Cutler-Hammer

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FINAL

POWER SYSTEM STUDY
FOR

VA BEDFORD MEDICAL CENTER

BEDFORD, MA

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1.0 EXECUTIVE SUMMARY

This power system report contains the results of the Short Circuit and Device Evaluation, Protective Device Coordination, and Voltage Drop Analysis and Arc-Flash Analysis Studies performed on the electrical distribution system for the VA Bedford Medical Center.

1.1 Objectives

1. Perform a short circuit study on the electrical power system from the incoming Nstar Utililty circuit “559”, the 15kV medium voltage switchgear in Building 27, the substations at each building, down through the 480 V and 208 V distribution panelboards shown on drawings PSE-3800 to PSE-3821 created by Cutler-Hammer for the VA Bedford Division study. Evaluate protective device short circuit ratings in comparison to the calculated short circuit currents and provide in table format.

2. Develop time-current coordination curves to determine coordinated settings for the protective devices associated with the scope of work described in Item #1 above. Provide setting tables for all adjustable protective devices. For the coordination curves, note that the single largest device of each of the described protective devices downstream will be considered.

3. Perform a Voltage Drop Analysis on the electrical distribution system described in Item #1 above. Provide table of voltage drops compared to that allowed by the National Electrical Code (NEC) Section 210.19(A) FPN#4.

4. Perform an Arc-Flash Hazard Analysis per the NFPA 70E on the electrical distribution system described in Item #1 above. Provide tables for “Approach Boundaries to Live Parts for Shock Protection”, Flash Protection Boundary”, and “Hazard Risk Category Classifications”.

5. Perform a Site Analysis to determine the following:

    - If adequate NEC working clearances exist for electrical panelboards and equipment. Note the cases in table format.

    - If ground fault protection exists where required by NEC articles 215 and 517. Provide information in table format.

    - If Automatic Transfer Switches (ATS’s) are 3-pole or 4-pole and applied correctly. Provide information in table format.

- If any cable limiters are used and provide recommendations to avoid possible single-phasing conditions.

- Where undervoltage relays (device 27) are used, determine if two or three phases are monitored.

6. Provide specific recommendations with associated costs where necessary to improve the electrical distribution performance and correct any deficiencies found by the studies.

1.2 Results

1. **Short Circuit Study**:

   The available fault currents at the medium voltage incoming lines ahead of Building 27 Switchgear were obtained from Nstar Power Company. Conductor and other field information were obtained by Cutler-Hammer during field data collection and site assessments. Short circuit currents were calculated for each bus shown on the one-line diagram in Section 8. The calculated fault current from Case 1, utility on line and all motors on line, was used in the short circuit analysis and device evaluation to provide the worst case fault currents. See Section 2 for more information.

2. **Device Evaluation**:

   The Device Evaluation is based on the power system worst-case short circuit current configuration, of which, is when Utility Circuit 559 is supplying the power system. All medium voltage selector switches were configured to their normal operating position.

   All protective devices are evaluated in Section 2 of this report. There are forty-three panel boards that are “over-dutied”, of which fifteen are unknown type panelboards, which need to be investigated to verify the interrupting rating of the panelboard. 10kA was assumed for all 208V panelboards as the minimum interrupting rating for 208V. See Table 1.0 on the next page for a listing of over-dutied panelboards. See Section 2.0 for the complete Device Evaluation analysis.

Table 1.0: Overdutied Devices

OVER-DUTIED DEVICES

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B3-1ST FL	208	10.4	1.3	10.4	7.844	1	7.844	(2) PANELBOARD	10	104%
B-B3-COMP MF	208	12.3	1.9	12.7	9.197	1.4	9.197	(2) PANELBOARD	10	127%
B-B3-ELEV	208	10.8	1.5	10.8	7.552	1	7.552	(2) PANELBOARD	10	108%
B-B3-EP2	208	15.85	2.7	17.9	13.22	2.1	13.9	(2) GE PANELBOARD	10	179%
B-B3-MECH HVAC	208	10.38	1.2	10.38	7.385	0.9	7.385	(2) PANELBOARD	10	104%
B-B3-MECH RM	208	12.32	1.9	12.6	9.468	1.4	9.468	(2) PANELBOARD	10	126%
B-B3-P3	208	12.9	1.5	12.9	10.36	1.1	10.36	(1) UNKNOWN	10	129%
B-B3-STRT PNL	208	11.85	1.4	11.85	8.776	1	8.776	(2) PANELBOARD	10	119%
B-B3-TELE PNL	208	11.55	1.8	11.7	9.193	1.5	9.193	(2) PANELBOARD	10	117%
B-B3-TRAY LINE	208	10.38	1.2	10.38	7.385	0.9	7.385	(2) PANELBOARD	10	104%
B-B4-4EQD	208	22.33	2.7	22.33	19.75	2	19.75	(2) WEST. PANELBOARD	22	101%
B-B4-ATS-EQ	208	25.16	2.9	25.16	24.13	2.2	24.13	(2) ASCO VERY OLD	25	101%
B-B4-PP1	208	15.89	1.7	15.89	12.32	1.3	12.32	(1) UNKNOWN	10	159%
B-B5-PNL-H	208	15.76	1.6	15.76	12.13	1.3	12.13	(1) UNKNOWN	10	158%
B-B6-EQD	208	14.34	2.3	15.4	10.77	1.8	10.77	(2) PANELBOARD	10	154%
B-B6-EQMACH	208	11.63	1.5	11.63	8.215	1.1	8.215	(1) UNKNOWN	10	116%

OVER-DUTIED DEVICES

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B6-MACH SHOP	208	12.54	1.3	12.54	9.185	1	9.185	(1) UNKNOWN	10	125%
B-B6-P6-CS	208	15.43	1.5	15.43	11.94	1.2	11.94	(1) UNKNOWN	10	154%
B-B8 2ND FLR	208	12.43	2.3	13.4	10.33	2	10.7	(1) UNKNOWN	10	134%
B-B8-MDP-8	208	17.28	2.8	19.6	16.14	2.6	16.14	(2) WEST. PANELBOARD	10	196%
B-B8-PNL-PK	208	13.26	1.8	13.3	11	1.4	11	(1) UNKNOWN	10	133%
B-B9-*PNLZZ	208	11.52	2	12.0	9.627	1.9	9.8	(2) PANELBOARD	10	120%
B-B9-EM	208	13.33	2.3	14.4	11.75	2	12.2	(2) PANELBOARD	10	144%
B-B9-L9B	208	11.38	1.4	11.38	9.54	1.3	9.54	(1) UNKNOWN	10	114%
B-B9-MDP	208	14.95	2.5	16.6	13.82	2.3	13.82	(2) GE PANELBOARD	10	166%
B-B19-200A PNL	208	17.75	2.7	20.0	17.78	2.1	18.6	(2) 200A PANELBOARD	10	200%
B-B61-DP	208	10.62	0.8	10.62	10.26	0.6	10.26	(2) PANELBOARD	10	106%
B-B61-LSD	208	10.6	2	11.0	9.548	1.6	9.548	(2) WEST. PANELBOARD	10	110%
B-B62-A	208	14.39	1.4	14.39	11.02	1.1	11.02	(2) PANELBOARD	10	144%
B-B62-B	208	15.2	1.4	15.2	11.83	1.1	11.83	(2) PANELBOARD	10	152%
B-B62-BL	208	10.47	0.8	10.47	7.183	0.6	7.183	(2) PANELBOARD	10	105%
B-B62-BP	208	13.28	0.9	13.28	9.742	0.7	9.742	(2) PANELBOARD	10	133%

OVER-DUTIED DEVICES

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B62-EQD	208	16.45	1.8	16.5	12.95	1.3	12.95	(2) PANELBOARD	10	165%
B-B62-KP	208	13.46	1.2	13.46	9.996	0.9	9.996	(2) PANELBOARD	10	135%
B-B62-OT	208	12.15	0.9	12.15	8.61	0.7	8.61	(2) PANELBOARD	10	122%
B-B62-STRT LGT	208	10.39	0.6	10.39	6.948	0.5	6.948	(2) PANELBOARD	10	104%
B-B70-EQD	208	12.57	2.5	13.9	11.33	2	11.8	(2) WEST. PANELBOARD	10	139%
B-B70-LSD	208	11.99	2.2	12.8	10.54	1.8	10.6	(2) WEST. PANELBOARD	10	128%
B-B78-PULM 78B	208	18.48	1.7	18.48	14.52	1.2	14.52	(1) UNKNOWN	10	185%
B-B92 GEN	208	8.21	17	12.9	7.736	18	12.2	(1) UNKNOWN	10	129%
B-B93-GEN	208	6.931	20	11.1	6.931	20	11.1	(1) UNKNOWN	10	111%
B-B94-GEN	208	6.931	20	11.1	6.931	20	11.1	(1) UNKNOWN	10	111%
B-B95-GEN	208	6.931	20	11.1	6.931	20	11.1	(1) UNKNOWN	10	111%

1. Panelboard data was not obtainable or could not be found at the time of the study. For 208V panels, a 10 KAIC rating was assumed. For 480V panels, a 14 KAIC rating was assumed. **All unknown devices should be verified for KAIC rating.**

2. The calculated short circuit duty exceeds the device short circuit withstand rating.

3. **Coordination Study:**

   The medium voltage relaying needs to be upgraded in order to achieve proper coordination with downstream protective devices. Low votage breakers need retrofited with newer electronic trip units in order to achieve proper coordination with upstream and downstream protective deives. The recommended changes would maximize coordination in an attempt to allow the various downstream devices to isolate faults without operation of the upstream devices. Although instantaneous trip devices provide the highest degree of protection, when applied in series they compromise selectivity at high-magnitude fault currents. See Section 4 for more information.

4. **Suggested Protective Device Settings:**

   Settings for all devices are shown in Table 3.1. The tables list the settings per building.

5. **Voltage Drop Analysis:**

   Cutler-Hammer used simulated loads, which were defined per the Department of Veterans Affairs' specification as described in Section 4.3. The voltage drops were compared to that allowed by the National Electrical Code (NEC) Section 210.19(A) FPN#4. These requirements, as stated in the NEC, provide reasonable efficiency of operation when voltage drops do not exceed 3% for branch circuits (Table 4.1 BRANCH %VD), and do not exceed 5% for a combination of both feeder and branch circuits (Table 4.1 BUS %VD). Cable current capacity (Table 4.1 CABLE RATING %) is considered out of spec when % is greater than 100. Refer to Table 4.1 for complete details of the voltage drop analysis.

   Since the loads were just simulated loads per the study specifications, each location where the % voltage drop and cable current capacity are out of spec should be reviewed further in a more detailed load flow study. The detailed load flow study should include load flow measurements to be taken by a power quality analysis meter like a RPM meter.

6. **Arc-Flash Hazard Analysis**:

   The fault current cannot easily be reduced nor can the working distance be increased to lessen the incident energy. In many locations the protective device setting can be adjusted or the trip unit upgraded to decrease the device interrupting time that will in turn decrease the incident energy. For a mission critical electrical distribution system,

such as for the Bedford VA Medical Center, it is essential that the system reliability not be compromised. Settings for protective devices cannot be adjusted if the chance of nuisance trips within critical care circuits is introduced. Each location where the hazard risk level is unacceptable must be individually evaluated to determine the most effective means of reducing the incident energy while maintaining the highest degree of reliability. See Tables 5.1 and 5.2 for complete Arc-Flash and Shock Hazard summaries.

7. **Site Assessment**

   At first glance, there didn't appear to be any generator neutrals grounded at the generators, which would create two grounds for the system neutral bonding. The generator neutral should only be grounded at the generator when a 4-pole ATS is used; otherwise, when connected to 3-pole ATS's, it should be connected to the neutral bar in the ATS or normal power neutral bar at the low voltage switchgear. All generators connected to 3-pole ATS's should have their neutral disconnected from the generator ground. It is possible that the neutral to ground bond is done at the wye point of the generator. See Table 6.1 for tabular results of the Site Assessment.

1.3 Recommendations

1. The forty-three over-dutied panelboards shown in Table 1.0 should be reviewed for panelboard/breaker replacement to comply with the short circuit current ratings required.

2. It is recommended to add protection at the emergency generators in Buildings 92, 93, 94 and 95. The lack of protection was field varified. Therefore, four 1200 Ampere ND Cutler-Hammer breakers with thermal magnetic trip should be added. One at each generator. The setting should be at min.

3. It is recommended to replace the General Electric type IFC-53 relays located on the main incoming breakers located at the 15kV switchgear with Cutler-Hammer type FP-5000. The recommended settings can be found in Section 3.5.

4. It is recommended to replace the General Electric type IFC-53 relays located on the feeder breakers at the 15kV switchgear with Cutler-Hammer type DT3001. The recommended settings can be found in Section 3.5.

5. It is recommended to replace the main breaker located in Building 1 MDP with a Cutler-Hammer KD breaker with RMS310LSI trip unit and

a rating plug of 250 Amperes. The breaker settings can be found in Section 3.5 of this report. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

6. It is recommended to replace the feeder breakers located in Building 1 MDP with Cutler-Hammer type JD breakers with thermal trip. There should be six 125-Ampere breakers and two 100-Ampere breakers. The settings can be found in Section 3.5.

7. It is recommended to replace the 480V main breaker in Building 2 MDP with a Cutler-Hammer type ND with RMS310 LSIG trip units with a tripping rating of 1200 Amperes. The settings can be found in Section 3.5. Note LSIG means Long Time Delay, Short Time Delay, Instantaneous and Ground.

8. Since two levels of ground protection are required, it is recommended to replace the 480V feeder breakers in Building 2 MDP with Cutler-Hammer type KD breakers with RMS-310-LSIG trip units with trip ratings of 200 Amperes. The settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

9. In Building 2 Panelboard MDP, it is recommended to change the trip rating of B2-MDP-1 type FPE NJL breaker from 200 Amperes to 150 Amperes in order to protect the 1/0 cable.

10. In Building 2 Panelboard MDP, it is recommended to change the trip rating of B2-MDP-2 type FPE NJL breaker from 225 Amperes to 110 Amperes in order to protect the #2 cable.

11. It is recommended to change out the calbe that feeds Building 2 ATS LED3 normal side from 2/0 to 250 MCM. This consists of approximately 10 Feet of cable.

12. It is recommended to install an emergency panelboard in Building 2 on the load side of ATS LED3. Presently there isn't any protection for the five feeders. The panelboard should be rated for 250 Amperes and have five feeders. The feeders should consist of 1-85 Ampere breaker, 2-200 Ampere breakers, 1-175 Ampere breaker and 1-100 Ampere breaker. All breakers should be thermal magnetic. The short circuit rating can be 10kA.

13. It is recommended to replace the 208V main breaker in Building 2 MDPA with Cutler-Hammer type LD with RMS310 LSI trip unit and a trip rating of 600 Amperes. The settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

14. It is recommended to replace the tiebreaker in Building 2 MDPA and MDPB with a Cutler-Hammer type KD with RMS310 LSI and a trip rating of 400 Amperes. The settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

15. It is recommended to replace the 208V main breaker in Building 2 MDPB with Cutler-Hammer type LD with RMS310 LSI trip units and a trip rating of 600 Amperes. The settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

16. In Building 2 Panelboard Critical, it is recommended to replace the FPE NJL breaker B2-CRIT-2 from 200A to a 100A trip rating. This will protect the #2 size cable.

17. In Building 3 Panelboard EP1, it is recommended to replace the Sq-D KA breaker B3-EP1-4 from 200 Amperes to 175 Amperes, This will protect the 2/0 cable.

18. In Building 3 Panelboard EP2, it is recommended to replace the GE TQD breaker B3-EP2-3 from 200 Amperes to a GE type THQD 150 Amperes, This will protect the 1/0 cable and increase the short circuit rating to 22kA.

19. In Building 3 Panelboard EP2, it is recommended to replace the GE THQD breaker B3-EP2-6 from 175 Amperes to 125 Amperes, This will protect the #1 cable.

20. In Building 3 Panelboard EP2, it is recommended to replace the GE THED breaker B3-EP2-8 from 100 Amperes to 70 Amperes, This will protect the #4 cable.

21. In Building 3 Panelboard EP2, it is recommended to replace the GE TQD breaker B3-EP2-10 200 Ampere with a GE THQD 200 Ampere breaker. This will increase the short circuit rating for B-B3-EP2 to 22kA.

22. It is recommended to replace the main breaker in Building 4 MDP with a Cutler-Hammer RD breaker with RMS310-LSI trip unit and a 1600 Ampere rating plug. The settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

23. In Building 4 Panelboard EQD, it is recommended to replace the Westinghouse CAH breaker B4-4EQD-7 from a 225 Amp trip to a 150 Amp trip. This will protect the 1/0 cable.

24. It is recommended to replace the main breaker in Building 5 MDP with a Cutler-Hammer ND breaker with RMS310 LSI trip unit and a 1000-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

25. In Building 5 panelboard EQD, it is recommended to replace the FPE NJL breaker BE-EQD-5 from 200 Amp trip to 150 Amp trip. This will protect the 1/0 cable.

26. It is recommended to retrofit the existing Westinghouse SPB-100 in Building 6 MDP with a Cutler-Hammer Digitrip RMS-510 trip unit with LSI trip characteristics. The rating plug should be 1200 Ampers. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

27. In Building 6 Panelboard MDP, it is recommended to replace the Westinghouse LC Seltronic breakers B6-MDP-8 and B6-MDP-9 from 225 Amp trip to 200 Amp trip. This will protect the 3/0 cable.

28. In Building 6 Panelboard EQD, it is recommended to replace the Westinghouse CAH breaker B6-EQD-2 from 150 Amp trip to 130 Amp trip. This will protect the #1 cable.

29. In Building 6 Panelboard EQD, it is recommended to replace the Westinghouse CAH breaker B6-EQD-3 from 225 Amp trip to 175Amp trip. This will protect the 2/0 cable.

30. In Building 6 Panelboard LSD, it is recommended to replace breaker B6-LSD-4 from 100 Amp trip type Westinghouse BA to 100 Amp trip type C-H GHD. This will correct the overduttied situation for Panelboard LSD.

31. It is recommended to retrofit the existing Westinghouse SPB-100 in Building 7 MDP with a Cutler-Hammer Digitrip RMS-510 trip unit with LSI trip characteristics. The rating plug should be 800 Amperes. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

32. It is recommended to determine the load for Building 94 ATS which is supplied normal power from Building 7. The cables go into an unmarked conduit and then the conduit goes into the floor. Onsite personnel did not know what the transfer switch feeds.

33. In Building 7 Panelboard EQD, it is recommended to replace the GE TFJ breaker B7-EQD-6 from a 200 Amp trip to a 150 Amp trip. This will protect the 1/0 cable.

34. In Building 7 Switchboard MDP, it is recommended to replace Breaker B7-MDP-10 from a Westinghouse type LC seltronic with a 150 Amp trip to a Cutler-Hammer type LD Digitrip RMS310 LS with adjustable trip and set for 85 Ampere trip rating. This will protect the #4 cable.

35. In Building 8, it is recommended to install a panelboard on the 208V secondary of the 225kVA transformer. Presently there is only one 700-Ampere breaker protecting multiple size cables. The panelboard will need at a minimum, one 400-Ampere breaker and one 300-Ampere breaker.

36. In Building 8 480V panelboard, it is recommended to replace breaker B8 480V PNL-2 from a 100-Ampere trip to a 70-Ampere trip.

37. In Building 8 480V panelboard, it is recommended to replace breaker B8 480V PNL-4 from a 60-Ampere trip to a 40-Ampere trip.

38. In Building 8, 208V ATS has it's normal and emergency source from the same panelboard but different circuit breakers. There should be a warning on the ATS stating that both normal and emergency side of ATS is always energized.

39. In Building 9, the ATS is only connected to a normal source. The emergency side does not connect to anything. It is recommended to place a sign on the emergency panelboard stating that there is no emergency back-up power connected to Panelboard B-B9-EM.

40. It is recommended to replace the main breaker in Building 13 MDP with a Cutler-Hammer ND breaker with RMS310 LSI trip unit and a 1200-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

41. It is recommended to replace the main breaker in Building 17 MDP with a Cutler-Hammer LD breaker with RMS310 LSI trip unit and a 600-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

42. In Building 17 Panelboard DP, it is recommended to replace the Sq-D FA breaker B17-DP-3 from a 100 Amp trip to a 70 Amp trip. This will protect the #4 cable.

43. In Building 17 Panelboard DP, it is recommended to replace the SQ-D Q2H breaker B17-DP-6 from a 225 Amp trip to a 200 Amp trip. This will protect the 3/0 cable.

44. It is recommended to replace the main breaker in Building 18 MDP with a Cutler-Hammer LD breaker with RMS310 LSI trip unit and a 600-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

45. In Building 18 Panelboard NMDP, it is recommended to replace the Sq-D FA breaker B18-NMDP-7 from a 100 Amp trip to a 90 Amp trip. This will protect the #4 cable.

46. It is recommended to replace the main breaker in Building 19 MDP2 with a Cutler-Hammer ND breaker with RMS310 LSI trip unit and a 600-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

47. In Building 19 Panelboard MDP1, it is recommended to replace the Sq-D KA breaker B19-MDP1-7 from a 225 Amp trip to a 200 Amp trip. This will protect the 3/0 cable.

48. It is recommended to replace the main breaker in Building 22 MDP with a Cutler-Hammer ND breaker with RMS310 LSI trip unit and a 400-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous. By reducing the trip to 400 Amperes, the breaker will be rated to protect the transformer and the 500MCM cable.

49. It is recommended to replace the main distribution panelboard in Building 60. The existing panelboard is old and in bad shape.

50. It is recommended to replace Panelboard D-1 in Building 60. This panel is old and in bad shape. This is a 400-Ampere panelboard with a main and three feeder breakers. The feeders are rated 100 Amperes, 175 Amperes and 200 Amperes. The panelboard should have a short circuit rating of 18kA.

51. It is recommended to retrofit the existing Westinghouse SPB-100 in Building 61 MDP with a Cutler-Hammer Digitrip RMS-510 trip unit with LSI trip characteristics. The rating plug should be 800 Amperes. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

52. It is recommended to retrofit the existing Westinghouse SPB-100 in Building 62 MDP with a Cutler-Hammer Digitrip RMS-510 trip unit with LSI trip characteristics. The rating plug should be 1200 Amperes. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

53. In Building 62 Panelboard EQD, it is recommended to replace the Sq-D NEJ H breaker B62-EQD-5 from a 200 Amp trip to a breaker with 150 Amp trip. This will protect the 1/0 cable.

54. It is recommended to retrofit the existing Westinghouse SPB-100 in Building 70 MDP with a Cutler-Hammer Digitrip RMS-510 trip unit with LSI trip characteristics. The rating plug should be 800 Amperes. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

55. It is recommended to install an emergency distribution panelboard in order to protect the different sized cables that are spliced together in the junction box. The panel would conisist of a 400-Ampere main breaker with 2 - 350-Ampere feeder breakers and 1- 225-Ampere feeder breaker. The breakers could be thermal-magnetic trip.

56. There is a potential hazard with Building 70's emergency generator and the utility feeder. There are two firepump breakers, normal and emergency that are both closed. It is possible for the generater to come on line out of sync with the utility causing a catistrophic failure to the power system. It is highly recommended to install a 400 Ampere ATS in place of the emergency breaker designated B70-FIREPMP-E

57. In Building 78 panel MDP, it it recommended to replace the GE SGDA Spectra 300-Ampere breaker B78-MDP-28 with a trip rating of 250 Amperes. This change will protectect the 250MCM cable.

58. In Building 78 panel MDP, it it recommended to replace the two GE TEY 600-Ampere breaker B78-MDP-211B and 31A with a breaker with a trip rating of 65 Amperes. This change will protectect the #6 cable.

59. In Building 78 panel MDP, it it recommended to replace the GE SFHA Spectra 225-Ampere breaker B78-MDP-39A with a breaker with a trip rating of 200 Amperes. This change will protectect the 3/0 cable.

60. In Building 78 panel MDP, it it recommended to replace the GE SGDA Spectra 400-Ampere breaker B78-MDP-45 with a breaker with a trip rating of 275 Amperes. This change will protectect the 300MCM cable.

61. It is recommended to replace the main breaker in Building 80 MDP with a Cutler-Hammer LD breaker with RMS310 LSI trip unit and a 600-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

62. It is recommended to replace the main breaker in Building 82 MDP with a Cutler-Hammer LD breaker with RMS310 LSI trip unit and a 400-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous. The trip rating is being reduced in order to protect the 112.5kVA transformer.

63. For buildings that have not been called out for a breaker or trip-unit replacement, the protective devices should be tested and set per the recommended settings located in Section 3.5. This will protect the remaining overloaded cables.

64. A more detailed load flow study with real-time measurements should be done to review possible over-loaded cables and out of spec % voltage drops resulting from this study. It is recommended that real-time load flow measurements be taken at the secondary of all twenty seven building substation transformers. An RPM meter should be connected for a 24hr monitoring period. See Table 1.1 located on the next page for transformer monitoring locations.

Table 1.1: Transformer Monitoring Locations

XFMR	SIZE	VOLTAGE	LOCATION
T-B1	75kVA	13.8kV/208V	FEEDS BLDG 1
T-B2	750kVA	13.8kV/208V/480V	FEEDS BLDG 2 480V & 208V
T-B2A	300kVA	13.8kV/208V	FEEDS BLDG. 2A
T-B3	300kVA	13.8kV/208V	FEEDS BLDG. 3
T-B4	500kVA	13.8kV/208V	FEEDS BLDG. 4
T-B5	300kVA	13.8kV/208V	FEEDS BLDG. 5
T-B6	300kVA	13.8kV/208V	FEEDS BLDG. 6
T-B7	225kVA	13.8kV/208V	FEEDS BLDG. 7
T-B8	225kVA	13.8kV/208V	FEEDS BLDG. 8
T-B9	225kVA	13.8kV/208V	FEEDS BLDG. 9
T-B10	75kVA	13.8kV/208V	FEEDS BLDG. 75
T-B12	75kVA	13.8kV/208V	FEEDS BLDG. 12
T-B13	225kVA	13.8kV/208V	FEEDS BLDG. 13
T-B17	150kVA	13.8kV/208V	FEEDS BLDG. 17
T-B18	150kVA	13.8kV/208V	FEEDS BLDG. 18
T-B19	500kVA	13.8kV/208V	FEEDS BLDG. 19
T-B22	225kVA	13.8kV/480V	FEEDS BLDG. 22
T-B30	75kVA	13.8kV/208V	FEEDS BLDG.30
T-B33	75kVA	13.8kV/208V	FEEDS BLDG. 33
T-B60	112.5 kVA	13.8kV/208V	FEEDS BLDG. 82
T-B61	225kVA	13.8kV/208V	FEEDS BLDG. 61
T-B62	300kVA	13.8kV/208V	FEEDS BLDG. 62
T-B70	300kVA	13.8kV/208V	FEEDS BLDG.70
T-B78	1000kVA	13.8kV/208V	FEEDS BLDG. 78
T-B80	150kVA	13.8kV/208V	FEEDS BLDG. 80
T-B81	75kVA	13.8kV/208V	FEEDS BLDG. 81
T-B82	112.5 kVA	13.8kV/208V	FEEDS BLDG. 82

65. It is recommended that Arc-Flash Hazard labels be created and applied to each piece of equipment accessed by VA employees or contractors (approximately 700 locations). At some locations where the hazard risk level may be unacceptable to the Department of Veterans Affairs, further investigation, outside the scope of this study, is recommended to determine the most effective means of reducing the incident energy while maintaining the highest desired degree of reliability.

66. Working clearance violations, as outlined in Table 6.1 located in Section 6, should be reviewed and corrected to meet NEC 2002 Article 110.26 requirements.

67. The emergency generators in Buildings 70, 92, 93, 94 and 95 should have their neutrals "disconnected" from ground at the generator location. The neutral from the generator should be carried through the 3-pole ATS's (connected to isolated neutral bar in ATS) to the neutral in the LV SWBD feeding the normal side of the ATS. This allows only one common ground for the neutral of the associated circuit, which is specified in NEC 2002 Article 250. Further investigation of each generator wye point or neutral point should be performed inside the generator.

2.0 Short Circuit Analysis

The short circuit study determines the fault currents that flow in the system during various fault conditions. The calculated fault currents are used in the device evaluation and coordination studies. See Section 2.4 for the computer generated input data, and Section 2.5 for the computer generated output data.

The short circuit calculations were done using A_FAULT, a computer software package by SKM Systems Analysis. The short circuit analysis performed by A_FAULT is based on ANSI Standards C37.010, C37.5 and C37.13.

Separate “Z” (complex), “X” (reactive), and "R" (resistive) networks are used by A_FAULT for the short circuit analysis. A_FAULT uses complex network reduction and the relationship E/Z to calculate the fault current magnitude and angle at each faulted bus. The complex equivalent circuit impedance, Z, is calculated by the reduction of the “Z” (complex) network, and is reported as the “EQUIV. IMPEDANCE” in the A_FAULT reports. The X/R ratios calculated for each fault condition are based on the separate reduction of the X and R networks. These X/R ratios are used for the calculation of fault duty multipliers, to evaluate the short circuit ratings of system components.

A_FAULT is capable of generating three types of short circuit reports for both balanced (three-phase bolted) and unbalanced (line-to-ground) faults. The reports that are generated depend on the system that is being evaluated.

The three types of short circuit reports are:

1. Fault Report (for low voltage)
2. Momentary Duty Report (for medium voltage)
3. Interrupting Duty Report (for medium voltage)

<u>Fault Report</u>

The fault currents reported in the “Fault Report” are applicable to low voltage devices and components. The fault currents calculated in this report are based on the contribution data derived from ANSI C37.13. The fault currents are calculated as follows:

- Motor and generator subtransient reactances (Xd”) are adjusted per the first cycle duty multipliers described in IEEE Standard 141-1993.
- The complex equivalent circuit impedance, Z, is calculated by network reduction of the “Z” (complex) network.
- The momentary symmetrical current = E/Z.
- The X/R ratio is equal to the equivalent circuit reactance, X, divided by the equivalent circuit resistance, R. As discussed above, X is calculated by the reduction of the “X” (reactive) network and R is calculated by the reduction of the “R” (resistive) network.

Multiplying factors are determined and used to adjust the calculated symmetrical fault current. The adjusted current is used to evaluate low voltage protective devices. Low voltage output algorithms and output reports reflect NEMA AB-1 molded case breaker derating multipliers. Breakers are derated for circuits where the power factor is lower than the NEMA test circuit (higher X/R ratio). The multipliers adjust the symmetrical fault current to the value associated with the systems fault point X/R ratio. The adjusted value listed on the report may then be compared directly with the manufacturer's published interrupting rating.

Momentary Duty Report

The "Momentary Duty Report" contains the calculated fault currents that occur during the first half-cycle of the fault. The fault currents reported in the "Momentary Duty Report" are calculated as follows:

- Motor and generator subtransient reactances (Xd") are adjusted per the first cycle duty multipliers described in IEEE Standard 141-1993.
- The complex equivalent circuit impedance, Z, is calculated by network reduction of the "Z" (complex) network.
- The momentary symmetrical current = E/Z.
- The X/R ratio reported is equal to the equivalent circuit reactance, X, divided by the equivalent circuit resistance, R. As discussed above, X is calculated by the reduction of the "X" (reactive) network and R is calculated by the reduction of the "R" (resistive) network.
- A_FAULT calculates and reports the momentary asymmetrical current in two different ways, once as "sym*1.6" and again as "momentary based on X/R". The "sym*1.6" value is the momentary symmetrical current multiplied by 1.6. The "momentary based on X/R" value is the momentary symmetrical current multiplied by

$$\sqrt{1+2e^{(-2\pi/(X/R))}}$$

Interrupting Duty Report

The fault currents reported in the "Interrupting Duty Report" are used to evaluate medium voltage breakers. The interrupting symmetrical current is calculated as follows:

- Motor and generator subtransient reactances (Xd") are adjusted per the interrupting duty multipliers described in IEEE Standard 141-1993.
- The complex equivalent circuit impedance, Z, is calculated by network reduction of the "Z" (complex) network.
- The interrupting symmetrical current = E/Z.
- The X/R ratio reported is equal to the equivalent circuit reactance, X, divided by the equivalent circuit resistance, R. As discussed above, X is

calculated by the reduction of the “X” (reactive) network and R is calculated by the reduction of the “R” (resistive) network.

A_FAULT determines the minimum contact parting time multiplying factors for 2, 3, 5, and 8 cycle breakers. The multiplying factors are based on ANSI C37.5-1979 and C37.010-1979 standards. The multiplying factors are applied to the interrupting symmetrical in order to calculate the RMS short circuit current interrupting duty for 2, 3, 5, and 8 cycle breakers. This duty is compared to the symmetrical current interrupting rating of the circuit breaker. NACD (No AC Decrement) ratios are calculated with consideration of generator "Local" and "Remote" contributions as outlined in ANSI Standard C37.010-1979.

Motor and generator impedance multipliers for the short circuit calculations are summarized as follows. This is based on the recommended combination network for comprehensive multi-voltage system calculations (from ANSI/IEEE Standard 141-1993 Red Book):

Machine Type	Impedance (First Cycle Duty)	Impedance (Interrupting Duty)
Turbine generators, Condensers, Hydrogenerators with amortisseur windings,	1.0 Xd"	1.0 Xd"
Synchronous motors	1.0 Xd"	1.5 Xd"
Induction motors > 1000 hp at speed ≤ 1800 RPM, or > 250 hp at 3600 RPM.	1.0 Xd"	1.5 Xd"
Induction motors ≥ 50 hp not covered above.	1.2 Xd"	3.0 Xd"
Induction motors < 50 hp	1.67 Xd"	Neglect

Note: Xd" is assumed to equal 17% for induction motors.

2.1 Short Circuit Objectives

Calculate the maximum short circuit currents produced by balanced three-phase and unbalanced faults at each bus shown on the one-line diagrams in Section 8.

2.2 Short Circuit Results

The available short circuit currents used in this study were 2,700 amps (phase) and 1,200 amps (gnd) for Utility Circuits 559-1 and 559-2. The utility short circuit data was obtained from Nstar Power Company.

For maximum system fault duties (used in the device evaluation of Section 2.3), the modeling is summarized as follows:

- Utility source contribution from Utility Circuit 559 for worst-case fault currents.
- All listed motors were assumed to be in service at 100% of total connected hp.
- System voltage was considered at 100%.
- Assumptions – If cable distance wasn't available, a distance of 30 feet was assumed.

The calculated currents including branch contributions for the short circuit analysis are provided in Section 2.5. The single line diagram with referenced bus identification is included in Section 8.

2.3 Protective Device Evaluation

The purpose of the device evaluation is to compare the ***maximum*** calculated short circuit currents to the short circuit ratings of protective devices. The comparison is made in order to determine if the device can interrupt or withstand the available fault currents of the electrical system to which the device is applied, as required by NEC 110.9 and 110.10. The device evaluation follows the evaluation procedures outlined in ANSI C37.13-1981, ANSI C37.010-1979, ANSI C37.5-1979, ANSI C37.41-1981, IEEE Std. 1015-1997, and applicable ANSI, NEMA, and UL standards.

2.3.1 Device Evaluation Objectives

Evaluate the protective device equipment from the 15kV medium voltage switchgear to the downstream 480V and 208 V panelboards.

2.3.2 Device Evaluation Results

The results of the device evaluation are summarized in Table 2.1 on the following page. For convenient reference, the devices are referenced by the same bus identifications as shown on the single line diagram in Section 8. The "Adj. KA" column is the adjusted current to be compared directly with the manufacturer's published short circuit rating. Equipment is derated for circuits where the system equivalent power factor is lower than the design test circuit (namely, system equivalent X/R ratio is higher than the design X/R ratio). The 2nd to the last column in the table shows the maximum calculated short circuit current as a percentage of the protective device interrupting rating. See Table 2.1 for Device Evaluation.

Table 2.1 – Device Evaluation

EVALUATION OF MEDIUM VOLTAGE BREAKERS

DEVICE INFORMATION				MOMENTARY RATING (Asym. RMS Amps)				INTERRUPTING RATING (RMS Amps)			
BUS I.D.	Note	VOLT L-L	DEVICE TYPE	Close & Latch (Momentary) kA Rating	Calculated Momentary kA	X/R	Momentary % Duty	Interrupting kA Rating	Calculated Interrupting kA	X/R	Interrupting % Duty
B-T-B1-PRI		13800	MCGRAW ED NX FUSE	35.00	3.148	2.73	8.99%	50.00	2.744	2.72	5.49%
B-T-B2-PRI		13800	MCGRAW ED NX FUSE	35.00	3.189	2.8	9.11%	50.00	2.763	2.79	5.53%
B-T-B3-PRI		13800	MCGRAW ED NX FUSE	35.00	3.09	2.61	8.83%	50.00	2.713	2.6	5.43%
B-T-B4-PRI		13800	MCGRAW ED NX FUSE	35.00	2.986	2.42	8.53%	50.00	2.661	2.43	5.32%
B-T-B5-PRI		13800	MCGRAW ED NX FUSE	35.00	2.795	2.13	7.99%	50.00	2.544	2.14	5.09%
B-T-B6-PRI		13800	MCGRAW ED NX FUSE	35.00	2.842	2.2	8.12%	50.00	2.573	2.2	5.15%
B-T-B7-PRI		13800	MCGRAW ED NX FUSE	35.00	2.906	2.3	8.30%	50.00	2.612	2.3	5.22%
B-T-B8-PRI		13800	MCGRAW ED NX FUSE	35.00	3.068	2.58	8.77%	50.00	2.703	2.57	5.41%
B-T-B9-PRI		13800	MCGRAW ED NX FUSE	35.00	2.938	2.35	8.39%	50.00	2.631	2.35	5.26%
B-T-B10-PRI		13800	MCGRAW ED NX FUSE	35.00	2.996	2.45	8.56%	50.00	2.663	2.44	5.33%

EVALUATION OF MEDIUM VOLTAGE BREAKERS

DEVICE INFORMATION				MOMENTARY RATING (Asym. RMS Amps)				INTERRUPTING RATING (RMS Amps)			
BUS I.D.	Note	VOLT L-L	DEVICE TYPE	Close & Latch (Momentary) kA Rating	Calculated Momentary kA	X/R	Momentary % Duty	Interrupting kA Rating	Calculated Interrupting kA	X/R	Interrupting % Duty
B-T-B12-PRI		13800	MCGRAW ED NX FUSE	35.00	2.855	2.22	8.16%	50.00	2.583	2.22	5.17%
B-T-13-PRI		13800	MCGRAW ED NX FUSE	35.00	2.904	2.3	8.30%	50.00	2.612	2.3	5.22%
B-T-B17-PRI		13800	MCGRAW ED NX FUSE	35.00	2.734	2.04	7.81%	50.00	2.507	2.06	5.01%
B-T-B18-PRI		13800	MCGRAW ED NX FUSE	35.00	2.72	2.02	7.77%	50.00	2.498	2.04	5.00%
B-T-B19-PRI		13800	MCGRAW ED NX FUSE	35.00	3.132	2.68	8.95%	50.00	2.738	2.68	5.48%
B-T-B22-PRI		13800	MCGRAW ED NX FUSE	35.00	3.216	2.85	9.19%	50.00	2.779	2.84	5.56%
B-B27-SWGR		13800	ITE 15-MK-500	20.90	3.355	3.14	16.05%	45.00	2.839	3.12	6.31%
B-T-B30-PRI		13800	GE FUSE EJO-1	40.00	2.938	2.36	7.35%	60.00	2.632	2.37	4.39%
B-T-B33-PRI		13800	MCGRAW ED NX FUSE	35.00	3.284	2.98	9.38%	50.00	2.809	2.97	5.62%
B-T-B60-PRI		13800	MCGRAW ED NX FUSE	35.00	2.778	2.1	7.94%	50.00	2.536	2.12	5.07%

EVALUATION OF MEDIUM VOLTAGE BREAKERS

DEVICE INFORMATION				MOMENTARY RATING (Asym. RMS Amps)				INTERRUPTING RATING (RMS Amps)			
BUS I.D.	Note	VOLT L-L	DEVICE TYPE	Close & Latch (Momentary) kA Rating	Calculated Momentary kA	X/R	Momentary % Duty	Interrupting kA Rating	Calculated Interrupting kA	X/R	Interrupting % Duty
B-T-B61-PRI		13800	MCGRAW ED NX FUSE	35.00	2.987	2.44	8.53%	50.00	2.658	2.43	5.32%
B-T-B62-PRI		13800	MCGRAW ED NX FUSE	35.00	3.041	2.531	8.69%	50.00	2.688	2.52	5.38%
B-T-B70-PRI		13800	MCGRAW ED NX FUSE	35.00	3.067	2.58	8.76%	50.00	2.702	2.58	5.40%
B-T-B78-PRI		13800	MCGRAW ED NX FUSE	35.00	3.052	2.55	8.72%	50.00	2.693	2.54	5.39%
B-T-B80-PRI		13800	MCGRAW ED NX FUSE	35.00	2.959	2.38	8.45%	50.00	2.647	2.39	5.29%
B-T-B81-PRI		13800	MCGRAW ED NX FUSE	35.00	2.839	2.186	8.11%	50.00	2.573	2.2	5.15%
B-T-B82-PRI		13800	MCGRAW ED NX FUSE	35.00	3.04	2.496	8.69%	50.00	2.691	2.52	5.38%

1. All listed devices are applied within the listed short circuit ratings.

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B1-MDP	208	4.41	1.76	4.43	4.52	1.75	4.53	ITE PANEL	10	44%
B-B2-ATS-CRIT	208	14.06	1.28	14.06	13.42	2.00	13.42	ASC0 ATS	30	47%
B-B2-ATS-LED3	208	3.31	1.33	3.37	3.41	1.30	3.41	ASC0 ATS	30	11%
B-B2-ATS-LS	208	14.38	2.69	14.38	14.04	2.15	14.04	ASC0 ATS	30	48%
B-B2-BATTERYCH	208	3.88	0.40	3.88	2.41	0.27	2.41	(1) UNKNOWN	10	39%
B-B2-CATSCAN	480	9.34	1.28	9.34	7.90	0.89	7.90	(1) UNKNOWN	14	67%
B-B2-CRIT PNL	208	13.82	2.54	13.82	12.99	1.90	12.99	FPE PANEL	42	33%
B-B2-DENTAL LB	208	7.80	0.92	7.80	5.55	0.64	5.55	(1) UNKNOWN	10	78%
B-B2-DENTSUCPM	208	7.47	1.22	7.47	5.01	0.66	5.01	(1) UNKNOWN	10	75%
B-B2-ELEV	208	10.54	1.83	10.69	8.64	1.31	8.64	(1)(2) UNKNOWN	10	107%
B-B2-ELEV-P1	208	7.99	1.75	8.01	5.73	1.11	5.73	(1) UNKNOWN	10	80%
B-B2-EMERG-M	208	3.26	1.31	3.26	3.31	1.27	3.31	SQ-D PANEL	10	33%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B2-EMERG-PNL	208	3.25	1.31	3.25	3.30	1.27	3.39	SQ-D PANEL	10	33%
B-B2-EPNL-B	208	2.97	2.30	3.20	2.22	1.73	2.22	PANELBOARD	10	32%
B-B2-L12	208	9.31	1.47	9.31	7.33	1.07	7.33	(3) PANELBOARD	10	93%
B-B2-L2A	208	9.30	1.48	9.30	7.29	1.07	7.29	(3) PANELBOARD	10	93%
B-B2-L2E	208	9.31	1.47	9.31	7.33	1.07	7.34	(3) PANELBOARD	10	93%
B-B2-L4	208	9.87	1.54	9.87	8.01	1.14	8.01	(3) PANELBOARD	10	99%
B-B2-L6	208	9.87	1.54	9.87	8.01	1.14	8.01	(3) PANELBOARD	10	99%
B-B2-L7	208	9.87	1.54	9.87	8.01	1.14	8.01	(3) PANELBOARD	10	99%
B-B2-L8	208	9.87	1.54	9.87	8.01	1.14	8.01	(3) PANELBOARD	10	99%
B-B2-L9E	208	8.31	1.12	8.31	6.16	0.80	6.16	PANELBOARD	10	83%
B-B2-LB1E	208	8.31	1.12	8.31	6.16	0.80	6.16	PANELBOARD	10	83%
B-B2-LB2	208	9.87	1.54	9.87	8.01	1.14	8.01	(3) PANELBOARD	10	99%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B2-LB2E	208	6.94	0.82	6.94	4.79	0.58	4.79	PANELBOARD	10	69%
B-B2-LED-3	208	3.41	1.37	3.41	3.58	1.38	3.58	(1) UNKNOWN	10	34%
B-B2-MDP	480	12.67	4.67	12.67	12.97	4.75	12.97	PANELBOARD	30	42%
B-B2-MDPA	208	7.62	5.16	7.69	7.67	5.10	7.73	PANELBOARD	42	18%
B-B2-MDPB	208	14.94	2.93	14.94	15.08	2.49	15.08	PANELBOARD	42	36%
B-B2-MEDAIRCOM	208	7.20	0.98	7.20	4.89	0.61	4.89	PANELBOARD	10	72%
B-B2-NEWLAB	208	3.22	1.29	3.22	3.24	1.23	3.24	GE PANEL	10	32%
B-B2-NEWLAB-M	208	3.22	1.29	3.22	3.25	1.24	3.25	SQ-D PANEL	10	32%
B-B2-PNL 1	208	3.26	1.31	3.26	3.31	1.27	3.31	SQ-D PANEL	10	33%
B-B2-PNL LS	208	13.84	2.51	13.84	13.12	1.92	13.12	FPE PANEL	42	33%
B-B2-PNL-2	208	3.27	1.29	3.27	3.33	1.25	3.33	SQ-D PANEL	10	33%
B-B2-PNL-3-M	208	3.21	1.26	3.21	3.23	1.19	3.23	SQ-D PANEL	10	32%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B2-PNL-D2	208	6.10	3.64	7.46	5.55	3.02	6.45	(1) UNKNOWN	10	75%
B-B2-PNL-L11	208	9.52	1.59	9.52	7.39	1.10	7.39	(1)(3) UNKNOWN	10	95%
B-B2-PNL-M1	208	3.11	1.20	3.11	3.06	1.10	3.06	GE PNL	10	31%
B-B2-PNL-P	480	9.56	2.73	9.56	8.28	2.15	8.28	GE PANELBOARD	22	43%
B-B2-POD2PP	208	9.72	1.64	9.72	7.84	1.21	7.84	(1)(3) UNKNOWN	10	97%
B-B2-TEL COMM	208	9.87	1.54	9.87	8.01	1.14	8.01	(1)(3) UNKNOWN	10	99%
B-B2-UNIT-1	480	8.55	1.92	8.55	7.05	1.46	7.05	PANELBOARD	14	61%
B-B2-UNIT-2	480	9.04	2.24	9.04	7.63	1.72	7.63	PANELBOARD	14	65%
B-B2-XRAY	208	1.91	0.19	1.91	1.14	0.13	1.14	(1) UNKNOWN	10	19%
B-B2-XRAY124	208	6.28	1.23	6.28	4.75	0.94	4.75	(1) UNKNOWN	10	63%
B-B2-XRAY-124	480	8.06	0.98	8.06	5.90	0.70	5.90	FPE TYPE NFJ	22	37%
B-B3-1ST FL	208	10.40	1.34	10.40	7.84	1.03	7.84	(2) PANELBOARD	10	104%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B3-ALDN KIT	208	7.86	0.73	7.86	5.16	0.54	5.16	PANELBOARD	10	79%
B-B3-ATS-COMP	208	16.81	2.73	16.81	14.66	2.18	14.66	RUSSELECTRIC ATS	42	40%
B-B3-ATSTEL RM	208	15.37	2.56	15.37	13.62	2.18	13.62	RUSSELECTRIC ATS	42	37%
B-B3-COMP	208	9.18	1.03	9.18	6.35	0.77	6.35	(3) PANELBOARD	10	92%
B-B3-COMP AC	208	3.05	0.25	3.05	1.82	0.19	1.82	PANELBOARD	10	31%
B-B3-COMP MF	208	12.30	1.94	12.67	9.20	1.36	9.20	(2) PANELBOARD	10	127%
B-B3-DBL GRILL	208	8.78	1.22	8.78	6.37	0.94	6.37	PANELBOARD	10	88%
B-B3-ELEV	208	10.80	1.48	10.80	7.55	0.95	7.55	(2) PANELBOARD	10	108%
B-B3-EP1	208	14.61	2.50	14.61	12.66	2.11	12.66	SQ-D PANEL	25	58%
B-B3-EP2	208	15.85	2.69	17.87	13.22	2.08	13.88	(2) GE PANELBOARD	10	179%
B-B3-HYDRO ELV	208	8.10	1.31	8.10	5.24	0.80	5.24	PANELBOARD	10	81%
B-B3-KP1	208	9.78	1.58	9.78	7.42	1.25	7.42	(3) PANELBOARD	10	98%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B3-MDP	208	20.07	2.92	20.07	20.04	2.62	20.04	(3) PANELBOARD	22	91%
B-B3-MECH HVAC	208	10.38	1.18	10.38	7.39	0.88	7.39	(2) PANELBOARD	10	104%
B-B3-MECH RM	208	12.32	1.88	12.59	9.47	1.44	9.47	(2) PANELBOARD	10	126%
B-B3-P3	208	12.90	1.50	12.90	10.36	1.13	10.36	(1) UNKNOWN	10	129%
B-B3-P7	208	9.17	1.03	9.17	6.56	0.77	6.56	(3) PANELBOARD	10	92%
B-B3-STRT LTS	208	8.55	0.58	8.55	5.69	0.39	5.69	PANELBOARD	10	85%
B-B3-STRT PNL	208	11.85	1.41	11.85	8.78	1.05	8.78	(2) PANELBOARD	10	119%
B-B3-TELE PNL	208	11.55	1.84	11.73	9.19	1.46	9.19	(2) PANELBOARD	10	117%
B-B3-TRAY LINE	208	10.38	1.18	10.38	7.39	0.88	7.39	(2) PANELBOARD	10	104%
B-B4-4EQD	208	22.33	2.71	22.33	19.75	1.98	19.75	(2) WEST. PANELBOARD	22	101%
B-B4-ATS-EQ	208	25.16	2.91	25.16	24.13	2.18	24.13	(2) ASCO VERY OLD	25	101%
B-B4-ATS-LS	208	22.11	2.15	22.11	19.85	1.55	19.85	ASCO	42	53%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B4-EQ1	208	13.65	1.27	13.65	9.93	0.92	9.93	PANELBOARD	22	62%
B-B4-EQ10	208	9.30	0.96	9.30	6.27	0.72	6.27	PANELBOARD	22	42%
B-B4-EQ11	208	11.31	1.09	11.31	7.89	0.81	7.89	PANELBOARD	22	51%
B-B4-EQ12	208	7.76	0.87	7.76	5.11	0.67	5.11	PANELBOARD	22	35%
B-B4-EQ15	208	8.77	0.93	8.77	5.86	0.70	5.86	PANELBOARD	22	40%
B-B4-EQ2	208	18.02	1.76	18.02	14.38	1.26	14.38	PANELBOARD	22	82%
B-B4-EQ3	208	10.66	1.05	10.66	7.35	0.78	7.35	PANELBOARD	22	48%
B-B4-EQ5	208	10.98	1.07	10.98	7.61	0.79	7.61	PANELBOARD	22	50%
B-B4-EQ6	208	13.81	1.29	13.81	10.09	0.93	10.09	PANELBOARD	22	63%
B-B4-EQ7	208	8.92	0.94	8.92	5.97	0.71	5.97	PANELBOARD	22	41%
B-B4-EQ9	208	7.04	0.83	7.04	4.59	0.64	4.59	PANELBOARD	22	32%
B-B4-LP1	208	13.52	1.38	13.52	10.09	1.02	10.09	PANELBOARD	22	61%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B4-LP10	208	10.69	1.22	10.69	7.60	0.92	7.60	PANELBOARD	22	49%
B-B4-LP11	208	12.95	1.35	12.95	9.57	1.00	9.57	PANELBOARD	22	59%
B-B4-LP12	208	14.13	1.42	14.13	10.67	1.04	10.67	PANELBOARD	22	64%
B-B4-LP13	208	10.69	1.22	10.69	7.60	0.92	7.60	PANELBOARD	22	49%
B-B4-LP14	208	9.36	1.15	9.36	6.51	0.88	6.51	PANELBOARD	22	43%
B-B4-LP15	208	6.86	0.65	6.86	4.38	0.49	4.38	PANELBOARD	22	31%
B-B4-LP2	208	19.33	1.84	19.33	16.19	1.32	16.19	PANELBOARD	22	88%
B-B4-LP3	208	19.33	1.84	19.33	16.19	1.32	16.19	PANELBOARD	22	88%
B-B4-LP4	208	12.95	1.35	12.95	9.57	1.00	9.57	PANELBOARD	22	59%
B-B4-LP5	208	12.43	1.32	12.43	9.10	0.98	9.10	PANELBOARD	22	56%
B-B4-LP6	208	15.55	1.52	15.55	12.06	1.11	12.06	PANELBOARD	22	71%
B-B4-LP7	208	15.55	1.52	15.55	12.06	1.11	12.06	PANELBOARD	22	71%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B4-LP8	208	12.43	1.32	12.43	9.10	0.98	9.10	PANELBOARD	22	56%
B-B4-LP9	208	10.69	1.22	10.69	7.60	0.92	7.60	PANELBOARD	22	49%
B-B4-LS1	208	8.54	0.79	8.54	5.64	0.59	5.64	PANELBOARD	22	39%
B-B4-LS10	208	5.44	0.64	5.44	3.44	0.50	3.44	PANELBOARD	22	25%
B-B4-LS11	208	6.30	0.68	6.30	4.02	0.52	4.02	PANELBOARD	22	29%
B-B4-LS12	208	7.17	0.72	7.17	4.63	0.55	4.63	PANELBOARD	22	33%
B-B4-LS13	208	7.34	0.73	7.34	4.76	0.55	4.76	PANELBOARD	22	33%
B-B4-LS14	208	7.34	0.73	7.34	4.76	0.55	4.76	PANELBOARD	22	33%
B-B4-LS2	208	12.68	1.05	12.68	9.01	0.75	9.01	PANELBOARD	22	58%
B-B4-LS3	208	15.78	1.31	15.78	11.98	0.93	11.98	PANELBOARD	22	72%
B-B4-LS4	208	9.95	0.87	9.95	6.72	0.64	6.72	PANELBOARD	22	45%
B-B4-LS5	208	6.21	0.68	6.21	3.96	0.52	3.96	PANELBOARD	22	28%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B4-LS6	208	7.34	0.73	7.34	4.76	0.55	4.76	PANELBOARD	22	33%
B-B4-LS7	208	8.54	0.79	8.54	5.64	0.59	5.64	PANELBOARD	22	39%
B-B4-LS8	208	8.79	0.81	8.79	5.83	0.60	5.83	PANELBOARD	22	40%
B-B4-LS9	208	8.79	0.81	8.79	5.83	0.60	5.83	PANELBOARD	22	40%
B-B4-LSD	208	20.55	1.97	20.55	17.68	1.41	17.68	(3) WEST. PANELBOARD	22	93%
B-B4-MDP	208	27.38	3.15	27.38	27.94	2.45	27.94	WEST. PNL	42	65%
B-B4-PP1	208	15.89	1.73	15.89	12.32	1.27	12.32	(1) UNKNOWN	10	159%
B-B4-PP2	208	6.86	0.65	6.86	4.38	0.49	4.38	PANELBOARD	10	69%
B-B5-ATS-EQ	208	15.93	2.14	15.93	12.15	1.67	12.15	RUSSELECTRIC ATS	42	38%
B-B5-ATS-LS	208	15.08	1.56	15.08	11.51	1.23	11.51	ZENITH ATS	30	50%
B-B5-EQ1	208	9.42	1.07	9.42	6.33	0.84	6.33	PANELBOARD	22	43%
B-B5-EQ2	208	9.14	1.04	9.14	6.11	0.82	6.11	PANELBOARD	22	42%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B5-EQ5	208	9.42	1.07	9.42	6.33	0.84	6.33	PANELBOARD	22	43%
B-B5-EQ6	208	8.79	1.24	8.79	5.64	0.83	5.64	PANELBOARD	22	40%
B-B5-EQD	208	15.48	2.14	15.48	11.69	1.66	11.69	FPE PANEL	22	70%
B-B5-HYDR ELEV	208	11.61	1.48	11.61	7.96	1.05	7.96	PANELBOARD	22	53%
B-B5-LP1	208	14.86	1.55	14.86	11.26	1.22	11.26	PANELBOARD	22	68%
B-B5-LP2	208	12.37	1.36	12.37	8.99	1.08	8.99	PANELBOARD	22	56%
B-B5-LP3	208	12.47	1.37	12.47	9.08	1.08	9.08	PANELBOARD	22	57%
B-B5-LP4	208	10.65	1.26	10.65	7.53	1.00	7.53	PANELBOARD	22	48%
B-B5-LP5	208	12.98	1.04	12.98	9.21	0.79	9.21	PANELBOARD	22	59%
B-B5-LS1	208	10.85	1.09	10.85	7.57	0.85	7.57	PANELBOARD	22	49%
B-B5-LS2	208	6.86	0.79	6.86	4.46	0.62	4.46	PANELBOARD	22	31%
B-B5-LS3	208	8.80	0.92	8.80	5.91	0.72	5.91	PANELBOARD	22	40%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION										
DESCRIPTION		**SHORT CIRCUIT DUTY**						**DEVICE**		
									S.C	**MAX.**
BUS RECORD	**VOLT**	**3-PHASE**			**LINE-GND**				**RATING**	**DUTY ÷**
NAME	**L-L**	**KA**	**X/R**	**Adj.KA**	**KA**	**X/R**	**Adj.KA**	**DESCRIPTION**	**KA**	**RATING**
B-B5-LS4	208	5.95	0.73	5.95	3.81	0.58	3.81	PANELBOARD	22	27%
B-B5-LSD	208	14.32	1.50	14.32	10.75	1.18	10.75	PANELBOARD	22	65%
B-B5-MDP	208	20.99	2.20	20.99	17.86	1.79	17.86	FPE PANEL	42	50%
B-B5-PNL-H	208	15.76	1.62	15.76	12.13	1.27	12.13	(1) UNKNOWN	10	158%
B-B5-STRT LGHT	208	9.65	0.65	9.65	6.33	0.48	6.33	(3) PANELBOARD	10	97%
B-B6-ATS-EQ	208	15.76	2.32	15.76	12.24	1.85	12.24	ZENITH ATS	30	53%
B-B6-ATS-LS	208	16.09	1.66	16.09	12.71	1.32	12.71	ZENITH ATS	30	54%
B-B6-EQ1	208	11.63	1.46	11.63	8.22	1.13	8.22	PANELBOARD	22	53%
B-B6-EQ2	208	8.95	1.21	8.95	6.07	0.95	6.07	PANELBOARD	22	41%
B-B6-EQ3	208	11.01	1.49	11.01	7.75	1.16	7.75	PANELBOARD	22	50%
B-B6-EQ4	208	7.71	1.08	7.71	5.12	0.86	5.12	PANELBOARD	22	35%
B-B6-EQ5	208	9.24	1.25	9.24	6.30	0.98	6.30	PANELBOARD	22	42%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B6-EQ8	208	9.71	2.03	9.71	6.43	1.27	6.43	PANELBOARD	22	44%
B-B6-EQD	208	14.34	2.27	15.41	10.77	1.76	10.77	(2) PANELBOARD	10	154%
B-B6-EQMACH	208	11.63	1.46	11.63	8.22	1.13	8.22	(1) UNKNOWN	10	116%
B-B6-LP1	208	11.28	0.95	11.28	7.88	0.73	7.88	PANELBOARD	22	51%
B-B6-LP2	208	12.66	1.05	12.66	9.08	0.79	9.08	PANELBOARD	22	58%
B-B6-LP3	208	13.93	1.48	13.93	10.55	1.17	10.55	PANELBOARD	22	63%
B-B6-LP4	208	14.31	1.51	14.31	10.92	1.20	10.92	PANELBOARD	22	65%
B-B6-LP5	208	11.80	1.33	11.80	8.61	1.06	8.61	PANELBOARD	22	54%
B-B6-LP6	208	12.08	1.35	12.08	8.85	1.07	8.85	PANELBOARD	22	55%
B-B6-LP7	208	17.40	1.48	17.40	13.81	1.14	13.81	PANELBOARD	22	79%
B-B6-LS1	208	9.67	0.98	9.67	6.66	0.77	6.66	PANELBOARD	22	44%
B-B6-LS2	208	11.86	1.10	11.86	8.48	0.85	8.48	PANELBOARD	22	54%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B6-LS3	208	9.67	0.98	9.67	6.66	0.77	6.66	PANELBOARD	22	44%
B-B6-LS4	208	9.67	0.98	9.67	6.66	0.77	6.66	PANELBOARD	22	44%
B-B6-LS5	208	7.99	0.86	7.99	5.33	0.67	5.33	PANELBOARD	22	36%
B-B6-LS6	208	7.99	0.86	7.99	5.33	0.67	5.33	PANELBOARD	22	36%
B-B6-LSD	208	14.86	1.55	14.86	11.45	1.23	11.45	PANELBOARD	10	149%
B-B6-MACH SHOP	208	12.54	1.26	12.54	9.19	0.99	9.19	(1) UNKNOWN	10	125%
B-B6-MDP	208	22.82	2.55	22.82	20.60	2.23	20.60	PANELBOARD	42	54%
B-B6-P6-CS	208	15.43	1.49	15.43	11.94	1.17	11.94	(1) UNKNOWN	10	154%
B-B7-ATS-EQ	208	10.96	2.39	10.96	8.30	1.95	8.30	RUSSELECTRIC ATS	42	26%
B-B7-ATS-LS	208	10.03	1.88	10.03	7.48	1.53	7.48	ZENITH ATS	30	33%
B-B7-EQ1	208	7.29	1.44	7.29	5.02	1.16	5.02	PANELBOARD	22	33%
B-B7-EQ2	208	8.90	1.89	8.90	6.38	1.51	6.38	PANELBOARD	22	40%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B7-EQ4	208	7.68	1.45	7.68	5.31	1.15	5.31	PANELBOARD	22	35%
B-B7-EQD	208	9.93	2.34	9.93	7.31	1.88	7.31	GE PANEL	25	40%
B-B7-LP2	208	9.43	1.85	9.43	6.95	1.51	6.95	PANELBOARD	22	43%
B-B7-LP3	208	7.20	1.42	7.20	5.04	1.16	5.04	PANELBOARD	22	33%
B-B7-LP4	208	9.43	1.85	9.43	6.95	1.51	6.95	PANELBOARD	22	43%
B-B7-LP5	208	7.20	1.42	7.20	5.04	1.16	5.04	PANELBOARD	22	33%
B-B7-LP6	208	6.59	1.35	6.59	4.55	1.10	4.55	PANELBOARD	22	30%
B-B7-LP7	208	8.49	1.70	8.49	6.13	1.38	6.13	PANELBOARD	22	39%
B-B7-LP8	208	6.59	1.35	6.59	4.55	1.10	4.55	PANELBOARD	22	30%
B-B7-LS1	208	6.11	1.03	6.11	4.09	0.83	4.09	PANELBOARD	22	28%
B-B7-LS2	208	7.66	1.20	7.66	5.30	0.95	5.30	PANELBOARD	22	35%
B-B7-LS4	208	5.84	0.99	5.84	3.88	0.80	3.88	PANELBOARD	22	27%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B7-LS5	208	7.33	1.23	7.33	5.06	0.98	5.06	PANELBOARD	22	33%
B-B7-LSD	208	9.69	1.81	9.69	7.15	1.47	7.15	PANELBOARD	22	44%
B-B7-MCC-1	208	7.77	1.26	7.77	5.31	0.99	5.31	(1) UNKNOWN	10	78%
B-B7-MCC-2	208	9.11	1.18	9.11	6.43	0.92	6.43	(1)(3) UNKNOWN	10	91%
B-B7-MDP	208	12.25	2.46	12.25	9.62	2.05	9.62	WEST PNL	42	29%
B-B7-STRT LGHT	208	6.92	0.82	6.92	4.57	0.64	4.57	PANELBOARD	10	69%
B-B8 2ND FLR	208	12.43	2.32	13.45	10.33	2.01	10.74	(1) UNKNOWN	10	134%
B-B8-208V-MAIN	208	18.04	2.82	18.04	17.18	2.69	17.18	SPB-65 BKR	85	21%
B-B8-480V ATS	480	8.62	2.74	8.62	8.05	2.52	8.05	ZENITH ATS	18	48%
B-B8-480V PNL	480	8.49	2.71	8.49	7.86	2.46	7.86	PANELBOARD	18	47%
B-B8-ATS	208	14.31	2.24	14.31	12.36	1.93	12.36	KOHLER ATS	35	41%
B-B8-BS	208	3.53	0.48	3.53	2.20	0.37	2.20	PANELBOARD	10	35%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B8-CMOP	208	4.29	1.48	4.29	4.18	1.27	4.18	PANELBOARD	22	20%
B-B8-COMP	480	2.52	0.51	2.52	1.53	0.29	1.53	(1) UNKNOWN	14	18%
B-B8-FDR	208	4.77	1.74	4.77	5.00	1.64	5.00	KD BREAKER	65	7%
B-B8-FLEXPMACH	480	3.13	0.46	3.13	2.00	0.32	2.00	(1) UNKNOWN	14	22%
B-B8-GE BKR	480	8.73	2.78	8.73	8.22	2.58	8.22	TJJ BKR	42	21%
B-B8-GEN	480	1.00	20.00	1.60	1.00	20.00	1.00	(1) UNKNOWN	10	16%
B-B8-L8B	208	5.82	0.62	5.82	3.79	0.47	3.79	PANELBOARD	10	58%
B-B8-LB1	208	7.14	1.22	7.14	5.07	0.98	5.07	PANELBOARD	10	71%
B-B8-LB2	208	6.67	1.18	6.67	4.68	0.95	4.68	PANELBOARD	10	67%
B-B8-MAIN BUS	208	17.59	2.79	17.59	16.56	2.65	16.56	SPB BKR	65	27%
B-B8-MDP-8	208	17.28	2.78	19.64	16.14	2.62	16.14	(2) WEST. PANELBOARD	10	196%
B-B8-PNL-PK	208	13.26	1.77	13.34	11.00	1.43	11.00	(1) UNKNOWN	10	133%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B8-PP1	208	16.29	2.43	16.29	14.75	2.15	14.75	GE PANELBOARD	22	74%
B-B8-SYLV	208	15.02	2.46	15.02	13.24	2.18	13.24	GE PANELBOARD	22	68%
B-B9-*PNLXX	208	8.28	0.88	8.28	6.52	0.78	6.52	PANELBOARD	10	83%
B-B9-*PNLYY	208	7.43	0.74	7.43	5.79	0.66	5.79	PANELBOARD	10	74%
B-B9-*PNLZZ	208	11.52	2.03	12.01	9.63	1.88	9.84	(2) PANELBOARD	10	120%
B-B9-STRT LGHT	208	5.83	0.52	5.83	3.78	0.37	3.78	PANELBOARD	10	58%
B-B9-ATS BKR	208	13.74	2.38	13.74	12.27	2.08	12.27	FPE NJL BKR	42	33%
B-B9-EM	208	13.33	2.29	14.36	11.75	1.97	12.16	(2) PANELBOARD	10	144%
B-B9-L91A	208	3.70	0.75	3.70	2.39	0.60	2.39	PANELBOARD	10	37%
B-B9-L92	208	4.83	0.53	4.83	3.63	0.49	3.63	ASSUMED	10	48%
B-B9-L9A	208	6.89	0.88	6.89	5.25	0.82	5.25	ASSUMED	10	69%
B-B9-L9B	208	11.38	1.44	11.38	9.54	1.27	9.54	(1) UNKNOWN	10	114%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B9-LPN	208	2.61	0.52	2.61	1.63	0.42	1.63	PANELBOARD	10	26%
B-B9-LPS	208	5.78	0.69	5.78	3.90	0.53	3.90	PANELBOARD	10	58%
B-B9-MAIN	208	16.03	2.62	16.03	15.29	2.42	15.29	SPB-65	85	19%
B-B9-MDP	208	14.95	2.52	16.55	13.82	2.27	13.82	(2) GE PANELBOARD	10	166%
B-B10-MDP	208	5.31	1.69	5.31	5.09	1.68	5.09	SQ-D PANEL	10	53%
B-B12-MDP	208	4.28	1.84	4.28	4.47	1.90	4.47	FPE PANELBOARD	18	24%
B-B13-APT-13	240	6.47	1.39	6.47	4.47	1.90	4.58	PANELBOARD	10	65%
B-B13-APT-14	240	5.95	2.07	6.24	4.47	1.90	4.58	PANELBOARD	10	62%
B-B13-APT-15	240	4.59	2.08	4.82	4.47	1.90	4.58	PANELBOARD	10	48%
B-B13-GARAGE	240	4.79	1.23	4.79	4.47	1.90	4.58	PANELBOARD	10	48%
B-B13-MDP	240	8.71	2.39	9.50	4.47	1.90	4.58	(3) PANELBOARD	10	95%
B-B13-MGR H16	240	2.56	0.91	2.56	4.47	1.90	4.58	PANELBOARD	10	26%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B17-ATS	208	8.68	1.58	8.68	7.44	1.31	7.44	ASC0 ATS	18	48%
B-B17-DP	208	6.75	1.60	6.75	5.40	1.34	5.40	SQ-D PANELBOARD	22	31%
B-B17-EMERG	208	8.40	1.51	8.40	7.09	1.23	7.09	PANELBOARD	10	84%
B-B17-MAIN	208	9.85	1.99	9.85	9.02	1.78	9.02	QL BKR	25	39%
B-B17-NEB1	208	3.84	0.66	3.84	2.56	0.50	2.56	PANELBOARD	10	38%
B-B17-NEB2	208	5.38	0.79	5.38	3.81	0.59	3.81	PANELBOARD	22	24%
B-B17-NP11	208	4.69	0.84	4.69	3.28	0.65	3.28	PANELBOARD	10	47%
B-B17-NP12	208	6.15	1.46	6.15	4.77	1.21	4.77	PANELBOARD	10	61%
B-B17-NP21	208	5.69	1.21	5.69	4.27	0.97	4.27	PANELBOARD	10	57%
B-B17-NP22	208	5.69	1.21	5.69	4.27	0.97	4.27	PANELBOARD	10	57%
B-B17-NPA1	208	5.69	1.21	5.69	4.27	0.97	4.27	PANELBOARD	10	57%
B-B17-NPB1	208	6.07	1.41	6.07	4.68	1.16	4.68	PANELBOARD	10	61%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B17-NPB2	208	5.69	1.21	5.69	4.27	0.97	4.27	PANELBOARD	10	57%
B-B18-1STFL	208	5.92	0.89	5.92	4.37	0.66	4.37	PANELBOARD	10	59%
B-B18-2NDFL	208	4.97	0.76	4.97	3.50	0.56	3.50	PANELBOARD	10	50%
B-B18-ATS-EMRG	208	7.98	1.23	7.98	6.61	0.94	6.61	RUSSELECTRIC ATS	30	27%
B-B18-EMERG	208	7.14	1.09	7.14	5.63	0.82	5.63	SQ-D PANELBOARD	10	71%
B-B18-NCP	208	9.78	1.76	9.82	9.09	1.50	9.09	(3) PANELBOARD	10	98%
B-B18-NMDP	208	10.78	2.30	10.78	10.67	2.25	10.67	SQ-D PANELBOARD	22	49%
B-B18-NP11	208	7.00	0.95	7.00	5.39	0.69	5.39	PANELBOARD	10	70%
B-B18-NP12	208	7.00	0.95	7.00	5.39	0.69	5.39	PANELBOARD	10	70%
B-B18-NP21	208	7.60	1.06	7.60	6.07	0.78	6.07	PANELBOARD	10	76%
B-B18-NP22	208	8.31	1.43	8.31	7.11	1.14	7.11	PANELBOARD	10	83%
B-B18-NP23	208	7.00	0.95	7.00	5.39	0.69	5.39	PANELBOARD	10	70%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B18-STRT LHT	208	7.00	0.95	7.00	5.39	0.69	5.39	PANELBOARD	10	70%
B-B19-200A PNL	208	17.75	2.67	19.95	17.78	2.06	18.62	(2) 200A PANELBOARD	10	200%
B-B19-B1	208	16.07	1.78	16.07	14.67	1.23	14.67	PANELBOARD	22	73%
B-B19-L1	208	2.63	0.41	2.63	1.61	0.32	1.61	PANELBOARD	10	26%
B-B19-L2	208	7.37	0.82	7.37	5.05	0.58	5.05	PANELBOARD	10	74%
B-B19-MDP1	208	20.14	3.27	20.14	21.95	2.75	21.95	SQ-D PANELBOARD	42	48%
B-B19-MDP2	208	18.80	3.08	18.80	19.61	2.53	19.61	SQ-D PANELBOARD	22	85%
B-B19-MDPA	208	10.56	2.21	10.56	8.63	1.75	8.63	SQ-D PANELBOARD	22	48%
B-B19-P1	208	10.56	2.21	10.56	8.63	1.75	8.63	SQ-D PANELBOARD	22	48%
B-B19-P2	208	9.03	0.82	7.37	6.68	0.58	5.05	SQ-D PANELBOARD	22	34%
B-B19-P4	208	16.07	1.78	16.07	14.67	1.23	14.67	SQ-D PANELBOARD	22	73%
B-B19-P6	208	3.01	0.55	3.01	1.87	0.43	1.87	SQ-D PANELBOARD	22	14%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B19-PS	208	4.84	0.53	4.84	3.07	0.38	3.07	SQ-D PANELBOARD	22	22%
B-B21-P1	208	3.17	0.62	3.17	2.00	0.48	2.00	SQ-D PANELBOARD	10	32%
B-B21-P2	208	5.44	0.94	5.44	3.67	0.73	3.67	SQ-D PANELBOARD	10	54%
B-B22-ATS-EMER	480	6.56	2.46	6.56	5.79	2.17	5.79	ASC0 ATS	42	16%
B-B22-EMERG	480	6.23	2.40	6.23	5.40	2.09	5.40	SQ-D PANEL	25	25%
B-B22-GEN	480	1.80	20.00	1.80	1.80	20.00	1.80	WEST LB BKR	30	6%
B-B22-L1	208	2.82	1.57	2.82	2.96	1.50	2.96	SQ-D PANEL	10	28%
B-B22-L2	208	2.82	1.57	2.82	2.96	1.50	2.96	SQ-D PANEL	10	28%
B-B22-L3	208	2.83	1.57	2.83	2.97	1.50	2.97	SQ-D PANEL	10	28%
B-B22-MDP	480	7.01	2.55	7.01	6.35	2.28	6.35	SQ-D PANEL	25	28%
B-B22-N1	208	4.80	1.78	4.83	4.75	1.66	4.75	SQ-D PANEL	10	48%
B-B22-P1	480	6.00	2.26	6.00	5.11	1.93	5.11	SQ-D PANEL	18	33%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B22-P2	480	6.00	2.26	6.00	5.11	1.93	5.11	SQ-D PANEL	18	33%
B-B33-MDP	208	4.85	1.58	4.85	4.38	1.48	4.38	SQ-D PANEL	10	49%
B-B60-MDP	208	7.20	2.37	7.20	7.41	2.34	7.41	FPE PANEL, VERY OLD	25	29%
B-B61 STRT LGH	208	7.35	0.83	7.35	5.34	0.56	5.34	GE PANELBOARD	10	73%
B-B61-ATS-EQD	208	11.55	2.68	11.55	10.82	2.27	10.82	RUSSELECTRIC ATS	42	27%
B-B61-ATS-LSD	208	11.15	2.15	11.15	10.34	1.72	10.34	ZENITH ATS	30	37%
B-B61-COMP RM	208	9.38	2.10	9.87	7.96	1.66	7.96	(3) PANELBOARD	10	99%
B-B61-DP	208	10.62	0.83	10.62	10.26	0.56	10.26	(2) PANELBOARD	10	106%
B-B61-ELEV	208	7.85	2.01	8.16	5.97	1.37	5.97	PANELBOARD	10	82%
B-B61-EQ1	208	7.56	1.43	7.56	5.84	1.08	5.84	PANELBOARD	10	76%
B-B61-EQ2	208	9.65	2.03	9.65	8.23	1.58	8.23	PANELBOARD	10	97%
B-B61-EQ4	208	7.46	1.31	7.46	5.69	0.98	5.69	PANELBOARD	10	75%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B61-EQA	208	10.56	2.50	10.56	9.44	2.05	9.44	PANELBOARD	65	16%
B-B61-EQD	208	10.83	2.61	10.83	9.79	2.16	9.79	PANELBOARD	25	43%
B-B61-KITCHEN	208	8.39	1.60	8.39	6.84	1.22	6.84	PANELBOARD	10	84%
B-B61-LP1	208	4.13	0.73	4.13	2.75	0.55	2.75	PANELBOARD	10	41%
B-B61-LP2	208	4.13	0.73	4.13	2.75	0.55	2.75	PANELBOARD	10	41%
B-B61-LP3	208	7.68	1.49	7.68	6.09	1.14	6.09	PANELBOARD	10	77%
B-B61-LP4	208	9.18	1.69	9.18	7.55	1.31	7.55	(3) PANELBOARD	10	92%
B-B61-LP5	208	6.23	0.70	6.23	4.31	0.48	4.31	PANELBOARD	10	62%
B-B61-LS1	208	6.08	0.99	6.08	4.38	0.74	4.38	PANELBOARD	10	61%
B-B61-LS2	208	7.72	1.13	7.72	5.90	0.82	5.90	PANELBOARD	10	77%
B-B61-LS3	208	5.37	0.91	5.37	3.76	0.67	3.76	PANELBOARD	10	54%
B-B61-LS4	208	6.08	0.99	6.08	4.38	0.74	4.38	PANELBOARD	10	61%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B61-LS5	208	5.37	0.91	5.37	3.76	0.67	3.76	PANELBOARD	10	54%
B-B61-LSD	208	10.60	2.01	11.03	9.55	1.59	9.55	(2) WEST. PANELBOARD	10	110%
B-B61-MCC	208	7.35	0.83	7.35	5.34	0.56	5.34	(1) UNKNOWN	10	73%
B-B61-MDP	208	13.33	2.89	13.33	13.73	2.66	13.73	WEST PANELBOARD	42	32%
B-B62-A	208	14.39	1.37	14.39	11.02	1.07	11.02	(2) PANELBOARD	10	144%
B-B62-ATS-EQD	208	19.12	2.00	19.12	16.04	1.58	16.04	RUSSELECTRIC ATS	42	46%
B-B62-ATS-LSD	208	18.79	1.90	18.79	15.87	1.54	15.87	ZENITH ATS	30	63%
B-B62-B	208	15.20	1.43	15.20	11.83	1.12	11.83	(2) PANELBOARD	10	152%
B-B62-BL	208	10.47	0.81	10.47	7.18	0.61	7.18	(2) PANELBOARD	10	105%
B-B62-BP	208	13.28	0.91	13.28	9.74	0.68	9.74	(2) PANELBOARD	10	133%
B-B62-EQ	208	14.83	1.44	14.83	11.20	1.08	11.20	PANELBOARD	22	67%
B-B62-EQD	208	16.45	1.77	16.54	12.95	1.34	12.95	(2) PANELBOARD	10	165%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B62-KP	208	13.46	1.18	13.46	10.00	0.90	10.00	(2) PANELBOARD	10	135%
B-B62-LP1	208	13.92	1.10	13.92	10.32	0.83	10.32	PANELBOARD	22	63%
B-B62-LP2	208	13.46	1.18	13.46	10.00	0.90	10.00	PANELBOARD	22	61%
B-B62-LP3	208	13.80	1.32	13.80	10.44	1.03	10.44	PANELBOARD	22	63%
B-B62-LP4	208	15.21	1.56	15.21	11.94	1.24	11.94	PANELBOARD	22	69%
B-B62-LS1	208	6.78	0.64	6.78	4.37	0.50	4.37	PANELBOARD	22	31%
B-B62-LS2	208	10.17	0.89	10.17	7.00	0.68	7.00	PANELBOARD	22	46%
B-B62-LS3	208	8.07	0.84	8.07	5.39	0.65	5.39	PANELBOARD	22	37%
B-B62-LS4	208	10.46	1.01	10.46	7.32	0.78	7.32	PANELBOARD	22	48%
B-B62-LSD	208	15.87	1.62	15.87	12.57	1.28	12.57	(2) PANELBOARD	10	159%
B-B62-MDP	208	24.21	2.75	24.21	22.96	2.54	22.96	WEST PANELBOARD	42	58%
B-B62-OT	208	12.15	0.91	12.15	8.61	0.68	8.61	(2) PANELBOARD	10	122%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B62-STRT LGT	208	10.39	0.64	10.39	6.95	0.46	6.95	(2) PANELBOARD	10	104%
B-B70 -BLDG-71	208	1.09	0.36	1.09	0.65	0.29	0.65	(1) UNKNOWN	10	11%
B-B70-A	208	9.07	1.19	9.07	6.92	0.87	6.92	(1)(3) UNKNOWN	10	91%
B-B70-ATS-EQD	208	13.28	2.60	13.28	12.31	2.16	12.31	RUSSELECTRIC ATS	42	32%
B-B70-ATS-LSD	208	12.64	2.28	12.64	11.39	1.82	11.39	ZENITH ATS	30	42%
B-B70-ATTIC	208	7.94	1.05	7.94	5.81	0.77	5.81	(1) UNKNOWN	10	79%
B-B70-B	208	9.07	1.19	9.07	6.92	0.87	6.92	(1)(3) UNKNOWN	10	91%
B-B70-EQ1	208	6.61	1.09	6.61	4.72	0.83	4.72	PANELBOARD	10	66%
B-B70-EQ2	208	5.20	0.94	5.20	3.55	0.72	3.55	PANELBOARD	10	52%
B-B70-EQ3	208	6.07	1.03	6.07	4.25	0.79	4.25	PANELBOARD	10	61%
B-B70-EQ4	208	4.85	0.90	4.85	3.27	0.70	3.27	PANELBOARD	10	48%
B-B70-EQ5	208	5.60	0.98	5.60	3.87	0.75	3.87	PANELBOARD	10	56%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B70-EQ6	208	4.54	0.87	4.54	3.04	0.68	3.04	PANELBOARD	10	45%
B-B70-EQD	208	12.57	2.49	13.87	11.33	2.04	11.84	(2) WEST. PANELBOARD	10	139%
B-B70-GEN	208	2.88	20.00	4.60	2.88	20.00	4.60	(1) UNKNOWN	10	46%
B-B70-K	208	7.00	0.71	7.00	4.79	0.49	4.79	(1) UNKNOWN	10	70%
B-B70-LP1	208	6.54	0.90	6.54	4.57	0.67	4.57	PANELBOARD	10	65%
B-B70-LP2	208	5.38	0.80	5.38	3.62	0.60	3.62	PANELBOARD	10	54%
B-B70-LP3	208	7.15	1.33	7.15	5.29	1.03	5.29	PANELBOARD	10	71%
B-B70-LP-4	208	5.90	1.21	5.90	4.20	0.94	4.20	PANELBOARD	10	59%
B-B70-LS1	208	4.69	0.66	4.69	3.07	0.49	3.07	PANELBOARD	10	47%
B-B70-LS2	208	3.79	0.58	3.79	2.42	0.44	2.42	PANELBOARD	10	38%
B-B70-LS3	208	5.38	0.86	5.38	3.65	0.65	3.65	PANELBOARD	10	54%
B-B70-LS4	208	4.23	0.75	4.23	2.78	0.57	2.78	PANELBOARD	10	42%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B70-LS5	208	4.94	0.81	4.94	3.30	0.62	3.30	PANELBOARD	10	49%
B-B70-LS6	208	3.95	0.72	3.95	2.57	0.56	2.57	PANELBOARD	10	40%
B-B70-LSD	208	11.99	2.21	12.79	10.54	1.75	10.57	(2) WEST. PANELBOARD	10	128%
B-B70-MDP	208	14.70	2.85	14.70	14.32	2.45	14.32	WEST PANELBOARD	42	35%
B-B70-PP2	208	8.77	1.52	8.77	6.84	1.16	6.84	(1) UNKNOWN	10	88%
B-B70-PP220	208	6.28	1.11	6.28	4.47	0.85	4.47	(1) UNKNOWN	10	63%
B-B70-STRTLGHT	208	7.66	0.78	7.66	5.36	0.54	5.36	PANELBOARD	10	77%
B-B78-1P	208	5.80	0.74	5.80	3.69	0.59	3.69	PANELBOARD	10	58%
B-B78-78AE1	208	15.71	1.50	15.71	11.80	1.11	11.80	PANELBOARD	22	71%
B-B78-A/C	208	4.07	0.74	4.07	2.35	0.44	2.35	(1) UNKNOWN	10	41%
B-B78A-PNL-2	208	15.29	1.05	15.29	10.91	0.74	10.91	PANELBOARD	22	70%
B-B78-ATS TAP	208	18.48	1.70	18.48	14.52	1.25	14.52	WALL MNTD BREAKERS	25	74%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B78-ATS-CRD	208	5.32	0.73	5.32	3.37	0.58	3.37	ZENITH ATS	30	18%
B-B78-ATS-E1	208	7.92	1.43	7.92	5.46	1.15	5.46	RUSSELECTRIC ATS	42	19%
B-B78-ATSG9578	208	16.30	1.49	16.30	12.31	1.10	12.31	RUSSELECTRIC ATS	42	39%
B-B78-ATS-LS1	208	14.50	1.46	14.50	10.71	1.10	10.71	RUSSELECTRIC ATS	42	35%
B-B78-BARBER	208	3.04	0.17	3.04	1.80	0.12	1.80	(1) UNKNOWN	10	30%
B-B78-CRD	208	2.92	0.67	2.92	1.81	0.55	1.81	PANELBOARD	22	13%
B-B78-E1	208	7.78	1.43	7.78	5.35	1.15	5.35	PANELBOARD	22	35%
B-B78-FLPNL	208	4.93	0.61	4.93	3.07	0.49	3.07	PANELBOARD	22	22%
B-B78-KK	208	6.80	0.66	6.80	4.32	0.51	4.32	PANELBOARD	18	38%
B-B78-L10	208	6.69	1.23	6.69	4.49	1.00	4.49	PANELBOARD	22	30%
B-B78-LP-1	208	6.34	0.85	6.34	4.10	0.68	4.10	PANELBOARD	22	29%
B-B78-LP10	208	5.92	1.18	5.92	3.94	0.96	3.94	PANELBOARD	22	27%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B78-LP13	208	5.43	1.19	5.43	3.59	0.97	3.59	PANELBOARD	22	25%
B-B78-LP-13	208	6.16	1.22	6.16	4.11	0.99	4.11	PANELBOARD	22	28%
B-B78-LP-14	208	5.71	1.20	5.71	3.79	0.98	3.79	PANELBOARD	22	26%
B-B78-LP-15	208	5.32	1.19	5.32	3.52	0.98	3.52	PANELBOARD	22	24%
B-B78-LP-2	208	11.26	1.00	11.26	7.72	0.75	7.72	PANELBOARD	22	51%
B-B78-LP3	208	11.26	1.00	11.26	7.72	0.75	7.72	PANELBOARD	22	51%
B-B78-LP-4	208	3.72	0.64	3.72	2.31	0.52	2.31	PANELBOARD	22	17%
B-B78-LP6	208	9.32	0.98	9.32	6.27	0.76	6.27	PANELBOARD	22	42%
B-B78-LP7	208	6.52	1.17	6.52	4.35	0.94	4.35	PANELBOARD	22	30%
B-B78-LP-8	208	13.06	1.40	13.06	9.46	1.06	9.46	PANELBOARD	22	59%
B-B78-LSD	208	13.85	1.42	13.85	10.13	1.07	10.13	PANELBOARD	22	63%
B-B78-MDP	208	41.63	4.54	41.63	50.39	3.92	50.39	GE PANEL	65	64%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B78-PHV	208	2.80	0.34	2.80	1.68	0.27	1.68	PANELBOARD	22	13%
B-B78-PK	208	5.82	0.84	5.82	3.75	0.67	3.75	PANELBOARD	22	26%
B-B78-PNL-330A	208	10.56	1.12	10.56	7.28	0.85	7.28	PANELBOARD	22	48%
B-B78-PULM 78B	208	18.48	1.70	18.48	14.52	1.25	14.52	(1) UNKNOWN	10	185%
B-B78-QP	208	11.83	0.71	11.83	7.83	0.50	7.83	PANELBOARD	22	54%
B-B80-ATS-EQ	208	6.86	0.97	6.86	5.18	0.73	5.18	RUSSELECTRIC ATS	42	16%
B-B80-E1	208	5.90	0.84	5.90	4.26	0.62	4.26	GE PANELBOARD	10	59%
B-B80-L1-1	208	2.98	0.38	2.98	1.88	0.27	1.88	PANELBOARD	10	30%
B-B80-L1-3	208	3.41	0.38	3.41	2.17	0.26	2.17	PANELBOARD	10	34%
B-B80-LB-1	208	7.81	1.25	7.81	6.29	0.98	6.29	PANELBOARD	10	78%
B-B80-LB-E	208	3.97	0.62	3.97	2.64	0.47	2.64	PANELBOARD	10	40%
B-B80-MDP	208	11.09	2.20	11.09	10.69	2.07	10.69	WEST PNL	42	26%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B80-P1	208	8.13	1.31	8.13	6.66	1.03	6.66	PANELBOARD	10	81%
B-B80-P5	208	1.70	0.27	1.70	1.03	0.20	1.03	PANELBOARD	10	17%
B-B80-PB-1	208	3.07	0.35	3.07	1.93	0.24	1.93	PANELBOARD	10	31%
B-B80-PB-2	208	4.58	0.69	4.58	3.11	0.51	3.11	PANELBOARD	10	46%
B-B81-MDP	208	4.28	1.75	4.29	4.45	1.73	4.45	FPE PANELBOARD	10	43%
B-B82-MDP	208	7.14	2.34	7.74	7.33	2.28	7.33	VERY OLD	10	77%
B-B92-ATS	208	5.08	0.49	5.08	3.19	0.41	3.19	RUSSELECTRIC ATS	42	12%
B-B92-EMDP	208	8.14	15.05	9.91	7.61	14.49	9.22	GE PANELBOARD	65	15%
B-B92 GEN	208	8.21	17.07	12.93	7.74	18.06	12.24	(1) UNKNOWN	10	129%
B-B92-PNL-E1	208	4.68	0.47	4.68	2.92	0.40	2.92	PANELBOARD	10	47%
B-B93-EMDP	208	6.80	16.43	8.37	6.74	14.44	8.17	PANELBOARD	65	13%
B-B93-EMDP1	208	6.77	15.78	8.29	6.69	13.61	8.05	PANELBOARD	42	20%

LOW VOLTAGE SHORT CIRCUIT DEVICE EVALUATION

DESCRIPTION		SHORT CIRCUIT DUTY						DEVICE		
									S.C	MAX.
BUS RECORD	VOLT	3-PHASE			LINE-GND				RATING	DUTY ÷
NAME	L-L	KA	X/R	Adj.KA	KA	X/R	Adj.KA	DESCRIPTION	KA	RATING
B-B93-GEN	208	6.93	20.00	11.05	6.93	20.00	11.05	(1) UNKNOWN	10	111%
B-B94-ATS	208	5.46	0.88	5.46	3.58	0.70	3.58	RUSSELECTRIC ATS	42	13%
B-B94-EMDP	208	6.80	16.43	8.37	6.74	14.44	8.17	PANELBOARD	65	13%
B-B94-GEN	208	6.93	20.00	11.05	6.93	20.00	11.05	(1) UNKNOWN	10	111%
B-B95-EMDP	208	6.80	16.43	8.37	6.74	14.44	8.17	PANELBOARD	42	20%
B-B95-GEN	208	6.93	20.00	11.05	6.93	20.00	11.05	(1) UNKNOWN	10	111%

NOTES FOR "DESCRIPTION" COLUMN:

1. Panelboard data was not obtainable or could not be found at the time of the study. For 208V panels, a 10 KAIC rating was assumed. For 480V panels, a 14 KAIC rating was assumed. **All unknown devices should be verified for KAIC rating.**
2. The calculated short circuit duty exceeds the device short circuit withstand rating.
3. The calculated short circuit duty is greater than 90% of the device's short circuit rating, but does not exceed device short circuit rating.
4. All other listed devices are applied within the listed short circuit ratings.
5. Device can be series rated to upstream device. Series rating labels must be applied to the overdutied devices in the field.
6. There were no fuses in the conditioning water pump disconnect switches, so a rating of 10KAIC is the maximum short circuit rating.

2.4 Input Report

Feeder Input Data

Lists the conductor and bus data, including positive, negative, and zero sequence impedance in ohms per 1,000 feet (Ohms/M Length) and per-unit impedance on a 100 MVA base.

Transformer Input Data

Lists the transformer data, including positive and zero sequence impedance in per-unit on the transformer's base and per-unit impedance on a 100 MVA base.

Generation contribution Data

Lists the source available fault current, and any local generators.

Motor Contribution Data

Lists the subtransient reactance and the per-unit impedance of rotating machines on a 100 MVA base.

2.4.1Computer Input Data – Utility Case

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

ALL INFORMATION PRESENTED IS FOR REVIEW, APPROVAL
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0002	B-B27-SWGR-M1	B-SWGR27 TAP	1	13800	1.000 FEET	1200	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0119 + J 0.0619 Ohms/1000 ft				0.00001 + J 0.00003 PU		
	Z0 Impedance: 0.0710 + J 0.3314 Ohms/1000 ft				0.00004 + J 0.00017 PU		
CBL-0003	B-SWGR27 TAP	B-B27-SWGR	1	13800	1.000 FEET	1200	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0119 + J 0.0619 Ohms/1000 ft				0.00001 + J 0.00003 PU		
	Z0 Impedance: 0.0710 + J 0.3314 Ohms/1000 ft				0.00004 + J 0.00017 PU		
CBL-0004	B-B27-SWGR	BUS-0017	1	13800	600.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type: EPR			Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0504 + J 0.0170 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0801 + J 0.0433 PU		
CBL-0005	B-B27-SWGR	B-T-B8-PRI	1	13800	1375.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type: EPR			Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.1155 + J 0.0390 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.1836 + J 0.0992 PU		
CBL-0006	B-T-B62-PRI	B-T-B8-PRI	1	13800	150.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type: EPR			Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0126 + J 0.0043 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0200 + J 0.0108 PU		
CBL-0007	B-T-B7-PRI	B-T-B61-PRI	1	13800	476.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type: EPR			Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0400 + J 0.0135 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0636 + J 0.0343 PU		
CBL-0008	B-T-B61-PRI	B-T-B62-PRI	1	13800	300.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type: EPR			Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0252 + J 0.0085 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0401 + J 0.0216 PU		
CBL-0009	B-T-B6-PRI	B-T-B7-PRI	1	13800	400.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type: EPR			Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0336 + J 0.0113 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0534 + J 0.0289 PU		
CBL-0010	B-T-B5-PRI	B-T-B6-PRI	1	13800	300.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type: EPR			Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0252 + J 0.0085 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0401 + J 0.0216 PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0011	B-SW-MV-1	B-T-B5-PRI	1	13800	100.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR	Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0084 + J 0.0028 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0134 + J 0.0072 PU		
CBL-0012	BUS-0019	B-T-B2-PRI	1	13800	175.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR	Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0147 + J 0.0050 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0234 + J 0.0126 PU		
CBL-0013	B-T-B60-PRI	B-T-B17-PRI	1	13800	300.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR	Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0252 + J 0.0085 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0401 + J 0.0216 PU		
CBL-0014	B-T-B70-PRI	B-T-B30-PRI	1	13800	700.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR	Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0588 + J 0.0198 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0935 + J 0.0505 PU		
CBL-0015	B-T-B30-PRI	B-T-B60-PRI	1	13800	1000.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR	Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0840 + J 0.0284 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.1335 + J 0.0721 PU		
CBL-0016	B-T-B1-PRI	B-T-B70-PRI	1	13800	425.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR	Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0357 + J 0.0121 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0568 + J 0.0307 PU		
CBL-0017	B-T-B2-PRI	B-T-B1-PRI	1	13800	200.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR	Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0168 + J 0.0057 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0267 + J 0.0144 PU		
CBL-0019	B-T-B17-PRI	B-T-B18-PRI	1	13800	100.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR	Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0084 + J 0.0028 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0134 + J 0.0072 PU		
CBL-0020	B-T-B4-PRI	B-T-B80-PRI	1	13800	150.0 FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR	Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0126 + J 0.0043 PU		
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0200 + J 0.0108 PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE
CBL-0021	B-T-B19-PRI	B-T-B82-PRI	1	13800	476.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540		Ohms/1000 ft		0.0400 + J 0.0135		PU	
	Z0 Impedance: 0.2543 + J 0.1374		Ohms/1000 ft		0.0636 + J 0.0343		PU	
CBL-0022	B-T-B82-PRI	B-T-B4-PRI	1	13800	300.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540		Ohms/1000 ft		0.0252 + J 0.0085		PU	
	Z0 Impedance: 0.2543 + J 0.1374		Ohms/1000 ft		0.0401 + J 0.0216		PU	
CBL-0023	B-T-B22-PRI	B-T-B19-PRI	1	13800	400.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540		Ohms/1000 ft		0.0336 + J 0.0113		PU	
	Z0 Impedance: 0.2543 + J 0.1374		Ohms/1000 ft		0.0534 + J 0.0289		PU	
CBL-0024	B-T-B33-PRI	B-T-B22-PRI	1	13800	300.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540		Ohms/1000 ft		0.0252 + J 0.0085		PU	
	Z0 Impedance: 0.2543 + J 0.1374		Ohms/1000 ft		0.0401 + J 0.0216		PU	
CBL-0027	B-T-B10-PRI	B-T-B78-PRI	1	13800	300.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540		Ohms/1000 ft		0.0252 + J 0.0085		PU	
	Z0 Impedance: 0.2543 + J 0.1374		Ohms/1000 ft		0.0401 + J 0.0216		PU	
CBL-0028	B-T-13-PRI	B-T-B9-PRI	1	13800	200.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540		Ohms/1000 ft		0.0168 + J 0.0057		PU	
	Z0 Impedance: 0.2543 + J 0.1374		Ohms/1000 ft		0.0267 + J 0.0144		PU	
CBL-0029	B-T-B9-PRI	B-T-B10-PRI	1	13800	325.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540		Ohms/1000 ft		0.0273 + J 0.0092		PU	
	Z0 Impedance: 0.2543 + J 0.1374		Ohms/1000 ft		0.0434 + J 0.0234		PU	
CBL-0030	B-T-B12-PRI	B-T-13-PRI	1	13800	300.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540		Ohms/1000 ft		0.0252 + J 0.0085		PU	
	Z0 Impedance: 0.2543 + J 0.1374		Ohms/1000 ft		0.0401 + J 0.0216		PU	
CBL-0031	B-T-B81-PRI	B-T-B12-PRI	1	13800	100.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540		Ohms/1000 ft		0.0084 + J 0.0028		PU	
	Z0 Impedance: 0.2543 + J 0.1374		Ohms/1000 ft		0.0134 + J 0.0072		PU	

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0032	B-T-B78-PRI	B-T-B3-PRI	1	13800	200.0	FEET	1	Copper	
	Duct Material: Non-Magnetic			Insulation Type:		EPR	Insulation Class:		MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft					0.0168 + J 0.0057 PU			
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft					0.0267 + J 0.0144 PU			
CBL-0033	BUS-0065	B-T-B3-PRI	1	13800	175.0	FEET	1	Copper	
	Duct Material: Non-Magnetic			Insulation Type:		EPR	Insulation Class:		MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft					0.0147 + J 0.0050 PU			
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft					0.0234 + J 0.0126 PU			
CBL-0034	B-SW-MV-2	B-T-B80-PRI	1	13800	150.0	FEET	1	Copper	
	Duct Material: Non-Magnetic			Insulation Type:		EPR	Insulation Class:		MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft					0.0126 + J 0.0043 PU			
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft					0.0200 + J 0.0108 PU			
CBL-0035	B-B27-SWGR	BUS-0063	1	13800	1100.0	FEET	1	Copper	
	Duct Material: Non-Magnetic			Insulation Type:		EPR	Insulation Class:		MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft					0.0924 + J 0.0312 PU			
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft					0.1469 + J 0.0794 PU			
CBL-0036	B-B27-SWGR	B-T-B33-PRI	1	13800	300.0	FEET	1	Copper	
	Duct Material: Non-Magnetic			Insulation Type:		EPR	Insulation Class:		MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft					0.0252 + J 0.0085 PU			
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft					0.0401 + J 0.0216 PU			
CBL-0037	B-T-B1-SEC	B-B1-MDP-M	1	208	20.0	FEET	250	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft					2.55 + J 2.29 PU			
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft					8.04 + J 5.64 PU			
CBL-0038	B-B1-MDP-M	B-B1-MDP	1	208	25.0	FEET	300	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance: 0.0464 + J 0.0493 Ohms/1000 ft					2.68 + J 2.85 PU			
	Z0 Impedance: 0.1462 + J 0.1214 Ohms/1000 ft					8.45 + J 7.02 PU			
CBL-0039	B-B2-MDP-M	B-B2-MDP	1	480	1.000	FEET	1200	Copper	
	Duct Material: Busway			Insulation Type:		Epoxy	Insulation Class:		Class B
	+/- Impedance: 0.0111 + J 0.0052 Ohms/1000 ft					0.0048 + J 0.0023 PU			
	Z0 Impedance: 0.0660 + J 0.0278 Ohms/1000 ft					0.0286 + J 0.0121 PU			
CBL-0040	B-B2-MDP	B-B2-CATSCAN	1	480	80.0	FEET	1/0	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft					4.44 + J 1.88 PU			
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft					14.01 + J 4.61 PU			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0041	B-B2-MDP	B-T-B2-LED-PRI	1	480	80.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				7.01 + J 2.03	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				22.10 + J 5.00	PU		
CBL-0042	B-T-B2-LED-SEC	B-B2-LED-3	1	208	10.0	FEET	250	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft				1.28 + J 1.14	PU		
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft				4.02 + J 2.82	PU		
CBL-0043	B-B2-LED-3	BUS-0076	1	208	10.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				2.36 + J 1.23	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				7.43 + J 3.03	PU		
CBL-0044	B-B2-ATS-LED3	B-B2-EMERG-M	1	208	7.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				1.30 + J 0.8397	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				4.10 + J 2.07	PU		
CBL-0045	B-B2-EMERG-M	B-B2-EMERG-PNL	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0046	B-B2-ATS-LED3	B-B2-PNL 1	1	208	7.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				1.30 + J 0.8397	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				4.10 + J 2.07	PU		
CBL-0048	B-B2-ATS-LED3	B-B2-NEWLAB-M	1	208	10.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				2.36 + J 1.23	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				7.43 + J 3.03	PU		
CBL-0049	B-B2-NEWLAB-M	B-B2-NEWLAB	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0050	B-B2-ATS-LED3	B-B2-PNL-2	1	208	2.0	FEET	4	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft				1.48 + J 0.2922	PU		
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft				4.68 + J 0.7193	PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0051	B-B2-ATS-LED3	B-B2-PNL-3-M	1	208	7.0	FEET	2	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft						3.27 + J 0.9465 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft						10.30 + J 2.33 PU		
CBL-0052	B-B2-MDP	B-B2-PNL-P	1	480	160.0	FEET	500	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft						2.04 + J 3.24 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft						6.43 + J 7.97 PU		
CBL-0053	B-B2-PNL-P	B-B2-UNIT-1	1	480	40.0	FEET	2/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						1.77 + J 0.9253 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						5.58 + J 2.28 PU		
CBL-0054	B-B2-PNL-P	B-B2-UNIT-2	1	480	20.0	FEET	2/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						0.8854 + J 0.4627 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						2.79 + J 1.14 PU		
CBL-0055	B-B2-MDP	B-B2-XRAY-124	1	480	310.0	FEET	4/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft						8.61 + J 6.69 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft						27.14 + J 16.47 PU		
CBL-0057	B-B2-MDPA-M	B-B2-MDPA	2	208	3.0	FEET	350	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft						0.1311 + J 0.1702 PU		
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft						0.4129 + J 0.4192 PU		
CBL-0058	B-B2-MDPA	BUS-0091	1	208	150.0	FEET	1/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						44.38 + J 18.72 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						139.86 + J 46.08 PU		
CBL-0059	B-B2-MDPA	B-B2-PNL-D2	1	208	75.0	FEET	500	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft						5.10 + J 8.08 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft						16.05 + J 19.88 PU		
CBL-0060	B-B92-ATS	B-B92-PNL-E1	1	208	10.0	FEET	2	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft						4.67 + J 1.35 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft						14.71 + J 3.33 PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0062	B-B2-PNL-3-M	B-B2-PNL-M1	1	208	7.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				3.27 + J 0.9465	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				10.30 + J 2.33	PU		
CBL-0063	B-B2-MDPB	BUS-0097*	2	208	17.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				1.58 + J 1.02	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				4.98 + J 2.51	PU		
CBL-0064	B-B2-ATS-CRIT	B-B2-CRIT PNL	2	208	5.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				0.4652 + J 0.2999	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				1.47 + J 0.7385	PU		
CBL-0065	B-B2-CRIT PNL	B-B2-LB2E	1	208	50.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				23.35 + J 6.76	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				73.57 + J 16.64	PU		
CBL-0066	B-B2-CRIT PNL	B-B2-L2A	1	208	50.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				9.30 + J 6.00	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				29.32 + J 14.77	PU		
CBL-0067	B-B2-CRIT PNL	B-B2-MEDAIRCOM	1	208	50.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				23.35 + J 6.76	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				73.57 + J 16.64	PU		
CBL-0068	B-B2-CRIT PNL	B-B2-ELEV-P1	1	208	100.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				14.79 + J 11.49	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				46.62 + J 28.29	PU		
CBL-0069	B-B2-CRIT PNL	B-B2-DENTAL LB	1	208	40.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				18.68 + J 5.41	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				58.86 + J 13.31	PU		
CBL-0070	B-B2-CRIT PNL	B-B2-PNL-L11	1	208	50.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				9.30 + J 6.00	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				29.32 + J 14.77	PU		

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0071	B-B2-MDPB	BUS-0106*	2	208	10.0	FEET	3/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft						0.9303 + J 0.5998 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft						2.93 + J 1.48 PU		
CBL-0072	B-B2-ATS-LS	B-B2-PNL LS	2	208	10.0	FEET	3/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft						0.9303 + J 0.5998 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft						2.93 + J 1.48 PU		
CBL-0073	B-B2-PNL LS	B-B2-ELEV	1	208	40.0	FEET	4/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft						5.92 + J 4.60 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft						18.65 + J 11.32 PU		
CBL-0074	B-B2-PNL LS	B-B2-L2E	1	208	50.0	FEET	3/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft						9.30 + J 6.00 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft						29.32 + J 14.77 PU		
CBL-0075	B-B2-PNL LS	B-B2-L12	1	208	50.0	FEET	3/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft						9.30 + J 6.00 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft						29.32 + J 14.77 PU		
CBL-0076	B-B2-PNL LS	B-B2-DENTSUCPM	1	208	50.0	FEET	2	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft						23.35 + J 6.76 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft						73.57 + J 16.64 PU		
CBL-0077	B-B2-PNL LS	B-B2-L9E	1	208	50.0	FEET	1/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						14.79 + J 6.24 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						46.62 + J 15.36 PU		
CBL-0078	B-B2-PNL LS	B-B2-LB1E	1	208	50.0	FEET	1/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						14.79 + J 6.24 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						46.62 + J 15.36 PU		
CBL-0079	B-B2-PNL LS	B-B2-POD2PP	1	208	50.0	FEET	4/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft						7.40 + J 5.74 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft						23.31 + J 14.15 PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0080	B-B2-PNL LS	B-B2-BATTERYCH	1	208	50.0 FEET	6	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.5100 + J 0.0685 Ohms/1000 ft				58.94 + J 7.92 PU		
	Z0 Impedance: 1.61 + J 0.1687 Ohms/1000 ft				185.74 + J 19.50 PU		
CBL-0082	B-B2-MDPB	B-B2-LB2	1	208	50.0 FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft				9.30 + J 6.00 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft				29.32 + J 14.77 PU		
CBL-0083	B-B2-MDPB	B-B2-L6	1	208	50.0 FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft				9.30 + J 6.00 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft				29.32 + J 14.77 PU		
CBL-0084	B-T-B2-SEC4	B-B2-MDP-M	4	480	10.0 FEET	250	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft				0.0599 + J 0.0537 PU		
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft				0.1887 + J 0.1323 PU		
CBL-0085	B-T-B2-SEC2	B-B2-MDPA-M	2	208	3.0 FEET	350	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft				0.1311 + J 0.1702 PU		
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft				0.4129 + J 0.4192 PU		
CBL-0086	B-B2-MDPB-M	B-B2-MDPB	2	208	3.0 FEET	350	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft				0.1311 + J 0.1702 PU		
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft				0.4129 + J 0.4192 PU		
CBL-0087	B-T-B2-SEC3	B-B2-MDPB-M	3	208	70.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				1.59 + J 2.51 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				4.99 + J 6.19 PU		
CBL-0088	B-B2-MDPB	B-B2-L7	1	208	50.0 FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft				9.30 + J 6.00 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft				29.32 + J 14.77 PU		
CBL-0089	B-B2-MDPB	B-B2-L8	1	208	50.0 FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft				9.30 + J 6.00 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft				29.32 + J 14.77 PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0090	B-B2-MDPB	B-B2-L4	1	208	50.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft		9.30 + J 6.00	PU				
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft		29.32 + J 14.77	PU				
CBL-0091	B-B2-MDPB	B-B2-XRAY	1	208	50.0	FEET	10	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	1.18 + J 0.0854	Ohms/1000 ft		136.37 + J 9.87	PU				
	Z0 Impedance:	3.72 + J 0.2103	Ohms/1000 ft		429.78 + J 24.30	PU				
CBL-0092	B-B2-MDPB	B-B2-XRAY124	1	208	50.0	FEET	1	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft		18.49 + J 6.59	PU				
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft		58.27 + J 16.21	PU				
CBL-0093	B-B2-MDPB	B-B2-TEL COMM	1	208	50.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft		9.30 + J 6.00	PU				
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft		29.32 + J 14.77	PU				
CBL-0094	B-T-B3-SEC	B-B3-MDP-M	3	208	35.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		0.7928 + J 1.26	PU				
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		2.50 + J 3.09	PU				
CBL-0095	B-B3-MDP-M	B-B3-MDP	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft		0.0328 + J 0.0153	PU				
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft		0.1951 + J 0.0816	PU				
CBL-0096	B-B3-MDP	B-B3-P3	1	208	40.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft		7.44 + J 4.80	PU				
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft		23.46 + J 11.82	PU				
CBL-0097	B-B3-MDP	BUS-0131	1	208	35.0	FEET	600	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0257 + J 0.0463	Ohms/1000 ft		2.08 + J 3.75	PU				
	Z0 Impedance:	0.0809 + J 0.1140	Ohms/1000 ft		6.54 + J 9.22	PU				
CBL-0098	B-B3-ATSTEL RM	B-B3-EP1-M	1	208	7.0	FEET	600	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0257 + J 0.0463	Ohms/1000 ft		0.4158 + J 0.7491	PU				
	Z0 Impedance:	0.0809 + J 0.1140	Ohms/1000 ft		1.31 + J 1.84	PU				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0099	B-B3-EP1-M	B-B3-EP1	1	208	1.000	FEET	400	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy		Insulation Class:		Class B
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft		0.0673 + J 0.0696	PU			
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft		0.3999 + J 0.3724	PU			
CBL-0100	B-B3-EP1	B-B3-TELE PNL	1	208	30.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		4.44 + J 3.45	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		13.99 + J 8.49	PU			
CBL-0101	B-B3-EP1	B-B3-KP1	1	208	55.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		8.14 + J 6.32	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		25.64 + J 15.56	PU			
CBL-0102	B-B3-EP1	B-B3-P7	1	208	30.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		14.01 + J 4.06	PU			
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		44.14 + J 9.99	PU			
CBL-0103	B-B3-EP1	B-B3-DBL GRILL	1	208	55.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		12.97 + J 6.78	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		40.86 + J 16.68	PU			
CBL-0104	B-B3-EP1	B-B3-1ST FL	1	208	30.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		8.88 + J 3.74	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		27.97 + J 9.22	PU			
CBL-0105	B-B3-MDP	BUS-0140	1	208	30.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		2.04 + J 3.23	PU			
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		6.42 + J 7.95	PU			
CBL-0106	B-B3-ATS-COMP	B-B3-EP2-M	1	208	11.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		0.7475 + J 1.18	PU			
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		2.35 + J 2.92	PU			
CBL-0107	B-B3-EP2-M	B-B3-EP2	1	208	1.000	FEET	400	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy		Insulation Class:		Class B
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft		0.0673 + J 0.0696	PU			
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft		0.3999 + J 0.3724	PU			

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0108	B-B3-EP2	B-B3-TRAY LINE	1	208	30.0	FEET	1	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				11.09 + J 3.95	PU	
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				34.96 + J 9.73	PU	
CBL-0109	B-B3-EP2	B-B3-COMP	1	208	40.0	FEET	1	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				14.79 + J 5.27	PU	
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				46.62 + J 12.97	PU	
CBL-0110	B-B3-EP2	B-B3-HYDRO ELV	1	208	70.0	FEET	1/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				20.71 + J 8.74	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				65.27 + J 21.50	PU	
CBL-0111	B-B3-EP2	B-B3-MECH HVAC	1	208	30.0	FEET	1	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				11.09 + J 3.95	PU	
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				34.96 + J 9.73	PU	
CBL-0112	B-B3-EP2	B-B3-COMP AC	1	208	30.0	FEET	10	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	1.18 + J 0.0854	Ohms/1000 ft				81.82 + J 5.92	PU	
	Z0 Impedance:	3.72 + J 0.2103	Ohms/1000 ft				257.87 + J 14.58	PU	
CBL-0113	B-B3-EP2	B-B3-ELEV	1	208	30.0	FEET	1	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				11.09 + J 3.95	PU	
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				34.96 + J 9.73	PU	
CBL-0114	B-B3-EP2	B-B3-STRT PNL	1	208	20.0	FEET	1	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				7.40 + J 2.63	PU	
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				23.31 + J 6.49	PU	
CBL-0115	B-B3-EP2	B-B3-ALDN KIT	1	208	30.0	FEET	4	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft				22.26 + J 4.38	PU	
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft				70.15 + J 10.79	PU	
CBL-0116	B-B3-EP2	B-B3-MECH RM	1	208	30.0	FEET	4/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				4.44 + J 3.45	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				13.99 + J 8.49	PU	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0117	B-B3-EP2	B-B3-COMP MF	1	208	30.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				5.58 + J 3.60	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				17.59 + J 8.86	PU		
CBL-0118	B-B3-MDP	B-B3-STRT LTS	1	208	20.0	FEET	6	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.5100 + J 0.0685	Ohms/1000 ft				23.58 + J 3.17	PU		
	Z0 Impedance:	1.61 + J 0.1687	Ohms/1000 ft				74.30 + J 7.80	PU		
CBL-0119	B-B3-MDP	B-B3-FRZN FOOD	1	208	20.0	FEET	6	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.5100 + J 0.0685	Ohms/1000 ft				23.58 + J 3.17	PU		
	Z0 Impedance:	1.61 + J 0.1687	Ohms/1000 ft				74.30 + J 7.80	PU		
CBL-0120	B-T-B4-SEC	B-B4-BUS	4	208	20.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.3398 + J 0.5386	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				1.07 + J 1.33	PU		
CBL-0121	B-B4-BUS	B-B4-JBOX	1	208	20.0	FEET	2000	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0066 + J 0.0035	Ohms/1000 ft				0.3051 + J 0.1618	PU		
	Z0 Impedance:	0.0392 + J 0.0187	Ohms/1000 ft				1.81 + J 0.8645	PU		
CBL-0122	B-B4-JBOX	B-B4-MDP-M	4	208	5.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.0849 + J 0.1346	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				0.2675 + J 0.3314	PU		
CBL-0124	B-B4-MDP-M	B-B4-MDP	1	208	1.000	FEET	2000	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0066 + J 0.0035	Ohms/1000 ft				0.0153 + J 0.0081	PU		
	Z0 Impedance:	0.0392 + J 0.0187	Ohms/1000 ft				0.0906 + J 0.0432	PU		
CBL-0125	B-B4-MDP	B-B4-LP3-M	1	208	25.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				3.70 + J 2.87	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				11.66 + J 7.07	PU		
CBL-0126	B-B4-LP3-M	B-B4-LP4-M	1	208	40.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				5.92 + J 4.60	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				18.65 + J 11.32	PU		

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0127	B-B4-LP3-M	B-B4-LP3	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0128	B-B4-LP4-M	B-B4-LP4	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0129	B-B4-MDP	B-B4-LP9-M	1	208	90.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft		13.31 + J 10.34 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft		41.96 + J 25.46 PU				
CBL-0130	B-B4-LP9-M	B-B4-LP14-M	1	208	20.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft		2.96 + J 2.30 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft		9.32 + J 5.66 PU				
CBL-0131	B-B4-LP9-M	B-B4-LP9	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0132	B-B4-LP14-M	B-B4-LP14	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0133	B-B4-MDP	B-B4-LP7-M	1	208	45.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft		6.66 + J 5.17 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft		20.98 + J 12.73 PU				
CBL-0134	B-B4-LP7-M	B-B4-LP7	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0135	B-B4-MDP	B-B4-LP12-M	1	208	55.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft		8.14 + J 6.32 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft		25.64 + J 15.56 PU				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0136	B-B4-LP12-M	B-B4-LP12	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU		
CBL-0137	B-B4-MDP	BUS-0172*	1	208	15.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				2.22 + J 1.72 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				6.99 + J 4.24 PU		
CBL-0138	B-B4-ATS-LS	B-B4-LSD-M	1	208	5.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				0.7396 + J 0.5744 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				2.33 + J 1.41 PU		
CBL-0139	B-B4-LSD-M	B-B4-LSD	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU		
CBL-0140	B-B4-LSD	B-B4-LS2-M	1	208	30.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				8.88 + J 3.74 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				27.97 + J 9.22 PU		
CBL-0141	B-B4-LS2-M	B-B4-LS2	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU		
CBL-0142	B-B4-LS2-M	B-B4-LS1-M	1	208	35.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				10.36 + J 4.37 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				32.63 + J 10.75 PU		
CBL-0143	B-B4-LS1-M	B-B4-LS1	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU		
CBL-0144	B-B4-LSD	B-B4-LS3-M	1	208	15.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				4.44 + J 1.87 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				13.99 + J 4.61 PU		

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0145	B-B4-LS3-M	B-B4-LS3	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft						0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft						0.5841 + J 0.3996 PU		
CBL-0146	B-B4-LS3-M	B-B4-LS4-M	1	208	35.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						10.36 + J 4.37 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						32.63 + J 10.75 PU		
CBL-0147	B-B4-LS4-M	B-B4-LS4	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft						0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft						0.5841 + J 0.3996 PU		
CBL-0148	B-B4-LSD	B-B4-LS5-M	1	208	104.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						30.77 + J 12.98 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						96.97 + J 31.95 PU		
CBL-0149	B-B4-LS5-M	B-B4-LS5	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft						0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft						0.5841 + J 0.3996 PU		
CBL-0150	B-B4-LS5-M	B-B4-LS10-M	1	208	20.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						5.92 + J 2.50 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						18.65 + J 6.14 PU		
CBL-0151	B-B4-LS10-M	B-B4-LS10	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft						0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft						0.5841 + J 0.3996 PU		
CBL-0152	B-B4-LSD	B-B4-LS6-M	1	208	82.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						24.26 + J 10.23 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						76.46 + J 25.19 PU		
CBL-0153	B-B4-LS6-M	B-B4-LS6	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft						0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft						0.5841 + J 0.3996 PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0154	B-B4-LS6-M	B-B4-LS11-M	1	208	20.0	FEET	1/0	Copper		
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				5.92 + J 2.50 PU					
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				18.65 + J 6.14 PU					
CBL-0155	B-B4-LS11-M	B-B4-LS11	1	208	1.000	FEET	225	Copper		
	Duct Material: Busway		Insulation Type:		Epoxy		Insulation Class:		Class B	
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU					
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU					
CBL-0156	B-B4-LSD	B-B4-LS7-M	1	208	65.0	FEET	1/0	Copper		
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				19.23 + J 8.11 PU					
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				60.61 + J 19.97 PU					
CBL-0157	B-B4-LS7-M	B-B4-LS7	1	208	1.000	FEET	225	Copper		
	Duct Material: Busway		Insulation Type:		Epoxy		Insulation Class:		Class B	
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU					
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU					
CBL-0158	B-B4-LS7-M	B-B4-LS12-M	1	208	20.0	FEET	1/0	Copper		
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				5.92 + J 2.50 PU					
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				18.65 + J 6.14 PU					
CBL-0159	B-B4-LS12-M	B-B4-LS12	1	208	1.000	FEET	225	Copper		
	Duct Material: Busway		Insulation Type:		Epoxy		Insulation Class:		Class B	
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU					
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU					
CBL-0160	B-B4-LSD	B-B4-LP15-M	1	208	75.0	FEET	1	Copper		
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance: 0.1600 + J 0.0570 Ohms/1000 ft				27.74 + J 9.88 PU					
	Z0 Impedance: 0.5042 + J 0.1403 Ohms/1000 ft				87.41 + J 24.32 PU					
CBL-0161	B-B4-LP15-M	B-B4-LP15	1	208	1.000	FEET	225	Copper		
	Duct Material: Busway		Insulation Type:		Epoxy		Insulation Class:		Class B	
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU					
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU					
CBL-0163	B-B4-LSD	B-B4-PP2-M	1	208	75.0	FEET	1	Copper		
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance: 0.1600 + J 0.0570 Ohms/1000 ft				27.74 + J 9.88 PU					
	Z0 Impedance: 0.5042 + J 0.1403 Ohms/1000 ft				87.41 + J 24.32 PU					

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0164	B-B4-PP2-M	B-B4-PP2	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0165	B-B4-LSD	B-B4-LS8-M	1	208	62.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		18.34 + J 7.74 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		57.81 + J 19.05 PU				
CBL-0166	B-B4-LS8-M	B-B4-LS8	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0167	B-B4-LS8-M	B-B4-LS13-M	1	208	20.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		5.92 + J 2.50 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		18.65 + J 6.14 PU				
CBL-0168	B-B4-LS13-M	B-B4-LS13	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0169	B-B4-LSD	B-B4-LS9-M	1	208	62.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		18.34 + J 7.74 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		57.81 + J 19.05 PU				
CBL-0170	B-B4-LS9-M	B-B4-LS9	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0171	B-B4-LS9-M	B-B4-LS14-M	1	208	20.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		5.92 + J 2.50 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		18.65 + J 6.14 PU				
CBL-0172	B-B4-LS14-M	B-B4-LS14	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0173	B-B4-MDP	B-B4-LP2-M	1	208	25.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		3.70 + J 2.87	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		11.66 + J 7.07	PU				
CBL-0174	B-B4-LP2-M	B-B4-LP1-M	1	208	35.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		5.18 + J 4.02	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		16.32 + J 9.90	PU				
CBL-0175	B-B4-LP2-M	B-B4-LP2	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0176	B-B4-LP1-M	B-B4-LP1	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0177	B-B4-MDP	B-B4-LP5-M	1	208	70.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		10.36 + J 8.04	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		32.63 + J 19.80	PU				
CBL-0178	B-B4-LP5-M	B-B4-LP10-M	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		2.96 + J 2.30	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		9.32 + J 5.66	PU				
CBL-0179	B-B4-LP5-M	B-B4-LP5	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0180	B-B4-LP10-M	B-B4-LP10	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0181	B-B4-MDP	B-B4-LP6-M	1	208	45.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		6.66 + J 5.17	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		20.98 + J 12.73	PU				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0182	B-B4-LP6-M	B-B4-LP11-M	1	208	20.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				2.96 + J 2.30 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				9.32 + J 5.66 PU		
CBL-0183	B-B4-LP6-M	B-B4-LP6	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU		
CBL-0184	B-B4-LP11-M	B-B4-LP11	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU		
CBL-0185	B-B4-MDP	B-B4-LP8-M	1	208	70.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				10.36 + J 8.04 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				32.63 + J 19.80 PU		
CBL-0186	B-B4-LP8-M	B-B4-LP13-M	1	208	20.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				2.96 + J 2.30 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				9.32 + J 5.66 PU		
CBL-0187	B-B4-LP8-M	B-B4-LP8	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU		
CBL-0188	B-B4-LP13-M	B-B4-LP13	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU		
CBL-0193	B-B4-MDP	BUS-0227	1	208	8.0 FEET	400	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0356 + J 0.0490 Ohms/1000 ft				0.6583 + J 0.9061 PU		
	Z0 Impedance: 0.1122 + J 0.1206 Ohms/1000 ft				2.07 + J 2.23 PU		
CBL-0194	B-B4-ATS-EQ	B-B4-4EQD-M	1	208	13.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				0.8834 + J 1.40 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				2.78 + J 3.45 PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0195	B-B4-4EQD-M	B-B4-4EQD	1	208	1.000	FEET	400	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft						0.0673 + J 0.0696 PU		
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft						0.3999 + J 0.3724 PU		
CBL-0196	B-B4-4EQD	B-B4-EQ9	1	208	110.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						25.93 + J 13.55 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						81.72 + J 33.36 PU		
CBL-0197	B-B4-4EQD	B-B4-EQ2	1	208	14.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						3.30 + J 1.72 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						10.40 + J 4.25 PU		
CBL-0198	B-B4-4EQD	B-B4-EQ15	1	208	80.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						18.86 + J 9.86 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						59.43 + J 24.26 PU		
CBL-0199	B-B4-4EQD	B-B4-EQ3	1	208	58.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						13.67 + J 7.15 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						43.09 + J 17.59 PU		
CBL-0200	B-B4-4EQD	B-B4-EQ1	1	208	35.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						8.25 + J 4.31 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						26.00 + J 10.61 PU		
CBL-0201	B-B4-4EQD	B-B4-ELEV#4	1	208	80.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						18.86 + J 9.86 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						59.43 + J 24.26 PU		
CBL-0202	B-B4-4EQD	B-B4-HYDROELEV	1	208	80.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						23.67 + J 9.99 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						74.59 + J 24.57 PU		
CBL-0203	B-B4-4EQD	B-B4-PP1	1	208	30.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft						4.44 + J 3.45 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft						13.99 + J 8.49 PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0204	B-B4-EQ1	B-B4-EQ5	1	208	20.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.72 + J 2.46	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				14.86 + J 6.07	PU		
CBL-0205	B-B4-EQ5	B-B4-EQ10	1	208	18.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.24 + J 2.22	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				13.37 + J 5.46	PU		
CBL-0206	B-B4-EQ3	B-B4-EQ7	1	208	20.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.72 + J 2.46	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				14.86 + J 6.07	PU		
CBL-0207	B-B4-EQ7	B-B4-EQ12	1	208	18.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.24 + J 2.22	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				13.37 + J 5.46	PU		
CBL-0208	B-B4-EQ2	B-B4-EQ6	1	208	20.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.72 + J 2.46	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				14.86 + J 6.07	PU		
CBL-0209	B-B4-EQ6	B-B4-EQ11	1	208	18.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.24 + J 2.22	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				13.37 + J 5.46	PU		
CBL-0210	B-T-B5-SEC	B-B5-MDP-M	1	208	25.0	FEET	300	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0464 + J 0.0493	Ohms/1000 ft				2.68 + J 2.85	PU		
	Z0 Impedance:	0.1462 + J 0.1214	Ohms/1000 ft				8.45 + J 7.02	PU		
CBL-0211	B-B5-MDP-M	B-B5-MDP	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft				0.0328 + J 0.0153	PU		
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft				0.1951 + J 0.0816	PU		
CBL-0212	B-B5-MDP	B-B5-PNL-H-M	1	208	25.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				3.70 + J 2.87	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				11.66 + J 7.07	PU		

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0213	B-B5-MDP	B-B5-LP1-M	1	208	31.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				4.59 + J 3.56 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				14.45 + J 8.77 PU				
CBL-0214	B-B5-LP1-M	B-B5-LP1	1	208	1.000	FEET	400	Copper	
	Duct Material: Busway		Insulation Type:		Epoxy		Insulation Class:		Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft				0.0673 + J 0.0696 PU				
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft				0.3999 + J 0.3724 PU				
CBL-0215	B-B5-LP1-M	B-B5-LP3-M	1	208	20.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				2.96 + J 2.30 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				9.32 + J 5.66 PU				
CBL-0216	B-B5-LP3-M	B-B5-LP3	1	208	1.000	FEET	400	Copper	
	Duct Material: Busway		Insulation Type:		Epoxy		Insulation Class:		Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft				0.0673 + J 0.0696 PU				
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft				0.3999 + J 0.3724 PU				
CBL-0220	B-B5-MDP	B-B5-STRT LGHT	1	208	25.0	FEET	4	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft				18.55 + J 3.65 PU				
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft				58.46 + J 8.99 PU				
CBL-0221	B-B5-MDP	B-B5-NEXTEL	1	208	40.0	FEET	3/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft				7.44 + J 4.80 PU				
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft				23.46 + J 11.82 PU				
CBL-0222	B-B5-MDP	BUS-0258*	1	208	40.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				2.72 + J 4.31 PU				
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				8.56 + J 10.60 PU				
CBL-0223	B-B5-ATS-EQ	B-B5-EQD	1	208	5.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				0.3398 + J 0.5386 PU				
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				1.07 + J 1.33 PU				
CBL-0224	B-B5-EQD	B-B5-EQ1	1	208	42.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				12.43 + J 5.24 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				39.16 + J 12.90 PU				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0225	B-B5-EQD	B-B5-EQ5	1	208	42.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				12.43 + J 5.24	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				39.16 + J 12.90	PU		
CBL-0226	B-B5-EQD	B-B5-EQ2	1	208	45.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				13.31 + J 5.62	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				41.96 + J 13.82	PU		
CBL-0227	B-B5-EQD	B-B5-EQ6	1	208	55.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				16.27 + J 6.86	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				51.28 + J 16.90	PU		
CBL-0228	B-B5-EQD	B-B5-HYDR ELEV	1	208	25.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				7.40 + J 3.12	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				23.31 + J 7.68	PU		
CBL-0229	B-B5-PNL-H-M	B-B5-PNL-H	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft				0.0673 + J 0.0696	PU		
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft				0.3999 + J 0.3724	PU		
CBL-0230	B-B5-MDP	B-B5-LP5-M	1	208	25.0	FEET	1	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				9.25 + J 3.29	PU		
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				29.14 + J 8.11	PU		
CBL-0231	B-B5-LP5-M	B-B5-LP5	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft				0.0673 + J 0.0696	PU		
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft				0.3999 + J 0.3724	PU		
CBL-0232	B-B5-MDP	BUS-0269	1	208	30.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				4.44 + J 3.45	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				13.99 + J 8.49	PU		
CBL-0233	B-B5-ATS-LS	B-B5-LSD-M	1	208	5.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				0.7396 + J 0.5744	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				2.33 + J 1.41	PU		

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0234	B-B5-LSD-M	B-B5-LSD	1	208	1.000 FEET	400	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft				0.0673 + J 0.0696 PU		
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft				0.3999 + J 0.3724 PU		
CBL-0235	B-B5-LSD	B-B5-LS2	1	208	71.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				21.01 + J 8.86 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				66.20 + J 21.81 PU		
CBL-0236	B-B5-LS2	B-B5-LS4	1	208	20.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				5.92 + J 2.50 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				18.65 + J 6.14 PU		
CBL-0237	B-B5-LSD	B-B5-LS1	1	208	22.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				6.51 + J 2.75 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				20.51 + J 6.76 PU		
CBL-0238	B-B5-LS1	B-B55-LS3	1	208	20.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				5.92 + J 2.50 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				18.65 + J 6.14 PU		
CBL-0239	B-B5-MDP	B-B5-LP2-M	1	208	52.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				7.69 + J 5.97 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				24.24 + J 14.71 PU		
CBL-0240	B-B5-LP2-M	B-B5-LP2	1	208	1.000 FEET	400	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft				0.0673 + J 0.0696 PU		
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft				0.3999 + J 0.3724 PU		
CBL-0241	B-B5-LP2-M	B-B5-LP4-M	1	208	20.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				2.96 + J 2.30 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				9.32 + J 5.66 PU		
CBL-0242	B-B5-LP4-M	B-B5-LP4	1	208	1.000 FEET	400	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft				0.0673 + J 0.0696 PU		
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft				0.3999 + J 0.3724 PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0243	B-B5-MDP	B-B5-TEMP TRAI	1	208	50.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft		9.30 + J 6.00	PU				
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft		29.32 + J 14.77	PU				
CBL-0244	B-T-B6-SEC	B-B6-MDP-M	3	208	50.0	FEET	400	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft		1.37 + J 1.89	PU				
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft		4.32 + J 4.65	PU				
CBL-0245	B-B6-MDP-M	B-B6-MDP	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft		0.0328 + J 0.0153	PU				
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft		0.1951 + J 0.0816	PU				
CBL-0246	B-B6-MDP	B-B6-LP1-M	1	208	45.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		13.31 + J 5.62	PU				
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		41.96 + J 13.82	PU				
CBL-0247	B-B6-LP1-M	B-B6-LP1	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft		0.0328 + J 0.0153	PU				
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft		0.1951 + J 0.0816	PU				
CBL-0248	B-B6-MDP	B-B6-LP3-M	1	208	45.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		6.66 + J 5.17	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		20.98 + J 12.73	PU				
CBL-0249	B-B6-LP3-M	B-B6-LP3	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft		0.0328 + J 0.0153	PU				
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft		0.1951 + J 0.0816	PU				
CBL-0250	B-B6-LP3-M	B-B6-LP5-M	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		2.96 + J 2.30	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		9.32 + J 5.66	PU				
CBL-0251	B-B6-LP5-M	B-B6-LP5	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft		0.0328 + J 0.0153	PU				
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft		0.1951 + J 0.0816	PU				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0252	B-B6-MDP	BUS-0290	1	208	30.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				4.44 + J 3.45	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				13.99 + J 8.49	PU		
CBL-0253	B-B6-ATS-LS	B-B6-LSD-M	1	208	8.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				1.18 + J 0.9190	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				3.73 + J 2.26	PU		
CBL-0255	B-B6-LS4	B-B6-LS6	1	208	20.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				5.92 + J 2.50	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				18.65 + J 6.14	PU		
CBL-0257	B-B6-LSD-M	B-B6-LSD	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft				0.0328 + J 0.0153	PU		
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft				0.1951 + J 0.0816	PU		
CBL-0258	B-B6-LSD	B-B6-LS4	1	208	35.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				10.36 + J 4.37	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				32.63 + J 10.75	PU		
CBL-0259	B-B6-LS3	B-B6-LS5	1	208	20.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				5.92 + J 2.50	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				18.65 + J 6.14	PU		
CBL-0260	B-B6-LSD	B-B6-LS3	1	208	35.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				10.36 + J 4.37	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				32.63 + J 10.75	PU		
CBL-0261	B-B6-LSD	B-B6-LS1	1	208	35.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				10.36 + J 4.37	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				32.63 + J 10.75	PU		
CBL-0262	B-B6-LSD	B-B6-LS2	1	208	12.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				5.60 + J 1.62	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				17.66 + J 3.99	PU		

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0263	B-B6-MDP	BUS-0302	1	208	50.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				3.40 + J 5.39	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				10.70 + J 13.26	PU	
CBL-0264	B-B6-ATS-EQ	B-B6-EQD-M	1	208	15.0	FEET	400	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				1.23 + J 1.70	PU	
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				3.89 + J 4.18	PU	
CBL-0265	B-B6-EQD-M	B-B6-EQD	1	208	1.000	FEET	1000	Copper	
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft				0.0328 + J 0.0153	PU	
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft				0.1951 + J 0.0816	PU	
CBL-0266	B-B6-EQD	B-B6-EQ8	1	208	66.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				9.76 + J 7.58	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				30.77 + J 18.67	PU	
CBL-0267	B-B6-EQD	B-B6-EQ1	1	208	15.0	FEET	1	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				5.55 + J 1.98	PU	
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				17.48 + J 4.86	PU	
CBL-0268	B-B6-EQD	B-B6-EQ3	1	208	26.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				6.13 + J 3.20	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				19.31 + J 7.88	PU	
CBL-0269	B-B6-EQD	B-B6-EQ2	1	208	50.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				11.79 + J 6.16	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				37.14 + J 15.16	PU	
CBL-0270	B-B6-EQ3	B-B6-EQ5	1	208	20.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.72 + J 2.46	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				14.86 + J 6.07	PU	
CBL-0271	B-B6-EQ2	B-B6-EQ4	1	208	20.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.72 + J 2.46	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				14.86 + J 6.07	PU	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0272	B-B6-EQD	B-B6-EQMACH	1	208	15.0 FEET	1	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1600 + J 0.0570 Ohms/1000 ft				5.55 + J 1.98 PU		
	Z0 Impedance: 0.5042 + J 0.1403 Ohms/1000 ft				17.48 + J 4.86 PU		
CBL-0273	B-B6-MDP	B-B6-LP2-M	1	208	36.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				10.65 + J 4.49 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				33.57 + J 11.06 PU		
CBL-0274	B-B6-LP2-M	B-B6-LP2	1	208	1.000 FEET	1000	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0142 + J 0.0066 Ohms/1000 ft				0.0328 + J 0.0153 PU		
	Z0 Impedance: 0.0844 + J 0.0353 Ohms/1000 ft				0.1951 + J 0.0816 PU		
CBL-0275	B-B6-MDP	B-B6-LP7-M	1	208	15.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				4.44 + J 1.87 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				13.99 + J 4.61 PU		
CBL-0276	B-B6-LP7-M	B-B6-LP7	1	208	1.000 FEET	1000	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0142 + J 0.0066 Ohms/1000 ft				0.0328 + J 0.0153 PU		
	Z0 Impedance: 0.0844 + J 0.0353 Ohms/1000 ft				0.1951 + J 0.0816 PU		
CBL-0277	B-B6-LP4-M	B-B6-LP4	1	208	1.000 FEET	1000	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0142 + J 0.0066 Ohms/1000 ft				0.0328 + J 0.0153 PU		
	Z0 Impedance: 0.0844 + J 0.0353 Ohms/1000 ft				0.1951 + J 0.0816 PU		
CBL-0278	B-B6-LP4-M	B-B6-LP6-M	1	208	20.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				2.96 + J 2.30 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				9.32 + J 5.66 PU		
CBL-0279	B-B6-LP6-M	B-B6-LP6	1	208	1.000 FEET	1000	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0142 + J 0.0066 Ohms/1000 ft				0.0328 + J 0.0153 PU		
	Z0 Impedance: 0.0844 + J 0.0353 Ohms/1000 ft				0.1951 + J 0.0816 PU		
CBL-0280	B-B6-MDP	B-B6-LP4-M	1	208	42.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				6.21 + J 4.82 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				19.58 + J 11.88 PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0281	B-B6-MDP	B-B6-MACH SHOP	1	208	50.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				9.30 + J 6.00	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				29.32 + J 14.77	PU		
CBL-0282	B-B6-MDP	B-B6-P6-CS	1	208	30.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				5.58 + J 3.60	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				17.59 + J 8.86	PU		
CBL-0283	B-T-B7-SEC	B-B7-MDP-M	2	208	175.0	FEET	600	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0257 + J 0.0463	Ohms/1000 ft				5.20 + J 9.36	PU		
	Z0 Impedance:	0.0809 + J 0.1140	Ohms/1000 ft				16.36 + J 23.06	PU		
CBL-0284	B-B7-MDP-M	B-B7-MDP	1	208	1.000	FEET	800	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0167 + J 0.0127	Ohms/1000 ft				0.0386 + J 0.0294	PU		
	Z0 Impedance:	0.0992 + J 0.0679	Ohms/1000 ft				0.2293 + J 0.1569	PU		
CBL-0285	B-B7-MDP	BUS-0327	1	208	25.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				1.70 + J 2.69	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				5.35 + J 6.63	PU		
CBL-0286	B-B7-ATS-EQ	B-B7-EQD	1	208	25.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				1.70 + J 2.69	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				5.35 + J 6.63	PU		
CBL-0287	B-B7-EQD	B-B7-ELEV	1	208	62.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				9.17 + J 7.12	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				28.90 + J 17.54	PU		
CBL-0288	B-B7-EQD	bB-B7-MC1	1	208	40.0	FEET	6	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.5100 + J 0.0685	Ohms/1000 ft				47.15 + J 6.33	PU		
	Z0 Impedance:	1.61 + J 0.1687	Ohms/1000 ft				148.59 + J 15.60	PU		
CBL-0289	B-B7-EQD	B-B7-EQ2	1	208	15.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				3.54 + J 1.85	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				11.14 + J 4.55	PU		

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0290	B-B7-EQD	B-B7-EQ1	1	208	45.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				10.61 + J 5.54	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				33.43 + J 13.65	PU		
CBL-0291	B-B7-EQD	B-B7-MCC-1	1	208	15.0	FEET	4	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft				11.13 + J 2.19	PU		
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft				35.07 + J 5.39	PU		
CBL-0292	B-B7-EQD	B-B7-EQ4	1	208	32.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				9.47 + J 3.99	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				29.84 + J 9.83	PU		
CBL-0293	B-B7-MDP	B-B7-LP3-M	1	208	91.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				13.46 + J 10.45	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				42.42 + J 25.75	PU		
CBL-0294	B-B7-LP3-M	B-B7-LP3	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0295	B-B7-LP3-M	B-B7-LP6-M	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.96 + J 2.30	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				9.32 + J 5.66	PU		
CBL-0296	B-B7-LP6-M	B-B7-LP6	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0297	B-B7-MDP	B-B7-LP5-M	1	208	91.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				13.46 + J 10.45	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				42.42 + J 25.75	PU		
CBL-0298	B-B7-LP5-M	B-B7-LP5	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0299	B-B7-LP5-M	B-B7-LP8-M	1	208	20.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				2.96 + J 2.30 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				9.32 + J 5.66 PU				
CBL-0300	B-B7-LP8-M	B-B7-LP8	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU				
CBL-0301	B-B7-MDP	BUS-0344	1	208	30.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				4.44 + J 3.45 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				13.99 + J 8.49 PU				
CBL-0302	B-B7-ATS-LS	B-B7-LSD-M	1	208	5.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				0.7396 + J 0.5744 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				2.33 + J 1.41 PU				
CBL-0303	B-B7-LSD-M	B-B7-LSD	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU				
CBL-0304	B-B7-LSD	B-B7-LS5	1	208	34.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				10.06 + J 4.24 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				31.70 + J 10.44 PU				
CBL-0305	B-B7-LSD	B-B7-LS4	1	208	67.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				19.82 + J 8.36 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				62.47 + J 20.58 PU				
CBL-0306	B-B7-LSD	B-B7-LS1	1	208	60.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				17.75 + J 7.49 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				55.94 + J 18.43 PU				
CBL-0307	B-B7-LSD	B-B7-LS2	1	208	20.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				9.34 + J 2.70 PU				
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				29.43 + J 6.66 PU				

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0308	B-B7-MDP	B-B7-LP4-M	1	208	42.0	FEET	250	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft				5.36 + J 4.81 PU				
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft				16.88 + J 11.83 PU				
CBL-0309	B-B7-LP4-M	B-B7-LP4	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type:		Epoxy		Insulation Class:		Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU				
CBL-0310	B-B7-LP4-M	B-B7-LP7-M	1	208	20.0	FEET	250	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft				2.55 + J 2.29 PU				
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft				8.04 + J 5.64 PU				
CBL-0311	B-B7-LP7-M	B-B7-LP7	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type:		Epoxy		Insulation Class:		Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU				
CBL-0312	B-B7-MDP	B-B7-SRTLGHT-M	1	208	30.0	FEET	4	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft				22.26 + J 4.38 PU				
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft				70.15 + J 10.79 PU				
CBL-0313	B-B7-SRTLGHT-M	B-B7-STRT LGHT	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type:		Epoxy		Insulation Class:		Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU				
CBL-0314	B-B7-MDP	B-B7-LP2-M	1	208	42.0	FEET	250	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft				5.36 + J 4.81 PU				
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft				16.88 + J 11.83 PU				
CBL-0315	B-B7-LP2-M	B-B7-LP2	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type:		Epoxy		Insulation Class:		Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU				
CBL-0316	B-B7-MDP	BUS-0360	1	208	100.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				29.59 + J 12.48 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				93.24 + J 30.72 PU				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0317	B-B7-MDP	B-B7-MCC-2	1	208	15.0	FEET	4	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft		11.13 + J 2.19	PU			
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft		35.07 + J 5.39	PU			
CBL-0318	B-T-B8-SEC	B-B8-208V-MAIN	2	208	30.0	FEET	750	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0216 + J 0.0445	Ohms/1000 ft		0.7489 + J 1.54	PU			
	Z0 Impedance:	0.0680 + J 0.1095	Ohms/1000 ft		2.36 + J 3.80	PU			
CBL-0319	B-B8-208V-MAIN	B-B8-MAIN BUS	2	208	7.0	FEET	750	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0216 + J 0.0445	Ohms/1000 ft		0.1747 + J 0.3600	PU			
	Z0 Impedance:	0.0680 + J 0.1095	Ohms/1000 ft		0.5501 + J 0.8858	PU			
CBL-0320	B-B8-MAIN BUS	B-B8-MDP-8	2	208	5.0	FEET	750	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0216 + J 0.0445	Ohms/1000 ft		0.1248 + J 0.2571	PU			
	Z0 Impedance:	0.0680 + J 0.1095	Ohms/1000 ft		0.3929 + J 0.6327	PU			
CBL-0321	B-B8-MDP-8	B-B8-L8B	1	208	75.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		35.02 + J 10.14	PU			
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		110.36 + J 24.96	PU			
CBL-0322	B-B8-MDP-8	B-B8 2ND FLR	1	208	50.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		3.40 + J 5.39	PU			
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		10.70 + J 13.26	PU			
CBL-0323	B-B8-MDP-8	B-B8-BS	1	208	140.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		65.37 + J 18.93	PU			
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		206.00 + J 46.60	PU			
CBL-0324	B-B8-MDP-8	B-B8-PNL-PK	1	208	26.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft		4.84 + J 3.12	PU			
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft		15.25 + J 7.68	PU			
CBL-0325	B-B8-MDP-8	B-B8-LB1	1	208	130.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		19.23 + J 14.93	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		60.61 + J 36.78	PU			

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0326	B-B8-LB1	B-B8-LB2	1	208	15.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.22 + J 1.72	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				6.99 + J 4.24	PU	
CBL-0327	B-B8-MAIN BUS	B-B8-PP1-M	2	208	15.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				1.11 + J 0.8616	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				3.50 + J 2.12	PU	
CBL-0328	B-B8-PP1-M	B-B8-PP1	1	208	1.000	FEET	600	Copper	
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0202 + J 0.0170	Ohms/1000 ft				0.0467 + J 0.0393	PU	
	Z0 Impedance:	0.1201 + J 0.0910	Ohms/1000 ft				0.2776 + J 0.2103	PU	
CBL-0329	B-B8-MAIN BUS	B-B8-SYLV	1	208	20.0	FEET	400	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				1.65 + J 2.27	PU	
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				5.19 + J 5.58	PU	
CBL-0330	B-B8-SYLV	BUS-0375	1	208	5.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				0.9303 + J 0.5998	PU	
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				2.93 + J 1.48	PU	
CBL-0331	B-B8-SYLV	BUS-0376	1	208	6.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				1.12 + J 0.7198	PU	
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				3.52 + J 1.77	PU	
CBL-0332	B-T-B8-2-SEC	B-B8-GE BKR	1	480	45.0	FEET	350	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0378 + J 0.0491	Ohms/1000 ft				0.7383 + J 0.9590	PU	
	Z0 Impedance:	0.1191 + J 0.1209	Ohms/1000 ft				2.33 + J 2.36	PU	
CBL-0333	B-B8-GE BKR	BUS-0380	1	480	8.0	FEET	350	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0378 + J 0.0491	Ohms/1000 ft				0.1313 + J 0.1705	PU	
	Z0 Impedance:	0.1191 + J 0.1209	Ohms/1000 ft				0.4135 + J 0.4198	PU	
CBL-0334	B-B8-480V ATS	B-B8-480V PNL	1	480	10.0	FEET	350	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0378 + J 0.0491	Ohms/1000 ft				0.1641 + J 0.2131	PU	
	Z0 Impedance:	0.1191 + J 0.1209	Ohms/1000 ft				0.5169 + J 0.5247	PU	

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0335	B-B8-480V PNL	B-B8-FLEXPMACH	1	480	85.0 FEET	8	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.8110 + J 0.0754 Ohms/1000 ft				29.92 + J 2.78 PU		
	Z0 Impedance: 2.56 + J 0.1856 Ohms/1000 ft				94.29 + J 6.85 PU		
CBL-0336	B-B8-480V PNL	B-B8 HYDRO ELV	1	480	150.0 FEET	4	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft				20.90 + J 4.11 PU		
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft				65.86 + J 10.13 PU		
CBL-0337	B-B8-480V PNL	B-B8-TXMR PRI	1	480	7.0 FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0805 + J 0.0397 Ohms/1000 ft				0.2446 + J 0.1206 PU		
	Z0 Impedance: 0.2537 + J 0.0978 Ohms/1000 ft				0.7708 + J 0.2971 PU		
CBL-0338	B-B8-TXMR SEC	B-B8-CMOP	1	208	50.0 FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft				9.30 + J 6.00 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft				29.32 + J 14.77 PU		
CBL-0339	B-B8-TXMR SEC	B-B8-FDR	1	208	25.0 FEET	350	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft				2.18 + J 2.84 PU		
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft				6.88 + J 6.99 PU		
CBL-0340	B-B8-FDR	B-B8-J-BOX	1	208	30.0 FEET	350	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft				2.62 + J 3.40 PU		
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft				8.26 + J 8.38 PU		
CBL-0341	B-B8-480V PNL	B-B8-COMP	1	480	120.0 FEET	8	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.8110 + J 0.0754 Ohms/1000 ft				42.24 + J 3.93 PU		
	Z0 Impedance: 2.56 + J 0.1856 Ohms/1000 ft				133.12 + J 9.67 PU		
CBL-0342	B-T-B9-SEC	B-B9-MAIN	2	208	40.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				1.36 + J 2.15 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				4.28 + J 5.30 PU		
CBL-0343	B-B9-MAIN	B-B9-MDP	2	208	20.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				0.6795 + J 1.08 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				2.14 + J 2.65 PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0344	B-B9-MDP	B-B9-*PNLZZ	1	208	50.0	FEET	750	Aluminum	
	Duct Material: Magnetic		Insulation Type:		XLPE		Insulation Class:		USE-2
	+/- Impedance: 0.0329 + J 0.0377 Ohms/1000 ft				3.80 + J 4.36 PU				
	Z0 Impedance: 0.0750 + J 0.1085 Ohms/1000 ft				8.67 + J 12.54 PU				
CBL-0345	B-B9-MDP	B-B9-*PNLYY	1	208	50.0	FEET	1/0	Aluminum	
	Duct Material: Magnetic		Insulation Type:		XLPE		Insulation Class:		USE-2
	+/- Impedance: 0.2001 + J 0.0434 Ohms/1000 ft				23.13 + J 5.02 PU				
	Z0 Impedance: 0.4271 + J 0.1246 Ohms/1000 ft				49.36 + J 14.40 PU				
CBL-0346	B-B9-MDP	B-B9-*PNLXX	1	208	50.0	FEET	2/0	Aluminum	
	Duct Material: Magnetic		Insulation Type:		XLPE		Insulation Class:		USE-2
	+/- Impedance: 0.1585 + J 0.0421 Ohms/1000 ft				18.32 + J 4.87 PU				
	Z0 Impedance: 0.3421 + J 0.1209 Ohms/1000 ft				39.54 + J 13.97 PU				
CBL-0347	B-B9-MDP	B-B9-L91A-M	1	208	225.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft				53.05 + J 27.72 PU				
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft				167.15 + J 68.23 PU				
CBL-0348	B-B9-L91A-M	B-B9-L91A	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type:		Epoxy		Insulation Class:		Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU				
CBL-0349	B-B9-MDP	B-B9-L9A	1	208	100.0	FEET	4/0	Aluminum	
	Duct Material: Magnetic		Insulation Type:		XLPE		Insulation Class:		USE-2
	+/- Impedance: 0.1016 + J 0.0401 Ohms/1000 ft				23.48 + J 9.27 PU				
	Z0 Impedance: 0.2230 + J 0.1152 Ohms/1000 ft				51.54 + J 26.63 PU				
CBL-0351	B-B9-MDP	B-B9-L9B	1	208	30.0	FEET	4/0	Aluminum	
	Duct Material: Magnetic		Insulation Type:		XLPE		Insulation Class:		USE-2
	+/- Impedance: 0.1016 + J 0.0401 Ohms/1000 ft				7.05 + J 2.78 PU				
	Z0 Impedance: 0.2230 + J 0.1152 Ohms/1000 ft				15.46 + J 7.99 PU				
CBL-0352	B-B9-MDP	B-B9-L92	1	208	95.0	FEET	1/0	Aluminum	
	Duct Material: Magnetic		Insulation Type:		XLPE		Insulation Class:		USE-2
	+/- Impedance: 0.2001 + J 0.0434 Ohms/1000 ft				43.94 + J 9.53 PU				
	Z0 Impedance: 0.4271 + J 0.1246 Ohms/1000 ft				93.78 + J 27.36 PU				
CBL-0353	B-B9-MDP	B-B9-STRT LGHT	1	208	30.0	FEET	6	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.5100 + J 0.0685 Ohms/1000 ft				35.36 + J 4.75 PU				
	Z0 Impedance: 1.61 + J 0.1687 Ohms/1000 ft				111.45 + J 11.70 PU				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0354	B-B9-MDP	B-B9-TAP	1	208	20.0 FEET	4/0	Aluminum
	Duct Material: Magnetic		Insulation Type: XLPE			Insulation Class:	USE-2
	+/- Impedance: 0.1016 + J 0.0401 Ohms/1000 ft			4.70 + J 1.85 PU			
	Z0 Impedance: 0.2230 + J 0.1152 Ohms/1000 ft			10.31 + J 5.33 PU			
CBL-0355	B-B9-TAP	B-B9-LPS	1	208	60.0 FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft			28.01 + J 8.11 PU			
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft			88.29 + J 19.97 PU			
CBL-0356	B-B9-TAP	B-B9-LPN	1	208	225.0 FEET	1	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1600 + J 0.0570 Ohms/1000 ft			83.21 + J 29.64 PU			
	Z0 Impedance: 0.5042 + J 0.1403 Ohms/1000 ft			262.22 + J 72.96 PU			
CBL-0357	B-B9-MDP	B-B9-ATS BKR	1	208	12.0 FEET	400	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0356 + J 0.0490 Ohms/1000 ft			0.9874 + J 1.36 PU			
	Z0 Impedance: 0.1122 + J 0.1206 Ohms/1000 ft			3.11 + J 3.35 PU			
CBL-0358	B-B9-ATS BKR	B-B9-EM	1	208	4.0 FEET	250	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft			0.5104 + J 0.4577 PU			
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft			1.61 + J 1.13 PU			
CBL-0359	B-T-B10-SEC	B-B10 DISC	1	208	20.0 FEET	250	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft			2.55 + J 2.29 PU			
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft			8.04 + J 5.64 PU			
CBL-0360	B-B10 DISC	B-B10-MDP	1	208	25.0 FEET	250	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft			3.19 + J 2.86 PU			
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft			10.05 + J 7.04 PU			
CBL-0361	B-T-B12-SEC	B-B12-MAP-M	1	208	45.0 FEET	400	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0356 + J 0.0490 Ohms/1000 ft			3.70 + J 5.10 PU			
	Z0 Impedance: 0.1122 + J 0.1206 Ohms/1000 ft			11.67 + J 12.54 PU			
CBL-0362	B-B12-MAP-M	B-B12-MDP	1	208	1.000 FEET	400	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft			0.0673 + J 0.0696 PU			
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft			0.3999 + J 0.3724 PU			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0363	B-B13-TXMR SEC	B-B13-MDP-M	1	240	60.0	FEET	400	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				3.71 + J 5.10	PU		
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				11.69 + J 12.56	PU		
CBL-0364	B-B13-MDP-M	B-B13-MDP	1	240	1.000	FEET	1000	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft				0.0247 + J 0.0115	PU		
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft				0.1465 + J 0.0613	PU		
CBL-0365	B-B13-MDP	B-B13-GARAGE	1	240	150.0	FEET	3/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				20.96 + J 13.52	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				66.07 + J 33.28	PU		
CBL-0366	B-B13-MDP	B-B13-MGR H16	1	240	420.0	FEET	3/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				58.70 + J 37.84	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				184.99 + J 93.19	PU		
CBL-0367	B-B13-MDP	B-B13-APT-15	1	240	270.0	FEET	600	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0257 + J 0.0463	Ohms/1000 ft				12.05 + J 21.70	PU		
	Z0 Impedance:	0.0809 + J 0.1140	Ohms/1000 ft				37.92 + J 53.44	PU		
CBL-0368	B-B13-MDP	B-B13-APT-14	1	240	135.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				6.89 + J 10.92	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				21.70 + J 26.88	PU		
CBL-0369	B-B13-MDP	B-B13-APT-13	1	240	50.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				11.11 + J 4.69	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				35.02 + J 11.54	PU		
CBL-0370	B-B13-MDP	B-B13-UNKNOWN	1	240	50.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				11.11 + J 4.69	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				35.02 + J 11.54	PU		
CBL-0371	B-T-B17-SEC	B-B17-MAIN	2	208	40.0	FEET	300	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0464 + J 0.0493	Ohms/1000 ft				2.14 + J 2.28	PU		
	Z0 Impedance:	0.1462 + J 0.1214	Ohms/1000 ft				6.76 + J 5.61	PU		

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0372	B-B17-MAIN	B-B17-EMAIN	1	208	3.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						0.8876 + J 0.3744 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						2.80 + J 0.9216 PU		
CBL-0373	B-B17-MAIN	B-B17-DP	2	208	85.0	FEET	300	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0464 + J 0.0493 Ohms/1000 ft						4.56 + J 4.84 PU		
	Z0 Impedance: 0.1462 + J 0.1214 Ohms/1000 ft						14.36 + J 11.93 PU		
CBL-0374	B-B17-ATS	B-B17-EMERG	1	208	4.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						1.18 + J 0.4993 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						3.73 + J 1.23 PU		
CBL-0375	B-B17-EMERG	B-B17-NEB2	1	208	30.0	FEET	4	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft						22.26 + J 4.38 PU		
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft						70.15 + J 10.79 PU		
CBL-0376	B-B17-EMERG	B-B17-NEB1	1	208	90.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft						42.02 + J 12.17 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft						132.43 + J 29.96 PU		
CBL-0377	B-B17-EMERG	B-B17-ANIMALRM	1	208	75.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft						35.02 + J 10.14 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft						110.36 + J 24.96 PU		
CBL-0378	B-B17-DP	B-B17-NP11	1	208	20.0	FEET	6	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.5100 + J 0.0685 Ohms/1000 ft						23.58 + J 3.17 PU		
	Z0 Impedance: 1.61 + J 0.1687 Ohms/1000 ft						74.30 + J 7.80 PU		
CBL-0379	B-B17-DP	B-B17-NP21	1	208	20.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft						9.34 + J 2.70 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft						29.43 + J 6.66 PU		
CBL-0380	B-B17-DP	B-B17-ACB	1	208	20.0	FEET	4	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft						14.84 + J 2.92 PU		
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft						46.76 + J 7.19 PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0381	B-B17-DP	B-B17-AC1	1	208	20.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		9.34 + J	2.70 PU			
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		29.43 + J	6.66 PU			
CBL-0382	B-B17-DP	B-B17-NPA1	1	208	20.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		9.34 + J	2.70 PU			
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		29.43 + J	6.66 PU			
CBL-0383	B-B17-DP	B-B17-NP12	1	208	20.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft		3.72 + J	2.40 PU			
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft		11.73 + J	5.91 PU			
CBL-0384	B-B17-DP	B-B17-A/C	1	208	20.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		2.96 + J	2.30 PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		9.32 + J	5.66 PU			
CBL-0385	B-B17-DP	B-B17-NPB2	1	208	20.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		9.34 + J	2.70 PU			
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		29.43 + J	6.66 PU			
CBL-0386	B-B17-DP	B-B17-A/C-2	1	208	20.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		9.34 + J	2.70 PU			
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		29.43 + J	6.66 PU			
CBL-0387	B-B17-DP	B-B17-NP22	1	208	20.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		9.34 + J	2.70 PU			
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		29.43 + J	6.66 PU			
CBL-0388	B-B17-DP	B-B17-NPB1	1	208	20.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		4.72 + J	2.46 PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		14.86 + J	6.07 PU			
CBL-0390	B-T-B18-SEC	B-B18-NMDP-M	2	208	35.0	FEET	400	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft		1.44 + J	1.98 PU			
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft		4.54 + J	4.88 PU			

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0391	B-B18-NMDP-M	B-B18-NMDP	1	208	1.000	FEET	600	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0202 + J 0.0170 Ohms/1000 ft						0.0467 + J 0.0393 PU		
	Z0 Impedance: 0.1201 + J 0.0910 Ohms/1000 ft						0.2776 + J 0.2103 PU		
CBL-0392	B-B18-NMDP	B-B18-NP11	1	208	25.0	FEET	4	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft						18.55 + J 3.65 PU		
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft						58.46 + J 8.99 PU		
CBL-0393	B-B18-NMDP	B-B18-AC1	1	208	25.0	FEET	4	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft						18.55 + J 3.65 PU		
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft						58.46 + J 8.99 PU		
CBL-0394	B-B18-NMDP	B-B18-NCP	1	208	8.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft						3.74 + J 1.08 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft						11.77 + J 2.66 PU		
CBL-0395	B-B18-NMDP	B-B18-NP22	1	208	30.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						8.88 + J 3.74 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						27.97 + J 9.22 PU		
CBL-0396	B-B18-NMDP	B-B18-NP23	1	208	25.0	FEET	3/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft						4.65 + J 3.00 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft						14.66 + J 7.38 PU		
CBL-0397	B-B18-NMDP	B-B18-NP12	1	208	25.0	FEET	4	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft						18.55 + J 3.65 PU		
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft						58.46 + J 8.99 PU		
CBL-0398	B-B18-NMDP	B-B18-NP21	1	208	20.0	FEET	4	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft						14.84 + J 2.92 PU		
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft						46.76 + J 7.19 PU		
CBL-0399	B-B18-NMDP	BUS-0452	1	208	25.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft						11.67 + J 3.38 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft						36.79 + J 8.32 PU		

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0400	B-B18-ATS-EMRG	B-B18-TAP BOX	1	208	8.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				2.37 + J 0.9985	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				7.46 + J 2.46	PU		
CBL-0401	B-B18-TAP BOX	B-B18-2ND-FL-M	1	208	3.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				1.40 + J 0.4056	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				4.41 + J 0.9985	PU		
CBL-0402	B-B18-2ND-FL-M	B-B18-2NDFL	1	208	40.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				18.68 + J 5.41	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				58.86 + J 13.31	PU		
CBL-0403	B-B18-TAP BOX	B-B18-1STFL-M	1	208	3.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				1.40 + J 0.4056	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				4.41 + J 0.9985	PU		
CBL-0404	B-B18-1STFL-M	B-B18-1STFL	1	208	20.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				9.34 + J 2.70	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				29.43 + J 6.66	PU		
CBL-0405	B-B18-TAP BOX	B-B18-EMERG-M	1	208	4.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				1.87 + J 0.5409	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				5.89 + J 1.33	PU		
CBL-0406	B-B18-EMERG-M	B-B18-EMERG	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0407	B-B18-NMDP	B-B18-AC2	1	208	25.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				5.89 + J 3.08	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				18.57 + J 7.58	PU		
CBL-0408	B-B18-NMDP	B-B18-STRT LHT	1	208	35.0	FEET	6	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.5100 + J 0.0685	Ohms/1000 ft				41.26 + J 5.54	PU		
	Z0 Impedance:	1.61 + J 0.1687	Ohms/1000 ft				130.02 + J 13.65	PU		

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0410	B-T-B19-SEC	B-B19-MDP1-M	3	208	40.0	FEET	500	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft						0.9061 + J 1.44 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft						2.85 + J 3.53 PU		
CBL-0411	B-B19-MDP1-M	B-B19-MDP1	1	208	1.000	FEET	1200	Copper	
	Duct Material: Busway			Insulation Type:			Epoxy	Insulation Class:	Class B
	+/- Impedance: 0.0111 + J 0.0052 Ohms/1000 ft						0.0257 + J 0.0120 PU		
	Z0 Impedance: 0.0660 + J 0.0278 Ohms/1000 ft						0.1526 + J 0.0643 PU		
CBL-0412	B-B19-MDP1	B-B19-PS	1	208	100.0	FEET	2	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft						46.69 + J 13.52 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft						147.14 + J 33.28 PU		
CBL-0413	B-B19-MDP1	B-B19-L1	1	208	200.0	FEET	2	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft						93.38 + J 27.04 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft						294.29 + J 66.57 PU		
CBL-0414	B-B19-MDP1	B-B19-B1	1	208	15.0	FEET	1/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						4.44 + J 1.87 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						13.99 + J 4.61 PU		
CBL-0415	B-B19-MDP1	B-B19-L2	1	208	85.0	FEET	1/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						25.15 + J 10.61 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						79.26 + J 26.11 PU		
CBL-0416	B-B19-MDP1	B-B19-MDPA	1	208	100.0	FEET	500	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft						6.80 + J 10.77 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft						21.40 + J 26.51 PU		
CBL-0417	B-B19-MDP1	B-B19-P1	1	208	100.0	FEET	500	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft						6.80 + J 10.77 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft						21.40 + J 26.51 PU		
CBL-0418	B-B19-MDP1	B-B19-P4	1	208	15.0	FEET	3/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft						2.79 + J 1.80 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft						8.80 + J 4.43 PU		

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0419	B-B19-MDP1	B-B19-P2	1	208	85.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				15.82 + J 10.20	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				49.84 + J 25.11	PU		
CBL-0420	B-B19-MDPA	B-B19-P6	1	208	150.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				70.04 + J 20.28	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				220.71 + J 49.93	PU		
CBL-0421	B-T-B19-SEC	B-B19-MDP2-M	2	208	35.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				1.19 + J 1.88	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				3.75 + J 4.64	PU		
CBL-0422	B-B19-MDP2-M	B-B19-MDP2	2	208	4.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.1359 + J 0.2154	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				0.4281 + J 0.5302	PU		
CBL-0423	B-B19-MDP2	B-B21-P2	1	208	175.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				32.56 + J 20.99	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				102.62 + J 51.69	PU		
CBL-0424	B-B19-MDP2	B-B19-200A PNL	1	208	5.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				0.9303 + J 0.5998	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				2.93 + J 1.48	PU		
CBL-0425	B-B21-P2	B-B21-P1	1	208	80.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				37.35 + J 10.82	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				117.71 + J 26.63	PU		
CBL-0426	B-T-B22-SEC	B-B22-MDP-M	1	480	150.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				1.91 + J 3.03	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				6.03 + J 7.47	PU		
CBL-0427	B-B22-MDP-M	B-B22-MDP	1	480	1.000	FEET	800	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0167 + J 0.0127	Ohms/1000 ft				0.0072 + J 0.0055	PU		
	Z0 Impedance:	0.0992 + J 0.0679	Ohms/1000 ft				0.0431 + J 0.0295	PU		

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0428	B-B22-MDP	BUS-0481	1	480	50.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		0.6380 + J 1.01 PU				
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		2.01 + J 2.49 PU				
CBL-0429	B-B22-ATS-EMER	B-B22-EMERG-M	1	480	40.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		0.5104 + J 0.8090 PU				
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		1.61 + J 1.99 PU				
CBL-0430	B-B22-EMERG-M	B-B22-EMERG	1	480	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:			Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0184 + J 0.0140 PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.1097 + J 0.0750 PU				
CBL-0431	B-B22-EMERG	B-B22-P1	1	480	25.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		0.6944 + J 0.5393 PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		2.19 + J 1.33 PU				
CBL-0432	B-B22-EMERG	B-B22-P2	1	480	25.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		0.6944 + J 0.5393 PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		2.19 + J 1.33 PU				
CBL-0433	B-B22-EMERG	B-B22-T2-PRI	1	480	10.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		0.5556 + J 0.2344 PU				
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		1.75 + J 0.5768 PU				
CBL-0434	B-B22-T2-SEC	B-B22-L3-M	1	208	15.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		2.22 + J 1.72 PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		6.99 + J 4.24 PU				
CBL-0435	B-B22-L3-M	B-B22-L3	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:			Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0436	B-B22-EMERG	B-B22-T3 PRI	1	480	15.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		0.8333 + J 0.3516 PU				
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		2.63 + J 0.8652 PU				

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0437	B-B22-T22-SEC	B-B22-L2-M	1	208	15.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				2.22 + J 1.72 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				6.99 + J 4.24 PU				
CBL-0438	B-B22-L2-M	B-B22-L2	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU				
CBL-0439	B-B22-EMERG	B-B22-T4-PRI	1	480	15.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				0.8333 + J 0.3516 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				2.63 + J 0.8652 PU				
CBL-0440	B-B22-T4-SEC	B-B22-L1-M	1	208	15.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				2.22 + J 1.72 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				6.99 + J 4.24 PU				
CBL-0441	B-B22-L1-M	B-B22-L1	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU				
CBL-0442	B-B22-MDP	B-B22-T1-PRI	1	480	10.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				0.2778 + J 0.2157 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				0.8754 + J 0.5313 PU				
CBL-0443	B-B22-T1-SEC	B-B22-N1-M	1	208	25.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				1.70 + J 2.69 PU				
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				5.35 + J 6.63 PU				
CBL-0444	B-B22-N1-M	B-B22-N1	1	208	1.000	FEET	400	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft				0.0673 + J 0.0696 PU				
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft				0.3999 + J 0.3724 PU				
CBL-0445	B-T-B33-SEC	B-B33-MDP-M	1	208	80.0	FEET	250	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft				10.21 + J 9.15 PU				
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft				32.16 + J 22.54 PU				

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0446	B-B33-MDP-M	B-B33-MDP	1	208	1.000 FEET	400	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft			0.0673 + J 0.0696 PU			
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft			0.3999 + J 0.3724 PU			
CBL-0448	B-T-B60-SEC	B-B60-MDP-M	1	208	25.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft			1.70 + J 2.69 PU			
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft			5.35 + J 6.63 PU			
CBL-0449	B-B60-MDP-M	B-B60-MDP	1	208	1.000 FEET	400	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft			0.0673 + J 0.0696 PU			
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft			0.3999 + J 0.3724 PU			
CBL-0450	B-T-B61-SEC	B-B61-MDP-M	2	208	35.0 FEET	600	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0257 + J 0.0463 Ohms/1000 ft			1.04 + J 1.87 PU			
	Z0 Impedance: 0.0809 + J 0.1140 Ohms/1000 ft			3.27 + J 4.61 PU			
CBL-0451	B-B61-MDP-M	B-B61-MDP	1	208	1.000 FEET	800	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0167 + J 0.0127 Ohms/1000 ft			0.0386 + J 0.0294 PU			
	Z0 Impedance: 0.0992 + J 0.0679 Ohms/1000 ft			0.2293 + J 0.1569 PU			
CBL-0452	B-B61-MDP	B-B61-MCC	1	208	30.0 FEET	4	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft			22.26 + J 4.38 PU			
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft			70.15 + J 10.79 PU			
CBL-0453	B-B61-MDP	B-B61 STRT LGH	1	208	30.0 FEET	4	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft			22.26 + J 4.38 PU			
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft			70.15 + J 10.79 PU			
CBL-0454	B-B61-MDP	B-B61-LP1	1	208	160.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft			47.34 + J 19.97 PU			
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft			149.19 + J 49.15 PU			
CBL-0455	B-B61-MDP	B-B61-LP3	1	208	90.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft			13.31 + J 10.34 PU			
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft			41.96 + J 25.46 PU			

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0456	B-B61-MDP	B-B61-LP5	1	208	40.0	FEET	4	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft				29.68 + J 5.84	PU		
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft				93.53 + J 14.39	PU		
CBL-0457	B-B61-MDP	B-B61-DP	1	208	30.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				2.04 + J 3.23	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				6.42 + J 7.95	PU		
CBL-0458	B-B61-MDP	B-B61-LP2	1	208	160.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				47.34 + J 19.97	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				149.19 + J 49.15	PU		
CBL-0459	B-B61-MDP	B-B61-LP4	1	208	60.0	FEET	250	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft				7.66 + J 6.86	PU		
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft				24.12 + J 16.91	PU		
CBL-0460	B-B61-MDP	BUS-0518	1	208	25.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				3.70 + J 2.87	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				11.66 + J 7.07	PU		
CBL-0461	B-B61-MDP	BUS-0520	1	208	30.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				2.04 + J 3.23	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				6.42 + J 7.95	PU		
CBL-0462	B-B61-ATS-LSD	B-B61-LSD-M	1	208	7.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				1.04 + J 0.8041	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				3.26 + J 1.98	PU		
CBL-0463	B-B61-LSD-M	B-B61-LSD	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0464	B-B61-LSD	B-B61-LS3	1	208	90.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				26.63 + J 11.23	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				83.92 + J 27.65	PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0465	B-B61-LSD	B-B61-LS4	1	208	70.0	FEET	1/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						20.71 + J 8.74 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						65.27 + J 21.50 PU		
CBL-0466	B-B61-LSD	B-B61-LS5	1	208	90.0	FEET	1/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						26.63 + J 11.23 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						83.92 + J 27.65 PU		
CBL-0467	B-B61-LSD	B-B61-KITCHEN	1	208	40.0	FEET	4/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft						5.92 + J 4.60 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft						18.65 + J 11.32 PU		
CBL-0468	B-B61-LSD	B-B61-LS1	1	208	70.0	FEET	1/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						20.71 + J 8.74 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						65.27 + J 21.50 PU		
CBL-0469	B-B61-LSD	B-B61-LS2	1	208	26.0	FEET	2	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft						12.14 + J 3.52 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft						38.26 + J 8.65 PU		
CBL-0470	B-B61-ATS-EQD	B-B61-EQD	1	208	15.0	FEET	500	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft						1.02 + J 1.62 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft						3.21 + J 3.98 PU		
CBL-0472	B-B61-EQD	B-B61-ELEV	1	208	70.0	FEET	4/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft						10.36 + J 8.04 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft						32.63 + J 19.80 PU		
CBL-0473	B-B61-EQD	B-B61-EQ1	1	208	50.0	FEET	2/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						11.79 + J 6.16 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						37.14 + J 15.16 PU		
CBL-0474	B-B61-EQD	B-B61-EQ4	1	208	45.0	FEET	1/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						13.31 + J 5.62 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						41.96 + J 13.82 PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0475	B-B61-EQD	B-B61-EQ2	1	208	15.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				3.54 + J 1.85	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				11.14 + J 4.55	PU		
CBL-0476	B-B61-EQD	B-B61-EQA	1	208	4.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				0.5917 + J 0.4595	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				1.86 + J 1.13	PU		
CBL-0477	B-B61-EQA	B-B61-COMP RM	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.96 + J 2.30	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				9.32 + J 5.66	PU		
CBL-0478	B-T-B62-SEC	B-B62-MDP-M	3	208	30.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.6795 + J 1.08	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				2.14 + J 2.65	PU		
CBL-0479	B-B62-MDP-M	B-B62-MDP	1	208	1.000	FEET	1200	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0111 + J 0.0052	Ohms/1000 ft				0.0257 + J 0.0120	PU		
	Z0 Impedance:	0.0660 + J 0.0278	Ohms/1000 ft				0.1526 + J 0.0643	PU		
CBL-0480	B-B62-MDP	B-B62-OT	1	208	35.0	FEET	1	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				12.94 + J 4.61	PU		
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				40.79 + J 11.35	PU		
CBL-0481	B-B62-MDP	B-B62-BP	1	208	35.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				10.36 + J 4.37	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				32.63 + J 10.75	PU		
CBL-0482	B-B62-MDP	B-B62-STRT LGT	1	208	25.0	FEET	4	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft				18.55 + J 3.65	PU		
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft				58.46 + J 8.99	PU		
CBL-0483	B-B62-MDP	B-B62-A	1	208	40.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				7.44 + J 4.80	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				23.46 + J 11.82	PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0484	B-B62-MDP	B-B62-LP3	1	208	44.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				6.51 + J 5.05	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				20.51 + J 12.45	PU	
CBL-0485	B-B62-MDP	BUS-0546	1	208	20.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.96 + J 2.30	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				9.32 + J 5.66	PU	
CBL-0486	B-B62-MDP	B-B62-BL	1	208	45.0	FEET	1	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				16.64 + J 5.93	PU	
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				52.44 + J 14.59	PU	
CBL-0487	B-B62-MDP	B-B62-KP	1	208	40.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				9.43 + J 4.93	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				29.72 + J 12.13	PU	
CBL-0488	B-B62-MDP	B-B62-LP1	1	208	32.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				9.47 + J 3.99	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				29.84 + J 9.83	PU	
CBL-0489	B-B62-MDP	B-B62-LP2	1	208	40.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				9.43 + J 4.93	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				29.72 + J 12.13	PU	
CBL-0490	B-B62-MDP	B-B62-B	1	208	35.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				6.51 + J 4.20	PU	
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				20.52 + J 10.34	PU	
CBL-0491	B-B62-MDP	B-B62-LP4	1	208	40.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				5.92 + J 4.60	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				18.65 + J 11.32	PU	
CBL-0492	B-B62-MDP	BUS-0554	1	208	20.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.96 + J 2.30	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				9.32 + J 5.66	PU	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0493	B-B62-ATS-EQD	B-B62-EQD	1	208	15.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.22 + J 1.72	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				6.99 + J 4.24	PU		
CBL-0494	B-B62-EQD	B-B62-ELEV-1	1	208	45.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				10.61 + J 5.54	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				33.43 + J 13.65	PU		
CBL-0495	B-B62-EQD	B-B62-ATTC PNL	1	208	45.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				10.61 + J 5.54	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				33.43 + J 13.65	PU		
CBL-0496	B-B62-EQD	B-B62-EQ	1	208	5.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				2.33 + J 0.6761	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				7.36 + J 1.66	PU		
CBL-0497	B-B62-EQD	B-B62-ELEV-2	1	208	45.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				10.61 + J 5.54	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				33.43 + J 13.65	PU		
CBL-0498	B-B62-EQD	B-B62-PAD RM	1	208	16.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				4.73 + J 2.00	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				14.92 + J 4.91	PU		
CBL-0499	B-B62-ATS-LSD	B-B62-LSD-M	1	208	15.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.22 + J 1.72	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				6.99 + J 4.24	PU		
CBL-0500	B-B62-LSD-M	B-B62-LSD	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0501	B-B62-LSD	B-B62-LS3	1	208	58.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				17.16 + J 7.24	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				54.08 + J 17.82	PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0502	B-B62-LSD	B-B62-LS4	1	208	32.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				9.47 + J 3.99 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				29.84 + J 9.83 PU				
CBL-0503	B-B62-LSD	B-B62-LS1	1	208	54.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				25.21 + J 7.30 PU				
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				79.46 + J 17.97 PU				
CBL-0504	B-B62-LSD	B-B62-LS2	1	208	24.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				11.21 + J 3.25 PU				
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				35.31 + J 7.99 PU				
CBL-0505	B-T-B70-SEC	B-B70-MDP-M	2	208	65.0	FEET	600	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0257 + J 0.0463 Ohms/1000 ft				1.93 + J 3.48 PU				
	Z0 Impedance: 0.0809 + J 0.1140 Ohms/1000 ft				6.08 + J 8.56 PU				
CBL-0506	B-T-B70-SEC	B-B70-FP-TAP	1	208	35.0	FEET	600	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0257 + J 0.0463 Ohms/1000 ft				2.08 + J 3.75 PU				
	Z0 Impedance: 0.0809 + J 0.1140 Ohms/1000 ft				6.54 + J 9.22 PU				
CBL-0507	B-B70-FP-TAP	B-B70-FPMP M	1	208	15.0	FEET	350	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0378 + J 0.0373 Ohms/1000 ft				1.31 + J 1.29 PU				
	Z0 Impedance: 0.1191 + J 0.0918 Ohms/1000 ft				4.13 + J 3.18 PU				
CBL-0508	B-B70-FPMP M	B-B70-FIRE PMP	1	208	60.0	FEET	6	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.5100 + J 0.0685 Ohms/1000 ft				70.73 + J 9.50 PU				
	Z0 Impedance: 1.61 + J 0.1687 Ohms/1000 ft				222.89 + J 23.40 PU				
CBL-0509	B-B70-MDP-M	B-B70-MDP	1	208	1.000	FEET	800	Copper	
	Duct Material: Busway		Insulation Type:		Epoxy		Insulation Class:		Class B
	+/- Impedance: 0.0167 + J 0.0127 Ohms/1000 ft				0.0386 + J 0.0294 PU				
	Z0 Impedance: 0.0992 + J 0.0679 Ohms/1000 ft				0.2293 + J 0.1569 PU				
CBL-0510	B-B70-MDP	B-B70-STRTLGHT	1	208	30.0	FEET	4	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft				22.26 + J 4.38 PU				
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft				70.15 + J 10.79 PU				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0511	B-B70-MDP	B0B70-LP2	1	208	115.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				34.02 + J 14.35 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				107.23 + J 35.33 PU				
CBL-0512	B-B70-MDP	B-B70-ATTIC	1	208	60.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				17.75 + J 7.49 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				55.94 + J 18.43 PU				
CBL-0513	B-B70-MDP	B-B70-A	1	208	45.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				13.31 + J 5.62 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				41.96 + J 13.82 PU				
CBL-0514	B-B70-MDP	B-B70-K	1	208	35.0	FEET	4	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft				25.97 + J 5.11 PU				
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft				81.84 + J 12.59 PU				
CBL-0515	B-B70-MDP	BUS-0581	1	208	20.0	FEET	250	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft				2.55 + J 2.29 PU				
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft				8.04 + J 5.64 PU				
CBL-0516	B-B70-MDP	B-B70-PP2	1	208	75.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				11.09 + J 8.62 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				34.97 + J 21.22 PU				
CBL-0517	B-B70-MDP	BUS-0582	1	208	15.0	FEET	400	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0356 + J 0.0490 Ohms/1000 ft				1.23 + J 1.70 PU				
	Z0 Impedance: 0.1122 + J 0.1206 Ohms/1000 ft				3.89 + J 4.18 PU				
CBL-0518	B-B70-MDP	B-B70 -BLDG-71	1	208	500.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				233.45 + J 67.61 PU				
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				735.72 + J 166.42 PU				
CBL-0519	B-B70-MDP	B-B70-LP1	1	208	85.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				25.15 + J 10.61 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				79.26 + J 26.11 PU				

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0520	B-B70-MDP	B-B70-LP3	1	208	115.0	FEET	4/0	Copper		
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance: 0.0640 + J	0.0497	Ohms/1000 ft		17.01 + J	13.21	PU			
	Z0 Impedance: 0.2017 + J	0.1224	Ohms/1000 ft		53.61 + J	32.54	PU			
CBL-0521	B-B70-MDP	B-B70-B	1	208	45.0	FEET	1/0	Copper		
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance: 0.1280 + J	0.0540	Ohms/1000 ft		13.31 + J	5.62	PU			
	Z0 Impedance: 0.4034 + J	0.1329	Ohms/1000 ft		41.96 + J	13.82	PU			
CBL-0522	B-B70-MDP	B-B70-LP-4	1	208	160.0	FEET	4/0	Copper		
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance: 0.0640 + J	0.0497	Ohms/1000 ft		23.67 + J	18.38	PU			
	Z0 Impedance: 0.2017 + J	0.1224	Ohms/1000 ft		74.59 + J	45.27	PU			
CBL-0524	B-B70-MDP	B-B70-CHLLR	1	208	200.0	FEET	350	Copper		
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance: 0.0378 + J	0.0491	Ohms/1000 ft		17.47 + J	22.70	PU			
	Z0 Impedance: 0.1191 + J	0.1209	Ohms/1000 ft		55.06 + J	55.89	PU			
CBL-0525	B-B70-MDP	B-B70-PP220	1	208	125.0	FEET	3/0	Copper		
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance: 0.0805 + J	0.0519	Ohms/1000 ft		23.26 + J	15.00	PU			
	Z0 Impedance: 0.2537 + J	0.1278	Ohms/1000 ft		73.30 + J	36.92	PU			
CBL-0526	B-B70-ATS-EQD	B-B70-EQD-M	1	208	8.0	FEET	400	Copper		
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance: 0.0356 + J	0.0490	Ohms/1000 ft		0.6583 + J	0.9061	PU			
	Z0 Impedance: 0.1122 + J	0.1206	Ohms/1000 ft		2.07 + J	2.23	PU			
CBL-0527	B-B70-EQD-M	B-B70-EQD	1	208	1.000	FEET	400	Copper		
	Duct Material: Busway		Insulation Type:		Epoxy		Insulation Class:		Class B	
	+/- Impedance: 0.0291 + J	0.0301	Ohms/1000 ft		0.0673 + J	0.0696	PU			
	Z0 Impedance: 0.1730 + J	0.1611	Ohms/1000 ft		0.3999 + J	0.3724	PU			
CBL-0528	B-B70-EQD	B-B70-EQ1	1	208	85.0	FEET	2/0	Copper		
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance: 0.1020 + J	0.0533	Ohms/1000 ft		20.04 + J	10.47	PU			
	Z0 Impedance: 0.3214 + J	0.1312	Ohms/1000 ft		63.14 + J	25.78	PU			
CBL-0529	B-B70-EQ1	B-B70-EQ3	1	208	15.0	FEET	2/0	Copper		
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance: 0.1020 + J	0.0533	Ohms/1000 ft		3.54 + J	1.85	PU			
	Z0 Impedance: 0.3214 + J	0.1312	Ohms/1000 ft		11.14 + J	4.55	PU			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0530	B-B70-EQ3	B-B70-EQ5	1	208	15.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				3.54 + J 1.85	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				11.14 + J 4.55	PU		
CBL-0531	B-B70-EQD	B-B70-EQ2	1	208	130.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				30.65 + J 16.02	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				96.57 + J 39.42	PU		
CBL-0532	B-B70-EQ2	B-B70-EQ4	1	208	15.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				3.54 + J 1.85	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				11.14 + J 4.55	PU		
CBL-0533	B-B70-EQ4	B-B70-EQ6	1	208	15.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				3.54 + J 1.85	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				11.14 + J 4.55	PU		
CBL-0534	B-B70-LSD	B-B70-LS3	1	208	100.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				29.59 + J 12.48	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				93.24 + J 30.72	PU		
CBL-0535	B-B70-LS3	B-B70-LS5	1	208	15.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				4.44 + J 1.87	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				13.99 + J 4.61	PU		
CBL-0537	B-B70-LSD	B-B70-LS4	1	208	145.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				42.90 + J 18.10	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				135.20 + J 44.54	PU		
CBL-0538	B-B70-LS4	B-B70-LS6	1	208	15.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				4.44 + J 1.87	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				13.99 + J 4.61	PU		
CBL-0540	B-B70-ATS-LSD	B-B70-LSD-M	1	208	8.0	FEET	400	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				0.6583 + J 0.9061	PU		
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				2.07 + J 2.23	PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0541	B-B70-LSD-M	B-B70-LSD	1	208	1.000 FEET	400	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft			0.0673 + J 0.0696 PU			
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft			0.3999 + J 0.3724 PU			
CBL-0542	B-B70-LSD	B-B70-LS1	1	208	85.0 FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft			39.69 + J 11.49 PU			
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft			125.07 + J 28.29 PU			
CBL-0543	B-B70-LSD	B-B70-LS2	1	208	115.0 FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft			53.69 + J 15.55 PU			
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft			169.21 + J 38.28 PU			
CBL-0544	B-B70 GEN-M	B-B70-EM-TAP	1	208	1.000 FEET	400	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft			0.0673 + J 0.0696 PU			
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft			0.3999 + J 0.3724 PU			
CBL-0545	B-B70-GEN	B-B70 GEN-M	1	208	7.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft			0.4757 + J 0.7540 PU			
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft			1.50 + J 1.86 PU			
CBL-0546	B-B70-EM-TAP	BUS-0612	1	208	30.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft			2.04 + J 3.23 PU			
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft			6.42 + J 7.95 PU			
CBL-0547	B-B70-EM-TAP	BUS-0613	1	208	30.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft			4.44 + J 3.45 PU			
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft			13.99 + J 8.49 PU			
CBL-0548	B-B70-EM-TAP	B-B70-FPMP M	1	208	25.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft			1.70 + J 2.69 PU			
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft			5.35 + J 6.63 PU			
CBL-0549	B-B78-MDP-M	B-B78-MDP	1	208	1.000 FEET	4000	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0033 + J 0.0019 Ohms/1000 ft			0.0076 + J 0.0044 PU			
	Z0 Impedance: 0.0196 + J 0.0101 Ohms/1000 ft			0.0453 + J 0.0233 PU			

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE
CBL-0550	B-T-B78-SEC	B-B78-MDP-M	1	208	5.0	FEET	4000	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class: Class B		
	+/- Impedance: 0.0033 + J 0.0019 Ohms/1000 ft				0.0381 + J 0.0220 PU			
	Z0 Impedance: 0.0196 + J 0.0101 Ohms/1000 ft				0.2265 + J 0.1167 PU			
CBL-0551	B-B78-MDP	B-B78-A/C	1	208	280.0	FEET	2/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.1020 + J 0.0407 Ohms/1000 ft				66.01 + J 26.34 PU			
	Z0 Impedance: 0.3214 + J 0.1002 Ohms/1000 ft				208.01 + J 64.85 PU			
CBL-0552	B-B78-MDP	B-B78-ATS TAP	1	208	75.0	FEET	400	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0356 + J 0.0371 Ohms/1000 ft				6.17 + J 6.43 PU			
	Z0 Impedance: 0.1122 + J 0.0913 Ohms/1000 ft				19.45 + J 15.83 PU			
CBL-0553	B-B78-ATS TAP	BUS-0618	1	208	10.0	FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft				1.86 + J 1.20 PU			
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft				5.86 + J 2.95 PU			
CBL-0554	B-B78-ATS TAP	BUS-0620	1	208	25.0	FEET	250	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft				3.19 + J 2.86 PU			
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft				10.05 + J 7.04 PU			
CBL-0555	B-B78-ATSG9578	B-B78-78AE1	1	208	5.0	FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				0.3398 + J 0.5386 PU			
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				1.07 + J 1.33 PU			
CBL-0556	B-B78-ATS-LS1	B-B78-LSD	1	208	5.0	FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				0.7396 + J 0.5744 PU			
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				2.33 + J 1.41 PU			
CBL-0557	B-B78-MDP	B-B78-LP7	1	208	300.0	FEET	350	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0378 + J 0.0373 Ohms/1000 ft				26.21 + J 25.86 PU			
	Z0 Impedance: 0.1191 + J 0.0918 Ohms/1000 ft				82.59 + J 63.66 PU			
CBL-0558	B-B78-LP7	B-B78-LP10	1	208	30.0	FEET	350	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft				2.62 + J 3.40 PU			
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft				8.26 + J 8.38 PU			

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0559	B-B78-LP10	B-B78-LP13	1	208	30.0	FEET	350	Copper	
	Duct Material: Magnetic		Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft						2.62 + J 3.40 PU		
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft						8.26 + J 8.38 PU		
CBL-0561	B-B78-MDP	B-B78-PULM 78B	1	208	75.0	FEET	400	Copper	
	Duct Material: Magnetic		Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance: 0.0356 + J 0.0371 Ohms/1000 ft						6.17 + J 6.43 PU		
	Z0 Impedance: 0.1122 + J 0.0913 Ohms/1000 ft						19.45 + J 15.83 PU		
CBL-0562	B-B78-MDP	B-B78-LP3	1	208	125.0	FEET	250	Copper	
	Duct Material: Magnetic		Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance: 0.0552 + J 0.0379 Ohms/1000 ft						15.95 + J 10.95 PU		
	Z0 Impedance: 0.1739 + J 0.0933 Ohms/1000 ft						50.24 + J 26.96 PU		
CBL-0563	B-B78-LP3	B-B78-LP6	1	208	30.0	FEET	250	Copper	
	Duct Material: Magnetic		Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft						3.83 + J 3.43 PU		
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft						12.06 + J 8.45 PU		
CBL-0564	B-B78-MDP	B-B78-ELEV-1	1	208	75.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0381 Ohms/1000 ft						11.09 + J 6.60 PU		
	Z0 Impedance: 0.2017 + J 0.0938 Ohms/1000 ft						34.97 + J 16.26 PU		
CBL-0565	B-B78-MDP	B-B78-ELEV-2	1	208	75.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0381 Ohms/1000 ft						11.09 + J 6.60 PU		
	Z0 Impedance: 0.2017 + J 0.0938 Ohms/1000 ft						34.97 + J 16.26 PU		
CBL-0566	B-B78-MDP	B-B78-QP	1	208	75.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance: 0.1020 + J 0.0407 Ohms/1000 ft						17.68 + J 7.06 PU		
	Z0 Impedance: 0.3214 + J 0.1002 Ohms/1000 ft						55.72 + J 17.37 PU		
CBL-0567	B-B78-MDP	B-B78-BARBER	1	208	75.0	FEET	6	Copper	
	Duct Material: Magnetic		Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance: 0.5100 + J 0.0525 Ohms/1000 ft						88.41 + J 9.10 PU		
	Z0 Impedance: 1.61 + J 0.1293 Ohms/1000 ft						278.62 + J 22.41 PU		
CBL-0568	B-B78-MDP	B-B78-PHARM AC	1	208	75.0	FEET	6	Copper	
	Duct Material: Magnetic		Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance: 0.5100 + J 0.0525 Ohms/1000 ft						88.41 + J 9.10 PU		
	Z0 Impedance: 1.61 + J 0.1293 Ohms/1000 ft						278.62 + J 22.41 PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0569	B-B78-MDP	B-B78-L10	1	208	300.0	FEET	400	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0356 + J 0.0371 Ohms/1000 ft				24.69 + J 25.73 PU				
	Z0 Impedance: 0.1122 + J 0.0913 Ohms/1000 ft				77.80 + J 63.31 PU				
CBL-0571	B-B78-MDP	BUS-0730	1	208	275.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0349 Ohms/1000 ft				18.69 + J 22.18 PU				
	Z0 Impedance: 0.0926 + J 0.0859 Ohms/1000 ft				58.86 + J 54.60 PU				
CBL-0573	B-B78-MDP	B-B78-MEC-1 AC	1	208	300.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0349 Ohms/1000 ft				20.39 + J 24.20 PU				
	Z0 Impedance: 0.0926 + J 0.0859 Ohms/1000 ft				64.21 + J 59.56 PU				
CBL-0574	B-B78-MDP	B-B78-LP-1	1	208	250.0	FEET	250	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0552 + J 0.0379 Ohms/1000 ft				31.90 + J 21.90 PU				
	Z0 Impedance: 0.1739 + J 0.0933 Ohms/1000 ft				100.49 + J 53.91 PU				
CBL-0575	B-B78-MDP	B-B78-KK	1	208	175.0	FEET	3/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0805 + J 0.0397 Ohms/1000 ft				32.56 + J 16.06 PU				
	Z0 Impedance: 0.2537 + J 0.0978 Ohms/1000 ft				102.62 + J 39.56 PU				
CBL-0576	B-B78-MDP	B-B78-1P	1	208	250.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0381 Ohms/1000 ft				36.98 + J 22.02 PU				
	Z0 Impedance: 0.2017 + J 0.0938 Ohms/1000 ft				116.55 + J 54.20 PU				
CBL-0577	B-B78-MDP	B-B78-FLPNL	1	208	250.0	FEET	3/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0805 + J 0.0397 Ohms/1000 ft				46.52 + J 22.94 PU				
	Z0 Impedance: 0.2537 + J 0.0978 Ohms/1000 ft				146.60 + J 56.51 PU				
CBL-0578	B-B78-MDP	B-B78-PHV	1	208	250.0	FEET	1	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.1600 + J 0.0436 Ohms/1000 ft				92.46 + J 25.19 PU				
	Z0 Impedance: 0.5042 + J 0.1073 Ohms/1000 ft				291.35 + J 62.00 PU				
CBL-0579	B-B78-MDP	B-B78A-PNL-2	1	208	75.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0381 Ohms/1000 ft				11.09 + J 6.60 PU				
	Z0 Impedance: 0.2017 + J 0.0938 Ohms/1000 ft				34.97 + J 16.26 PU				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0580	B-B78-MDP	B-B78-LP-8	1	208	125.0	FEET	350	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0378 + J	0.0373	Ohms/1000 ft		10.92 + J	10.78	PU		
	Z0 Impedance: 0.1191 + J	0.0918	Ohms/1000 ft		34.41 + J	26.52	PU		
CBL-0581	B-B78-MDP	B-B78-MEC2-A/C	1	208	75.0	FEET	300	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0464 + J	0.0377	Ohms/1000 ft		8.04 + J	6.54	PU		
	Z0 Impedance: 0.1462 + J	0.0928	Ohms/1000 ft		25.34 + J	16.09	PU		
CBL-0582	B-B78-MDP	B-B78-LP-2	1	208	125.0	FEET	250	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0552 + J	0.0379	Ohms/1000 ft		15.95 + J	10.95	PU		
	Z0 Impedance: 0.1739 + J	0.0933	Ohms/1000 ft		50.24 + J	26.96	PU		
CBL-0583	B-B78-MDP	B-B78-PNL-330A	1	208	150.0	FEET	300	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0464 + J	0.0377	Ohms/1000 ft		16.09 + J	13.07	PU		
	Z0 Impedance: 0.1462 + J	0.0928	Ohms/1000 ft		50.69 + J	32.17	PU		
CBL-0584	B-B78-MDP	B-B78-PK	1	208	275.0	FEET	250	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0552 + J	0.0379	Ohms/1000 ft		35.09 + J	24.09	PU		
	Z0 Impedance: 0.1739 + J	0.0933	Ohms/1000 ft		110.54 + J	59.30	PU		
CBL-0585	B-B78-MDP	BUS-0652	1	208	275.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0640 + J	0.0381	Ohms/1000 ft		40.68 + J	24.22	PU		
	Z0 Impedance: 0.2017 + J	0.0938	Ohms/1000 ft		128.21 + J	59.62	PU		
CBL-0586	B-B78-ATS-CRD	B-B78-CRD	1	208	250.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0640 + J	0.0381	Ohms/1000 ft		36.98 + J	22.02	PU		
	Z0 Impedance: 0.2017 + J	0.0938	Ohms/1000 ft		116.55 + J	54.20	PU		
CBL-0587	B-B78-MDP	B-B78-CONRM-AC	1	208	260.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.2020 + J	0.0448	Ohms/1000 ft		121.39 + J	26.92	PU		
	Z0 Impedance: 0.6366 + J	0.1103	Ohms/1000 ft		382.57 + J	66.29	PU		
CBL-0588	B-T-B80-SEC	B-B80-MDP-M	2	208	20.0	FEET	300	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THWN
	+/- Impedance: 0.0464 + J	0.0493	Ohms/1000 ft		1.07 + J	1.14	PU		
	Z0 Impedance: 0.1462 + J	0.1214	Ohms/1000 ft		3.38 + J	2.81	PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0589	B-B80-MDP-M	B-B80-MDP	2	208	20.0	FEET	300	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THWN
	+/- Impedance: 0.0464 + J 0.0493 Ohms/1000 ft				1.07 + J 1.14 PU				
	Z0 Impedance: 0.1462 + J 0.1214 Ohms/1000 ft				3.38 + J 2.81 PU				
CBL-0590	B-B80-MDP	B-B80-L1-1	1	208	65.0	FEET	6	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.5100 + J 0.0685 Ohms/1000 ft				76.62 + J 10.29 PU				
	Z0 Impedance: 1.61 + J 0.1687 Ohms/1000 ft				241.47 + J 25.35 PU				
CBL-0591	B-B80-MDP	B-B80-P1	1	208	35.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				10.36 + J 4.37 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				32.63 + J 10.75 PU				
CBL-0592	B-B80-MDP	B-B80-P5	1	208	125.0	FEET	6	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.5100 + J 0.0685 Ohms/1000 ft				147.35 + J 19.79 PU				
	Z0 Impedance: 1.61 + J 0.1687 Ohms/1000 ft				464.36 + J 48.74 PU				
CBL-0593	B-B80-MDP	B-B80-L1-3	1	208	35.0	FEET	8	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.8110 + J 0.0754 Ohms/1000 ft				65.61 + J 6.10 PU				
	Z0 Impedance: 2.56 + J 0.1856 Ohms/1000 ft				206.77 + J 15.01 PU				
CBL-0594	B-B80-MDP	B-B80-PB-1	1	208	40.0	FEET	8	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.8110 + J 0.0754 Ohms/1000 ft				74.98 + J 6.97 PU				
	Z0 Impedance: 2.56 + J 0.1856 Ohms/1000 ft				236.31 + J 17.16 PU				
CBL-0595	B-B80-MDP	B-B80-LB-1	1	208	40.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				11.83 + J 4.99 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				37.30 + J 12.29 PU				
CBL-0596	B-B80-MDP	BUS-0664	1	208	40.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				18.68 + J 5.41 PU				
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				58.86 + J 13.31 PU				
CBL-0597	B-B80-ATS-EQ	B-B80-E1	1	208	15.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				7.00 + J 2.03 PU				
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				22.07 + J 4.99 PU				

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0598	B-B80-E1	B-B80-LB-E	1	208	50.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		23.35 + J 6.76	PU				
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		73.57 + J 16.64	PU				
CBL-0599	B-B80-E1	B-B80-PB-2	1	208	30.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		14.01 + J 4.06	PU				
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		44.14 + J 9.99	PU				
CBL-0600	B-T-B81-SEC	B-B81-MDP-M	1	208	40.0	FEET	250	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft		5.10 + J 4.58	PU				
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft		16.08 + J 11.27	PU				
CBL-0601	B-B81-MDP-M	B-B81-MDP	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft		0.0673 + J 0.0696	PU				
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft		0.3999 + J 0.3724	PU				
CBL-0602	B-T-B82-SEC	B-B82-MDP-M	2	208	50.0	FEET	400	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft		2.06 + J 2.83	PU				
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft		6.48 + J 6.97	PU				
CBL-0603	B-B82-MDP-M	B-B82-MDP	1	208	1.000	FEET	600	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0202 + J 0.0170	Ohms/1000 ft		0.0467 + J 0.0393	PU				
	Z0 Impedance:	0.1201 + J 0.0910	Ohms/1000 ft		0.2776 + J 0.2103	PU				
CBL-0604	B-B92 GEN	B-B92-EMDP-M	3	208	12.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		0.2718 + J 0.4308	PU				
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		0.8561 + J 1.06	PU				
CBL-0605	B-B92-EMDP-M	B-B92-EMDP	1	208	1.000	FEET	1200	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0111 + J 0.0052	Ohms/1000 ft		0.0257 + J 0.0120	PU				
	Z0 Impedance:	0.0660 + J 0.0278	Ohms/1000 ft		0.1526 + J 0.0643	PU				
CBL-0606	B-B92-EMDP	BUS-0676	1	208	25.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		11.67 + J 3.38	PU				
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		36.79 + J 8.32	PU				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0607	B-B92-EMDP	BUS-0677	1	208	375.0 FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft				69.78 + J 44.99 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft				219.90 + J 110.77 PU		
CBL-0608	B-B92-EMDP	BUS-0678	1	208	150.0 FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				70.04 + J 20.28 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				220.71 + J 49.93 PU		
CBL-0609	B-B92-EMDP	BUS-0680	1	208	325.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				96.15 + J 40.56 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				303.03 + J 99.83 PU		
CBL-0610	B-B92-EMDP	BUS-0736	1	208	400.0 FEET	350	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft				34.95 + J 45.40 PU		
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft				110.11 + J 111.78 PU		
CBL-0611	B-B92-EMDP	B-B2-EPNL-B-M	1	208	400.0 FEET	350	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft				34.95 + J 45.40 PU		
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft				110.11 + J 111.78 PU		
CBL-0612	B-B93-GEN	B-B93-EMDP-M	3	208	20.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				0.4530 + J 0.7181 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				1.43 + J 1.77 PU		
CBL-0613	B-B93-EMDP-M	B-B93-EMDP	1	208	1.000 FEET	1200	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0111 + J 0.0052 Ohms/1000 ft				0.0257 + J 0.0120 PU		
	Z0 Impedance: 0.0660 + J 0.0278 Ohms/1000 ft				0.1526 + J 0.0643 PU		
CBL-0614	B-B93-EMDP	BUS-0685	1	208	25.0 FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				11.67 + J 3.38 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				36.79 + J 8.32 PU		
CBL-0615	B-B93-EMDP	BUS-0688	1	208	300.0 FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				140.07 + J 40.56 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				441.43 + J 99.85 PU		

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0616	B-B93-EMDP	BUS-0689	1	208	225.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		33.28 + J 25.85	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		104.90 + J 63.66	PU				
CBL-0617	B-B93-EMDP	BUS-0691	1	208	225.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		15.29 + J 24.23	PU				
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		48.16 + J 59.65	PU				
CBL-0618	B-B93-EMDP	BUS-0692	1	208	675.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		45.87 + J 72.70	PU				
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		144.47 + J 178.95	PU				
CBL-0619	B-B93-EMDP	B-B93-EMDP1	3	208	5.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		0.1133 + J 0.1795	PU				
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		0.3567 + J 0.4419	PU				
CBL-0620	B-B93-EMDP1	BUS-0694	1	208	225.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		33.28 + J 25.85	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		104.90 + J 63.66	PU				
CBL-0621	B-B93-EMDP1	BUS-0695	1	208	675.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		99.85 + J 77.54	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		314.69 + J 190.97	PU				
CBL-0624	B-B94-GEN	B-B94-EMDP-M	3	208	20.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		0.4530 + J 0.7181	PU				
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		1.43 + J 1.77	PU				
CBL-0625	B-B94-EMDP-M	B-B94-EMDP	1	208	1.000	FEET	1200	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0111 + J 0.0052	Ohms/1000 ft		0.0257 + J 0.0120	PU				
	Z0 Impedance:	0.0660 + J 0.0278	Ohms/1000 ft		0.1526 + J 0.0643	PU				
CBL-0626	B-B94-EMDP	BUS-0700	1	208	775.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		52.67 + J 83.48	PU				
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		165.88 + J 205.47	PU				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0627	B-B94-EMDP	BUS-0701	1	208	500.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				33.98 + J 53.86 PU				
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				107.02 + J 132.56 PU				
CBL-0628	B-B94-EMDP	BUS-0702	1	208	250.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				16.99 + J 26.93 PU				
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				53.51 + J 66.28 PU				
CBL-0629	B-B94-EMDP	BUS-0703	1	208	575.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				39.07 + J 61.93 PU				
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				123.07 + J 152.44 PU				
CBL-0630	B-B94-EMDP	BUS-0704	1	208	20.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				9.34 + J 2.70 PU				
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				29.43 + J 6.66 PU				
CBL-0631	B-B94-EMDP	BUS-0705	1	208	575.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				85.06 + J 66.05 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				268.07 + J 162.68 PU				
CBL-0632	B-B94-EMDP	BUS-0706	1	208	775.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				114.64 + J 89.03 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				361.31 + J 219.26 PU				
CBL-0633	B-B94-EMDP	BUS-0707	1	208	450.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				66.57 + J 51.69 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				209.79 + J 127.31 PU				
CBL-0634	B-B94-EMDP	BUS-0708	1	208	250.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				36.98 + J 28.72 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				116.55 + J 70.73 PU				
CBL-0635	B-B95-GEN	B-B95-EMDP-M	3	208	20.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				0.4530 + J 0.7181 PU				
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				1.43 + J 1.77 PU				

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0636	B-B95-EMDP-M	B-B95-EMDP	1	208	1.000	FEET	1200	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0111 + J 0.0052 Ohms/1000 ft				0.0257 + J 0.0120 PU				
	Z0 Impedance: 0.0660 + J 0.0278 Ohms/1000 ft				0.1526 + J 0.0643 PU				
CBL-0637	B-B95-EMDP	BUS-0712	1	208	150.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				22.19 + J 17.23 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				69.93 + J 42.44 PU				
CBL-0638	B-B95-EMDP	BUS-0713	1	208	375.0	FEET	3/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft				69.78 + J 44.99 PU				
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft				219.90 + J 110.77 PU				
CBL-0639	B-B95-EMDP	BUS-0714	1	208	150.0	FEET	250	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft				19.14 + J 17.16 PU				
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft				60.29 + J 42.26 PU				
CBL-0640	B-B95-EMDP	BUS-0715	1	208	150.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				10.19 + J 16.16 PU				
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				32.11 + J 39.77 PU				
CBL-0641	B-B95-EMDP	B-B10 EMRG TAP	1	208	425.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				28.88 + J 45.78 PU				
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				90.96 + J 112.67 PU				
CBL-0642	B-B95-EMDP	BUS-0718	1	208	150.0	FEET	600	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0257 + J 0.0463 Ohms/1000 ft				8.91 + J 16.05 PU				
	Z0 Impedance: 0.0809 + J 0.1140 Ohms/1000 ft				28.05 + J 39.52 PU				
CBL-0643	B-B95-EMDP	BUS-0719	1	208	150.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				10.19 + J 16.16 PU				
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				32.11 + J 39.77 PU				
CBL-0645	B-B2-EPNL-B-M	B-B2-EPNL-B	1	208	1.000	FEET	800	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0167 + J 0.0127 Ohms/1000 ft				0.0386 + J 0.0294 PU				
	Z0 Impedance: 0.0992 + J 0.0679 Ohms/1000 ft				0.2293 + J 0.1569 PU				

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0646	B-B2-EPNL-B	BUS-0722	1	208	56.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				3.81 + J 6.03 PU				
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				11.99 + J 14.85 PU				
CBL-0647	B-B2-EPNL-B	BUS-0723	1	208	225.0	FEET	250	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft				28.71 + J 25.74 PU				
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft				90.44 + J 63.40 PU				
CBL-0648	B-B8-GEN	BUS-0725	1	480	60.0	FEET	350	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft				0.9844 + J 1.28 PU				
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft				3.10 + J 3.15 PU				
CBL-0649	B-B22-GEN	BUS-0727	1	480	50.0	FEET	300	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0464 + J 0.0493 Ohms/1000 ft				1.01 + J 1.07 PU				
	Z0 Impedance: 0.1462 + J 0.1214 Ohms/1000 ft				3.17 + J 2.63 PU				
CBL-0651	B-B78-ATS-E1	B-B78-E1	1	208	5.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THWN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				0.3398 + J 0.5386 PU				
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				1.07 + J 1.33 PU				
CBL-0652	B-B78-L10	B-B78-LP-13	1	208	30.0	FEET	400	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0356 + J 0.0371 Ohms/1000 ft				2.47 + J 2.57 PU				
	Z0 Impedance: 0.1122 + J 0.0913 Ohms/1000 ft				7.78 + J 6.33 PU				
CBL-0653	B-B78-LP-13	B-B78-LP-14	1	208	30.0	FEET	400	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0356 + J 0.0371 Ohms/1000 ft				2.47 + J 2.57 PU				
	Z0 Impedance: 0.1122 + J 0.0913 Ohms/1000 ft				7.78 + J 6.33 PU				
CBL-0654	B-B78-LP-14	B-B78-LP-15	1	208	30.0	FEET	400	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.0356 + J 0.0371 Ohms/1000 ft				2.47 + J 2.57 PU				
	Z0 Impedance: 0.1122 + J 0.0913 Ohms/1000 ft				7.78 + J 6.33 PU				
CBL-0655	B-B78-LP-1	B-B78-LP-4	1	208	125.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance: 0.1020 + J 0.0407 Ohms/1000 ft				29.47 + J 11.76 PU				
	Z0 Impedance: 0.3214 + J 0.1002 Ohms/1000 ft				92.86 + J 28.95 PU				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0658	B-B8-J-BOX	B-B8-ELEV	1	208	20.0	FEET	350	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0378 + J 0.0491	Ohms/1000 ft				1.75 + J 2.27	PU		
	Z0 Impedance:	0.1191 + J 0.1209	Ohms/1000 ft				5.51 + J 5.59	PU		
CBL-0659	BUS-0739	B-B9-ATS BKR	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft				0.0673 + J 0.0696	PU		
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft				0.3999 + J 0.3724	PU		
CBL-0660	B-B17-EMAIN	BUS-0740	1	208	12.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				3.55 + J 1.50	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				11.19 + J 3.69	PU		
CBL-0662	B-B94-ATS	B-B94-E1	1	208	20.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				9.34 + J 2.70	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				29.43 + J 6.66	PU		
CBL-0663	B-B82-MDP	BUS-0744	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.96 + J 2.30	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				9.32 + J 5.66	PU		
CBL-0664	B-B82-ATS-EMER	B-B82-EMERG-M	1	208	10.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				1.48 + J 1.15	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				4.66 + J 2.83	PU		
CBL-0665	B-B82-EMERG-M	B-B82-EMER	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft				0.0673 + J 0.0696	PU		
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft				0.3999 + J 0.3724	PU		
CBL-0666	B-T-B2-PRI	BUS-0747	5	13800	1.000	FEET		Copper		
	Duct Material:	Non-Magnetic	Insulation Type:					Insulation Class:		
	+/- Impedance:	0.00010 + J 0.00010	Ohms/1000 ft				0.00001 + J 0.00001	PU		
	Z0 Impedance:	0.00010 + J 0.00010	Ohms/1000 ft				0.00000 + J 0.00000	PU		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

TRANSFORMER INPUT DATA

TRANSFORMER NAME	PRIMARY RECORD NO	NAME		VOLTS L-L	* SECONDARY RECORD NO	NAME		VOLTS L-L	FULL-LOAD KVA	NOMINAL KVA
T -B2	BUS-0747		D	13800.0	B-T-B2-SEC2		YG	208.00	150.00	150.00
	Pos. Seq. Z%:		0.930 + J	5.12	6.20 + j	34.11 PU				
	Zero Seq. Z%:		0.930 + J	5.12	6.20 + j	34.11 PU				
	Taps Pri. 0.000 %		Sec. 0.000 %	Phase Shift (Pri. Leading Sec.):		30.00 Deg.				
T- B2	BUS-0747		D	13800.0	B-T-B2-SEC4		YG	480.00	600.00	600.00
	Pos. Seq. Z%:		0.946 + J	5.11	1.58 + j	8.52 PU				
	Zero Seq. Z%:		0.946 + J	5.11	1.58 + j	8.52 PU				
	Taps Pri. 0.000 %		Sec. 0.000 %	Phase Shift (Pri. Leading Sec.):		30.00 Deg.				
T-B1	B-T-B1-PRI		D	13800.0	B-T-B1-SEC		YG	208.00	75.00	75.00
	Pos. Seq. Z%:		1.90 + J	3.62	25.40 + j	48.26 PU				
	Zero Seq. Z%:		0.948 + J	2.85	12.65 + j	37.95 PU				
	Taps Pri. 0.000 %		Sec. 0.000 %	Phase Shift (Pri. Leading Sec.):		30.00 Deg.				
T-B10	B-T-B10-PRI		D	13800.0	B-T-B10-SEC		YG	208.00	75.00	75.00
	Pos. Seq. Z%:		1.52 + J	2.88	20.24 + j	38.46 PU				
	Zero Seq. Z%:		0.948 + J	2.85	12.65 + j	37.95 PU				
	Taps Pri. 0.000 %		Sec. 0.000 %	Phase Shift (Pri. Leading Sec.):		30.00 Deg.				
T-B12	B-T-B12-PRI		D	13800.0	B-T-B12-SEC		YG	208.00	75.00	75.00
	Pos. Seq. Z%:		1.99 + J	3.79	26.58 + j	50.50 PU				
	Zero Seq. Z%:		0.948 + J	2.85	12.65 + j	37.95 PU				
	Taps Pri. 0.000 %		Sec. 0.000 %	Phase Shift (Pri. Leading Sec.):		30.00 Deg.				
T-B13	B-T-13-PRI		YG	13800.0	B-B13-TXMR SEC		D	240.00	250.00	250.00
	Pos. Seq. Z%:		1.58 + J	4.74	6.32 + j	18.97 PU				
	Zero Seq. Z%:		0.948 + J	2.85	3.79 + j	11.38 PU				
	Taps Pri. 0.000 %		Sec. 0.000 %	Phase Shift (Pri. Leading Sec.):		-30.0 Deg.				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

TRANSFORMER INPUT DATA

TRANSFORMER NAME	PRIMARY RECORD NO	NAME		VOLTS L-L	* SECONDARY RECORD NO	NAME		VOLTS L-L	FULL-LOAD KVA	NOMINAL KVA
T-B17	B-T-B17-PRI	D	13800.0		B-T-B17-SEC	YG	208.00		150.00	150.00
	Pos. Seq. Z%:	1.15 + J	2.88	7.68 + j 19.19 PU						
	Zero Seq. Z%:	0.948 + J	2.85	6.32 + j 18.97 PU						
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.							
T-B18	B-T-B18-PRI	D	13800.0		B-T-B18-SEC	YG	208.00		150.00	150.00
	Pos. Seq. Z%:	1.21 + J	3.03	8.07 + j 20.18 PU						
	Zero Seq. Z%:	0.948 + J	2.85	6.32 + j 18.97 PU						
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.							
T-B19	B-T-B19-PRI	D	13800.0		B-T-B19-SEC	YG	208.00		500.00	500.00
	Pos. Seq. Z%:	1.30 + J	5.19	2.60 + j 10.38 PU						
	Zero Seq. Z%:	0.948 + J	2.85	1.90 + j 5.69 PU						
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.							
T-B2 LED-3	B-T-B2-LED-PRI	D	480.00		B-T-B2-LED-SEC	YG	208.00		75.00	75.00
	Pos. Seq. Z%:	2.73 + J	4.07	36.43 + j 54.23 PU						
	Zero Seq. Z%:	2.73 + J	4.07	36.43 + j 54.23 PU						
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.							
T-B22	B-T-B22-PRI	D	13800.0		B-T-B22-SEC	YG	480.00		225.00	225.00
	Pos. Seq. Z%:	0.869 + J	2.61	3.87 + j 11.60 PU						
	Zero Seq. Z%:	0.948 + J	2.85	4.22 + j 12.65 PU						
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.							
T-B2A	B-T-B2-PRI	D	13800.0		B-T-B2-SEC3	YG	208.00		300.00	300.00
	Pos. Seq. Z%:	1.80 + J	5.39	5.99 + j 17.96 PU						
	Zero Seq. Z%:	0.948 + J	2.85	3.16 + j 9.49 PU						
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.							

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

TRANSFORMER INPUT DATA

TRANSFORMER NAME	PRIMARY RECORD NO	NAME		VOLTS L-L	* SECONDARY RECORD NO	NAME		VOLTS L-L	FULL-LOAD KVA	NOMINAL KVA
T-B3	B-T-B3-PRI		D	13800.0	B-T-B3-SEC		YG	208.00	300.00	300.00
	Pos. Seq. Z%:			1.23 + J 3.68				4.09 + j 12.27 PU		
	Zero Seq. Z%:			0.948 + J 2.85				3.16 + j 9.49 PU		
	Taps Pri. 0.000 % Sec. 0.000 % Phase Shift (Pri. Leading Sec.): 30.00 Deg.									
T-B30	B-T-B30-PRI		D	13800.0	B-T-B30-SEC		YG	208.00	75.00	75.00
	Pos. Seq. Z%:			1.90 + J 3.62				25.40 + j 48.26 PU		
	Zero Seq. Z%:			0.948 + J 2.85				12.65 + j 37.95 PU		
	Taps Pri. 0.000 % Sec. 0.000 % Phase Shift (Pri. Leading Sec.): 30.00 Deg.									
T-B33	B-T-B33-PRI		D	13800.0	B-T-B33-SEC		YG	208.00	75.00	75.00
	Pos. Seq. Z%:			1.49 + J 2.83				19.87 + j 37.76 PU		
	Zero Seq. Z%:			0.948 + J 2.85				12.65 + j 37.95 PU		
	Taps Pri. 0.000 % Sec. 0.000 % Phase Shift (Pri. Leading Sec.): 30.00 Deg.									
T-B4	B-T-B4-PRI		D	13800.0	B-T-B4-SEC		YG	208.00	500.00	500.00
	Pos. Seq. Z%:			1.03 + J 4.12				2.06 + j 8.25 PU		
	Zero Seq. Z%:			0.948 + J 2.85				1.90 + j 5.69 PU		
	Taps Pri. 0.000 % Sec. 0.000 % Phase Shift (Pri. Leading Sec.): 30.00 Deg.									
T-B5	B-T-B5-PRI		D	13800.0	B-T-B5-SEC		YG	208.00	300.00	300.00
	Pos. Seq. Z%:			0.857 + J 2.57				2.86 + j 8.57 PU		
	Zero Seq. Z%:			0.948 + J 2.85				3.16 + j 9.49 PU		
	Taps Pri. 0.000 % Sec. 0.000 % Phase Shift (Pri. Leading Sec.): 30.00 Deg.									
T-B6	B-T-B6-PRI		D	13800.0	B-T-B6-SEC		YG	208.00	300.00	300.00
	Pos. Seq. Z%:			0.860 + J 2.58				2.87 + j 8.60 PU		
	Zero Seq. Z%:			0.948 + J 2.85				3.16 + j 9.49 PU		
	Taps Pri. 0.000 % Sec. 0.000 % Phase Shift (Pri. Leading Sec.): 30.00 Deg.									

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

TRANSFORMER INPUT DATA

TRANSFORMER NAME	PRIMARY RECORD NO	NAME		VOLTS L-L	* SECONDARY RECORD NO	NAME		VOLTS L-L	FULL-LOAD KVA	NOMINAL KVA
T-B60	B-T-B60-PRI	D	13800.0		B-T-B60-SEC	YG	208.00		112.50	112.50
	Pos. Seq. Z%:		1.41 + J	3.53	12.54 + j	31.36 PU				
	Zero Seq. Z%:		0.948 + J	2.85	8.43 + j	25.30 PU				
	Taps Pri. 0.000 % Sec. 0.000 % Phase Shift (Pri. Leading Sec.): 30.00 Deg.									
T-B61	B-T-B61-PRI	D	13800.0		B-T-B61-SEC	YG	208.00		225.00	225.00
	Pos. Seq. Z%:		1.33 + J	3.98	5.90 + j	17.71 PU				
	Zero Seq. Z%:		0.948 + J	2.85	4.22 + j	12.65 PU				
	Taps Pri. 0.000 % Sec. 0.000 % Phase Shift (Pri. Leading Sec.): 30.00 Deg.									
T-B62	B-T-B62-PRI	D	13800.0		B-T-B62-SEC	YG	208.00		300.00	300.00
	Pos. Seq. Z%:		0.869 + J	2.61	2.90 + j	8.70 PU				
	Zero Seq. Z%:		0.948 + J	2.85	3.16 + j	9.49 PU				
	Taps Pri. 0.000 % Sec. 0.000 % Phase Shift (Pri. Leading Sec.): 30.00 Deg.									
T-B7	B-T-B7-PRI	D	13800.0		B-T-B7-SEC	YG	208.00		225.00	225.00
	Pos. Seq. Z%:		0.869 + J	2.61	3.87 + j	11.60 PU				
	Zero Seq. Z%:		0.948 + J	2.85	4.22 + j	12.65 PU				
	Taps Pri. 0.000 % Sec. 0.000 % Phase Shift (Pri. Leading Sec.): 30.00 Deg.									
T-B70	B-T-B70-PRI	D	13800.0		B-T-B70-SEC	YG	208.00		300.00	300.00
	Pos. Seq. Z%:		1.58 + J	4.74	5.27 + j	15.81 PU				
	Zero Seq. Z%:		0.948 + J	2.85	3.16 + j	9.49 PU				
	Taps Pri. 0.000 % Sec. 0.000 % Phase Shift (Pri. Leading Sec.): 30.00 Deg.									
T-B78	B-T-B78-PRI	D	13800.0		B-T-B78-SEC	YG	208.00		1333.00	1000.00
	Pos. Seq. Z%:		1.02 + J	6.10	1.02 + j	6.10 PU				
	Zero Seq. Z%:		0.948 + J	2.85	0.948 + j	2.85 PU				
	Taps Pri. 0.000 % Sec. 0.000 % Phase Shift (Pri. Leading Sec.): 30.00 Deg.									

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

TRANSFORMER INPUT DATA

TRANSFORMER NAME	PRIMARY RECORD NO	NAME		VOLTS L-L	* SECONDARY RECORD NO	NAME		VOLTS L-L	FULL-LOAD KVA	NOMINAL KVA
T-B8	B-T-B8-PRI		D	13800.0	B-T-B8-SEC		YG	208.00	225.00	225.00
	Pos. Seq. Z%:	0.869 + J	2.61	3.87 + j 11.60 PU						
	Zero Seq. Z%:	0.948 + J	2.85	4.22 + j 12.65 PU						
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.							
T-B8-2	B-T-B8-PRI		D	13800.0	B-T-B8-2-SEC		YG	480.00	225.00	225.00
	Pos. Seq. Z%:	0.869 + J	2.61	3.87 + j 11.60 PU						
	Zero Seq. Z%:	0.948 + J	2.85	4.22 + j 12.65 PU						
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.							
T-B80	B-T-B80-PRI		D	13800.0	B-T-B80-SEC		YG	208.00	150.00	150.00
	Pos. Seq. Z%:	1.15 + J	2.87	7.65 + j 19.13 PU						
	Zero Seq. Z%:	0.948 + J	2.85	6.32 + j 18.97 PU						
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.							
T-B81	B-T-B81-PRI		D	13800.0	B-T-B81-SEC		YG	208.00	75.00	75.00
	Pos. Seq. Z%:	1.98 + J	3.77	26.45 + j 50.26 PU						
	Zero Seq. Z%:	0.948 + J	2.85	12.65 + j 37.95 PU						
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.							
T-B82	B-T-B82-PRI		D	13800.0	B-T-B82-SEC		YG	208.00	112.50	112.50
	Pos. Seq. Z%:	1.42 + J	3.55	12.61 + j 31.53 PU						
	Zero Seq. Z%:	0.948 + J	2.85	8.43 + j 25.30 PU						
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.							
T-B9	B-T-B9-PRI		D	13800.0	B-T-B9-SEC		YG	208.00	225.00	225.00
	Pos. Seq. Z%:	0.948 + J	2.85	4.22 + j 12.65 PU						
	Zero Seq. Z%:	0.948 + J	2.85	4.22 + j 12.65 PU						
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.							

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

TRANSFORMER INPUT DATA

TRANSFORMER NAME	PRIMARY RECORD NO	NAME		VOLTS L-L	* SECONDARY RECORD NO	NAME		VOLTS L-L	FULL-LOAD KVA	NOMINAL KVA
XF2-0032	B-B8-TXMR PRI	D	480.00		B-B8-TXMR SEC	YG	208.00		112.50	112.50
	Pos. Seq. Z%:		2.44 + J	3.85	21.73 + j	34.22 PU				
	Zero Seq. Z%:		2.44 + J	3.85	21.73 + j	34.22 PU				
	Taps Pri. 0.000 %		Sec. 0.000 %		Phase Shift (Pri. Leading Sec.):				30.00 Deg.	
XF2-0033	B-B22-T2-PRI	D	480.00		B-B22-T2-SEC	YG	208.00		75.00	75.00
	Pos. Seq. Z%:		3.18 + J	4.73	42.38 + j	63.09 PU				
	Zero Seq. Z%:		3.18 + J	4.73	42.38 + j	63.09 PU				
	Taps Pri. 0.000 %		Sec. 0.000 %		Phase Shift (Pri. Leading Sec.):				30.00 Deg.	
XF2-0034	B-B22-T3 PRI	D	480.00		B-B22-T22-SEC	YG	208.00		75.00	75.00
	Pos. Seq. Z%:		3.18 + J	4.73	42.38 + j	63.09 PU				
	Zero Seq. Z%:		3.18 + J	4.73	42.38 + j	63.09 PU				
	Taps Pri. 0.000 %		Sec. 0.000 %		Phase Shift (Pri. Leading Sec.):				30.00 Deg.	
XF2-0035	B-B22-T4-PRI	D	480.00		B-B22-T4-SEC	YG	208.00		75.00	75.00
	Pos. Seq. Z%:		3.18 + J	4.73	42.38 + j	63.09 PU				
	Zero Seq. Z%:		3.18 + J	4.73	42.38 + j	63.09 PU				
	Taps Pri. 0.000 %		Sec. 0.000 %		Phase Shift (Pri. Leading Sec.):				30.00 Deg.	
XF2-0036	B-B22-T1-PRI	D	480.00		B-B22-T1-SEC	YG	208.00		112.50	112.50
	Pos. Seq. Z%:		2.25 + J	3.55	20.02 + j	31.51 PU				
	Zero Seq. Z%:		3.18 + J	4.73	28.25 + j	42.06 PU				
	Taps Pri. 0.000 %		Sec. 0.000 %		Phase Shift (Pri. Leading Sec.):				30.00 Deg.	
XF2-0040	B-T-B2-PRI	D	13800.0		B-T-B2-SEC4	YG	480.00		600.00	600.00
	Pos. Seq. Z%:		0.930 + J	5.12	1.55 + j	8.53 PU				
	Zero Seq. Z%:		0.930 + J	5.12	1.55 + j	8.53 PU				
	Taps Pri. 0.000 %		Sec. 0.000 %		Phase Shift (Pri. Leading Sec.):				30.00 Deg.	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

GENERATION CONTRIBUTION DATA

BUS NAME	CONTRIBUTION NAME	VOLTAGE L-L	MVA	X"d	X/R	
B-B22-GEN	G-B22-GEN	480.00	0.225	0.1500	20.00	
	KG: 0.9174 xdsat: 1.60 Excitation Limit: 1.30 Ik - ON					
	Pos Sequence Impedance (100 MVA Base) 3.33 + J 66.67 PU					
B-B27-SWGR-M1	UTIL-STN 559-2	13800.0	64.54			
	Three Phase Contribution: 2700.00 AMPS 3.00					
	Single Line to Ground Contribution: 1200.00 AMPS 3.00					
	Pos Sequence Impedance (100 MVA Base) 0.4900 + J 1.47 PU					
	Zero Sequence Impedance (100 MVA Base) 2.33 + J 6.98 PU					
B-B70-GEN	B70-GEN	208.00	0.156	0.1500	20.00	
	KG: 0.9174 xdsat: 1.60 Excitation Limit: 1.30 Ik - ON					
	Pos Sequence Impedance (100 MVA Base) 4.81 + J 96.15 PU					
B-B8-GEN	G-B8 GEN	480.00	0.225	0.1500	20.00	
	KG: 0.9174 xdsat: 1.60 Excitation Limit: 1.30 Ik - ON					
	Pos Sequence Impedance (100 MVA Base) 3.33 + J 66.67 PU					
B-B92 GEN	GEN-B92	208.00	0.375	0.1500	20.00	
	KG: 0.9174 xdsat: 1.60 Excitation Limit: 1.30 Ik - ON					
	Pos Sequence Impedance (100 MVA Base) 2.00 + J 40.00 PU					
B-B93-GEN	GEN-B93	208.00	0.375	0.1500	20.00	
	KG: 0.9174 xdsat: 1.60 Excitation Limit: 1.30 Ik - ON					
	Pos Sequence Impedance (100 MVA Base) 2.00 + J 40.00 PU					
B-B94-GEN	B94-GEN	208.00	0.375	0.1500	20.00	
	KG: 0.9174 xdsat: 1.60 Excitation Limit: 1.30 Ik - ON					
	Pos Sequence Impedance (100 MVA Base) 2.00 + J 40.00 PU					
B-B95-GEN	B-95 GEN	208.00	0.375	0.1500	20.00	
	KG: 0.9174 xdsat: 1.60 Excitation Limit: 1.30 Ik - ON					
	Pos Sequence Impedance (100 MVA Base) 2.00 + J 40.00 PU					

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

MOTOR CONTRIBUTION DATA

BUS NAME	CONTRIBUTION NAME	VOLTAGE L-L	BASE kVA	X"d	X/R	Motor Number
B-B2-DENTSUCPM	MTRI-0007	208	58.28	0.17	5.40	1.00
	Pos Sequence Impedance (100 MVA Base)			54.02 + j		291.69 PU
B-B2-ELEV	MTRI-0005	208	29.14	0.17	4.20	1.00
	Pos Sequence Impedance (100 MVA Base)			138.90 + j		583.38 PU
B-B2-ELEV-P1	M-B2-ELEV-P1	208	58.28	0.17	5.40	1.00
	Pos Sequence Impedance (100 MVA Base)			54.02 + j		291.69 PU
B-B2-MEDAIRCOM	M-B2 MEDAIRCOM	208	29.14	0.17	4.20	1.00
	Pos Sequence Impedance (100 MVA Base)			138.90 + j		583.38 PU
B-B2-PNL-L11	MTRI-0003	208	29.14	0.17	4.20	1.00
	Pos Sequence Impedance (100 MVA Base)			138.90 + j		583.38 PU
B-B2-PNL-P	M-B2-PNL-P	480	122.39	0.17	4.20	1.00
	Pos Sequence Impedance (100 MVA Base)			33.07 + j		138.90 PU
B-B3-COMP MF	MTRI-0010	208	58.28	0.17	5.40	1.00
	Pos Sequence Impedance (100 MVA Base)			54.02 + j		291.69 PU
B-B3-ELEV	M-B3-ELEV	208	58.28	0.17	5.40	1.00
	Pos Sequence Impedance (100 MVA Base)			54.02 + j		291.69 PU
B-B3-HYDRO ELV	M-B3-HYDR ELEV	208	58.28	0.17	5.40	1.00
	Pos Sequence Impedance (100 MVA Base)			54.02 + j		291.69 PU
B-B4-ELEV#4	M-B4-ELEV#4	208	58.28	0.17	5.40	1.00
	Pos Sequence Impedance (100 MVA Base)			54.02 + j		291.69 PU

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

MOTOR CONTRIBUTION DATA

BUS NAME	CONTRIBUTION NAME	VOLTAGE L-L	BASE kVA	X"d	X/R	Motor Number
B-B4-HYDROELEV	MTRI-0012	208	87.42	0.17	6.80	1.00
	Pos Sequence Impedance (100 MVA Base)			28.60 + j	194.46 PU	
B-B5-EQ6	M-B5-EQ6	208	52.45	0.17	5.00	1.00
	Pos Sequence Impedance (100 MVA Base)			64.82 + j	324.10 PU	
B-B5-HYDR ELEV	M-B5-HYDR ELEV	208	52.45	0.17	5.00	1.00
	Pos Sequence Impedance (100 MVA Base)			64.82 + j	324.10 PU	
B-B6-EQ8	M-B6-ELEV	208	87.42	0.17	6.80	1.00
	Pos Sequence Impedance (100 MVA Base)			28.60 + j	194.46 PU	
B-B61-ELEV	B61-ELEV	208	58.28	0.17	5.40	1.00
	Pos Sequence Impedance (100 MVA Base)			54.02 + j	291.69 PU	
B-B62-ELEV-2	MTRI-0021	208	58.28	0.17	5.40	1.00
	Pos Sequence Impedance (100 MVA Base)			54.02 + j	291.69 PU	
B-B7-ELEV	MTRI-0017	208	58.28	0.17	5.40	1.00
	Pos Sequence Impedance (100 MVA Base)			54.02 + j	291.69 PU	
B-B70-CHLLR	MTRI-0023	208	116.56	0.17	8.00	1.00
	Pos Sequence Impedance (100 MVA Base)			18.23 + j	145.84 PU	
B-B70-FIRE PMP	MTRI-0022	208	58.28	0.17	5.40	1.00
	Pos Sequence Impedance (100 MVA Base)			54.02 + j	291.69 PU	
B-B78-A/C	M-B78-A/C	208	34.97	0.17	4.40	1.00
	Pos Sequence Impedance (100 MVA Base)			110.49 + j	486.15 PU	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

MOTOR CONTRIBUTION DATA

BUS NAME	CONTRIBUTION NAME	VOLTAGE L-L	BASE kVA	X"d	X/R	Motor Number
B-B78-CONRM-AC	M-B78-CONRM-AC	208	58.28	0.17	5.40	1.00
	Pos Sequence Impedance (100 MVA Base)			54.02 + j	291.69 PU	
B-B78-ELEV-1	MTRI-0024	208	69.94	0.17	6.00	1.00
	Pos Sequence Impedance (100 MVA Base)			40.51 + j	243.07 PU	
B-B78-ELEV-2	MTRI-0025	208	69.94	0.17	6.00	1.00
	Pos Sequence Impedance (100 MVA Base)			40.51 + j	243.07 PU	
B-B78-MEC-1 AC	MTRI-0028	208	58.28	0.17	5.40	1.00
	Pos Sequence Impedance (100 MVA Base)			54.02 + j	291.69 PU	
B-B78-MEC2-A/C	M-B78-MEC2-A/C	208	58.28	0.17	5.40	1.00
	Pos Sequence Impedance (100 MVA Base)			54.02 + j	291.69 PU	
B-B78-PHARM AC	M-B78-PHARM-AC	208	23.31	0.17	3.90	1.00
	Pos Sequence Impedance (100 MVA Base)			186.98 + j	729.22 PU	
B-B8 HYDRO ELV	MTRI-0018	480	58.28	0.17	5.40	1.00
	Pos Sequence Impedance (100 MVA Base)			54.02 + j	291.69 PU	
B-B8-COMP	MTRI-0019	480	34.97	0.17	4.40	1.00
	Pos Sequence Impedance (100 MVA Base)			110.49 + j	486.15 PU	
B-B8-ELEV	M-B8-ELEV	208	87.42	0.2	6.80	1.00
	Pos Sequence Impedance (100 MVA Base)			33.64 + j	228.78 PU	

2.5 Fault/Duty Reports

Fault Report (three phase & unbalanced)

The fault currents reported in the "Fault Report" are applicable to low voltage devices and components. The fault currents calculated in this report are based on the contribution data derived from ANSI C37.13, as follows:

- Motor and generator subtransient reactances (Xd") are adjusted per the first cycle duty multipliers described in IEEE standard 141-1993.
- The complex equivalent circuit impedance, Z, is calculated by network reduction of the "Z" (complex) network.
- The momentary symmetrical current = E/Z.
- The X/R ratio is equal to the equivalent circuit reactance, X, divided by the equivalent circuit resistance, R. As discussed above, X is calculated by the reduction of the "X" (reactive) network and R is calculated by the reduction of the "R" (resistive) network.

Momentary Duty Report

The "Momentary Duty Report" are the fault currents that occur during the first half-cycle of the fault, and are calculated as follows:

- Motor and generator subtransient reactances (Xd") are adjusted per the first cycle duty multipliers described in IEEE standard 141-1993.
- The complex equivalent circuit impedance, Z, is calculated by network reduction of the "Z" (complex) network.
- The momentary symmetrical current = E/Z.
- The X/R ratio reported is equal to the equivalent circuit reactance, X, divided by the equivalent circuit resistance, R. As discussed above, X is calculated by the reduction of the "X" (reactive) network and R is calculated by the reduction of the "R" (resistive) network.
- A_FAULT calculates and reports the momentary asymmetrical current in two different ways, once as "sym*1.6" and again as "momentary based on X/R". The "sym*1.6" value is the momentary symmetrical current multiplied by 1.6. The "momentary based on X/R" value is the momentary symmetrical current multiplied by $\sqrt{1+2e^{(-2\pi/(X/R))}}$

Interrupting Duty Report

The fault currents reported in the "Interrupting Duty Report" are symmetrical currents used to evaluate medium voltage breakers, and are calculated as follows:

- Motor and generator subtransient reactances (Xd") are adjusted per the interrupting duty multipliers described in IEEE standard 141-1993.

- The complex equivalent circuit impedance, Z, is calculated by network reduction of the “Z” (complex) network.
- The interrupting symmetrical current = E/Z.
- The X/R ratio reported is equal to the equivalent circuit reactance, X (calculated by the reduction of the reactive network), divided by the equivalent circuit resistance, R (calculated by the reduction of the resistive network).

2.5.1 Computer Output Data – Utility Case

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE
Feb 02, 2005 15:33:35

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SKM POWER*TOOLS FOR WINDOWS
A_FAULT SHORT CIRCUIT ANALYSIS REPORT
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T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B1-MDP	FAULT:	4.408 KA AT -60.37 DEG (	1.59 MVA)	X/R:	1.76
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0135 + J 0.0237		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.408 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.425 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.408 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.408 KA			
	CONTRIBUTIONS: B-B1-MDP-M	4.408 KA		ANG:	-60.37
B-B1-MDP-M	FAULT:	4.691 KA AT -61.26 DEG (	1.69 MVA)	X/R:	1.82
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0123 + J 0.0224		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.691 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.754 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.691 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.691 KA			
	CONTRIBUTIONS: B-T-B1-SEC	4.691 KA		ANG:	-61.26
B-B10 DISC	FAULT:	5.764 KA AT -60.98 DEG (	2.08 MVA)	X/R:	1.80
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0101 + J 0.0182		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.764 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.824 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.764 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.764 KA			
	CONTRIBUTIONS: B-T-B10-SEC	5.764 KA		ANG:	-60.98
B-B10-MDP	FAULT:	5.315 KA AT -59.44 DEG (	1.91 MVA)	X/R:	1.69
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0115 + J 0.0195		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.315 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.315 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.315 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.315 KA			
	CONTRIBUTIONS: B-B10 DISC	5.315 KA		ANG:	-59.44
B-B12-MAP-M	FAULT:	4.282 KA AT -61.52 DEG (	1.54 MVA)	X/R:	1.84
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0134 + J 0.0247		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.282 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.351 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.282 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.282 KA			
	CONTRIBUTIONS: B-T-B12-SEC	4.282 KA		ANG:	-61.52

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B12-MDP FAULT: 4.276 KA AT -61.49 DEG (1.54 MVA) X/R: 1.84
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0134 + J 0.0247 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.276 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.344 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.276 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.276 KA
CONTRIBUTIONS: B-B12-MAP-M 4.276 KA ANG: -61.49

B-B13-APT-13 FAULT: 6.468 KA AT -54.16 DEG (2.69 MVA) X/R: 1.38
VOLTAGE: 240. EQUIV. IMPEDANCE= 0.0125 + J 0.0174 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.468 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.468 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.468 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.468 KA
CONTRIBUTIONS: B-B13-MDP 6.468 KA ANG: -54.16

B-B13-APT-14 FAULT: 5.954 KA AT -64.24 DEG (2.48 MVA) X/R: 2.07
VOLTAGE: 240. EQUIV. IMPEDANCE= 0.0101 + J 0.0210 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.954 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.244 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.954 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.954 KA
CONTRIBUTIONS: B-B13-MDP 5.954 KA ANG: -64.24

B-B13-APT-15 FAULT: 4.595 KA AT -64.28 DEG (1.91 MVA) X/R: 2.08
VOLTAGE: 240. EQUIV. IMPEDANCE= 0.0131 + J 0.0272 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.595 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.822 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.595 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.595 KA
CONTRIBUTIONS: B-B13-MDP 4.595 KA ANG: -64.28

B-B13-GARAGE FAULT: 4.792 KA AT -50.94 DEG (1.99 MVA) X/R: 1.23
VOLTAGE: 240. EQUIV. IMPEDANCE= 0.0182 + J 0.0225 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.792 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.792 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.792 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.792 KA
CONTRIBUTIONS: B-B13-MDP 4.792 KA ANG: -50.94

B-B13-MDP FAULT: 8.713 KA AT -67.27 DEG (3.62 MVA) X/R: 2.39
VOLTAGE: 240. EQUIV. IMPEDANCE= 0.0061 + J 0.0147 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	8.713 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.503 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.713 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.713 KA		
	CONTRIBUTIONS: B-B13-MDP-M	8.713 KA	ANG:	-67.27
B-B13-MDP-M	FAULT: 8.720 KA AT -67.31 DEG (	3.62 MVA)	X/R:	2.39
	VOLTAGE: 240. EQUIV. IMPEDANCE=	0.0061 + J 0.0147		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.720 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.514 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.720 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.720 KA		
	CONTRIBUTIONS: B-B13-TXMR SEC	8.720 KA	ANG:	-67.31
B-B13-MGR H16	FAULT: 2.562 KA AT -42.39 DEG (	1.06 MVA)	X/R:	0.91
	VOLTAGE: 240. EQUIV. IMPEDANCE=	0.0400 + J 0.0365		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.562 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.562 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.562 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.562 KA		
	CONTRIBUTIONS: B-B13-MDP	2.562 KA	ANG:	-42.39
B-B13-TXMR SEC	FAULT: 11.190 KA AT -71.18 DEG (	4.65 MVA)	X/R:	2.94
	VOLTAGE: 240. EQUIV. IMPEDANCE=	0.0040 + J 0.0117		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.190 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.190 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.190 KA		
	CONTRIBUTIONS: B-T-13-PRI	11.190 KA	ANG:	-71.18
B-B13-UNKNOWN	FAULT: 6.468 KA AT -54.16 DEG (	2.69 MVA)	X/R:	1.38
	VOLTAGE: 240. EQUIV. IMPEDANCE=	0.0125 + J 0.0174		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.468 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.468 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.468 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.468 KA		
	CONTRIBUTIONS: B-B13-MDP	6.468 KA	ANG:	-54.16

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B17-A/C       FAULT:    7.926 KA AT  -58.99 DEG (   2.86 MVA)  X/R:     1.66
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0078 + J  0.0130  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.926 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.926 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.926 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.926 KA
                CONTRIBUTIONS:  B-B17-DP           7.926 KA      ANG:   -58.99

B-B17-A/C-2     FAULT:    7.115 KA AT  -51.24 DEG (   2.56 MVA)  X/R:     1.25
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0106 + J  0.0132  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.115 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.115 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.115 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.115 KA
                CONTRIBUTIONS:  B-B17-DP           7.115 KA      ANG:   -51.24

B-B17-AC1       FAULT:    7.115 KA AT  -51.24 DEG (   2.56 MVA)  X/R:     1.25
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0106 + J  0.0132  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.115 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.115 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.115 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.115 KA
                CONTRIBUTIONS:  B-B17-DP           7.115 KA      ANG:   -51.24

B-B17-ACB       FAULT:    6.481 KA AT  -45.67 DEG (   2.33 MVA)  X/R:     1.02
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0129 + J  0.0133  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.481 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.481 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.481 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.481 KA
                CONTRIBUTIONS:  B-B17-DP           6.481 KA      ANG:   -45.67

B-B17-ANIMALRM  FAULT:    4.462 KA AT  -34.67 DEG (   1.61 MVA)  X/R:     0.69
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0221 + J  0.0153  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    4.462 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   4.462 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   4.462 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   4.462 KA
                CONTRIBUTIONS:  B-B17-EMERG        4.462 KA      ANG:   -34.67

B-B17-ATS       FAULT:    9.598 KA AT  -58.84 DEG (   3.46 MVA)  X/R:     1.65
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0065 + J  0.0107  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	9.598 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.598 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.598 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.598 KA		
	ATS-B17 BUS-0740	9.598 KA	ANG:	-58.84
B-B17-DP	FAULT: 8.796 KA AT -61.44 DEG (3.17 MVA)		X/R:	1.84
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0065 + J 0.0120			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.796 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.932 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.796 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.796 KA		
	CONTRIBUTIONS: B-B17-MAIN	8.796 KA	ANG:	-61.44
B-B17-EMAIN	FAULT: 10.717 KA AT -63.85 DEG (3.86 MVA)		X/R:	2.04
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0049 + J 0.0101			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.717 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.717 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.717 KA		
	CONTRIBUTIONS: B-B17-MAIN	10.717 KA	ANG:	-63.85
B-B17-EMERG	FAULT: 9.262 KA AT -57.39 DEG (3.34 MVA)		X/R:	1.56
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0070 + J 0.0109			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.262 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.262 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.262 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.262 KA		
	CONTRIBUTIONS: B-B17-ATS	9.262 KA	ANG:	-57.39

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B17-MAIN FAULT: 11.023 KA AT -65.29 DEG (3.97 MVA) X/R: 2.17
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0046 + J 0.0099 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 11.023 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 11.023 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 11.023 KA
CONTRIBUTIONS: B-T-B17-SEC 11.023 KA ANG: -65.29

B-B17-NEB1 FAULT: 4.013 KA AT -32.75 DEG (1.45 MVA) X/R: 0.64
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0252 + J 0.0162 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.013 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.013 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.013 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.013 KA
CONTRIBUTIONS: B-B17-EMERG 4.013 KA ANG: -32.75

B-B17-NEB2 FAULT: 5.722 KA AT -37.65 DEG (2.06 MVA) X/R: 0.77
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0166 + J 0.0128 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.722 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.722 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.722 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.722 KA
CONTRIBUTIONS: B-B17-EMERG 5.722 KA ANG: -37.65

B-B17-NP11 FAULT: 5.609 KA AT -38.62 DEG (2.02 MVA) X/R: 0.80
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0167 + J 0.0134 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.609 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.609 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.609 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.609 KA
CONTRIBUTIONS: B-B17-DP 5.609 KA ANG: -38.62

B-B17-NP12 FAULT: 7.818 KA AT -58.02 DEG (2.82 MVA) X/R: 1.60
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0081 + J 0.0130 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.818 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.818 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.818 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.818 KA
CONTRIBUTIONS: B-B17-DP 7.818 KA ANG: -58.02

B-B17-NP21 FAULT: 7.115 KA AT -51.24 DEG (2.56 MVA) X/R: 1.25
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0106 + J 0.0132 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	7.115 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.115 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.115 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.115 KA			
	CONTRIBUTIONS: B-B17-DP	7.115 KA	ANG:	-51.24	
B-B17-NP22	FAULT: 7.115 KA AT -51.24 DEG (	2.56 MVA)	X/R:	1.25	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0106 + J	0.0132	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.115 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.115 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.115 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.115 KA			
	CONTRIBUTIONS: B-B17-DP	7.115 KA	ANG:	-51.24	
B-B17-NPA1	FAULT: 7.115 KA AT -51.24 DEG (	2.56 MVA)	X/R:	1.25	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0106 + J	0.0132	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.115 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.115 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.115 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.115 KA			
	CONTRIBUTIONS: B-B17-DP	7.115 KA	ANG:	-51.24	
B-B17-NPB1	FAULT: 7.690 KA AT -56.73 DEG (	2.77 MVA)	X/R:	1.52	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0086 + J	0.0131	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.690 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.690 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.690 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.690 KA			
	CONTRIBUTIONS: B-B17-DP	7.690 KA	ANG:	-56.73	
B-B17-NPB2	FAULT: 7.115 KA AT -51.24 DEG (	2.56 MVA)	X/R:	1.25	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0106 + J	0.0132	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.115 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.115 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.115 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.115 KA			
	CONTRIBUTIONS: B-B17-DP	7.115 KA	ANG:	-51.24	
B-B18-1STFL	FAULT: 5.924 KA AT -41.58 DEG (	2.13 MVA)	X/R:	0.89	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0152 + J	0.0135	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.924 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.924 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.924 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.924 KA			
	CONTRIBUTIONS: B-B18-1STFL-M	5.924 KA	ANG:	-41.58	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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 B-B18-1STFL-M  FAULT:    7.246 KA AT  -47.84 DEG (   2.61 MVA)  X/R:     1.10
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0111 + J  0.0123  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.246 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.246 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.246 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.246 KA
                CONTRIBUTIONS:  B-B18-TAP BOX      7.246 KA      ANG:   -47.84

 B-B18-2ND-FL-M FAULT:    7.246 KA AT  -47.84 DEG (   2.61 MVA)  X/R:     1.10
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0111 + J  0.0123  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.246 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.246 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.246 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.246 KA
                CONTRIBUTIONS:  B-B18-TAP BOX      7.246 KA      ANG:   -47.84

 B-B18-2NDFL    FAULT:    4.975 KA AT  -37.29 DEG (   1.79 MVA)  X/R:     0.76
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0192 + J  0.0146  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    4.975 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   4.975 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   4.975 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   4.975 KA
                CONTRIBUTIONS:  B-B18-2ND-FL-M     4.975 KA      ANG:   -37.29

 B-B18-AC1      FAULT:    6.997 KA AT  -43.40 DEG (   2.52 MVA)  X/R:     0.95
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0125 + J  0.0118  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.997 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.997 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.997 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.997 KA
                CONTRIBUTIONS:  B-B18-NMDP         6.997 KA      ANG:   -43.40

 B-B18-AC2      FAULT:    8.895 KA AT  -58.79 DEG (   3.20 MVA)  X/R:     1.65
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0070 + J  0.0115  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.895 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.895 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.895 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.895 KA
                CONTRIBUTIONS:  B-B18-NMDP         8.895 KA      ANG:   -58.79

 B-B18-ATS-EMRG FAULT:    7.979 KA AT  -50.88 DEG (   2.87 MVA)  X/R:     1.23
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0095 + J  0.0117  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	7.979 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.979 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.979 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.979 KA			
	CONTRIBUTIONS: BUS-0452	7.979 KA	ANG:	-50.88	
B-B18-EMERG	FAULT: 7.146 KA AT -47.42 DEG (	2.57 MVA)	X/R:	1.09	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0114 + J	0.0124	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.146 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.146 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.146 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.146 KA			
	CONTRIBUTIONS: B-B18-EMERG-M	7.146 KA	ANG:	-47.42	
B-B18-EMERG-M	FAULT: 7.168 KA AT -47.46 DEG (	2.58 MVA)	X/R:	1.09	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0113 + J	0.0123	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.168 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.168 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.168 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.168 KA			
	CONTRIBUTIONS: B-B18-TAP BOX	7.168 KA	ANG:	-47.46	
B-B18-NCP	FAULT: 9.778 KA AT -60.43 DEG (	3.52 MVA)	X/R:	1.76	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0061 + J	0.0107	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.778 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.822 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.778 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.778 KA			
	CONTRIBUTIONS: B-B18-NMDP	9.778 KA	ANG:	-60.43	
B-B18-NMDP	FAULT: 10.780 KA AT -66.48 DEG (	3.88 MVA)	X/R:	2.30	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0044 + J	0.0102	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.780 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.780 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.780 KA			
	CONTRIBUTIONS: B-B18-NMDP-M	10.780 KA	ANG:	-66.48	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B18-NMDP (CONTINUED)

B-B18-NMDP-M FAULT: 10.803 KA AT -66.54 DEG (3.89 MVA) X/R: 2.31
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0044 + J 0.0102 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 10.803 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 10.803 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 10.803 KA
CONTRIBUTIONS: B-T-B18-SEC 10.803 KA ANG: -66.54

B-B18-NP11 FAULT: 6.997 KA AT -43.40 DEG (2.52 MVA) X/R: 0.95
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0125 + J 0.0118 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.997 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.997 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.997 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.997 KA
CONTRIBUTIONS: B-B18-NMDP 6.997 KA ANG: -43.40

B-B18-NP12 FAULT: 6.997 KA AT -43.40 DEG (2.52 MVA) X/R: 0.95
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0125 + J 0.0118 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.997 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.997 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.997 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.997 KA
CONTRIBUTIONS: B-B18-NMDP 6.997 KA ANG: -43.40

B-B18-NP21 FAULT: 7.598 KA AT -46.57 DEG (2.74 MVA) X/R: 1.06
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0109 + J 0.0115 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.598 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.598 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.598 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.598 KA
CONTRIBUTIONS: B-B18-NMDP 7.598 KA ANG: -46.57

B-B18-NP22 FAULT: 8.313 KA AT -55.00 DEG (2.99 MVA) X/R: 1.43
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0083 + J 0.0118 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 8.313 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 8.313 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 8.313 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 8.313 KA
CONTRIBUTIONS: B-B18-NMDP 8.313 KA ANG: -55.00

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B18-NP23 FAULT: 9.098 KA AT -60.71 DEG (3.28 MVA) X/R: 1.78
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0065 + J 0.0115 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.098 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.166 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.098 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.098 KA
CONTRIBUTIONS: B-B18-NMDP 9.098 KA ANG: -60.71

B-B18-STRT LHT FAULT: 4.688 KA AT -29.50 DEG (1.69 MVA) X/R: 0.57
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0223 + J 0.0126 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.688 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.688 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.688 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.688 KA
CONTRIBUTIONS: B-B18-NMDP 4.688 KA ANG: -29.50

B-B18-TAP BOX FAULT: 7.487 KA AT -49.02 DEG (2.70 MVA) X/R: 1.15
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0105 + J 0.0121 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.487 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.487 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.487 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.487 KA
CONTRIBUTIONS: B-B18-ATS-EMRG 7.487 KA ANG: -49.02

B-B19-200A PNL FAULT: 18.043 KA AT -69.61 DEG (6.50 MVA) X/R: 2.69
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0023 + J 0.0062 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 18.043 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 18.043 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 18.043 KA
CONTRIBUTIONS: B-B19-MDP2 18.043 KA ANG: -69.61

B-B19-B1 FAULT: 16.079 KA AT -60.60 DEG (5.79 MVA) X/R: 1.78
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0037 + J 0.0065 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 16.079 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 16.079 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 16.079 KA
CONTRIBUTIONS: B-B19-MDP1 16.079 KA ANG: -60.60

B-B19-L1 FAULT: 2.634 KA AT -22.43 DEG (0.95 MVA) X/R: 0.41
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0421 + J 0.0174 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.634 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.634 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.634 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.634 KA		
	CONTRIBUTIONS: B-B19-MDP1	2.634 KA	ANG:	-22.43
B-B19-L2	FAULT: 7.374 KA AT -39.17 DEG (2.66 MVA)		X/R:	0.81
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0126 + J 0.0103			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.374 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.374 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.374 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.374 KA		
	CONTRIBUTIONS: B-B19-MDP1	7.374 KA	ANG:	-39.17
B-B19-MDP1	FAULT: 20.154 KA AT -72.96 DEG (7.26 MVA)		X/R:	3.27
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0017 + J 0.0057			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	20.154 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	20.154 KA		
	CONTRIBUTIONS: B-B19-MDP1-M	20.154 KA	ANG:	-72.96
B-B19-MDP1-M	FAULT: 20.182 KA AT -73.05 DEG (7.27 MVA)		X/R:	3.28
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0017 + J 0.0057			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	20.182 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	20.182 KA		
	CONTRIBUTIONS: B-T-B19-SEC	20.182 KA	ANG:	-73.05
B-B19-MDP2	FAULT: 19.126 KA AT -72.23 DEG (6.89 MVA)		X/R:	3.12
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0019 + J 0.0060			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	19.126 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	19.126 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	19.126 KA		
	CONTRIBUTIONS: B-B19-MDP2-M	19.126 KA	ANG:	-72.23

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B19-MDP2-M	FAULT: 19.457 KA AT -72.49 DEG (7.01 MVA) X/R:	3.17
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0019 + J 0.0059	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER 19.457 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 19.457 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 19.457 KA	
	CONTRIBUTIONS: B-T-B19-SEC 19.457 KA ANG:	-72.49
B-B19-MDPA	FAULT: 10.564 KA AT -65.66 DEG (3.81 MVA) X/R:	2.21
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0047 + J 0.0104	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER 10.564 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 10.564 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 10.564 KA	
	CONTRIBUTIONS: B-B19-MDP1 10.564 KA ANG:	-65.66
B-B19-P1	FAULT: 10.564 KA AT -65.66 DEG (3.81 MVA) X/R:	2.21
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0047 + J 0.0104	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER 10.564 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 10.564 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 10.564 KA	
	CONTRIBUTIONS: B-B19-MDP1 10.564 KA ANG:	-65.66
B-B19-P2	FAULT: 9.053 KA AT -49.65 DEG (3.26 MVA) X/R:	1.18
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0086 + J 0.0101	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER 9.053 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA 9.053 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 9.053 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 9.053 KA	
	CONTRIBUTIONS: B-B19-MDP1 9.053 KA ANG:	-49.65
B-B19-P4	FAULT: 16.873 KA AT -65.48 DEG (6.08 MVA) X/R:	2.19
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0030 + J 0.0065	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER 16.873 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 16.873 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 16.873 KA	
	CONTRIBUTIONS: B-B19-MDP1 16.873 KA ANG:	-65.48
B-B19-P6	FAULT: 3.012 KA AT -28.67 DEG (1.08 MVA) X/R:	0.55
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0350 + J 0.0191	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    3.012 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.012 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   3.012 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.012 KA
                CONTRIBUTIONS:  B-B19-MDPA         3.012 KA      ANG:   -28.67

 B-B19-PS       FAULT:    4.843 KA AT  -27.75 DEG (   1.74 MVA)  X/R:     0.53
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0219 + J  0.0115  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    4.843 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   4.843 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   4.843 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   4.843 KA
                CONTRIBUTIONS:  B-B19-MDP1         4.843 KA      ANG:   -27.75

 B-B2-ATS-CRIT  FAULT:   14.058 KA AT  -68.37 DEG (   5.06 MVA)  X/R:     2.61
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0031 + J  0.0079  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   14.058 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.058 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.058 KA
                CONTRIBUTIONS:  BUS-0097*         12.279 KA      ANG:   -67.25
                CBL-0064        B-B2-CRIT PNL      1.798 KA      ANG:   -76.09

 B-B2-ATS-LED3  FAULT:    3.313 KA AT  -54.16 DEG (   1.19 MVA)  X/R:     1.38
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0212 + J  0.0294  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    3.313 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.313 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   3.313 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.313 KA
                CONTRIBUTIONS:  BUS-0076           3.313 KA      ANG:   -54.16

 B-B2-ATS-LS    FAULT:   14.376 KA AT  -69.19 DEG (   5.18 MVA)  X/R:     2.69
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0030 + J  0.0078  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   14.376 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.376 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.376 KA
                CONTRIBUTIONS:  BUS-0106*         13.032 KA      ANG:   -68.53
                CBL-0072        B-B2-PNL LS        1.353 KA      ANG:   -75.49

 B-B2-BATTERYCH FAULT:    3.876 KA AT  -21.69 DEG (   1.40 MVA)  X/R:     0.40
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0288 + J  0.0115  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.876 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.876 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.876 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.876 KA			
	CONTRIBUTIONS: B-B2-PNL LS	3.876 KA	ANG:	-21.69	
B-B2-CATSCAN	FAULT: 9.340 KA AT -60.01 DEG (7.77 MVA)	X/R:	1.73		
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0148 + J 0.0257	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.340 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.344 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.340 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.340 KA			
	CONTRIBUTIONS: B-B2-MDP	9.340 KA	ANG:	-60.01	
B-B2-CRIT PNL	FAULT: 13.815 KA AT -67.74 DEG (4.98 MVA)	X/R:	2.54		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0033 + J 0.0080	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	13.815 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.815 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	13.815 KA			
	CONTRIBUTIONS: B-B2-ATS-CRIT	12.035 KA	ANG:	-66.47	
	CBL-0067 B-B2-MEDAIRCOM	0.454 KA	ANG:	-74.63	
	CBL-0068 B-B2-ELEV-P1	0.893 KA	ANG:	-77.21	
	CBL-0070 B-B2-PNL-L11	0.457 KA	ANG:	-75.89	
B-B2-DENTAL LB	FAULT: 7.797 KA AT -42.40 DEG (2.81 MVA)	X/R:	0.92		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0114 + J 0.0104	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.797 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.797 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.797 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.797 KA			
	CONTRIBUTIONS: B-B2-CRIT PNL	7.797 KA	ANG:	-42.40	
B-B2-DENTSUCPM	FAULT: 7.467 KA AT -44.53 DEG (2.69 MVA)	X/R:	1.22		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0115 + J 0.0113	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.467 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.467 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.467 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.467 KA			
	CONTRIBUTIONS: MTRI-0007	0.936 KA	ANG:	-79.51	
	CBL-0076 B-B2-PNL LS	6.722 KA	ANG:	-39.95	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B2-ELEV       FAULT:   10.539 KA AT  -60.44 DEG (   3.80 MVA)  X/R:     1.83
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0056 + J  0.0099  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.539 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.539 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.539 KA
                CONTRIBUTIONS:  MTRI-0005          0.463 KA      ANG:   -76.61
                CBL-0073        B-B2-PNL LS       10.096 KA      ANG:   -59.70

B-B2-ELEV-P1    FAULT:    7.988 KA AT  -56.42 DEG (   2.88 MVA)  X/R:     1.75
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0083 + J  0.0125  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.988 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.009 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.988 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.988 KA
                CONTRIBUTIONS:  M-B2-ELEV-P1       0.936 KA      ANG:   -79.51
                CBL-0068        B-B2-CRIT PNL      7.137 KA      ANG:   -53.47

B-B2-EMERG-M    FAULT:    3.257 KA AT  -53.78 DEG (   1.17 MVA)  X/R:     1.37
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0218 + J  0.0297  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    3.257 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.257 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   3.257 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.257 KA
                CONTRIBUTIONS:  B-B2-ATS-LED3      3.257 KA      ANG:   -53.78

B-B2-EMERG-PNL  FAULT:    3.252 KA AT  -53.75 DEG (   1.17 MVA)  X/R:     1.36
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0218 + J  0.0298  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    3.252 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.252 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   3.252 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.252 KA
                CONTRIBUTIONS:  B-B2-EMERG-M       3.252 KA      ANG:   -53.75

B-B2-L12        FAULT:    9.312 KA AT  -55.46 DEG (   3.35 MVA)  X/R:     1.47
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0073 + J  0.0106  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.312 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.312 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.312 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.312 KA
                CONTRIBUTIONS:  B-B2-PNL LS        9.312 KA      ANG:   -55.46

B-B2-L2A        FAULT:    9.299 KA AT  -55.48 DEG (   3.35 MVA)  X/R:     1.48
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0073 + J  0.0106  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    9.299 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.299 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.299 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.299 KA
                CONTRIBUTIONS:  B-B2-CRIT PNL      9.299 KA      ANG:   -55.48

 B-B2-L2E       FAULT:    9.312 KA AT  -55.46 DEG (   3.35 MVA)  X/R:     1.47
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0073 + J  0.0106  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.312 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.312 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.312 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.312 KA
                CONTRIBUTIONS:  B-B2-PNL LS        9.312 KA      ANG:   -55.46

 B-B2-L4        FAULT:    9.865 KA AT  -56.78 DEG (   3.55 MVA)  X/R:     1.54
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0067 + J  0.0102  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.865 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.865 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.865 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.865 KA
                CONTRIBUTIONS:  B-B2-MDPB          9.865 KA      ANG:   -56.78

 B-B2-L6        FAULT:    9.865 KA AT  -56.78 DEG (   3.55 MVA)  X/R:     1.54
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0067 + J  0.0102  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.865 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.865 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.865 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.865 KA
                CONTRIBUTIONS:  B-B2-MDPB          9.865 KA      ANG:   -56.78

 B-B2-L7        FAULT:    9.865 KA AT  -56.78 DEG (   3.55 MVA)  X/R:     1.54
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0067 + J  0.0102  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.865 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.865 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.865 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.865 KA
                CONTRIBUTIONS:  B-B2-MDPB          9.865 KA      ANG:   -56.78

 B-B2-L8        FAULT:    9.865 KA AT  -56.78 DEG (   3.55 MVA)  X/R:     1.54
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0067 + J  0.0102  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.865 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.865 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.865 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.865 KA
                CONTRIBUTIONS:  B-B2-MDPB          9.865 KA      ANG:   -56.78
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-L9E	FAULT:	8.308 KA	AT -47.92 DEG (	2.99 MVA)	X/R:	1.12
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0097 + J 0.0107		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.308 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.308 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.308 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.308 KA				
	CONTRIBUTIONS: B-B2-PNL LS	8.308 KA			ANG:	-47.92
B-B2-LB1E	FAULT:	8.308 KA	AT -47.92 DEG (	2.99 MVA)	X/R:	1.12
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0097 + J 0.0107		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.308 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.308 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.308 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.308 KA				
	CONTRIBUTIONS: B-B2-PNL LS	8.308 KA			ANG:	-47.92
B-B2-LB2	FAULT:	9.865 KA	AT -56.78 DEG (	3.55 MVA)	X/R:	1.54
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0067 + J 0.0102		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.865 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.865 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.865 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.865 KA				
	CONTRIBUTIONS: B-B2-MDPB	9.865 KA			ANG:	-56.78
B-B2-LB2E	FAULT:	6.937 KA	AT -39.32 DEG (	2.50 MVA)	X/R:	0.82
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0134 + J 0.0110		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.937 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.937 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.937 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.937 KA				
	CONTRIBUTIONS: B-B2-CRIT PNL	6.937 KA			ANG:	-39.32
B-B2-LED-3	FAULT:	3.409 KA	AT -54.99 DEG (	1.23 MVA)	X/R:	1.43
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0202 + J 0.0289		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.409 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.409 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.409 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.409 KA				
	CONTRIBUTIONS: B-T-B2-LED-SEC	3.409 KA			ANG:	-54.99
B-B2-MDP	FAULT:	12.674 KA	AT -77.89 DEG (	10.54 MVA)	X/R:	4.67
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0046 + J 0.0214		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   12.674 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.951 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.674 KA
                CONTRIBUTIONS:  B-B2-MDP-M        11.853 KA      ANG:   -78.01
                CBL-0052        B-B2-PNL-P         0.822 KA      ANG:   -76.12

 B-B2-MDP-M     FAULT:   12.678 KA AT  -77.91 DEG (  10.54 MVA)  X/R:     4.68
                VOLTAGE:    480.   EQUIV. IMPEDANCE=  0.0046 + J  0.0214  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.678 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.961 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.678 KA
                CONTRIBUTIONS:  B-T-B2-SEC4       11.856 KA      ANG:   -78.03
                CBL-0039        B-B2-MDP           0.822 KA      ANG:   -76.12

 B-B2-MDPA      FAULT:    7.615 KA AT  -79.01 DEG (   2.74 MVA)  X/R:     5.15
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0030 + J  0.0155  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.615 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.565 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.699 KA
                CBL-0057        B-B2-MDPA-M        7.615 KA      ANG:   -79.01

 B-B2-MDPA-M    FAULT:    7.656 KA AT  -79.16 DEG (   2.76 MVA)  X/R:     5.23
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0030 + J  0.0154  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.656 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.636 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.764 KA
                CONTRIBUTIONS:  B-T-B2-SEC2        7.656 KA      ANG:   -79.16

 B-B2-MDPB      FAULT:   14.942 KA AT  -70.79 DEG (   5.38 MVA)  X/R:     2.93
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0026 + J  0.0076  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   14.942 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.942 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.942 KA
                CONTRIBUTIONS:  BUS-0097*           1.782 KA      ANG:   -75.61
                CBL-0071        BUS-0106*          1.348 KA      ANG:   -75.28
                CBL-0086        B-B2-MDPB-M       11.825 KA      ANG:   -69.55
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B2-MDPB (CONTINUED)

B-B2-MDPB-M FAULT: 15.041 KA AT -70.89 DEG (5.42 MVA) X/R: 2.94
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0026 + J 0.0075 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 15.041 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 15.041 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 15.041 KA
CONTRIBUTIONS: B-T-B2-SEC3 11.930 KA ANG: -69.71
CBL-0086 B-B2-MDPB 3.123 KA ANG: -75.42

B-B2-MEDAIRCOM FAULT: 7.203 KA AT -41.88 DEG (2.60 MVA) X/R: 0.98
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0124 + J 0.0111 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.203 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.203 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.203 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.203 KA
CONTRIBUTIONS: M-B2 MEDAIRCOM 0.463 KA ANG: -76.61
CBL-0067 B-B2-CRIT PNL 6.828 KA ANG: -39.67

B-B2-NEWLAB FAULT: 3.216 KA AT -53.34 DEG (1.16 MVA) X/R: 1.34
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0223 + J 0.0300 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.216 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.216 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.216 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.216 KA
CONTRIBUTIONS: B-B2-NEWLAB-M 3.216 KA ANG: -53.34

B-B2-NEWLAB-M FAULT: 3.221 KA AT -53.36 DEG (1.16 MVA) X/R: 1.34
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0222 + J 0.0299 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.221 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.221 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.221 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.221 KA
CONTRIBUTIONS: B-B2-ATS-LED3 3.221 KA ANG: -53.36

B-B2-PNL 1 FAULT: 3.257 KA AT -53.78 DEG (1.17 MVA) X/R: 1.37
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0218 + J 0.0297 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER		3.257 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.257 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.257 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.257 KA		
	CONTRIBUTIONS:	B-B2-ATS-LED3	3.257 KA	ANG:	-53.78
B-B2-PNL LS	FAULT:	13.843 KA AT -67.73 DEG (4.99 MVA)		X/R:	2.51
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0033 + J 0.0080		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		13.843 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		13.843 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		13.843 KA		
	CONTRIBUTIONS:	B-B2-ATS-LS	12.499 KA	ANG:	-66.86
	CBL-0076	B-B2-DENTSUCPM	0.900 KA	ANG:	-75.47
	CBL-0073	B-B2-ELEV	0.458 KA	ANG:	-76.16
B-B2-PNL-2	FAULT:	3.269 KA AT -53.46 DEG (1.18 MVA)		X/R:	1.35
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0219 + J 0.0295		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		3.269 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.269 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.269 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.269 KA		
	CONTRIBUTIONS:	B-B2-ATS-LED3	3.269 KA	ANG:	-53.46
B-B2-PNL-3-M	FAULT:	3.209 KA AT -52.77 DEG (1.16 MVA)		X/R:	1.32
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0226 + J 0.0298		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		3.209 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.209 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.209 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.209 KA		
	CONTRIBUTIONS:	B-B2-ATS-LED3	3.209 KA	ANG:	-52.77
B-B2-PNL-D2	FAULT:	6.103 KA AT -74.64 DEG (2.20 MVA)		X/R:	3.64
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0052 + J 0.0190		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		6.103 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		7.462 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		6.324 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		6.103 KA		
	CONTRIBUTIONS:	B-B2-MDPA	6.103 KA	ANG:	-74.64

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B2-PNL-L11	FAULT:	9.524 KA AT -56.56 DEG (	3.43 MVA)	X/R:	1.59
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0069 + J 0.0105		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		9.524 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		9.524 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		9.524 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		9.524 KA		
	CONTRIBUTIONS:	MTRI-0003	0.463 KA	ANG:	-76.61
	CBL-0070	B-B2-CRIT PNL	9.091 KA	ANG:	-55.56
B-B2-PNL-M1	FAULT:	3.110 KA AT -51.46 DEG (	1.12 MVA)	X/R:	1.26
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0241 + J 0.0302		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		3.110 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.110 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.110 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.110 KA		
	CONTRIBUTIONS:	B-B2-PNL-3-M	3.110 KA	ANG:	-51.46
B-B2-PNL-P	FAULT:	9.556 KA AT -72.86 DEG (	7.94 MVA)	X/R:	3.26
	VOLTAGE:	480. EQUIV. IMPEDANCE=	0.0085 + J 0.0277		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		9.556 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		9.622 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		9.556 KA		
	CONTRIBUTIONS:	M-B2-PNL-P	0.842 KA	ANG:	-76.61
	CBL-0052	B-B2-MDP	8.715 KA	ANG:	-72.50
B-B2-POD2PP	FAULT:	9.721 KA AT -58.32 DEG (	3.50 MVA)	X/R:	1.64
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0065 + J 0.0105		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		9.721 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		9.721 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		9.721 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		9.721 KA		
	CONTRIBUTIONS:	B-B2-PNL LS	9.721 KA	ANG:	-58.32
B-B2-TEL COMM	FAULT:	9.865 KA AT -56.78 DEG (	3.55 MVA)	X/R:	1.54
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0067 + J 0.0102		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		9.865 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		9.865 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		9.865 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		9.865 KA		
	CONTRIBUTIONS:	B-B2-MDPB	9.865 KA	ANG:	-56.78

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B2-UNIT-1	FAULT: 8.552 KA AT -67.07 DEG (7.11 MVA) X/R: 2.37	
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0126 + J 0.0298 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 8.552 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA 9.310 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 8.552 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 8.552 KA	
	CONTRIBUTIONS: B-B2-PNL-P 8.552 KA ANG: -67.07	
B-B2-UNIT-2	FAULT: 9.037 KA AT -69.81 DEG (7.51 MVA) X/R: 2.73	
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0106 + J 0.0288 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 9.037 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 9.037 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 9.037 KA	
	CONTRIBUTIONS: B-B2-PNL-P 9.037 KA ANG: -69.81	
B-B2-XRAY	FAULT: 1.913 KA AT -10.89 DEG (0.69 MVA) X/R: 0.19	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0616 + J 0.0119 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 1.913 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA 1.913 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 1.913 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 1.913 KA	
	CONTRIBUTIONS: B-B2-MDPB 1.913 KA ANG: -10.89	
B-B2-XRAY-124	FAULT: 6.276 KA AT -56.41 DEG (5.22 MVA) X/R: 1.51	
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0244 + J 0.0368 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 6.276 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA 6.276 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 6.276 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 6.276 KA	
	CONTRIBUTIONS: B-B2-MDP 6.276 KA ANG: -56.41	
B-B2-XRAY124	FAULT: 8.055 KA AT -44.44 DEG (2.90 MVA) X/R: 0.98	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0106 + J 0.0104 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 8.055 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA 8.055 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 8.055 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 8.055 KA	
	CONTRIBUTIONS: B-B2-MDPB 8.055 KA ANG: -44.44	
B-B21-P1	FAULT: 3.182 KA AT -31.54 DEG (1.15 MVA) X/R: 0.61	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0322 + J 0.0197 OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.182 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.182 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.182 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.182 KA			
	CONTRIBUTIONS: B-B21-P2	3.182 KA	ANG:	-31.54	
B-B21-P2	FAULT: 5.464 KA AT -43.26 DEG (	1.97 MVA)	X/R:	0.94	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0160 + J	0.0151	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.464 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.464 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.464 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.464 KA			
	CONTRIBUTIONS: B-B19-MDP2	5.464 KA	ANG:	-43.26	
B-B22-ATS-EMER	FAULT: 6.565 KA AT -67.88 DEG (	5.46 MVA)	X/R:	2.46	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0159 + J	0.0391	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.565 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.219 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.565 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.565 KA			
	CONTRIBUTIONS: BUS-0481	6.565 KA	ANG:	-67.88	
B-B22-EMERG	FAULT: 6.237 KA AT -67.34 DEG (	5.19 MVA)	X/R:	2.40	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0171 + J	0.0410	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.237 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.808 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.237 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.237 KA			
	CONTRIBUTIONS: B-B22-EMERG-M	6.237 KA	ANG:	-67.34	
B-B22-EMERG-M	FAULT: 6.243 KA AT -67.38 DEG (	5.19 MVA)	X/R:	2.40	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0171 + J	0.0410	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.243 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.819 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.243 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.243 KA			
	CONTRIBUTIONS: B-B22-ATS-EMER	6.243 KA	ANG:	-67.38	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B22-L1	FAULT:	2.818 KA AT	-57.47 DEG (	1.02 MVA)	X/R:	1.57
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0229 + J	0.0359	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.818 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.818 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.818 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.818 KA				
	CONTRIBUTIONS: B-B22-L1-M	2.818 KA	ANG:	-57.47		
B-B22-L1-M	FAULT:	2.822 KA AT	-57.50 DEG (	1.02 MVA)	X/R:	1.57
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0229 + J	0.0359	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.822 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.822 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.822 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.822 KA				
	CONTRIBUTIONS: B-B22-T4-SEC	2.822 KA	ANG:	-57.50		
B-B22-L2	FAULT:	2.818 KA AT	-57.47 DEG (	1.02 MVA)	X/R:	1.57
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0229 + J	0.0359	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.818 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.818 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.818 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.818 KA				
	CONTRIBUTIONS: B-B22-L2-M	2.818 KA	ANG:	-57.47		
B-B22-L2-M	FAULT:	2.822 KA AT	-57.50 DEG (	1.02 MVA)	X/R:	1.57
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0229 + J	0.0359	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.822 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.822 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.822 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.822 KA				
	CONTRIBUTIONS: B-B22-T22-SEC	2.822 KA	ANG:	-57.50		
B-B22-L3	FAULT:	2.826 KA AT	-57.57 DEG (	1.02 MVA)	X/R:	1.57
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0228 + J	0.0359	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.826 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.826 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.826 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.826 KA				
	CONTRIBUTIONS: B-B22-L3-M	2.826 KA	ANG:	-57.57		
B-B22-L3-M	FAULT:	2.829 KA AT	-57.60 DEG (	1.02 MVA)	X/R:	1.58
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0227 + J	0.0358	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.829 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.829 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.829 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.829 KA
	CONTRIBUTIONS: B-B22-T2-SEC	2.829 KA ANG: -57.60
B-B22-MDP	FAULT: 7.015 KA AT -68.58 DEG (5.83 MVA)	X/R: 2.55
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0144 + J 0.0368	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.015 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.791 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.015 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.015 KA
	CONTRIBUTIONS: B-B22-MDP-M	7.015 KA ANG: -68.58
B-B22-MDP-M	FAULT: 7.018 KA AT -68.59 DEG (5.83 MVA)	X/R: 2.55
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0144 + J 0.0368	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.018 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.796 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.018 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.018 KA
	CONTRIBUTIONS: B-T-B22-SEC	7.018 KA ANG: -68.59
B-B22-N1	FAULT: 4.797 KA AT -60.69 DEG (1.73 MVA)	X/R: 1.78
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0123 + J 0.0218	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.797 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.832 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.797 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.797 KA
	CONTRIBUTIONS: B-B22-N1-M	4.797 KA ANG: -60.69
B-B22-N1-M	FAULT: 4.805 KA AT -60.72 DEG (1.73 MVA)	X/R: 1.78
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0122 + J 0.0218	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.805 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.841 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.805 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.805 KA
	CONTRIBUTIONS: B-B22-T1-SEC	4.805 KA ANG: -60.72
B-B22-P1	FAULT: 5.998 KA AT -66.10 DEG (4.99 MVA)	X/R: 2.26
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0187 + J 0.0422	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	5.998 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.440 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.998 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.998 KA
	CONTRIBUTIONS: B-B22-EMERG	5.998 KA ANG: -66.10
B-B22-P2	FAULT: 5.998 KA AT -66.10 DEG (4.99 MVA)	X/R: 2.26
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0187 + J 0.0422	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.998 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.440 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.998 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.998 KA
	CONTRIBUTIONS: B-B22-EMERG	5.998 KA ANG: -66.10
B-B22-T1-PRI	FAULT: 6.893 KA AT -67.99 DEG (5.73 MVA)	X/R: 2.48
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0151 + J 0.0373	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.893 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.592 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.893 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.893 KA
	CONTRIBUTIONS: B-B22-MDP	6.893 KA ANG: -67.99
B-B22-T1-SEC	FAULT: 5.085 KA AT -60.89 DEG (1.83 MVA)	X/R: 1.80
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0115 + J 0.0206	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.085 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.133 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.085 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.085 KA
	CONTRIBUTIONS: B-B22-T1-PRI	5.085 KA ANG: -60.89
B-B22-T2-PRI	FAULT: 6.099 KA AT -66.11 DEG (5.07 MVA)	X/R: 2.26
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0184 + J 0.0415	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.099 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.550 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.099 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.099 KA
	CONTRIBUTIONS: B-B22-EMERG	6.099 KA ANG: -66.11
B-B22-T2-SEC	FAULT: 2.907 KA AT -58.17 DEG (1.05 MVA)	X/R: 1.61
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0218 + J 0.0351	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.907 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.907 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.907 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.907 KA			
	CONTRIBUTIONS: B-B22-T2-PRI	2.907 KA	ANG:	-58.17	
B-B22-T22-SEC	FAULT: 2.900 KA AT -58.06 DEG (	1.04 MVA)	X/R:	1.60	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0219 + J	0.0351	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.900 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.900 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.900 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.900 KA			
	CONTRIBUTIONS: B-B22-T3 PRI	2.900 KA	ANG:	-58.06	
B-B22-T3 PRI	FAULT: 6.032 KA AT -65.52 DEG (	5.01 MVA)	X/R:	2.20	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0190 + J	0.0418	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.032 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.428 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.032 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.032 KA			
	CONTRIBUTIONS: B-B22-EMERG	6.032 KA	ANG:	-65.52	
B-B22-T4-PRI	FAULT: 6.032 KA AT -65.52 DEG (	5.01 MVA)	X/R:	2.20	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0190 + J	0.0418	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.032 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.428 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.032 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.032 KA			
	CONTRIBUTIONS: B-B22-EMERG	6.032 KA	ANG:	-65.52	
B-B22-T4-SEC	FAULT: 2.900 KA AT -58.06 DEG (	1.04 MVA)	X/R:	1.60	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0219 + J	0.0351	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.900 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.900 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.900 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.900 KA			
	CONTRIBUTIONS: B-B22-T4-PRI	2.900 KA	ANG:	-58.06	
B-B27-SWGR	FAULT: 3.034 KA AT -71.97 DEG (	72.52 MVA)	X/R:	3.10	
	VOLTAGE: 13800. EQUIV. IMPEDANCE=	0.8127 + J	2.4971	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                CONTRIBUTIONS TO  B-B27-SWGR     (CONTINUED)
                CONTRIBUTIONS:  B-SWGR27 TAP       2.700 KA      ANG:   -71.57
                CBL-0005        B-T-B8-PRI         0.099 KA      ANG:   -76.03
                CBL-0004        BUS-0017           0.096 KA      ANG:   -74.59
                CBL-0036        B-T-B33-PRI        0.030 KA      ANG:   -75.28
                CBL-0035        BUS-0063           0.109 KA      ANG:   -75.15

 B-B27-SWGR-M2  FAULT:    3.034 KA AT  -71.97 DEG (  72.52 MVA)  X/R:     3.10
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  0.8126 + J  2.4970  OHMS
                CONTRIBUTIONS:  UTIL-STN 559-1     2.700 KA      ANG:   -71.57
                CBL-0001        B-SWGR27 TAP       0.335 KA      ANG:   -75.26

 B-B3-1ST FL    FAULT:   10.403 KA AT  -53.17 DEG (   3.75 MVA)  X/R:     1.34
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0069 + J  0.0092  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.403 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.403 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.403 KA
                CONTRIBUTIONS:  B-B3-EP1          10.403 KA      ANG:   -53.17

 B-B3-ALDN KIT  FAULT:    7.858 KA AT  -35.84 DEG (   2.83 MVA)  X/R:     0.73
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0124 + J  0.0089  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.858 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.858 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.858 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.858 KA
                CONTRIBUTIONS:  B-B3-EP2           7.858 KA      ANG:   -35.84

 B-B3-ATS-COMP  FAULT:   16.814 KA AT  -69.09 DEG (   6.06 MVA)  X/R:     2.73
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0025 + J  0.0067  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   16.814 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  16.814 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  16.814 KA
                CONTRIBUTIONS:  BUS-0140          14.148 KA      ANG:   -67.56
                CBL-0106        B-B3-EP2-M         2.697 KA      ANG:   -77.12

 B-B3-ATSTEL RM FAULT:   15.372 KA AT  -68.45 DEG (   5.54 MVA)  X/R:     2.56
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0029 + J  0.0073  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   15.372 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  15.372 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  15.372 KA
                CONTRIBUTIONS:  BUS-0131          15.372 KA      ANG:   -68.45
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B3-COMP	FAULT:	9.184 KA AT	-45.54 DEG (	3.31 MVA)	X/R:	1.03
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0092 + J	0.0093	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.184 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.184 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.184 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.184 KA				
	CONTRIBUTIONS:	B-B3-EP2	9.184 KA	ANG:	-45.54	
B-B3-COMP AC	FAULT:	3.052 KA AT	-14.14 DEG (	1.10 MVA)	X/R:	0.25
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0382 + J	0.0096	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.052 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.052 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.052 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.052 KA				
	CONTRIBUTIONS:	B-B3-EP2	3.052 KA	ANG:	-14.14	
B-B3-COMP MF	FAULT:	12.305 KA AT	-60.48 DEG (	4.43 MVA)	X/R:	1.94
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0048 + J	0.0085	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.305 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.305 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.305 KA				
	CONTRIBUTIONS:	MTRI-0010	0.936 KA	ANG:	-79.51	
	CBL-0117	B-B3-EP2	11.424 KA	ANG:	-58.95	
B-B3-DBL GRILL	FAULT:	8.786 KA AT	-50.53 DEG (	3.17 MVA)	X/R:	1.22
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0087 + J	0.0106	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.786 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.786 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.786 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.786 KA				
	CONTRIBUTIONS:	B-B3-EP1	8.786 KA	ANG:	-50.53	
B-B3-ELEV	FAULT:	10.803 KA AT	-52.07 DEG (	3.89 MVA)	X/R:	1.47
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0068 + J	0.0088	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.803 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.803 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.803 KA				
	CONTRIBUTIONS:	M-B3-ELEV	0.936 KA	ANG:	-79.51	
	CBL-0113	B-B3-EP2	9.982 KA	ANG:	-49.60	
B-B3-EP1	FAULT:	14.612 KA AT	-68.00 DEG (	5.26 MVA)	X/R:	2.50
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0031 + J	0.0076	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	14.612 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.612 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.612 KA			
	CONTRIBUTIONS: B-B3-EP1-M	14.612 KA	ANG:	-68.00	
B-B3-EP1-M	FAULT: 14.681 KA AT -68.11 DEG (5.29 MVA)		X/R:	2.52	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0030 + J 0.0076				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.681 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.681 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.681 KA			
	CONTRIBUTIONS: B-B3-ATSTEL RM	14.681 KA	ANG:	-68.11	
B-B3-EP2	FAULT: 15.856 KA AT -68.63 DEG (5.71 MVA)		X/R:	2.69	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0028 + J 0.0071				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	15.856 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	15.856 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	15.856 KA			
	CONTRIBUTIONS: B-B3-EP2-M	13.161 KA	ANG:	-66.82	
	CBL-0110 B-B3-HYDRO ELV	0.897 KA	ANG:	-76.03	
	CBL-0113 B-B3-ELEV	0.917 KA	ANG:	-77.58	
	CBL-0117 B-B3-COMP MF	0.921 KA	ANG:	-78.59	
B-B3-EP2-M	FAULT: 15.912 KA AT -68.70 DEG (5.73 MVA)		X/R:	2.70	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0027 + J 0.0070				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	15.912 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	15.912 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	15.912 KA			
	CONTRIBUTIONS: B-B3-ATS-COMP	13.217 KA	ANG:	-66.91	
	CBL-0107 B-B3-EP2	2.732 KA	ANG:	-77.38	
B-B3-FRZN FOOD	FAULT: 8.549 KA AT -29.96 DEG (3.08 MVA)		X/R:	0.58	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0122 + J 0.0070				OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

```
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.549 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.549 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.549 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.549 KA
                CONTRIBUTIONS:  B-B3-MDP           8.549 KA      ANG:   -29.96

 B-B3-HYDRO ELV FAULT:    8.100 KA AT  -47.16 DEG (   2.92 MVA)  X/R:     1.31
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0101 + J  0.0109  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.100 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.100 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.100 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.100 KA
                CONTRIBUTIONS:  M-B3-HYDR ELEV     0.936 KA      ANG:   -79.51
                CBL-0110        B-B3-EP2           7.326 KA      ANG:   -43.24

 B-B3-KP1       FAULT:    9.781 KA AT  -57.49 DEG (   3.52 MVA)  X/R:     1.58
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0066 + J  0.0104  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.781 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.781 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.781 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.781 KA
                CONTRIBUTIONS:  B-B3-EP1           9.781 KA      ANG:   -57.49

 B-B3-MDP       FAULT:   20.084 KA AT  -70.76 DEG (   7.24 MVA)  X/R:     2.92
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0020 + J  0.0056  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   20.084 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  20.084 KA
                CONTRIBUTIONS:  B-B3-MDP-M        17.493 KA      ANG:   -69.91
                CBL-0105        BUS-0140           2.606 KA      ANG:   -76.44

 B-B3-MDP-M     FAULT:   20.112 KA AT  -70.84 DEG (   7.25 MVA)  X/R:     2.93
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0020 + J  0.0056  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   20.112 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  20.112 KA
                CONTRIBUTIONS:  B-T-B3-SEC        17.521 KA      ANG:   -70.01
                CBL-0095        B-B3-MDP           2.605 KA      ANG:   -76.43

 B-B3-MECH HVAC FAULT:   10.377 KA AT  -49.22 DEG (   3.74 MVA)  X/R:     1.18
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0076 + J  0.0088  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

```
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.377 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.377 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.377 KA
                CONTRIBUTIONS:  B-B3-EP2          10.377 KA      ANG:   -49.22

 B-B3-MECH RM   FAULT:   12.328 KA AT  -61.29 DEG (   4.44 MVA)  X/R:     1.88
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0047 + J  0.0085  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.328 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.328 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.328 KA
                CONTRIBUTIONS:  B-B3-EP2          12.328 KA      ANG:   -61.29

 B-B3-P3        FAULT:   12.908 KA AT  -56.09 DEG (   4.65 MVA)  X/R:     1.50
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0052 + J  0.0077  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.908 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.908 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.908 KA
                CONTRIBUTIONS:  B-B3-MDP          12.908 KA      ANG:   -56.09

 B-B3-P7        FAULT:    9.172 KA AT  -45.73 DEG (   3.30 MVA)  X/R:     1.03
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0091 + J  0.0094  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.172 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.172 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.172 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.172 KA
                CONTRIBUTIONS:  B-B3-EP1           9.172 KA      ANG:   -45.73

 B-B3-STRT LTS  FAULT:    8.549 KA AT  -29.96 DEG (   3.08 MVA)  X/R:     0.58
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0122 + J  0.0070  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.549 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.549 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.549 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.549 KA
                CONTRIBUTIONS:  B-B3-MDP           8.549 KA      ANG:   -29.96

 B-B3-STRT PNL  FAULT:   11.854 KA AT  -53.97 DEG (   4.27 MVA)  X/R:     1.40
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0060 + J  0.0082  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.854 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.854 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.854 KA
                CONTRIBUTIONS:  B-B3-EP2          11.854 KA      ANG:   -53.97

 B-B3-TELE PNL  FAULT:   11.556 KA AT  -61.25 DEG (   4.16 MVA)  X/R:     1.83
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0050 + J  0.0091  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

```
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.556 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.556 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.556 KA
                CONTRIBUTIONS:  B-B3-EP1          11.556 KA      ANG:   -61.25

 B-B3-TRAY LINE FAULT:   10.377 KA AT  -49.22 DEG (   3.74 MVA)  X/R:     1.18
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0076 + J  0.0088  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.377 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.377 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.377 KA
                CONTRIBUTIONS:  B-B3-EP2          10.377 KA      ANG:   -49.22

 B-B33-MDP      FAULT:    4.855 KA AT  -57.65 DEG (   1.75 MVA)  X/R:     1.58
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0132 + J  0.0209  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    4.855 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   4.855 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   4.855 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   4.855 KA
                CONTRIBUTIONS:  B-B33-MDP-M        4.855 KA      ANG:   -57.65

 B-B33-MDP-M    FAULT:    4.863 KA AT  -57.66 DEG (   1.75 MVA)  X/R:     1.58
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0132 + J  0.0209  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    4.863 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   4.863 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   4.863 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   4.863 KA
                CONTRIBUTIONS:  B-T-B33-SEC        4.863 KA      ANG:   -57.66

 B-B4-4EQD      FAULT:   22.341 KA AT  -69.45 DEG (   8.05 MVA)  X/R:     2.71
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0019 + J  0.0050  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   22.341 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  22.341 KA
                CONTRIBUTIONS:  B-B4-4EQD-M       20.146 KA      ANG:   -68.74
                CBL-0201        B-B4-ELEV#4        0.895 KA      ANG:   -76.41
                CBL-0202        B-B4-HYDROELEV     1.315 KA      ANG:   -75.66

 B-B4-4EQD-M    FAULT:   22.471 KA AT  -69.58 DEG (   8.10 MVA)  X/R:     2.73
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0019 + J  0.0050  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   22.471 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  22.471 KA
                CONTRIBUTIONS:  B-B4-ATS-EQ       20.278 KA      ANG:   -68.89
                CBL-0195        B-B4-4EQD          2.209 KA      ANG:   -75.94

 B-B4-ATS-EQ    FAULT:   25.173 KA AT  -70.87 DEG (   9.07 MVA)  X/R:     2.91
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0016 + J  0.0045  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   25.173 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  25.173 KA
                CONTRIBUTIONS:  BUS-0227          23.000 KA      ANG:   -70.41
                CBL-0194        B-B4-4EQD-M        2.181 KA      ANG:   -75.71

 B-B4-ATS-LS    FAULT:   22.121 KA AT  -65.05 DEG (   7.97 MVA)  X/R:     2.15
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0023 + J  0.0049  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   22.121 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  22.121 KA
                CONTRIBUTIONS:  BUS-0172*         22.121 KA      ANG:   -65.05

 B-B4-BUS       FAULT:   28.372 KA AT  -73.77 DEG (  10.22 MVA)  X/R:     3.44
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0012 + J  0.0041  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   28.372 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  28.372 KA
                CONTRIBUTIONS:  B-T-B4-SEC        26.216 KA      ANG:   -73.64
                CBL-0121        B-B4-JBOX          2.157 KA      ANG:   -75.38

 B-B4-ELEV#4    FAULT:    9.409 KA AT  -46.47 DEG (   3.39 MVA)  X/R:     1.25
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0088 + J  0.0093  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.409 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.409 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.409 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.409 KA
                CONTRIBUTIONS:  M-B4-ELEV#4         0.936 KA      ANG:   -79.51
                CBL-0201        B-B4-4EQD          8.639 KA      ANG:   -43.09

 B-B4-EQ1       FAULT:   13.653 KA AT  -51.66 DEG (   4.92 MVA)  X/R:     1.27
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0055 + J  0.0069  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   13.653 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.653 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.653 KA
                CONTRIBUTIONS:  B-B4-4EQD         13.653 KA      ANG:   -51.66

 B-B4-EQ10      FAULT:    9.300 KA AT  -43.72 DEG (   3.35 MVA)  X/R:     0.96
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0093 + J  0.0089  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	9.300 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.300 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.300 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.300 KA			
	CONTRIBUTIONS: B-B4-EQ5	9.300 KA	ANG:	-43.72	
B-B4-EQ11	FAULT: 11.316 KA AT -47.34 DEG (	4.08 MVA)	X/R:	1.09	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0072 + J	0.0078	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.316 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.316 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.316 KA			
	CONTRIBUTIONS: B-B4-EQ6	11.316 KA	ANG:	-47.34	
B-B4-EQ12	FAULT: 7.761 KA AT -40.99 DEG (	2.80 MVA)	X/R:	0.87	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0117 + J	0.0102	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.761 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.761 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.761 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.761 KA			
	CONTRIBUTIONS: B-B4-EQ7	7.761 KA	ANG:	-40.99	
B-B4-EQ15	FAULT: 8.773 KA AT -42.78 DEG (	3.16 MVA)	X/R:	0.93	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0100 + J	0.0093	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.773 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.773 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.773 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.773 KA			
	CONTRIBUTIONS: B-B4-4EQD	8.773 KA	ANG:	-42.78	
B-B4-EQ2	FAULT: 18.024 KA AT -60.16 DEG (	6.49 MVA)	X/R:	1.76	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0033 + J	0.0058	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	18.024 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	18.024 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	18.024 KA			
	CONTRIBUTIONS: B-B4-4EQD	18.024 KA	ANG:	-60.16	
B-B4-EQ3	FAULT: 10.661 KA AT -46.16 DEG (	3.84 MVA)	X/R:	1.04	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0078 + J	0.0081	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.661 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.661 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.661 KA			
	CONTRIBUTIONS: B-B4-4EQD	10.661 KA	ANG:	-46.16	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B4-EQ5        FAULT:   10.979 KA AT  -46.73 DEG (   3.96 MVA)  X/R:     1.07
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0075 + J  0.0080  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.979 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.979 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.979 KA
                CONTRIBUTIONS:  B-B4-EQ1          10.979 KA      ANG:   -46.73

B-B4-EQ6        FAULT:   13.817 KA AT  -51.97 DEG (   4.98 MVA)  X/R:     1.28
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0054 + J  0.0068  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   13.817 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.817 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.817 KA
                CONTRIBUTIONS:  B-B4-EQ2          13.817 KA      ANG:   -51.97

B-B4-EQ7        FAULT:    8.917 KA AT  -43.04 DEG (   3.21 MVA)  X/R:     0.94
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0098 + J  0.0092  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.917 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.917 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.917 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.917 KA
                CONTRIBUTIONS:  B-B4-EQ3           8.917 KA      ANG:   -43.04

B-B4-EQ9        FAULT:    7.046 KA AT  -39.74 DEG (   2.54 MVA)  X/R:     0.83
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0131 + J  0.0109  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.046 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.046 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.046 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.046 KA
                CONTRIBUTIONS:  B-B4-4EQD          7.046 KA      ANG:   -39.74

B-B4-HYDROELEV  FAULT:    8.767 KA AT  -44.53 DEG (   3.16 MVA)  X/R:     1.41
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0098 + J  0.0096  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.767 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.767 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.767 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.767 KA
                CONTRIBUTIONS:  MTRI-0012          1.412 KA      ANG:   -81.63
                CBL-0202        B-B4-4EQD          7.688 KA      ANG:   -38.17

B-B4-JBOX       FAULT:   27.783 KA AT  -72.58 DEG (  10.01 MVA)  X/R:     3.20
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0013 + J  0.0041  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   27.783 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  27.783 KA
                CONTRIBUTIONS:  B-B4-BUS          25.625 KA      ANG:   -72.33
                CBL-0122        B-B4-MDP-M         2.161 KA      ANG:   -75.50

 B-B4-LP1       FAULT:   13.521 KA AT  -54.06 DEG (   4.87 MVA)  X/R:     1.38
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0052 + J  0.0072  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   13.521 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.521 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.521 KA
                CONTRIBUTIONS:  B-B4-LP1-M        13.521 KA      ANG:   -54.06

 B-B4-LP1-M     FAULT:   13.600 KA AT  -54.16 DEG (   4.90 MVA)  X/R:     1.39
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0052 + J  0.0072  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   13.600 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.600 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.600 KA
                CONTRIBUTIONS:  B-B4-LP2-M        13.600 KA      ANG:   -54.16

 B-B4-LP10      FAULT:   10.688 KA AT  -50.59 DEG (   3.85 MVA)  X/R:     1.22
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0071 + J  0.0087  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.688 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.688 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.688 KA
                CONTRIBUTIONS:  B-B4-LP10-M       10.688 KA      ANG:   -50.59

 B-B4-LP10-M    FAULT:   10.737 KA AT  -50.66 DEG (   3.87 MVA)  X/R:     1.22
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0071 + J  0.0086  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.737 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.737 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.737 KA
                CONTRIBUTIONS:  B-B4-LP5-M        10.737 KA      ANG:   -50.66

 B-B4-LP11      FAULT:   12.953 KA AT  -53.36 DEG (   4.67 MVA)  X/R:     1.35
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0055 + J  0.0074  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.953 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.953 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.953 KA
                CONTRIBUTIONS:  B-B4-LP11-M       12.953 KA      ANG:   -53.36

 B-B4-LP11-M    FAULT:   13.025 KA AT  -53.45 DEG (   4.69 MVA)  X/R:     1.35
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0055 + J  0.0074  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   13.025 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.025 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.025 KA
                CONTRIBUTIONS:  B-B4-LP6-M        13.025 KA      ANG:   -53.45

 B-B4-LP12      FAULT:   14.139 KA AT  -54.83 DEG (   5.09 MVA)  X/R:     1.42
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0049 + J  0.0069  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   14.139 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.139 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.139 KA
                CONTRIBUTIONS:  B-B4-LP12-M       14.139 KA      ANG:   -54.83

 B-B4-LP12-M    FAULT:   14.225 KA AT  -54.93 DEG (   5.12 MVA)  X/R:     1.43
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0049 + J  0.0069  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   14.225 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.225 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.225 KA
                CONTRIBUTIONS:  B-B4-MDP          14.225 KA      ANG:   -54.93

 B-B4-LP13      FAULT:   10.688 KA AT  -50.59 DEG (   3.85 MVA)  X/R:     1.22
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0071 + J  0.0087  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.688 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.688 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.688 KA
                CONTRIBUTIONS:  B-B4-LP13-M       10.688 KA      ANG:   -50.59

 B-B4-LP13-M    FAULT:   10.737 KA AT  -50.66 DEG (   3.87 MVA)  X/R:     1.22
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0071 + J  0.0086  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.737 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.737 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.737 KA
                CONTRIBUTIONS:  B-B4-LP8-M        10.737 KA      ANG:   -50.66

 B-B4-LP14      FAULT:    9.366 KA AT  -48.99 DEG (   3.37 MVA)  X/R:     1.15
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0084 + J  0.0097  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.366 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.366 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.366 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.366 KA
                CONTRIBUTIONS:  B-B4-LP14-M        9.366 KA      ANG:   -48.99
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B4-LP14-M FAULT: 9.404 KA AT -49.04 DEG (3.39 MVA) X/R: 1.15
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0084 + J 0.0096 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.404 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.404 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.404 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.404 KA
CONTRIBUTIONS: B-B4-LP9-M 9.404 KA ANG: -49.04

B-B4-LP15 FAULT: 6.861 KA AT -32.91 DEG (2.47 MVA) X/R: 0.65
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0147 + J 0.0095 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.861 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.861 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.861 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.861 KA
CONTRIBUTIONS: B-B4-LP15-M 6.861 KA ANG: -32.91

B-B4-LP15-M FAULT: 6.882 KA AT -32.90 DEG (2.48 MVA) X/R: 0.65
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0147 + J 0.0095 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.882 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.882 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.882 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.882 KA
CONTRIBUTIONS: B-B4-LSD 6.882 KA ANG: -32.90

B-B4-LP2 FAULT: 19.340 KA AT -61.40 DEG (6.97 MVA) X/R: 1.84
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0030 + J 0.0055 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 19.340 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 19.340 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 19.340 KA
CONTRIBUTIONS: B-B4-LP2-M 19.340 KA ANG: -61.40

B-B4-LP2-M FAULT: 19.493 KA AT -61.60 DEG (7.02 MVA) X/R: 1.85
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0029 + J 0.0054 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 19.493 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 19.493 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 19.493 KA
CONTRIBUTIONS: B-B4-MDP 19.493 KA ANG: -61.60

B-B4-LP3 FAULT: 19.340 KA AT -61.40 DEG (6.97 MVA) X/R: 1.84
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0030 + J 0.0055 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   19.340 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  19.340 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  19.340 KA
                CONTRIBUTIONS:  B-B4-LP3-M        19.340 KA      ANG:   -61.40

 B-B4-LP3-M     FAULT:   19.493 KA AT  -61.60 DEG (   7.02 MVA)  X/R:     1.85
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0029 + J  0.0054  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   19.493 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  19.493 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  19.493 KA
                CONTRIBUTIONS:  B-B4-MDP          19.493 KA      ANG:   -61.60

 B-B4-LP4       FAULT:   12.953 KA AT  -53.36 DEG (   4.67 MVA)  X/R:     1.35
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0055 + J  0.0074  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.953 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.953 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.953 KA
                CONTRIBUTIONS:  B-B4-LP4-M        12.953 KA      ANG:   -53.36

 B-B4-LP4-M     FAULT:   13.025 KA AT  -53.45 DEG (   4.69 MVA)  X/R:     1.35
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0055 + J  0.0074  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   13.025 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.025 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.025 KA
                CONTRIBUTIONS:  B-B4-LP3-M        13.025 KA      ANG:   -53.45

 B-B4-LP5       FAULT:   12.429 KA AT  -52.72 DEG (   4.48 MVA)  X/R:     1.31
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0059 + J  0.0077  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.429 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.429 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.429 KA
                CONTRIBUTIONS:  B-B4-LP5-M        12.429 KA      ANG:   -52.72

 B-B4-LP5-M     FAULT:   12.495 KA AT  -52.80 DEG (   4.50 MVA)  X/R:     1.32
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0058 + J  0.0077  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.495 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.495 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.495 KA
                CONTRIBUTIONS:  B-B4-MDP          12.495 KA      ANG:   -52.80
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LP6	FAULT:	15.552 KA	AT -56.58 DEG (	5.60 MVA)	X/R:	1.52
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0043 + J 0.0064		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	15.552 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	15.552 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	15.552 KA				
	CONTRIBUTIONS:	B-B4-LP6-M	15.552 KA	ANG:	-56.58	
B-B4-LP6-M	FAULT:	15.654 KA	AT -56.72 DEG (	5.64 MVA)	X/R:	1.53
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0042 + J 0.0064		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	15.654 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	15.654 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	15.654 KA				
	CONTRIBUTIONS:	B-B4-MDP	15.654 KA	ANG:	-56.72	
B-B4-LP7	FAULT:	15.552 KA	AT -56.58 DEG (	5.60 MVA)	X/R:	1.52
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0043 + J 0.0064		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	15.552 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	15.552 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	15.552 KA				
	CONTRIBUTIONS:	B-B4-LP7-M	15.552 KA	ANG:	-56.58	
B-B4-LP7-M	FAULT:	15.654 KA	AT -56.72 DEG (	5.64 MVA)	X/R:	1.53
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0042 + J 0.0064		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	15.654 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	15.654 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	15.654 KA				
	CONTRIBUTIONS:	B-B4-MDP	15.654 KA	ANG:	-56.72	
B-B4-LP8	FAULT:	12.429 KA	AT -52.72 DEG (	4.48 MVA)	X/R:	1.31
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0059 + J 0.0077		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.429 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.429 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.429 KA				
	CONTRIBUTIONS:	B-B4-LP8-M	12.429 KA	ANG:	-52.72	
B-B4-LP8-M	FAULT:	12.495 KA	AT -52.80 DEG (	4.50 MVA)	X/R:	1.32
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0058 + J 0.0077		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   12.495 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.495 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.495 KA
                CONTRIBUTIONS:  B-B4-MDP          12.495 KA      ANG:   -52.80

 B-B4-LP9       FAULT:   10.688 KA AT  -50.59 DEG (   3.85 MVA)  X/R:     1.22
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0071 + J  0.0087  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.688 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.688 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.688 KA
                CONTRIBUTIONS:  B-B4-LP9-M        10.688 KA      ANG:   -50.59

 B-B4-LP9-M     FAULT:   10.737 KA AT  -50.66 DEG (   3.87 MVA)  X/R:     1.22
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0071 + J  0.0086  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.737 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.737 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.737 KA
                CONTRIBUTIONS:  B-B4-MDP          10.737 KA      ANG:   -50.66

 B-B4-LS1       FAULT:    8.538 KA AT  -38.45 DEG (   3.08 MVA)  X/R:     0.79
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0110 + J  0.0087  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.538 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.538 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.538 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.538 KA
                CONTRIBUTIONS:  B-B4-LS1-M         8.538 KA      ANG:   -38.45

 B-B4-LS1-M     FAULT:    8.571 KA AT  -38.45 DEG (   3.09 MVA)  X/R:     0.79
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0110 + J  0.0087  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.571 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.571 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.571 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.571 KA
                CONTRIBUTIONS:  B-B4-LS2-M         8.571 KA      ANG:   -38.45

 B-B4-LS10      FAULT:    5.441 KA AT  -32.72 DEG (   1.96 MVA)  X/R:     0.64
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0186 + J  0.0119  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

```
                LOW VOLTAGE POWER CIRCUIT BREAKER    5.441 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   5.441 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   5.441 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   5.441 KA
                CONTRIBUTIONS:  B-B4-LS10-M        5.441 KA      ANG:   -32.72

 B-B4-LS10-M    FAULT:    5.454 KA AT  -32.71 DEG (   1.97 MVA)  X/R:     0.64
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0185 + J  0.0119  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    5.454 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   5.454 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   5.454 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   5.454 KA
                CONTRIBUTIONS:  B-B4-LS5-M         5.454 KA      ANG:   -32.71

 B-B4-LS11      FAULT:    6.299 KA AT  -34.30 DEG (   2.27 MVA)  X/R:     0.68
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0158 + J  0.0107  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.299 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.299 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.299 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.299 KA
                CONTRIBUTIONS:  B-B4-LS11-M        6.299 KA      ANG:   -34.30

 B-B4-LS11-M    FAULT:    6.316 KA AT  -34.29 DEG (   2.28 MVA)  X/R:     0.68
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0157 + J  0.0107  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.316 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.316 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.316 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.316 KA
                CONTRIBUTIONS:  B-B4-LS6-M         6.316 KA      ANG:   -34.29

 B-B4-LS12      FAULT:    7.166 KA AT  -35.90 DEG (   2.58 MVA)  X/R:     0.72
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0136 + J  0.0098  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.166 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.166 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.166 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.166 KA
                CONTRIBUTIONS:  B-B4-LS12-M        7.166 KA      ANG:   -35.90

 B-B4-LS12-M    FAULT:    7.189 KA AT  -35.89 DEG (   2.59 MVA)  X/R:     0.72
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0135 + J  0.0098  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	7.189 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.189 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.189 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.189 KA			
	CONTRIBUTIONS: B-B4-LS7-M	7.189 KA	ANG:	-35.89	
B-B4-LS13	FAULT: 7.344 KA AT -36.22 DEG (	2.65 MVA)	X/R:	0.73	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0132 + J	0.0097	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.344 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.344 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.344 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.344 KA			
	CONTRIBUTIONS: B-B4-LS13-M	7.344 KA	ANG:	-36.22	
B-B4-LS13-M	FAULT: 7.368 KA AT -36.22 DEG (	2.65 MVA)	X/R:	0.73	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0131 + J	0.0096	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.368 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.368 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.368 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.368 KA			
	CONTRIBUTIONS: B-B4-LS8-M	7.368 KA	ANG:	-36.22	
B-B4-LS14	FAULT: 7.344 KA AT -36.22 DEG (	2.65 MVA)	X/R:	0.73	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0132 + J	0.0097	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.344 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.344 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.344 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.344 KA			
	CONTRIBUTIONS: B-B4-LS14-M	7.344 KA	ANG:	-36.22	
B-B4-LS14-M	FAULT: 7.368 KA AT -36.22 DEG (	2.65 MVA)	X/R:	0.73	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0131 + J	0.0096	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.368 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.368 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.368 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.368 KA			
	CONTRIBUTIONS: B-B4-LS9-M	7.368 KA	ANG:	-36.22	
B-B4-LS2	FAULT: 12.679 KA AT -46.37 DEG (	4.57 MVA)	X/R:	1.05	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0065 + J	0.0069	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   12.679 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.679 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.679 KA
                CONTRIBUTIONS:  B-B4-LS2-M        12.679 KA      ANG:   -46.37

 B-B4-LS2-M     FAULT:   12.750 KA AT  -46.42 DEG (   4.59 MVA)  X/R:     1.05
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0065 + J  0.0068  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.750 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.750 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.750 KA
                CONTRIBUTIONS:  B-B4-LSD          12.750 KA      ANG:   -46.42

 B-B4-LS3       FAULT:   15.790 KA AT  -52.64 DEG (   5.69 MVA)  X/R:     1.31
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0046 + J  0.0060  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   15.790 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  15.790 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  15.790 KA
                CONTRIBUTIONS:  B-B4-LS3-M        15.790 KA      ANG:   -52.64

 B-B4-LS3-M     FAULT:   15.897 KA AT  -52.75 DEG (   5.73 MVA)  X/R:     1.32
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0046 + J  0.0060  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   15.897 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  15.897 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  15.897 KA
                CONTRIBUTIONS:  B-B4-LSD          15.897 KA      ANG:   -52.75

 B-B4-LS4       FAULT:    9.949 KA AT  -41.10 DEG (   3.58 MVA)  X/R:     0.87
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0091 + J  0.0079  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.949 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.949 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.949 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.949 KA
                CONTRIBUTIONS:  B-B4-LS4-M         9.949 KA      ANG:   -41.10

 B-B4-LS4-M     FAULT:    9.993 KA AT  -41.12 DEG (   3.60 MVA)  X/R:     0.87
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0091 + J  0.0079  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.993 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.993 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.993 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.993 KA
                CONTRIBUTIONS:  B-B4-LS3-M         9.993 KA      ANG:   -41.12
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LS5	FAULT:	6.210 KA AT	-34.13 DEG (	2.24 MVA)	X/R:	0.68
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0160 + J 0.0109		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			6.210 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			6.210 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			6.210 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			6.210 KA		
	CONTRIBUTIONS:	B-B4-LS5-M		6.210 KA	ANG:	-34.13
B-B4-LS5-M	FAULT:	6.227 KA AT	-34.12 DEG (	2.24 MVA)	X/R:	0.68
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0160 + J 0.0108		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			6.227 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			6.227 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			6.227 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			6.227 KA		
	CONTRIBUTIONS:	B-B4-LSD		6.227 KA	ANG:	-34.12
B-B4-LS6	FAULT:	7.344 KA AT	-36.22 DEG (	2.65 MVA)	X/R:	0.73
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0132 + J 0.0097		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			7.344 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			7.344 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			7.344 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			7.344 KA		
	CONTRIBUTIONS:	B-B4-LS6-M		7.344 KA	ANG:	-36.22
B-B4-LS6-M	FAULT:	7.368 KA AT	-36.22 DEG (	2.65 MVA)	X/R:	0.73
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0131 + J 0.0096		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			7.368 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			7.368 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			7.368 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			7.368 KA		
	CONTRIBUTIONS:	B-B4-LSD		7.368 KA	ANG:	-36.22
B-B4-LS7	FAULT:	8.538 KA AT	-38.45 DEG (	3.08 MVA)	X/R:	0.79
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0110 + J 0.0087		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			8.538 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			8.538 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			8.538 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			8.538 KA		
	CONTRIBUTIONS:	B-B4-LS7-M		8.538 KA	ANG:	-38.45

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B4-LS7-M	FAULT:	8.571 KA AT	-38.45 DEG (	3.09 MVA)	X/R:	0.79
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0110 + J	0.0087	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.571 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.571 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.571 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.571 KA				
	CONTRIBUTIONS: B-B4-LSD	8.571 KA	ANG:	-38.45		
B-B4-LS8	FAULT:	8.789 KA AT	-38.92 DEG (	3.17 MVA)	X/R:	0.81
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0106 + J	0.0086	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.789 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.789 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.789 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.789 KA				
	CONTRIBUTIONS: B-B4-LS8-M	8.789 KA	ANG:	-38.92		
B-B4-LS8-M	FAULT:	8.823 KA AT	-38.92 DEG (	3.18 MVA)	X/R:	0.81
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0106 + J	0.0086	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.823 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.823 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.823 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.823 KA				
	CONTRIBUTIONS: B-B4-LSD	8.823 KA	ANG:	-38.92		
B-B4-LS9	FAULT:	8.789 KA AT	-38.92 DEG (	3.17 MVA)	X/R:	0.81
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0106 + J	0.0086	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.789 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.789 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.789 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.789 KA				
	CONTRIBUTIONS: B-B4-LS9-M	8.789 KA	ANG:	-38.92		
B-B4-LS9-M	FAULT:	8.823 KA AT	-38.92 DEG (	3.18 MVA)	X/R:	0.81
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0106 + J	0.0086	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.823 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.823 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.823 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.823 KA				
	CONTRIBUTIONS: B-B4-LSD	8.823 KA	ANG:	-38.92		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LSD	FAULT:	20.563 KA AT -62.99 DEG (	7.41 MVA)	X/R:	1.97
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0027 + J 0.0052		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	20.563 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	20.563 KA			
	CONTRIBUTIONS:	B-B4-LSD-M	20.563 KA	ANG:	-62.99
B-B4-LSD-M	FAULT:	20.733 KA AT -63.21 DEG (	7.47 MVA)	X/R:	1.98
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0026 + J 0.0052		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	20.733 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	20.733 KA			
	CONTRIBUTIONS:	B-B4-ATS-LS	20.733 KA	ANG:	-63.21
B-B4-MDP	FAULT:	27.397 KA AT -72.33 DEG (	9.87 MVA)	X/R:	3.15
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0013 + J 0.0042		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	27.397 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	27.397 KA			
	CONTRIBUTIONS:	B-B4-MDP-M	25.237 KA	ANG:	-72.06
	CBL-0193	BUS-0227	2.164 KA	ANG:	-75.52
B-B4-MDP-M	FAULT:	27.426 KA AT -72.39 DEG (	9.88 MVA)	X/R:	3.16
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0013 + J 0.0042		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER 27.426 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA 27.426 KA				
	CONTRIBUTIONS: B-B4-JBOX	25.266 KA	ANG:	-72.12	
	CBL-0124 B-B4-MDP	2.163 KA	ANG:	-75.52	
B-B4-PP1	FAULT: 15.898 KA AT -59.74 DEG (5.73 MVA)	X/R:	1.73		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0038 + J 0.0065	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER 15.898 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA 15.898 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA 15.898 KA				
	CONTRIBUTIONS: B-B4-4EQD	15.898 KA	ANG:	-59.74	
B-B4-PP2	FAULT: 6.861 KA AT -32.91 DEG (2.47 MVA)	X/R:	0.65		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0147 + J 0.0095	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER 6.861 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA 6.861 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA 6.861 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA 6.861 KA				
	CONTRIBUTIONS: B-B4-PP2-M	6.861 KA	ANG:	-32.91	
B-B4-PP2-M	FAULT: 6.882 KA AT -32.90 DEG (2.48 MVA)	X/R:	0.65		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0147 + J 0.0095	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER 6.882 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA 6.882 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA 6.882 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA 6.882 KA				
	CONTRIBUTIONS: B-B4-LSD	6.882 KA	ANG:	-32.90	
B-B5-ATS-EQ	FAULT: 15.937 KA AT -63.87 DEG (5.74 MVA)	X/R:	2.14		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0033 + J 0.0068	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER 15.937 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA 15.937 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA 15.937 KA				
	CONTRIBUTIONS: BUS-0258*	14.347 KA	ANG:	-62.40	
	CBL-0223 B-B5-EQD	1.637 KA	ANG:	-76.83	
B-B5-ATS-LS	FAULT: 15.089 KA AT -56.97 DEG (5.44 MVA)	X/R:	1.56		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0043 + J 0.0067	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER 15.089 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA 15.089 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA 15.089 KA				
	CONTRIBUTIONS: BUS-0269	15.089 KA	ANG:	-56.97	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B5-EQ1	FAULT:	9.419 KA AT	-46.35 DEG (	3.39 MVA)	X/R: 1.07
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0088 + J 0.0092	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.419 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.419 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.419 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.419 KA			
	CONTRIBUTIONS:	B-B5-EQD	9.419 KA	ANG:	-46.35
B-B5-EQ2	FAULT:	9.144 KA AT	-45.63 DEG (	3.29 MVA)	X/R: 1.04
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0092 + J 0.0094	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.144 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.144 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.144 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.144 KA			
	CONTRIBUTIONS:	B-B5-EQD	9.144 KA	ANG:	-45.63
B-B5-EQ5	FAULT:	9.419 KA AT	-46.35 DEG (	3.39 MVA)	X/R: 1.07
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0088 + J 0.0092	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.419 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.419 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.419 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.419 KA			
	CONTRIBUTIONS:	B-B5-EQD	9.419 KA	ANG:	-46.35
B-B5-EQ6	FAULT:	8.787 KA AT	-46.84 DEG (	3.17 MVA)	X/R: 1.24
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0093 + J 0.0100	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.787 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.787 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.787 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.787 KA			
	CONTRIBUTIONS:	M-B5-EQ6	0.840 KA	ANG:	-78.69
	CBL-0227	B-B5-EQD	8.086 KA	ANG:	-43.70
B-B5-EQD	FAULT:	15.486 KA AT	-63.79 DEG (	5.58 MVA)	X/R: 2.14
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0034 + J 0.0070	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	15.486 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	15.486 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	15.486 KA			
	CONTRIBUTIONS:	B-B5-ATS-EQ	13.891 KA	ANG:	-62.26
	CBL-0227	B-B5-EQ6	0.815 KA	ANG:	-76.23
	CBL-0228	B-B5-HYDR ELEV	0.828 KA	ANG:	-77.55

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B5-HYDR ELEV FAULT:   11.608 KA AT  -53.25 DEG (   4.18 MVA)  X/R:     1.48
               VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0062 + J  0.0083  OHMS
               LOW VOLTAGE POWER CIRCUIT BREAKER   11.608 KA
               MOLDED CASE CIRCUIT BREAKER < 20KA  11.608 KA
               MOLDED CASE CIRCUIT BREAKER > 20KA  11.608 KA
               CONTRIBUTIONS:  M-B5-HYDR ELEV     0.840 KA      ANG:   -78.69
               CBL-0228        B-B5-EQD          10.855 KA      ANG:   -51.34

B-B5-LP1       FAULT:   14.869 KA AT  -56.72 DEG (   5.36 MVA)  X/R:     1.55
               VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0044 + J  0.0068  OHMS
               LOW VOLTAGE POWER CIRCUIT BREAKER   14.869 KA
               MOLDED CASE CIRCUIT BREAKER < 20KA  14.869 KA
               MOLDED CASE CIRCUIT BREAKER > 20KA  14.869 KA
               CONTRIBUTIONS:  B-B5-LP1-M        14.869 KA      ANG:   -56.72

B-B5-LP1-M     FAULT:   14.945 KA AT  -56.78 DEG (   5.38 MVA)  X/R:     1.55
               VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0044 + J  0.0067  OHMS
               LOW VOLTAGE POWER CIRCUIT BREAKER   14.945 KA
               MOLDED CASE CIRCUIT BREAKER < 20KA  14.945 KA
               MOLDED CASE CIRCUIT BREAKER > 20KA  14.945 KA
               CONTRIBUTIONS:  B-B5-MDP          14.945 KA      ANG:   -56.78

B-B5-LP2       FAULT:   12.378 KA AT  -53.47 DEG (   4.46 MVA)  X/R:     1.36
               VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0058 + J  0.0078  OHMS
               LOW VOLTAGE POWER CIRCUIT BREAKER   12.378 KA
               MOLDED CASE CIRCUIT BREAKER < 20KA  12.378 KA
               MOLDED CASE CIRCUIT BREAKER > 20KA  12.378 KA
               CONTRIBUTIONS:  B-B5-LP2-M        12.378 KA      ANG:   -53.47

B-B5-LP2-M     FAULT:   12.431 KA AT  -53.50 DEG (   4.48 MVA)  X/R:     1.37
               VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0057 + J  0.0078  OHMS
               LOW VOLTAGE POWER CIRCUIT BREAKER   12.431 KA
               MOLDED CASE CIRCUIT BREAKER < 20KA  12.431 KA
               MOLDED CASE CIRCUIT BREAKER > 20KA  12.431 KA
               CONTRIBUTIONS:  B-B5-MDP          12.431 KA      ANG:   -53.50

B-B5-LP3       FAULT:   12.478 KA AT  -53.60 DEG (   4.50 MVA)  X/R:     1.37
               VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0057 + J  0.0077  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   12.478 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.478 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.478 KA
                CONTRIBUTIONS:  B-B5-LP3-M        12.478 KA      ANG:   -53.60

 B-B5-LP3-M     FAULT:   12.532 KA AT  -53.63 DEG (   4.51 MVA)  X/R:     1.37
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0057 + J  0.0077  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.532 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.532 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.532 KA
                CONTRIBUTIONS:  B-B5-LP1-M        12.532 KA      ANG:   -53.63

 B-B5-LP4       FAULT:   10.654 KA AT  -51.25 DEG (   3.84 MVA)  X/R:     1.26
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0071 + J  0.0088  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.654 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.654 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.654 KA
                CONTRIBUTIONS:  B-B5-LP4-M        10.654 KA      ANG:   -51.25

 B-B5-LP4-M     FAULT:   10.694 KA AT  -51.27 DEG (   3.85 MVA)  X/R:     1.26
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0070 + J  0.0088  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.694 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.694 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.694 KA
                CONTRIBUTIONS:  B-B5-LP2-M        10.694 KA      ANG:   -51.27

 B-B5-LP5       FAULT:   12.979 KA AT  -45.83 DEG (   4.68 MVA)  X/R:     1.04
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0064 + J  0.0066  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.979 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.979 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.979 KA
                CONTRIBUTIONS:  B-B5-LP5-M        12.979 KA      ANG:   -45.83

 B-B5-LP5-M     FAULT:   13.038 KA AT  -45.83 DEG (   4.70 MVA)  X/R:     1.04
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0064 + J  0.0066  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   13.038 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.038 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.038 KA
                CONTRIBUTIONS:  B-B5-MDP          13.038 KA      ANG:   -45.83

 B-B5-LS1       FAULT:   10.848 KA AT  -47.33 DEG (   3.91 MVA)  X/R:     1.09
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0075 + J  0.0081  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	10.848 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.848 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.848 KA			
	CONTRIBUTIONS: B-B5-LSD	10.848 KA		ANG:	-47.33
B-B5-LS2	FAULT:	6.864 KA AT	-38.06 DEG (	2.47 MVA)	X/R: 0.79
	VOLTAGE: 208.	EQUIV. IMPEDANCE=	0.0138 + J	0.0108	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.864 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.864 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.864 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.864 KA			
	CONTRIBUTIONS: B-B5-LSD	6.864 KA		ANG:	-38.06
B-B5-LS4	FAULT:	5.948 KA AT	-35.99 DEG (	2.14 MVA)	X/R: 0.73
	VOLTAGE: 208.	EQUIV. IMPEDANCE=	0.0163 + J	0.0119	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.948 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.948 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.948 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.948 KA			
	CONTRIBUTIONS: B-B5-LS2	5.948 KA		ANG:	-35.99
B-B5-LSD	FAULT:	14.324 KA AT	-56.01 DEG (	5.16 MVA)	X/R: 1.50
	VOLTAGE: 208.	EQUIV. IMPEDANCE=	0.0047 + J	0.0070	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.324 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.324 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.324 KA			
	CONTRIBUTIONS: B-B5-LSD-M	14.324 KA		ANG:	-56.01
B-B5-LSD-M	FAULT:	14.395 KA AT	-56.06 DEG (	5.19 MVA)	X/R: 1.51
	VOLTAGE: 208.	EQUIV. IMPEDANCE=	0.0047 + J	0.0069	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.395 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.395 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.395 KA			
	CONTRIBUTIONS: B-B5-ATS-LS	14.395 KA		ANG:	-56.06
B-B5-MDP	FAULT:	21.002 KA AT	-64.98 DEG (	7.57 MVA)	X/R: 2.20
	VOLTAGE: 208.	EQUIV. IMPEDANCE=	0.0024 + J	0.0052	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER 21.002 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA 21.002 KA			
	CONTRIBUTIONS: B-B5-MDP-M	19.444 KA	ANG:	-64.06
	CBL-0222 BUS-0258*	1.592 KA	ANG:	-76.28
B-B5-MDP-M	FAULT: 21.041 KA AT -65.06 DEG (7.58 MVA)		X/R:	2.21
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0024 + J 0.0052 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER 21.041 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA 21.041 KA			
	CONTRIBUTIONS: B-T-B5-SEC	19.482 KA	ANG:	-64.15
	CBL-0211 B-B5-MDP	1.592 KA	ANG:	-76.27
B-B5-NEXTEL	FAULT: 13.067 KA AT -52.16 DEG (4.71 MVA)		X/R:	1.30
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0056 + J 0.0073 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER 13.067 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA 13.067 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA 13.067 KA			
	CONTRIBUTIONS: B-B5-MDP	13.067 KA	ANG:	-52.16
B-B5-PNL-H	FAULT: 15.764 KA AT -57.91 DEG (5.68 MVA)		X/R:	1.62
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0040 + J 0.0065 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER 15.764 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA 15.764 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA 15.764 KA			
	CONTRIBUTIONS: B-B5-PNL-H-M	15.764 KA	ANG:	-57.91
B-B5-PNL-H-M	FAULT: 15.849 KA AT -57.97 DEG (5.71 MVA)		X/R:	1.62
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0040 + J 0.0064 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER 15.849 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA 15.849 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA 15.849 KA			
	CONTRIBUTIONS: B-B5-MDP	15.849 KA	ANG:	-57.97
B-B5-STRT LGHT	FAULT: 9.653 KA AT -32.92 DEG (3.48 MVA)		X/R:	0.65
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0104 + J 0.0068 OHMS			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    9.653 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.653 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.653 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.653 KA
                CONTRIBUTIONS:  B-B5-MDP           9.653 KA      ANG:   -32.92

 B-B5-TEMP TRAI FAULT:   11.891 KA AT  -50.36 DEG (   4.28 MVA)  X/R:     1.22
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0064 + J  0.0078  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.891 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.891 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.891 KA
                CONTRIBUTIONS:  B-B5-MDP          11.891 KA      ANG:   -50.36

 B-B55-LS3      FAULT:    8.799 KA AT  -42.49 DEG (   3.17 MVA)  X/R:     0.92
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0101 + J  0.0092  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.799 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.799 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.799 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.799 KA
                CONTRIBUTIONS:  B-B5-LS1           8.799 KA      ANG:   -42.49

 B-B6-ATS-EQ    FAULT:   15.769 KA AT  -65.54 DEG (   5.68 MVA)  X/R:     2.32
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0032 + J  0.0069  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   15.769 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  15.769 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  15.769 KA
                CONTRIBUTIONS:  BUS-0302          14.472 KA      ANG:   -64.30
                CBL-0264        B-B6-EQD-M         1.337 KA      ANG:   -78.99

 B-B6-ATS-LS    FAULT:   16.101 KA AT  -58.68 DEG (   5.80 MVA)  X/R:     1.66
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0039 + J  0.0064  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   16.101 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  16.101 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  16.101 KA
                CONTRIBUTIONS:  BUS-0290          16.101 KA      ANG:   -58.68

 B-B6-EQ1       FAULT:   11.628 KA AT  -54.65 DEG (   4.19 MVA)  X/R:     1.46
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0060 + J  0.0084  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.628 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.628 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.628 KA
                CONTRIBUTIONS:  B-B6-EQD          11.628 KA      ANG:   -54.65
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B6-EQ2        FAULT:    8.952 KA AT  -49.71 DEG (   3.22 MVA)  X/R:     1.21
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0087 + J  0.0102  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.952 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.952 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.952 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.952 KA
                CONTRIBUTIONS:  B-B6-EQD           8.952 KA      ANG:   -49.71

B-B6-EQ3        FAULT:   11.011 KA AT  -55.19 DEG (   3.97 MVA)  X/R:     1.49
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0062 + J  0.0090  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.011 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.011 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.011 KA
                CONTRIBUTIONS:  B-B6-EQD          11.011 KA      ANG:   -55.19

B-B6-EQ4        FAULT:    7.712 KA AT  -46.52 DEG (   2.78 MVA)  X/R:     1.08
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0107 + J  0.0113  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.712 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.712 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.712 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.712 KA
                CONTRIBUTIONS:  B-B6-EQ2           7.712 KA      ANG:   -46.52

B-B6-EQ5        FAULT:    9.245 KA AT  -50.48 DEG (   3.33 MVA)  X/R:     1.24
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0083 + J  0.0100  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.245 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.245 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.245 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.245 KA
                CONTRIBUTIONS:  B-B6-EQ3           9.245 KA      ANG:   -50.48

B-B6-EQ8        FAULT:    9.716 KA AT  -57.82 DEG (   3.50 MVA)  X/R:     2.03
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0066 + J  0.0105  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.716 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.716 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.716 KA
                CONTRIBUTIONS:  M-B6-ELEV          1.412 KA      ANG:   -81.63
                CBL-0266        B-B6-EQD           8.443 KA      ANG:   -53.95

B-B6-EQD        FAULT:   14.347 KA AT  -64.72 DEG (   5.17 MVA)  X/R:     2.27
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0036 + J  0.0076  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   14.347 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.347 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.347 KA
                CONTRIBUTIONS:  B-B6-EQD-M        13.045 KA      ANG:   -63.23
                CBL-0266        B-B6-EQ8           1.350 KA      ANG:   -79.25

 B-B6-EQD-M     FAULT:   14.365 KA AT  -64.77 DEG (   5.18 MVA)  X/R:     2.27
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0036 + J  0.0076  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   14.365 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.365 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.365 KA
                CONTRIBUTIONS:  B-B6-ATS-EQ       13.062 KA      ANG:   -63.29
                CBL-0265        B-B6-EQD           1.350 KA      ANG:   -79.24

 B-B6-EQMACH    FAULT:   11.628 KA AT  -54.65 DEG (   4.19 MVA)  X/R:     1.46
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0060 + J  0.0084  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.628 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.628 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.628 KA
                CONTRIBUTIONS:  B-B6-EQD          11.628 KA      ANG:   -54.65

 B-B6-LP1       FAULT:   11.281 KA AT  -43.42 DEG (   4.06 MVA)  X/R:     0.95
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0077 + J  0.0073  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.281 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.281 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.281 KA
                CONTRIBUTIONS:  B-B6-LP1-M        11.281 KA      ANG:   -43.42

 B-B6-LP1-M     FAULT:   11.297 KA AT  -43.45 DEG (   4.07 MVA)  X/R:     0.95
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0077 + J  0.0073  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.297 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.297 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.297 KA
                CONTRIBUTIONS:  B-B6-MDP          11.297 KA      ANG:   -43.45

 B-B6-LP2       FAULT:   12.662 KA AT  -46.08 DEG (   4.56 MVA)  X/R:     1.04
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0066 + J  0.0068  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 12.662 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 12.662 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 12.662 KA
CONTRIBUTIONS: B-B6-LP2-M 12.662 KA ANG: -46.08

B-B6-LP2-M FAULT: 12.681 KA AT -46.11 DEG (4.57 MVA) X/R: 1.05
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0066 + J 0.0068 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 12.681 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 12.681 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 12.681 KA
CONTRIBUTIONS: B-B6-MDP 12.681 KA ANG: -46.11

B-B6-LP3 FAULT: 13.934 KA AT -55.75 DEG (5.02 MVA) X/R: 1.48
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0049 + J 0.0071 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.934 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.934 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.934 KA
CONTRIBUTIONS: B-B6-LP3-M 13.934 KA ANG: -55.75

B-B6-LP3-M FAULT: 13.955 KA AT -55.80 DEG (5.03 MVA) X/R: 1.48
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0048 + J 0.0071 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.955 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.955 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.955 KA
CONTRIBUTIONS: B-B6-MDP 13.955 KA ANG: -55.80

B-B6-LP4 FAULT: 14.317 KA AT -56.26 DEG (5.16 MVA) X/R: 1.51
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0047 + J 0.0070 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 14.317 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 14.317 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 14.317 KA
CONTRIBUTIONS: B-B6-LP4-M 14.317 KA ANG: -56.26

B-B6-LP4-M FAULT: 14.340 KA AT -56.31 DEG (5.17 MVA) X/R: 1.51
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0046 + J 0.0070 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 14.340 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 14.340 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 14.340 KA
CONTRIBUTIONS: B-B6-MDP 14.340 KA ANG: -56.31

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-LP5	FAULT:	11.805 KA	AT -52.94 DEG (	4.25 MVA)	X/R:	1.33
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0061 + J 0.0081		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.805 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.805 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.805 KA				
	CONTRIBUTIONS:	B-B6-LP5-M	11.805 KA	ANG:	-52.94	
B-B6-LP5-M	FAULT:	11.821 KA	AT -52.98 DEG (	4.26 MVA)	X/R:	1.34
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0061 + J 0.0081		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.821 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.821 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.821 KA				
	CONTRIBUTIONS:	B-B6-LP3-M	11.821 KA	ANG:	-52.98	
B-B6-LP6	FAULT:	12.083 KA	AT -53.30 DEG (	4.35 MVA)	X/R:	1.35
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0059 + J 0.0080		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.083 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.083 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.083 KA				
	CONTRIBUTIONS:	B-B6-LP6-M	12.083 KA	ANG:	-53.30	
B-B6-LP6-M	FAULT:	12.100 KA	AT -53.35 DEG (	4.36 MVA)	X/R:	1.35
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0059 + J 0.0080		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.100 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.100 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.100 KA				
	CONTRIBUTIONS:	B-B6-LP4-M	12.100 KA	ANG:	-53.35	
B-B6-LP7	FAULT:	17.406 KA	AT -55.67 DEG (	6.27 MVA)	X/R:	1.48
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0039 + J 0.0057		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	17.406 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	17.406 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	17.406 KA				
	CONTRIBUTIONS:	B-B6-LP7-M	17.406 KA	ANG:	-55.67	
B-B6-LP7-M	FAULT:	17.440 KA	AT -55.73 DEG (	6.28 MVA)	X/R:	1.48
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0039 + J 0.0057		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	17.440 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	17.440 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	17.440 KA				
	CONTRIBUTIONS:	B-B6-MDP	17.440 KA	ANG:	-55.73	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B6-LS1 FAULT: 9.677 KA AT -44.29 DEG (3.49 MVA) X/R: 0.98
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0089 + J 0.0087 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.677 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.677 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.677 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.677 KA
CONTRIBUTIONS: B-B6-LSD 9.677 KA ANG: -44.29

B-B6-LS2 FAULT: 11.860 KA AT -47.60 DEG (4.27 MVA) X/R: 1.10
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0068 + J 0.0075 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 11.860 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 11.860 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 11.860 KA
CONTRIBUTIONS: B-B6-LSD 11.860 KA ANG: -47.60

B-B6-LS3 FAULT: 9.677 KA AT -44.29 DEG (3.49 MVA) X/R: 0.98
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0089 + J 0.0087 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.677 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.677 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.677 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.677 KA
CONTRIBUTIONS: B-B6-LSD 9.677 KA ANG: -44.29

B-B6-LS4 FAULT: 9.677 KA AT -44.29 DEG (3.49 MVA) X/R: 0.98
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0089 + J 0.0087 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.677 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.677 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.677 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.677 KA
CBL-0258 B-B6-LSD 9.677 KA ANG: -44.29

B-B6-LS5 FAULT: 7.989 KA AT -40.42 DEG (2.88 MVA) X/R: 0.85
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0114 + J 0.0097 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.989 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.989 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.989 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.989 KA
CONTRIBUTIONS: B-B6-LS3 7.989 KA ANG: -40.42

B-B6-LS6 FAULT: 7.989 KA AT -40.42 DEG (2.88 MVA) X/R: 0.85
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0114 + J 0.0097 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    7.989 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.989 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.989 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.989 KA
                CONTRIBUTIONS:  B-B6-LS4           7.989 KA      ANG:   -40.42

 B-B6-LSD       FAULT:   14.861 KA AT  -56.98 DEG (   5.35 MVA)  X/R:     1.55
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0044 + J  0.0068  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   14.861 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.861 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.861 KA
                CONTRIBUTIONS:  B-B6-LSD-M        14.861 KA      ANG:   -56.98

 B-B6-LSD-M     FAULT:   14.885 KA AT  -57.04 DEG (   5.36 MVA)  X/R:     1.56
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0044 + J  0.0068  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   14.885 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.885 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.885 KA
                CONTRIBUTIONS:  B-B6-ATS-LS       14.885 KA      ANG:   -57.04

 B-B6-MACH SHOP FAULT:   12.543 KA AT  -51.33 DEG (   4.52 MVA)  X/R:     1.26
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0060 + J  0.0075  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.543 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.543 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.543 KA
                CONTRIBUTIONS:  B-B6-MDP          12.543 KA      ANG:   -51.33

 B-B6-MDP       FAULT:   22.838 KA AT  -68.15 DEG (   8.23 MVA)  X/R:     2.55
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0020 + J  0.0049  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   22.838 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  22.838 KA
                CONTRIBUTIONS:  B-B6-MDP-M        21.560 KA      ANG:   -67.54
                CBL-0263        BUS-0302           1.300 KA      ANG:   -78.38
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

```
B-B6-MDP-M      FAULT:   22.883 KA AT  -68.25 DEG (   8.24 MVA)  X/R:     2.57
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0019 + J  0.0049  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   22.883 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  22.883 KA
                CONTRIBUTIONS:  B-T-B6-SEC        21.604 KA      ANG:   -67.65
                CBL-0245        B-B6-MDP           1.300 KA      ANG:   -78.37

B-B6-P6-CS      FAULT:   15.432 KA AT  -55.82 DEG (   5.56 MVA)  X/R:     1.49
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0044 + J  0.0064  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   15.432 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  15.432 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  15.432 KA
                CONTRIBUTIONS:  B-B6-MDP          15.432 KA      ANG:   -55.82

B-B60-MDP       FAULT:    7.199 KA AT  -67.12 DEG (   2.59 MVA)  X/R:     2.37
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0065 + J  0.0154  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.199 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.835 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.199 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.199 KA
                CONTRIBUTIONS:  B-B60-MDP-M        7.199 KA      ANG:   -67.12

B-B60-MDP-M     FAULT:    7.216 KA AT  -67.17 DEG (   2.60 MVA)  X/R:     2.38
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0065 + J  0.0153  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.216 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.859 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.216 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.216 KA
                CONTRIBUTIONS:  B-T-B60-SEC        7.216 KA      ANG:   -67.17

B-B61 STRT LGH  FAULT:    7.348 KA AT  -39.50 DEG (   2.65 MVA)  X/R:     0.83
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0126 + J  0.0104  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.348 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.348 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.348 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.348 KA
                CONTRIBUTIONS:  B-B61-MDP          7.348 KA      ANG:   -39.50

B-B61-ATS-EQD   FAULT:   11.548 KA AT  -69.11 DEG (   4.16 MVA)  X/R:     2.68
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0037 + J  0.0097  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

```
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.548 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.548 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.548 KA
                CONTRIBUTIONS:  BUS-0520          10.659 KA      ANG:   -68.38
                CBL-0470        B-B61-EQD          0.900 KA      ANG:   -77.76

 B-B61-ATS-LSD  FAULT:   11.155 KA AT  -64.82 DEG (   4.02 MVA)  X/R:     2.15
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0046 + J  0.0097  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.155 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.155 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.155 KA
                CONTRIBUTIONS:  BUS-0518          11.155 KA      ANG:   -64.82

 B-B61-COMP RM  FAULT:    9.385 KA AT  -64.06 DEG (   3.38 MVA)  X/R:     2.10
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0056 + J  0.0115  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.385 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.873 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.385 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.385 KA
                CONTRIBUTIONS:  B-B61-EQA          9.385 KA      ANG:   -64.06

 B-B61-DP       FAULT:   11.303 KA AT  -68.69 DEG (   4.07 MVA)  X/R:     2.59
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0039 + J  0.0099  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.303 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.303 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.303 KA
                CONTRIBUTIONS:  B-B61-MDP         11.303 KA      ANG:   -68.69

 B-B61-ELEV     FAULT:    7.848 KA AT  -60.72 DEG (   2.83 MVA)  X/R:     2.01
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0075 + J  0.0133  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.848 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.161 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.848 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.848 KA
                CONTRIBUTIONS:  B61-ELEV           0.936 KA      ANG:   -79.51
                CBL-0472        B-B61-EQD          6.969 KA      ANG:   -58.24

 B-B61-EQ1      FAULT:    7.559 KA AT  -54.78 DEG (   2.72 MVA)  X/R:     1.43
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0092 + J  0.0130  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.559 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.559 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.559 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.559 KA
                CONTRIBUTIONS:  B-B61-EQD          7.559 KA      ANG:   -54.78
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

```
B-B61-EQ2       FAULT:    9.653 KA AT  -63.29 DEG (   3.48 MVA)  X/R:     2.03
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0056 + J  0.0111  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.653 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.653 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.653 KA
                CONTRIBUTIONS:  B-B61-EQD          9.653 KA      ANG:   -63.29

B-B61-EQ4       FAULT:    7.464 KA AT  -52.38 DEG (   2.69 MVA)  X/R:     1.31
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0098 + J  0.0127  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.464 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.464 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.464 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.464 KA
                CONTRIBUTIONS:  B-B61-EQD          7.464 KA      ANG:   -52.38

B-B61-EQA       FAULT:   10.567 KA AT  -67.67 DEG (   3.81 MVA)  X/R:     2.50
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0043 + J  0.0105  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.567 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.567 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.567 KA
                CONTRIBUTIONS:  B-B61-EQD         10.567 KA      ANG:   -67.67

B-B61-EQD       FAULT:   10.834 KA AT  -68.51 DEG (   3.90 MVA)  X/R:     2.61
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0041 + J  0.0103  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.834 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.834 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.834 KA
                CONTRIBUTIONS:  B-B61-ATS-EQD      9.942 KA      ANG:   -67.66
                CBL-0472        B-B61-ELEV         0.905 KA      ANG:   -77.88

B-B61-KITCHEN   FAULT:    8.389 KA AT  -57.79 DEG (   3.02 MVA)  X/R:     1.59
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0076 + J  0.0121  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.389 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.389 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.389 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.389 KA
                CONTRIBUTIONS:  B-B61-LSD          8.389 KA      ANG:   -57.79
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

==========

B-B61-LP1 FAULT: 4.133 KA AT -36.15 DEG (1.49 MVA) X/R: 0.73
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0235 + J 0.0171 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.133 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.133 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.133 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.133 KA
CONTRIBUTIONS: B-B61-MDP 4.133 KA ANG: -36.15

B-B61-LP2 FAULT: 4.133 KA AT -36.15 DEG (1.49 MVA) X/R: 0.73
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0235 + J 0.0171 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.133 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.133 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.133 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.133 KA
CONTRIBUTIONS: B-B61-MDP 4.133 KA ANG: -36.15

B-B61-LP3 FAULT: 7.677 KA AT -56.03 DEG (2.77 MVA) X/R: 1.49
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0087 + J 0.0130 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.677 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.677 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.677 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.677 KA
CONTRIBUTIONS: B-B61-MDP 7.677 KA ANG: -56.03

B-B61-LP4 FAULT: 9.179 KA AT -61.25 DEG (3.31 MVA) X/R: 1.83
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0063 + J 0.0115 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.179 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.316 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.179 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.179 KA
CONTRIBUTIONS: B-B61-MDP 9.179 KA ANG: -61.25

B-B61-LP5 FAULT: 6.227 KA AT -34.88 DEG (2.24 MVA) X/R: 0.70
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0158 + J 0.0110 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.227 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.227 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.227 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.227 KA
CONTRIBUTIONS: B-B61-MDP 6.227 KA ANG: -34.88

B-B61-LS1 FAULT: 6.080 KA AT -44.74 DEG (2.19 MVA) X/R: 0.99
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0140 + J 0.0139 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	6.080 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.080 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.080 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.080 KA			
	CONTRIBUTIONS: B-B61-LSD	6.080 KA	ANG:	-44.74	
B-B61-LS2	FAULT: 7.717 KA AT -48.44 DEG (2.78 MVA)		X/R:	1.13	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0103 + J 0.0116				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.717 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.717 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.717 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.717 KA			
	CONTRIBUTIONS: B-B61-LSD	7.717 KA	ANG:	-48.44	
B-B61-LS3	FAULT: 5.372 KA AT -42.09 DEG (1.94 MVA)		X/R:	0.90	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0166 + J 0.0150				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.372 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.372 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.372 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.372 KA			
	CONTRIBUTIONS: B-B61-LSD	5.372 KA	ANG:	-42.09	
B-B61-LS4	FAULT: 6.080 KA AT -44.74 DEG (2.19 MVA)		X/R:	0.99	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0140 + J 0.0139				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.080 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.080 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.080 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.080 KA			
	CONTRIBUTIONS: B-B61-LSD	6.080 KA	ANG:	-44.74	
B-B61-LS5	FAULT: 5.372 KA AT -42.09 DEG (1.94 MVA)		X/R:	0.90	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0166 + J 0.0150				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.372 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.372 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.372 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.372 KA			
	CONTRIBUTIONS: B-B61-LSD	5.372 KA	ANG:	-42.09	
B-B61-LSD	FAULT: 10.607 KA AT -63.39 DEG (3.82 MVA)		X/R:	2.01	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0051 + J 0.0101				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.607 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.607 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.607 KA			
	CONTRIBUTIONS: B-B61-LSD-M	10.607 KA	ANG:	-63.39	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B61-LSD (CONTINUED)

B-B61-LSD-M FAULT: 10.652 KA AT -63.51 DEG (3.84 MVA) X/R: 2.02
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0050 + J 0.0101 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 10.652 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 10.652 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 10.652 KA
CONTRIBUTIONS: B-B61-ATS-LSD 10.652 KA ANG: -63.51

B-B61-MCC FAULT: 7.348 KA AT -39.50 DEG (2.65 MVA) X/R: 0.83
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0126 + J 0.0104 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.348 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.348 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.348 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.348 KA
CONTRIBUTIONS: B-B61-MDP 7.348 KA ANG: -39.50

B-B61-MDP FAULT: 13.332 KA AT -70.68 DEG (4.80 MVA) X/R: 2.89
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0030 + J 0.0085 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.332 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.332 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.332 KA
CONTRIBUTIONS: B-B61-MDP-M 12.449 KA ANG: -70.19
CBL-0461 BUS-0520 0.890 KA ANG: -77.52

B-B61-MDP-M FAULT: 13.355 KA AT -70.74 DEG (4.81 MVA) X/R: 2.90
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0030 + J 0.0085 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   13.355 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.355 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.355 KA
                CONTRIBUTIONS:  B-T-B61-SEC       12.472 KA      ANG:   -70.26
                CBL-0451        B-B61-MDP          0.890 KA      ANG:   -77.51

 B-B62-A        FAULT:   14.398 KA AT  -53.77 DEG (   5.19 MVA)  X/R:     1.37
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0049 + J  0.0067  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   14.398 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.398 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.398 KA
                CONTRIBUTIONS:  B-B62-MDP         14.398 KA      ANG:   -53.77

 B-B62-ATS-EQD  FAULT:   19.128 KA AT  -62.83 DEG (   6.89 MVA)  X/R:     2.00
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0029 + J  0.0056  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   19.128 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  19.128 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  19.128 KA
                CONTRIBUTIONS:  BUS-0546          18.253 KA      ANG:   -62.11
                CBL-0493        B-B62-EQD          0.906 KA      ANG:   -77.40

 B-B62-ATS-LSD  FAULT:   18.797 KA AT  -62.11 DEG (   6.77 MVA)  X/R:     1.90
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0030 + J  0.0056  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   18.797 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  18.797 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  18.797 KA
                CONTRIBUTIONS:  BUS-0554          18.797 KA      ANG:   -62.11

 B-B62-ATTC PNL FAULT:    9.997 KA AT  -46.29 DEG (   3.60 MVA)  X/R:     1.06
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0083 + J  0.0087  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.997 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.997 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.997 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.997 KA
                CONTRIBUTIONS:  B-B62-EQD          9.997 KA      ANG:   -46.29

 B-B62-B        FAULT:   15.211 KA AT  -55.02 DEG (   5.48 MVA)  X/R:     1.43
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0045 + J  0.0065  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   15.211 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  15.211 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  15.211 KA
                CONTRIBUTIONS:  B-B62-MDP         15.211 KA      ANG:   -55.02
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B62-BL	FAULT: 10.474 KA AT -39.01 DEG (3.77 MVA) X/R: 0.81	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0089 + J 0.0072 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 10.474 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 10.474 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 10.474 KA	
	CONTRIBUTIONS: B-B62-MDP 10.474 KA ANG: -39.01	
B-B62-BP	FAULT: 13.335 KA AT -46.59 DEG (4.80 MVA) X/R: 1.06	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0062 + J 0.0065 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 13.335 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 13.335 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 13.335 KA	
	CONTRIBUTIONS: B-B62-MDP 13.335 KA ANG: -46.59	
B-B62-ELEV-1	FAULT: 9.997 KA AT -46.29 DEG (3.60 MVA) X/R: 1.06	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0083 + J 0.0087 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 9.997 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA 9.997 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 9.997 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 9.997 KA	
	CONTRIBUTIONS: B-B62-EQD 9.997 KA ANG: -46.29	
B-B62-ELEV-2	FAULT: 10.449 KA AT -48.91 DEG (3.76 MVA) X/R: 1.33	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0076 + J 0.0087 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 10.449 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 10.449 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 10.449 KA	
	CONTRIBUTIONS: MTRI-0021 0.936 KA ANG: -79.51	
	CBL-0497 B-B62-EQD 9.655 KA ANG: -46.08	
B-B62-EQ	FAULT: 14.832 KA AT -54.34 DEG (5.34 MVA) X/R: 1.44	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0047 + J 0.0066 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 14.832 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 14.832 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 14.832 KA	
	CONTRIBUTIONS: B-B62-EQD 14.832 KA ANG: -54.34	
B-B62-EQD	FAULT: 16.453 KA AT -59.45 DEG (5.93 MVA) X/R: 1.77	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0037 + J 0.0063 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 16.453 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 16.453 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 16.453 KA	
	CONTRIBUTIONS: B-B62-ATS-EQD 15.589 KA ANG: -58.39	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B62-EQD (CONTINUED)
CBL-0497 B-B62-ELEV-2 0.913 KA ANG: -77.73

B-B62-KP FAULT: 13.465 KA AT -49.53 DEG (4.85 MVA) X/R: 1.17
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0058 + J 0.0068 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.465 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.465 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.465 KA
CONTRIBUTIONS: B-B62-MDP 13.465 KA ANG: -49.53

B-B62-LP1 FAULT: 13.922 KA AT -47.70 DEG (5.02 MVA) X/R: 1.10
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0058 + J 0.0064 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.922 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.922 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.922 KA
CONTRIBUTIONS: B-B62-MDP 13.922 KA ANG: -47.70

B-B62-LP2 FAULT: 13.465 KA AT -49.53 DEG (4.85 MVA) X/R: 1.17
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0058 + J 0.0068 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.465 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.465 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.465 KA
CONTRIBUTIONS: B-B62-MDP 13.465 KA ANG: -49.53

B-B62-LP3 FAULT: 14.644 KA AT -56.51 DEG (5.28 MVA) X/R: 1.52
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0045 + J 0.0068 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 14.644 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 14.644 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 14.644 KA
CONTRIBUTIONS: B-B62-MDP 14.644 KA ANG: -56.51

B-B62-LP4 FAULT: 15.213 KA AT -57.26 DEG (5.48 MVA) X/R: 1.56
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0043 + J 0.0066 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 15.213 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 15.213 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 15.213 KA
CONTRIBUTIONS: B-B62-MDP 15.213 KA ANG: -57.26

B-B62-LS1 FAULT: 6.779 KA AT -32.75 DEG (2.44 MVA) X/R: 0.64
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0149 + J 0.0096 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    6.779 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.779 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.779 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.779 KA
                CONTRIBUTIONS:  B-B62-LSD          6.779 KA      ANG:   -32.75

 B-B62-LS2      FAULT:   10.171 KA AT  -41.53 DEG (   3.66 MVA)  X/R:     0.89
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0088 + J  0.0078  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.171 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.171 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.171 KA
                CONTRIBUTIONS:  B-B62-LSD         10.171 KA      ANG:   -41.53

 B-B62-LS3      FAULT:    8.067 KA AT  -39.93 DEG (   2.91 MVA)  X/R:     0.84
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0114 + J  0.0096  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.067 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.067 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.067 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.067 KA
                CONTRIBUTIONS:  B-B62-LSD          8.067 KA      ANG:   -39.93

 B-B62-LS4      FAULT:   10.458 KA AT  -45.23 DEG (   3.77 MVA)  X/R:     1.01
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0081 + J  0.0082  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.458 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.458 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.458 KA
                CONTRIBUTIONS:  B-B62-LSD         10.458 KA      ANG:   -45.23

 B-B62-LSD      FAULT:   15.878 KA AT  -58.15 DEG (   5.72 MVA)  X/R:     1.61
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0040 + J  0.0064  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   15.878 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  15.878 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  15.878 KA
                CONTRIBUTIONS:  B-B62-LSD-M        15.878 KA      ANG:   -58.15

 B-B62-LSD-M    FAULT:   15.984 KA AT  -58.29 DEG (   5.76 MVA)  X/R:     1.62
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0039 + J  0.0064  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	15.984 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	15.984 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	15.984 KA			
	CONTRIBUTIONS: B-B62-ATS-LSD	15.984 KA	ANG:	-58.29	
B-B62-MDP	FAULT: 24.230 KA AT -69.83 DEG (	8.73 MVA)	X/R:	2.74	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0017 + J	0.0047	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	24.230 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	24.230 KA			
	CONTRIBUTIONS: B-B62-MDP-M	23.340 KA	ANG:	-69.56	
	CBL-0485 BUS-0546	0.898 KA	ANG:	-76.95	
B-B62-MDP-M	FAULT: 24.270 KA AT -69.92 DEG (	8.74 MVA)	X/R:	2.76	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0017 + J	0.0046	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	24.270 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	24.270 KA			
	CONTRIBUTIONS: B-T-B62-SEC	23.379 KA	ANG:	-69.65	
	CBL-0479 B-B62-MDP	0.898 KA	ANG:	-76.95	
B-B62-OT	FAULT: 12.155 KA AT -42.29 DEG (	4.38 MVA)	X/R:	0.91	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0073 + J	0.0066	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.155 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.155 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.155 KA			
	CONTRIBUTIONS: B-B62-MDP	12.155 KA	ANG:	-42.29	
B-B62-PAD RM	FAULT: 13.082 KA AT -51.15 DEG (	4.71 MVA)	X/R:	1.27	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0058 + J	0.0071	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   13.082 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.082 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.082 KA
                CONTRIBUTIONS:  B-B62-EQD         13.082 KA      ANG:   -51.15

 B-B62-STRT LGT FAULT:   10.390 KA AT  -32.63 DEG (   3.74 MVA)  X/R:     0.64
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0097 + J  0.0062  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.390 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.390 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.390 KA
                CONTRIBUTIONS:  B-B62-MDP         10.390 KA      ANG:   -32.63

 B-B7-ATS-EQ    FAULT:   10.961 KA AT  -66.52 DEG (   3.95 MVA)  X/R:     2.39
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0044 + J  0.0100  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.961 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.961 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.961 KA
                CONTRIBUTIONS:  BUS-0327          10.080 KA      ANG:   -65.52
                CBL-0286        B-B7-EQD           0.900 KA      ANG:   -77.85

 B-B7-ATS-LS    FAULT:   10.030 KA AT  -61.59 DEG (   3.61 MVA)  X/R:     1.88
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0057 + J  0.0105  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.030 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.030 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.030 KA
                CONTRIBUTIONS:  BUS-0344          10.030 KA      ANG:   -61.59

 B-B7-ELEV      FAULT:    7.582 KA AT  -60.08 DEG (   2.73 MVA)  X/R:     1.98
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0079 + J  0.0137  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.582 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.848 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.582 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.582 KA
                CONTRIBUTIONS:  MTRI-0017           0.936 KA      ANG:   -79.51
                CBL-0287        B-B7-EQD            6.707 KA      ANG:   -57.42

 B-B7-EQ1       FAULT:    7.290 KA AT  -54.68 DEG (   2.63 MVA)  X/R:     1.44
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0095 + J  0.0134  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.290 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.290 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.290 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.290 KA
                CONTRIBUTIONS:  B-B7-EQD            7.290 KA      ANG:   -54.68
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

==========

B-B7-EQ2 FAULT: 8.901 KA AT -61.37 DEG (3.21 MVA) X/R: 1.89
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0065 + J 0.0118 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 8.901 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.110 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 8.901 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 8.901 KA
CONTRIBUTIONS: B-B7-EQD 8.901 KA ANG: -61.37

B-B7-EQ4 FAULT: 7.678 KA AT -54.73 DEG (2.77 MVA) X/R: 1.45
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0090 + J 0.0128 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.678 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.678 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.678 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.678 KA
CONTRIBUTIONS: B-B7-EQD 7.678 KA ANG: -54.73

B-B7-EQD FAULT: 9.929 KA AT -65.92 DEG (3.58 MVA) X/R: 2.34
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0049 + J 0.0110 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.929 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.929 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.929 KA
CONTRIBUTIONS: B-B7-ATS-EQ 9.043 KA ANG: -64.71
CBL-0287 B-B7-ELEV 0.909 KA ANG: -78.06

B-B7-LP2 FAULT: 9.435 KA AT -61.17 DEG (3.40 MVA) X/R: 1.85
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0061 + J 0.0112 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.435 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.592 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.435 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.435 KA
CONTRIBUTIONS: B-B7-LP2-M 9.435 KA ANG: -61.17

B-B7-LP2-M FAULT: 9.471 KA AT -61.27 DEG (3.41 MVA) X/R: 1.85
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0061 + J 0.0111 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.471 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.639 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.471 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.471 KA
CONTRIBUTIONS: B-B7-MDP 9.471 KA ANG: -61.27

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

==========

B-B7-LP3 FAULT: 7.205 KA AT -54.65 DEG (2.60 MVA) X/R: 1.42
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0096 + J 0.0136 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.205 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.205 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.205 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.205 KA
CONTRIBUTIONS: B-B7-LP3-M 7.205 KA ANG: -54.65

B-B7-LP3-M FAULT: 7.227 KA AT -54.71 DEG (2.60 MVA) X/R: 1.43
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0096 + J 0.0136 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.227 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.227 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.227 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.227 KA
CONTRIBUTIONS: B-B7-MDP 7.227 KA ANG: -54.71

B-B7-LP4 FAULT: 9.435 KA AT -61.17 DEG (3.40 MVA) X/R: 1.85
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0061 + J 0.0112 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.435 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.592 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.435 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.435 KA
CONTRIBUTIONS: B-B7-LP4-M 9.435 KA ANG: -61.17

B-B7-LP4-M FAULT: 9.471 KA AT -61.27 DEG (3.41 MVA) X/R: 1.85
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0061 + J 0.0111 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.471 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.639 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.471 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.471 KA
CONTRIBUTIONS: B-B7-MDP 9.471 KA ANG: -61.27

B-B7-LP5 FAULT: 7.205 KA AT -54.65 DEG (2.60 MVA) X/R: 1.42
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0096 + J 0.0136 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.205 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.205 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.205 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.205 KA
CONTRIBUTIONS: B-B7-LP5-M 7.205 KA ANG: -54.65

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B7-LP5-M FAULT: 7.227 KA AT -54.71 DEG (2.60 MVA) X/R: 1.43
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0096 + J 0.0136 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.227 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.227 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.227 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.227 KA
CONTRIBUTIONS: B-B7-MDP 7.227 KA ANG: -54.71

B-B7-LP6 FAULT: 6.589 KA AT -53.18 DEG (2.37 MVA) X/R: 1.35
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0109 + J 0.0146 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.589 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.589 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.589 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.589 KA
CONTRIBUTIONS: B-B7-LP6-M 6.589 KA ANG: -53.18

B-B7-LP6-M FAULT: 6.608 KA AT -53.22 DEG (2.38 MVA) X/R: 1.35
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0109 + J 0.0146 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.608 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.608 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.608 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.608 KA
CONTRIBUTIONS: B-B7-LP3-M 6.608 KA ANG: -53.22

B-B7-LP7 FAULT: 8.495 KA AT -59.19 DEG (3.06 MVA) X/R: 1.70
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0072 + J 0.0121 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 8.495 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 8.495 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 8.495 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 8.495 KA
CONTRIBUTIONS: B-B7-LP7-M 8.495 KA ANG: -59.19

B-B7-LP7-M FAULT: 8.525 KA AT -59.27 DEG (3.07 MVA) X/R: 1.70
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0072 + J 0.0121 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 8.525 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 8.525 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 8.525 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 8.525 KA
CONTRIBUTIONS: B-B7-LP4-M 8.525 KA ANG: -59.27

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B7-LP8	FAULT:	6.589 KA AT	-53.18 DEG (	2.37 MVA)	X/R:	1.35
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0109 + J	0.0146	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.589 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.589 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.589 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.589 KA				
	CONTRIBUTIONS: B-B7-LP8-M	6.589 KA	ANG:	-53.18		
B-B7-LP8-M	FAULT:	6.608 KA AT	-53.22 DEG (	2.38 MVA)	X/R:	1.35
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0109 + J	0.0146	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.608 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.608 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.608 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.608 KA				
	CONTRIBUTIONS: B-B7-LP5-M	6.608 KA	ANG:	-53.22		
B-B7-LS1	FAULT:	6.111 KA AT	-45.65 DEG (	2.20 MVA)	X/R:	1.03
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0137 + J	0.0141	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.111 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.111 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.111 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.111 KA				
	CONTRIBUTIONS: B-B7-LSD	6.111 KA	ANG:	-45.65		
B-B7-LS2	FAULT:	7.664 KA AT	-49.87 DEG (	2.76 MVA)	X/R:	1.20
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0101 + J	0.0120	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.664 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.664 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.664 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.664 KA				
	CONTRIBUTIONS: B-B7-LSD	7.664 KA	ANG:	-49.87		
B-B7-LS4	FAULT:	5.843 KA AT	-44.60 DEG (	2.11 MVA)	X/R:	0.99
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0146 + J	0.0144	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.843 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.843 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.843 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.843 KA				
	CONTRIBUTIONS: B-B7-LSD	5.843 KA	ANG:	-44.60		
B-B7-LS5	FAULT:	7.331 KA AT	-50.54 DEG (	2.64 MVA)	X/R:	1.23
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0104 + J	0.0126	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	7.331 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.331 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.331 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.331 KA			
	CONTRIBUTIONS: B-B7-LSD	7.331 KA	ANG:	-50.54	
B-B7-LSD	FAULT: 9.690 KA AT -60.74 DEG (	3.49 MVA)	X/R:	1.81	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0061 + J	0.0108	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.690 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.805 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.690 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.690 KA			
	CONTRIBUTIONS: B-B7-LSD-M	9.690 KA	ANG:	-60.74	
B-B7-LSD-M	FAULT: 9.728 KA AT -60.83 DEG (	3.50 MVA)	X/R:	1.82	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0060 + J	0.0108	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.728 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.855 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.728 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.728 KA			
	CONTRIBUTIONS: B-B7-ATS-LS	9.728 KA	ANG:	-60.83	
B-B7-MCC-1	FAULT: 7.771 KA AT -50.89 DEG (	2.80 MVA)	X/R:	1.25	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0097 + J	0.0120	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.771 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.771 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.771 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.771 KA			
	CONTRIBUTIONS: B-B7-EQD	7.771 KA	ANG:	-50.89	
B-B7-MCC-2	FAULT: 9.115 KA AT -49.30 DEG (	3.28 MVA)	X/R:	1.17	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0086 + J	0.0100	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.115 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.115 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.115 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.115 KA			
	CONTRIBUTIONS: B-B7-MDP	9.115 KA	ANG:	-49.30	
B-B7-MDP	FAULT: 12.258 KA AT -67.33 DEG (	4.42 MVA)	X/R:	2.46	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0038 + J	0.0090	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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==========================================================================
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.258 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.258 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.258 KA
                CONTRIBUTIONS:  B-B7-MDP-M        11.382 KA      ANG:   -66.53
                CBL-0285        BUS-0327           0.891 KA      ANG:   -77.65

 B-B7-MDP-M     FAULT:   12.278 KA AT  -67.38 DEG (   4.42 MVA)  X/R:     2.46
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0038 + J  0.0090  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.278 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.278 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.278 KA
                CONTRIBUTIONS:  B-T-B7-SEC        11.402 KA      ANG:   -66.58
                CBL-0284        B-B7-MDP           0.891 KA      ANG:   -77.65

 B-B7-SRTLGHT-M FAULT:    6.941 KA AT  -39.21 DEG (   2.50 MVA)  X/R:     0.82
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0134 + J  0.0109  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.941 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.941 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.941 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.941 KA
                CONTRIBUTIONS:  B-B7-MDP           6.941 KA      ANG:   -39.21

 B-B7-STRT LGHT FAULT:    6.920 KA AT  -39.20 DEG (   2.49 MVA)  X/R:     0.82
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0134 + J  0.0110  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.920 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.920 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.920 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.920 KA
                CONTRIBUTIONS:  B-B7-SRTLGHT-M     6.920 KA      ANG:   -39.20

 B-B70 -BLDG-71 FAULT:    1.090 KA AT  -19.59 DEG (   0.39 MVA)  X/R:     0.36
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.1038 + J  0.0369  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.090 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.090 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.090 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.090 KA			
	CONTRIBUTIONS: B-B70-MDP	1.090 KA	ANG:	-19.59	
B-B70-A	FAULT: 9.076 KA AT -49.80 DEG (	3.27 MVA)	X/R:	1.19	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0085 + J 0.0101	OHMS		
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.076 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.076 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.076 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.076 KA			
	CONTRIBUTIONS: B-B70-MDP	9.076 KA	ANG:	-49.80	
B-B70-ATS-EQD	FAULT: 13.283 KA AT -68.50 DEG (	4.79 MVA)	X/R:	2.60	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0033 + J 0.0084	OHMS		
	LOW VOLTAGE POWER CIRCUIT BREAKER	13.283 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.283 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	13.283 KA			
	CONTRIBUTIONS: BUS-0582	13.283 KA	ANG:	-68.50	
B-B70-ATS-LSD	FAULT: 12.644 KA AT -65.86 DEG (	4.56 MVA)	X/R:	2.28	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0039 + J 0.0087	OHMS		
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.644 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.644 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.644 KA			
	CONTRIBUTIONS: BUS-0581	12.644 KA	ANG:	-65.86	
B-B70-ATTIC	FAULT: 7.943 KA AT -46.22 DEG (	2.86 MVA)	X/R:	1.05	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0105 + J 0.0109	OHMS		
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.943 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.943 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.943 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.943 KA			
	CONTRIBUTIONS: B-B70-MDP	7.943 KA	ANG:	-46.22	
B-B70-B	FAULT: 9.076 KA AT -49.80 DEG (	3.27 MVA)	X/R:	1.19	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0085 + J 0.0101	OHMS		
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.076 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.076 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.076 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.076 KA			
	CONTRIBUTIONS: B-B70-MDP	9.076 KA	ANG:	-49.80	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B70-CHLLR	FAULT:	7.403 KA AT	-65.31 DEG (	2.67 MVA)	X/R: 3.12
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0068 + J 0.0147	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.403 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		8.690 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		7.403 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		7.403 KA		
	CONTRIBUTIONS:	MTRI-0023	1.889 KA	ANG:	-82.87
	CBL-0524	B-B70-MDP	5.631 KA	ANG:	-59.50
B-B70-EQ1	FAULT:	6.612 KA AT	-47.38 DEG (	2.38 MVA)	X/R: 1.09
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0123 + J 0.0134	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		6.612 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		6.612 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		6.612 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		6.612 KA		
	CONTRIBUTIONS:	B-B70-EQD	6.612 KA	ANG:	-47.38
B-B70-EQ2	FAULT:	5.198 KA AT	-43.03 DEG (	1.87 MVA)	X/R: 0.94
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0169 + J 0.0158	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		5.198 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		5.198 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		5.198 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		5.198 KA		
	CONTRIBUTIONS:	B-B70-EQD	5.198 KA	ANG:	-43.03
B-B70-EQ3	FAULT:	6.067 KA AT	-45.69 DEG (	2.19 MVA)	X/R: 1.03
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0138 + J 0.0142	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		6.067 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		6.067 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		6.067 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		6.067 KA		
	CONTRIBUTIONS:	B-B70-EQ1	6.067 KA	ANG:	-45.69
B-B70-EQ4	FAULT:	4.848 KA AT	-41.96 DEG (	1.75 MVA)	X/R: 0.90
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0184 + J 0.0166	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.848 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.848 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.848 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.848 KA		
	CONTRIBUTIONS:	B-B70-EQ2	4.848 KA	ANG:	-41.96

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B70-EQ5	FAULT:	5.601 KA AT	-44.25 DEG (	2.02 MVA)	X/R:	0.98
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0154 + J 0.0150	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.601 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.601 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.601 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.601 KA				
	CONTRIBUTIONS:	B-B70-EQ3	5.601 KA	ANG:	-44.25	
B-B70-EQ6	FAULT:	4.541 KA AT	-41.03 DEG (	1.64 MVA)	X/R:	0.87
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0199 + J 0.0174	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.541 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.541 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.541 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.541 KA				
	CONTRIBUTIONS:	B-B70-EQ4	4.541 KA	ANG:	-41.03	
B-B70-EQD	FAULT:	12.575 KA AT	-67.67 DEG (	4.53 MVA)	X/R:	2.49
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0036 + J 0.0088	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.575 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.575 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.575 KA				
	CONTRIBUTIONS:	B-B70-EQD-M	12.575 KA	ANG:	-67.67	
B-B70-EQD-M	FAULT:	12.626 KA AT	-67.76 DEG (	4.55 MVA)	X/R:	2.50
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0036 + J 0.0088	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.626 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.626 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.626 KA				
	CONTRIBUTIONS:	B-B70-ATS-EQD	12.626 KA	ANG:	-67.76	
B-B70-FIRE PMP	FAULT:	3.845 KA AT	-32.85 DEG (	1.39 MVA)	X/R:	0.85
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0262 + J 0.0169	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.845 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.845 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.845 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.845 KA				
	CONTRIBUTIONS:	MTRI-0022	0.936 KA	ANG:	-79.51	
	CBL-0508	B-B70-FPMP M	3.274 KA	ANG:	-20.85	
B-B70-FP-TAP	FAULT:	14.274 KA AT	-69.50 DEG (	5.14 MVA)	X/R:	2.70
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0029 + J 0.0079	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	14.274 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.274 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.274 KA		
	CONTRIBUTIONS: B-T-B70-SEC	13.428 KA	ANG:	-69.63
	CBL-0507 B-B70-FPMP M	0.847 KA	ANG:	-67.38
B-B70-FPMP M	FAULT: 13.269 KA AT -67.63 DEG (4.78 MVA)		X/R:	2.45
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0034 + J 0.0084			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	13.269 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.269 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	13.269 KA		
	CONTRIBUTIONS: B-B70-FP-TAP	12.417 KA	ANG:	-67.64
	CBL-0508 B-B70-FIRE PMP	0.851 KA	ANG:	-67.50
B-B70-K	FAULT: 7.001 KA AT -35.21 DEG (2.52 MVA)		X/R:	0.71
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0140 + J 0.0099			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.001 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.001 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.001 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.001 KA		
	CONTRIBUTIONS: B-B70-MDP	7.001 KA	ANG:	-35.21
B-B70-LP-4	FAULT: 5.904 KA AT -50.20 DEG (2.13 MVA)		X/R:	1.21
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0130 + J 0.0156			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.904 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.904 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.904 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.904 KA		
	CONTRIBUTIONS: B-B70-MDP	5.904 KA	ANG:	-50.20
B-B70-LP1	FAULT: 6.541 KA AT -41.92 DEG (2.36 MVA)		X/R:	0.90
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0137 + J 0.0123			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.541 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.541 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.541 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.541 KA		
	CONTRIBUTIONS: B-B70-MDP	6.541 KA	ANG:	-41.92
B-B70-LP3	FAULT: 7.149 KA AT -52.87 DEG (2.58 MVA)		X/R:	1.33
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0101 + J 0.0134			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.149 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.149 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.149 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.149 KA		
	CONTRIBUTIONS: B-B70-MDP	7.149 KA	ANG:	-52.87

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B70-LS1 FAULT: 4.695 KA AT -33.35 DEG (1.69 MVA) X/R: 0.66
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0214 + J 0.0141 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.695 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.695 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.695 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.695 KA
CONTRIBUTIONS: B-B70-LSD 4.695 KA ANG: -33.35

B-B70-LS2 FAULT: 3.793 KA AT -29.97 DEG (1.37 MVA) X/R: 0.58
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0274 + J 0.0158 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.793 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.793 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.793 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.793 KA
CONTRIBUTIONS: B-B70-LSD 3.793 KA ANG: -29.97

B-B70-LS3 FAULT: 5.377 KA AT -40.44 DEG (1.94 MVA) X/R: 0.86
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0170 + J 0.0145 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.377 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.377 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.377 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.377 KA
CONTRIBUTIONS: B-B70-LSD 5.377 KA ANG: -40.44

B-B70-LS4 FAULT: 4.235 KA AT -36.63 DEG (1.53 MVA) X/R: 0.75
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0228 + J 0.0169 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.235 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.235 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.235 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.235 KA
CONTRIBUTIONS: B-B70-LSD 4.235 KA ANG: -36.63

B-B70-LS5 FAULT: 4.936 KA AT -38.96 DEG (1.78 MVA) X/R: 0.81
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0189 + J 0.0153 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.936 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.936 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.936 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.936 KA
CONTRIBUTIONS: B-B70-LS3 4.936 KA ANG: -38.96

B-B70-LS6 FAULT: 3.952 KA AT -35.69 DEG (1.42 MVA) X/R: 0.72
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0247 + J 0.0177 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	3.952 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.952 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.952 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.952 KA			
	CONTRIBUTIONS: B-B70-LS4	3.952 KA	ANG:	-35.69	
B-B70-LSD	FAULT: 11.995 KA AT -65.21 DEG (4.32 MVA)		X/R:	2.21	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0042 + J 0.0091				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.995 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.995 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.995 KA			
	CBL-0541 B-B70-LSD-M	11.995 KA	ANG:	-65.21	
B-B70-LSD-M	FAULT: 12.043 KA AT -65.29 DEG (4.34 MVA)		X/R:	2.22	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0042 + J 0.0091				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.043 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.043 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.043 KA			
	CONTRIBUTIONS: B-B70-ATS-LSD	12.043 KA	ANG:	-65.29	
B-B70-MDP	FAULT: 14.708 KA AT -70.09 DEG (5.30 MVA)		X/R:	2.85	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0028 + J 0.0077				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.708 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.708 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.708 KA			
	CONTRIBUTIONS: B-B70-MDP-M	13.115 KA	ANG:	-69.12	
	CBL-0524 B-B70-CHLLR	1.611 KA	ANG:	-78.04	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B70-MDP-M     FAULT:   14.734 KA AT  -70.15 DEG (   5.31 MVA)  X/R:     2.85
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0028 + J  0.0077  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   14.734 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.734 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.734 KA
                CONTRIBUTIONS:  B-T-B70-SEC       13.140 KA      ANG:   -69.19
                CBL-0509        B-B70-MDP          1.611 KA      ANG:   -78.03

B-B70-PP2       FAULT:    8.770 KA AT  -56.39 DEG (   3.16 MVA)  X/R:     1.52
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0076 + J  0.0114  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.770 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.770 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.770 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.770 KA
                CONTRIBUTIONS:  B-B70-MDP          8.770 KA      ANG:   -56.39

B-B70-PP220     FAULT:    6.281 KA AT  -47.80 DEG (   2.26 MVA)  X/R:     1.11
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0128 + J  0.0142  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.281 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.281 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.281 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.281 KA
                CONTRIBUTIONS:  B-B70-MDP          6.281 KA      ANG:   -47.80

B-B70-STRTLGHT  FAULT:    7.662 KA AT  -37.64 DEG (   2.76 MVA)  X/R:     0.78
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0124 + J  0.0096  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.662 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.662 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.662 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.662 KA
                CONTRIBUTIONS:  B-B70-MDP          7.662 KA      ANG:   -37.64

B-B78-1P        FAULT:    5.800 KA AT  -36.57 DEG (   2.09 MVA)  X/R:     0.74
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0166 + J  0.0123  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    5.800 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   5.800 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   5.800 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   5.800 KA
                CONTRIBUTIONS:  B-B78-MDP          5.800 KA      ANG:   -36.57

B-B78-78AE1     FAULT:   15.720 KA AT  -56.18 DEG (   5.66 MVA)  X/R:     1.50
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0043 + J  0.0063  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   15.720 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  15.720 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  15.720 KA
                CONTRIBUTIONS:  B-B78-ATSG9578    15.720 KA      ANG:   -56.18

 B-B78-A/C      FAULT:    4.069 KA AT  -32.13 DEG (   1.47 MVA)  X/R:     0.74
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0250 + J  0.0157  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    4.069 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   4.069 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   4.069 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   4.069 KA
                CONTRIBUTIONS:  M-B78-A/C          0.557 KA      ANG:   -77.20
                CBL-0551        B-B78-MDP          3.697 KA      ANG:   -26.01

 B-B78-ATS TAP  FAULT:   18.489 KA AT  -59.46 DEG (   6.66 MVA)  X/R:     1.70
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0033 + J  0.0056  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   18.489 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  18.489 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  18.489 KA
                CONTRIBUTIONS:  B-B78-MDP         18.489 KA      ANG:   -59.46

 B-B78-ATS-CRD  FAULT:    5.323 KA AT  -36.09 DEG (   1.92 MVA)  X/R:     0.73
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0182 + J  0.0133  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    5.323 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   5.323 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   5.323 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   5.323 KA
                CONTRIBUTIONS:  BUS-0652            5.323 KA      ANG:   -36.09

 B-B78-ATS-E1   FAULT:    7.919 KA AT  -54.92 DEG (   2.85 MVA)  X/R:     1.43
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0087 + J  0.0124  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.919 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.919 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.919 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.919 KA
                CONTRIBUTIONS:  BUS-0730            7.919 KA      ANG:   -54.92

 B-B78-ATS-LS1  FAULT:   14.501 KA AT  -55.59 DEG (   5.22 MVA)  X/R:     1.46
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0047 + J  0.0068  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   14.501 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.501 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.501 KA
                CONTRIBUTIONS:  BUS-0620          14.501 KA      ANG:   -55.59

 B-B78-ATSG9578 FAULT:   16.308 KA AT  -56.12 DEG (   5.88 MVA)  X/R:     1.49
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0041 + J  0.0061  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   16.308 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  16.308 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  16.308 KA
                CONTRIBUTIONS:  BUS-0618          16.308 KA      ANG:   -56.12

 B-B78-BARBER   FAULT:    3.043 KA AT   -9.85 DEG (   1.10 MVA)  X/R:     0.17
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0389 + J  0.0067  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    3.043 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.043 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   3.043 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.043 KA
                CONTRIBUTIONS:  B-B78-MDP          3.043 KA      ANG:    -9.85

 B-B78-CONRM-AC FAULT:    2.720 KA AT  -33.32 DEG (   0.98 MVA)  X/R:     0.80
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0369 + J  0.0242  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.720 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.720 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.720 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.720 KA
                CONTRIBUTIONS:  M-B78-CONRM-AC     0.936 KA      ANG:   -79.51
                CBL-0587        B-B78-MDP          2.180 KA      ANG:   -15.27

 B-B78-CRD      FAULT:    2.919 KA AT  -33.68 DEG (   1.05 MVA)  X/R:     0.67
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0342 + J  0.0228  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.919 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.919 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.919 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.919 KA
                CONTRIBUTIONS:  B-B78-ATS-CRD      2.919 KA      ANG:   -33.68

 B-B78-E1       FAULT:    7.778 KA AT  -54.97 DEG (   2.80 MVA)  X/R:     1.43
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0089 + J  0.0126  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    7.778 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.778 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.778 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.778 KA
                CONTRIBUTIONS:  B-B78-ATS-E1       7.778 KA      ANG:   -54.97

 B-B78-ELEV-1   FAULT:   16.114 KA AT  -48.76 DEG (   5.81 MVA)  X/R:     1.31
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0049 + J  0.0056  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   16.114 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  16.114 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  16.114 KA
                CONTRIBUTIONS:  MTRI-0024          1.126 KA      ANG:   -80.54
                CBL-0564        B-B78-MDP         15.168 KA      ANG:   -46.52

 B-B78-ELEV-2   FAULT:   16.114 KA AT  -48.76 DEG (   5.81 MVA)  X/R:     1.31
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0049 + J  0.0056  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   16.114 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  16.114 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  16.114 KA
                CONTRIBUTIONS:  MTRI-0025          1.126 KA      ANG:   -80.54
                CBL-0565        B-B78-MDP         15.168 KA      ANG:   -46.52

 B-B78-FLPNL    FAULT:    4.931 KA AT  -31.54 DEG (   1.78 MVA)  X/R:     0.61
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0208 + J  0.0127  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    4.931 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   4.931 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   4.931 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   4.931 KA
                CONTRIBUTIONS:  B-B78-MDP          4.931 KA      ANG:   -31.54

 B-B78-KK       FAULT:    6.800 KA AT  -33.55 DEG (   2.45 MVA)  X/R:     0.66
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0147 + J  0.0098  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.800 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.800 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.800 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.800 KA
                CONTRIBUTIONS:  B-B78-MDP          6.800 KA      ANG:   -33.55

 B-B78-L10      FAULT:    6.689 KA AT  -50.95 DEG (   2.41 MVA)  X/R:     1.23
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0113 + J  0.0139  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.689 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.689 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.689 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.689 KA
                CONTRIBUTIONS:  B-B78-MDP          6.689 KA      ANG:   -50.95
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B78-LP-1	FAULT:	6.336 KA AT	-40.41 DEG (	2.28 MVA)	X/R: 0.85
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0144 + J 0.0123	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.336 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.336 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.336 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.336 KA			
	CONTRIBUTIONS: B-B78-MDP	6.336 KA	ANG:	-40.41	
B-B78-LP-13	FAULT:	6.162 KA AT	-50.57 DEG (	2.22 MVA)	X/R: 1.22
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0124 + J 0.0151	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.162 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.162 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.162 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.162 KA			
	CONTRIBUTIONS: B-B78-L10	6.162 KA	ANG:	-50.57	
B-B78-LP-14	FAULT:	5.711 KA AT	-50.25 DEG (	2.06 MVA)	X/R: 1.20
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0134 + J 0.0162	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.711 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.711 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.711 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.711 KA			
	CONTRIBUTIONS: B-B78-LP-13	5.711 KA	ANG:	-50.25	
B-B78-LP-15	FAULT:	5.321 KA AT	-49.97 DEG (	1.92 MVA)	X/R: 1.19
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0145 + J 0.0173	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.321 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.321 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.321 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.321 KA			
	CONTRIBUTIONS: B-B78-LP-14	5.321 KA	ANG:	-49.97	
B-B78-LP-2	FAULT:	11.262 KA AT	-45.07 DEG (	4.06 MVA)	X/R: 1.00
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0075 + J 0.0075	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.262 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.262 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.262 KA			
	CONTRIBUTIONS: B-B78-MDP	11.262 KA	ANG:	-45.07	
B-B78-LP-4	FAULT:	3.723 KA AT	-32.59 DEG (	1.34 MVA)	X/R: 0.64
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0272 + J 0.0174	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    3.723 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.723 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   3.723 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.723 KA
                CONTRIBUTIONS:  B-B78-LP-1         3.723 KA      ANG:   -32.59

 B-B78-LP-8     FAULT:   13.061 KA AT  -54.38 DEG (   4.71 MVA)  X/R:     1.40
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0054 + J  0.0075  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   13.061 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.061 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.061 KA
                CONTRIBUTIONS:  B-B78-MDP         13.061 KA      ANG:   -54.38

 B-B78-LP10     FAULT:    5.922 KA AT  -49.74 DEG (   2.13 MVA)  X/R:     1.18
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0131 + J  0.0155  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    5.922 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   5.922 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   5.922 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   5.922 KA
                CONTRIBUTIONS:  B-B78-LP7          5.922 KA      ANG:   -49.74

 B-B78-LP13     FAULT:    5.425 KA AT  -49.97 DEG (   1.95 MVA)  X/R:     1.19
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0142 + J  0.0169  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    5.425 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   5.425 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   5.425 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   5.425 KA
                CONTRIBUTIONS:  B-B78-LP10         5.425 KA      ANG:   -49.97

 B-B78-LP3      FAULT:   11.262 KA AT  -45.07 DEG (   4.06 MVA)  X/R:     1.00
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0075 + J  0.0075  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.262 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.262 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.262 KA
                CONTRIBUTIONS:  B-B78-MDP         11.262 KA      ANG:   -45.07

 B-B78-LP6      FAULT:    9.321 KA AT  -44.52 DEG (   3.36 MVA)  X/R:     0.98
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0092 + J  0.0090  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.321 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.321 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.321 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.321 KA
                CONTRIBUTIONS:  B-B78-LP3          9.321 KA      ANG:   -44.52
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B78-LP7 FAULT: 6.519 KA AT -49.47 DEG (2.35 MVA) X/R: 1.17
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0120 + J 0.0140 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.519 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.519 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.519 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.519 KA
CONTRIBUTIONS: B-B78-MDP 6.519 KA ANG: -49.47

B-B78-LSD FAULT: 13.854 KA AT -54.77 DEG (4.99 MVA) X/R: 1.42
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0050 + J 0.0071 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.854 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.854 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.854 KA
CONTRIBUTIONS: B-B78-ATS-LS1 13.854 KA ANG: -54.77

B-B78-MDP FAULT: 41.674 KA AT -77.37 DEG (15.01 MVA) X/R: 4.55
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0006 + J 0.0028 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 41.674 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 41.674 KA
CONTRIBUTIONS: B-B78-MDP-M 36.141 KA ANG: -77.81
CBL-0551 B-B78-A/C 0.512 KA ANG: -71.00
CBL-0564 B-B78-ELEV-1 1.089 KA ANG: -78.32
CBL-0565 B-B78-ELEV-2 1.089 KA ANG: -78.32
CBL-0568 B-B78-PHARM AC 0.352 KA ANG: -69.54
CBL-0573 B-B78-MEC-1 AC 0.855 KA ANG: -76.75
CBL-0581 B-B78-MEC2-A/C 0.911 KA ANG: -78.24

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	CONTRIBUTIONS TO B-B78-MDP (CONTINUED)				
	CBL-0587	B-B78-CONRM-AC	0.763 KA	ANG:	-61.17
B-B78-MDP-M	FAULT: 41.701 KA AT -77.41 DEG (15.02 MVA)			X/R:	4.56
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0006 + J 0.0028 OHMS				
	LOW VOLTAGE POWER CIRCUIT BREAKER		41.701 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		41.701 KA		
	CONTRIBUTIONS:	B-T-B78-SEC	36.169 KA	ANG:	-77.85
	CBL-0549	B-B78-MDP	5.540 KA	ANG:	-74.50
B-B78-MEC-1 AC	FAULT: 8.201 KA AT -57.40 DEG (2.95 MVA)			X/R:	1.79
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0079 + J 0.0123 OHMS				
	LOW VOLTAGE POWER CIRCUIT BREAKER		8.201 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		8.273 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		8.201 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.201 KA		
	CONTRIBUTIONS:	MTRI-0028	0.936 KA	ANG:	-79.51
	CBL-0573	B-B78-MDP	7.342 KA	ANG:	-54.65
B-B78-MEC2-A/C	FAULT: 17.913 KA AT -55.40 DEG (6.45 MVA)			X/R:	1.56
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0038 + J 0.0055 OHMS				
	LOW VOLTAGE POWER CIRCUIT BREAKER		17.913 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		17.913 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		17.913 KA		
	CONTRIBUTIONS:	M-B78-MEC2-A/C	0.936 KA	ANG:	-79.51
	CBL-0581	B-B78-MDP	17.063 KA	ANG:	-54.11
B-B78-PHARM AC	FAULT: 3.212 KA AT -15.89 DEG (1.16 MVA)			X/R:	0.25
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0360 + J 0.0102 OHMS				
	LOW VOLTAGE POWER CIRCUIT BREAKER		3.212 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.212 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.212 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.212 KA		
	CONTRIBUTIONS:	M-B78-PHARM-AC	0.369 KA	ANG:	-75.62
	CBL-0568	B-B78-MDP	3.043 KA	ANG:	-9.88
B-B78-PHV	FAULT: 2.800 KA AT -18.65 DEG (1.01 MVA)			X/R:	0.34
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0406 + J 0.0137 OHMS				
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.800 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.800 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.800 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.800 KA		
	CONTRIBUTIONS:	B-B78-MDP	2.800 KA	ANG:	-18.65

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B78-PK        FAULT:    5.824 KA AT  -39.93 DEG (   2.10 MVA)  X/R:     0.84
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0158 + J  0.0132  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    5.824 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   5.824 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   5.824 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   5.824 KA
                CONTRIBUTIONS:  B-B78-MDP          5.824 KA      ANG:   -39.93

B-B78-PNL-330A  FAULT:   10.561 KA AT  -48.12 DEG (   3.80 MVA)  X/R:     1.12
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0076 + J  0.0085  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.561 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.561 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.561 KA
                CONTRIBUTIONS:  B-B78-MDP         10.561 KA      ANG:   -48.12

B-B78-PULM 78B  FAULT:   18.489 KA AT  -59.46 DEG (   6.66 MVA)  X/R:     1.70
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0033 + J  0.0056  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   18.489 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  18.489 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  18.489 KA
                CONTRIBUTIONS:  B-B78-MDP         18.489 KA      ANG:   -59.46

B-B78-QP        FAULT:   11.835 KA AT  -35.31 DEG (   4.26 MVA)  X/R:     0.71
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0083 + J  0.0059  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.835 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.835 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.835 KA
                CONTRIBUTIONS:  B-B78-MDP         11.835 KA      ANG:   -35.31

B-B78A-PNL-2    FAULT:   15.297 KA AT  -46.23 DEG (   5.51 MVA)  X/R:     1.05
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0054 + J  0.0057  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   15.297 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  15.297 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  15.297 KA
                CONTRIBUTIONS:  B-B78-MDP         15.297 KA      ANG:   -46.23

B-B8 2ND FLR    FAULT:   12.438 KA AT  -66.65 DEG (   4.48 MVA)  X/R:     2.32
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0038 + J  0.0089  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.438 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.438 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.438 KA
                CONTRIBUTIONS:  B-B8-MDP-8        12.438 KA      ANG:   -66.65
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B8 HYDRO ELV	FAULT:	4.085 KA AT -38.57 DEG (3.40 MVA)		X/R:	0.96
	VOLTAGE:	480. EQUIV. IMPEDANCE= 0.0530 + J 0.0423			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.085 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.085 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.085 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.085 KA			
	CONTRIBUTIONS:	MTRI-0018	0.405 KA	ANG:	-79.51
	CBL-0336	B-B8-480V PNL	3.788 KA	ANG:	-34.55
B-B8-208V-MAIN	FAULT:	18.055 KA AT -70.43 DEG (6.50 MVA)		X/R:	2.82
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0022 + J 0.0063			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	18.055 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	18.055 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	18.055 KA			
	CONTRIBUTIONS:	B-T-B8-SEC	18.055 KA	ANG:	-70.43
B-B8-480V ATS	FAULT:	8.624 KA AT -69.84 DEG (7.17 MVA)		X/R:	2.74
	VOLTAGE:	480. EQUIV. IMPEDANCE= 0.0111 + J 0.0302			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.624 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.774 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.624 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.624 KA			
	CONTRIBUTIONS:	BUS-0380	7.999 KA	ANG:	-69.47
	CBL-0334	B-B8-480V PNL	0.627 KA	ANG:	-74.60
B-B8-480V PNL	FAULT:	8.490 KA AT -69.58 DEG (7.06 MVA)		X/R:	2.71
	VOLTAGE:	480. EQUIV. IMPEDANCE= 0.0114 + J 0.0306			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.490 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.586 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.490 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.490 KA			
	CONTRIBUTIONS:	B-B8-480V ATS	7.864 KA	ANG:	-69.17
	CBL-0336	B-B8 HYDRO ELV	0.394 KA	ANG:	-75.79
	CBL-0341	B-B8-COMP	0.234 KA	ANG:	-72.69
B-B8-ATS	FAULT:	14.313 KA AT -65.96 DEG (5.16 MVA)		X/R:	2.24
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0034 + J 0.0077			OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	14.313 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.313 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.313 KA			
	CONTRIBUTIONS: BUS-0375	14.313 KA		ANG:	-65.96
B-B8-BS	FAULT: 3.533 KA AT -25.67 DEG (1.27 MVA)			X/R:	0.48
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0306 + J 0.0147 OHMS				
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.533 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.533 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.533 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.533 KA			
	CONTRIBUTIONS: B-B8-MDP-8	3.533 KA		ANG:	-25.67
B-B8-CMOP	FAULT: 4.290 KA AT -55.95 DEG (1.55 MVA)			X/R:	1.48
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0157 + J 0.0232 OHMS				
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.290 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.290 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.290 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.290 KA			
	CONTRIBUTIONS: B-B8-TXMR SEC	4.290 KA		ANG:	-55.95
B-B8-COMP	FAULT: 2.522 KA AT -24.96 DEG (2.10 MVA)			X/R:	0.51
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0996 + J 0.0464 OHMS				
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.522 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.522 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.522 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.522 KA			
	CONTRIBUTIONS: MTRI-0019	0.241 KA		ANG:	-77.20
	CBL-0341 B-B8-480V PNL	2.382 KA		ANG:	-20.36
B-B8-ELEV	FAULT: 4.248 KA AT -59.19 DEG (1.53 MVA)			X/R:	1.68
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0145 + J 0.0243 OHMS				
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.248 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.248 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.248 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.248 KA			
	CONTRIBUTIONS: B-B8-J-BOX	4.248 KA		ANG:	-59.19
B-B8-FDR	FAULT: 4.766 KA AT -60.02 DEG (1.72 MVA)			X/R:	1.74
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0126 + J 0.0218 OHMS				
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.766 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.768 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.766 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.766 KA			
	CONTRIBUTIONS: B-B8-TXMR SEC	4.766 KA		ANG:	-60.02

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B8-FLEXPMACH FAULT:    3.134 KA AT  -24.73 DEG (   2.61 MVA)  X/R:     0.46
               VOLTAGE:    480.   EQUIV. IMPEDANCE=  0.0803 + J  0.0370  OHMS
               LOW VOLTAGE POWER CIRCUIT BREAKER    3.134 KA
               MOLDED CASE CIRCUIT BREAKER < 10KA   3.134 KA
               MOLDED CASE CIRCUIT BREAKER < 20KA   3.134 KA
               MOLDED CASE CIRCUIT BREAKER > 20KA   3.134 KA
               CONTRIBUTIONS:  B-B8-480V PNL      3.134 KA      ANG:   -24.73

B-B8-GE BKR    FAULT:    8.734 KA AT  -70.06 DEG (   7.26 MVA)  X/R:     2.77
               VOLTAGE:    480.   EQUIV. IMPEDANCE=  0.0108 + J  0.0298  OHMS
               LOW VOLTAGE POWER CIRCUIT BREAKER    8.734 KA
               MOLDED CASE CIRCUIT BREAKER < 10KA   9.931 KA
               MOLDED CASE CIRCUIT BREAKER < 20KA   8.734 KA
               MOLDED CASE CIRCUIT BREAKER > 20KA   8.734 KA
               CONTRIBUTIONS:  B-T-B8-2-SEC       8.110 KA      ANG:   -69.71
               CBL-0333        BUS-0380           0.627 KA      ANG:   -74.58

B-B8-J-BOX     FAULT:    4.441 KA AT  -59.50 DEG (   1.60 MVA)  X/R:     1.70
               VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0137 + J  0.0233  OHMS
               LOW VOLTAGE POWER CIRCUIT BREAKER    4.441 KA
               MOLDED CASE CIRCUIT BREAKER < 10KA   4.441 KA
               MOLDED CASE CIRCUIT BREAKER < 20KA   4.441 KA
               MOLDED CASE CIRCUIT BREAKER > 20KA   4.441 KA
               CONTRIBUTIONS:  B-B8-FDR           4.441 KA      ANG:   -59.50

B-B8-L8B       FAULT:    5.820 KA AT  -31.96 DEG (   2.10 MVA)  X/R:     0.62
               VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0175 + J  0.0109  OHMS
               LOW VOLTAGE POWER CIRCUIT BREAKER    5.820 KA
               MOLDED CASE CIRCUIT BREAKER < 10KA   5.820 KA
               MOLDED CASE CIRCUIT BREAKER < 20KA   5.820 KA
               MOLDED CASE CIRCUIT BREAKER > 20KA   5.820 KA
               CONTRIBUTIONS:  B-B8-MDP-8         5.820 KA      ANG:   -31.96

B-B8-LB1       FAULT:    7.140 KA AT  -50.59 DEG (   2.57 MVA)  X/R:     1.22
               VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0107 + J  0.0130  OHMS
               LOW VOLTAGE POWER CIRCUIT BREAKER    7.140 KA
               MOLDED CASE CIRCUIT BREAKER < 10KA   7.140 KA
               MOLDED CASE CIRCUIT BREAKER < 20KA   7.140 KA
               MOLDED CASE CIRCUIT BREAKER > 20KA   7.140 KA
               CONTRIBUTIONS:  B-B8-MDP-8         7.140 KA      ANG:   -50.59
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B8-LB2	FAULT:	6.669 KA	AT -49.74 DEG (	2.40 MVA)	X/R:	1.18
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0116 + J 0.0137		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.669 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.669 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.669 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.669 KA				
	CONTRIBUTIONS: B-B8-LB1	6.669 KA			ANG:	-49.74
B-B8-MAIN BUS	FAULT:	17.599 KA	AT -70.27 DEG (	6.34 MVA)	X/R:	2.79
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0023 + J 0.0064		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	17.599 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	17.599 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	17.599 KA				
	CONTRIBUTIONS: B-B8-208V-MAIN	17.599 KA			ANG:	-70.27
B-B8-MDP-8	FAULT:	17.288 KA	AT -70.16 DEG (	6.23 MVA)	X/R:	2.78
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0024 + J 0.0065		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	17.288 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	17.288 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	17.288 KA				
	CONTRIBUTIONS: B-B8-MAIN BUS	17.288 KA			ANG:	-70.16
B-B8-PNL-PK	FAULT:	13.265 KA	AT -60.56 DEG (	4.78 MVA)	X/R:	1.77
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0045 + J 0.0079		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	13.265 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.265 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	13.265 KA				
	CONTRIBUTIONS: B-B8-MDP-8	13.265 KA			ANG:	-60.56
B-B8-PP1	FAULT:	16.301 KA	AT -67.63 DEG (	5.87 MVA)	X/R:	2.43
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0028 + J 0.0068		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	16.301 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	16.301 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	16.301 KA				
	CONTRIBUTIONS: B-B8-PP1-M	16.301 KA			ANG:	-67.63

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B8-PP1-M FAULT: 16.353 KA AT -67.73 DEG (5.89 MVA) X/R: 2.44
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0028 + J 0.0068 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 16.353 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 16.353 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 16.353 KA
CONTRIBUTIONS: B-B8-MAIN BUS 16.353 KA ANG: -67.73

B-B8-SYLV FAULT: 15.023 KA AT -67.84 DEG (5.41 MVA) X/R: 2.46
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0030 + J 0.0074 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 15.023 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 15.023 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 15.023 KA
CONTRIBUTIONS: B-B8-MAIN BUS 15.023 KA ANG: -67.84

B-B8-TXMR PRI FAULT: 8.372 KA AT -68.83 DEG (6.96 MVA) X/R: 2.60
VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0120 + J 0.0309 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 8.372 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.350 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 8.372 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 8.372 KA
CONTRIBUTIONS: B-B8-480V PNL 8.372 KA ANG: -68.83

B-B8-TXMR SEC FAULT: 5.075 KA AT -60.52 DEG (1.83 MVA) X/R: 1.77
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0116 + J 0.0206 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.075 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.104 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.075 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.075 KA
CONTRIBUTIONS: B-B8-TXMR PRI 5.075 KA ANG: -60.52

B-B80-ATS-EQ FAULT: 6.858 KA AT -44.12 DEG (2.47 MVA) X/R: 0.97
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0126 + J 0.0122 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.858 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.858 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.858 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.858 KA
CONTRIBUTIONS: BUS-0664 6.858 KA ANG: -44.12

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B80-E1	FAULT:	5.901 KA AT	-39.95 DEG (	2.13 MVA)	X/R: 0.84
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0156 + J 0.0131	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.901 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.901 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.901 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.901 KA			
	CONTRIBUTIONS: B-B80-ATS-EQ	5.901 KA	ANG:	-39.95	
B-B80-L1-1	FAULT:	2.982 KA AT	-20.81 DEG (	1.07 MVA)	X/R: 0.38
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0376 + J 0.0143	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.982 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.982 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.982 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.982 KA			
	CONTRIBUTIONS: B-B80-MDP	2.982 KA	ANG:	-20.81	
B-B80-L1-3	FAULT:	3.415 KA AT	-20.80 DEG (	1.23 MVA)	X/R: 0.38
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0329 + J 0.0125	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.415 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.415 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.415 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.415 KA			
	CONTRIBUTIONS: B-B80-MDP	3.415 KA	ANG:	-20.80	
B-B80-LB-1	FAULT:	7.806 KA AT	-51.33 DEG (	2.81 MVA)	X/R: 1.25
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0096 + J 0.0120	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.806 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.806 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.806 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.806 KA			
	CONTRIBUTIONS: B-B80-MDP	7.806 KA	ANG:	-51.33	
B-B80-LB-E	FAULT:	3.967 KA AT	-31.89 DEG (	1.43 MVA)	X/R: 0.62
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0257 + J 0.0160	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.967 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.967 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.967 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.967 KA			
	CONTRIBUTIONS: B-B80-E1	3.967 KA	ANG:	-31.89	
B-B80-MDP	FAULT:	11.092 KA AT	-65.49 DEG (	4.00 MVA)	X/R: 2.19
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0045 + J 0.0099	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	11.092 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.092 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.092 KA			
	CONTRIBUTIONS: B-B80-MDP-M	11.092 KA	ANG:	-65.49	
B-B80-MDP-M	FAULT: 11.787 KA AT -66.72 DEG (	4.25 MVA)	X/R:	2.32	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0040 + J	0.0094	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.787 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.787 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.787 KA			
	CONTRIBUTIONS: B-T-B80-SEC	11.787 KA	ANG:	-66.72	
B-B80-P1	FAULT: 8.127 KA AT -52.62 DEG (	2.93 MVA)	X/R:	1.31	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0090 + J	0.0117	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.127 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.127 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.127 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.127 KA			
	CONTRIBUTIONS: B-B80-MDP	8.127 KA	ANG:	-52.62	
B-B80-P5	FAULT: 1.699 KA AT -15.10 DEG (	0.61 MVA)	X/R:	0.27	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0682 + J	0.0184	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.699 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.699 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.699 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.699 KA			
	CONTRIBUTIONS: B-B80-MDP	1.699 KA	ANG:	-15.10	
B-B80-PB-1	FAULT: 3.071 KA AT -19.21 DEG (	1.11 MVA)	X/R:	0.35	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0369 + J	0.0129	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.071 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.071 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.071 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.071 KA			
	CONTRIBUTIONS: B-B80-MDP	3.071 KA	ANG:	-19.21	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B80-PB-2	FAULT:	4.575 KA AT	-34.39 DEG (	1.65 MVA)	X/R:	0.68
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0217 + J	0.0148	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.575 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.575 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.575 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.575 KA				
	CONTRIBUTIONS: B-B80-E1	4.575 KA	ANG:	-34.39		
B-B81-MDP	FAULT:	4.278 KA AT	-60.18 DEG (	1.54 MVA)	X/R:	1.74
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0140 + J	0.0244	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.278 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.286 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.278 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.278 KA				
	CONTRIBUTIONS: B-B81-MDP-M	4.278 KA	ANG:	-60.18		
B-B81-MDP-M	FAULT:	4.284 KA AT	-60.20 DEG (	1.54 MVA)	X/R:	1.75
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0139 + J	0.0243	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.284 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.293 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.284 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.284 KA				
	CONTRIBUTIONS: B-T-B81-SEC	4.284 KA	ANG:	-60.20		
B-B82-ATS-EMER	FAULT:	6.580 KA AT	-64.41 DEG (	2.37 MVA)	X/R:	2.09
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0079 + J	0.0165	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.580 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.914 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.580 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.580 KA				
	CONTRIBUTIONS: BUS-0744	6.580 KA	ANG:	-64.41		
B-B82-EMER	FAULT:	6.314 KA AT	-63.28 DEG (	2.27 MVA)	X/R:	1.99
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0086 + J	0.0170	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.314 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.546 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.314 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.314 KA				
	CONTRIBUTIONS: B-B82-EMERG-M	6.314 KA	ANG:	-63.28		
B-B82-EMERG-M	FAULT:	6.327 KA AT	-63.32 DEG (	2.28 MVA)	X/R:	1.99
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0085 + J	0.0170	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	6.327 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.562 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.327 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.327 KA			
	CONTRIBUTIONS: B-B82-ATS-EMER	6.327 KA	ANG:	-63.32	
B-B82-MDP	FAULT: 7.141 KA AT -66.88 DEG (	2.57 MVA)	X/R:	2.34	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0066 + J	0.0155	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.141 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.746 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.141 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.141 KA			
	CONTRIBUTIONS: B-B82-MDP-M	7.141 KA	ANG:	-66.88	
B-B82-MDP-M	FAULT: 7.151 KA AT -66.92 DEG (	2.58 MVA)	X/R:	2.35	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0066 + J	0.0155	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.151 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.761 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.151 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.151 KA			
	CONTRIBUTIONS: B-T-B82-SEC	7.151 KA	ANG:	-66.92	
B-B9-*PNLXX	FAULT: 8.285 KA AT -41.31 DEG (	2.98 MVA)	X/R:	0.88	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0109 + J	0.0096	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.285 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.285 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.285 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.285 KA			
	CONTRIBUTIONS: B-B9-MDP	8.285 KA	ANG:	-41.31	
B-B9-*PNLYY	FAULT: 7.434 KA AT -36.60 DEG (	2.68 MVA)	X/R:	0.74	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0130 + J	0.0096	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.434 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.434 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.434 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.434 KA			
	CONTRIBUTIONS: B-B9-MDP	7.434 KA	ANG:	-36.60	
B-B9-*PNLZZ	FAULT: 11.523 KA AT -63.76 DEG (	4.15 MVA)	X/R:	2.03	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0046 + J	0.0093	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	11.523 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.523 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.523 KA			
	CONTRIBUTIONS: B-B9-MDP	11.523 KA		ANG:	-63.76
B-B9-ATS BKR	FAULT: 13.747 KA AT -67.16 DEG (	4.95 MVA)	X/R:		2.38
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0034 + J	0.0081	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	13.747 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.747 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	13.747 KA			
	CONTRIBUTIONS: B-B9-MDP	13.747 KA		ANG:	-67.16
B-B9-EM	FAULT: 13.337 KA AT -66.36 DEG (	4.80 MVA)	X/R:		2.29
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0036 + J	0.0082	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	13.337 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.337 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	13.337 KA			
	CONTRIBUTIONS: B-B9-ATS BKR	13.337 KA		ANG:	-66.36
B-B9-L91A	FAULT: 3.700 KA AT -36.90 DEG (	1.33 MVA)	X/R:		0.75
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0260 + J	0.0195	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.700 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.700 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.700 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.700 KA			
	CONTRIBUTIONS: B-B9-L91A-M	3.700 KA		ANG:	-36.90
B-B9-L91A-M	FAULT: 3.706 KA AT -36.90 DEG (	1.34 MVA)	X/R:		0.75
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0259 + J	0.0195	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.706 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.706 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.706 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.706 KA			
	CONTRIBUTIONS: B-B9-MDP	3.706 KA		ANG:	-36.90
B-B9-L92	FAULT: 4.834 KA AT -27.80 DEG (	1.74 MVA)	X/R:		0.53
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0220 + J	0.0116	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.834 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.834 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.834 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.834 KA			
	CONTRIBUTIONS: B-B9-MDP	4.834 KA		ANG:	-27.80

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B9-L9A	FAULT:	6.889 KA AT	-41.16 DEG (	2.48 MVA)	X/R: 0.87
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0131 + J 0.0115	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.889 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.889 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.889 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.889 KA			
	CONTRIBUTIONS: B-B9-MDP	6.889 KA	ANG:	-41.16	
B-B9-L9B	FAULT:	11.387 KA AT	-55.25 DEG (	4.10 MVA)	X/R: 1.44
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0060 + J 0.0087	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.387 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.387 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.387 KA			
	CONTRIBUTIONS: B-B9-MDP	11.387 KA	ANG:	-55.25	
B-B9-LPN	FAULT:	2.605 KA AT	-27.22 DEG (	0.94 MVA)	X/R: 0.51
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0410 + J 0.0211	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.605 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.605 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.605 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.605 KA			
	CONTRIBUTIONS: B-B9-TAP	2.605 KA	ANG:	-27.22	
B-B9-LPS	FAULT:	5.781 KA AT	-34.53 DEG (	2.08 MVA)	X/R: 0.69
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0171 + J 0.0118	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.781 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.781 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.781 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.781 KA			
	CONTRIBUTIONS: B-B9-TAP	5.781 KA	ANG:	-34.53	
B-B9-MAIN	FAULT:	16.037 KA AT	-69.12 DEG (	5.78 MVA)	X/R: 2.62
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0027 + J 0.0070	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	16.037 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	16.037 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	16.037 KA			
	CONTRIBUTIONS: B-T-B9-SEC	16.037 KA	ANG:	-69.12	
B-B9-MDP	FAULT:	14.956 KA AT	-68.34 DEG (	5.39 MVA)	X/R: 2.52
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0030 + J 0.0075	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   14.956 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.956 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.956 KA
                CONTRIBUTIONS:  B-B9-MAIN         14.956 KA      ANG:   -68.34

 B-B9-STRT LGHT FAULT:    5.831 KA AT  -27.53 DEG (   2.10 MVA)  X/R:     0.52
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0183 + J  0.0095  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    5.831 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   5.831 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   5.831 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   5.831 KA
                CONTRIBUTIONS:  B-B9-MDP           5.831 KA      ANG:   -27.53

 B-B9-TAP       FAULT:   12.436 KA AT  -58.85 DEG (   4.48 MVA)  X/R:     1.66
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0050 + J  0.0083  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.436 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.436 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.436 KA
                CONTRIBUTIONS:  B-B9-MDP          12.436 KA      ANG:   -58.85

 B-B92-ATS      FAULT:    3.707 KA AT  -46.72 DEG (   1.34 MVA)  X/R:     1.06
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0222 + J  0.0236  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    3.707 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.707 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   3.707 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.707 KA
                CONTRIBUTIONS:  BUS-0091           3.707 KA      ANG:   -46.72

 B-B92-PNL-E1   FAULT:    3.509 KA AT  -44.93 DEG (   1.26 MVA)  X/R:     1.00
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0242 + J  0.0242  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.509 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.509 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.509 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.509 KA		
	CONTRIBUTIONS: B-B92-ATS	3.509 KA	ANG:	-44.93
B-B94-ATS	FAULT: 5.463 KA AT -41.06 DEG (1.97 MVA)		X/R:	0.88
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0166 + J 0.0144			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.463 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.463 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.463 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.463 KA		
	CONTRIBUTIONS: BUS-0360	5.463 KA	ANG:	-41.06
B-B94-E1	FAULT: 4.644 KA AT -37.13 DEG (1.67 MVA)		X/R:	0.76
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0206 + J 0.0156			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.644 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.644 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.644 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.644 KA		
	CONTRIBUTIONS: B-B94-ATS	4.644 KA	ANG:	-37.13
B-SW-MV-1	FAULT: 2.698 KA AT -64.23 DEG (64.48 MVA)		X/R:	2.10
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2841 + J 2.6596			OHMS
	CONTRIBUTIONS: B-T-B5-PRI	2.698 KA	ANG:	-64.23
B-SW-MV-2	FAULT: 2.800 KA AT -66.41 DEG (66.92 MVA)		X/R:	2.31
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1388 + J 2.6078			OHMS
	CONTRIBUTIONS: B-T-B80-PRI	2.800 KA	ANG:	-66.41
B-SWGR27 TAP	FAULT: 3.034 KA AT -71.97 DEG (72.52 MVA)		X/R:	3.10
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.8126 + J 2.4970			OHMS
	CONTRIBUTIONS: B-B27-SWGR-M2	2.700 KA	ANG:	-71.57
	CBL-0003 B-B27-SWGR	0.335 KA	ANG:	-75.26
B-T-13-PRI	FAULT: 2.782 KA AT -66.03 DEG (66.49 MVA)		X/R:	2.27
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1636 + J 2.6172			OHMS
	CONTRIBUTIONS: B-T-B9-PRI	2.782 KA	ANG:	-66.03

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-T-B1-PRI      FAULT:    2.927 KA AT  -69.35 DEG (  69.96 MVA)  X/R:     2.68
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  0.9598 + J  2.5474  OHMS
                CONTRIBUTIONS:  B-T-B70-PRI        0.032 KA      ANG:   -73.73
                CBL-0017        B-T-B2-PRI         2.895 KA      ANG:   -69.31

B-T-B1-SEC      FAULT:    4.961 KA AT  -62.42 DEG (   1.79 MVA)  X/R:     1.92
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0112 + J  0.0215  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    4.961 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   5.092 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   4.961 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   4.961 KA
                CONTRIBUTIONS:  B-T-B1-PRI         4.961 KA      ANG:   -62.42

B-T-B10-PRI     FAULT:    2.841 KA AT  -67.36 DEG (  67.89 MVA)  X/R:     2.43
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.0796 + J  2.5888  OHMS
                CONTRIBUTIONS:  B-T-B78-PRI        2.841 KA      ANG:   -67.36

B-T-B10-SEC     FAULT:    6.177 KA AT  -62.41 DEG (   2.23 MVA)  X/R:     1.91
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0090 + J  0.0172  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.177 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.341 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.177 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.177 KA
                CONTRIBUTIONS:  B-T-B10-PRI         6.177 KA      ANG:   -62.41

B-T-B12-PRI     FAULT:    2.749 KA AT  -65.29 DEG (  65.70 MVA)  X/R:     2.20
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.2116 + J  2.6334  OHMS
                CONTRIBUTIONS:  B-T-13-PRI         2.749 KA      ANG:   -65.29

B-T-B12-SEC     FAULT:    4.738 KA AT  -62.32 DEG (   1.71 MVA)  X/R:     1.91
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0118 + J  0.0224  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    4.738 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   4.858 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   4.738 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   4.738 KA
                CONTRIBUTIONS:  B-T-B12-PRI        4.738 KA      ANG:   -62.32

 B-T-B17-PRI    FAULT:    2.658 KA AT  -63.31 DEG (  63.54 MVA)  X/R:     2.00
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.3463 + J  2.6780  OHMS
                CBL-0013        B-T-B60-PRI        2.658 KA      ANG:   -63.31

 B-T-B17-SEC    FAULT:   12.483 KA AT  -67.85 DEG (   4.50 MVA)  X/R:     2.46
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0036 + J  0.0089  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.483 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.483 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.483 KA
                CONTRIBUTIONS:  B-T-B17-PRI       12.483 KA      ANG:   -67.85

 B-T-B18-PRI    FAULT:    2.648 KA AT  -63.08 DEG (  63.28 MVA)  X/R:     1.98
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.3623 + J  2.6834  OHMS
                CONTRIBUTIONS:  B-T-B17-PRI        2.648 KA      ANG:   -63.08

 B-T-B18-SEC    FAULT:   11.909 KA AT  -67.85 DEG (   4.29 MVA)  X/R:     2.46
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0038 + J  0.0093  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.909 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.909 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.909 KA
                CONTRIBUTIONS:  B-T-B18-PRI       11.909 KA      ANG:   -67.85

 B-T-B19-PRI    FAULT:    2.920 KA AT  -69.19 DEG (  69.80 MVA)  X/R:     2.65
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  0.9693 + J  2.5503  OHMS
                CONTRIBUTIONS:  B-T-B82-PRI        0.030 KA      ANG:   -75.32
                CBL-0023        B-T-B22-PRI        2.890 KA      ANG:   -69.12

 B-T-B19-SEC    FAULT:   22.895 KA AT  -75.16 DEG (   8.25 MVA)  X/R:     3.78
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0013 + J  0.0051  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   22.895 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  22.895 KA
                CONTRIBUTIONS:  B-T-B19-PRI       22.895 KA      ANG:   -75.16

 B-T-B2-LED-PRI FAULT:    8.320 KA AT  -51.47 DEG (   6.92 MVA)  X/R:     1.26
                VOLTAGE:    480.   EQUIV. IMPEDANCE=  0.0207 + J  0.0261  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.320 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.320 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.320 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.320 KA
                CONTRIBUTIONS:  B-B2-MDP           8.320 KA      ANG:   -51.47

 B-T-B2-LED-SEC FAULT:    3.480 KA AT  -55.27 DEG (   1.25 MVA)  X/R:     1.44
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0197 + J  0.0284  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    3.480 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.480 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   3.480 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.480 KA
                CONTRIBUTIONS:  B-T-B2-LED-PRI     3.480 KA      ANG:   -55.27

 B-T-B2-PRI     FAULT:    2.949 KA AT  -69.90 DEG (  70.50 MVA)  X/R:     2.76
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  0.9285 + J  2.5368  OHMS
                CONTRIBUTIONS:  BUS-0019           2.853 KA      ANG:   -69.73
                CBL-0017        B-T-B1-PRI         0.032 KA      ANG:   -73.73
                T-B2            B-T-B2-SEC4        0.027 KA      ANG:   -76.30
                T-B2A           B-T-B2-SEC3        0.038 KA      ANG:   -74.29

 B-T-B2-SEC2    FAULT:    7.696 KA AT  -79.31 DEG (   2.77 MVA)  X/R:     5.30
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0029 + J  0.0153  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.696 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.709 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.829 KA
                T -B2           BUS-0747           7.696 KA      ANG:   -79.31

 B-T-B2-SEC3    FAULT:   16.649 KA AT  -72.06 DEG (   6.00 MVA)  X/R:     3.11
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0022 + J  0.0069  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER 16.649 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA 16.649 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA 16.649 KA			
	CONTRIBUTIONS: B-T-B2-PRI	13.627 KA	ANG:	-71.44
	CBL-0087 B-B2-MDPB-M	3.027 KA	ANG:	-74.85
B-T-B2-SEC4	FAULT: 12.753 KA AT -78.16 DEG (10.60 MVA)		X/R:	4.79
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0045 + J 0.0213 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER 12.753 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA 14.115 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA 12.753 KA			
	CONTRIBUTIONS: B-T-B2-PRI	11.933 KA	ANG:	-78.30
	CBL-0084 B-B2-MDP-M	0.821 KA	ANG:	-76.10
B-T-B22-PRI	FAULT: 2.966 KA AT -70.28 DEG (70.89 MVA)		X/R:	2.81
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.9067 + J 2.5290 OHMS			
	CONTRIBUTIONS: B-T-B19-PRI	0.030 KA	ANG:	-75.30
	CBL-0024 B-T-B33-PRI	2.935 KA	ANG:	-70.22
B-T-B22-SEC	FAULT: 8.823 KA AT -71.43 DEG (7.34 MVA)		X/R:	2.98
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0100 + J 0.0298 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER 8.823 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA 8.823 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA 8.823 KA			
	CONTRIBUTIONS: B-T-B22-PRI	8.823 KA	ANG:	-71.43
B-T-B3-PRI	FAULT: 2.896 KA AT -68.65 DEG (69.23 MVA)		X/R:	2.59
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.0013 + J 2.5622 OHMS			
	CONTRIBUTIONS: B-T-B78-PRI	0.074 KA	ANG:	-75.11
	T-B3 B-T-B3-SEC	0.035 KA	ANG:	-75.68
	CBL-0033 BUS-0065	2.788 KA	ANG:	-68.40
B-T-B3-SEC	FAULT: 21.847 KA AT -71.84 DEG (7.87 MVA)		X/R:	3.08
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0017 + J 0.0052 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER 21.847 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA 21.847 KA			
	CONTRIBUTIONS: B-T-B3-PRI	19.285 KA	ANG:	-71.26
	CBL-0094 B-B3-MDP-M	2.571 KA	ANG:	-76.17
B-T-B30-PRI	FAULT: 2.800 KA AT -66.42 DEG (66.93 MVA)		X/R:	2.31
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1383 + J 2.6078 OHMS			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	CONTRIBUTIONS TO B-T-B30-PRI (CONTINUED)				
	CBL-0014	B-T-B70-PRI	2.800 KA	ANG:	-66.42
B-T-B30-SEC	FAULT: 4.955 KA AT -62.35 DEG (1.78 MVA)			X/R:	1.91
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0112 + J 0.0215 OHMS				
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.955 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		5.082 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.955 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.955 KA		
	CONTRIBUTIONS: B-T-B30-PRI		4.955 KA	ANG:	-62.35
B-T-B33-PRI	FAULT: 3.000 KA AT -71.11 DEG (71.70 MVA)			X/R:	2.95
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.8597 + J 2.5130 OHMS				
	CONTRIBUTIONS: B-B27-SWGR		2.970 KA	ANG:	-71.07
	CBL-0024	B-T-B22-PRI	0.030 KA	ANG:	-75.29
B-T-B33-SEC	FAULT: 6.302 KA AT -62.52 DEG (2.27 MVA)			X/R:	1.92
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0088 + J 0.0169 OHMS				
	LOW VOLTAGE POWER CIRCUIT BREAKER		6.302 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		6.476 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		6.302 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		6.302 KA		
	CONTRIBUTIONS: B-T-B33-PRI		6.302 KA	ANG:	-62.52
B-T-B4-PRI	FAULT: 2.834 KA AT -67.17 DEG (67.73 MVA)			X/R:	2.40
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.0908 + J 2.5916 OHMS				
	T-B4	B-T-B4-SEC	0.030 KA	ANG:	-75.34
	CBL-0022	B-T-B82-PRI	2.804 KA	ANG:	-67.09
B-T-B4-SEC	FAULT: 29.968 KA AT -74.69 DEG (10.80 MVA)			X/R:	3.66
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0011 + J 0.0039 OHMS				
	LOW VOLTAGE POWER CIRCUIT BREAKER		29.968 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		29.968 KA		
	CONTRIBUTIONS: B-T-B4-PRI		27.821 KA	ANG:	-74.64
	CBL-0120	B-B4-BUS	2.147 KA	ANG:	-75.30
B-T-B5-PRI	FAULT: 2.709 KA AT -64.46 DEG (64.74 MVA)			X/R:	2.12
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2681 + J 2.6542 OHMS				

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                CONTRIBUTIONS TO  B-T-B5-PRI     (CONTINUED)
                CONTRIBUTIONS:  B-T-B6-PRI         2.687 KA      ANG:   -64.37
                T-B5            B-T-B5-SEC         0.022 KA      ANG:   -75.45

 B-T-B5-SEC     FAULT:   27.790 KA AT  -70.80 DEG (  10.01 MVA)  X/R:     2.89
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0014 + J  0.0041  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   27.790 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  27.790 KA
                CONTRIBUTIONS:  B-T-B5-PRI        26.235 KA      ANG:   -70.51
                CBL-0210        B-B5-MDP-M         1.561 KA      ANG:   -75.65

 B-T-B6-PRI     FAULT:    2.741 KA AT  -65.17 DEG (  65.51 MVA)  X/R:     2.19
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.2209 + J  2.6381  OHMS
                CONTRIBUTIONS:  B-T-B7-PRI         2.701 KA      ANG:   -64.99
                T-B6            B-T-B6-SEC         0.019 KA      ANG:   -77.85
                CBL-0010        B-T-B5-PRI         0.022 KA      ANG:   -75.45

 B-T-B6-SEC     FAULT:   27.475 KA AT  -70.97 DEG (   9.90 MVA)  X/R:     2.94
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0014 + J  0.0041  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   27.475 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  27.475 KA
                CONTRIBUTIONS:  B-T-B6-PRI        26.199 KA      ANG:   -70.63
                CBL-0244        B-B6-MDP-M         1.287 KA      ANG:   -78.11

 B-T-B60-PRI    FAULT:    2.690 KA AT  -64.00 DEG (  64.30 MVA)  X/R:     2.06
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.2983 + J  2.6618  OHMS
                CBL-0015        B-T-B30-PRI        2.690 KA      ANG:   -64.00

 B-T-B60-SEC    FAULT:    7.857 KA AT  -68.01 DEG (   2.83 MVA)  X/R:     2.48
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0057 + J  0.0142  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.857 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.657 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.857 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.857 KA
                CONTRIBUTIONS:  B-T-B60-PRI        7.857 KA      ANG:   -68.01

 B-T-B61-PRI    FAULT:    2.836 KA AT  -67.27 DEG (  67.78 MVA)  X/R:     2.42
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.0857 + J  2.5916  OHMS
                CONTRIBUTIONS:  B-T-B62-PRI        2.770 KA      ANG:   -67.05
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                CONTRIBUTIONS TO  B-T-B61-PRI    (CONTINUED)
                T-B61           B-T-B61-SEC        0.013 KA      ANG:   -77.07
                CBL-0007        B-T-B7-PRI         0.054 KA      ANG:   -76.58

 B-T-B61-SEC    FAULT:   14.658 KA AT  -71.62 DEG (   5.28 MVA)  X/R:     3.04
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0026 + J  0.0078  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   14.658 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.658 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.658 KA
                CONTRIBUTIONS:  B-T-B61-PRI       13.779 KA      ANG:   -71.25
                CBL-0450        B-B61-MDP-M        0.884 KA      ANG:   -77.40

 B-T-B62-PRI    FAULT:    2.868 KA AT  -68.01 DEG (  68.56 MVA)  X/R:     2.51
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.0401 + J  2.5758  OHMS
                CONTRIBUTIONS:  B-T-B8-PRI         2.790 KA      ANG:   -67.77
                T-B62           B-T-B62-SEC        0.013 KA      ANG:   -76.72
                CBL-0008        B-T-B61-PRI        0.066 KA      ANG:   -76.66

 B-T-B62-SEC    FAULT:   27.003 KA AT  -71.26 DEG (   9.73 MVA)  X/R:     2.96
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0014 + J  0.0042  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   27.003 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  27.003 KA
                CONTRIBUTIONS:  B-T-B62-PRI       26.113 KA      ANG:   -71.07
                CBL-0478        B-B62-MDP-M        0.894 KA      ANG:   -76.87

 B-T-B7-PRI     FAULT:    2.784 KA AT  -66.11 DEG (  66.54 MVA)  X/R:     2.29
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.1589 + J  2.6168  OHMS
                CONTRIBUTIONS:  B-T-B61-PRI        2.731 KA      ANG:   -65.91
                T-B7            B-T-B7-SEC         0.013 KA      ANG:   -76.90
                CBL-0009        B-T-B6-PRI         0.041 KA      ANG:   -76.52

 B-T-B7-SEC     FAULT:   21.081 KA AT  -71.21 DEG (   7.59 MVA)  X/R:     2.96
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0018 + J  0.0054  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   21.081 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  21.081 KA
                CONTRIBUTIONS:  B-T-B7-PRI        20.223 KA      ANG:   -70.96
                CBL-0283        B-B7-MDP-M         0.863 KA      ANG:   -77.10

 B-T-B70-PRI    FAULT:    2.879 KA AT  -68.23 DEG (  68.82 MVA)  X/R:     2.53
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.0263 + J  2.5700  OHMS
                T-B70           B-T-B70-SEC        0.032 KA      ANG:   -73.75
                CBL-0016        B-T-B1-PRI         2.848 KA      ANG:   -68.17
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-T-B70-SEC     FAULT:   17.708 KA AT  -71.67 DEG (   6.38 MVA)  X/R:     3.07
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0021 + J  0.0064  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   17.708 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  17.708 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  17.708 KA
                CONTRIBUTIONS:  B-T-B70-PRI       15.307 KA      ANG:   -71.29
                CBL-0505        B-B70-MDP-M        1.576 KA      ANG:   -77.65
                CBL-0506        B-B70-FP-TAP       0.836 KA      ANG:   -67.29

B-T-B78-PRI     FAULT:    2.874 KA AT  -68.15 DEG (  68.71 MVA)  X/R:     2.53
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.0316 + J  2.5726  OHMS
                CONTRIBUTIONS:  B-T-B78-SEC        0.074 KA      ANG:   -75.13
                CBL-0032        B-T-B3-PRI         2.801 KA      ANG:   -67.96

B-T-B78-SEC     FAULT:   41.836 KA AT  -77.62 DEG (  15.07 MVA)  X/R:     4.65
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0006 + J  0.0028  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   41.836 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  41.836 KA
                CONTRIBUTIONS:  B-T-B78-PRI       36.308 KA      ANG:   -78.10
                CBL-0550        B-B78-MDP-M        5.537 KA      ANG:   -74.46

B-T-B8-2-SEC    FAULT:    9.414 KA AT  -71.43 DEG (   7.83 MVA)  X/R:     2.99
                VOLTAGE:    480.   EQUIV. IMPEDANCE=  0.0094 + J  0.0279  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.414 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.414 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.414 KA
                CONTRIBUTIONS:  B-T-B8-PRI         8.792 KA      ANG:   -71.22
                CBL-0332        B-B8-GE BKR        0.623 KA      ANG:   -74.44

B-T-B8-PRI      FAULT:    2.885 KA AT  -68.39 DEG (  68.95 MVA)  X/R:     2.55
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.0174 + J  2.5679  OHMS
                CONTRIBUTIONS:  B-B27-SWGR         2.786 KA      ANG:   -68.11
                CBL-0006        B-T-B62-PRI        0.079 KA      ANG:   -76.65
                T-B8-2          B-T-B8-2-SEC       0.020 KA      ANG:   -74.27

B-T-B8-SEC      FAULT:   20.304 KA AT  -71.23 DEG (   7.31 MVA)  X/R:     2.95
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0019 + J  0.0056  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   20.304 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  20.304 KA
                CONTRIBUTIONS:  B-T-B8-PRI        20.304 KA      ANG:   -71.23

 B-T-B80-PRI    FAULT:    2.817 KA AT  -66.79 DEG (  67.33 MVA)  X/R:     2.35
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.1148 + J  2.5997  OHMS
                CBL-0020        B-T-B4-PRI         2.817 KA      ANG:   -66.79

 B-T-B80-SEC    FAULT:   12.568 KA AT  -68.10 DEG (   4.53 MVA)  X/R:     2.49
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0036 + J  0.0089  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.568 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.568 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.568 KA
                CONTRIBUTIONS:  B-T-B80-PRI       12.568 KA      ANG:   -68.10

 B-T-B81-PRI    FAULT:    2.738 KA AT  -65.05 DEG (  65.43 MVA)  X/R:     2.17
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.2276 + J  2.6388  OHMS
                CONTRIBUTIONS:  B-T-B12-PRI        2.738 KA      ANG:   -65.05

 B-T-B81-SEC    FAULT:    4.759 KA AT  -62.32 DEG (   1.71 MVA)  X/R:     1.91
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0117 + J  0.0223  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    4.759 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   4.879 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   4.759 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   4.759 KA
                CONTRIBUTIONS:  B-T-B81-PRI        4.759 KA      ANG:   -62.32

 B-T-B82-PRI    FAULT:    2.867 KA AT  -67.94 DEG (  68.53 MVA)  X/R:     2.49
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.0438 + J  2.5756  OHMS
                CONTRIBUTIONS:  B-T-B4-PRI          0.030 KA      ANG:   -75.33
                CBL-0021        B-T-B19-PRI        2.837 KA      ANG:   -67.86

 B-T-B82-SEC    FAULT:    7.838 KA AT  -68.19 DEG (   2.82 MVA)  X/R:     2.50
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0057 + J  0.0142  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	7.838 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.657 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.838 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.838 KA		
	CONTRIBUTIONS: B-T-B82-PRI	7.838 KA	ANG:	-68.19
B-T-B9-PRI	FAULT: 2.804 KA AT -66.53 DEG (67.02 MVA)		X/R:	2.33
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1316 + J 2.6064 OHMS			
	CONTRIBUTIONS: B-T-B10-PRI	2.804 KA	ANG:	-66.53
B-T-B9-SEC	FAULT: 18.730 KA AT -71.06 DEG (6.75 MVA)		X/R:	2.92
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0021 + J 0.0061 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	18.730 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	18.730 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	18.730 KA		
	CONTRIBUTIONS: B-T-B9-PRI	18.730 KA	ANG:	-71.06
B0B70-LP2	FAULT: 5.375 KA AT -38.43 DEG (1.94 MVA)		X/R:	0.80
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0175 + J 0.0139 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.375 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.375 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.375 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.375 KA		
	CONTRIBUTIONS: B-B70-MDP	5.375 KA	ANG:	-38.43

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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BUS-0739 FAULT: 13.686 KA AT -67.06 DEG (4.93 MVA) X/R: 2.37
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0034 + J 0.0081 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.686 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.686 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.686 KA
CONTRIBUTIONS: B-B9-ATS BKR 13.686 KA ANG: -67.06

bB-B7-MC1 FAULT: 4.164 KA AT -28.55 DEG (1.50 MVA) X/R: 0.55
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0253 + J 0.0138 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.164 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.164 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.164 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.164 KA
CONTRIBUTIONS: B-B7-EQD 4.164 KA ANG: -28.55

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B1-MDP	3 PHASE:	4.408	2.	Z1= 62.9684	4.530	4.469
	SLG DUTY:	4.518	2.	Z2= 62.9684	4.641	
208. VOLTS	LN/LN	3.818		Z0= 58.3865		
	LN/LN/GND	4.472	(	4.633 GND RETURN KA)		
B-B1-MDP-M	3 PHASE:	4.691	2.	Z1= 59.1737	4.838	4.765
	SLG DUTY:	5.000	2.	Z2= 59.1737	5.180	
208. VOLTS	LN/LN	4.062		Z0= 48.2430		
	LN/LN/GND	4.783	(	5.352 GND RETURN KA)		
B-B10 DISC	3 PHASE:	5.764	2.	Z1= 48.1582	5.938	5.851
	SLG DUTY:	5.763	2.	Z2= 48.1582	5.969	
208. VOLTS	LN/LN	4.992		Z0= 48.2430		
	LN/LN/GND	5.656	(	5.760 GND RETURN KA)		
B-B10-MDP	3 PHASE:	5.315	2.	Z1= 52.2256	5.444	5.379
	SLG DUTY:	5.088	2.	Z2= 52.2256	5.206	
208. VOLTS	LN/LN	4.603		Z0= 59.2262		
	LN/LN/GND	5.228	(	4.879 GND RETURN KA)		
B-B12-MAP-M	3 PHASE:	4.282	2.	Z1= 64.8271	4.421	4.352
	SLG DUTY:	4.485	2.	Z2= 64.8271	4.649	
208. VOLTS	LN/LN	3.708		Z0= 56.0423		
	LN/LN/GND	4.331	(	4.708 GND RETURN KA)		
B-B12-MDP	3 PHASE:	4.276	2.	Z1= 64.9204	4.414	4.345
	SLG DUTY:	4.469	2.	Z2= 64.9204	4.630	
208. VOLTS	LN/LN	3.703		Z0= 56.5516		
	LN/LN/GND	4.323	(	4.679 GND RETURN KA)		
B-B13-APT-13	3 PHASE:	6.468	1.	Z1= 37.1947	6.536	6.502
	SLG DUTY:	0.000	1.	Z2= 37.1947	0.000	
240. VOLTS	LN/LN	5.601		Z0= INFINITE		
	LN/LN/GND	5.601	(	0.000 GND RETURN KA)		
B-B13-APT-14	3 PHASE:	5.954	2.	Z1= 40.4009	6.235	6.096
	SLG DUTY:	0.000	1.	Z2= 40.4009	0.000	
240. VOLTS	LN/LN	5.157		Z0= INFINITE		
	LN/LN/GND	5.157	(	0.000 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B13-APT-15	3 PHASE:	4.595	2.	Z1= 52.3516	4.813	4.705
	SLG DUTY:	0.000	1.	Z2= 52.3516	0.000	
240. VOLTS	LN/LN	3.979		Z0= INFINITE		
	LN/LN/GND	3.979	(	0.000 GND RETURN KA)		
B-B13-GARAGE	3 PHASE:	4.792	1.	Z1= 50.1994	4.821	4.807
	SLG DUTY:	0.000	1.	Z2= 50.1994	0.000	
240. VOLTS	LN/LN	4.150		Z0= INFINITE		
	LN/LN/GND	4.150	(	0.000 GND RETURN KA)		
B-B13-MDP	3 PHASE:	8.713	2.	Z1= 27.6082	9.320	9.019
	SLG DUTY:	0.000	1.	Z2= 27.6082	0.000	
240. VOLTS	LN/LN	7.546		Z0= INFINITE		
	LN/LN/GND	7.546	(	0.000 GND RETURN KA)		
B-B13-MDP-M	3 PHASE:	8.720	2.	Z1= 27.5881	9.330	9.027
	SLG DUTY:	0.000	1.	Z2= 27.5881	0.000	
240. VOLTS	LN/LN	7.552		Z0= INFINITE		
	LN/LN/GND	7.552	(	0.000 GND RETURN KA)		
B-B13-MGR H16	3 PHASE:	2.562	1.	Z1= 93.9125	2.564	2.563
	SLG DUTY:	0.000	1.	Z2= 93.9125	0.000	
240. VOLTS	LN/LN	2.218		Z0= INFINITE		
	LN/LN/GND	2.218	(	0.000 GND RETURN KA)		
B-B13-TXMR SEC	3 PHASE:	11.190	3.	Z1= 21.4975	12.438	11.823
	SLG DUTY:	0.000	1.	Z2= 21.4975	0.000	
240. VOLTS	LN/LN	9.691		Z0= INFINITE		
	LN/LN/GND	9.691	(	0.000 GND RETURN KA)		
B-B13-UNKNOWN	3 PHASE:	6.468	1.	Z1= 37.1947	6.536	6.502
	SLG DUTY:	0.000	1.	Z2= 37.1947	0.000	
240. VOLTS	LN/LN	5.601		Z0= INFINITE		
	LN/LN/GND	5.601	(	0.000 GND RETURN KA)		
B-B17-A/C	3 PHASE:	7.926	2.	Z1= 35.0210	8.105	8.016
	SLG DUTY:	6.635	1.	Z2= 35.0210	6.710	
208. VOLTS	LN/LN	6.864		Z0= 55.9484		
	LN/LN/GND	7.772	(	5.684 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B17-A/C-2	3 PHASE:	7.115	1.	Z1= 39.0126	7.161	7.138
	SLG DUTY:	5.615	1.	Z2= 39.0126	5.624	
208. VOLTS	LN/LN	6.162		Z0= 71.4008		
	LN/LN/GND	6.978	(	4.603 GND RETURN KA)		
B-B17-AC1	3 PHASE:	7.115	1.	Z1= 39.0126	7.161	7.138
	SLG DUTY:	5.615	1.	Z2= 39.0126	5.624	
208. VOLTS	LN/LN	6.162		Z0= 71.4008		
	LN/LN/GND	6.978	(	4.603 GND RETURN KA)		
B-B17-ACB	3 PHASE:	6.481	1.	Z1= 42.8279	6.495	6.488
	SLG DUTY:	4.890	1.	Z2= 42.8279	4.892	
208. VOLTS	LN/LN	5.613		Z0= 86.1222		
	LN/LN/GND	6.317	(	3.894 GND RETURN KA)		
B-B17-ANIMALRM	3 PHASE:	4.462	1.	Z1= 62.2114	4.462	4.462
	SLG DUTY:	3.037	1.	Z2= 62.2114	3.037	
208. VOLTS	LN/LN	3.864		Z0= 151.6332		
	LN/LN/GND	4.234	(	2.287 GND RETURN KA)		
B-B17-ATS	3 PHASE:	9.598	2.	Z1= 28.9197	9.811	9.705
	SLG DUTY:	8.570	1.	Z2= 28.9197	8.660	
208. VOLTS	LN/LN	8.312		Z0= 39.8120		
	LN/LN/GND	9.668	(	7.703 GND RETURN KA)		
B-B17-DP	3 PHASE:	8.796	2.	Z1= 31.5565	9.080	8.938
	SLG DUTY:	7.674	2.	Z2= 31.5565	7.823	
208. VOLTS	LN/LN	7.618		Z0= 45.6758		
	LN/LN/GND	8.669	(	6.789 GND RETURN KA)		
B-B17-EMAIN	3 PHASE:	10.717	2.	Z1= 25.8998	11.197	10.958
	SLG DUTY:	10.186	2.	Z2= 25.8998	10.528	
208. VOLTS	LN/LN	9.281		Z0= 30.0465		
	LN/LN/GND	10.768	(	9.694 GND RETURN KA)		
B-B17-EMERG	3 PHASE:	9.262	2.	Z1= 29.9688	9.427	9.345
	SLG DUTY:	8.116	1.	Z2= 29.9688	8.176	
208. VOLTS	LN/LN	8.021		Z0= 43.2906		
	LN/LN/GND	9.312	(	7.179 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B17-MAIN	3 PHASE:	11.023	2.	Z1= 25.1804	11.620	11.323
	SLG DUTY:	10.651	2.	Z2= 25.1804	11.145	
208. VOLTS	LN/LN	9.546		Z0= 27.8498		
	LN/LN/GND	11.025	(10.299 GND RETURN KA)			
B-B17-NEB1	3 PHASE:	4.013	1.	Z1= 69.1640	4.013	4.013
	SLG DUTY:	2.681	0.	Z2= 69.1640	2.681	
208. VOLTS	LN/LN	3.476		Z0= 174.0367		
	LN/LN/GND	3.787	(2.002 GND RETURN KA)			
B-B17-NEB2	3 PHASE:	5.722	1.	Z1= 48.5075	5.724	5.723
	SLG DUTY:	4.078	1.	Z2= 48.5075	4.078	
208. VOLTS	LN/LN	4.956		Z0= 109.0335		
	LN/LN/GND	5.517	(3.141 GND RETURN KA)			
B-B17-NP11	3 PHASE:	5.609	1.	Z1= 49.4828	5.612	5.611
	SLG DUTY:	4.001	1.	Z2= 49.4828	4.001	
208. VOLTS	LN/LN	4.858		Z0= 110.9723		
	LN/LN/GND	5.402	(3.084 GND RETURN KA)			
B-B17-NP12	3 PHASE:	7.818	2.	Z1= 35.5062	7.971	7.894
	SLG DUTY:	6.496	1.	Z2= 35.5062	6.555	
208. VOLTS	LN/LN	6.770		Z0= 57.7398		
	LN/LN/GND	7.671	(5.533 GND RETURN KA)			
B-B17-NP21	3 PHASE:	7.115	1.	Z1= 39.0126	7.161	7.138
	SLG DUTY:	5.615	1.	Z2= 39.0126	5.624	
208. VOLTS	LN/LN	6.162		Z0= 71.4008		
	LN/LN/GND	6.978	(4.603 GND RETURN KA)			
B-B17-NP22	3 PHASE:	7.115	1.	Z1= 39.0126	7.161	7.138
	SLG DUTY:	5.615	1.	Z2= 39.0126	5.624	
208. VOLTS	LN/LN	6.162		Z0= 71.4008		
	LN/LN/GND	6.978	(4.603 GND RETURN KA)			
B-B17-NPA1	3 PHASE:	7.115	1.	Z1= 39.0126	7.161	7.138
	SLG DUTY:	5.615	1.	Z2= 39.0126	5.624	
208. VOLTS	LN/LN	6.162		Z0= 71.4008		
	LN/LN/GND	6.978	(4.603 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B17-NPB1	3 PHASE:	7.690	2.	Z1= 36.0966	7.813	7.752
	SLG DUTY:	6.330	1.	Z2= 36.0966	6.373	
208. VOLTS	LN/LN	6.659		Z0= 60.0186		
	LN/LN/GND	7.551	(	5.353 GND RETURN KA)		
B-B17-NPB2	3 PHASE:	7.115	1.	Z1= 39.0126	7.161	7.138
	SLG DUTY:	5.615	1.	Z2= 39.0126	5.624	
208. VOLTS	LN/LN	6.162		Z0= 71.4008		
	LN/LN/GND	6.978	(	4.603 GND RETURN KA)		
B-B18-1STFL	3 PHASE:	5.924	1.	Z1= 46.8587	5.929	5.926
	SLG DUTY:	4.368	1.	Z2= 46.8587	4.368	
208. VOLTS	LN/LN	5.130		Z0= 98.8314		
	LN/LN/GND	5.764	(	3.426 GND RETURN KA)		
B-B18-1STFL-M	3 PHASE:	7.246	1.	Z1= 38.3068	7.270	7.258
	SLG DUTY:	5.753	1.	Z2= 38.3068	5.756	
208. VOLTS	LN/LN	6.275		Z0= 69.7171		
	LN/LN/GND	7.194	(	4.720 GND RETURN KA)		
B-B18-2ND-FL-M	3 PHASE:	7.246	1.	Z1= 38.3068	7.270	7.258
	SLG DUTY:	5.753	1.	Z2= 38.3068	5.756	
208. VOLTS	LN/LN	6.275		Z0= 69.7171		
	LN/LN/GND	7.194	(	4.720 GND RETURN KA)		
B-B18-2NDFL	3 PHASE:	4.975	1.	Z1= 55.7950	4.976	4.976
	SLG DUTY:	3.498	1.	Z2= 55.7950	3.498	
208. VOLTS	LN/LN	4.308		Z0= 128.4349		
	LN/LN/GND	4.773	(	2.676 GND RETURN KA)		
B-B18-AC1	3 PHASE:	6.997	1.	Z1= 39.6727	7.006	7.001
	SLG DUTY:	5.391	1.	Z2= 39.6727	5.392	
208. VOLTS	LN/LN	6.059		Z0= 77.0460		
	LN/LN/GND	6.922	(	4.332 GND RETURN KA)		
B-B18-AC2	3 PHASE:	8.895	2.	Z1= 31.2043	9.091	8.994
	SLG DUTY:	7.911	1.	Z2= 31.2043	7.992	
208. VOLTS	LN/LN	7.704		Z0= 43.4067		
	LN/LN/GND	8.960	(	7.086 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B18-ATS-EMRG	3 PHASE:	7.979	1.	Z1= 34.7862	8.027	8.003
	SLG DUTY:	6.606	1.	Z2= 34.7862	6.614	
208. VOLTS	LN/LN	6.910		Z0= 57.8411		
	LN/LN/GND	8.011	(5.577 GND RETURN KA)			
B-B18-EMERG	3 PHASE:	7.146	1.	Z1= 38.8427	7.168	7.157
	SLG DUTY:	5.629	1.	Z2= 38.8427	5.632	
208. VOLTS	LN/LN	6.189		Z0= 71.8580		
	LN/LN/GND	7.079	(4.594 GND RETURN KA)			
B-B18-EMERG-M	3 PHASE:	7.168	1.	Z1= 38.7213	7.191	7.180
	SLG DUTY:	5.665	1.	Z2= 38.7213	5.668	
208. VOLTS	LN/LN	6.208		Z0= 71.1519		
	LN/LN/GND	7.109	(4.634 GND RETURN KA)			
B-B18-NCP	3 PHASE:	9.778	2.	Z1= 28.3882	10.051	9.915
	SLG DUTY:	9.093	1.	Z2= 28.3882	9.228	
208. VOLTS	LN/LN	8.468		Z0= 35.2018		
	LN/LN/GND	9.971	(8.461 GND RETURN KA)			
B-B18-NMDP	3 PHASE:	10.780	2.	Z1= 25.7476	11.460	11.123
	SLG DUTY:	10.675	2.	Z2= 25.7476	11.310	
208. VOLTS	LN/LN	9.336		Z0= 26.5158		
	LN/LN/GND	10.800	(10.571 GND RETURN KA)			
B-B18-NMDP-M	3 PHASE:	10.803	2.	Z1= 25.6930	11.490	11.149
	SLG DUTY:	10.732	2.	Z2= 25.6930	11.384	
208. VOLTS	LN/LN	9.356		Z0= 26.2088		
	LN/LN/GND	10.824	(10.661 GND RETURN KA)			
B-B18-NP11	3 PHASE:	6.997	1.	Z1= 39.6727	7.006	7.001
	SLG DUTY:	5.391	1.	Z2= 39.6727	5.392	
208. VOLTS	LN/LN	6.059		Z0= 77.0460		
	LN/LN/GND	6.922	(4.332 GND RETURN KA)			
B-B18-NP12	3 PHASE:	6.997	1.	Z1= 39.6727	7.006	7.001
	SLG DUTY:	5.391	1.	Z2= 39.6727	5.392	
208. VOLTS	LN/LN	6.059		Z0= 77.0460		
	LN/LN/GND	6.922	(4.332 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B18-NP21	3 PHASE:	7.598	1.	Z1= 36.5314	7.618	7.608
	SLG DUTY:	6.073	1.	Z2= 36.5314	6.075	
208. VOLTS	LN/LN	6.580		Z0= 65.8014		
	LN/LN/GND	7.593	(4.995 GND RETURN KA)			
B-B18-NP22	3 PHASE:	8.313	1.	Z1= 33.3905	8.415	8.364
	SLG DUTY:	7.106	1.	Z2= 33.3905	7.134	
208. VOLTS	LN/LN	7.199		Z0= 51.3539		
	LN/LN/GND	8.354	(6.155 GND RETURN KA)			
B-B18-NP23	3 PHASE:	9.098	2.	Z1= 30.5084	9.363	9.231
	SLG DUTY:	8.219	2.	Z2= 30.5084	8.350	
208. VOLTS	LN/LN	7.879		Z0= 40.6764		
	LN/LN/GND	9.140	(7.467 GND RETURN KA)			
B-B18-STRT LHT	3 PHASE:	4.688	1.	Z1= 59.2059	4.688	4.688
	SLG DUTY:	3.173	0.	Z2= 59.2059	3.173	
208. VOLTS	LN/LN	4.060		Z0= 146.1110		
	LN/LN/GND	4.464	(2.380 GND RETURN KA)			
B-B18-TAP BOX	3 PHASE:	7.487	1.	Z1= 37.0738	7.519	7.503
	SLG DUTY:	6.031	1.	Z2= 37.0738	6.035	
208. VOLTS	LN/LN	6.484		Z0= 65.4327		
	LN/LN/GND	7.460	(4.995 GND RETURN KA)			
B-B19-200A PNL	3 PHASE:	18.043	3.	Z1= 15.3837	19.715	18.889
	SLG DUTY:	18.238	2.	Z2= 15.3837	19.118	
208. VOLTS	LN/LN	15.626		Z0= 15.2742		
	LN/LN/GND	19.485	(18.282 GND RETURN KA)			
B-B19-B1	3 PHASE:	16.079	2.	Z1= 17.2630	16.540	16.310
	SLG DUTY:	14.678	1.	Z2= 17.2630	14.766	
208. VOLTS	LN/LN	13.925		Z0= 23.4523		
	LN/LN/GND	17.139	(13.209 GND RETURN KA)			
B-B19-L1	3 PHASE:	2.634	0.	Z1= 105.3890	2.634	2.634
	SLG DUTY:	1.607	0.	Z2= 105.3890	1.607	
208. VOLTS	LN/LN	2.281		Z0= 308.6572		
	LN/LN/GND	2.420	(1.154 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B19-L2	3 PHASE:	7.374	1.	Z1= 37.6437	7.377	7.375
	SLG DUTY:	5.049	1.	Z2= 37.6437	5.050	
208. VOLTS	LN/LN	6.386		Z0= 91.3018		
	LN/LN/GND	7.078	(3.803 GND RETURN KA)			
B-B19-MDP1	3 PHASE:	20.154	3.	Z1= 13.7725	22.909	21.555
	SLG DUTY:	21.962	3.	Z2= 13.7725	24.090	
208. VOLTS	LN/LN	17.454		Z0= 10.5058		
	LN/LN/GND	22.288	(24.041 GND RETURN KA)			
B-B19-MDP1-M	3 PHASE:	20.182	3.	Z1= 13.7535	22.968	21.598
	SLG DUTY:	22.051	3.	Z2= 13.7535	24.250	
208. VOLTS	LN/LN	17.478		Z0= 10.3783		
	LN/LN/GND	22.313	(24.223 GND RETURN KA)			
B-B19-MDP2	3 PHASE:	19.126	3.	Z1= 14.5125	21.533	20.348
	SLG DUTY:	20.165	3.	Z2= 14.5125	21.860	
208. VOLTS	LN/LN	16.564		Z0= 12.4433		
	LN/LN/GND	20.768	(21.234 GND RETURN KA)			
B-B19-MDP2-M	3 PHASE:	19.457	3.	Z1= 14.2661	21.978	20.737
	SLG DUTY:	20.742	3.	Z2= 14.2661	22.579	
208. VOLTS	LN/LN	16.850		Z0= 11.7722		
	LN/LN/GND	21.243	(22.121 GND RETURN KA)			
B-B19-MDPA	3 PHASE:	10.564	2.	Z1= 26.2754	11.163	10.866
	SLG DUTY:	8.633	2.	Z2= 26.2754	8.866	
208. VOLTS	LN/LN	9.149		Z0= 44.4287		
	LN/LN/GND	10.370	(7.260 GND RETURN KA)			
B-B19-P1	3 PHASE:	10.564	2.	Z1= 26.2754	11.163	10.866
	SLG DUTY:	8.633	2.	Z2= 26.2754	8.866	
208. VOLTS	LN/LN	9.149		Z0= 44.4287		
	LN/LN/GND	10.370	(7.260 GND RETURN KA)			
B-B19-P2	3 PHASE:	9.053	1.	Z1= 30.6593	9.097	9.075
	SLG DUTY:	6.688	1.	Z2= 30.6593	6.692	
208. VOLTS	LN/LN	7.841		Z0= 64.6580		
	LN/LN/GND	8.855	(5.243 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B19-P4	3 PHASE:	16.873	2.	Z1= 16.4508	17.809	17.344
	SLG DUTY:	16.164	2.	Z2= 16.4508	16.476	
208. VOLTS	LN/LN	14.612		Z0= 19.3902		
	LN/LN/GND	18.093	(15.279 GND RETURN KA)			
B-B19-P6	3 PHASE:	3.012	1.	Z1= 92.1680	3.012	3.012
	SLG DUTY:	1.874	0.	Z2= 92.1680	1.874	
208. VOLTS	LN/LN	2.608		Z0= 261.4752		
	LN/LN/GND	2.786	(1.356 GND RETURN KA)			
B-B19-PS	3 PHASE:	4.843	1.	Z1= 57.3189	4.843	4.843
	SLG DUTY:	3.072	0.	Z2= 57.3189	3.072	
208. VOLTS	LN/LN	4.194		Z0= 157.8952		
	LN/LN/GND	4.529	(2.238 GND RETURN KA)			
B-B2-ATS-CRIT	3 PHASE:	14.058	3.	Z1= 19.7443	15.267	14.669
	SLG DUTY:	13.421	2.	Z2= 19.7443	13.989	
208. VOLTS	LN/LN	12.175		Z0= 23.0167		
	LN/LN/GND	14.701	(12.745 GND RETURN KA)			
B-B2-ATS-LED3	3 PHASE:	3.313	1.	Z1= 83.7906	3.348	3.330
	SLG DUTY:	3.408	1.	Z2= 83.7906	3.439	
208. VOLTS	LN/LN	2.869		Z0= 76.8266		
	LN/LN/GND	3.408	(3.508 GND RETURN KA)			
B-B2-ATS-LS	3 PHASE:	14.376	3.	Z1= 19.3081	15.708	15.049
	SLG DUTY:	14.043	2.	Z2= 19.3081	14.783	
208. VOLTS	LN/LN	12.450		Z0= 20.9988		
	LN/LN/GND	15.057	(13.652 GND RETURN KA)			
B-B2-BATTERYCH	3 PHASE:	3.876	0.	Z1= 71.6123	3.876	3.876
	SLG DUTY:	2.410	0.	Z2= 71.6123	2.410	
208. VOLTS	LN/LN	3.357		Z0= 203.8535		
	LN/LN/GND	3.600	(1.741 GND RETURN KA)			
B-B2-CATSCAN	3 PHASE:	9.340	2.	Z1= 12.8779	9.587	9.464
	SLG DUTY:	7.898	1.	Z2= 12.8779	7.948	
480. VOLTS	LN/LN	8.089		Z0= 20.6240		
	LN/LN/GND	9.544	(6.740 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-CRIT PNL	3 PHASE:	13.815	3.	Z1= 20.0923	14.929	14.377
	SLG DUTY:	12.988	2.	Z2= 20.0923	13.458	
208. VOLTS	LN/LN	11.964		Z0= 24.4883		
	LN/LN/GND	14.419	(12.149 GND RETURN KA)			
B-B2-DENTAL LB	3 PHASE:	7.797	1.	Z1= 35.5981	7.806	7.802
	SLG DUTY:	5.552	1.	Z2= 35.5981	5.552	
208. VOLTS	LN/LN	6.753		Z0= 80.7723		
	LN/LN/GND	7.595	(4.257 GND RETURN KA)			
B-B2-DENTSUCPM	3 PHASE:	7.467	1.	Z1= 37.1712	7.511	7.489
	SLG DUTY:	5.013	1.	Z2= 37.1712	5.013	
208. VOLTS	LN/LN	6.467		Z0= 94.9658		
	LN/LN/GND	7.279	(3.705 GND RETURN KA)			
B-B2-ELEV	3 PHASE:	10.539	2.	Z1= 26.3366	10.874	10.707
	SLG DUTY:	8.638	1.	Z2= 26.3366	8.709	
208. VOLTS	LN/LN	9.127		Z0= 44.9030		
	LN/LN/GND	10.592	(7.231 GND RETURN KA)			
B-B2-ELEV-P1	3 PHASE:	7.988	2.	Z1= 34.7474	8.205	8.097
	SLG DUTY:	5.726	1.	Z2= 34.7474	5.745	
208. VOLTS	LN/LN	6.918		Z0= 77.9001		
	LN/LN/GND	7.796	(4.405 GND RETURN KA)			
B-B2-EMERG-M	3 PHASE:	3.257	1.	Z1= 85.2359	3.289	3.273
	SLG DUTY:	3.313	1.	Z2= 85.2359	3.340	
208. VOLTS	LN/LN	2.820		Z0= 81.0246		
	LN/LN/GND	3.345	(3.369 GND RETURN KA)			
B-B2-EMERG-PNL	3 PHASE:	3.252	1.	Z1= 85.3542	3.284	3.268
	SLG DUTY:	3.301	1.	Z2= 85.3542	3.327	
208. VOLTS	LN/LN	2.816		Z0= 81.7061		
	LN/LN/GND	3.339	(3.349 GND RETURN KA)			
B-B2-L12	3 PHASE:	9.312	1.	Z1= 29.8092	9.440	9.376
	SLG DUTY:	7.334	1.	Z2= 29.8092	7.355	
208. VOLTS	LN/LN	8.064		Z0= 55.2979		
	LN/LN/GND	9.254	(5.979 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-L2A	3 PHASE:	9.299	1.	Z1= 29.8485	9.430	9.365
	SLG DUTY:	7.290	1.	Z2= 29.8485	7.310	
208. VOLTS	LN/LN	8.053		Z0= 55.9427		
	LN/LN/GND	9.236	(	5.923 GND RETURN KA)		
B-B2-L2E	3 PHASE:	9.312	1.	Z1= 29.8092	9.440	9.376
	SLG DUTY:	7.334	1.	Z2= 29.8092	7.355	
208. VOLTS	LN/LN	8.064		Z0= 55.2979		
	LN/LN/GND	9.254	(	5.979 GND RETURN KA)		
B-B2-L4	3 PHASE:	9.865	2.	Z1= 28.1382	10.029	9.947
	SLG DUTY:	8.014	1.	Z2= 28.1382	8.046	
208. VOLTS	LN/LN	8.543		Z0= 48.8677		
	LN/LN/GND	9.880	(	6.670 GND RETURN KA)		
B-B2-L6	3 PHASE:	9.865	2.	Z1= 28.1382	10.029	9.947
	SLG DUTY:	8.014	1.	Z2= 28.1382	8.046	
208. VOLTS	LN/LN	8.543		Z0= 48.8677		
	LN/LN/GND	9.880	(	6.670 GND RETURN KA)		
B-B2-L7	3 PHASE:	9.865	2.	Z1= 28.1382	10.029	9.947
	SLG DUTY:	8.014	1.	Z2= 28.1382	8.046	
208. VOLTS	LN/LN	8.543		Z0= 48.8677		
	LN/LN/GND	9.880	(	6.670 GND RETURN KA)		
B-B2-L8	3 PHASE:	9.865	2.	Z1= 28.1382	10.029	9.947
	SLG DUTY:	8.014	1.	Z2= 28.1382	8.046	
208. VOLTS	LN/LN	8.543		Z0= 48.8677		
	LN/LN/GND	9.880	(	6.670 GND RETURN KA)		
B-B2-L9E	3 PHASE:	8.308	1.	Z1= 33.4107	8.338	8.323
	SLG DUTY:	6.163	1.	Z2= 33.4107	6.165	
208. VOLTS	LN/LN	7.195		Z0= 70.0808		
	LN/LN/GND	8.161	(	4.837 GND RETURN KA)		
B-B2-LB1E	3 PHASE:	8.308	1.	Z1= 33.4107	8.338	8.323
	SLG DUTY:	6.163	1.	Z2= 33.4107	6.165	
208. VOLTS	LN/LN	7.195		Z0= 70.0808		
	LN/LN/GND	8.161	(	4.837 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-LB2	3 PHASE:	9.865	2.	Z1= 28.1382	10.029	9.947
	SLG DUTY:	8.014	1.	Z2= 28.1382	8.046	
208. VOLTS	LN/LN	8.543		Z0= 48.8677		
	LN/LN/GND	9.880	(6.670 GND RETURN KA)			
B-B2-LB2E	3 PHASE:	6.937	1.	Z1= 40.0156	6.940	6.938
	SLG DUTY:	4.794	1.	Z2= 40.0156	4.794	
208. VOLTS	LN/LN	6.007		Z0= 95.6202		
	LN/LN/GND	6.688	(3.624 GND RETURN KA)			
B-B2-LED-3	3 PHASE:	3.409	1.	Z1= 81.4201	3.451	3.430
	SLG DUTY:	3.577	1.	Z2= 81.4201	3.620	
208. VOLTS	LN/LN	2.952		Z0= 69.9354		
	LN/LN/GND	3.507	(3.763 GND RETURN KA)			
B-B2-MDP	3 PHASE:	12.674	5.	Z1= 9.4905	15.633	14.194
	SLG DUTY:	12.966	5.	Z2= 9.4905	16.049	
480. VOLTS	LN/LN	10.976		Z0= 8.8495		
	LN/LN/GND	12.788	(13.272 GND RETURN KA)			
B-B2-MDP-M	3 PHASE:	12.678	5.	Z1= 9.4878	15.644	14.202
	SLG DUTY:	12.977	5.	Z2= 9.4878	16.084	
480. VOLTS	LN/LN	10.979		Z0= 8.8320		
	LN/LN/GND	12.786	(13.290 GND RETURN KA)			
B-B2-MDPA	3 PHASE:	7.615	5.	Z1= 36.4488	9.604	8.640
	SLG DUTY:	7.672	5.	Z2= 36.4488	9.650	
208. VOLTS	LN/LN	6.595		Z0= 35.6452		
	LN/LN/GND	7.658	(7.729 GND RETURN KA)			
B-B2-MDPA-M	3 PHASE:	7.656	5.	Z1= 36.2568	9.687	8.703
	SLG DUTY:	7.734	5.	Z2= 36.2568	9.785	
208. VOLTS	LN/LN	6.630		Z0= 35.1543		
	LN/LN/GND	7.696	(7.814 GND RETURN KA)			
B-B2-MDPB	3 PHASE:	14.942	3.	Z1= 18.5763	16.596	15.780
	SLG DUTY:	15.075	2.	Z2= 18.5763	16.237	
208. VOLTS	LN/LN	12.940		Z0= 18.2314		
	LN/LN/GND	15.652	(15.170 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-MDPB-M	3 PHASE:	15.041	3.	Z1= 18.4549	16.720	15.892
	SLG DUTY:	15.293	3.	Z2= 18.4549	16.514	
208. VOLTS	LN/LN	13.026		Z0= 17.6681		
	LN/LN/GND	15.789	(15.518 GND RETURN KA)			
B-B2-MEDAIRCOM	3 PHASE:	7.203	1.	Z1= 38.5335	7.215	7.209
	SLG DUTY:	4.894	1.	Z2= 38.5335	4.894	
208. VOLTS	LN/LN	6.238		Z0= 95.6202		
	LN/LN/GND	6.981	(3.654 GND RETURN KA)			
B-B2-NEWLAB	3 PHASE:	3.216	1.	Z1= 86.2966	3.246	3.231
	SLG DUTY:	3.240	1.	Z2= 86.2966	3.263	
208. VOLTS	LN/LN	2.786		Z0= 84.6050		
	LN/LN/GND	3.303	(3.262 GND RETURN KA)			
B-B2-NEWLAB-M	3 PHASE:	3.221	1.	Z1= 86.1781	3.251	3.236
	SLG DUTY:	3.252	1.	Z2= 86.1781	3.275	
208. VOLTS	LN/LN	2.789		Z0= 83.9193		
	LN/LN/GND	3.310	(3.281 GND RETURN KA)			
B-B2-PNL 1	3 PHASE:	3.257	1.	Z1= 85.2359	3.289	3.273
	SLG DUTY:	3.313	1.	Z2= 85.2359	3.340	
208. VOLTS	LN/LN	2.820		Z0= 81.0246		
	LN/LN/GND	3.345	(3.369 GND RETURN KA)			
B-B2-PNL LS	3 PHASE:	13.843	3.	Z1= 20.0515	14.935	14.394
	SLG DUTY:	13.115	2.	Z2= 20.0515	13.604	
208. VOLTS	LN/LN	11.988		Z0= 23.8970		
	LN/LN/GND	14.454	(12.360 GND RETURN KA)			
B-B2-PNL-2	3 PHASE:	3.269	1.	Z1= 84.9027	3.300	3.285
	SLG DUTY:	3.331	1.	Z2= 84.9027	3.355	
208. VOLTS	LN/LN	2.831		Z0= 80.3675		
	LN/LN/GND	3.371	(3.392 GND RETURN KA)			
B-B2-PNL-3-M	3 PHASE:	3.209	1.	Z1= 86.4972	3.236	3.223
	SLG DUTY:	3.227	1.	Z2= 86.4972	3.247	
208. VOLTS	LN/LN	2.779		Z0= 85.3234		
	LN/LN/GND	3.309	(3.242 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-PNL-D2	3 PHASE:	6.103	4.	Z1= 45.4828	7.107	6.615
	SLG DUTY:	5.546	3.	Z2= 45.4828	6.201	
208. VOLTS	LN/LN	5.285		Z0= 59.4890		
	LN/LN/GND	6.074	(	5.072 GND RETURN KA)		
B-B2-PNL-L11	3 PHASE:	9.524	2.	Z1= 29.1441	9.706	9.615
	SLG DUTY:	7.391	1.	Z2= 29.1441	7.416	
208. VOLTS	LN/LN	8.248		Z0= 55.9426		
	LN/LN/GND	9.471	(	5.958 GND RETURN KA)		
B-B2-PNL-M1	3 PHASE:	3.110	1.	Z1= 89.2513	3.131	3.120
	SLG DUTY:	3.060	1.	Z2= 89.2513	3.072	
208. VOLTS	LN/LN	2.693		Z0= 94.2384		
	LN/LN/GND	3.207	(	3.005 GND RETURN KA)		
B-B2-PNL-P	3 PHASE:	9.556	3.	Z1= 12.5876	10.860	10.219
	SLG DUTY:	8.279	3.	Z2= 12.5876	8.996	
480. VOLTS	LN/LN	8.275		Z0= 18.5468		
	LN/LN/GND	9.427	(	7.281 GND RETURN KA)		
B-B2-POD2PP	3 PHASE:	9.721	2.	Z1= 28.5542	9.931	9.826
	SLG DUTY:	7.841	1.	Z2= 28.5542	7.885	
208. VOLTS	LN/LN	8.419		Z0= 50.2621		
	LN/LN/GND	9.695	(	6.500 GND RETURN KA)		
B-B2-TEL COMM	3 PHASE:	9.865	2.	Z1= 28.1382	10.029	9.947
	SLG DUTY:	8.014	1.	Z2= 28.1382	8.046	
208. VOLTS	LN/LN	8.543		Z0= 48.8677		
	LN/LN/GND	9.880	(	6.670 GND RETURN KA)		
B-B2-UNIT-1	3 PHASE:	8.552	2.	Z1= 14.0655	9.137	8.847
	SLG DUTY:	7.048	2.	Z2= 14.0655	7.266	
480. VOLTS	LN/LN	7.406		Z0= 23.4005		
	LN/LN/GND	8.454	(	5.956 GND RETURN KA)		
B-B2-UNIT-2	3 PHASE:	9.037	3.	Z1= 13.3095	9.902	9.475
	SLG DUTY:	7.632	2.	Z2= 13.3095	8.018	
480. VOLTS	LN/LN	7.826		Z0= 20.8974		
	LN/LN/GND	8.938	(	6.573 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-XRAY	3 PHASE:	1.913	0.	Z1= 145.0965	1.913	1.913
	SLG DUTY:	1.141	0.	Z2= 145.0965	1.141	
208. VOLTS	LN/LN	1.657		Z0= 440.2068		
	LN/LN/GND	1.739	(	0.812 GND RETURN KA)		
B-B2-XRAY-124	3 PHASE:	6.276	2.	Z1= 19.1661	6.372	6.324
	SLG DUTY:	4.751	1.	Z2= 19.1661	4.770	
480. VOLTS	LN/LN	5.435		Z0= 38.3090		
	LN/LN/GND	6.126	(	3.789 GND RETURN KA)		
B-B2-XRAY124	3 PHASE:	8.055	1.	Z1= 34.4606	8.068	8.062
	SLG DUTY:	5.895	1.	Z2= 34.4606	5.895	
208. VOLTS	LN/LN	6.976		Z0= 74.2376		
	LN/LN/GND	7.893	(	4.589 GND RETURN KA)		
B-B21-P1	3 PHASE:	3.182	1.	Z1= 87.2299	3.182	3.182
	SLG DUTY:	2.001	0.	Z2= 87.2299	2.001	
208. VOLTS	LN/LN	2.756		Z0= 243.3374		
	LN/LN/GND	2.952	(	1.454 GND RETURN KA)		
B-B21-P2	3 PHASE:	5.464	1.	Z1= 50.7967	5.471	5.468
	SLG DUTY:	3.693	1.	Z2= 50.7967	3.694	
208. VOLTS	LN/LN	4.732		Z0= 125.4073		
	LN/LN/GND	5.181	(	2.771 GND RETURN KA)		
B-B22-ATS-EMER	3 PHASE:	6.565	2.	Z1= 18.3229	7.057	6.813
	SLG DUTY:	5.791	2.	Z2= 18.3229	6.102	
480. VOLTS	LN/LN	5.685		Z0= 25.7600		
	LN/LN/GND	6.436	(	5.173 GND RETURN KA)		
B-B22-EMERG	3 PHASE:	6.237	2.	Z1= 19.2854	6.675	6.458
	SLG DUTY:	5.398	2.	Z2= 19.2854	5.658	
480. VOLTS	LN/LN	5.401		Z0= 28.4003		
	LN/LN/GND	6.093	(	4.749 GND RETURN KA)		
B-B22-EMERG-M	3 PHASE:	6.243	2.	Z1= 19.2653	6.684	6.465
	SLG DUTY:	5.410	2.	Z2= 19.2653	5.674	
480. VOLTS	LN/LN	5.407		Z0= 28.2810		
	LN/LN/GND	6.099	(	4.765 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B22-L1	3 PHASE:	2.818	2.	Z1= 98.4847	2.869	2.844
	SLG DUTY:	2.963	2.	Z2= 98.4847	3.008	
208. VOLTS	LN/LN	2.441		Z0= 84.1608		
	LN/LN/GND	2.953	(	3.123 GND RETURN KA)		
B-B22-L1-M	3 PHASE:	2.822	2.	Z1= 98.3690	2.873	2.847
	SLG DUTY:	2.973	2.	Z2= 98.3690	3.018	
208. VOLTS	LN/LN	2.444		Z0= 83.4928		
	LN/LN/GND	2.958	(	3.140 GND RETURN KA)		
B-B22-L2	3 PHASE:	2.818	2.	Z1= 98.4847	2.869	2.844
	SLG DUTY:	2.963	2.	Z2= 98.4847	3.008	
208. VOLTS	LN/LN	2.441		Z0= 84.1608		
	LN/LN/GND	2.953	(	3.123 GND RETURN KA)		
B-B22-L2-M	3 PHASE:	2.822	2.	Z1= 98.3690	2.873	2.847
	SLG DUTY:	2.973	2.	Z2= 98.3690	3.018	
208. VOLTS	LN/LN	2.444		Z0= 83.4928		
	LN/LN/GND	2.958	(	3.140 GND RETURN KA)		
B-B22-L3	3 PHASE:	2.826	2.	Z1= 98.2367	2.877	2.851
	SLG DUTY:	2.969	2.	Z2= 98.2367	3.014	
208. VOLTS	LN/LN	2.447		Z0= 84.1608		
	LN/LN/GND	2.961	(	3.126 GND RETURN KA)		
B-B22-L3-M	3 PHASE:	2.829	2.	Z1= 98.1210	2.881	2.855
	SLG DUTY:	2.978	2.	Z2= 98.1210	3.024	
208. VOLTS	LN/LN	2.450		Z0= 83.4928		
	LN/LN/GND	2.966	(	3.143 GND RETURN KA)		
B-B22-MDP	3 PHASE:	7.015	3.	Z1= 17.1471	7.588	7.304
	SLG DUTY:	6.347	2.	Z2= 17.1471	6.740	
480. VOLTS	LN/LN	6.075		Z0= 22.6208		
	LN/LN/GND	6.913	(	5.789 GND RETURN KA)		
B-B22-MDP-M	3 PHASE:	7.018	3.	Z1= 17.1393	7.593	7.308
	SLG DUTY:	6.354	2.	Z2= 17.1393	6.749	
480. VOLTS	LN/LN	6.078		Z0= 22.5750		
	LN/LN/GND	6.916	(	5.799 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B22-N1	3 PHASE:	4.797	2.	Z1= 57.8606	4.936	4.867
	SLG DUTY:	4.752	2.	Z2= 57.8606	4.857	
208. VOLTS	LN/LN	4.155		Z0= 59.6906		
	LN/LN/GND	4.902	(	4.703 GND RETURN KA)		
B-B22-N1-M	3 PHASE:	4.805	2.	Z1= 57.7670	4.945	4.875
	SLG DUTY:	4.771	2.	Z2= 57.7670	4.878	
208. VOLTS	LN/LN	4.161		Z0= 59.1568		
	LN/LN/GND	4.914	(	4.734 GND RETURN KA)		
B-B22-P1	3 PHASE:	5.998	2.	Z1= 20.0552	6.358	6.179
	SLG DUTY:	5.111	2.	Z2= 20.0552	5.305	
480. VOLTS	LN/LN	5.194		Z0= 30.6609		
	LN/LN/GND	5.860	(	4.442 GND RETURN KA)		
B-B22-P2	3 PHASE:	5.998	2.	Z1= 20.0552	6.358	6.179
	SLG DUTY:	5.111	2.	Z2= 20.0552	5.305	
480. VOLTS	LN/LN	5.194		Z0= 30.6609		
	LN/LN/GND	5.860	(	4.442 GND RETURN KA)		
B-B22-T1-PRI	3 PHASE:	6.893	2.	Z1= 17.4502	7.417	7.157
	SLG DUTY:	6.188	2.	Z2= 17.4502	6.529	
480. VOLTS	LN/LN	5.969		Z0= 23.4982		
	LN/LN/GND	6.797	(	5.606 GND RETURN KA)		
B-B22-T1-SEC	3 PHASE:	5.085	2.	Z1= 54.5876	5.236	5.161
	SLG DUTY:	5.214	2.	Z2= 54.5876	5.339	
208. VOLTS	LN/LN	4.404		Z0= 50.6666		
	LN/LN/GND	5.273	(	5.345 GND RETURN KA)		
B-B22-T2-PRI	3 PHASE:	6.099	2.	Z1= 19.7202	6.466	6.284
	SLG DUTY:	5.225	2.	Z2= 19.7202	5.424	
480. VOLTS	LN/LN	5.282		Z0= 29.7917		
	LN/LN/GND	5.970	(	4.559 GND RETURN KA)		
B-B22-T2-SEC	3 PHASE:	2.907	2.	Z1= 95.4818	2.965	2.936
	SLG DUTY:	3.120	2.	Z2= 95.4818	3.177	
208. VOLTS	LN/LN	2.518		Z0= 75.9999		
	LN/LN/GND	3.059	(	3.365 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B22-T22-SEC	3 PHASE:	2.900	2.	Z1= 95.7281	2.957	2.928
	SLG DUTY:	3.114	2.	Z2= 95.7281	3.170	
208. VOLTS	LN/LN	2.511		Z0= 75.9999		
	LN/LN/GND	3.051	(	3.362 GND RETURN KA)		
B-B22-T3 PRI	3 PHASE:	6.032	2.	Z1= 19.9409	6.368	6.201
	SLG DUTY:	5.141	2.	Z2= 19.9409	5.315	
480. VOLTS	LN/LN	5.224		Z0= 30.5055		
	LN/LN/GND	5.908	(	4.467 GND RETURN KA)		
B-B22-T4-PRI	3 PHASE:	6.032	2.	Z1= 19.9409	6.368	6.201
	SLG DUTY:	5.141	2.	Z2= 19.9409	5.315	
480. VOLTS	LN/LN	5.224		Z0= 30.5055		
	LN/LN/GND	5.908	(	4.467 GND RETURN KA)		
B-B22-T4-SEC	3 PHASE:	2.900	2.	Z1= 95.7281	2.957	2.928
	SLG DUTY:	3.114	2.	Z2= 95.7281	3.170	
208. VOLTS	LN/LN	2.511		Z0= 75.9999		
	LN/LN/GND	3.051	(	3.362 GND RETURN KA)		
B-B27-SWGR	3 PHASE:	3.034	3.	Z1= 1.3789	3.411	3.225
	SLG DUTY:	1.706	3.	Z2= 1.3789	1.904	
13800. VOLTS	LN/LN	2.628		Z0= 4.5990		
	LN/LN/GND	2.701	(	1.187 GND RETURN KA)		
B-B27-SWGR-M2	3 PHASE:	3.034	3.	Z1= 1.3789	3.411	3.225
	SLG DUTY:	1.706	3.	Z2= 1.3789	1.904	
13800. VOLTS	LN/LN	2.628		Z0= 4.5989		
	LN/LN/GND	2.701	(	1.187 GND RETURN KA)		
B-B3-1ST FL	3 PHASE:	10.403	1.	Z1= 26.6813	10.499	10.451
	SLG DUTY:	7.845	1.	Z2= 26.6813	7.863	
208. VOLTS	LN/LN	9.009		Z0= 53.6724		
	LN/LN/GND	10.124	(	6.246 GND RETURN KA)		
B-B3-ALDN KIT	3 PHASE:	7.858	1.	Z1= 35.3256	7.859	7.858
	SLG DUTY:	5.157	1.	Z2= 35.3256	5.157	
208. VOLTS	LN/LN	6.805		Z0= 91.9703		
	LN/LN/GND	7.423	(	3.812 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B3-ATS-COMP	3 PHASE:	16.814	3.	Z1= 16.5086	18.416	17.624
	SLG DUTY:	14.659	2.	Z2= 16.5086	15.459	
208. VOLTS	LN/LN	14.561		Z0= 23.9929		
	LN/LN/GND	16.674	(12.948 GND RETURN KA)			
B-B3-ATSTEL RM	3 PHASE:	15.372	3.	Z1= 18.0567	16.644	16.015
	SLG DUTY:	13.624	2.	Z2= 18.0567	14.362	
208. VOLTS	LN/LN	13.313		Z0= 25.1523		
	LN/LN/GND	15.202	(12.204 GND RETURN KA)			
B-B3-COMP	3 PHASE:	9.184	1.	Z1= 30.2251	9.204	9.194
	SLG DUTY:	6.346	1.	Z2= 30.2251	6.348	
208. VOLTS	LN/LN	7.953		Z0= 71.8330		
	LN/LN/GND	8.779	(4.811 GND RETURN KA)			
B-B3-COMP AC	3 PHASE:	3.052	0.	Z1= 90.9578	3.052	3.052
	SLG DUTY:	1.823	0.	Z2= 90.9578	1.823	
208. VOLTS	LN/LN	2.643		Z0= 275.5982		
	LN/LN/GND	2.778	(1.298 GND RETURN KA)			
B-B3-COMP MF	3 PHASE:	12.305	2.	Z1= 22.5584	12.775	12.541
	SLG DUTY:	9.198	1.	Z2= 22.5584	9.288	
208. VOLTS	LN/LN	10.656		Z0= 46.2358		
	LN/LN/GND	11.976	(7.280 GND RETURN KA)			
B-B3-DBL GRILL	3 PHASE:	8.786	1.	Z1= 31.5937	8.836	8.811
	SLG DUTY:	6.373	1.	Z2= 31.5937	6.381	
208. VOLTS	LN/LN	7.609		Z0= 68.4418		
	LN/LN/GND	8.455	(4.965 GND RETURN KA)			
B-B3-ELEV	3 PHASE:	10.803	1.	Z1= 25.6939	10.954	10.879
	SLG DUTY:	7.553	1.	Z2= 25.6939	7.563	
208. VOLTS	LN/LN	9.356		Z0= 60.2520		
	LN/LN/GND	10.471	(5.737 GND RETURN KA)			
B-B3-EP1	3 PHASE:	14.612	3.	Z1= 18.9963	15.755	15.189
	SLG DUTY:	12.665	2.	Z2= 18.9963	13.290	
208. VOLTS	LN/LN	12.654		Z0= 27.9262		
	LN/LN/GND	14.370	(11.148 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B3-EP1-M	3 PHASE:	14.681	3.	Z1= 18.9066	15.845	15.269
	SLG DUTY:	12.800	2.	Z2= 18.9066	13.451	
208. VOLTS	LN/LN	12.714		Z0= 27.4033		
	LN/LN/GND	14.451	(11.318 GND RETURN KA)			
B-B3-EP2	3 PHASE:	15.856	3.	Z1= 17.5054	17.325	16.599
	SLG DUTY:	13.224	2.	Z2= 17.5054	13.854	
208. VOLTS	LN/LN	13.732		Z0= 28.2359		
	LN/LN/GND	15.579	(11.293 GND RETURN KA)			
B-B3-EP2-M	3 PHASE:	15.912	3.	Z1= 17.4445	17.393	16.661
	SLG DUTY:	13.359	2.	Z2= 17.4445	14.012	
208. VOLTS	LN/LN	13.780		Z0= 27.7082		
	LN/LN/GND	15.648	(11.464 GND RETURN KA)			
B-B3-FRZN FOOD	3 PHASE:	8.549	1.	Z1= 32.4696	8.549	8.549
	SLG DUTY:	5.692	0.	Z2= 32.4696	5.692	
208. VOLTS	LN/LN	7.403		Z0= 82.7220		
	LN/LN/GND	8.147	(4.229 GND RETURN KA)			
B-B3-HYDRO ELV	3 PHASE:	8.100	1.	Z1= 34.2690	8.167	8.133
	SLG DUTY:	5.240	1.	Z2= 34.2690	5.242	
208. VOLTS	LN/LN	7.015		Z0= 92.2477		
	LN/LN/GND	7.733	(3.830 GND RETURN KA)			
B-B3-KP1	3 PHASE:	9.781	2.	Z1= 28.3785	9.961	9.871
	SLG DUTY:	7.420	1.	Z2= 28.3785	7.468	
208. VOLTS	LN/LN	8.471		Z0= 56.1516		
	LN/LN/GND	9.452	(5.942 GND RETURN KA)			
B-B3-MDP	3 PHASE:	20.084	3.	Z1= 13.8205	22.294	21.204
	SLG DUTY:	20.043	3.	Z2= 13.8205	21.787	
208. VOLTS	LN/LN	17.393		Z0= 13.9493		
	LN/LN/GND	20.614	(19.981 GND RETURN KA)			
B-B3-MDP-M	3 PHASE:	20.112	3.	Z1= 13.8011	22.343	21.243
	SLG DUTY:	20.133	3.	Z2= 13.8011	21.939	
208. VOLTS	LN/LN	17.418		Z0= 13.7941		
	LN/LN/GND	20.625	(20.137 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B3-MECH HVAC	3 PHASE:	10.377	1.	Z1= 26.7496	10.427	10.402
	SLG DUTY:	7.386	1.	Z2= 26.7496	7.392	
208. VOLTS	LN/LN	8.986		Z0= 60.2520		
	LN/LN/GND	9.996	(	5.685 GND RETURN KA)		
B-B3-MECH RM	3 PHASE:	12.328	2.	Z1= 22.5162	12.756	12.543
	SLG DUTY:	9.469	1.	Z2= 22.5162	9.588	
208. VOLTS	LN/LN	10.676		Z0= 43.4867		
	LN/LN/GND	11.973	(	7.638 GND RETURN KA)		
B-B3-P3	3 PHASE:	12.908	1.	Z1= 21.5046	13.100	13.004
	SLG DUTY:	10.359	1.	Z2= 21.5046	10.399	
208. VOLTS	LN/LN	11.178		Z0= 38.1868		
	LN/LN/GND	12.819	(	8.566 GND RETURN KA)		
B-B3-P7	3 PHASE:	9.172	1.	Z1= 30.2618	9.193	9.183
	SLG DUTY:	6.564	1.	Z2= 30.2618	6.566	
208. VOLTS	LN/LN	7.944		Z0= 67.4909		
	LN/LN/GND	8.848	(	5.067 GND RETURN KA)		
B-B3-STRT LTS	3 PHASE:	8.549	1.	Z1= 32.4696	8.549	8.549
	SLG DUTY:	5.692	0.	Z2= 32.4696	5.692	
208. VOLTS	LN/LN	7.403		Z0= 82.7220		
	LN/LN/GND	8.147	(	4.229 GND RETURN KA)		
B-B3-STRT PNL	3 PHASE:	11.854	1.	Z1= 23.4168	11.988	11.921
	SLG DUTY:	8.777	1.	Z2= 23.4168	8.799	
208. VOLTS	LN/LN	10.265		Z0= 48.9213		
	LN/LN/GND	11.522	(	6.907 GND RETURN KA)		
B-B3-TELE PNL	3 PHASE:	11.556	2.	Z1= 24.0207	11.926	11.742
	SLG DUTY:	9.194	1.	Z2= 24.0207	9.319	
208. VOLTS	LN/LN	10.007		Z0= 43.0263		
	LN/LN/GND	11.268	(	7.594 GND RETURN KA)		
B-B3-TRAY LINE	3 PHASE:	10.377	1.	Z1= 26.7496	10.427	10.402
	SLG DUTY:	7.386	1.	Z2= 26.7496	7.392	
208. VOLTS	LN/LN	8.986		Z0= 60.2520		
	LN/LN/GND	9.996	(	5.685 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B33-MDP	3 PHASE:	4.855	2.	Z1= 57.1747	4.945	4.900
	SLG DUTY:	4.382	1.	Z2= 57.1747	4.444	
208. VOLTS	LN/LN	4.204		Z0= 75.8117		
	LN/LN/GND	4.750	(3.990 GND RETURN KA)			
B-B33-MDP-M	3 PHASE:	4.863	2.	Z1= 57.0799	4.953	4.908
	SLG DUTY:	4.399	1.	Z2= 57.0799	4.462	
208. VOLTS	LN/LN	4.211		Z0= 75.2745		
	LN/LN/GND	4.760	(4.013 GND RETURN KA)			
B-B4-4EQD	3 PHASE:	22.341	3.	Z1= 12.4245	24.437	23.401
	SLG DUTY:	19.753	2.	Z2= 12.4245	20.561	
208. VOLTS	LN/LN	19.348		Z0= 17.6834		
	LN/LN/GND	22.775	(17.546 GND RETURN KA)			
B-B4-4EQD-M	3 PHASE:	22.471	3.	Z1= 12.3523	24.611	23.553
	SLG DUTY:	20.068	2.	Z2= 12.3523	20.924	
208. VOLTS	LN/LN	19.461		Z0= 17.1474		
	LN/LN/GND	22.969	(17.975 GND RETURN KA)			
B-B4-ATS-EQ	3 PHASE:	25.173	3.	Z1= 11.0267	27.922	26.565
	SLG DUTY:	24.143	2.	Z2= 11.0267	25.456	
208. VOLTS	LN/LN	21.800		Z0= 12.7276		
	LN/LN/GND	26.478	(23.000 GND RETURN KA)			
B-B4-ATS-LS	3 PHASE:	22.121	2.	Z1= 12.5480	23.287	22.708
	SLG DUTY:	19.855	2.	Z2= 12.5480	20.200	
208. VOLTS	LN/LN	19.157		Z0= 17.4190		
	LN/LN/GND	23.001	(17.766 GND RETURN KA)			
B-B4-BUS	3 PHASE:	28.372	3.	Z1= 9.7834	32.627	30.538
	SLG DUTY:	30.672	3.	Z2= 9.7834	34.391	
208. VOLTS	LN/LN	24.571		Z0= 7.6192		
	LN/LN/GND	30.655	(33.334 GND RETURN KA)			
B-B4-ELEV#4	3 PHASE:	9.409	1.	Z1= 29.5018	9.470	9.439
	SLG DUTY:	6.070	1.	Z2= 29.5018	6.072	
208. VOLTS	LN/LN	8.148		Z0= 79.7679		
	LN/LN/GND	8.975	(4.432 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-EQ1	3 PHASE:	13.653	1.	Z1= 20.3312	13.749	13.701
	SLG DUTY:	9.935	1.	Z2= 20.3312	9.946	
208. VOLTS	LN/LN	11.823		Z0= 44.1093		
	LN/LN/GND	13.300	(	7.724 GND RETURN KA)		
B-B4-EQ10	3 PHASE:	9.300	1.	Z1= 29.8469	9.313	9.306
	SLG DUTY:	6.268	1.	Z2= 29.8469	6.269	
208. VOLTS	LN/LN	8.054		Z0= 74.1924		
	LN/LN/GND	8.842	(	4.692 GND RETURN KA)		
B-B4-EQ11	3 PHASE:	11.316	1.	Z1= 24.5296	11.351	11.333
	SLG DUTY:	7.888	1.	Z2= 24.5296	7.891	
208. VOLTS	LN/LN	9.800		Z0= 57.5145		
	LN/LN/GND	10.877	(	6.000 GND RETURN KA)		
B-B4-EQ12	3 PHASE:	7.761	1.	Z1= 35.7647	7.767	7.764
	SLG DUTY:	5.108	1.	Z2= 35.7647	5.108	
208. VOLTS	LN/LN	6.721		Z0= 92.5304		
	LN/LN/GND	7.319	(	3.784 GND RETURN KA)		
B-B4-EQ15	3 PHASE:	8.773	1.	Z1= 31.6399	8.783	8.778
	SLG DUTY:	5.864	1.	Z2= 31.6399	5.864	
208. VOLTS	LN/LN	7.598		Z0= 79.7679		
	LN/LN/GND	8.317	(	4.373 GND RETURN KA)		
B-B4-EQ2	3 PHASE:	18.024	2.	Z1= 15.4000	18.522	18.274
	SLG DUTY:	14.379	1.	Z2= 15.4000	14.476	
208. VOLTS	LN/LN	15.609		Z0= 27.8673		
	LN/LN/GND	18.016	(	11.809 GND RETURN KA)		
B-B4-EQ3	3 PHASE:	10.661	1.	Z1= 26.0374	10.687	10.674
	SLG DUTY:	7.348	1.	Z2= 26.0374	7.350	
208. VOLTS	LN/LN	9.232		Z0= 62.2701		
	LN/LN/GND	10.210	(	5.559 GND RETURN KA)		
B-B4-EQ5	3 PHASE:	10.979	1.	Z1= 25.2821	11.009	10.994
	SLG DUTY:	7.609	1.	Z2= 25.2821	7.611	
208. VOLTS	LN/LN	9.508		Z0= 59.8911		
	LN/LN/GND	10.534	(	5.771 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-EQ6	3 PHASE:	13.817	1.	Z1= 20.0886	13.921	13.869
	SLG DUTY:	10.088	1.	Z2= 20.0886	10.099	
208. VOLTS	LN/LN	11.966		Z0= 43.3253		
	LN/LN/GND	13.473	(7.856 GND RETURN KA)			
B-B4-EQ7	3 PHASE:	8.917	1.	Z1= 31.1268	8.928	8.923
	SLG DUTY:	5.974	1.	Z2= 31.1268	5.975	
208. VOLTS	LN/LN	7.723		Z0= 78.1743		
	LN/LN/GND	8.461	(4.460 GND RETURN KA)			
B-B4-EQ9	3 PHASE:	7.046	1.	Z1= 39.3968	7.049	7.047
	SLG DUTY:	4.589	1.	Z2= 39.3968	4.589	
208. VOLTS	LN/LN	6.102		Z0= 103.7131		
	LN/LN/GND	6.620	(3.384 GND RETURN KA)			
B-B4-HYDROELEV	3 PHASE:	8.767	1.	Z1= 31.6601	8.867	8.817
	SLG DUTY:	5.390	1.	Z2= 31.6601	5.390	
208. VOLTS	LN/LN	7.593		Z0= 93.4593		
	LN/LN/GND	8.360	(3.838 GND RETURN KA)			
B-B4-JBOX	3 PHASE:	27.783	3.	Z1= 9.9907	31.439	29.640
	SLG DUTY:	28.698	3.	Z2= 9.9907	30.955	
208. VOLTS	LN/LN	24.061		Z0= 9.2180		
	LN/LN/GND	30.115	(29.488 GND RETURN KA)			
B-B4-LP1	3 PHASE:	13.521	1.	Z1= 20.5285	13.663	13.592
	SLG DUTY:	10.094	1.	Z2= 20.5285	10.115	
208. VOLTS	LN/LN	11.710		Z0= 42.3352		
	LN/LN/GND	13.223	(7.969 GND RETURN KA)			
B-B4-LP1-M	3 PHASE:	13.600	1.	Z1= 20.4105	13.745	13.672
	SLG DUTY:	10.210	1.	Z2= 20.4105	10.232	
208. VOLTS	LN/LN	11.778		Z0= 41.6284		
	LN/LN/GND	13.319	(8.088 GND RETURN KA)			
B-B4-LP10	3 PHASE:	10.688	1.	Z1= 25.9710	10.749	10.718
	SLG DUTY:	7.596	1.	Z2= 25.9710	7.604	
208. VOLTS	LN/LN	9.256		Z0= 58.6304		
	LN/LN/GND	10.283	(5.843 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LP10-M	3 PHASE:	10.737		1. Z1= 25.8510	10.800	10.769
	SLG DUTY:	7.662		1. Z2= 25.8510	7.670	
208. VOLTS	LN/LN	9.299		Z0= 57.9228		
	LN/LN/GND	10.340	(	5.907 GND RETURN KA)		
B-B4-LP11	3 PHASE:	12.953		1. Z1= 21.4293	13.074	13.014
	SLG DUTY:	9.571		1. Z2= 21.4293	9.589	
208. VOLTS	LN/LN	11.218		Z0= 45.0478		
	LN/LN/GND	12.624	(	7.515 GND RETURN KA)		
B-B4-LP11-M	3 PHASE:	13.025		1. Z1= 21.3108	13.149	13.087
	SLG DUTY:	9.676		1. Z2= 21.3108	9.694	
208. VOLTS	LN/LN	11.280		Z0= 44.3408		
	LN/LN/GND	12.712	(	7.620 GND RETURN KA)		
B-B4-LP12	3 PHASE:	14.139		1. Z1= 19.6311	14.308	14.224
	SLG DUTY:	10.675		1. Z2= 19.6311	10.701	
208. VOLTS	LN/LN	12.245		Z0= 39.6245		
	LN/LN/GND	13.880	(	8.482 GND RETURN KA)		
B-B4-LP12-M	3 PHASE:	14.225		1. Z1= 19.5136	14.397	14.311
	SLG DUTY:	10.805		1. Z2= 19.5136	10.832	
208. VOLTS	LN/LN	12.319		Z0= 38.9180		
	LN/LN/GND	13.985	(	8.616 GND RETURN KA)		
B-B4-LP13	3 PHASE:	10.688		1. Z1= 25.9710	10.749	10.718
	SLG DUTY:	7.596		1. Z2= 25.9710	7.604	
208. VOLTS	LN/LN	9.256		Z0= 58.6304		
	LN/LN/GND	10.283	(	5.843 GND RETURN KA)		
B-B4-LP13-M	3 PHASE:	10.737		1. Z1= 25.8510	10.800	10.769
	SLG DUTY:	7.662		1. Z2= 25.8510	7.670	
208. VOLTS	LN/LN	9.299		Z0= 57.9228		
	LN/LN/GND	10.340	(	5.907 GND RETURN KA)		
B-B4-LP14	3 PHASE:	9.366		1. Z1= 29.6359	9.406	9.386
	SLG DUTY:	6.515		1. Z2= 29.6359	6.520	
208. VOLTS	LN/LN	8.111		Z0= 69.5107		
	LN/LN/GND	8.947	(	4.959 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LP14-M	3 PHASE:	9.404	1.	Z1= 29.5151	9.445	9.425
	SLG DUTY:	6.564	1.	Z2= 29.5151	6.569	
208. VOLTS	LN/LN	8.144		Z0= 68.8030		
	LN/LN/GND	8.990	(5.005 GND RETURN KA)			
B-B4-LP15	3 PHASE:	6.861	1.	Z1= 40.4587	6.861	6.861
	SLG DUTY:	4.382	0.	Z2= 40.4587	4.382	
208. VOLTS	LN/LN	5.941		Z0= 110.1821		
	LN/LN/GND	6.423	(3.202 GND RETURN KA)			
B-B4-LP15-M	3 PHASE:	6.882	1.	Z1= 40.3357	6.882	6.882
	SLG DUTY:	4.403	0.	Z2= 40.3357	4.403	
208. VOLTS	LN/LN	5.960		Z0= 109.4944		
	LN/LN/GND	6.446	(3.221 GND RETURN KA)			
B-B4-LP2	3 PHASE:	19.340	2.	Z1= 14.3519	19.963	19.653
	SLG DUTY:	16.196	1.	Z2= 14.3519	16.332	
208. VOLTS	LN/LN	16.749		Z0= 23.4387		
	LN/LN/GND	19.657	(13.738 GND RETURN KA)			
B-B4-LP2-M	3 PHASE:	19.493	2.	Z1= 14.2394	20.139	19.817
	SLG DUTY:	16.487	1.	Z2= 14.2394	16.634	
208. VOLTS	LN/LN	16.882		Z0= 22.7376		
	LN/LN/GND	19.870	(14.088 GND RETURN KA)			
B-B4-LP3	3 PHASE:	19.340	2.	Z1= 14.3519	19.963	19.653
	SLG DUTY:	16.196	1.	Z2= 14.3519	16.332	
208. VOLTS	LN/LN	16.749		Z0= 23.4387		
	LN/LN/GND	19.657	(13.738 GND RETURN KA)			
B-B4-LP3-M	3 PHASE:	19.493	2.	Z1= 14.2394	20.139	19.817
	SLG DUTY:	16.487	1.	Z2= 14.2394	16.634	
208. VOLTS	LN/LN	16.882		Z0= 22.7376		
	LN/LN/GND	19.870	(14.088 GND RETURN KA)			
B-B4-LP4	3 PHASE:	12.953	1.	Z1= 21.4293	13.074	13.014
	SLG DUTY:	9.571	1.	Z2= 21.4293	9.589	
208. VOLTS	LN/LN	11.218		Z0= 45.0478		
	LN/LN/GND	12.624	(7.515 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LP4-M	3 PHASE:	13.025		1. Z1= 21.3108	13.149	13.087
	SLG DUTY:	9.676		1. Z2= 21.3108	9.694	
208. VOLTS	LN/LN	11.280		Z0= 44.3408		
	LN/LN/GND	12.712	(	7.620 GND RETURN KA)		
B-B4-LP5	3 PHASE:	12.429		1. Z1= 22.3330	12.533	12.481
	SLG DUTY:	9.099		1. Z2= 22.3330	9.114	
208. VOLTS	LN/LN	10.764		Z0= 47.7620		
	LN/LN/GND	12.076	(	7.109 GND RETURN KA)		
B-B4-LP5-M	3 PHASE:	12.495		1. Z1= 22.2141	12.601	12.548
	SLG DUTY:	9.194		1. Z2= 22.2141	9.209	
208. VOLTS	LN/LN	10.821		Z0= 47.0548		
	LN/LN/GND	12.156	(	7.203 GND RETURN KA)		
B-B4-LP6	3 PHASE:	15.552		2. Z1= 17.8484	15.797	15.675
	SLG DUTY:	12.058		1. Z2= 17.8484	12.099	
208. VOLTS	LN/LN	13.468		Z0= 34.2108		
	LN/LN/GND	15.403	(	9.730 GND RETURN KA)		
B-B4-LP6-M	3 PHASE:	15.654		2. Z1= 17.7320	15.906	15.780
	SLG DUTY:	12.223		1. Z2= 17.7320	12.266	
208. VOLTS	LN/LN	13.557		Z0= 33.5052		
	LN/LN/GND	15.533	(	9.906 GND RETURN KA)		
B-B4-LP7	3 PHASE:	15.552		2. Z1= 17.8484	15.797	15.675
	SLG DUTY:	12.058		1. Z2= 17.8484	12.099	
208. VOLTS	LN/LN	13.468		Z0= 34.2108		
	LN/LN/GND	15.403	(	9.730 GND RETURN KA)		
B-B4-LP7-M	3 PHASE:	15.654		2. Z1= 17.7320	15.906	15.780
	SLG DUTY:	12.223		1. Z2= 17.7320	12.266	
208. VOLTS	LN/LN	13.557		Z0= 33.5052		
	LN/LN/GND	15.533	(	9.906 GND RETURN KA)		
B-B4-LP8	3 PHASE:	12.429		1. Z1= 22.3330	12.533	12.481
	SLG DUTY:	9.099		1. Z2= 22.3330	9.114	
208. VOLTS	LN/LN	10.764		Z0= 47.7620		
	LN/LN/GND	12.076	(	7.109 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LP8-M	3 PHASE:	12.495		1. Z1= 22.2141	12.601	12.548
	SLG DUTY:	9.194		1. Z2= 22.2141	9.209	
208. VOLTS	LN/LN	10.821		Z0= 47.0548		
	LN/LN/GND	12.156	(	7.203 GND RETURN KA)		
B-B4-LP9	3 PHASE:	10.688		1. Z1= 25.9710	10.749	10.718
	SLG DUTY:	7.596		1. Z2= 25.9710	7.604	
208. VOLTS	LN/LN	9.256		Z0= 58.6304		
	LN/LN/GND	10.283	(	5.843 GND RETURN KA)		
B-B4-LP9-M	3 PHASE:	10.737		1. Z1= 25.8510	10.800	10.769
	SLG DUTY:	7.662		1. Z2= 25.8510	7.670	
208. VOLTS	LN/LN	9.299		Z0= 57.9228		
	LN/LN/GND	10.340	(	5.907 GND RETURN KA)		
B-B4-LS1	3 PHASE:	8.538		1. Z1= 32.5087	8.542	8.540
	SLG DUTY:	5.639		1. Z2= 32.5087	5.639	
208. VOLTS	LN/LN	7.394		Z0= 83.7549		
	LN/LN/GND	8.083	(	4.180 GND RETURN KA)		
B-B4-LS1-M	3 PHASE:	8.571		1. Z1= 32.3854	8.574	8.572
	SLG DUTY:	5.675		1. Z2= 32.3854	5.675	
208. VOLTS	LN/LN	7.423		Z0= 83.0579		
	LN/LN/GND	8.119	(	4.212 GND RETURN KA)		
B-B4-LS10	3 PHASE:	5.441		1. Z1= 51.0128	5.442	5.441
	SLG DUTY:	3.435		0. Z2= 51.0128	3.435	
208. VOLTS	LN/LN	4.712		Z0= 141.4738		
	LN/LN/GND	5.064	(	2.499 GND RETURN KA)		
B-B4-LS10-M	3 PHASE:	5.454		1. Z1= 50.8898	5.455	5.455
	SLG DUTY:	3.448		0. Z2= 50.8898	3.448	
208. VOLTS	LN/LN	4.724		Z0= 140.7829		
	LN/LN/GND	5.078	(	2.511 GND RETURN KA)		
B-B4-LS11	3 PHASE:	6.299		1. Z1= 44.0692	6.299	6.299
	SLG DUTY:	4.023		1. Z2= 44.0692	4.023	
208. VOLTS	LN/LN	5.455		Z0= 119.9287		
	LN/LN/GND	5.889	(	2.941 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LS11-M	3 PHASE:	6.316		1. Z1= 43.9459	6.317	6.317
	SLG DUTY:	4.041		1. Z2= 43.9459	4.041	
208. VOLTS	LN/LN	5.470		Z0= 119.2361		
	LN/LN/GND	5.908	(	2.957 GND RETURN KA)		
B-B4-LS12	3 PHASE:	7.166		1. Z1= 38.7335	7.167	7.167
	SLG DUTY:	4.634		1. Z2= 38.7335	4.634	
208. VOLTS	LN/LN	6.206		Z0= 103.2953		
	LN/LN/GND	6.732	(	3.405 GND RETURN KA)		
B-B4-LS12-M	3 PHASE:	7.189		1. Z1= 38.6102	7.190	7.190
	SLG DUTY:	4.659		1. Z2= 38.6102	4.659	
208. VOLTS	LN/LN	6.226		Z0= 102.6009		
	LN/LN/GND	6.757	(	3.427 GND RETURN KA)		
B-B4-LS13	3 PHASE:	7.344		1. Z1= 37.7956	7.345	7.345
	SLG DUTY:	4.762		1. Z2= 37.7956	4.762	
208. VOLTS	LN/LN	6.360		Z0= 100.3619		
	LN/LN/GND	6.905	(	3.503 GND RETURN KA)		
B-B4-LS13-M	3 PHASE:	7.368		1. Z1= 37.6722	7.369	7.369
	SLG DUTY:	4.788		1. Z2= 37.6722	4.788	
208. VOLTS	LN/LN	6.381		Z0= 99.6672		
	LN/LN/GND	6.932	(	3.525 GND RETURN KA)		
B-B4-LS14	3 PHASE:	7.344		1. Z1= 37.7956	7.345	7.345
	SLG DUTY:	4.762		1. Z2= 37.7956	4.762	
208. VOLTS	LN/LN	6.360		Z0= 100.3619		
	LN/LN/GND	6.905	(	3.503 GND RETURN KA)		
B-B4-LS14-M	3 PHASE:	7.368		1. Z1= 37.6722	7.369	7.369
	SLG DUTY:	4.788		1. Z2= 37.6722	4.788	
208. VOLTS	LN/LN	6.381		Z0= 99.6672		
	LN/LN/GND	6.932	(	3.525 GND RETURN KA)		
B-B4-LS2	3 PHASE:	12.679		1. Z1= 21.8914	12.711	12.695
	SLG DUTY:	9.010		1. Z2= 21.8914	9.012	
208. VOLTS	LN/LN	10.981		Z0= 49.7375		
	LN/LN/GND	12.307	(	6.909 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LS2-M	3 PHASE:	12.750		1. Z1= 21.7696	12.783	12.767
	SLG DUTY:	9.104		1. Z2= 21.7696	9.106	
208. VOLTS	LN/LN	11.042		Z0= 49.0333		
	LN/LN/GND	12.393	(	6.998 GND RETURN KA)		
B-B4-LS3	3 PHASE:	15.790		1. Z1= 17.5793	15.920	15.855
	SLG DUTY:	11.982		1. Z2= 17.5793	11.995	
208. VOLTS	LN/LN	13.674		Z0= 35.3620		
	LN/LN/GND	15.646	(	9.518 GND RETURN KA)		
B-B4-LS3-M	3 PHASE:	15.897		1. Z1= 17.4604	16.031	15.964
	SLG DUTY:	12.147		1. Z2= 17.4604	12.161	
208. VOLTS	LN/LN	13.767		Z0= 34.6545		
	LN/LN/GND	15.785	(	9.688 GND RETURN KA)		
B-B4-LS4	3 PHASE:	9.949		1. Z1= 27.8989	9.957	9.953
	SLG DUTY:	6.725		1. Z2= 27.8989	6.725	
208. VOLTS	LN/LN	8.616		Z0= 69.1346		
	LN/LN/GND	9.496	(	5.036 GND RETURN KA)		
B-B4-LS4-M	3 PHASE:	9.993		1. Z1= 27.7758	10.001	9.997
	SLG DUTY:	6.777		1. Z2= 27.7758	6.777	
208. VOLTS	LN/LN	8.654		Z0= 68.4349		
	LN/LN/GND	9.547	(	5.083 GND RETURN KA)		
B-B4-LS5	3 PHASE:	6.210		1. Z1= 44.6988	6.210	6.210
	SLG DUTY:	3.961		1. Z2= 44.6988	3.961	
208. VOLTS	LN/LN	5.378		Z0= 121.8866		
	LN/LN/GND	5.803	(	2.894 GND RETURN KA)		
B-B4-LS5-M	3 PHASE:	6.227		1. Z1= 44.5756	6.228	6.227
	SLG DUTY:	3.979		1. Z2= 44.5756	3.979	
208. VOLTS	LN/LN	5.393		Z0= 121.1941		
	LN/LN/GND	5.821	(	2.910 GND RETURN KA)		
B-B4-LS6	3 PHASE:	7.344		1. Z1= 37.7956	7.345	7.345
	SLG DUTY:	4.762		1. Z2= 37.7956	4.762	
208. VOLTS	LN/LN	6.360		Z0= 100.3619		
	LN/LN/GND	6.905	(	3.503 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LS6-M	3 PHASE:	7.368	1.	Z1= 37.6722	7.369	7.369
	SLG DUTY:	4.788	1.	Z2= 37.6722	4.788	
208. VOLTS	LN/LN	6.381		Z0= 99.6672		
	LN/LN/GND	6.932	(3.525 GND RETURN KA)			
B-B4-LS7	3 PHASE:	8.538	1.	Z1= 32.5087	8.542	8.540
	SLG DUTY:	5.639	1.	Z2= 32.5087	5.639	
208. VOLTS	LN/LN	7.394		Z0= 83.7549		
	LN/LN/GND	8.083	(4.180 GND RETURN KA)			
B-B4-LS7-M	3 PHASE:	8.571	1.	Z1= 32.3854	8.574	8.572
	SLG DUTY:	5.675	1.	Z2= 32.3854	5.675	
208. VOLTS	LN/LN	7.423		Z0= 83.0579		
	LN/LN/GND	8.119	(4.212 GND RETURN KA)			
B-B4-LS8	3 PHASE:	8.789	1.	Z1= 31.5818	8.793	8.791
	SLG DUTY:	5.827	1.	Z2= 31.5818	5.827	
208. VOLTS	LN/LN	7.611		Z0= 80.8278		
	LN/LN/GND	8.332	(4.327 GND RETURN KA)			
B-B4-LS8-M	3 PHASE:	8.823	1.	Z1= 31.4585	8.827	8.825
	SLG DUTY:	5.866	1.	Z2= 31.4585	5.867	
208. VOLTS	LN/LN	7.641		Z0= 80.1303		
	LN/LN/GND	8.371	(4.362 GND RETURN KA)			
B-B4-LS9	3 PHASE:	8.789	1.	Z1= 31.5818	8.793	8.791
	SLG DUTY:	5.827	1.	Z2= 31.5818	5.827	
208. VOLTS	LN/LN	7.611		Z0= 80.8278		
	LN/LN/GND	8.332	(4.327 GND RETURN KA)			
B-B4-LS9-M	3 PHASE:	8.823	1.	Z1= 31.4585	8.827	8.825
	SLG DUTY:	5.866	1.	Z2= 31.4585	5.867	
208. VOLTS	LN/LN	7.641		Z0= 80.1303		
	LN/LN/GND	8.371	(4.362 GND RETURN KA)			
B-B4-LSD	3 PHASE:	20.563	2.	Z1= 13.4987	21.387	20.977
	SLG DUTY:	17.682	1.	Z2= 13.4987	17.884	
208. VOLTS	LN/LN	17.808		Z0= 20.7676		
	LN/LN/GND	21.086	(15.293 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LSD-M	3 PHASE:	20.733	2.	Z1= 13.3877	21.591	21.164
	SLG DUTY:	18.026	1.	Z2= 13.3877	18.246	
208. VOLTS	LN/LN	17.956		Z0= 20.0693		
	LN/LN/GND	21.331	(15.724 GND RETURN KA)			
B-B4-MDP	3 PHASE:	27.397	3.	Z1= 10.1314	30.907	29.179
	SLG DUTY:	27.957	2.	Z2= 10.1314	30.027	
208. VOLTS	LN/LN	23.727		Z0= 9.7247		
	LN/LN/GND	29.551	(28.347 GND RETURN KA)			
B-B4-MDP-M	3 PHASE:	27.426	3.	Z1= 10.1210	30.961	29.221
	SLG DUTY:	28.048	2.	Z2= 10.1210	30.167	
208. VOLTS	LN/LN	23.751		Z0= 9.6403		
	LN/LN/GND	29.584	(28.513 GND RETURN KA)			
B-B4-PP1	3 PHASE:	15.898	2.	Z1= 17.4596	16.310	16.105
	SLG DUTY:	12.323	1.	Z2= 17.4596	12.408	
208. VOLTS	LN/LN	13.768		Z0= 33.3760		
	LN/LN/GND	15.676	(9.957 GND RETURN KA)			
B-B4-PP2	3 PHASE:	6.861	1.	Z1= 40.4587	6.861	6.861
	SLG DUTY:	4.382	0.	Z2= 40.4587	4.382	
208. VOLTS	LN/LN	5.941		Z0= 110.1821		
	LN/LN/GND	6.423	(3.202 GND RETURN KA)			
B-B4-PP2-M	3 PHASE:	6.882	1.	Z1= 40.3357	6.882	6.882
	SLG DUTY:	4.403	0.	Z2= 40.3357	4.403	
208. VOLTS	LN/LN	5.960		Z0= 109.4944		
	LN/LN/GND	6.446	(3.221 GND RETURN KA)			
B-B5-ATS-EQ	3 PHASE:	15.937	2.	Z1= 17.4164	16.759	16.351
	SLG DUTY:	12.156	2.	Z2= 17.4164	12.435	
208. VOLTS	LN/LN	13.802		Z0= 33.9706		
	LN/LN/GND	15.312	(9.783 GND RETURN KA)			
B-B5-ATS-LS	3 PHASE:	15.089	2.	Z1= 18.3959	15.356	15.223
	SLG DUTY:	11.516	1.	Z2= 18.3959	11.585	
208. VOLTS	LN/LN	13.067		Z0= 35.9689		
	LN/LN/GND	14.614	(9.256 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B5-EQ1	3 PHASE:	9.419	1.	Z1= 29.4700	9.445	9.432
	SLG DUTY:	6.327	1.	Z2= 29.4700	6.330	
208. VOLTS	LN/LN	8.157		Z0= 73.3990		
	LN/LN/GND	8.880	(	4.739 GND RETURN KA)		
B-B5-EQ2	3 PHASE:	9.144	1.	Z1= 30.3560	9.165	9.155
	SLG DUTY:	6.113	1.	Z2= 30.3560	6.116	
208. VOLTS	LN/LN	7.919		Z0= 76.2328		
	LN/LN/GND	8.612	(	4.568 GND RETURN KA)		
B-B5-EQ5	3 PHASE:	9.419	1.	Z1= 29.4700	9.445	9.432
	SLG DUTY:	6.327	1.	Z2= 29.4700	6.330	
208. VOLTS	LN/LN	8.157		Z0= 73.3990		
	LN/LN/GND	8.880	(	4.739 GND RETURN KA)		
B-B5-EQ6	3 PHASE:	8.787	1.	Z1= 31.5875	8.842	8.815
	SLG DUTY:	5.638	1.	Z2= 31.5875	5.641	
208. VOLTS	LN/LN	7.610		Z0= 85.7329		
	LN/LN/GND	8.305	(	4.119 GND RETURN KA)		
B-B5-EQD	3 PHASE:	15.486	2.	Z1= 17.9240	16.283	15.887
	SLG DUTY:	11.694	2.	Z2= 17.9240	11.958	
208. VOLTS	LN/LN	13.411		Z0= 35.6732		
	LN/LN/GND	14.848	(	9.354 GND RETURN KA)		
B-B5-HYDR ELEV	3 PHASE:	11.608	1.	Z1= 23.9126	11.774	11.691
	SLG DUTY:	7.963	1.	Z2= 23.9126	7.984	
208. VOLTS	LN/LN	10.053		Z0= 57.5524		
	LN/LN/GND	11.069	(	6.017 GND RETURN KA)		
B-B5-LP1	3 PHASE:	14.869	2.	Z1= 18.6680	15.122	14.996
	SLG DUTY:	11.265	1.	Z2= 18.6680	11.328	
208. VOLTS	LN/LN	12.877		Z0= 37.0469		
	LN/LN/GND	14.375	(	9.013 GND RETURN KA)		
B-B5-LP1-M	3 PHASE:	14.945	2.	Z1= 18.5729	15.201	15.074
	SLG DUTY:	11.378	1.	Z2= 18.5729	11.443	
208. VOLTS	LN/LN	12.943		Z0= 36.5005		
	LN/LN/GND	14.467	(	9.130 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B5-LP2	3 PHASE:	12.378		1. Z1= 22.4255	12.501	12.439
	SLG DUTY:	8.994		1. Z2= 22.4255	9.021	
208. VOLTS	LN/LN	10.719		Z0= 48.2834		
	LN/LN/GND	11.853	(	7.024 GND RETURN KA)		
B-B5-LP2-M	3 PHASE:	12.431		1. Z1= 22.3295	12.555	12.493
	SLG DUTY:	9.067		1. Z2= 22.3295	9.093	
208. VOLTS	LN/LN	10.765		Z0= 47.7373		
	LN/LN/GND	11.915	(	7.095 GND RETURN KA)		
B-B5-LP3	3 PHASE:	12.478		1. Z1= 22.2452	12.605	12.541
	SLG DUTY:	9.082		1. Z2= 22.2452	9.109	
208. VOLTS	LN/LN	10.806		Z0= 47.7460		
	LN/LN/GND	11.954	(	7.099 GND RETURN KA)		
B-B5-LP3-M	3 PHASE:	12.532		1. Z1= 22.1493	12.660	12.596
	SLG DUTY:	9.156		1. Z2= 22.1493	9.183	
208. VOLTS	LN/LN	10.853		Z0= 47.1999		
	LN/LN/GND	12.017	(	7.171 GND RETURN KA)		
B-B5-LP4	3 PHASE:	10.654		1. Z1= 26.0523	10.726	10.690
	SLG DUTY:	7.532		1. Z2= 26.0523	7.546	
208. VOLTS	LN/LN	9.227		Z0= 59.0619		
	LN/LN/GND	10.135	(	5.795 GND RETURN KA)		
B-B5-LP4-M	3 PHASE:	10.694		1. Z1= 25.9559	10.766	10.730
	SLG DUTY:	7.583		1. Z2= 25.9559	7.597	
208. VOLTS	LN/LN	9.261		Z0= 58.5166		
	LN/LN/GND	10.180	(	5.843 GND RETURN KA)		
B-B5-LP5	3 PHASE:	12.979		1. Z1= 21.3866	13.009	12.994
	SLG DUTY:	9.213		1. Z2= 21.3866	9.216	
208. VOLTS	LN/LN	11.240		Z0= 48.3444		
	LN/LN/GND	12.467	(	7.086 GND RETURN KA)		
B-B5-LP5-M	3 PHASE:	13.038		1. Z1= 21.2898	13.068	13.053
	SLG DUTY:	9.289		1. Z2= 21.2898	9.292	
208. VOLTS	LN/LN	11.291		Z0= 47.8096		
	LN/LN/GND	12.538	(	7.158 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B5-LS1	3 PHASE:	10.848		1. Z1= 25.5871	10.883	10.865
	SLG DUTY:	7.575		1. Z2= 25.5871	7.580	
208. VOLTS	LN/LN	9.395		Z0= 59.4519		
	LN/LN/GND	10.327	(	5.784 GND RETURN KA)		
B-B5-LS2	3 PHASE:	6.864		1. Z1= 40.4380	6.866	6.865
	SLG DUTY:	4.464		1. Z2= 40.4380	4.464	
208. VOLTS	LN/LN	5.945		Z0= 106.4951		
	LN/LN/GND	6.416	(	3.294 GND RETURN KA)		
B-B5-LS4	3 PHASE:	5.948		1. Z1= 46.6663	5.949	5.949
	SLG DUTY:	3.813		1. Z2= 46.6663	3.813	
208. VOLTS	LN/LN	5.151		Z0= 125.9270		
	LN/LN/GND	5.535	(	2.795 GND RETURN KA)		
B-B5-LSD	3 PHASE:	14.324		2. Z1= 19.3783	14.541	14.433
	SLG DUTY:	10.751		1. Z2= 19.3783	10.804	
208. VOLTS	LN/LN	12.405		Z0= 39.1775		
	LN/LN/GND	13.820	(	8.554 GND RETURN KA)		
B-B5-LSD-M	3 PHASE:	14.395		2. Z1= 19.2830	14.615	14.505
	SLG DUTY:	10.854		1. Z2= 19.2830	10.908	
208. VOLTS	LN/LN	12.466		Z0= 38.6312		
	LN/LN/GND	13.904	(	8.659 GND RETURN KA)		
B-B5-MDP	3 PHASE:	21.002		2. Z1= 13.2165	22.181	21.595
	SLG DUTY:	17.870		2. Z2= 13.2165	18.393	
208. VOLTS	LN/LN	18.188		Z0= 20.3563		
	LN/LN/GND	20.722	(	15.488 GND RETURN KA)		
B-B5-MDP-M	3 PHASE:	21.041		2. Z1= 13.1923	22.232	21.641
	SLG DUTY:	17.954		2. Z2= 13.1923	18.494	
208. VOLTS	LN/LN	18.222		Z0= 20.1770		
	LN/LN/GND	20.757	(	15.597 GND RETURN KA)		
B-B5-NEXTEL	3 PHASE:	13.067		1. Z1= 21.2423	13.171	13.119
	SLG DUTY:	9.553		1. Z2= 21.2423	9.572	
208. VOLTS	LN/LN	11.316		Z0= 45.2757		
	LN/LN/GND	12.566	(	7.480 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B5-PNL-H	3 PHASE:	15.764	2.	Z1= 17.6085	16.086	15.925
	SLG DUTY:	12.129	1.	Z2= 17.6085	12.216	
208. VOLTS	LN/LN	13.652		Z0= 33.8630		
	LN/LN/GND	15.291	(	9.798 GND RETURN KA)		
B-B5-PNL-H-M	3 PHASE:	15.849	2.	Z1= 17.5138	16.176	16.013
	SLG DUTY:	12.260	1.	Z2= 17.5138	12.349	
208. VOLTS	LN/LN	13.725		Z0= 33.3170		
	LN/LN/GND	15.394	(	9.936 GND RETURN KA)		
B-B5-STRT LGHT	3 PHASE:	9.653	1.	Z1= 28.7561	9.653	9.653
	SLG DUTY:	6.335	0.	Z2= 28.7561	6.335	
208. VOLTS	LN/LN	8.359		Z0= 74.7704		
	LN/LN/GND	9.096	(	4.686 GND RETURN KA)		
B-B5-TEMP TRAI	3 PHASE:	11.891	1.	Z1= 23.3426	11.959	11.925
	SLG DUTY:	8.518	1.	Z2= 23.3426	8.529	
208. VOLTS	LN/LN	10.298		Z0= 51.7139		
	LN/LN/GND	11.378	(	6.594 GND RETURN KA)		
B-B55-LS3	3 PHASE:	8.799	1.	Z1= 31.5454	8.809	8.804
	SLG DUTY:	5.914	1.	Z2= 31.5454	5.915	
208. VOLTS	LN/LN	7.620		Z0= 78.4981		
	LN/LN/GND	8.299	(	4.430 GND RETURN KA)		
B-B6-ATS-EQ	3 PHASE:	15.769	2.	Z1= 17.6025	16.786	16.282
	SLG DUTY:	12.240	2.	Z2= 17.6025	12.641	
208. VOLTS	LN/LN	13.656		Z0= 33.0527		
	LN/LN/GND	15.126	(	9.970 GND RETURN KA)		
B-B6-ATS-LS	3 PHASE:	16.101	2.	Z1= 17.2393	16.464	16.283
	SLG DUTY:	12.717	1.	Z2= 17.2393	12.827	
208. VOLTS	LN/LN	13.944		Z0= 31.3811		
	LN/LN/GND	15.693	(	10.450 GND RETURN KA)		
B-B6-EQ1	3 PHASE:	11.628	1.	Z1= 23.8703	11.786	11.707
	SLG DUTY:	8.216	1.	Z2= 23.8703	8.249	
208. VOLTS	LN/LN	10.070		Z0= 54.1772		
	LN/LN/GND	11.064	(	6.319 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-EQ2	3 PHASE:	8.952	1.	Z1= 31.0084	9.001	8.976
	SLG DUTY:	6.071	1.	Z2= 31.0084	6.079	
208. VOLTS	LN/LN	7.752		Z0= 75.8461		
	LN/LN/GND	8.439	(	4.571 GND RETURN KA)		
B-B6-EQ3	3 PHASE:	11.011	1.	Z1= 25.2091	11.172	11.092
	SLG DUTY:	7.751	1.	Z2= 25.2091	7.786	
208. VOLTS	LN/LN	9.536		Z0= 57.5781		
	LN/LN/GND	10.453	(	5.951 GND RETURN KA)		
B-B6-EQ4	3 PHASE:	7.712	1.	Z1= 35.9927	7.734	7.723
	SLG DUTY:	5.121	1.	Z2= 35.9927	5.124	
208. VOLTS	LN/LN	6.679		Z0= 91.3803		
	LN/LN/GND	7.236	(	3.816 GND RETURN KA)		
B-B6-EQ5	3 PHASE:	9.245	1.	Z1= 30.0254	9.304	9.274
	SLG DUTY:	6.302	1.	Z2= 30.0254	6.312	
208. VOLTS	LN/LN	8.006		Z0= 72.7660		
	LN/LN/GND	8.724	(	4.757 GND RETURN KA)		
B-B6-EQ8	3 PHASE:	9.716	2.	Z1= 28.5687	10.144	9.931
	SLG DUTY:	6.433	1.	Z2= 28.5687	6.479	
208. VOLTS	LN/LN	8.414		Z0= 73.3130		
	LN/LN/GND	9.213	(	4.774 GND RETURN KA)		
B-B6-EQD	3 PHASE:	14.347	2.	Z1= 19.3468	15.217	14.785
	SLG DUTY:	10.776	2.	Z2= 19.3468	11.074	
208. VOLTS	LN/LN	12.425		Z0= 38.8809		
	LN/LN/GND	13.703	(	8.596 GND RETURN KA)		
B-B6-EQD-M	3 PHASE:	14.365	2.	Z1= 19.3230	15.240	14.806
	SLG DUTY:	10.806	2.	Z2= 19.3230	11.110	
208. VOLTS	LN/LN	12.440		Z0= 38.7017		
	LN/LN/GND	13.718	(	8.630 GND RETURN KA)		
B-B6-EQMACH	3 PHASE:	11.628	1.	Z1= 23.8703	11.786	11.707
	SLG DUTY:	8.216	1.	Z2= 23.8703	8.249	
208. VOLTS	LN/LN	10.070		Z0= 54.1772		
	LN/LN/GND	11.064	(	6.319 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-LP1	3 PHASE:	11.281	1.	Z1= 24.6043	11.297	11.289
	SLG DUTY:	7.883	1.	Z2= 24.6043	7.884	
208. VOLTS	LN/LN	9.770		Z0= 57.2193		
	LN/LN/GND	10.782	(	6.015 GND RETURN KA)		
B-B6-LP1-M	3 PHASE:	11.297	1.	Z1= 24.5700	11.313	11.305
	SLG DUTY:	7.903	1.	Z2= 24.5700	7.905	
208. VOLTS	LN/LN	9.784		Z0= 57.0094		
	LN/LN/GND	10.799	(	6.035 GND RETURN KA)		
B-B6-LP2	3 PHASE:	12.662	1.	Z1= 21.9218	12.693	12.677
	SLG DUTY:	9.083	1.	Z2= 21.9218	9.086	
208. VOLTS	LN/LN	10.966		Z0= 48.5825		
	LN/LN/GND	12.187	(	7.027 GND RETURN KA)		
B-B6-LP2-M	3 PHASE:	12.681	1.	Z1= 21.8880	12.713	12.697
	SLG DUTY:	9.110	1.	Z2= 21.8880	9.114	
208. VOLTS	LN/LN	10.982		Z0= 48.3735		
	LN/LN/GND	12.209	(	7.054 GND RETURN KA)		
B-B6-LP3	3 PHASE:	13.934	1.	Z1= 19.9210	14.133	14.033
	SLG DUTY:	10.555	1.	Z2= 19.9210	10.604	
208. VOLTS	LN/LN	12.067		Z0= 39.5350		
	LN/LN/GND	13.464	(	8.445 GND RETURN KA)		
B-B6-LP3-M	3 PHASE:	13.955	1.	Z1= 19.8900	14.156	14.056
	SLG DUTY:	10.589	1.	Z2= 19.8900	10.640	
208. VOLTS	LN/LN	12.086		Z0= 39.3369		
	LN/LN/GND	13.488	(	8.481 GND RETURN KA)		
B-B6-LP4	3 PHASE:	14.317	2.	Z1= 19.3872	14.539	14.429
	SLG DUTY:	10.922	1.	Z2= 19.3872	10.979	
208. VOLTS	LN/LN	12.399		Z0= 37.9355		
	LN/LN/GND	13.857	(	8.776 GND RETURN KA)		
B-B6-LP4-M	3 PHASE:	14.340	2.	Z1= 19.3562	14.564	14.453
	SLG DUTY:	10.958	1.	Z2= 19.3562	11.016	
208. VOLTS	LN/LN	12.419		Z0= 37.7381		
	LN/LN/GND	13.881	(	8.815 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-LP5	3 PHASE:	11.805		1. Z1= 23.5136	11.910	11.858
	SLG DUTY:	8.610		1. Z2= 23.5136	8.632	
208. VOLTS	LN/LN	10.223		Z0= 50.2583		
	LN/LN/GND	11.308	(	6.738 GND RETURN KA)		
B-B6-LP5-M	3 PHASE:	11.821		1. Z1= 23.4816	11.927	11.874
	SLG DUTY:	8.633		1. Z2= 23.4816	8.656	
208. VOLTS	LN/LN	10.237		Z0= 50.0571		
	LN/LN/GND	11.325	(	6.761 GND RETURN KA)		
B-B6-LP6	3 PHASE:	12.083		1. Z1= 22.9716	12.198	12.141
	SLG DUTY:	8.856		1. Z2= 22.9716	8.881	
208. VOLTS	LN/LN	10.464		Z0= 48.6446		
	LN/LN/GND	11.588	(	6.949 GND RETURN KA)		
B-B6-LP6-M	3 PHASE:	12.100		1. Z1= 22.9397	12.216	12.158
	SLG DUTY:	8.880		1. Z2= 22.9397	8.906	
208. VOLTS	LN/LN	10.479		Z0= 48.4438		
	LN/LN/GND	11.606	(	6.974 GND RETURN KA)		
B-B6-LP7	3 PHASE:	17.406		1. Z1= 15.9468	17.654	17.530
	SLG DUTY:	13.812		1. Z2= 15.9468	13.868	
208. VOLTS	LN/LN	15.074		Z0= 28.9006		
	LN/LN/GND	17.146	(	11.356 GND RETURN KA)		
B-B6-LP7-M	3 PHASE:	17.440		1. Z1= 15.9157	17.691	17.566
	SLG DUTY:	13.871		1. Z2= 15.9157	13.929	
208. VOLTS	LN/LN	15.104		Z0= 28.6998		
	LN/LN/GND	17.185	(	11.422 GND RETURN KA)		
B-B6-LS1	3 PHASE:	9.677		1. Z1= 28.6842	9.693	9.685
	SLG DUTY:	6.664		1. Z2= 28.6842	6.666	
208. VOLTS	LN/LN	8.380		Z0= 68.3496		
	LN/LN/GND	9.184	(	5.053 GND RETURN KA)		
B-B6-LS2	3 PHASE:	11.860		1. Z1= 23.4042	11.899	11.880
	SLG DUTY:	8.480		1. Z2= 23.4042	8.486	
208. VOLTS	LN/LN	10.271		Z0= 52.0935		
	LN/LN/GND	11.372	(	6.555 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-LS3	3 PHASE:	9.677	1.	Z1= 28.6842	9.693	9.685
	SLG DUTY:	6.664	1.	Z2= 28.6842	6.666	
208. VOLTS	LN/LN	8.380		Z0= 68.3496		
	LN/LN/GND	9.184	(	5.053 GND RETURN KA)		
B-B6-LS4	3 PHASE:	9.677	1.	Z1= 28.6842	9.693	9.685
	SLG DUTY:	6.664	1.	Z2= 28.6842	6.666	
208. VOLTS	LN/LN	8.380		Z0= 68.3496		
	LN/LN/GND	9.184	(	5.053 GND RETURN KA)		
B-B6-LS5	3 PHASE:	7.989	1.	Z1= 34.7422	7.995	7.992
	SLG DUTY:	5.330	1.	Z2= 34.7422	5.330	
208. VOLTS	LN/LN	6.919		Z0= 87.5707		
	LN/LN/GND	7.520	(	3.979 GND RETURN KA)		
B-B6-LS6	3 PHASE:	7.989	1.	Z1= 34.7422	7.995	7.992
	SLG DUTY:	5.330	1.	Z2= 34.7422	5.330	
208. VOLTS	LN/LN	6.919		Z0= 87.5707		
	LN/LN/GND	7.520	(	3.979 GND RETURN KA)		
B-B6-LSD	3 PHASE:	14.861	2.	Z1= 18.6779	15.119	14.990
	SLG DUTY:	11.451	1.	Z2= 18.6779	11.520	
208. VOLTS	LN/LN	12.870		Z0= 35.8080		
	LN/LN/GND	14.414	(	9.259 GND RETURN KA)		
B-B6-LSD-M	3 PHASE:	14.885	2.	Z1= 18.6472	15.147	15.016
	SLG DUTY:	11.490	1.	Z2= 18.6472	11.562	
208. VOLTS	LN/LN	12.891		Z0= 35.6116		
	LN/LN/GND	14.440	(	9.302 GND RETURN KA)		
B-B6-MACH SHOP	3 PHASE:	12.543	1.	Z1= 22.1301	12.628	12.585
	SLG DUTY:	9.186	1.	Z2= 22.1301	9.202	
208. VOLTS	LN/LN	10.862		Z0= 47.0005		
	LN/LN/GND	12.064	(	7.200 GND RETURN KA)		
B-B6-MDP	3 PHASE:	22.838	3.	Z1= 12.1540	24.711	23.784
	SLG DUTY:	20.611	2.	Z2= 12.1540	21.803	
208. VOLTS	LN/LN	19.778		Z0= 16.1561		
	LN/LN/GND	22.578	(	18.751 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-MDP-M	3 PHASE:	22.883	3.	Z1= 12.1301	24.781	23.841
	SLG DUTY:	20.716	2.	Z2= 12.1301	21.954	
208. VOLTS	LN/LN	19.817		Z0= 15.9922		
	LN/LN/GND	22.609	(18.898 GND RETURN KA)			
B-B6-P6-CS	3 PHASE:	15.432	1.	Z1= 17.9868	15.656	15.544
	SLG DUTY:	11.945	1.	Z2= 17.9868	11.999	
208. VOLTS	LN/LN	13.364		Z0= 34.2222		
	LN/LN/GND	15.030	(9.678 GND RETURN KA)			
B-B60-MDP	3 PHASE:	7.199	2.	Z1= 38.5559	7.691	7.447
	SLG DUTY:	7.410	2.	Z2= 38.5559	7.899	
208. VOLTS	LN/LN	6.235		Z0= 35.2752		
	LN/LN/GND	7.340	(7.632 GND RETURN KA)			
B-B60-MDP-M	3 PHASE:	7.216	2.	Z1= 38.4656	7.712	7.466
	SLG DUTY:	7.455	2.	Z2= 38.4656	7.956	
208. VOLTS	LN/LN	6.249		Z0= 34.7742		
	LN/LN/GND	7.362	(7.709 GND RETURN KA)			
B-B61 STRT LGH	3 PHASE:	7.348	1.	Z1= 37.7748	7.352	7.350
	SLG DUTY:	5.336	1.	Z2= 37.7748	5.336	
208. VOLTS	LN/LN	6.364		Z0= 82.8157		
	LN/LN/GND	7.211	(4.130 GND RETURN KA)			
B-B61-ATS-EQD	3 PHASE:	11.548	3.	Z1= 24.0356	12.607	12.084
	SLG DUTY:	10.825	2.	Z2= 24.0356	11.488	
208. VOLTS	LN/LN	10.001		Z0= 29.0445		
	LN/LN/GND	11.669	(10.161 GND RETURN KA)			
B-B61-ATS-LSD	3 PHASE:	11.155	2.	Z1= 24.8833	11.736	11.447
	SLG DUTY:	10.346	2.	Z2= 24.8833	10.612	
208. VOLTS	LN/LN	9.660		Z0= 31.2263		
	LN/LN/GND	11.466	(9.586 GND RETURN KA)			
B-B61-COMP RM	3 PHASE:	9.385	2.	Z1= 29.5758	9.843	9.615
	SLG DUTY:	7.961	2.	Z2= 29.5758	8.139	
208. VOLTS	LN/LN	8.128		Z0= 46.0473		
	LN/LN/GND	9.325	(6.873 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B61-DP	3 PHASE:	11.303	3.	Z1= 24.5584	12.261	11.787
	SLG DUTY:	10.677	2.	Z2= 24.5584	11.301	
208. VOLTS	LN/LN	9.788		Z0= 29.0444		
	LN/LN/GND	11.435	(10.095 GND RETURN KA)			
B-B61-ELEV	3 PHASE:	7.848	2.	Z1= 35.3687	8.185	8.017
	SLG DUTY:	5.972	1.	Z2= 35.3687	6.033	
208. VOLTS	LN/LN	6.797		Z0= 70.1018		
	LN/LN/GND	7.692	(4.773 GND RETURN KA)			
B-B61-EQ1	3 PHASE:	7.559	1.	Z1= 36.7194	7.653	7.606
	SLG DUTY:	5.844	1.	Z2= 36.7194	5.862	
208. VOLTS	LN/LN	6.547		Z0= 70.3613		
	LN/LN/GND	7.419	(4.721 GND RETURN KA)			
B-B61-EQ2	3 PHASE:	9.653	2.	Z1= 28.7548	10.079	9.867
	SLG DUTY:	8.236	2.	Z2= 28.7548	8.390	
208. VOLTS	LN/LN	8.360		Z0= 44.2808		
	LN/LN/GND	9.646	(7.134 GND RETURN KA)			
B-B61-EQ4	3 PHASE:	7.464	1.	Z1= 37.1880	7.526	7.495
	SLG DUTY:	5.694	1.	Z2= 37.1880	5.704	
208. VOLTS	LN/LN	6.464		Z0= 73.3565		
	LN/LN/GND	7.323	(4.558 GND RETURN KA)			
B-B61-EQA	3 PHASE:	10.567	2.	Z1= 26.2678	11.390	10.983
	SLG DUTY:	9.436	2.	Z2= 26.2678	9.863	
208. VOLTS	LN/LN	9.151		Z0= 36.0300		
	LN/LN/GND	10.564	(8.494 GND RETURN KA)			
B-B61-EQD	3 PHASE:	10.834	3.	Z1= 25.6207	11.770	11.307
	SLG DUTY:	9.788	2.	Z2= 25.6207	10.310	
208. VOLTS	LN/LN	9.382		Z0= 34.0922		
	LN/LN/GND	10.838	(8.899 GND RETURN KA)			
B-B61-KITCHEN	3 PHASE:	8.389	2.	Z1= 33.0858	8.551	8.471
	SLG DUTY:	6.840	1.	Z2= 33.0858	6.880	
208. VOLTS	LN/LN	7.265		Z0= 56.6678		
	LN/LN/GND	8.342	(5.723 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B61-LP1	3 PHASE:	4.133	1.	Z1= 67.1559	4.134	4.134
	SLG DUTY:	2.750	1.	Z2= 67.1559	2.750	
208. VOLTS	LN/LN	3.580		Z0= 170.4409		
	LN/LN/GND	3.907	(	2.048 GND RETURN KA)		
B-B61-LP2	3 PHASE:	4.133	1.	Z1= 67.1559	4.134	4.134
	SLG DUTY:	2.750	1.	Z2= 67.1559	2.750	
208. VOLTS	LN/LN	3.580		Z0= 170.4409		
	LN/LN/GND	3.907	(	2.048 GND RETURN KA)		
B-B61-LP3	3 PHASE:	7.677	1.	Z1= 36.1561	7.790	7.733
	SLG DUTY:	6.091	1.	Z2= 36.1561	6.116	
208. VOLTS	LN/LN	6.649		Z0= 65.6233		
	LN/LN/GND	7.574	(	5.004 GND RETURN KA)		
B-B61-LP4	3 PHASE:	9.179	2.	Z1= 30.2390	9.473	9.327
	SLG DUTY:	7.819	1.	Z2= 30.2390	7.918	
208. VOLTS	LN/LN	7.950		Z0= 46.8136		
	LN/LN/GND	9.196	(	6.760 GND RETURN KA)		
B-B61-LP5	3 PHASE:	6.227	1.	Z1= 44.5739	6.228	6.228
	SLG DUTY:	4.314	0.	Z2= 44.5739	4.314	
208. VOLTS	LN/LN	5.393		Z0= 106.1237		
	LN/LN/GND	6.011	(	3.264 GND RETURN KA)		
B-B61-LS1	3 PHASE:	6.080	1.	Z1= 45.6547	6.091	6.085
	SLG DUTY:	4.376	1.	Z2= 45.6547	4.377	
208. VOLTS	LN/LN	5.265		Z0= 100.8483		
	LN/LN/GND	5.886	(	3.387 GND RETURN KA)		
B-B61-LS2	3 PHASE:	7.717	1.	Z1= 35.9667	7.747	7.732
	SLG DUTY:	5.902	1.	Z2= 35.9667	5.905	
208. VOLTS	LN/LN	6.684		Z0= 71.0034		
	LN/LN/GND	7.632	(	4.718 GND RETURN KA)		
B-B61-LS3	3 PHASE:	5.372	1.	Z1= 51.6703	5.377	5.375
	SLG DUTY:	3.757	1.	Z2= 51.6703	3.758	
208. VOLTS	LN/LN	4.652		Z0= 120.2108		
	LN/LN/GND	5.155	(	2.865 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B61-LS4	3 PHASE:	6.080	1.	Z1= 45.6547	6.091	6.085
	SLG DUTY:	4.376	1.	Z2= 45.6547	4.377	
208. VOLTS	LN/LN	5.265		Z0= 100.8483		
	LN/LN/GND	5.886	(	3.387 GND RETURN KA)		
B-B61-LS5	3 PHASE:	5.372	1.	Z1= 51.6703	5.377	5.375
	SLG DUTY:	3.757	1.	Z2= 51.6703	3.758	
208. VOLTS	LN/LN	4.652		Z0= 120.2108		
	LN/LN/GND	5.155	(	2.865 GND RETURN KA)		
B-B61-LSD	3 PHASE:	10.607	2.	Z1= 26.1690	11.064	10.837
	SLG DUTY:	9.550	2.	Z2= 26.1690	9.729	
208. VOLTS	LN/LN	9.186		Z0= 35.5134		
	LN/LN/GND	10.829	(	8.620 GND RETURN KA)		
B-B61-LSD-M	3 PHASE:	10.652	2.	Z1= 26.0584	11.118	10.886
	SLG DUTY:	9.647	2.	Z2= 26.0584	9.835	
208. VOLTS	LN/LN	9.225		Z0= 34.8296		
	LN/LN/GND	10.890	(	8.752 GND RETURN KA)		
B-B61-MCC	3 PHASE:	7.348	1.	Z1= 37.7748	7.352	7.350
	SLG DUTY:	5.336	1.	Z2= 37.7748	5.336	
208. VOLTS	LN/LN	6.364		Z0= 82.8157		
	LN/LN/GND	7.211	(	4.130 GND RETURN KA)		
B-B61-MDP	3 PHASE:	13.332	3.	Z1= 20.8197	14.772	14.061
	SLG DUTY:	13.730	3.	Z2= 20.8197	14.969	
208. VOLTS	LN/LN	11.546		Z0= 19.0505		
	LN/LN/GND	13.848	(	14.143 GND RETURN KA)		
B-B61-MDP-M	3 PHASE:	13.355	3.	Z1= 20.7841	14.807	14.090
	SLG DUTY:	13.799	3.	Z2= 20.7841	15.072	
208. VOLTS	LN/LN	11.566		Z0= 18.8147		
	LN/LN/GND	13.872	(	14.264 GND RETURN KA)		
B-B62-A	3 PHASE:	14.398	1.	Z1= 19.2781	14.544	14.471
	SLG DUTY:	11.019	1.	Z2= 19.2781	11.050	
208. VOLTS	LN/LN	12.469		Z0= 37.5862		
	LN/LN/GND	14.020	(	8.860 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B62-ATS-EQD	3 PHASE:	19.128	2.	Z1= 14.5110	19.941	19.537
	SLG DUTY:	16.044	2.	Z2= 14.5110	16.341	
208. VOLTS	LN/LN	16.566		Z0= 23.1824		
	LN/LN/GND	18.950	(13.738 GND RETURN KA)			
B-B62-ATS-LSD	3 PHASE:	18.797	2.	Z1= 14.7665	19.471	19.136
	SLG DUTY:	15.878	2.	Z2= 14.7665	16.145	
208. VOLTS	LN/LN	16.279		Z0= 23.1824		
	LN/LN/GND	18.605	(13.674 GND RETURN KA)			
B-B62-ATTC PNL	3 PHASE:	9.997	1.	Z1= 27.7662	10.024	10.010
	SLG DUTY:	6.912	1.	Z2= 27.7662	6.915	
208. VOLTS	LN/LN	8.657		Z0= 65.7676		
	LN/LN/GND	9.515	(5.248 GND RETURN KA)			
B-B62-B	3 PHASE:	15.211	1.	Z1= 18.2487	15.399	15.305
	SLG DUTY:	11.835	1.	Z2= 18.2487	11.878	
208. VOLTS	LN/LN	13.173		Z0= 34.3950		
	LN/LN/GND	14.869	(9.615 GND RETURN KA)			
B-B62-BL	3 PHASE:	10.474	1.	Z1= 26.5012	10.478	10.476
	SLG DUTY:	7.184	1.	Z2= 26.5012	7.184	
208. VOLTS	LN/LN	9.071		Z0= 63.7981		
	LN/LN/GND	9.983	(5.427 GND RETURN KA)			
B-B62-BP	3 PHASE:	13.335	1.	Z1= 20.8158	13.370	13.352
	SLG DUTY:	9.760	1.	Z2= 20.8158	9.764	
208. VOLTS	LN/LN	11.548		Z0= 44.4713		
	LN/LN/GND	12.928	(7.630 GND RETURN KA)			
B-B62-ELEV-1	3 PHASE:	9.997	1.	Z1= 27.7662	10.024	10.010
	SLG DUTY:	6.912	1.	Z2= 27.7662	6.915	
208. VOLTS	LN/LN	8.657		Z0= 65.7676		
	LN/LN/GND	9.515	(5.248 GND RETURN KA)			
B-B62-ELEV-2	3 PHASE:	10.449	1.	Z1= 26.5646	10.541	10.495
	SLG DUTY:	7.072	1.	Z2= 26.5646	7.077	
208. VOLTS	LN/LN	9.049		Z0= 65.7676		
	LN/LN/GND	9.997	(5.296 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B62-EQ	3 PHASE:	14.832	1.	Z1= 18.7139	15.021	14.927
	SLG DUTY:	11.197	1.	Z2= 18.7139	11.230	
208. VOLTS	LN/LN	12.845		Z0= 37.5961		
	LN/LN/GND	14.455	(8.917	GND RETURN KA)		
B-B62-EQD	3 PHASE:	16.453	2.	Z1= 16.8706	16.920	16.687
	SLG DUTY:	12.954	1.	Z2= 16.8706	13.072	
208. VOLTS	LN/LN	14.249		Z0= 31.0263		
	LN/LN/GND	16.126	(10.604	GND RETURN KA)		
B-B62-KP	3 PHASE:	13.465	1.	Z1= 20.6138	13.529	13.497
	SLG DUTY:	9.998	1.	Z2= 20.6138	10.007	
208. VOLTS	LN/LN	11.661		Z0= 42.7671		
	LN/LN/GND	13.062	(7.886	GND RETURN KA)		
B-B62-LP1	3 PHASE:	13.922	1.	Z1= 19.9376	13.968	13.945
	SLG DUTY:	10.317	1.	Z2= 19.9376	10.322	
208. VOLTS	LN/LN	12.057		Z0= 41.6049		
	LN/LN/GND	13.542	(8.121	GND RETURN KA)		
B-B62-LP2	3 PHASE:	13.465	1.	Z1= 20.6138	13.529	13.497
	SLG DUTY:	9.998	1.	Z2= 20.6138	10.007	
208. VOLTS	LN/LN	11.661		Z0= 42.7671		
	LN/LN/GND	13.062	(7.886	GND RETURN KA)		
B-B62-LP3	3 PHASE:	14.644	2.	Z1= 18.9544	14.874	14.760
	SLG DUTY:	11.370	1.	Z2= 18.9544	11.430	
208. VOLTS	LN/LN	12.682		Z0= 35.8049		
	LN/LN/GND	14.251	(9.234	GND RETURN KA)		
B-B62-LP4	3 PHASE:	15.213	2.	Z1= 18.2463	15.481	15.347
	SLG DUTY:	11.944	1.	Z2= 18.2463	12.018	
208. VOLTS	LN/LN	13.174		Z0= 33.6765		
	LN/LN/GND	14.841	(9.770	GND RETURN KA)		
B-B62-LS1	3 PHASE:	6.779	1.	Z1= 40.9466	6.779	6.779
	SLG DUTY:	4.369	0.	Z2= 40.9466	4.369	
208. VOLTS	LN/LN	5.871		Z0= 109.5649		
	LN/LN/GND	6.332	(3.210	GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B62-LS2	3 PHASE:	10.171	1.	Z1= 27.2914	10.179	10.175
	SLG DUTY:	6.999	1.	Z2= 27.2914	7.000	
208. VOLTS	LN/LN	8.808		Z0= 65.2357		
	LN/LN/GND	9.683	(5.300 GND RETURN KA)			
B-B62-LS3	3 PHASE:	8.067	1.	Z1= 34.4102	8.071	8.069
	SLG DUTY:	5.394	1.	Z2= 34.4102	5.394	
208. VOLTS	LN/LN	6.986		Z0= 86.4193		
	LN/LN/GND	7.603	(4.030 GND RETURN KA)			
B-B62-LS4	3 PHASE:	10.458	1.	Z1= 26.5420	10.479	10.468
	SLG DUTY:	7.324	1.	Z2= 26.5420	7.326	
208. VOLTS	LN/LN	9.057		Z0= 61.3976		
	LN/LN/GND	9.980	(5.599 GND RETURN KA)			
B-B62-LSD	3 PHASE:	15.878	2.	Z1= 17.4812	16.199	16.039
	SLG DUTY:	12.568	1.	Z2= 17.4812	12.660	
208. VOLTS	LN/LN	13.751		Z0= 31.7212		
	LN/LN/GND	15.521	(10.335 GND RETURN KA)			
B-B62-LSD-M	3 PHASE:	15.984	2.	Z1= 17.3660	16.314	16.149
	SLG DUTY:	12.743	1.	Z2= 17.3660	12.841	
208. VOLTS	LN/LN	13.842		Z0= 31.0263		
	LN/LN/GND	15.646	(10.530 GND RETURN KA)			
B-B62-MDP	3 PHASE:	24.230	3.	Z1= 11.4557	26.573	25.415
	SLG DUTY:	22.967	3.	Z2= 11.4557	24.820	
208. VOLTS	LN/LN	20.984		Z0= 13.3660		
	LN/LN/GND	24.109	(21.817 GND RETURN KA)			
B-B62-MDP-M	3 PHASE:	24.270	3.	Z1= 11.4369	26.642	25.470
	SLG DUTY:	23.065	3.	Z2= 11.4369	24.982	
208. VOLTS	LN/LN	21.018		Z0= 13.2456		
	LN/LN/GND	24.129	(21.964 GND RETURN KA)			
B-B62-OT	3 PHASE:	12.155	1.	Z1= 22.8355	12.168	12.161
	SLG DUTY:	8.611	1.	Z2= 22.8355	8.612	
208. VOLTS	LN/LN	10.527		Z0= 51.8965		
	LN/LN/GND	11.699	(6.611 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B62-PAD RM	3 PHASE:	13.082	1.	Z1= 21.2187	13.176	13.129
	SLG DUTY:	9.542	1.	Z2= 21.2187	9.555	
208. VOLTS	LN/LN	11.329		Z0= 45.5661		
	LN/LN/GND	12.640	(	7.450 GND RETURN KA)		
B-B62-STRT LGT	3 PHASE:	10.390	1.	Z1= 26.7153	10.391	10.390
	SLG DUTY:	6.949	0.	Z2= 26.7153	6.949	
208. VOLTS	LN/LN	8.998		Z0= 67.3327		
	LN/LN/GND	9.865	(	5.182 GND RETURN KA)		
B-B7-ATS-EQ	3 PHASE:	10.961	2.	Z1= 25.3242	11.721	11.344
	SLG DUTY:	8.303	2.	Z2= 25.3242	8.627	
208. VOLTS	LN/LN	9.492		Z0= 49.8964		
	LN/LN/GND	10.410	(	6.666 GND RETURN KA)		
B-B7-ATS-LS	3 PHASE:	10.030	2.	Z1= 27.6732	10.380	10.206
	SLG DUTY:	7.481	2.	Z2= 27.6732	7.604	
208. VOLTS	LN/LN	8.687		Z0= 56.3691		
	LN/LN/GND	9.555	(	5.944 GND RETURN KA)		
B-B7-ELEV	3 PHASE:	7.582	2.	Z1= 36.6096	7.891	7.737
	SLG DUTY:	5.132	1.	Z2= 36.6096	5.190	
208. VOLTS	LN/LN	6.566		Z0= 89.9623		
	LN/LN/GND	7.164	(	3.858 GND RETURN KA)		
B-B7-EQ1	3 PHASE:	7.290	1.	Z1= 38.0753	7.383	7.337
	SLG DUTY:	5.024	1.	Z2= 38.0753	5.046	
208. VOLTS	LN/LN	6.313		Z0= 90.3128		
	LN/LN/GND	6.870	(	3.817 GND RETURN KA)		
B-B7-EQ2	3 PHASE:	8.901	2.	Z1= 31.1829	9.218	9.060
	SLG DUTY:	6.384	2.	Z2= 31.1829	6.484	
208. VOLTS	LN/LN	7.709		Z0= 68.5517		
	LN/LN/GND	8.421	(	4.959 GND RETURN KA)		
B-B7-EQ4	3 PHASE:	7.678	1.	Z1= 36.1506	7.777	7.728
	SLG DUTY:	5.315	1.	Z2= 36.1506	5.338	
208. VOLTS	LN/LN	6.650		Z0= 85.0777		
	LN/LN/GND	7.246	(	4.047 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B7-EQD	3 PHASE:	9.929	2.	Z1= 27.9546	10.585	10.260
	SLG DUTY:	7.308	2.	Z2= 27.9546	7.561	
208. VOLTS	LN/LN	8.599		Z0= 58.3557		
	LN/LN/GND	9.394	(	5.766 GND RETURN KA)		
B-B7-LP2	3 PHASE:	9.435	2.	Z1= 29.4199	9.744	9.590
	SLG DUTY:	6.946	2.	Z2= 29.4199	7.052	
208. VOLTS	LN/LN	8.171		Z0= 61.4657		
	LN/LN/GND	8.964	(	5.478 GND RETURN KA)		
B-B7-LP2-M	3 PHASE:	9.471	2.	Z1= 29.3072	9.785	9.629
	SLG DUTY:	6.998	2.	Z2= 29.3072	7.108	
208. VOLTS	LN/LN	8.202		Z0= 60.7897		
	LN/LN/GND	9.001	(	5.531 GND RETURN KA)		
B-B7-LP3	3 PHASE:	7.205	1.	Z1= 38.5244	7.292	7.249
	SLG DUTY:	5.036	1.	Z2= 38.5244	5.058	
208. VOLTS	LN/LN	6.240		Z0= 88.9797		
	LN/LN/GND	6.801	(	3.856 GND RETURN KA)		
B-B7-LP3-M	3 PHASE:	7.227	1.	Z1= 38.4067	7.315	7.271
	SLG DUTY:	5.065	1.	Z2= 38.4067	5.087	
208. VOLTS	LN/LN	6.259		Z0= 88.2823		
	LN/LN/GND	6.825	(	3.883 GND RETURN KA)		
B-B7-LP4	3 PHASE:	9.435	2.	Z1= 29.4199	9.744	9.590
	SLG DUTY:	6.946	2.	Z2= 29.4199	7.052	
208. VOLTS	LN/LN	8.171		Z0= 61.4657		
	LN/LN/GND	8.964	(	5.478 GND RETURN KA)		
B-B7-LP4-M	3 PHASE:	9.471	2.	Z1= 29.3072	9.785	9.629
	SLG DUTY:	6.998	2.	Z2= 29.3072	7.108	
208. VOLTS	LN/LN	8.202		Z0= 60.7897		
	LN/LN/GND	9.001	(	5.531 GND RETURN KA)		
B-B7-LP5	3 PHASE:	7.205	1.	Z1= 38.5244	7.292	7.249
	SLG DUTY:	5.036	1.	Z2= 38.5244	5.058	
208. VOLTS	LN/LN	6.240		Z0= 88.9797		
	LN/LN/GND	6.801	(	3.856 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B7-LP5-M	3 PHASE:	7.227	1.	Z1= 38.4067	7.315	7.271
	SLG DUTY:	5.065	1.	Z2= 38.4067	5.087	
208. VOLTS	LN/LN	6.259		Z0= 88.2823		
	LN/LN/GND	6.825	(	3.883 GND RETURN KA)		
B-B7-LP6	3 PHASE:	6.589	1.	Z1= 42.1240	6.651	6.620
	SLG DUTY:	4.547	1.	Z2= 42.1240	4.562	
208. VOLTS	LN/LN	5.707		Z0= 99.6399		
	LN/LN/GND	6.205	(	3.458 GND RETURN KA)		
B-B7-LP6-M	3 PHASE:	6.608	1.	Z1= 42.0053	6.670	6.639
	SLG DUTY:	4.570	1.	Z2= 42.0053	4.585	
208. VOLTS	LN/LN	5.723		Z0= 98.9398		
	LN/LN/GND	6.225	(	3.480 GND RETURN KA)		
B-B7-LP7	3 PHASE:	8.495	2.	Z1= 32.6746	8.703	8.599
	SLG DUTY:	6.133	1.	Z2= 32.6746	6.198	
208. VOLTS	LN/LN	7.357		Z0= 70.9354		
	LN/LN/GND	8.049	(	4.782 GND RETURN KA)		
B-B7-LP7-M	3 PHASE:	8.525	2.	Z1= 32.5602	8.736	8.631
	SLG DUTY:	6.174	1.	Z2= 32.5602	6.241	
208. VOLTS	LN/LN	7.383		Z0= 70.2516		
	LN/LN/GND	8.080	(	4.823 GND RETURN KA)		
B-B7-LP8	3 PHASE:	6.589	1.	Z1= 42.1240	6.651	6.620
	SLG DUTY:	4.547	1.	Z2= 42.1240	4.562	
208. VOLTS	LN/LN	5.707		Z0= 99.6399		
	LN/LN/GND	6.205	(	3.458 GND RETURN KA)		
B-B7-LP8-M	3 PHASE:	6.608	1.	Z1= 42.0053	6.670	6.639
	SLG DUTY:	4.570	1.	Z2= 42.0053	4.585	
208. VOLTS	LN/LN	5.723		Z0= 98.9398		
	LN/LN/GND	6.225	(	3.480 GND RETURN KA)		
B-B7-LS1	3 PHASE:	6.111	1.	Z1= 45.4229	6.124	6.118
	SLG DUTY:	4.088	1.	Z2= 45.4229	4.090	
208. VOLTS	LN/LN	5.292		Z0= 113.7695		
	LN/LN/GND	5.739	(	3.059 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B7-LS2	3 PHASE:	7.664	1.	Z1= 36.2186	7.704	7.684
	SLG DUTY:	5.302	1.	Z2= 36.2186	5.310	
208. VOLTS	LN/LN	6.637		Z0= 85.4250		
	LN/LN/GND	7.253	(	4.034 GND RETURN KA)		
B-B7-LS4	3 PHASE:	5.843	1.	Z1= 47.5034	5.854	5.848
	SLG DUTY:	3.884	1.	Z2= 47.5034	3.885	
208. VOLTS	LN/LN	5.060		Z0= 120.3788		
	LN/LN/GND	5.480	(	2.896 GND RETURN KA)		
B-B7-LS5	3 PHASE:	7.331	1.	Z1= 37.8630	7.374	7.353
	SLG DUTY:	5.062	1.	Z2= 37.8630	5.071	
208. VOLTS	LN/LN	6.349		Z0= 89.5675		
	LN/LN/GND	6.927	(	3.848 GND RETURN KA)		
B-B7-LSD	3 PHASE:	9.690	2.	Z1= 28.6459	9.988	9.840
	SLG DUTY:	7.150	1.	Z2= 28.6459	7.250	
208. VOLTS	LN/LN	8.392		Z0= 59.6073		
	LN/LN/GND	9.221	(	5.645 GND RETURN KA)		
B-B7-LSD-M	3 PHASE:	9.728	2.	Z1= 28.5328	10.032	9.881
	SLG DUTY:	7.206	1.	Z2= 28.5328	7.309	
208. VOLTS	LN/LN	8.425		Z0= 58.9287		
	LN/LN/GND	9.261	(	5.702 GND RETURN KA)		
B-B7-MCC-1	3 PHASE:	7.771	1.	Z1= 35.7187	7.823	7.797
	SLG DUTY:	5.314	1.	Z2= 35.7187	5.324	
208. VOLTS	LN/LN	6.730		Z0= 86.0513		
	LN/LN/GND	7.337	(	4.019 GND RETURN KA)		
B-B7-MCC-2	3 PHASE:	9.115	1.	Z1= 30.4508	9.159	9.137
	SLG DUTY:	6.428	1.	Z2= 30.4508	6.435	
208. VOLTS	LN/LN	7.894		Z0= 69.4604		
	LN/LN/GND	8.692	(	4.935 GND RETURN KA)		
B-B7-MDP	3 PHASE:	12.258	2.	Z1= 22.6440	13.176	12.721
	SLG DUTY:	9.619	2.	Z2= 22.6440	10.061	
208. VOLTS	LN/LN	10.616		Z0= 41.4612		
	LN/LN/GND	11.698	(	7.899 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B7-MDP-M	3 PHASE:	12.278	2.	Z1= 22.6075	13.203	12.745
	SLG DUTY:	9.655	2.	Z2= 22.6075	10.104	
208. VOLTS	LN/LN	10.633		Z0= 41.2106		
	LN/LN/GND	11.717	(7.939 GND RETURN KA)			
B-B7-SRTLGHT-M	3 PHASE:	6.941	1.	Z1= 39.9884	6.945	6.943
	SLG DUTY:	4.595	1.	Z2= 39.9884	4.596	
208. VOLTS	LN/LN	6.011		Z0= 102.2199		
	LN/LN/GND	6.531	(3.417 GND RETURN KA)			
B-B7-STRT LGHT	3 PHASE:	6.920	1.	Z1= 40.1118	6.923	6.922
	SLG DUTY:	4.571	1.	Z2= 40.1118	4.572	
208. VOLTS	LN/LN	5.993		Z0= 102.9221		
	LN/LN/GND	6.508	(3.396 GND RETURN KA)			
B-B70 -BLDG-71	3 PHASE:	1.090	0.	Z1= 254.6092	1.090	1.090
	SLG DUTY:	0.653	0.	Z2= 254.6092	0.653	
208. VOLTS	LN/LN	0.944		Z0= 767.7156		
	LN/LN/GND	0.991	(0.465 GND RETURN KA)			
B-B70-A	3 PHASE:	9.076	1.	Z1= 30.5840	9.123	9.099
	SLG DUTY:	6.923	1.	Z2= 30.5840	6.928	
208. VOLTS	LN/LN	7.860		Z0= 60.5867		
	LN/LN/GND	8.954	(5.530 GND RETURN KA)			
B-B70-ATS-EQD	3 PHASE:	13.283	3.	Z1= 20.8975	14.421	13.858
	SLG DUTY:	12.308	2.	Z2= 20.8975	12.966	
208. VOLTS	LN/LN	11.503		Z0= 26.0713		
	LN/LN/GND	13.425	(11.432 GND RETURN KA)			
B-B70-ATS-LSD	3 PHASE:	12.644	2.	Z1= 21.9521	13.423	13.037
	SLG DUTY:	11.393	2.	Z2= 21.9521	11.749	
208. VOLTS	LN/LN	10.950		Z0= 29.5802		
	LN/LN/GND	12.803	(10.312 GND RETURN KA)			
B-B70-ATTIC	3 PHASE:	7.943	1.	Z1= 34.9465	7.963	7.953
	SLG DUTY:	5.812	1.	Z2= 34.9465	5.813	
208. VOLTS	LN/LN	6.879		Z0= 74.9755		
	LN/LN/GND	7.739	(4.534 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-B	3 PHASE:	9.076	1.	Z1= 30.5840	9.123	9.099
	SLG DUTY:	6.923	1.	Z2= 30.5840	6.928	
208. VOLTS	LN/LN	7.860		Z0= 60.5867		
	LN/LN/GND	8.954	(	5.530 GND RETURN KA)		
B-B70-CHLLR	3 PHASE:	7.403	3.	Z1= 37.4969	8.332	7.874
	SLG DUTY:	4.855	2.	Z2= 37.4969	4.958	
208. VOLTS	LN/LN	6.411		Z0= 98.2545		
	LN/LN/GND	7.054	(	3.578 GND RETURN KA)		
B-B70-EQ1	3 PHASE:	6.612	1.	Z1= 41.9790	6.633	6.623
	SLG DUTY:	4.721	1.	Z2= 41.9790	4.723	
208. VOLTS	LN/LN	5.726		Z0= 93.8879		
	LN/LN/GND	6.359	(	3.642 GND RETURN KA)		
B-B70-EQ2	3 PHASE:	5.198	1.	Z1= 53.3965	5.205	5.202
	SLG DUTY:	3.547	1.	Z2= 53.3965	3.547	
208. VOLTS	LN/LN	4.502		Z0= 129.5559		
	LN/LN/GND	4.934	(	2.675 GND RETURN KA)		
B-B70-EQ3	3 PHASE:	6.067	1.	Z1= 45.7534	6.080	6.073
	SLG DUTY:	4.254	1.	Z2= 45.7534	4.255	
208. VOLTS	LN/LN	5.254		Z0= 105.7441		
	LN/LN/GND	5.805	(	3.252 GND RETURN KA)		
B-B70-EQ4	3 PHASE:	4.848	1.	Z1= 57.2525	4.853	4.851
	SLG DUTY:	3.273	1.	Z2= 57.2525	3.273	
208. VOLTS	LN/LN	4.199		Z0= 141.4948		
	LN/LN/GND	4.587	(	2.456 GND RETURN KA)		
B-B70-EQ5	3 PHASE:	5.601	1.	Z1= 49.5616	5.610	5.605
	SLG DUTY:	3.869	1.	Z2= 49.5616	3.870	
208. VOLTS	LN/LN	4.850		Z0= 117.6368		
	LN/LN/GND	5.336	(	2.935 GND RETURN KA)		
B-B70-EQ6	3 PHASE:	4.541	1.	Z1= 61.1258	4.544	4.543
	SLG DUTY:	3.038	1.	Z2= 61.1258	3.038	
208. VOLTS	LN/LN	3.933		Z0= 153.4489		
	LN/LN/GND	4.285	(	2.270 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-EQD	3 PHASE:	12.575	2.	Z1= 22.0735	13.546	13.065
	SLG DUTY:	11.336	2.	Z2= 22.0735	11.847	
208. VOLTS	LN/LN	10.890		Z0= 29.5846		
	LN/LN/GND	12.620	(10.281 GND RETURN KA)			
B-B70-EQD-M	3 PHASE:	12.626	3.	Z1= 21.9836	13.613	13.125
	SLG DUTY:	11.444	2.	Z2= 21.9836	11.974	
208. VOLTS	LN/LN	10.935		Z0= 29.0564		
	LN/LN/GND	12.686	(10.427 GND RETURN KA)			
B-B70-FIRE PMP	3 PHASE:	3.845	1.	Z1= 72.1997	3.847	3.846
	SLG DUTY:	2.198	0.	Z2= 72.1997	2.198	
208. VOLTS	LN/LN	3.329		Z0= 241.0213		
	LN/LN/GND	3.649	(1.515 GND RETURN KA)			
B-B70-FP-TAP	3 PHASE:	14.274	3.	Z1= 19.4459	15.607	14.948
	SLG DUTY:	13.909	2.	Z2= 19.4459	14.866	
208. VOLTS	LN/LN	12.362		Z0= 21.0774		
	LN/LN/GND	14.576	(13.539 GND RETURN KA)			
B-B70-FPMP M	3 PHASE:	13.269	2.	Z1= 20.9194	14.252	13.765
	SLG DUTY:	12.337	2.	Z2= 20.9194	12.895	
208. VOLTS	LN/LN	11.491		Z0= 25.8979		
	LN/LN/GND	13.464	(11.487 GND RETURN KA)			
B-B70-K	3 PHASE:	7.001	1.	Z1= 39.6465	7.002	7.002
	SLG DUTY:	4.790	0.	Z2= 39.6465	4.790	
208. VOLTS	LN/LN	6.063		Z0= 96.3593		
	LN/LN/GND	6.724	(3.605 GND RETURN KA)			
B-B70-LP-4	3 PHASE:	5.904	1.	Z1= 47.0176	5.936	5.920
	SLG DUTY:	4.204	1.	Z2= 47.0176	4.210	
208. VOLTS	LN/LN	5.113		Z0= 105.3343		
	LN/LN/GND	5.645	(3.244 GND RETURN KA)			
B-B70-LP1	3 PHASE:	6.541	1.	Z1= 42.4362	6.547	6.544
	SLG DUTY:	4.565	1.	Z2= 42.4362	4.566	
208. VOLTS	LN/LN	5.665		Z0= 99.1769		
	LN/LN/GND	6.280	(3.476 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-LP3	3 PHASE:	7.149	1.	Z1= 38.8270	7.212	7.181
	SLG DUTY:	5.290	1.	Z2= 38.8270	5.301	
208. VOLTS	LN/LN	6.191		Z0= 80.9582		
	LN/LN/GND	6.910	(	4.168 GND RETURN KA)		
B-B70-LS1	3 PHASE:	4.695	1.	Z1= 59.1246	4.695	4.695
	SLG DUTY:	3.065	0.	Z2= 59.1246	3.065	
208. VOLTS	LN/LN	4.066		Z0= 155.0379		
	LN/LN/GND	4.417	(	2.263 GND RETURN KA)		
B-B70-LS2	3 PHASE:	3.793	1.	Z1= 73.1825	3.793	3.793
	SLG DUTY:	2.415	0.	Z2= 73.1825	2.415	
208. VOLTS	LN/LN	3.285		Z0= 199.9610		
	LN/LN/GND	3.537	(	1.764 GND RETURN KA)		
B-B70-LS3	3 PHASE:	5.377	1.	Z1= 51.6255	5.380	5.378
	SLG DUTY:	3.645	1.	Z2= 51.6255	3.645	
208. VOLTS	LN/LN	4.656		Z0= 126.8357		
	LN/LN/GND	5.106	(	2.738 GND RETURN KA)		
B-B70-LS4	3 PHASE:	4.235	1.	Z1= 65.5466	4.236	4.235
	SLG DUTY:	2.775	1.	Z2= 65.5466	2.775	
208. VOLTS	LN/LN	3.667		Z0= 170.6480		
	LN/LN/GND	3.978	(	2.053 GND RETURN KA)		
B-B70-LS5	3 PHASE:	4.936	1.	Z1= 56.2362	4.938	4.937
	SLG DUTY:	3.301	1.	Z2= 56.2362	3.301	
208. VOLTS	LN/LN	4.275		Z0= 141.4146		
	LN/LN/GND	4.667	(	2.465 GND RETURN KA)		
B-B70-LS6	3 PHASE:	3.952	1.	Z1= 70.2345	3.953	3.952
	SLG DUTY:	2.569	1.	Z2= 70.2345	2.569	
208. VOLTS	LN/LN	3.423		Z0= 185.2906		
	LN/LN/GND	3.703	(	1.894 GND RETURN KA)		
B-B70-LSD	3 PHASE:	11.995	2.	Z1= 23.1406	12.672	12.336
	SLG DUTY:	10.543	2.	Z2= 23.1406	10.832	
208. VOLTS	LN/LN	10.388		Z0= 33.1456		
	LN/LN/GND	12.048	(	9.352 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-LSD-M	3 PHASE:	12.043	2.	Z1= 23.0493	12.729	12.388
	SLG DUTY:	10.639	2.	Z2= 23.0493	10.937	
208. VOLTS	LN/LN	10.429		Z0= 32.6076		
	LN/LN/GND	12.112	(9.476	GND RETURN KA)		
B-B70-MDP	3 PHASE:	14.708	3.	Z1= 18.8717	16.245	15.486
	SLG DUTY:	14.320	2.	Z2= 18.8717	15.379	
208. VOLTS	LN/LN	12.738		Z0= 20.5223		
	LN/LN/GND	15.058	(13.924	GND RETURN KA)		
B-B70-MDP-M	3 PHASE:	14.734	3.	Z1= 18.8390	16.282	15.518
	SLG DUTY:	14.394	2.	Z2= 18.8390	15.483	
208. VOLTS	LN/LN	12.760		Z0= 20.2777		
	LN/LN/GND	15.087	(14.045	GND RETURN KA)		
B-B70-PP2	3 PHASE:	8.770	2.	Z1= 31.6514	8.909	8.839
	SLG DUTY:	6.843	1.	Z2= 31.6514	6.874	
208. VOLTS	LN/LN	7.595		Z0= 59.4038		
	LN/LN/GND	8.602	(5.565	GND RETURN KA)		
B-B70-PP220	3 PHASE:	6.281	1.	Z1= 44.1930	6.303	6.292
	SLG DUTY:	4.467	1.	Z2= 44.1930	4.470	
208. VOLTS	LN/LN	5.439		Z0= 99.4494		
	LN/LN/GND	6.025	(3.441	GND RETURN KA)		
B-B70-STRTLGHT	3 PHASE:	7.662	1.	Z1= 36.2271	7.664	7.663
	SLG DUTY:	5.361	1.	Z2= 36.2271	5.361	
208. VOLTS	LN/LN	6.635		Z0= 84.7311		
	LN/LN/GND	7.415	(4.076	GND RETURN KA)		
B-B78-1P	3 PHASE:	5.800	1.	Z1= 47.8609	5.801	5.800
	SLG DUTY:	3.690	1.	Z2= 47.8609	3.690	
208. VOLTS	LN/LN	5.023		Z0= 130.9230		
	LN/LN/GND	5.400	(2.695	GND RETURN KA)		
B-B78-78AE1	3 PHASE:	15.720	1.	Z1= 17.6572	15.954	15.837
	SLG DUTY:	11.797	1.	Z2= 17.6572	11.838	
208. VOLTS	LN/LN	13.614		Z0= 35.9905		
	LN/LN/GND	15.362	(9.349	GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-A/C	3 PHASE:	4.069	1.	Z1= 68.2149	4.070	4.069
	SLG DUTY:	2.354	0.	Z2= 68.2149	2.354	
208. VOLTS	LN/LN	3.524		Z0= 219.9488		
	LN/LN/GND	3.785	(	1.645 GND RETURN KA)		
B-B78-ATS TAP	3 PHASE:	18.489	2.	Z1= 15.0130	18.942	18.716
	SLG DUTY:	14.525	1.	Z2= 15.0130	14.618	
208. VOLTS	LN/LN	16.012		Z0= 27.9504		
	LN/LN/GND	18.323	(	11.831 GND RETURN KA)		
B-B78-ATS-CRD	3 PHASE:	5.323	1.	Z1= 52.1446	5.324	5.324
	SLG DUTY:	3.370	1.	Z2= 52.1446	3.370	
208. VOLTS	LN/LN	4.610		Z0= 143.7752		
	LN/LN/GND	4.947	(	2.456 GND RETURN KA)		
B-B78-ATS-E1	3 PHASE:	7.919	1.	Z1= 35.0499	8.015	7.967
	SLG DUTY:	5.457	1.	Z2= 35.0499	5.479	
208. VOLTS	LN/LN	6.858		Z0= 83.2218		
	LN/LN/GND	7.475	(	4.144 GND RETURN KA)		
B-B78-ATS-LS1	3 PHASE:	14.501	1.	Z1= 19.1411	14.698	14.600
	SLG DUTY:	10.714	1.	Z2= 19.1411	10.749	
208. VOLTS	LN/LN	12.559		Z0= 40.1534		
	LN/LN/GND	14.085	(	8.421 GND RETURN KA)		
B-B78-ATSG957	83 PHASE:	16.308	1.	Z1= 17.0206	16.548	16.428
	SLG DUTY:	12.312	1.	Z2= 17.0206	12.353	
208. VOLTS	LN/LN	14.123		Z0= 34.3208		
	LN/LN/GND	15.986	(	9.787 GND RETURN KA)		
B-B78-BARBER	3 PHASE:	3.043	0.	Z1= 91.2113	3.043	3.043
	SLG DUTY:	1.798	0.	Z2= 91.2113	1.798	
208. VOLTS	LN/LN	2.635		Z0= 280.9860		
	LN/LN/GND	2.755	(	1.275 GND RETURN KA)		
B-B78-CONRM-AC	3 PHASE:	2.720	1.	Z1= 102.0371	2.721	2.721
	SLG DUTY:	1.428	0.	Z2= 102.0371	1.428	
208. VOLTS	LN/LN	2.356		Z0= 389.9940		
	LN/LN/GND	2.561	(	0.952 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-CRD	3 PHASE:	2.919		1. Z1= 95.0822	2.920	2.919
	SLG DUTY:	1.805		1. Z2= 95.0822	1.805	
208. VOLTS	LN/LN	2.528		Z0= 272.3061		
	LN/LN/GND	2.687		(1.303 GND RETURN KA)		
B-B78-E1	3 PHASE:	7.778		1. Z1= 35.6859	7.873	7.826
	SLG DUTY:	5.353		1. Z2= 35.6859	5.375	
208. VOLTS	LN/LN	6.736		Z0= 84.9119		
	LN/LN/GND	7.338		(4.063 GND RETURN KA)		
B-B78-ELEV-1	3 PHASE:	16.114		1. Z1= 17.2258	16.247	16.181
	SLG DUTY:	11.221		1. Z2= 17.2258	11.225	
208. VOLTS	LN/LN	13.955		Z0= 40.9862		
	LN/LN/GND	15.736		(8.474 GND RETURN KA)		
B-B78-ELEV-2	3 PHASE:	16.114		1. Z1= 17.2258	16.247	16.181
	SLG DUTY:	11.221		1. Z2= 17.2258	11.225	
208. VOLTS	LN/LN	13.955		Z0= 40.9862		
	LN/LN/GND	15.736		(8.474 GND RETURN KA)		
B-B78-FLPNL	3 PHASE:	4.931		1. Z1= 56.2863	4.932	4.932
	SLG DUTY:	3.073		0. Z2= 56.2863	3.073	
208. VOLTS	LN/LN	4.271		Z0= 159.3458		
	LN/LN/GND	4.564		(2.225 GND RETURN KA)		
B-B78-KK	3 PHASE:	6.800		1. Z1= 40.8178	6.801	6.801
	SLG DUTY:	4.316		1. Z2= 40.8178	4.316	
208. VOLTS	LN/LN	5.889		Z0= 112.2184		
	LN/LN/GND	6.343		(3.147 GND RETURN KA)		
B-B78-L10	3 PHASE:	6.689		1. Z1= 41.4954	6.730	6.710
	SLG DUTY:	4.494		1. Z2= 41.4954	4.502	
208. VOLTS	LN/LN	5.793		Z0= 103.1479		
	LN/LN/GND	6.284		(3.369 GND RETURN KA)		
B-B78-LP-1	3 PHASE:	6.336		1. Z1= 43.8066	6.340	6.338
	SLG DUTY:	4.098		1. Z2= 43.8066	4.098	
208. VOLTS	LN/LN	5.487		Z0= 116.5422		
	LN/LN/GND	5.924		(3.015 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-LP-13	3 PHASE:	6.162		1. Z1= 45.0495	6.197	6.179
	SLG DUTY:	4.114		1. Z2= 45.0495	4.121	
208. VOLTS	LN/LN	5.336		Z0= 113.1774		
	LN/LN/GND	5.777	(	3.076 GND RETURN KA)		
B-B78-LP-14	3 PHASE:	5.711		1. Z1= 48.6052	5.741	5.726
	SLG DUTY:	3.793		1. Z2= 48.6052	3.800	
208. VOLTS	LN/LN	4.946		Z0= 123.2071		
	LN/LN/GND	5.345	(	2.829 GND RETURN KA)		
B-B78-LP-15	3 PHASE:	5.321		1. Z1= 52.1622	5.349	5.335
	SLG DUTY:	3.519		1. Z2= 52.1622	3.525	
208. VOLTS	LN/LN	4.608		Z0= 133.2368		
	LN/LN/GND	4.974	(	2.619 GND RETURN KA)		
B-B78-LP-2	3 PHASE:	11.262		1. Z1= 24.6460	11.284	11.273
	SLG DUTY:	7.716		1. Z2= 24.6460	7.718	
208. VOLTS	LN/LN	9.753		Z0= 59.5411		
	LN/LN/GND	10.758	(	5.821 GND RETURN KA)		
B-B78-LP-4	3 PHASE:	3.723		1. Z1= 74.5627	3.723	3.723
	SLG DUTY:	2.308		1. Z2= 74.5627	2.308	
208. VOLTS	LN/LN	3.224		Z0= 212.6663		
	LN/LN/GND	3.434	(	1.668 GND RETURN KA)		
B-B78-LP-8	3 PHASE:	13.061		1. Z1= 21.2527	13.206	13.133
	SLG DUTY:	9.459		1. Z2= 21.2527	9.484	
208. VOLTS	LN/LN	11.311		Z0= 46.2644		
	LN/LN/GND	12.600	(	7.355 GND RETURN KA)		
B-B78-LP10	3 PHASE:	5.922		1. Z1= 46.8700	5.951	5.937
	SLG DUTY:	3.935		1. Z2= 46.8700	3.941	
208. VOLTS	LN/LN	5.129		Z0= 118.7635		
	LN/LN/GND	5.547	(	2.935 GND RETURN KA)		
B-B78-LP13	3 PHASE:	5.425		1. Z1= 51.1625	5.453	5.439
	SLG DUTY:	3.591		1. Z2= 51.1625	3.597	
208. VOLTS	LN/LN	4.698		Z0= 130.4678		
	LN/LN/GND	5.073	(	2.674 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-LP3	3 PHASE:	11.262	1.	Z1= 24.6460	11.284	11.273
	SLG DUTY:	7.716	1.	Z2= 24.6460	7.718	
208. VOLTS	LN/LN	9.753		Z0= 59.5411		
	LN/LN/GND	10.758	(5.821 GND RETURN KA)			
B-B78-LP6	3 PHASE:	9.321	1.	Z1= 29.7807	9.336	9.328
	SLG DUTY:	6.266	1.	Z2= 29.7807	6.268	
208. VOLTS	LN/LN	8.072		Z0= 74.2251		
	LN/LN/GND	8.830	(4.690 GND RETURN KA)			
B-B78-LP7	3 PHASE:	6.519	1.	Z1= 42.5784	6.549	6.534
	SLG DUTY:	4.352	1.	Z2= 42.5784	4.357	
208. VOLTS	LN/LN	5.646		Z0= 107.0731		
	LN/LN/GND	6.119	(3.252 GND RETURN KA)			
B-B78-LSD	3 PHASE:	13.854	1.	Z1= 20.0350	14.019	13.937
	SLG DUTY:	10.132	1.	Z2= 20.0350	10.160	
208. VOLTS	LN/LN	11.998		Z0= 42.8498		
	LN/LN/GND	13.416	(7.918 GND RETURN KA)			
B-B78-MDP	3 PHASE:	41.674	5.	Z1= 6.6605	51.078	46.502
	SLG DUTY:	50.436	4.	Z2= 6.6605	59.724	
208. VOLTS	LN/LN	36.091		Z0= 3.2259		
	LN/LN/GND	50.073	(63.730 GND RETURN KA)			
B-B78-MDP-M	3 PHASE:	41.701	5.	Z1= 6.6562	51.154	46.554
	SLG DUTY:	50.567	4.	Z2= 6.6562	60.048	
208. VOLTS	LN/LN	36.114		Z0= 3.1873		
	LN/LN/GND	50.102	(64.103 GND RETURN KA)			
B-B78-MEC-1 AC	3 PHASE:	8.201	2.	Z1= 33.8479	8.443	8.322
	SLG DUTY:	5.300	1.	Z2= 33.8479	5.332	
208. VOLTS	LN/LN	7.102		Z0= 90.5195		
	LN/LN/GND	7.730	(3.890 GND RETURN KA)			
B-B78-MEC2-A/C	3 PHASE:	17.913	2.	Z1= 15.4954	18.228	18.071
	SLG DUTY:	13.270	1.	Z2= 15.4954	13.300	
208. VOLTS	LN/LN	15.513		Z0= 32.7030		
	LN/LN/GND	17.664	(10.388 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-PHARM AC	3 PHASE:	3.212	0.	Z1= 86.4211	3.212	3.212
	SLG DUTY:	1.842	0.	Z2= 86.4211	1.842	
208. VOLTS	LN/LN	2.782		Z0= 280.9859		
	LN/LN/GND	2.954	(	1.287 GND RETURN KA)		
B-B78-PHV	3 PHASE:	2.800	0.	Z1= 99.1160	2.800	2.800
	SLG DUTY:	1.675	0.	Z2= 99.1160	1.675	
208. VOLTS	LN/LN	2.425		Z0= 299.7025		
	LN/LN/GND	2.550	(	1.193 GND RETURN KA)		
B-B78-PK	3 PHASE:	5.824	1.	Z1= 47.6567	5.828	5.826
	SLG DUTY:	3.746	1.	Z2= 47.6567	3.746	
208. VOLTS	LN/LN	5.044		Z0= 127.9443		
	LN/LN/GND	5.434	(	2.750 GND RETURN KA)		
B-B78-PNL-330A	3 PHASE:	10.561	1.	Z1= 26.2827	10.599	10.580
	SLG DUTY:	7.279	1.	Z2= 26.2827	7.283	
208. VOLTS	LN/LN	9.146		Z0= 62.6965		
	LN/LN/GND	10.069	(	5.514 GND RETURN KA)		
B-B78-PULM 78B	3 PHASE:	18.489	2.	Z1= 15.0130	18.942	18.716
	SLG DUTY:	14.525	1.	Z2= 15.0130	14.618	
208. VOLTS	LN/LN	16.012		Z0= 27.9504		
	LN/LN/GND	18.323	(	11.831 GND RETURN KA)		
B-B78-QP	3 PHASE:	11.835	1.	Z1= 23.4526	11.837	11.836
	SLG DUTY:	7.827	0.	Z2= 23.4526	7.827	
208. VOLTS	LN/LN	10.250		Z0= 60.4661		
	LN/LN/GND	11.267	(	5.797 GND RETURN KA)		
B-B78A-PNL-2	3 PHASE:	15.297	1.	Z1= 18.1453	15.335	15.316
	SLG DUTY:	10.913	1.	Z2= 18.1453	10.915	
208. VOLTS	LN/LN	13.248		Z0= 40.9862		
	LN/LN/GND	14.890	(	8.380 GND RETURN KA)		
B-B8 2ND FLR	3 PHASE:	12.438	2.	Z1= 22.3170	13.239	12.841
	SLG DUTY:	10.327	2.	Z2= 22.3170	10.771	
208. VOLTS	LN/LN	10.771		Z0= 36.1469		
	LN/LN/GND	12.008	(	8.813 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B8 HYDRO ELV	3 PHASE:	4.085	1.	Z1= 29.4453	4.091	4.088
	SLG DUTY:	2.675	1.	Z2= 29.4453	2.675	
480. VOLTS	LN/LN	3.538		Z0= 77.8337		
	LN/LN/GND	3.923	(1.964 GND RETURN KA)			
B-B8-208V-MAIN	3 PHASE:	18.055	3.	Z1= 15.3741	19.901	18.989
	SLG DUTY:	17.187	3.	Z2= 15.3741	18.782	
208. VOLTS	LN/LN	15.636		Z0= 17.7107		
	LN/LN/GND	17.850	(16.396 GND RETURN KA)			
B-B8-480V ATS	3 PHASE:	8.624	3.	Z1= 13.9473	9.457	9.045
	SLG DUTY:	8.056	3.	Z2= 13.9473	8.697	
480. VOLTS	LN/LN	7.469		Z0= 16.9255		
	LN/LN/GND	8.539	(7.553 GND RETURN KA)			
B-B8-480V PNL	3 PHASE:	8.490	3.	Z1= 14.1675	9.286	8.892
	SLG DUTY:	7.859	2.	Z2= 14.1675	8.447	
480. VOLTS	LN/LN	7.352		Z0= 17.6182		
	LN/LN/GND	8.399	(7.309 GND RETURN KA)			
B-B8-ATS	3 PHASE:	14.313	2.	Z1= 19.3930	15.158	14.739
	SLG DUTY:	12.358	2.	Z2= 19.3930	12.824	
208. VOLTS	LN/LN	12.395		Z0= 28.7557		
	LN/LN/GND	14.037	(10.848 GND RETURN KA)			
B-B8-BS	3 PHASE:	3.533	0.	Z1= 78.5681	3.533	3.533
	SLG DUTY:	2.197	0.	Z2= 78.5681	2.197	
208. VOLTS	LN/LN	3.060		Z0= 223.0648		
	LN/LN/GND	3.260	(1.589 GND RETURN KA)			
B-B8-CMOP	3 PHASE:	4.290	1.	Z1= 64.7019	4.351	4.321
	SLG DUTY:	4.182	1.	Z2= 64.7019	4.211	
208. VOLTS	LN/LN	3.715		Z0= 70.7522		
	LN/LN/GND	4.484	(4.058 GND RETURN KA)			
B-B8-COMP	3 PHASE:	2.522	1.	Z1= 47.6952	2.522	2.522
	SLG DUTY:	1.526	0.	Z2= 47.6952	1.526	
480. VOLTS	LN/LN	2.184		Z0= 142.9084		
	LN/LN/GND	2.362	(1.086 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B8-ELEV	3 PHASE:	4.248	2.	Z1= 65.3488	4.347	4.297
	SLG DUTY:	4.164	2.	Z2= 65.3488	4.233	
208. VOLTS	LN/LN	3.678		Z0= 69.5710		
	LN/LN/GND	4.346	(	4.078 GND RETURN KA)		
B-B8-FDR	3 PHASE:	4.766	2.	Z1= 58.2438	4.892	4.829
	SLG DUTY:	5.000	2.	Z2= 58.2438	5.107	
208. VOLTS	LN/LN	4.127		Z0= 50.1634		
	LN/LN/GND	5.009	(	5.256 GND RETURN KA)		
B-B8-FLEXPMACH	3 PHASE:	3.134	0.	Z1= 38.3842	3.134	3.134
	SLG DUTY:	2.004	0.	Z2= 38.3842	2.004	
480. VOLTS	LN/LN	2.714		Z0= 104.2895		
	LN/LN/GND	2.934	(	1.465 GND RETURN KA)		
B-B8-GE BKR	3 PHASE:	8.734	3.	Z1= 13.7709	9.599	9.172
	SLG DUTY:	8.221	3.	Z2= 13.7709	8.909	
480. VOLTS	LN/LN	7.564		Z0= 16.3741		
	LN/LN/GND	8.653	(	7.760 GND RETURN KA)		
B-B8-J-BOX	3 PHASE:	4.441	2.	Z1= 62.5053	4.550	4.495
	SLG DUTY:	4.463	2.	Z2= 62.5053	4.544	
208. VOLTS	LN/LN	3.846		Z0= 61.7924		
	LN/LN/GND	4.586	(	4.481 GND RETURN KA)		
B-B8-L8B	3 PHASE:	5.820	1.	Z1= 47.6945	5.820	5.820
	SLG DUTY:	3.791	0.	Z2= 47.6945	3.791	
208. VOLTS	LN/LN	5.040		Z0= 125.4476		
	LN/LN/GND	5.461	(	2.797 GND RETURN KA)		
B-B8-LB1	3 PHASE:	7.140	1.	Z1= 38.8753	7.181	7.161
	SLG DUTY:	5.069	1.	Z2= 38.8753	5.077	
208. VOLTS	LN/LN	6.183		Z0= 87.3937		
	LN/LN/GND	6.791	(	3.910 GND RETURN KA)		
B-B8-LB2	3 PHASE:	6.669	1.	Z1= 41.6200	6.702	6.685
	SLG DUTY:	4.682	1.	Z2= 41.6200	4.689	
208. VOLTS	LN/LN	5.776		Z0= 95.5092		
	LN/LN/GND	6.326	(	3.590 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B8-MAIN BUS	3 PHASE:	17.599	3.	Z1= 15.7719	19.365	18.493
	SLG DUTY:	16.565	3.	Z2= 15.7719	18.043	
208. VOLTS	LN/LN	15.241		Z0= 18.7383		
	LN/LN/GND	17.353	(15.642 GND RETURN KA)			
B-B8-MDP-8	3 PHASE:	17.288	3.	Z1= 16.0561	19.000	18.154
	SLG DUTY:	16.147	3.	Z2= 16.0561	17.551	
208. VOLTS	LN/LN	14.972		Z0= 19.4733		
	LN/LN/GND	17.015	(15.144 GND RETURN KA)			
B-B8-PNL-PK	3 PHASE:	13.265	2.	Z1= 20.9250	13.643	13.455
	SLG DUTY:	10.998	1.	Z2= 20.9250	11.134	
208. VOLTS	LN/LN	11.488		Z0= 34.2900		
	LN/LN/GND	13.083	(9.341 GND RETURN KA)			
B-B8-PP1	3 PHASE:	16.301	2.	Z1= 17.0281	17.489	16.900
	SLG DUTY:	14.752	2.	Z2= 17.0281	15.521	
208. VOLTS	LN/LN	14.117		Z0= 22.4816		
	LN/LN/GND	16.138	(13.451 GND RETURN KA)			
B-B8-PP1-M	3 PHASE:	16.353	2.	Z1= 16.9741	17.559	16.961
	SLG DUTY:	14.862	2.	Z2= 16.9741	15.659	
208. VOLTS	LN/LN	14.162		Z0= 22.1635		
	LN/LN/GND	16.194	(13.601 GND RETURN KA)			
B-B8-SYLV	3 PHASE:	15.023	2.	Z1= 18.4762	16.147	15.590
	SLG DUTY:	13.245	2.	Z2= 18.4762	13.965	
208. VOLTS	LN/LN	13.010		Z0= 26.0049		
	LN/LN/GND	14.708	(11.827 GND RETURN KA)			
B-B8-TXMR PRI	3 PHASE:	8.372	3.	Z1= 14.3671	9.089	8.734
	SLG DUTY:	7.694	2.	Z2= 14.3671	8.191	
480. VOLTS	LN/LN	7.250		Z0= 18.2232		
	LN/LN/GND	8.300	(7.109 GND RETURN KA)			
B-B8-TXMR SEC	3 PHASE:	5.075	2.	Z1= 54.6968	5.219	5.147
	SLG DUTY:	5.556	2.	Z2= 54.6968	5.696	
208. VOLTS	LN/LN	4.395		Z0= 40.5339		
	LN/LN/GND	5.436	(6.135 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B80-ATS-EQ	3 PHASE:	6.858	1.	Z1= 40.4771	6.868	6.863
	SLG DUTY:	5.184	1.	Z2= 40.4771	5.185	
208. VOLTS	LN/LN	5.939		Z0= 81.3127		
	LN/LN/GND	6.714	(4.127	GND RETURN KA)		
B-B80-E1	3 PHASE:	5.901	1.	Z1= 47.0411	5.904	5.902
	SLG DUTY:	4.257	1.	Z2= 47.0411	4.257	
208. VOLTS	LN/LN	5.110		Z0= 103.3341		
	LN/LN/GND	5.702	(3.300	GND RETURN KA)		
B-B80-L1-1	3 PHASE:	2.982	0.	Z1= 93.0738	2.982	2.982
	SLG DUTY:	1.876	0.	Z2= 93.0738	1.876	
208. VOLTS	LN/LN	2.583		Z0= 259.4004		
	LN/LN/GND	2.764	(1.363	GND RETURN KA)		
B-B80-L1-3	3 PHASE:	3.415	0.	Z1= 81.2894	3.415	3.415
	SLG DUTY:	2.166	0.	Z2= 81.2894	2.166	
208. VOLTS	LN/LN	2.957		Z0= 223.3901		
	LN/LN/GND	3.178	(1.580	GND RETURN KA)		
B-B80-LB-1	3 PHASE:	7.806	1.	Z1= 35.5574	7.857	7.832
	SLG DUTY:	6.290	1.	Z2= 35.5574	6.300	
208. VOLTS	LN/LN	6.760		Z0= 62.4317		
	LN/LN/GND	7.729	(5.222	GND RETURN KA)		
B-B80-LB-E	3 PHASE:	3.967	1.	Z1= 69.9693	3.967	3.967
	SLG DUTY:	2.635	0.	Z2= 69.9693	2.635	
208. VOLTS	LN/LN	3.436		Z0= 177.8439		
	LN/LN/GND	3.738	(1.963	GND RETURN KA)		
B-B80-MDP	3 PHASE:	11.092	2.	Z1= 25.0255	11.708	11.402
	SLG DUTY:	10.694	2.	Z2= 25.0255	11.198	
208. VOLTS	LN/LN	9.606		Z0= 27.8498		
	LN/LN/GND	11.094	(10.320	GND RETURN KA)		
B-B80-MDP-M	3 PHASE:	11.787	2.	Z1= 23.5491	12.552	12.173
	SLG DUTY:	11.738	2.	Z2= 23.5491	12.477	
208. VOLTS	LN/LN	10.208		Z0= 23.8434		
	LN/LN/GND	11.806	(11.690	GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B80-P1	3 PHASE:	8.127	1.	Z1= 34.1544	8.194	8.160
	SLG DUTY:	6.660	1.	Z2= 34.1544	6.675	
208. VOLTS	LN/LN	7.038		Z0= 57.7823		
	LN/LN/GND	8.077	(	5.595 GND RETURN KA)		
B-B80-P5	3 PHASE:	1.699	0.	Z1= 163.3737	1.699	1.699
	SLG DUTY:	1.030	0.	Z2= 163.3737	1.030	
208. VOLTS	LN/LN	1.471		Z0= 483.0396		
	LN/LN/GND	1.551	(	0.738 GND RETURN KA)		
B-B80-PB-1	3 PHASE:	3.071	0.	Z1= 90.3955	3.071	3.071
	SLG DUTY:	1.927	0.	Z2= 90.3955	1.927	
208. VOLTS	LN/LN	2.659		Z0= 252.8602		
	LN/LN/GND	2.845	(	1.399 GND RETURN KA)		
B-B80-PB-2	3 PHASE:	4.575	1.	Z1= 60.6696	4.576	4.575
	SLG DUTY:	3.114	1.	Z2= 60.6696	3.114	
208. VOLTS	LN/LN	3.962		Z0= 147.9281		
	LN/LN/GND	4.344	(	2.345 GND RETURN KA)		
B-B81-MDP	3 PHASE:	4.278	2.	Z1= 64.8889	4.393	4.335
	SLG DUTY:	4.446	2.	Z2= 64.8889	4.563	
208. VOLTS	LN/LN	3.705		Z0= 57.5109		
	LN/LN/GND	4.381	(	4.629 GND RETURN KA)		
B-B81-MDP-M	3 PHASE:	4.284	2.	Z1= 64.7951	4.400	4.342
	SLG DUTY:	4.463	2.	Z2= 64.7951	4.581	
208. VOLTS	LN/LN	3.710		Z0= 56.9875		
	LN/LN/GND	4.391	(	4.658 GND RETURN KA)		
B-B82-ATS-EMER	3 PHASE:	6.580	2.	Z1= 42.1859	6.897	6.739
	SLG DUTY:	6.431	2.	Z2= 42.1859	6.653	
208. VOLTS	LN/LN	5.698		Z0= 45.3369		
	LN/LN/GND	6.736	(	6.278 GND RETURN KA)		
B-B82-EMER	3 PHASE:	6.314	2.	Z1= 43.9613	6.576	6.446
	SLG DUTY:	6.018	2.	Z2= 43.9613	6.177	
208. VOLTS	LN/LN	5.468		Z0= 50.8302		
	LN/LN/GND	6.442	(	5.733 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B82-EMERG-M	3 PHASE:	6.327	2.	Z1= 43.8689	6.591	6.460
	SLG DUTY:	6.049	2.	Z2= 43.8689	6.211	
208. VOLTS	LN/LN	5.480		Z0= 50.2948		
	LN/LN/GND	6.461	(	5.779 GND RETURN KA)		
B-B82-MDP	3 PHASE:	7.141	2.	Z1= 38.8720	7.614	7.379
	SLG DUTY:	7.331	2.	Z2= 38.8720	7.780	
208. VOLTS	LN/LN	6.184		Z0= 35.8554		
	LN/LN/GND	7.311	(	7.531 GND RETURN KA)		
B-B82-MDP-M	3 PHASE:	7.151	2.	Z1= 38.8175	7.627	7.391
	SLG DUTY:	7.358	2.	Z2= 38.8175	7.815	
208. VOLTS	LN/LN	6.193		Z0= 35.5476		
	LN/LN/GND	7.323	(	7.577 GND RETURN KA)		
B-B9-*PNLXX	3 PHASE:	8.285	1.	Z1= 33.5026	8.292	8.288
	SLG DUTY:	6.520	1.	Z2= 33.5026	6.522	
208. VOLTS	LN/LN	7.175		Z0= 60.9330		
	LN/LN/GND	7.888	(	5.366 GND RETURN KA)		
B-B9-*PNLYY	3 PHASE:	7.434	1.	Z1= 37.3389	7.435	7.435
	SLG DUTY:	5.786	1.	Z2= 37.3389	5.786	
208. VOLTS	LN/LN	6.438		Z0= 69.4610		
	LN/LN/GND	7.049	(	4.729 GND RETURN KA)		
B-B9-*PNLZZ	3 PHASE:	11.523	2.	Z1= 24.0887	12.033	11.779
	SLG DUTY:	9.629	2.	Z2= 24.0887	9.964	
208. VOLTS	LN/LN	9.979		Z0= 38.3544		
	LN/LN/GND	11.001	(	8.265 GND RETURN KA)		
B-B9-ATS BKR	3 PHASE:	13.747	2.	Z1= 20.1908	14.692	14.224
	SLG DUTY:	12.269	2.	Z2= 20.1908	12.853	
208. VOLTS	LN/LN	11.906		Z0= 27.6139		
	LN/LN/GND	13.569	(	11.058 GND RETURN KA)		
B-B9-EM	3 PHASE:	13.337	2.	Z1= 20.8127	14.165	13.754
	SLG DUTY:	11.750	2.	Z2= 20.8127	12.227	
208. VOLTS	LN/LN	11.550		Z0= 29.4037		
	LN/LN/GND	13.155	(	10.478 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B9-L91A	3 PHASE:	3.700	1.	Z1= 75.0209	3.701	3.700
	SLG DUTY:	2.392	1.	Z2= 75.0209	2.392	
208. VOLTS	LN/LN	3.204		Z0= 199.4456		
	LN/LN/GND	3.449	(1.761 GND RETURN KA)			
B-B9-L91A-M	3 PHASE:	3.706	1.	Z1= 74.8975	3.707	3.706
	SLG DUTY:	2.399	1.	Z2= 74.8975	2.399	
208. VOLTS	LN/LN	3.210		Z0= 198.7444		
	LN/LN/GND	3.455	(1.767 GND RETURN KA)			
B-B9-L92	3 PHASE:	4.834	1.	Z1= 57.4150	4.835	4.835
	SLG DUTY:	3.626	0.	Z2= 57.4150	3.626	
208. VOLTS	LN/LN	4.187		Z0= 114.9092		
	LN/LN/GND	4.490	(2.900 GND RETURN KA)			
B-B9-L9A	3 PHASE:	6.889	1.	Z1= 40.2898	6.895	6.892
	SLG DUTY:	5.251	1.	Z2= 40.2898	5.254	
208. VOLTS	LN/LN	5.966		Z0= 78.0844		
	LN/LN/GND	6.440	(4.240 GND RETURN KA)			
B-B9-L9B	3 PHASE:	11.387	1.	Z1= 24.3769	11.532	11.459
	SLG DUTY:	9.541	1.	Z2= 24.3769	9.610	
208. VOLTS	LN/LN	9.861		Z0= 38.7126		
	LN/LN/GND	11.055	(8.193 GND RETURN KA)			
B-B9-LPN	3 PHASE:	2.605	1.	Z1= 106.5594	2.605	2.605
	SLG DUTY:	1.627	0.	Z2= 106.5594	1.627	
208. VOLTS	LN/LN	2.256		Z0= 299.9341		
	LN/LN/GND	2.398	(1.180 GND RETURN KA)			
B-B9-LPS	3 PHASE:	5.781	1.	Z1= 48.0176	5.781	5.781
	SLG DUTY:	3.902	1.	Z2= 48.0176	3.902	
208. VOLTS	LN/LN	5.006		Z0= 118.4834		
	LN/LN/GND	5.450	(2.931 GND RETURN KA)			
B-B9-MAIN	3 PHASE:	16.037	3.	Z1= 17.3087	17.438	16.745
	SLG DUTY:	15.296	2.	Z2= 17.3087	16.391	
208. VOLTS	LN/LN	13.888		Z0= 19.8607		
	LN/LN/GND	16.038	(14.611 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B9-MDP	3 PHASE:	14.956	3.	Z1= 18.5590	16.146	15.557
	SLG DUTY:	13.824	2.	Z2= 18.5590	14.662	
208. VOLTS	LN/LN	12.952		Z0= 23.1865		
	LN/LN/GND	14.855	(12.837 GND RETURN KA)			
B-B9-STRT LGHT	3 PHASE:	5.831	1.	Z1= 47.6018	5.831	5.831
	SLG DUTY:	3.782	0.	Z2= 47.6018	3.782	
208. VOLTS	LN/LN	5.050		Z0= 126.2842		
	LN/LN/GND	5.482	(2.783 GND RETURN KA)			
B-B9-TAP	3 PHASE:	12.436	2.	Z1= 22.3208	12.712	12.574
	SLG DUTY:	10.704	1.	Z2= 22.3208	10.846	
208. VOLTS	LN/LN	10.770		Z0= 33.3317		
	LN/LN/GND	12.174	(9.374 GND RETURN KA)			
B-B92-ATS	3 PHASE:	3.707	1.	Z1= 74.8680	3.717	3.712
	SLG DUTY:	2.655	1.	Z2= 74.8680	2.655	
208. VOLTS	LN/LN	3.211		Z0= 167.7536		
	LN/LN/GND	3.607	(2.044 GND RETURN KA)			
B-B92-PNL-E1	3 PHASE:	3.509	1.	Z1= 79.0921	3.516	3.513
	SLG DUTY:	2.474	1.	Z2= 79.0921	2.474	
208. VOLTS	LN/LN	3.039		Z0= 182.2937		
	LN/LN/GND	3.398	(1.889 GND RETURN KA)			
B-B94-ATS	3 PHASE:	5.463	1.	Z1= 50.8122	5.467	5.465
	SLG DUTY:	3.579	1.	Z2= 50.8122	3.579	
208. VOLTS	LN/LN	4.731		Z0= 132.0610		
	LN/LN/GND	5.110	(2.650 GND RETURN KA)			
B-B94-E1	3 PHASE:	4.644	1.	Z1= 59.7700	4.645	4.645
	SLG DUTY:	2.979	1.	Z2= 59.7700	2.979	
208. VOLTS	LN/LN	4.022		Z0= 161.0885		
	LN/LN/GND	4.321	(2.185 GND RETURN KA)			
B-SW-MV-1	3 PHASE:	2.698	2.	Z1= 1.5508	2.830	2.764
	SLG DUTY:	1.558	2.	Z2= 1.5508	1.655	
13800. VOLTS	LN/LN	2.336		Z0= 4.9549		
	LN/LN/GND	2.374	(1.095 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-SW-MV-2	3 PHASE:	2.800	2.	Z1= 1.4942	2.978	2.890
	SLG DUTY:	1.605	2.	Z2= 1.4942	1.724	
13800. VOLTS	LN/LN	2.425		Z0= 4.8351		
	LN/LN/GND	2.471	(	1.124 GND RETURN KA)		
B-SWGR27 TAP	3 PHASE:	3.034	3.	Z1= 1.3789	3.411	3.225
	SLG DUTY:	1.706	3.	Z2= 1.3789	1.904	
13800. VOLTS	LN/LN	2.628		Z0= 4.5990		
	LN/LN/GND	2.701	(	1.187 GND RETURN KA)		
B-T-13-PRI	3 PHASE:	2.782	2.	Z1= 1.5040	2.952	2.868
	SLG DUTY:	1.638	3.	Z2= 1.5040	1.776	
13800. VOLTS	LN/LN	2.409		Z0= 4.6606		
	LN/LN/GND	2.440	(	1.160 GND RETURN KA)		
B-T-B1-PRI	3 PHASE:	2.927	3.	Z1= 1.4294	3.195	3.062
	SLG DUTY:	1.659	3.	Z2= 1.4294	1.815	
13800. VOLTS	LN/LN	2.535		Z0= 4.7088		
	LN/LN/GND	2.595	(	1.157 GND RETURN KA)		
B-T-B1-SEC	3 PHASE:	4.961	2.	Z1= 55.9518	5.144	5.053
	SLG DUTY:	5.495	2.	Z2= 55.9518	5.775	
208. VOLTS	LN/LN	4.296		Z0= 39.9994		
	LN/LN/GND	5.042	(	6.144 GND RETURN KA)		
B-T-B10-PRI	3 PHASE:	2.841	2.	Z1= 1.4729	3.046	2.944
	SLG DUTY:	1.654	3.	Z2= 1.4729	1.804	
13800. VOLTS	LN/LN	2.460		Z0= 4.6466		
	LN/LN/GND	2.500	(	1.166 GND RETURN KA)		
B-T-B10-SEC	3 PHASE:	6.177	2.	Z1= 44.9333	6.405	6.292
	SLG DUTY:	6.430	2.	Z2= 44.9333	6.774	
208. VOLTS	LN/LN	5.350		Z0= 39.9994		
	LN/LN/GND	6.012	(	6.685 GND RETURN KA)		
B-T-B12-PRI	3 PHASE:	2.749	2.	Z1= 1.5221	2.902	2.826
	SLG DUTY:	1.623	3.	Z2= 1.5221	1.752	
13800. VOLTS	LN/LN	2.380		Z0= 4.6945		
	LN/LN/GND	2.408	(	1.151 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B12-SEC	3 PHASE:	4.738	2.	Z1= 58.5873	4.910	4.824
	SLG DUTY:	5.311	2.	Z2= 58.5873	5.576	
208. VOLTS	LN/LN	4.103		Z0= 39.9994		
	LN/LN/GND	4.860	(6.028 GND RETURN KA)			
B-T-B17-PRI	3 PHASE:	2.658	2.	Z1= 1.5739	2.771	2.715
	SLG DUTY:	1.543	2.	Z2= 1.5739	1.631	
13800. VOLTS	LN/LN	2.302		Z0= 4.9902		
	LN/LN/GND	2.335	(1.087 GND RETURN KA)			
B-T-B17-SEC	3 PHASE:	12.483	2.	Z1= 22.2356	13.417	12.955
	SLG DUTY:	12.922	3.	Z2= 22.2356	14.034	
208. VOLTS	LN/LN	10.811		Z0= 19.9997		
	LN/LN/GND	12.476	(13.387 GND RETURN KA)			
B-T-B18-PRI	3 PHASE:	2.648	2.	Z1= 1.5802	2.757	2.702
	SLG DUTY:	1.539	2.	Z2= 1.5802	1.625	
13800. VOLTS	LN/LN	2.293		Z0= 5.0021		
	LN/LN/GND	2.325	(1.084 GND RETURN KA)			
B-T-B18-SEC	3 PHASE:	11.909	2.	Z1= 23.3076	12.800	12.359
	SLG DUTY:	12.506	3.	Z2= 23.3076	13.577	
208. VOLTS	LN/LN	10.314		Z0= 19.9997		
	LN/LN/GND	12.005	(13.160 GND RETURN KA)			
B-T-B19-PRI	3 PHASE:	2.920	3.	Z1= 1.4326	3.182	3.053
	SLG DUTY:	1.657	3.	Z2= 1.4326	1.811	
13800. VOLTS	LN/LN	2.529		Z0= 4.7116		
	LN/LN/GND	2.588	(1.156 GND RETURN KA)			
B-T-B19-SEC	3 PHASE:	22.895	4.	Z1= 12.1239	26.891	24.935
	SLG DUTY:	27.539	4.	Z2= 12.1239	31.983	
208. VOLTS	LN/LN	19.827		Z0= 5.9999		
	LN/LN/GND	26.696	(34.536 GND RETURN KA)			
B-T-B2-LED-PRI	3 PHASE:	8.320	1.	Z1= 14.4577	8.375	8.347
	SLG DUTY:	6.511	1.	Z2= 14.4577	6.516	
480. VOLTS	LN/LN	7.205		Z0= 27.5094		
	LN/LN/GND	8.368	(5.255 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B2-LED-SEC3	3 PHASE:	3.480	1.	Z1= 79.7519	3.525	3.503
	SLG DUTY:	3.704	1.	Z2= 79.7519	3.753	
208. VOLTS	LN/LN	3.014		Z0= 65.3330		
	LN/LN/GND	3.591	(3.958 GND RETURN KA)			
B-T-B2-PRI	3 PHASE:	2.949	3.	Z1= 1.4185	3.238	3.095
	SLG DUTY:	1.668	3.	Z2= 1.4185	1.833	
13800. VOLTS	LN/LN	2.554		Z0= 4.6861		
	LN/LN/GND	2.617	(1.163 GND RETURN KA)			
B-T-B2-SEC2	3 PHASE:	7.696	5.	Z1= 36.0651	9.770	8.766
	SLG DUTY:	7.797	5.	Z2= 36.0651	9.924	
208. VOLTS	LN/LN	6.665		Z0= 34.6665		
	LN/LN/GND	7.733	(7.901 GND RETURN KA)			
B-T-B2-SEC3	3 PHASE:	16.649	3.	Z1= 16.6720	18.728	17.704
	SLG DUTY:	19.212	3.	Z2= 16.6720	21.573	
208. VOLTS	LN/LN	14.418		Z0= 9.9999		
	LN/LN/GND	18.394	(22.708 GND RETURN KA)			
B-T-B2-SEC4	3 PHASE:	12.753	5.	Z1= 9.4314	15.818	14.329
	SLG DUTY:	13.109	5.	Z2= 9.4314	16.415	
480. VOLTS	LN/LN	11.045		Z0= 8.6666		
	LN/LN/GND	12.839	(13.483 GND RETURN KA)			
B-T-B22-PRI	3 PHASE:	2.966	3.	Z1= 1.4107	3.268	3.119
	SLG DUTY:	1.676	3.	Z2= 1.4107	1.847	
13800. VOLTS	LN/LN	2.568		Z0= 4.6663		
	LN/LN/GND	2.633	(1.168 GND RETURN KA)			
B-T-B22-SEC	3 PHASE:	8.823	3.	Z1= 13.6328	9.836	9.336
	SLG DUTY:	8.888	3.	Z2= 13.6328	9.913	
480. VOLTS	LN/LN	7.641		Z0= 13.3331		
	LN/LN/GND	8.850	(8.954 GND RETURN KA)			
B-T-B3-PRI	3 PHASE:	2.896	3.	Z1= 1.4445	3.142	3.020
	SLG DUTY:	1.669	3.	Z2= 1.4445	1.831	
13800. VOLTS	LN/LN	2.508		Z0= 4.6332		
	LN/LN/GND	2.558	(1.172 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B3-SEC	3 PHASE:	21.847	3.	Z1= 12.7050	24.528	23.207
	SLG DUTY:	23.517	3.	Z2= 12.7050	26.359	
208. VOLTS	LN/LN	18.920		Z0= 9.9999		
	LN/LN/GND	22.836	(25.462 GND RETURN KA)			
B-T-B30-PRI	3 PHASE:	2.800	2.	Z1= 1.4941	2.979	2.890
	SLG DUTY:	1.604	2.	Z2= 1.4941	1.724	
13800. VOLTS	LN/LN	2.425		Z0= 4.8379		
	LN/LN/GND	2.471	(1.124 GND RETURN KA)			
B-T-B30-SEC	3 PHASE:	4.955	2.	Z1= 56.0234	5.136	5.046
	SLG DUTY:	5.490	2.	Z2= 56.0234	5.768	
208. VOLTS	LN/LN	4.291		Z0= 39.9994		
	LN/LN/GND	5.035	(6.141 GND RETURN KA)			
B-T-B33-PRI	3 PHASE:	3.000	3.	Z1= 1.3947	3.337	3.171
	SLG DUTY:	1.691	3.	Z2= 1.3947	1.875	
13800. VOLTS	LN/LN	2.598		Z0= 4.6326		
	LN/LN/GND	2.667	(1.177 GND RETURN KA)			
B-T-B33-SEC	3 PHASE:	6.302	2.	Z1= 44.0448	6.538	6.420
	SLG DUTY:	6.519	2.	Z2= 44.0448	6.873	
208. VOLTS	LN/LN	5.458		Z0= 39.9994		
	LN/LN/GND	6.114	(6.732 GND RETURN KA)			
B-T-B4-PRI	3 PHASE:	2.834	2.	Z1= 1.4765	3.032	2.934
	SLG DUTY:	1.619	3.	Z2= 1.4765	1.748	
13800. VOLTS	LN/LN	2.454		Z0= 4.8004		
	LN/LN/GND	2.504	(1.133 GND RETURN KA)			
B-T-B4-SEC	3 PHASE:	29.968	4.	Z1= 9.2624	34.935	32.500
	SLG DUTY:	33.964	3.	Z2= 9.2624	39.135	
208. VOLTS	LN/LN	25.953		Z0= 5.9999		
	LN/LN/GND	32.993	(39.178 GND RETURN KA)			
B-T-B5-PRI	3 PHASE:	2.709	2.	Z1= 1.5446	2.845	2.777
	SLG DUTY:	1.563	2.	Z2= 1.5446	1.662	
13800. VOLTS	LN/LN	2.346		Z0= 4.9431		
	LN/LN/GND	2.384	(1.098 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B5-SEC	3 PHASE:	27.790	3.	Z1= 9.9880	30.791	29.310
	SLG DUTY:	27.780	3.	Z2= 9.9880	30.856	
208. VOLTS	LN/LN	24.067		Z0= 9.9999		
	LN/LN/GND	27.677	(27.769 GND RETURN KA)			
B-T-B6-PRI	3 PHASE:	2.741	2.	Z1= 1.5264	2.892	2.817
	SLG DUTY:	1.577	2.	Z2= 1.5264	1.683	
13800. VOLTS	LN/LN	2.374		Z0= 4.9079		
	LN/LN/GND	2.415	(1.107 GND RETURN KA)			
B-T-B6-SEC	3 PHASE:	27.475	3.	Z1= 10.1026	30.536	29.026
	SLG DUTY:	27.569	3.	Z2= 10.1026	30.685	
208. VOLTS	LN/LN	23.794		Z0= 9.9999		
	LN/LN/GND	27.441	(27.663 GND RETURN KA)			
B-T-B60-PRI	3 PHASE:	2.690	2.	Z1= 1.5551	2.816	2.753
	SLG DUTY:	1.557	2.	Z2= 1.5551	1.651	
13800. VOLTS	LN/LN	2.330		Z0= 4.9548		
	LN/LN/GND	2.365	(1.095 GND RETURN KA)			
B-T-B60-SEC	3 PHASE:	7.857	2.	Z1= 35.3285	8.456	8.159
	SLG DUTY:	8.559	3.	Z2= 35.3285	9.295	
208. VOLTS	LN/LN	6.804		Z0= 26.6663		
	LN/LN/GND	8.123	(9.396 GND RETURN KA)			
B-T-B61-PRI	3 PHASE:	2.836	2.	Z1= 1.4754	3.039	2.938
	SLG DUTY:	1.618	3.	Z2= 1.4754	1.747	
13800. VOLTS	LN/LN	2.456		Z0= 4.8061		
	LN/LN/GND	2.506	(1.132 GND RETURN KA)			
B-T-B61-SEC	3 PHASE:	14.658	3.	Z1= 18.9367	16.406	15.545
	SLG DUTY:	16.262	3.	Z2= 18.9367	18.189	
208. VOLTS	LN/LN	12.694		Z0= 13.3331		
	LN/LN/GND	15.640	(18.260 GND RETURN KA)			
B-T-B62-PRI	3 PHASE:	2.868	3.	Z1= 1.4586	3.094	2.982
	SLG DUTY:	1.632	3.	Z2= 1.4586	1.771	
13800. VOLTS	LN/LN	2.484		Z0= 4.7715		
	LN/LN/GND	2.538	(1.141 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B62-SEC	3 PHASE:	27.003	3.	Z1= 10.2794	30.072	28.559
	SLG DUTY:	27.250	3.	Z2= 10.2794	30.371	
208. VOLTS	LN/LN	23.385		Z0= 9.9999		
	LN/LN/GND	27.087	(27.501 GND RETURN KA)			
B-T-B7-PRI	3 PHASE:	2.784	2.	Z1= 1.5028	2.957	2.871
	SLG DUTY:	1.596	2.	Z2= 1.5028	1.711	
13800. VOLTS	LN/LN	2.411		Z0= 4.8612		
	LN/LN/GND	2.456	(1.118 GND RETURN KA)			
B-T-B7-SEC	3 PHASE:	21.081	3.	Z1= 13.1670	23.470	22.292
	SLG DUTY:	20.993	3.	Z2= 13.1670	23.393	
208. VOLTS	LN/LN	18.257		Z0= 13.3331		
	LN/LN/GND	21.000	(20.905 GND RETURN KA)			
B-T-B70-PRI	3 PHASE:	2.879	3.	Z1= 1.4531	3.110	2.995
	SLG DUTY:	1.638	3.	Z2= 1.4531	1.779	
13800. VOLTS	LN/LN	2.493		Z0= 4.7572		
	LN/LN/GND	2.548	(1.144 GND RETURN KA)			
B-T-B70-SEC	3 PHASE:	17.708	3.	Z1= 15.6750	19.859	18.799
	SLG DUTY:	20.138	3.	Z2= 15.6750	22.560	
208. VOLTS	LN/LN	15.336		Z0= 9.9999		
	LN/LN/GND	19.281	(23.342 GND RETURN KA)			
B-T-B78-PRI	3 PHASE:	2.874	3.	Z1= 1.4555	3.104	2.990
	SLG DUTY:	1.663	3.	Z2= 1.4555	1.820	
13800. VOLTS	LN/LN	2.489		Z0= 4.6386		
	LN/LN/GND	2.535	(1.170 GND RETURN KA)			
B-T-B78-SEC	3 PHASE:	41.836	5.	Z1= 6.6348	51.536	46.818
	SLG DUTY:	51.225	4.	Z2= 6.6348	61.739	
208. VOLTS	LN/LN	36.231		Z0= 3.0000		
	LN/LN/GND	50.215	(65.999 GND RETURN KA)			
B-T-B8-2-SEC	3 PHASE:	9.414	3.	Z1= 12.7767	10.502	9.966
	SLG DUTY:	9.279	3.	Z2= 12.7767	10.354	
480. VOLTS	LN/LN	8.153		Z0= 13.3331		
	LN/LN/GND	9.342	(9.148 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B8-PRI	3 PHASE:	2.885	3.	Z1= 1.4504	3.121	3.004
	SLG DUTY:	1.640	3.	Z2= 1.4504	1.783	
13800. VOLTS	LN/LN	2.498		Z0= 4.7544		
	LN/LN/GND	2.554	(1.145 GND RETURN KA)			
B-T-B8-SEC	3 PHASE:	20.304	3.	Z1= 13.6708	22.583	21.459
	SLG DUTY:	20.473	3.	Z2= 13.6708	22.798	
208. VOLTS	LN/LN	17.584		Z0= 13.3331		
	LN/LN/GND	20.355	(20.644 GND RETURN KA)			
B-T-B80-PRI	3 PHASE:	2.817	2.	Z1= 1.4853	3.005	2.912
	SLG DUTY:	1.612	2.	Z2= 1.4853	1.736	
13800. VOLTS	LN/LN	2.439		Z0= 4.8177		
	LN/LN/GND	2.487	(1.129 GND RETURN KA)			
B-T-B80-SEC	3 PHASE:	12.568	2.	Z1= 22.0849	13.538	13.058
	SLG DUTY:	12.982	3.	Z2= 22.0849	14.124	
208. VOLTS	LN/LN	10.885		Z0= 19.9997		
	LN/LN/GND	12.562	(13.418 GND RETURN KA)			
B-T-B81-PRI	3 PHASE:	2.738	2.	Z1= 1.5282	2.885	2.812
	SLG DUTY:	1.618	2.	Z2= 1.5282	1.744	
13800. VOLTS	LN/LN	2.371		Z0= 4.7059		
	LN/LN/GND	2.398	(1.148 GND RETURN KA)			
B-T-B81-SEC	3 PHASE:	4.759	2.	Z1= 58.3271	4.932	4.846
	SLG DUTY:	5.329	2.	Z2= 58.3271	5.595	
208. VOLTS	LN/LN	4.121		Z0= 39.9994		
	LN/LN/GND	4.877	(6.039 GND RETURN KA)			
B-T-B82-PRI	3 PHASE:	2.867	2.	Z1= 1.4593	3.088	2.978
	SLG DUTY:	1.633	3.	Z2= 1.4593	1.772	
13800. VOLTS	LN/LN	2.483		Z0= 4.7659		
	LN/LN/GND	2.536	(1.142 GND RETURN KA)			
B-T-B82-SEC	3 PHASE:	7.838	2.	Z1= 35.4150	8.448	8.146
	SLG DUTY:	8.544	3.	Z2= 35.4150	9.289	
208. VOLTS	LN/LN	6.788		Z0= 26.6663		
	LN/LN/GND	8.114	(9.387 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B9-PRI	3 PHASE:	2.804	2.	Z1= 1.4920	2.987	2.896
	SLG DUTY:	1.644	3.	Z2= 1.4920	1.786	
13800. VOLTS	LN/LN	2.428		Z0= 4.6553		
	LN/LN/GND	2.463	(1.162 GND RETURN KA)			
B-T-B9-SEC	3 PHASE:	18.730	3.	Z1= 14.8200	20.791	19.774
	SLG DUTY:	19.378	3.	Z2= 14.8200	21.548	
208. VOLTS	LN/LN	16.220		Z0= 13.3331		
	LN/LN/GND	19.026	(20.072 GND RETURN KA)			
B0B70-LP2	3 PHASE:	5.375	1.	Z1= 51.6377	5.377	5.376
	SLG DUTY:	3.620	1.	Z2= 51.6377	3.620	
208. VOLTS	LN/LN	4.655		Z0= 128.3897		
	LN/LN/GND	5.101	(2.711 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
BUS-0739	3 PHASE:	13.686	2.	Z1= 20.2811	14.615	14.155
	SLG DUTY:	12.145	2.	Z2= 20.2811	12.707	
208. VOLTS	LN/LN	11.853		Z0= 28.1364		
	LN/LN/GND	13.497	(10.895 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
bB-B7-MC1	3 PHASE:	4.164	1.	Z1= 66.6610	4.164	4.164
	SLG DUTY:	2.572	0.	Z2= 66.6610	2.572	
208. VOLTS	LN/LN	3.606		Z0= 191.3778		
	LN/LN/GND	3.839	(	1.856 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
B-B1-MDP	208.	4.408	1.76	4.518	1.75
B-B1-MDP-M	208.	4.691	1.82	5.000	1.90
B-B10 DISC	208.	5.764	1.80	5.763	1.90
B-B10-MDP	208.	5.315	1.69	5.088	1.68
B-B12-MAP-M	208.	4.282	1.84	4.485	1.91
B-B12-MDP	208.	4.276	1.84	4.469	1.90
B-B13-APT-13	240.	6.468	1.38	0.000	1.00
B-B13-APT-14	240.	5.954	2.07	0.000	1.00
B-B13-APT-15	240.	4.595	2.08	0.000	1.00
B-B13-GARAGE	240.	4.792	1.23	0.000	1.00
B-B13-MDP	240.	8.713	2.39	0.000	1.00
B-B13-MDP-M	240.	8.720	2.39	0.000	1.00
B-B13-MGR H16	240.	2.562	0.91	0.000	1.00
B-B13-TXMR SEC	240.	11.190	2.94	0.000	1.00
B-B13-UNKNOWN	240.	6.468	1.38	0.000	1.00
B-B17-A/C	208.	7.926	1.66	6.635	1.40
B-B17-A/C-2	208.	7.115	1.25	5.615	0.98
B-B17-AC1	208.	7.115	1.25	5.615	0.98
B-B17-ACB	208.	6.481	1.02	4.890	0.78
B-B17-ANIMALRM	208.	4.462	0.69	3.037	0.52
B-B17-ATS	208.	9.598	1.65	8.570	1.38
B-B17-DP	208.	8.796	1.84	7.674	1.60
B-B17-EMAIN	208.	10.717	2.04	10.186	1.86
B-B17-EMERG	208.	9.262	1.56	8.116	1.28
B-B17-MAIN	208.	11.023	2.17	10.651	2.06
B-B17-NEB1	208.	4.013	0.64	2.681	0.48
B-B17-NEB2	208.	5.722	0.77	4.078	0.57
B-B17-NP11	208.	5.609	0.80	4.001	0.59
B-B17-NP12	208.	7.818	1.60	6.496	1.34
B-B17-NP21	208.	7.115	1.25	5.615	0.98
B-B17-NP22	208.	7.115	1.25	5.615	0.98
B-B17-NPA1	208.	7.115	1.25	5.615	0.98
B-B17-NPB1	208.	7.690	1.52	6.330	1.26
B-B17-NPB2	208.	7.115	1.25	5.615	0.98
B-B18-1STFL	208.	5.924	0.89	4.368	0.66
B-B18-1STFL-M	208.	7.246	1.10	5.753	0.83
B-B18-2ND-FL-M	208.	7.246	1.10	5.753	0.83

B-B18-2NDFL	208.	4.975	0.76	3.498	0.56
B-B18-AC1	208.	6.997	0.95	5.391	0.69
B-B18-AC2	208.	8.895	1.65	7.911	1.37
B-B18-ATS-EMRG	208.	7.979	1.23	6.606	0.94
B-B18-EMERG	208.	7.146	1.09	5.629	0.82
B-B18-EMERG-M	208.	7.168	1.09	5.665	0.82
B-B18-NCP	208.	9.778	1.76	9.093	1.49

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
B-B18-NMDP	208.	10.780	2.30	10.675	2.25
B-B18-NMDP-M	208.	10.803	2.31	10.732	2.27
B-B18-NP11	208.	6.997	0.95	5.391	0.69
B-B18-NP12	208.	6.997	0.95	5.391	0.69
B-B18-NP21	208.	7.598	1.06	6.073	0.78
B-B18-NP22	208.	8.313	1.43	7.106	1.14
B-B18-NP23	208.	9.098	1.78	8.219	1.52
B-B18-STRT LHT	208.	4.688	0.57	3.173	0.39
B-B18-TAP BOX	208.	7.487	1.15	6.031	0.87
B-B19-200A PNL	208.	18.043	2.69	18.238	2.09
B-B19-B1	208.	16.079	1.78	14.678	1.23
B-B19-L1	208.	2.634	0.41	1.607	0.32
B-B19-L2	208.	7.374	0.81	5.049	0.58
B-B19-MDP1	208.	20.154	3.27	21.962	2.75
B-B19-MDP1-M	208.	20.182	3.28	22.051	2.78
B-B19-MDP2	208.	19.126	3.12	20.165	2.58
B-B19-MDP2-M	208.	19.457	3.17	20.742	2.64
B-B19-MDPA	208.	10.564	2.21	8.633	1.74
B-B19-P1	208.	10.564	2.21	8.633	1.74
B-B19-P2	208.	9.053	1.18	6.688	0.86
B-B19-P4	208.	16.873	2.19	16.164	1.60
B-B19-P6	208.	3.012	0.55	1.874	0.43
B-B19-PS	208.	4.843	0.53	3.072	0.38
B-B2-ATS-CRIT	208.	14.058	2.61	13.421	2.00
B-B2-ATS-LED3	208.	3.313	1.38	3.408	1.34
B-B2-ATS-LS	208.	14.376	2.69	14.043	2.15
B-B2-BATTERYCH	208.	3.876	0.40	2.410	0.27
B-B2-CATSCAN	480.	9.340	1.73	7.898	1.24
B-B2-CRIT PNL	208.	13.815	2.54	12.988	1.90
B-B2-DENTAL LB	208.	7.797	0.92	5.552	0.64
B-B2-DENTSUCPM	208.	7.467	1.22	5.013	0.66
B-B2-ELEV	208.	10.539	1.83	8.638	1.31
B-B2-ELEV-P1	208.	7.988	1.75	5.726	1.11
B-B2-EMERG-M	208.	3.257	1.37	3.313	1.31
B-B2-EMERG-PNL	208.	3.252	1.36	3.301	1.30
B-B2-L12	208.	9.312	1.47	7.334	1.07
B-B2-L2A	208.	9.299	1.48	7.290	1.07

B-B2-L2E	208.	9.312	1.47	7.334	1.07
B-B2-L4	208.	9.865	1.54	8.014	1.14
B-B2-L6	208.	9.865	1.54	8.014	1.14
B-B2-L7	208.	9.865	1.54	8.014	1.14

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B2-L8	208.	9.865	1.54	8.014	1.14
B-B2-L9E	208.	8.308	1.12	6.163	0.80
B-B2-LB1E	208.	8.308	1.12	6.163	0.80
B-B2-LB2	208.	9.865	1.54	8.014	1.14
B-B2-LB2E	208.	6.937	0.82	4.794	0.58
B-B2-LED-3	208.	3.409	1.43	3.577	1.42
B-B2-MDP	480.	12.674	4.67	12.966	4.75
B-B2-MDP-M	480.	12.678	4.68	12.977	4.77
B-B2-MDPA	208.	7.615	5.15	7.672	5.09
B-B2-MDPA-M	208.	7.656	5.23	7.734	5.22
B-B2-MDPB	208.	14.942	2.93	15.075	2.49
B-B2-MDPB-M	208.	15.041	2.94	15.293	2.52
B-B2-MEDAIRCOM	208.	7.203	0.98	4.894	0.61
B-B2-NEWLAB	208.	3.216	1.34	3.240	1.27
B-B2-NEWLAB-M	208.	3.221	1.34	3.252	1.27
B-B2-PNL 1	208.	3.257	1.37	3.313	1.31
B-B2-PNL LS	208.	13.843	2.51	13.115	1.92
B-B2-PNL-2	208.	3.269	1.35	3.331	1.28
B-B2-PNL-3-M	208.	3.209	1.32	3.227	1.23
B-B2-PNL-D2	208.	6.103	3.64	5.546	3.02
B-B2-PNL-L11	208.	9.524	1.59	7.391	1.10
B-B2-PNL-M1	208.	3.110	1.26	3.060	1.14
B-B2-PNL-P	480.	9.556	3.26	8.279	2.61
B-B2-POD2PP	208.	9.721	1.64	7.841	1.21
B-B2-TEL COMM	208.	9.865	1.54	8.014	1.14
B-B2-UNIT-1	480.	8.552	2.37	7.048	1.82
B-B2-UNIT-2	480.	9.037	2.73	7.632	2.12
B-B2-XRAY	208.	1.913	0.19	1.141	0.13
B-B2-XRAY-124	480.	6.276	1.51	4.751	1.14
B-B2-XRAY124	208.	8.055	0.98	5.895	0.70
B-B21-P1	208.	3.182	0.61	2.001	0.48
B-B21-P2	208.	5.464	0.94	3.693	0.72
B-B22-ATS-EMER	480.	6.565	2.46	5.791	2.17
B-B22-EMERG	480.	6.237	2.40	5.398	2.09
B-B22-EMERG-M	480.	6.243	2.40	5.410	2.10
B-B22-L1	208.	2.818	1.57	2.963	1.50
B-B22-L1-M	208.	2.822	1.57	2.973	1.50

B-B22-L2	208.	2.818	1.57	2.963	1.50
B-B22-L2-M	208.	2.822	1.57	2.973	1.50
B-B22-L3	208.	2.826	1.57	2.969	1.50
B-B22-L3-M	208.	2.829	1.58	2.978	1.51

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B22-MDP	480.	7.015	2.55	6.347	2.28
B-B22-MDP-M	480.	7.018	2.55	6.354	2.29
B-B22-N1	208.	4.797	1.78	4.752	1.65
B-B22-N1-M	208.	4.805	1.78	4.771	1.66
B-B22-P1	480.	5.998	2.26	5.111	1.93
B-B22-P2	480.	5.998	2.26	5.111	1.93
B-B22-T1-PRI	480.	6.893	2.48	6.188	2.19
B-B22-T1-SEC	208.	5.085	1.80	5.214	1.69
B-B22-T2-PRI	480.	6.099	2.26	5.225	1.93
B-B22-T2-SEC	208.	2.907	1.61	3.120	1.57
B-B22-T22-SEC	208.	2.900	1.60	3.114	1.57
B-B22-T3 PRI	480.	6.032	2.20	5.141	1.87
B-B22-T4-PRI	480.	6.032	2.20	5.141	1.87
B-B22-T4-SEC	208.	2.900	1.60	3.114	1.57
B-B27-SWGR	13800.	3.034	3.10	1.706	2.99
B-B27-SWGR-M2	13800.	3.034	3.10	1.706	2.99
B-B3-1ST FL	208.	10.403	1.34	7.845	1.03
B-B3-ALDN KIT	208.	7.858	0.73	5.157	0.54
B-B3-ATS-COMP	208.	16.814	2.73	14.659	2.18
B-B3-ATSTEL RM	208.	15.372	2.56	13.624	2.17
B-B3-COMP	208.	9.184	1.03	6.346	0.77
B-B3-COMP AC	208.	3.052	0.25	1.823	0.18
B-B3-COMP MF	208.	12.305	1.94	9.198	1.36
B-B3-DBL GRILL	208.	8.786	1.22	6.373	0.94
B-B3-ELEV	208.	10.803	1.47	7.553	0.95
B-B3-EP1	208.	14.612	2.50	12.665	2.11
B-B3-EP1-M	208.	14.681	2.52	12.800	2.13
B-B3-EP2	208.	15.856	2.69	13.224	2.08
B-B3-EP2-M	208.	15.912	2.70	13.359	2.10
B-B3-FRZN FOOD	208.	8.549	0.58	5.692	0.39
B-B3-HYDRO ELV	208.	8.100	1.31	5.240	0.80
B-B3-KP1	208.	9.781	1.58	7.420	1.25
B-B3-MDP	208.	20.084	2.92	20.043	2.62
B-B3-MDP-M	208.	20.112	2.93	20.133	2.65
B-B3-MECH HVAC	208.	10.377	1.18	7.386	0.88
B-B3-MECH RM	208.	12.328	1.88	9.469	1.44
B-B3-P3	208.	12.908	1.50	10.359	1.13

B-B3-P7	208.	9.172	1.03	6.564	0.77
B-B3-STRT LTS	208.	8.549	0.58	5.692	0.39
B-B3-STRT PNL	208.	11.854	1.40	8.777	1.04
B-B3-TELE PNL	208.	11.556	1.83	9.194	1.46

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
B-B3-TRAY LINE	208.	10.377	1.18	7.386	0.88
B-B33-MDP	208.	4.855	1.58	4.382	1.48
B-B33-MDP-M	208.	4.863	1.58	4.399	1.48
B-B4-4EQD	208.	22.341	2.71	19.753	1.98
B-B4-4EQD-M	208.	22.471	2.73	20.068	2.01
B-B4-ATS-EQ	208.	25.173	2.91	24.143	2.18
B-B4-ATS-LS	208.	22.121	2.15	19.855	1.55
B-B4-BUS	208.	28.372	3.44	30.672	3.06
B-B4-ELEV#4	208.	9.409	1.25	6.070	0.77
B-B4-EQ1	208.	13.653	1.27	9.935	0.92
B-B4-EQ10	208.	9.300	0.96	6.268	0.72
B-B4-EQ11	208.	11.316	1.09	7.888	0.81
B-B4-EQ12	208.	7.761	0.87	5.108	0.67
B-B4-EQ15	208.	8.773	0.93	5.864	0.70
B-B4-EQ2	208.	18.024	1.76	14.379	1.26
B-B4-EQ3	208.	10.661	1.04	7.348	0.78
B-B4-EQ5	208.	10.979	1.07	7.609	0.79
B-B4-EQ6	208.	13.817	1.28	10.088	0.93
B-B4-EQ7	208.	8.917	0.94	5.974	0.71
B-B4-EQ9	208.	7.046	0.83	4.589	0.64
B-B4-HYDROELEV	208.	8.767	1.41	5.390	0.70
B-B4-JBOX	208.	27.783	3.20	28.698	2.51
B-B4-LP1	208.	13.521	1.38	10.094	1.02
B-B4-LP1-M	208.	13.600	1.39	10.210	1.02
B-B4-LP10	208.	10.688	1.22	7.596	0.92
B-B4-LP10-M	208.	10.737	1.22	7.662	0.92
B-B4-LP11	208.	12.953	1.35	9.571	1.00
B-B4-LP11-M	208.	13.025	1.35	9.676	1.00
B-B4-LP12	208.	14.139	1.42	10.675	1.04
B-B4-LP12-M	208.	14.225	1.43	10.805	1.05
B-B4-LP13	208.	10.688	1.22	7.596	0.92
B-B4-LP13-M	208.	10.737	1.22	7.662	0.92
B-B4-LP14	208.	9.366	1.15	6.515	0.88
B-B4-LP14-M	208.	9.404	1.15	6.564	0.88
B-B4-LP15	208.	6.861	0.65	4.382	0.49
B-B4-LP15-M	208.	6.882	0.65	4.403	0.48
B-B4-LP2	208.	19.340	1.84	16.196	1.32

B-B4-LP2-M	208.	19.493	1.85	16.487	1.33
B-B4-LP3	208.	19.340	1.84	16.196	1.32
B-B4-LP3-M	208.	19.493	1.85	16.487	1.33
B-B4-LP4	208.	12.953	1.35	9.571	1.00

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
B-B4-LP4-M	208.	13.025	1.35	9.676	1.00
B-B4-LP5	208.	12.429	1.31	9.099	0.98
B-B4-LP5-M	208.	12.495	1.32	9.194	0.98
B-B4-LP6	208.	15.552	1.52	12.058	1.10
B-B4-LP6-M	208.	15.654	1.53	12.223	1.11
B-B4-LP7	208.	15.552	1.52	12.058	1.10
B-B4-LP7-M	208.	15.654	1.53	12.223	1.11
B-B4-LP8	208.	12.429	1.31	9.099	0.98
B-B4-LP8-M	208.	12.495	1.32	9.194	0.98
B-B4-LP9	208.	10.688	1.22	7.596	0.92
B-B4-LP9-M	208.	10.737	1.22	7.662	0.92
B-B4-LS1	208.	8.538	0.79	5.639	0.59
B-B4-LS1-M	208.	8.571	0.79	5.675	0.59
B-B4-LS10	208.	5.441	0.64	3.435	0.50
B-B4-LS10-M	208.	5.454	0.64	3.448	0.50
B-B4-LS11	208.	6.299	0.68	4.023	0.52
B-B4-LS11-M	208.	6.316	0.68	4.041	0.52
B-B4-LS12	208.	7.166	0.72	4.634	0.55
B-B4-LS12-M	208.	7.189	0.72	4.659	0.55
B-B4-LS13	208.	7.344	0.73	4.762	0.55
B-B4-LS13-M	208.	7.368	0.73	4.788	0.55
B-B4-LS14	208.	7.344	0.73	4.762	0.55
B-B4-LS14-M	208.	7.368	0.73	4.788	0.55
B-B4-LS2	208.	12.679	1.05	9.010	0.75
B-B4-LS2-M	208.	12.750	1.05	9.104	0.75
B-B4-LS3	208.	15.790	1.31	11.982	0.93
B-B4-LS3-M	208.	15.897	1.32	12.147	0.93
B-B4-LS4	208.	9.949	0.87	6.725	0.64
B-B4-LS4-M	208.	9.993	0.87	6.777	0.64
B-B4-LS5	208.	6.210	0.68	3.961	0.52
B-B4-LS5-M	208.	6.227	0.68	3.979	0.52
B-B4-LS6	208.	7.344	0.73	4.762	0.55
B-B4-LS6-M	208.	7.368	0.73	4.788	0.55
B-B4-LS7	208.	8.538	0.79	5.639	0.59
B-B4-LS7-M	208.	8.571	0.79	5.675	0.59
B-B4-LS8	208.	8.789	0.81	5.827	0.60
B-B4-LS8-M	208.	8.823	0.81	5.866	0.60

B-B4-LS9	208.	8.789	0.81	5.827	0.60
B-B4-LS9-M	208.	8.823	0.81	5.866	0.60
B-B4-LSD	208.	20.563	1.97	17.682	1.41
B-B4-LSD-M	208.	20.733	1.98	18.026	1.43

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B4-MDP	208.	27.397	3.15	27.957	2.45
B-B4-MDP-M	208.	27.426	3.16	28.048	2.47
B-B4-PP1	208.	15.898	1.73	12.323	1.26
B-B4-PP2	208.	6.861	0.65	4.382	0.49
B-B4-PP2-M	208.	6.882	0.65	4.403	0.48
B-B5-ATS-EQ	208.	15.937	2.14	12.156	1.67
B-B5-ATS-LS	208.	15.089	1.56	11.516	1.23
B-B5-EQ1	208.	9.419	1.07	6.327	0.83
B-B5-EQ2	208.	9.144	1.04	6.113	0.81
B-B5-EQ5	208.	9.419	1.07	6.327	0.83
B-B5-EQ6	208.	8.787	1.24	5.638	0.83
B-B5-EQD	208.	15.486	2.14	11.694	1.66
B-B5-HYDR ELEV	208.	11.608	1.48	7.963	1.05
B-B5-LP1	208.	14.869	1.55	11.265	1.21
B-B5-LP1-M	208.	14.945	1.55	11.378	1.22
B-B5-LP2	208.	12.378	1.36	8.994	1.08
B-B5-LP2-M	208.	12.431	1.37	9.067	1.08
B-B5-LP3	208.	12.478	1.37	9.082	1.08
B-B5-LP3-M	208.	12.532	1.37	9.156	1.08
B-B5-LP4	208.	10.654	1.26	7.532	1.00
B-B5-LP4-M	208.	10.694	1.26	7.583	1.00
B-B5-LP5	208.	12.979	1.04	9.213	0.79
B-B5-LP5-M	208.	13.038	1.04	9.289	0.78
B-B5-LS1	208.	10.848	1.09	7.575	0.85
B-B5-LS2	208.	6.864	0.79	4.464	0.62
B-B5-LS4	208.	5.948	0.73	3.813	0.58
B-B5-LSD	208.	14.324	1.50	10.751	1.18
B-B5-LSD-M	208.	14.395	1.51	10.854	1.18
B-B5-MDP	208.	21.002	2.20	17.870	1.79
B-B5-MDP-M	208.	21.041	2.21	17.954	1.80
B-B5-NEXTEL	208.	13.067	1.30	9.553	1.01
B-B5-PNL-H	208.	15.764	1.62	12.129	1.27
B-B5-PNL-H-M	208.	15.849	1.62	12.260	1.28
B-B5-STRT LGHT	208.	9.653	0.65	6.335	0.48
B-B5-TEMP TRAI	208.	11.891	1.22	8.518	0.95
B-B55-LS3	208.	8.799	0.92	5.914	0.72
B-B6-ATS-EQ	208.	15.769	2.32	12.240	1.85

B-B6-ATS-LS	208.	16.101	1.66	12.717	1.32
B-B6-EQ1	208.	11.628	1.46	8.216	1.13
B-B6-EQ2	208.	8.952	1.21	6.071	0.95
B-B6-EQ3	208.	11.011	1.49	7.751	1.16

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B6-EQ4	208.	7.712	1.08	5.121	0.85
B-B6-EQ5	208.	9.245	1.24	6.302	0.98
B-B6-EQ8	208.	9.716	2.03	6.433	1.27
B-B6-EQD	208.	14.347	2.27	10.776	1.76
B-B6-EQD-M	208.	14.365	2.27	10.806	1.77
B-B6-EQMACH	208.	11.628	1.46	8.216	1.13
B-B6-LP1	208.	11.281	0.95	7.883	0.73
B-B6-LP1-M	208.	11.297	0.95	7.903	0.73
B-B6-LP2	208.	12.662	1.04	9.083	0.79
B-B6-LP2-M	208.	12.681	1.05	9.110	0.80
B-B6-LP3	208.	13.934	1.48	10.555	1.17
B-B6-LP3-M	208.	13.955	1.48	10.589	1.18
B-B6-LP4	208.	14.317	1.51	10.922	1.20
B-B6-LP4-M	208.	14.340	1.51	10.958	1.20
B-B6-LP5	208.	11.805	1.33	8.610	1.06
B-B6-LP5-M	208.	11.821	1.34	8.633	1.06
B-B6-LP6	208.	12.083	1.35	8.856	1.07
B-B6-LP6-M	208.	12.100	1.35	8.880	1.07
B-B6-LP7	208.	17.406	1.48	13.812	1.14
B-B6-LP7-M	208.	17.440	1.48	13.871	1.15
B-B6-LS1	208.	9.677	0.98	6.664	0.77
B-B6-LS2	208.	11.860	1.10	8.480	0.85
B-B6-LS3	208.	9.677	0.98	6.664	0.77
B-B6-LS4	208.	9.677	0.98	6.664	0.77
B-B6-LS5	208.	7.989	0.85	5.330	0.67
B-B6-LS6	208.	7.989	0.85	5.330	0.67
B-B6-LSD	208.	14.861	1.55	11.451	1.23
B-B6-LSD-M	208.	14.885	1.56	11.490	1.24
B-B6-MACH SHOP	208.	12.543	1.26	9.186	0.99
B-B6-MDP	208.	22.838	2.55	20.611	2.23
B-B6-MDP-M	208.	22.883	2.57	20.716	2.25
B-B6-P6-CS	208.	15.432	1.49	11.945	1.17
B-B60-MDP	208.	7.199	2.37	7.410	2.34
B-B60-MDP-M	208.	7.216	2.38	7.455	2.36
B-B61 STRT LGH	208.	7.348	0.83	5.336	0.56
B-B61-ATS-EQD	208.	11.548	2.68	10.825	2.27
B-B61-ATS-LSD	208.	11.155	2.15	10.346	1.72

B-B61-COMP RM	208.	9.385	2.10	7.961	1.66
B-B61-DP	208.	11.303	2.59	10.677	2.24
B-B61-ELEV	208.	7.848	2.01	5.972	1.37
B-B61-EQ1	208.	7.559	1.43	5.844	1.08

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B61-EQ2	208.	9.653	2.03	8.236	1.58
B-B61-EQ4	208.	7.464	1.31	5.694	0.98
B-B61-EQA	208.	10.567	2.50	9.436	2.04
B-B61-EQD	208.	10.834	2.61	9.788	2.16
B-B61-KITCHEN	208.	8.389	1.59	6.840	1.22
B-B61-LP1	208.	4.133	0.73	2.750	0.55
B-B61-LP2	208.	4.133	0.73	2.750	0.55
B-B61-LP3	208.	7.677	1.49	6.091	1.14
B-B61-LP4	208.	9.179	1.83	7.819	1.44
B-B61-LP5	208.	6.227	0.70	4.314	0.48
B-B61-LS1	208.	6.080	0.99	4.376	0.74
B-B61-LS2	208.	7.717	1.13	5.902	0.82
B-B61-LS3	208.	5.372	0.90	3.757	0.67
B-B61-LS4	208.	6.080	0.99	4.376	0.74
B-B61-LS5	208.	5.372	0.90	3.757	0.67
B-B61-LSD	208.	10.607	2.01	9.550	1.58
B-B61-LSD-M	208.	10.652	2.02	9.647	1.60
B-B61-MCC	208.	7.348	0.83	5.336	0.56
B-B61-MDP	208.	13.332	2.89	13.730	2.66
B-B61-MDP-M	208.	13.355	2.90	13.799	2.69
B-B62-A	208.	14.398	1.37	11.019	1.07
B-B62-ATS-EQD	208.	19.128	2.00	16.044	1.58
B-B62-ATS-LSD	208.	18.797	1.90	15.878	1.54
B-B62-ATTC PNL	208.	9.997	1.06	6.912	0.82
B-B62-B	208.	15.211	1.43	11.835	1.12
B-B62-BL	208.	10.474	0.81	7.184	0.61
B-B62-BP	208.	13.335	1.06	9.760	0.80
B-B62-ELEV-1	208.	9.997	1.06	6.912	0.82
B-B62-ELEV-2	208.	10.449	1.33	7.072	0.88
B-B62-EQ	208.	14.832	1.44	11.197	1.08
B-B62-EQD	208.	16.453	1.77	12.954	1.34
B-B62-KP	208.	13.465	1.17	9.998	0.90
B-B62-LP1	208.	13.922	1.10	10.317	0.83
B-B62-LP2	208.	13.465	1.17	9.998	0.90
B-B62-LP3	208.	14.644	1.52	11.370	1.20
B-B62-LP4	208.	15.213	1.56	11.944	1.24
B-B62-LS1	208.	6.779	0.64	4.369	0.50

B-B62-LS2	208.	10.171	0.89	6.999	0.68
B-B62-LS3	208.	8.067	0.84	5.394	0.65
B-B62-LS4	208.	10.458	1.01	7.324	0.78
B-B62-LSD	208.	15.878	1.61	12.568	1.28

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
B-B62-LSD-M	208.	15.984	1.62	12.743	1.29
B-B62-MDP	208.	24.230	2.74	22.967	2.54
B-B62-MDP-M	208.	24.270	2.76	23.065	2.57
B-B62-OT	208.	12.155	0.91	8.611	0.68
B-B62-PAD RM	208.	13.082	1.27	9.542	0.96
B-B62-STRT LGT	208.	10.390	0.64	6.949	0.46
B-B7-ATS-EQ	208.	10.961	2.39	8.303	1.95
B-B7-ATS-LS	208.	10.030	1.88	7.481	1.53
B-B7-ELEV	208.	7.582	1.98	5.132	1.40
B-B7-EQ1	208.	7.290	1.44	5.024	1.16
B-B7-EQ2	208.	8.901	1.89	6.384	1.51
B-B7-EQ4	208.	7.678	1.45	5.315	1.15
B-B7-EQD	208.	9.929	2.34	7.308	1.88
B-B7-LP2	208.	9.435	1.85	6.946	1.50
B-B7-LP2-M	208.	9.471	1.85	6.998	1.51
B-B7-LP3	208.	7.205	1.42	5.036	1.16
B-B7-LP3-M	208.	7.227	1.43	5.065	1.16
B-B7-LP4	208.	9.435	1.85	6.946	1.50
B-B7-LP4-M	208.	9.471	1.85	6.998	1.51
B-B7-LP5	208.	7.205	1.42	5.036	1.16
B-B7-LP5-M	208.	7.227	1.43	5.065	1.16
B-B7-LP6	208.	6.589	1.35	4.547	1.10
B-B7-LP6-M	208.	6.608	1.35	4.570	1.10
B-B7-LP7	208.	8.495	1.70	6.133	1.38
B-B7-LP7-M	208.	8.525	1.70	6.174	1.39
B-B7-LP8	208.	6.589	1.35	4.547	1.10
B-B7-LP8-M	208.	6.608	1.35	4.570	1.10
B-B7-LS1	208.	6.111	1.03	4.088	0.83
B-B7-LS2	208.	7.664	1.20	5.302	0.95
B-B7-LS4	208.	5.843	0.99	3.884	0.80
B-B7-LS5	208.	7.331	1.23	5.062	0.98
B-B7-LSD	208.	9.690	1.81	7.150	1.47
B-B7-LSD-M	208.	9.728	1.82	7.206	1.48
B-B7-MCC-1	208.	7.771	1.25	5.314	0.99
B-B7-MCC-2	208.	9.115	1.17	6.428	0.92
B-B7-MDP	208.	12.258	2.46	9.619	2.05
B-B7-MDP-M	208.	12.278	2.46	9.655	2.06

B-B7-SRTLGHT-M	208.	6.941	0.82	4.595	0.64
B-B7-STRT LGHT	208.	6.920	0.82	4.571	0.64
B-B70 -BLDG-71	208.	1.090	0.36	0.653	0.29
B-B70-A	208.	9.076	1.19	6.923	0.87

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B70-ATS-EQD	208.	13.283	2.60	12.308	2.16
B-B70-ATS-LSD	208.	12.644	2.28	11.393	1.82
B-B70-ATTIC	208.	7.943	1.05	5.812	0.77
B-B70-B	208.	9.076	1.19	6.923	0.87
B-B70-CHLLR	208.	7.403	3.12	4.855	1.63
B-B70-EQ1	208.	6.612	1.09	4.721	0.83
B-B70-EQ2	208.	5.198	0.94	3.547	0.72
B-B70-EQ3	208.	6.067	1.03	4.254	0.79
B-B70-EQ4	208.	4.848	0.90	3.273	0.70
B-B70-EQ5	208.	5.601	0.98	3.869	0.75
B-B70-EQ6	208.	4.541	0.87	3.038	0.68
B-B70-EQD	208.	12.575	2.49	11.336	2.04
B-B70-EQD-M	208.	12.626	2.50	11.444	2.06
B-B70-FIRE PMP	208.	3.845	0.85	2.198	0.33
B-B70-FP-TAP	208.	14.274	2.70	13.909	2.38
B-B70-FPMP M	208.	13.269	2.45	12.337	2.04
B-B70-K	208.	7.001	0.71	4.790	0.49
B-B70-LP-4	208.	5.904	1.21	4.204	0.94
B-B70-LP1	208.	6.541	0.90	4.565	0.67
B-B70-LP3	208.	7.149	1.33	5.290	1.03
B-B70-LS1	208.	4.695	0.66	3.065	0.49
B-B70-LS2	208.	3.793	0.58	2.415	0.44
B-B70-LS3	208.	5.377	0.86	3.645	0.65
B-B70-LS4	208.	4.235	0.75	2.775	0.57
B-B70-LS5	208.	4.936	0.81	3.301	0.62
B-B70-LS6	208.	3.952	0.72	2.569	0.56
B-B70-LSD	208.	11.995	2.21	10.543	1.75
B-B70-LSD-M	208.	12.043	2.22	10.639	1.77
B-B70-MDP	208.	14.708	2.85	14.320	2.45
B-B70-MDP-M	208.	14.734	2.85	14.394	2.47
B-B70-PP2	208.	8.770	1.52	6.843	1.16
B-B70-PP220	208.	6.281	1.11	4.467	0.85
B-B70-STRTLGHT	208.	7.662	0.78	5.361	0.54
B-B78-1P	208.	5.800	0.74	3.690	0.59
B-B78-78AE1	208.	15.720	1.50	11.797	1.11
B-B78-A/C	208.	4.069	0.74	2.354	0.44
B-B78-ATS TAP	208.	18.489	1.70	14.525	1.24

B-B78-ATS-CRD	208.	5.323	0.73	3.370	0.58
B-B78-ATS-E1	208.	7.919	1.43	5.457	1.15
B-B78-ATS-LS1	208.	14.501	1.46	10.714	1.10
B-B78-ATSG9578	208.	16.308	1.49	12.312	1.10

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E 3 PHASE	X/R	F A U L T LINE/GRND	D U T I E S (KA) X/R
B-B78-BARBER	208.	3.043	0.17	1.798	0.12
B-B78-CONRM-AC	208.	2.720	0.80	1.428	0.28
B-B78-CRD	208.	2.919	0.67	1.805	0.55
B-B78-E1	208.	7.778	1.43	5.353	1.15
B-B78-ELEV-1	208.	16.114	1.31	11.221	0.80
B-B78-ELEV-2	208.	16.114	1.31	11.221	0.80
B-B78-FLPNL	208.	4.931	0.61	3.073	0.49
B-B78-KK	208.	6.800	0.66	4.316	0.51
B-B78-L10	208.	6.689	1.23	4.494	1.00
B-B78-LP-1	208.	6.336	0.85	4.098	0.68
B-B78-LP-13	208.	6.162	1.22	4.114	0.99
B-B78-LP-14	208.	5.711	1.20	3.793	0.98
B-B78-LP-15	208.	5.321	1.19	3.519	0.97
B-B78-LP-2	208.	11.262	1.00	7.716	0.75
B-B78-LP-4	208.	3.723	0.64	2.308	0.52
B-B78-LP-8	208.	13.061	1.40	9.459	1.06
B-B78-LP10	208.	5.922	1.18	3.935	0.96
B-B78-LP13	208.	5.425	1.19	3.591	0.97
B-B78-LP3	208.	11.262	1.00	7.716	0.75
B-B78-LP6	208.	9.321	0.98	6.266	0.76
B-B78-LP7	208.	6.519	1.17	4.352	0.94
B-B78-LSD	208.	13.854	1.42	10.132	1.07
B-B78-MDP	208.	41.674	4.55	50.436	3.92
B-B78-MDP-M	208.	41.701	4.56	50.567	3.97
B-B78-MEC-1 AC	208.	8.201	1.79	5.300	1.23
B-B78-MEC2-A/C	208.	17.913	1.56	13.270	1.04
B-B78-PHARM AC	208.	3.212	0.25	1.842	0.14
B-B78-PHV	208.	2.800	0.34	1.675	0.27
B-B78-PK	208.	5.824	0.84	3.746	0.67
B-B78-PNL-330A	208.	10.561	1.12	7.279	0.85
B-B78-PULM 78B	208.	18.489	1.70	14.525	1.24
B-B78-QP	208.	11.835	0.71	7.827	0.50
B-B78A-PNL-2	208.	15.297	1.05	10.913	0.74
B-B8 2ND FLR	208.	12.438	2.32	10.327	2.01
B-B8 HYDRO ELV	480.	4.085	0.96	2.675	0.55
B-B8-208V-MAIN	208.	18.055	2.82	17.187	2.69
B-B8-480V ATS	480.	8.624	2.74	8.056	2.52

B-B8-480V PNL	480.	8.490	2.71	7.859	2.46
B-B8-ATS	208.	14.313	2.24	12.358	1.93
B-B8-BS	208.	3.533	0.48	2.197	0.37
B-B8-CMOP	208.	4.290	1.48	4.182	1.27

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
B-B8-COMP	480.	2.522	0.51	1.526	0.29
B-B8-ELEV	208.	4.248	1.68	4.164	1.53
B-B8-FDR	208.	4.766	1.74	5.000	1.64
B-B8-FLEXPMACH	480.	3.134	0.46	2.004	0.32
B-B8-GE BKR	480.	8.734	2.77	8.221	2.58
B-B8-J-BOX	208.	4.441	1.70	4.463	1.57
B-B8-L8B	208.	5.820	0.62	3.791	0.47
B-B8-LB1	208.	7.140	1.22	5.069	0.98
B-B8-LB2	208.	6.669	1.18	4.682	0.95
B-B8-MAIN BUS	208.	17.599	2.79	16.565	2.65
B-B8-MDP-8	208.	17.288	2.78	16.147	2.62
B-B8-PNL-PK	208.	13.265	1.77	10.998	1.43
B-B8-PP1	208.	16.301	2.43	14.752	2.15
B-B8-PP1-M	208.	16.353	2.44	14.862	2.17
B-B8-SYLV	208.	15.023	2.46	13.245	2.18
B-B8-TXMR PRI	480.	8.372	2.60	7.694	2.32
B-B8-TXMR SEC	208.	5.075	1.77	5.556	1.71
B-B80-ATS-EQ	208.	6.858	0.97	5.184	0.72
B-B80-E1	208.	5.901	0.84	4.257	0.62
B-B80-L1-1	208.	2.982	0.38	1.876	0.27
B-B80-L1-3	208.	3.415	0.38	2.166	0.26
B-B80-LB-1	208.	7.806	1.25	6.290	0.97
B-B80-LB-E	208.	3.967	0.62	2.635	0.47
B-B80-MDP	208.	11.092	2.19	10.694	2.07
B-B80-MDP-M	208.	11.787	2.32	11.738	2.30
B-B80-P1	208.	8.127	1.31	6.660	1.03
B-B80-P5	208.	1.699	0.27	1.030	0.20
B-B80-PB-1	208.	3.071	0.35	1.927	0.24
B-B80-PB-2	208.	4.575	0.68	3.114	0.51
B-B81-MDP	208.	4.278	1.74	4.446	1.73
B-B81-MDP-M	208.	4.284	1.75	4.463	1.74
B-B82-ATS-EMER	208.	6.580	2.09	6.431	1.87
B-B82-EMER	208.	6.314	1.99	6.018	1.73
B-B82-EMERG-M	208.	6.327	1.99	6.049	1.74
B-B82-MDP	208.	7.141	2.34	7.331	2.27
B-B82-MDP-M	208.	7.151	2.35	7.358	2.29
B-B9-*PNLXX	208.	8.285	0.88	6.520	0.78

B-B9-*PNLYY	208.	7.434	0.74	5.786	0.66
B-B9-*PNLZZ	208.	11.523	2.03	9.629	1.88
B-B9-ATS BKR	208.	13.747	2.38	12.269	2.08
B-B9-EM	208.	13.337	2.29	11.750	1.97

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
B-B9-L91A	208.	3.700	0.75	2.392	0.60
B-B9-L91A-M	208.	3.706	0.75	2.399	0.60
B-B9-L92	208.	4.834	0.53	3.626	0.49
B-B9-L9A	208.	6.889	0.87	5.251	0.82
B-B9-L9B	208.	11.387	1.44	9.541	1.27
B-B9-LPN	208.	2.605	0.51	1.627	0.42
B-B9-LPS	208.	5.781	0.69	3.902	0.53
B-B9-MAIN	208.	16.037	2.62	15.296	2.42
B-B9-MDP	208.	14.956	2.52	13.824	2.27
B-B9-STRT LGHT	208.	5.831	0.52	3.782	0.37
B-B9-TAP	208.	12.436	1.66	10.704	1.46
B-B92-ATS	208.	3.707	1.06	2.655	0.76
B-B92-PNL-E1	208.	3.509	1.00	2.474	0.72
B-B94-ATS	208.	5.463	0.88	3.579	0.70
B-B94-E1	208.	4.644	0.76	2.979	0.61
B-SW-MV-1	13800.	2.698	2.10	1.558	2.28
B-SW-MV-2	13800.	2.800	2.31	1.605	2.46
B-SWGR27 TAP	13800.	3.034	3.10	1.706	2.99
B-T-13-PRI	13800.	2.782	2.27	1.638	2.58
B-T-B1-PRI	13800.	2.927	2.68	1.659	2.72
B-T-B1-SEC	208.	4.961	1.92	5.495	2.13
B-T-B10-PRI	13800.	2.841	2.43	1.654	2.67
B-T-B10-SEC	208.	6.177	1.91	6.430	2.17
B-T-B12-PRI	13800.	2.749	2.20	1.623	2.52
B-T-B12-SEC	208.	4.738	1.91	5.311	2.11
B-T-B17-PRI	13800.	2.658	2.00	1.543	2.22
B-T-B17-SEC	208.	12.483	2.46	12.922	2.61
B-T-B18-PRI	13800.	2.648	1.98	1.539	2.20
B-T-B18-SEC	208.	11.909	2.46	12.506	2.60
B-T-B19-PRI	13800.	2.920	2.65	1.657	2.70
B-T-B19-SEC	208.	22.895	3.78	27.539	3.60
B-T-B2-LED-PRI	480.	8.320	1.26	6.511	0.87
B-T-B2-LED-SEC	208.	3.480	1.44	3.704	1.46
B-T-B2-PRI	13800.	2.949	2.76	1.668	2.77
B-T-B2-SEC2	208.	7.696	5.30	7.797	5.36
B-T-B2-SEC3	208.	16.649	3.11	19.212	3.08
B-T-B2-SEC4	480.	12.753	4.79	13.109	4.99

B-T-B22-PRI	13800.	2.966	2.81	1.676	2.81
B-T-B22-SEC	480.	8.823	2.98	8.888	2.99
B-T-B3-PRI	13800.	2.896	2.59	1.669	2.75
B-T-B3-SEC	208.	21.847	3.08	23.517	3.06

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
B-T-B30-PRI	13800.	2.800	2.31	1.604	2.45
B-T-B30-SEC	208.	4.955	1.91	5.490	2.12
B-T-B33-PRI	13800.	3.000	2.95	1.691	2.90
B-T-B33-SEC	208.	6.302	1.92	6.519	2.18
B-T-B4-PRI	13800.	2.834	2.40	1.619	2.52
B-T-B4-SEC	208.	29.968	3.66	33.964	3.47
B-T-B5-PRI	13800.	2.709	2.12	1.563	2.30
B-T-B5-SEC	208.	27.790	2.89	27.780	2.93
B-T-B6-PRI	13800.	2.741	2.19	1.577	2.35
B-T-B6-SEC	208.	27.475	2.94	27.569	2.96
B-T-B60-PRI	13800.	2.690	2.06	1.557	2.27
B-T-B60-SEC	208.	7.857	2.48	8.559	2.60
B-T-B61-PRI	13800.	2.836	2.42	1.618	2.52
B-T-B61-SEC	208.	14.658	3.04	16.262	3.03
B-T-B62-PRI	13800.	2.868	2.51	1.632	2.59
B-T-B62-SEC	208.	27.003	2.96	27.250	2.98
B-T-B7-PRI	13800.	2.784	2.29	1.596	2.43
B-T-B7-SEC	208.	21.081	2.96	20.993	2.97
B-T-B70-PRI	13800.	2.879	2.53	1.638	2.61
B-T-B70-SEC	208.	17.708	3.07	20.138	3.05
B-T-B78-PRI	13800.	2.874	2.53	1.663	2.72
B-T-B78-SEC	208.	41.836	4.65	51.225	4.23
B-T-B8-2-SEC	480.	9.414	2.99	9.279	2.99
B-T-B8-PRI	13800.	2.885	2.55	1.640	2.62
B-T-B8-SEC	208.	20.304	2.95	20.473	2.96
B-T-B80-PRI	13800.	2.817	2.35	1.612	2.49
B-T-B80-SEC	208.	12.568	2.49	12.982	2.63
B-T-B81-PRI	13800.	2.738	2.17	1.618	2.49
B-T-B81-SEC	208.	4.759	1.91	5.329	2.11
B-T-B82-PRI	13800.	2.867	2.49	1.633	2.59
B-T-B82-SEC	208.	7.838	2.50	8.544	2.62
B-T-B9-PRI	13800.	2.804	2.33	1.644	2.62
B-T-B9-SEC	208.	18.730	2.92	19.378	2.94
B0B70-LP2	208.	5.375	0.80	3.620	0.60
BUS-0017	13800.	2.968	2.83	1.677	2.82
BUS-0019	13800.	2.968	2.83	1.677	2.82
BUS-0063	13800.	2.915	2.65	1.674	2.78

BUS-0065	13800.	2.915	2.65	1.674	2.78
BUS-0076	208.	3.313	1.38	3.408	1.34
BUS-0091	208.	3.707	1.06	2.655	0.76
BUS-0097*	208.	14.058	2.61	13.421	2.00

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
BUS-0106*	208.	14.376	2.69	14.043	2.15
BUS-0131	208.	15.372	2.56	13.624	2.17
BUS-0140	208.	16.814	2.73	14.659	2.18
BUS-0172*	208.	22.121	2.15	19.855	1.55
BUS-0227	208.	25.173	2.91	24.144	2.18
BUS-0258*	208.	15.937	2.14	12.156	1.67
BUS-0269	208.	15.089	1.56	11.516	1.23
BUS-0290	208.	16.101	1.66	12.717	1.32
BUS-0302	208.	15.769	2.32	12.240	1.85
BUS-0327	208.	10.961	2.39	8.303	1.95
BUS-0344	208.	10.030	1.88	7.481	1.53
BUS-0360	208.	5.463	0.88	3.579	0.70
BUS-0375	208.	14.313	2.24	12.358	1.93
BUS-0376	208.	14.177	2.21	12.192	1.89
BUS-0380	480.	8.624	2.74	8.056	2.52
BUS-0452	208.	7.979	1.23	6.606	0.94
BUS-0481	480.	6.565	2.46	5.791	2.17
BUS-0518	208.	11.155	2.15	10.346	1.72
BUS-0520	208.	11.548	2.68	10.825	2.27
BUS-0546	208.	19.128	2.00	16.044	1.58
BUS-0554	208.	18.798	1.90	15.878	1.54
BUS-0581	208.	12.644	2.28	11.393	1.82
BUS-0582	208.	13.283	2.60	12.308	2.16
BUS-0618	208.	16.308	1.49	12.312	1.10
BUS-0620	208.	14.501	1.46	10.714	1.10
BUS-0652	208.	5.323	0.73	3.370	0.58
BUS-0664	208.	6.858	0.97	5.184	0.72
BUS-0730	208.	7.919	1.43	5.457	1.15
BUS-0739	208.	13.686	2.37	12.145	2.06
BUS-0740	208.	9.598	1.65	8.570	1.38
BUS-0744	208.	6.580	2.09	6.431	1.87
BUS-0747	13800.	2.949	2.76	1.668	2.77
bB-B7-MC1	208.	4.164	0.55	2.572	0.43

651 FAULTED BUSES, 679 BRANCHES, 29 CONTRIBUTIONS
UNBALANCED FAULTS REQUESTED

*** SHORT CIRCUIT STUDY COMPLETE ***

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B1-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B1-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B10 DISC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B10-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B12-MAP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B12-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-13	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-14	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-15	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-GARAGE	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MDP	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MDP-M	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MGR H16	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-TXMR SEC	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-UNKNOWN	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B17-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-A/C-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-AC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ACB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ANIMALRM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-DP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B17-EMAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP21	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP22	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPA1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2ND-FL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2NDFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-AC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-AC2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-ATS-EMRG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NCP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B18-NMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP21	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP22	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP23	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-STRT LHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-TAP BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-200A PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-B1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-L1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-L2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDPA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B19-PS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-CRIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LED3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-BATTERYCH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-CATSCAN	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-CRIT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTAL LB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTSUCPM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ELEV-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L9E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB1E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-LB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LED-3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-MDP-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPA-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPB-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MEDAIRCOM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL 1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-D2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-L11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-M1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-P	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-POD2PP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-TEL COMM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-UNIT-1	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-UNIT-2	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY-124	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY124	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B21-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B21-P2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-ATS-EMER	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-EMERG	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-EMERG-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-L1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-MDP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-MDP-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-N1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-N1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-P1	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-P2	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B22-T1-PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)		
B-B22-T1-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B22-T2-PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)		
B-B22-T2-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B22-T22-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B22-T3 PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)		
B-B22-T4-PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)		
B-B22-T4-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B27-SWGR	E/Z:	2.939 KA AT	-71.95 DEG (70.25 MVA)	X/R:	3.10
	SYM*1.6:	4.703 KA	MOMENTARY BASED ON X/R:		3.303 KA
	SYM*2.7:	7.936 KA	CREST BASED ON X/R:		5.664 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE=	0.8401 + J 2.5773	OHMS
	CONTRIBUTIONS:	B-SWGR27 TAP	2.700 KA	ANG:	-71.57
	CBL-0005	B-T-B8-PRI	0.059 KA	ANG:	-77.27
	CBL-0004	BUS-0017	0.071 KA	ANG:	-75.54
	CBL-0036	B-T-B33-PRI	0.026 KA	ANG:	-76.09
	CBL-0035	BUS-0063	0.084 KA	ANG:	-76.11
B-B27-SWGR-M2	E/Z:	2.939 KA AT	-71.95 DEG (70.26 MVA)	X/R:	3.10
	SYM*1.6:	4.703 KA	MOMENTARY BASED ON X/R:		3.303 KA
	SYM*2.7:	7.936 KA	CREST BASED ON X/R:		5.664 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE=	0.8401 + J 2.5772	OHMS
	CONTRIBUTIONS:	UTIL-STN 559-1	2.700 KA	ANG:	-71.57
	CBL-0001	B-SWGR27 TAP	0.240 KA	ANG:	-76.23
B-B3-1ST FL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B3-ALDN KIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B3-ATS-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B3-ATSTEL RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B3-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B3-COMP AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B3-COMP MF	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-DBL GRILL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-FRZN FOOD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-HYDRO ELV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-KP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH HVAC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-P3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-P7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-STRT LTS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-STRT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TELE PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TRAY LINE	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B33-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B33-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-4EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-4EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-BUS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ELEV#4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-HYDROELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-JBOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LP10-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP11-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP12-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP13-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP14-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP9-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS12-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS13-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LS4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B5-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-HYDR ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-NEXTEL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B5-PNL-H	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-PNL-H-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-TEMP TRAI	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B55-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQMACH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MACH SHOP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-P6-CS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B60-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B60-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B61 STRT LGH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-COMP RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-DP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-KITCHEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B61-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MCC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATTC PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-BL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-BP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-KP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B62-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-OT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-PAD RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-STRT LGT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MCC-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MCC-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-SRTLGHT-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70 -BLDG-71	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATTIC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-CHLLR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FIRE PMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FP-TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FPMP M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-K	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP-4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-PP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-PP220	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-STRTLGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-1P	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-78AE1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATSG9578	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-BARBER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-CONRM-AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B78-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ELEV-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ELEV-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-FLPNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-KK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-L10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B78-MEC-1 AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MEC2-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PHARM AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PHV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PNL-330A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PULM 78B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-QP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78A-PNL-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8 2ND FLR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8 HYDRO ELV	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-208V-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-480V ATS	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-480V PNL	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-BS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-CMOP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-COMP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FDR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FLEXPMACH	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-GE BKR	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B8-J-BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-L8B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-LB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-LB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-MAIN BUS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-MDP-8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PNL-PK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-SYLV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-TXMR PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-TXMR SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-L1-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-L1-3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-LB-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-LB-E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-P5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B80-PB-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-PB-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B81-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B81-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-ATS-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLXX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLYY	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLZZ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-ATS BKR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-EM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L91A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L91A-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L92	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L9A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L9B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-LPN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-LPS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B9-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B9-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B9-TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B92-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B92-PNL-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B94-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B94-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-SW-MV-1	E/Z:	2.617 KA AT	-64.26 DEG (62.55 MVA)	X/R:	2.10
	SYM*1.6:	4.187 KA	MOMENTARY BASED ON X/R:		2.745 KA
	SYM*2.7:	7.066 KA	CREST BASED ON X/R:		4.528 KA
	VOLTAGE: 13800.	EQUIV. IMPEDANCE=	1.3223 + J 2.7422	OHMS	
	CONTRIBUTIONS:	B-T-B5-PRI	2.617 KA	ANG:	-64.26
B-SW-MV-2	E/Z:	2.719 KA AT	-66.53 DEG (64.98 MVA)	X/R:	2.32
	SYM*1.6:	4.350 KA	MOMENTARY BASED ON X/R:		2.895 KA
	SYM*2.7:	7.340 KA	CREST BASED ON X/R:		4.839 KA
	VOLTAGE: 13800.	EQUIV. IMPEDANCE=	1.1669 + J 2.6883	OHMS	
	CONTRIBUTIONS:	B-T-B80-PRI	2.719 KA	ANG:	-66.53
B-SWGR27 TAP	E/Z:	2.939 KA AT	-71.95 DEG (70.25 MVA)	X/R:	3.10
	SYM*1.6:	4.703 KA	MOMENTARY BASED ON X/R:		3.303 KA
	SYM*2.7:	7.936 KA	CREST BASED ON X/R:		5.664 KA
	VOLTAGE: 13800.	EQUIV. IMPEDANCE=	0.8401 + J 2.5772	OHMS	
	CONTRIBUTIONS:	B-B27-SWGR-M2	2.700 KA	ANG:	-71.57
	CBL-0003	B-B27-SWGR	0.240 KA	ANG:	-76.23
B-T-13-PRI	E/Z:	2.700 KA AT	-66.12 DEG (64.53 MVA)	X/R:	2.28
	SYM*1.6:	4.320 KA	MOMENTARY BASED ON X/R:		2.867 KA
	SYM*2.7:	7.290 KA	CREST BASED ON X/R:		4.783 KA
	VOLTAGE: 13800.	EQUIV. IMPEDANCE=	1.1945 + J 2.6985	OHMS	
	CONTRIBUTIONS:	B-T-B9-PRI	2.700 KA	ANG:	-66.12
B-T-B1-PRI	E/Z:	2.837 KA AT	-69.37 DEG (67.81 MVA)	X/R:	2.68
	SYM*1.6:	4.539 KA	MOMENTARY BASED ON X/R:		3.098 KA
	SYM*2.7:	7.660 KA	CREST BASED ON X/R:		5.256 KA
	VOLTAGE: 13800.	EQUIV. IMPEDANCE=	0.9893 + J 2.6283	OHMS	
	CONTRIBUTIONS:	B-T-B70-PRI	0.028 KA	ANG:	-74.79

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-T-B1-PRI (CONTINUED)
CBL-0017 B-T-B2-PRI 2.810 KA ANG: -69.32

B-T-B1-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B10-PRI E/Z: 2.755 KA AT -67.42 DEG (65.85 MVA) X/R: 2.43
SYM*1.6: 4.408 KA MOMENTARY BASED ON X/R: 2.956 KA
SYM*2.7: 7.439 KA CREST BASED ON X/R: 4.968 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1105 + J 2.6701 OHMS
CONTRIBUTIONS: B-T-B78-PRI 2.755 KA ANG: -67.42

B-T-B10-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B12-PRI E/Z: 2.669 KA AT -65.41 DEG (63.79 MVA) X/R: 2.21
SYM*1.6: 4.270 KA MOMENTARY BASED ON X/R: 2.820 KA
SYM*2.7: 7.205 KA CREST BASED ON X/R: 4.684 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2425 + J 2.7147 OHMS
CONTRIBUTIONS: B-T-13-PRI 2.669 KA ANG: -65.41

B-T-B12-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B17-PRI E/Z: 2.584 KA AT -63.49 DEG (61.77 MVA) X/R: 2.02
SYM*1.6: 4.135 KA MOMENTARY BASED ON X/R: 2.697 KA
SYM*2.7: 6.978 KA CREST BASED ON X/R: 4.426 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3760 + J 2.7589 OHMS
CONTRIBUTIONS: B-T-B17-SEC 0.000 KA ANG: -28.41
CBL-0013 B-T-B60-PRI 2.584 KA ANG: -63.49

B-T-B17-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B18-PRI E/Z: 2.574 KA AT -63.27 DEG (61.53 MVA) X/R: 2.00
SYM*1.6: 4.119 KA MOMENTARY BASED ON X/R: 2.683 KA
SYM*2.7: 6.951 KA CREST BASED ON X/R: 4.397 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3920 + J 2.7643 OHMS
CONTRIBUTIONS: B-T-B17-PRI 2.574 KA ANG: -63.27

B-T-B18-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-T-B19-PRI	E/Z:	2.832 KA AT -69.24 DEG (67.69 MVA)		X/R:	2.66
	SYM*1.6:	4.531 KA	MOMENTARY BASED ON X/R:		3.088 KA
	SYM*2.7:	7.647 KA	CREST BASED ON X/R:		5.235 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 0.9972 + J 2.6306 OHMS			
	CONTRIBUTIONS:	B-T-B82-PRI	0.026 KA	ANG:	-76.11
	CBL-0023	B-T-B22-PRI	2.806 KA	ANG:	-69.18
B-T-B19-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)			
B-T-B2-LED-PRI	VOLTAGE:	480. (SEE LOW VOLTAGE REPORT)			
B-T-B2-LED-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)			
B-T-B2-PRI	E/Z:	2.858 KA AT -69.90 DEG (68.32 MVA)		X/R:	2.76
	SYM*1.6:	4.573 KA	MOMENTARY BASED ON X/R:		3.138 KA
	SYM*2.7:	7.718 KA	CREST BASED ON X/R:		5.337 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 0.9580 + J 2.6176 OHMS			
	CONTRIBUTIONS:	BUS-0019	2.788 KA	ANG:	-69.75
	CBL-0017	B-T-B1-PRI	0.028 KA	ANG:	-74.79
	T-B2	B-T-B2-SEC4	0.023 KA	ANG:	-76.35
	T-B2A	B-T-B2-SEC3	0.020 KA	ANG:	-75.85
B-T-B2-SEC2	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)			
B-T-B2-SEC3	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)			
B-T-B2-SEC4	VOLTAGE:	480. (SEE LOW VOLTAGE REPORT)			
B-T-B22-PRI	E/Z:	2.875 KA AT -70.30 DEG (68.71 MVA)		X/R:	2.82
	SYM*1.6:	4.600 KA	MOMENTARY BASED ON X/R:		3.169 KA
	SYM*2.7:	7.762 KA	CREST BASED ON X/R:		5.398 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 0.9344 + J 2.6093 OHMS			
	CONTRIBUTIONS:	B-T-B19-PRI	0.026 KA	ANG:	-76.10
	CBL-0024	B-T-B33-PRI	2.849 KA	ANG:	-70.24
B-T-B22-SEC	VOLTAGE:	480. (SEE LOW VOLTAGE REPORT)			
B-T-B3-PRI	E/Z:	2.808 KA AT -68.68 DEG (67.11 MVA)		X/R:	2.59
	SYM*1.6:	4.492 KA	MOMENTARY BASED ON X/R:		3.047 KA
	SYM*2.7:	7.581 KA	CREST BASED ON X/R:		5.153 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.0318 + J 2.6434 OHMS			
	CONTRIBUTIONS:	B-T-B78-PRI	0.055 KA	ANG:	-76.22
	T-B3	B-T-B3-SEC	0.030 KA	ANG:	-76.22

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	CONTRIBUTIONS TO B-T-B3-PRI (CONTINUED)			
	CBL-0033	BUS-0065	2.724 KA	ANG: -68.44
B-T-B3-SEC	VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)			
B-T-B30-PRI	E/Z: 2.718 KA AT -66.52 DEG (64.96 MVA)			X/R: 2.32
	SYM*1.6: 4.349 KA	MOMENTARY BASED ON X/R:		2.894 KA
	SYM*2.7: 7.338 KA	CREST BASED ON X/R:		4.837 KA
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1680 + J 2.6887 OHMS			
	CONTRIBUTIONS: B-T-B60-PRI		0.000 KA	ANG: -19.99
	CBL-0014	B-T-B70-PRI	2.718 KA	ANG: -66.52
B-T-B30-SEC	VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)			
B-T-B33-PRI	E/Z: 2.907 KA AT -71.11 DEG (69.48 MVA)			X/R: 2.95
	SYM*1.6: 4.651 KA	MOMENTARY BASED ON X/R:		3.234 KA
	SYM*2.7: 7.849 KA	CREST BASED ON X/R:		5.528 KA
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.8873 + J 2.5933 OHMS			
	CONTRIBUTIONS: B-B27-SWGR		2.881 KA	ANG: -71.07
	CBL-0024	B-T-B22-PRI	0.026 KA	ANG: -76.09
B-T-B33-SEC	VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)			
B-T-B4-PRI	E/Z: 2.750 KA AT -67.28 DEG (65.74 MVA)			X/R: 2.41
	SYM*1.6: 4.401 KA	MOMENTARY BASED ON X/R:		2.946 KA
	SYM*2.7: 7.426 KA	CREST BASED ON X/R:		4.945 KA
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1189 + J 2.6721 OHMS			
	CONTRIBUTIONS: B-T-B80-PRI		0.000 KA	ANG: 16.52
	T-B4	B-T-B4-SEC	0.026 KA	ANG: -76.13
	CBL-0022	B-T-B82-PRI	2.725 KA	ANG: -67.19
B-T-B4-SEC	VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)			
B-T-B5-PRI	E/Z: 2.627 KA AT -64.48 DEG (62.80 MVA)			X/R: 2.12
	SYM*1.6: 4.204 KA	MOMENTARY BASED ON X/R:		2.759 KA
	SYM*2.7: 7.094 KA	CREST BASED ON X/R:		4.559 KA
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3063 + J 2.7368 OHMS			
	CONTRIBUTIONS: B-T-B6-PRI		2.627 KA	ANG: -64.48
B-T-B5-SEC	VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-T-B6-PRI	E/Z:	2.658 KA AT -65.18 DEG (63.53 MVA)	X/R:	2.19
	SYM*1.6:	4.253 KA	MOMENTARY BASED ON X/R:	2.804 KA
	SYM*2.7:	7.177 KA	CREST BASED ON X/R:	4.653 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.2583 + J 2.7206 OHMS		
	CONTRIBUTIONS:	B-T-B7-PRI 2.643 KA	ANG:	-65.10
	T-B6	B-T-B6-SEC 0.016 KA	ANG:	-78.41
B-T-B6-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)		
B-T-B60-PRI	E/Z:	2.615 KA AT -64.16 DEG (62.49 MVA)	X/R:	2.08
	SYM*1.6:	4.183 KA	MOMENTARY BASED ON X/R:	2.739 KA
	SYM*2.7:	7.059 KA	CREST BASED ON X/R:	4.515 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.3280 + J 2.7427 OHMS		
	CONTRIBUTIONS:	B-T-B17-PRI 0.000 KA	ANG:	-19.99
	CBL-0015	B-T-B30-PRI 2.615 KA	ANG:	-64.16
B-T-B60-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)		
B-T-B61-PRI	E/Z:	2.748 KA AT -67.26 DEG (65.69 MVA)	X/R:	2.41
	SYM*1.6:	4.397 KA	MOMENTARY BASED ON X/R:	2.945 KA
	SYM*2.7:	7.421 KA	CREST BASED ON X/R:	4.945 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.1205 + J 2.6736 OHMS		
	CONTRIBUTIONS:	B-T-B62-PRI 2.712 KA	ANG:	-67.12
	T-B61	B-T-B61-SEC 0.011 KA	ANG:	-77.44
	CBL-0007	B-T-B7-PRI 0.026 KA	ANG:	-77.94
B-T-B61-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)		
B-T-B62-PRI	E/Z:	2.780 KA AT -68.00 DEG (66.44 MVA)	X/R:	2.50
	SYM*1.6:	4.447 KA	MOMENTARY BASED ON X/R:	2.997 KA
	SYM*2.7:	7.505 KA	CREST BASED ON X/R:	5.052 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.0739 + J 2.6576 OHMS		
	CONTRIBUTIONS:	B-T-B8-PRI 2.732 KA	ANG:	-67.83
	T-B62	B-T-B62-SEC 0.011 KA	ANG:	-77.16
	CBL-0008	B-T-B61-PRI 0.037 KA	ANG:	-77.79
B-T-B62-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)		
B-T-B7-PRI	E/Z:	2.699 KA AT -66.12 DEG (64.52 MVA)	X/R:	2.29
	SYM*1.6:	4.319 KA	MOMENTARY BASED ON X/R:	2.867 KA
	SYM*2.7:	7.288 KA	CREST BASED ON X/R:	4.783 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.1951 + J 2.6991 OHMS		
	CONTRIBUTIONS:	B-T-B61-PRI 2.673 KA	ANG:	-66.00
	T-B7	B-T-B7-SEC 0.011 KA	ANG:	-77.29

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                CONTRIBUTIONS TO  B-T-B7-PRI     (CONTINUED)
                CBL-0009        B-T-B6-PRI         0.016 KA      ANG:   -78.40

 B-T-B7-SEC     VOLTAGE:    208.  ( SEE LOW VOLTAGE REPORT )

 B-T-B70-PRI    E/Z:      2.792 KA AT  -68.28 DEG (  66.74 MVA)  X/R:     2.53
                SYM*1.6:    4.467 KA       MOMENTARY BASED ON X/R:    3.017 KA
                SYM*2.7:    7.539 KA           CREST BASED ON X/R:    5.092 KA
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.0560 + J  2.6509  OHMS
                CONTRIBUTIONS:  B-T-B30-PRI        0.000 KA      ANG:   -19.99
                T-B70           B-T-B70-SEC        0.028 KA      ANG:   -74.81
                CBL-0016        B-T-B1-PRI         2.765 KA      ANG:   -68.22

 B-T-B70-SEC    VOLTAGE:    208.  ( SEE LOW VOLTAGE REPORT )

 B-T-B78-PRI    E/Z:      2.787 KA AT  -68.18 DEG (  66.62 MVA)  X/R:     2.53
                SYM*1.6:    4.459 KA       MOMENTARY BASED ON X/R:    3.011 KA
                SYM*2.7:    7.525 KA           CREST BASED ON X/R:    5.080 KA
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.0625 + J  2.6539  OHMS
                CONTRIBUTIONS:  B-T-B78-SEC        0.055 KA      ANG:   -76.23
                CBL-0032        B-T-B3-PRI         2.733 KA      ANG:   -68.02

 B-T-B78-SEC    VOLTAGE:    208.  ( SEE LOW VOLTAGE REPORT )

 B-T-B8-2-SEC   VOLTAGE:    480.  ( SEE LOW VOLTAGE REPORT )

 B-T-B8-PRI     E/Z:      2.795 KA AT  -68.37 DEG (  66.81 MVA)  X/R:     2.55
                SYM*1.6:    4.472 KA       MOMENTARY BASED ON X/R:    3.024 KA
                SYM*2.7:    7.547 KA           CREST BASED ON X/R:    5.106 KA
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.0507 + J  2.6496  OHMS
                CONTRIBUTIONS:  B-B27-SWGR         2.737 KA      ANG:   -68.18
                CBL-0006        B-T-B62-PRI        0.048 KA      ANG:   -77.64
                T-B8-2          B-T-B8-2-SEC       0.011 KA      ANG:   -76.13

 B-T-B8-SEC     VOLTAGE:    208.  ( SEE LOW VOLTAGE REPORT )

 B-T-B80-PRI    E/Z:      2.734 KA AT  -66.90 DEG (  65.36 MVA)  X/R:     2.36
                SYM*1.6:    4.375 KA       MOMENTARY BASED ON X/R:    2.920 KA
                SYM*2.7:    7.383 KA           CREST BASED ON X/R:    4.891 KA
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.1429 + J  2.6802  OHMS
                CONTRIBUTIONS:  B-T-B80-SEC        0.000 KA      ANG:    16.54
                CBL-0020        B-T-B4-PRI         2.734 KA      ANG:   -66.90
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-T-B80-SEC	VOLTAGE: 208.	(SEE LOW VOLTAGE REPORT)
B-T-B81-PRI	E/Z: 2.658 KA AT -65.17 DEG (63.54 MVA)	X/R: 2.18
	SYM*1.6: 4.253 KA MOMENTARY BASED ON X/R:	2.804 KA
	SYM*2.7: 7.178 KA CREST BASED ON X/R:	4.652 KA
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2585 + J 2.7201	OHMS
	CONTRIBUTIONS: B-T-B12-PRI 2.658 KA ANG:	-65.17
B-T-B81-SEC	VOLTAGE: 208.	(SEE LOW VOLTAGE REPORT)
B-T-B82-PRI	E/Z: 2.782 KA AT -68.02 DEG (66.49 MVA)	X/R: 2.50
	SYM*1.6: 4.451 KA MOMENTARY BASED ON X/R:	2.998 KA
	SYM*2.7: 7.511 KA CREST BASED ON X/R:	5.053 KA
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.0719 + J 2.6560	OHMS
	CONTRIBUTIONS: B-T-B4-PRI 0.026 KA ANG:	-76.12
	CBL-0021 B-T-B19-PRI 2.756 KA ANG:	-67.95
B-T-B82-SEC	VOLTAGE: 208.	(SEE LOW VOLTAGE REPORT)
B-T-B9-PRI	E/Z: 2.721 KA AT -66.61 DEG (65.03 MVA)	X/R: 2.34
	SYM*1.6: 4.353 KA MOMENTARY BASED ON X/R:	2.900 KA
	SYM*2.7: 7.346 KA CREST BASED ON X/R:	4.852 KA
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1625 + J 2.6877	OHMS
	CONTRIBUTIONS: B-T-B10-PRI 2.721 KA ANG:	-66.61
B-T-B9-SEC	VOLTAGE: 208.	(SEE LOW VOLTAGE REPORT)
B0B70-LP2	VOLTAGE: 208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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BUS-0739 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

bB-B7-MC1 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT TYPE	E/Z KA	X/R	EQUIVALENT IMPEDANCE (PU)	MOMENTARY FAULT DUTIES E/Z * 1.6	@ 0.5 CYCLE
	3 PHASE:	2.94	3.1	Z1= 1.4234	4.70	3.30
B-B27-SWGR	SLG DUTY:	1.69	3.0	Z2= 1.4234	2.70	1.88
13800. VOLTS	LN/LN	2.55		Z0= 4.5990		
	LN/LN/GND	2.62	(	1.18 GND RETURN KA)		
	3 PHASE:	2.94	3.1	Z1= 1.4234	4.70	3.30
B-B27-SWGR-M2	SLG DUTY:	1.69	3.0	Z2= 1.4234	2.70	1.88
13800. VOLTS	LN/LN	2.55		Z0= 4.5989		
	LN/LN/GND	2.62	(	1.18 GND RETURN KA)		
	3 PHASE:	2.62	2.1	Z1= 1.5986	4.19	2.74
B-SW-MV-1	SLG DUTY:	1.54	2.3	Z2= 1.5986	2.46	1.63
13800. VOLTS	LN/LN	2.27		Z0= 4.9549		
	LN/LN/GND	2.31	(	1.09 GND RETURN KA)		
	3 PHASE:	2.72	2.3	Z1= 1.5389	4.35	2.89
B-SW-MV-2	SLG DUTY:	1.59	2.5	Z2= 1.5389	2.54	1.71
13800. VOLTS	LN/LN	2.35		Z0= 4.8351		
	LN/LN/GND	2.40	(	1.12 GND RETURN KA)		
	3 PHASE:	2.94	3.1	Z1= 1.4234	4.70	3.30
B-SWGR27 TAP	SLG DUTY:	1.69	3.0	Z2= 1.4234	2.70	1.88
13800. VOLTS	LN/LN	2.55		Z0= 4.5990		
	LN/LN/GND	2.62	(	1.18 GND RETURN KA)		
	3 PHASE:	2.70	2.3	Z1= 1.5496	4.32	2.87
B-T-13-PRI	SLG DUTY:	1.62	2.6	Z2= 1.5496	2.59	1.76
13800. VOLTS	LN/LN	2.34		Z0= 4.6606		
	LN/LN/GND	2.37	(	1.15 GND RETURN KA)		
	3 PHASE:	2.84	2.7	Z1= 1.4746	4.54	3.10
B-T-B1-PRI	SLG DUTY:	1.64	2.7	Z2= 1.4746	2.62	1.79
13800. VOLTS	LN/LN	2.46		Z0= 4.7088		
	LN/LN/GND	2.52	(	1.15 GND RETURN KA)		
	3 PHASE:	2.76	2.4	Z1= 1.5185	4.41	2.96
B-T-B10-PRI	SLG DUTY:	1.63	2.7	Z2= 1.5185	2.61	1.78
13800. VOLTS	LN/LN	2.39		Z0= 4.6466		
	LN/LN/GND	2.43	(	1.16 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT TYPE	E/Z KA	X/R	EQUIVALENT IMPEDANCE (PU)	MOMENTARY FAULT DUTIES E/Z * 1.6	@ 0.5 CYCLE
	3 PHASE:	2.67	2.2	Z1= 1.5677	4.27	2.82
B-T-B12-PRI	SLG DUTY:	1.60	2.5	Z2= 1.5677	2.57	1.73
13800. VOLTS	LN/LN	2.31		Z0= 4.6945		
	LN/LN/GND	2.34	(	1.15 GND RETURN KA)		
	3 PHASE:	2.58	2.0	Z1= 1.6189	4.13	2.70
B-T-B17-PRI	SLG DUTY:	1.53	2.2	Z2= 1.6189	2.44	1.61
13800. VOLTS	LN/LN	2.24		Z0= 4.9902		
	LN/LN/GND	2.27	(	1.08 GND RETURN KA)		
	3 PHASE:	2.57	2.0	Z1= 1.6252	4.12	2.68
B-T-B18-PRI	SLG DUTY:	1.52	2.2	Z2= 1.6252	2.43	1.61
13800. VOLTS	LN/LN	2.23		Z0= 5.0021		
	LN/LN/GND	2.26	(	1.08 GND RETURN KA)		
	3 PHASE:	2.83	2.7	Z1= 1.4772	4.53	3.09
B-T-B19-PRI	SLG DUTY:	1.64	2.7	Z2= 1.4772	2.62	1.79
13800. VOLTS	LN/LN	2.45		Z0= 4.7116		
	LN/LN/GND	2.51	(	1.15 GND RETURN KA)		
	3 PHASE:	2.86	2.8	Z1= 1.4637	4.57	3.14
B-T-B2-PRI	SLG DUTY:	1.65	2.8	Z2= 1.4637	2.64	1.81
13800. VOLTS	LN/LN	2.48		Z0= 4.6861		
	LN/LN/GND	2.54	(	1.16 GND RETURN KA)		
	3 PHASE:	2.87	2.8	Z1= 1.4553	4.60	3.17
B-T-B22-PRI	SLG DUTY:	1.66	2.8	Z2= 1.4553	2.65	1.83
13800. VOLTS	LN/LN	2.49		Z0= 4.6663		
	LN/LN/GND	2.56	(	1.16 GND RETURN KA)		
	3 PHASE:	2.81	2.6	Z1= 1.4900	4.49	3.05
B-T-B3-PRI	SLG DUTY:	1.65	2.8	Z2= 1.4900	2.64	1.81
13800. VOLTS	LN/LN	2.43		Z0= 4.6332		
	LN/LN/GND	2.48	(	1.17 GND RETURN KA)		
	3 PHASE:	2.72	2.3	Z1= 1.5393	4.35	2.89
B-T-B30-PRI	SLG DUTY:	1.59	2.5	Z2= 1.5393	2.54	1.70
13800. VOLTS	LN/LN	2.35		Z0= 4.8379		
	LN/LN/GND	2.40	(	1.12 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT TYPE	E/Z KA	X/R	EQUIVALENT IMPEDANCE (PU)	MOMENTARY FAULT DUTIES E/Z * 1.6	@ 0.5 CYCLE
	3 PHASE:	2.91	2.9	Z1= 1.4392	4.65	3.23
B-T-B33-PRI	SLG DUTY:	1.67	2.9	Z2= 1.4392	2.67	1.85
13800. VOLTS	LN/LN	2.52		Z0= 4.6326		
	LN/LN/GND	2.59	(1.17 GND RETURN KA)			
	3 PHASE:	2.75	2.4	Z1= 1.5212	4.40	2.95
B-T-B4-PRI	SLG DUTY:	1.60	2.5	Z2= 1.5212	2.56	1.73
13800. VOLTS	LN/LN	2.38		Z0= 4.8004		
	LN/LN/GND	2.43	(1.13 GND RETURN KA)			
	3 PHASE:	2.63	2.1	Z1= 1.5924	4.20	2.76
B-T-B5-PRI	SLG DUTY:	1.54	2.3	Z2= 1.5924	2.47	1.64
13800. VOLTS	LN/LN	2.28		Z0= 4.9431		
	LN/LN/GND	2.32	(1.09 GND RETURN KA)			
	3 PHASE:	2.66	2.2	Z1= 1.5740	4.25	2.80
B-T-B6-PRI	SLG DUTY:	1.56	2.3	Z2= 1.5740	2.49	1.66
13800. VOLTS	LN/LN	2.30		Z0= 4.9079		
	LN/LN/GND	2.34	(1.10 GND RETURN KA)			
	3 PHASE:	2.61	2.1	Z1= 1.6001	4.18	2.74
B-T-B60-PRI	SLG DUTY:	1.54	2.3	Z2= 1.6001	2.46	1.63
13800. VOLTS	LN/LN	2.26		Z0= 4.9548		
	LN/LN/GND	2.30	(1.09 GND RETURN KA)			
	3 PHASE:	2.75	2.4	Z1= 1.5222	4.40	2.94
B-T-B61-PRI	SLG DUTY:	1.60	2.5	Z2= 1.5222	2.56	1.73
13800. VOLTS	LN/LN	2.38		Z0= 4.8061		
	LN/LN/GND	2.43	(1.13 GND RETURN KA)			
	3 PHASE:	2.78	2.5	Z1= 1.5051	4.45	3.00
B-T-B62-PRI	SLG DUTY:	1.61	2.6	Z2= 1.5051	2.58	1.75
13800. VOLTS	LN/LN	2.41		Z0= 4.7715		
	LN/LN/GND	2.46	(1.14 GND RETURN KA)			
	3 PHASE:	2.70	2.3	Z1= 1.5500	4.32	2.87
B-T-B7-PRI	SLG DUTY:	1.58	2.4	Z2= 1.5500	2.52	1.69
13800. VOLTS	LN/LN	2.34		Z0= 4.8612		
	LN/LN/GND	2.38	(1.11 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT TYPE	E/Z KA	X/R	EQUIVALENT IMPEDANCE (PU)	MOMENTARY FAULT DUTIES E/Z * 1.6 @ 0.5 CYCLE
	3 PHASE:	2.79	2.5	Z1= 1.4984	4.47 3.02
B-T-B70-PRI	SLG DUTY:	1.62	2.6	Z2= 1.4984	2.59 1.76
13800. VOLTS	LN/LN	2.42		Z0= 4.7572	
	LN/LN/GND	2.47	(1.14 GND RETURN KA)		
	3 PHASE:	2.79	2.5	Z1= 1.5011	4.46 3.01
B-T-B78-PRI	SLG DUTY:	1.64	2.7	Z2= 1.5011	2.63 1.80
13800. VOLTS	LN/LN	2.41		Z0= 4.6386	
	LN/LN/GND	2.46	(1.16 GND RETURN KA)		
	3 PHASE:	2.80	2.6	Z1= 1.4967	4.47 3.02
B-T-B8-PRI	SLG DUTY:	1.62	2.6	Z2= 1.4967	2.59 1.76
13800. VOLTS	LN/LN	2.42		Z0= 4.7544	
	LN/LN/GND	2.48	(1.14 GND RETURN KA)		
	3 PHASE:	2.73	2.4	Z1= 1.5300	4.38 2.92
B-T-B80-PRI	SLG DUTY:	1.59	2.5	Z2= 1.5300	2.55 1.72
13800. VOLTS	LN/LN	2.37		Z0= 4.8177	
	LN/LN/GND	2.42	(1.12 GND RETURN KA)		
	3 PHASE:	2.66	2.2	Z1= 1.5738	4.25 2.80
B-T-B81-PRI	SLG DUTY:	1.60	2.5	Z2= 1.5738	2.56 1.72
13800. VOLTS	LN/LN	2.30		Z0= 4.7059	
	LN/LN/GND	2.33	(1.14 GND RETURN KA)		
	3 PHASE:	2.78	2.5	Z1= 1.5040	4.45 3.00
B-T-B82-PRI	SLG DUTY:	1.61	2.6	Z2= 1.5040	2.58 1.75
13800. VOLTS	LN/LN	2.41		Z0= 4.7659	
	LN/LN/GND	2.46	(1.14 GND RETURN KA)		
	3 PHASE:	2.72	2.3	Z1= 1.5377	4.35 2.90
B-T-B9-PRI	SLG DUTY:	1.62	2.6	Z2= 1.5377	2.60 1.77
13800. VOLTS	LN/LN	2.36		Z0= 4.6553	
	LN/LN/GND	2.39	(1.16 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

M O M E N T A R Y D U T Y S U M M A R Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	* 3 P H A S E * E/Z	X/R	* * * SLG * * * E/Z	X/R
B-B27-SWGR	13800.	3.303	3.10	1.881	2.99
B-B27-SWGR-M2	13800.	3.303	3.10	1.881	2.99
B-SW-MV-1	13800.	2.745	2.10	1.635	2.28
B-SW-MV-2	13800.	2.895	2.32	1.705	2.46
B-SWGR27 TAP	13800.	3.303	3.10	1.881	2.99
B-T-13-PRI	13800.	2.867	2.28	1.755	2.58
B-T-B1-PRI	13800.	3.098	2.68	1.794	2.72
B-T-B10-PRI	13800.	2.956	2.43	1.782	2.67
B-T-B12-PRI	13800.	2.820	2.21	1.731	2.52
B-T-B17-PRI	13800.	2.697	2.02	1.614	2.22
B-T-B18-PRI	13800.	2.683	2.00	1.607	2.21
B-T-B19-PRI	13800.	3.088	2.66	1.791	2.71
B-T-B2-PRI	13800.	3.138	2.76	1.811	2.77
B-T-B22-PRI	13800.	3.169	2.82	1.825	2.81
B-T-B3-PRI	13800.	3.047	2.59	1.809	2.75
B-T-B30-PRI	13800.	2.894	2.32	1.704	2.46
B-T-B33-PRI	13800.	3.234	2.95	1.852	2.90
B-T-B4-PRI	13800.	2.946	2.41	1.728	2.52
B-T-B5-PRI	13800.	2.759	2.12	1.642	2.30
B-T-B6-PRI	13800.	2.804	2.19	1.662	2.35
B-T-B60-PRI	13800.	2.739	2.08	1.634	2.27
B-T-B61-PRI	13800.	2.945	2.41	1.726	2.52
B-T-B62-PRI	13800.	2.997	2.50	1.749	2.59
B-T-B7-PRI	13800.	2.867	2.29	1.691	2.42
B-T-B70-PRI	13800.	3.017	2.53	1.759	2.61
B-T-B78-PRI	13800.	3.011	2.53	1.799	2.72
B-T-B8-PRI	13800.	3.024	2.55	1.761	2.62
B-T-B80-PRI	13800.	2.920	2.36	1.717	2.49
B-T-B81-PRI	13800.	2.804	2.18	1.724	2.50
B-T-B82-PRI	13800.	2.998	2.50	1.752	2.59
B-T-B9-PRI	13800.	2.900	2.34	1.765	2.62
BUS-0017	13800.	3.173	2.83	1.826	2.82
BUS-0019	13800.	3.173	2.83	1.826	2.82
BUS-0063	13800.	3.078	2.65	1.818	2.78
BUS-0065	13800.	3.078	2.65	1.818	2.78
BUS-0747	13800.	3.138	2.76	1.811	2.77

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  36 FAULTED BUSES,  679 BRANCHES,   29 CONTRIBUTIONS
UNBALANCED FAULTS REQUESTED

*** SHORT CIRCUIT STUDY COMPLETE ***
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000

MODEL TRANSFORMER TAPS: NO

B-B1-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B1-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B10 DISC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B10-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B12-MAP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B12-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-13	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-14	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-15	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-GARAGE	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MDP	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MDP-M	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MGR H16	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-TXMR SEC	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-UNKNOWN	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B17-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-A/C-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-AC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ACB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ANIMALRM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-DP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B17-EMAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP21	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP22	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPA1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2ND-FL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2NDFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-AC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-AC2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-ATS-EMRG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NCP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B18-NMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP21	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP22	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP23	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-STRT LHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-TAP BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-200A PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-B1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-L1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-L2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDPA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B19-PS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-CRIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LED3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-BATTERYCH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-CATSCAN	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-CRIT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTAL LB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTSUCPM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ELEV-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L9E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB1E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-LB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LED-3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-MDP-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPA-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPB-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MEDAIRCOM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL 1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-D2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-L11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-M1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-P	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-POD2PP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-TEL COMM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-UNIT-1	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-UNIT-2	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY-124	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY124	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B21-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B21-P2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-ATS-EMER	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-EMERG	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-EMERG-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-L1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-MDP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-MDP-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-N1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-N1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-P1	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-P2	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B22-T1-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T1-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-T2-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T2-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-T22-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-T3 PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T4-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T4-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B27-SWGR E/Z: 2.803 KA AT -71.81 DEG (67.01 MVA) X/R: 3.07
VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.8870 + J 2.7000 OHMS
CONTRIBUTIONS: B-SWGR27 TAP 2.700 KA ANG: -71.57
CBL-0005 B-T-B8-PRI 0.025 KA ANG: -78.90
CBL-0004 BUS-0017 0.031 KA ANG: -77.73
CBL-0036 B-T-B33-PRI 0.011 KA ANG: -78.75
CBL-0035 BUS-0063 0.037 KA ANG: -78.10

GENERATOR NAME -- AT BUS -- KA VOLTS PU LOCAL/REMOTE
UTIL-STN 559-1 2.700 0.00 R
TOTAL REMOTE: 2.700 KA NACD RATIO: 0.9631

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.803	2.803	2.803	2.803

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.028	1.000	1.000	1.000
DUTY (KA) :	2.881	2.803	2.803	2.803

B-B27-SWGR-M2 E/Z: 2.804 KA AT -71.81 DEG (67.01 MVA) X/R: 3.07
VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.8870 + J 2.6999 OHMS
CONTRIBUTIONS: UTIL-STN 559-1 2.700 KA ANG: -71.57
CBL-0001 B-SWGR27 TAP 0.104 KA ANG: -78.25

GENERATOR NAME -- AT BUS -- KA VOLTS PU LOCAL/REMOTE
UTIL-STN 559-1 2.700 0.00 R
TOTAL REMOTE: 2.700 KA NACD RATIO: 0.9631

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.804	2.804	2.804	2.804

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.028	1.000	1.000	1.000
DUTY (KA) :	2.881	2.804	2.804	2.804

B-B3-1ST FL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ALDN KIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ATS-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ATSTEL RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP MF	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-DBL GRILL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-FRZN FOOD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-HYDRO ELV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-KP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B3-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH HVAC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-P3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-P7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-STRT LTS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-STRT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TELE PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TRAY LINE	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B33-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B33-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-4EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-4EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-BUS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ELEV#4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-HYDROELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-JBOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP10-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP11-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP12-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP13-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP14-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP9-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LS12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS12-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS13-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-HYDR ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B5-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-NEXTEL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-PNL-H	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-PNL-H-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-TEMP TRAI	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B55-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQMACH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MACH SHOP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-P6-CS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B60-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B60-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61 STRT LGH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-COMP RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-DP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B61-KITCHEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MCC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATTC PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-BL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B62-BP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-KP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-OT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-PAD RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-STRT LGT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MCC-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MCC-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-SRTLGHT-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70 -BLDG-71	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATTIC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-CHLLR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FIRE PMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FP-TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FPMP M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-K	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP-4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-PP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-PP220	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-STRTLGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-1P	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-78AE1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATSG9578	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-BARBER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-CONRM-AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ELEV-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ELEV-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-FLPNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-KK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-L10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B78-LP-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MEC-1 AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MEC2-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PHARM AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PHV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PNL-330A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PULM 78B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-QP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78A-PNL-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8 2ND FLR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8 HYDRO ELV	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B8-208V-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-480V ATS	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-480V PNL	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-BS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-CMOP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-COMP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FDR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FLEXPMACH	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-GE BKR	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-J-BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-L8B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-LB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-LB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-MAIN BUS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-MDP-8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PNL-PK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-SYLV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-TXMR PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B8-TXMR SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-L1-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-L1-3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-LB-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-LB-E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-P5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-PB-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-PB-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B81-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B81-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-ATS-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLXX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLYY	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B9-*PNLZZ VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-ATS BKR VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-EM VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-L91A VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-L91A-M VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-L92 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-L9A VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-L9B VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-LPN VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-LPS VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-MAIN VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-MDP VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-STRT LGHT VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-TAP VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B92-ATS VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B92-PNL-E1 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B94-ATS VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B94-E1 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-SW-MV-1 E/Z: 2.505 KA AT -64.34 DEG (59.88 MVA) X/R: 2.10
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3770 + J 2.8665 OHMS
CONTRIBUTIONS: B-T-B5-PRI 2.505 KA ANG: -64.34

GENERATOR NAME -- AT BUS -- KA VOLTS PU LOCAL/REMOTE
UTIL-STN 559-1 2.412 0.16 R
TOTAL REMOTE: 2.412 KA NACD RATIO: 0.9625

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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		SYM2	SYM3	SYM5	SYM8
	MULT. FACT:	1.000	1.000	1.000	1.000
	DUTY (KA) :	2.505	2.505	2.505	2.505

		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.016	1.000	1.000	1.000
	DUTY (KA) :	2.545	2.505	2.505	2.505

B-SW-MV-2 E/Z: 2.601 KA AT -66.60 DEG (62.16 MVA) X/R: 2.33
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2168 + J 2.8117 OHMS
CONTRIBUTIONS: B-T-B80-PRI 2.601 KA ANG: -66.60

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.504	0.11	R

TOTAL REMOTE: 2.504 KA NACD RATIO: 0.9628

		SYM2	SYM3	SYM5	SYM8
	MULT. FACT:	1.000	1.000	1.000	1.000
	DUTY (KA) :	2.601	2.601	2.601	2.601

		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.019	1.000	1.000	1.000
	DUTY (KA) :	2.649	2.601	2.601	2.601

B-SWGR27 TAP E/Z: 2.804 KA AT -71.81 DEG (67.01 MVA) X/R: 3.07
VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.8870 + J 2.7000 OHMS
CONTRIBUTIONS: B-B27-SWGR-M2 2.700 KA ANG: -71.57
CBL-0003 B-B27-SWGR 0.104 KA ANG: -78.25

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.700	0.00	R

TOTAL REMOTE: 2.700 KA NACD RATIO: 0.9631

		SYM2	SYM3	SYM5	SYM8
	MULT. FACT:	1.000	1.000	1.000	1.000
	DUTY (KA) :	2.804	2.804	2.804	2.804

		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.028	1.000	1.000	1.000
	DUTY (KA) :	2.881	2.804	2.804	2.804

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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B-T-13-PRI E/Z: 2.581 KA AT -66.14 DEG (61.69 MVA) X/R: 2.28
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2487 + J 2.8231 OHMS
CONTRIBUTIONS: B-T-B9-PRI 2.581 KA ANG: -66.14

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.484	0.12	R

TOTAL REMOTE: 2.484 KA NACD RATIO: 0.9625

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.581	2.581	2.581	2.581

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.018	1.000	1.000	1.000
DUTY (KA) :	2.628	2.581	2.581	2.581

B-T-B1-PRI E/Z: 2.708 KA AT -69.30 DEG (64.73 MVA) X/R: 2.67
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.0399 + J 2.7520 OHMS
CONTRIBUTIONS: B-T-B70-PRI 0.013 KA ANG: -78.58
CBL-0017 B-T-B2-PRI 2.696 KA ANG: -69.26

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.607	0.06	R

TOTAL REMOTE: 2.607 KA NACD RATIO: 0.9628

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.708	2.708	2.708	2.708

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.023	1.000	1.000	1.000
DUTY (KA) :	2.770	2.708	2.708	2.708

B-T-B1-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B10-PRI E/Z: 2.632 KA AT -67.38 DEG (62.90 MVA) X/R: 2.42
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1647 + J 2.7947 OHMS
CONTRIBUTIONS: B-T-B78-PRI 2.632 KA ANG: -67.38

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.533	0.10	R

TOTAL REMOTE: 2.533 KA NACD RATIO: 0.9625

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.632	2.632	2.632	2.632

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.020	1.000	1.000	1.000
DUTY (KA) :	2.683	2.632	2.632	2.632

B-T-B10-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B12-PRI E/Z: 2.553 KA AT -65.45 DEG (61.01 MVA) X/R: 2.21
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2967 + J 2.8393 OHMS
CONTRIBUTIONS: B-T-13-PRI 2.553 KA ANG: -65.45

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.457	0.14	R

TOTAL REMOTE: 2.457 KA NACD RATIO: 0.9625

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.553	2.553	2.553	2.553

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.017	1.000	1.000	1.000
DUTY (KA) :	2.596	2.553	2.553	2.553

B-T-B12-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B17-PRI E/Z: 2.477 KA AT -63.66 DEG (59.20 MVA) X/R: 2.03
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.4272 + J 2.8829 OHMS
CONTRIBUTIONS: B-T-B60-PRI 2.477 KA ANG: -63.66

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.384	0.18	R

TOTAL REMOTE: 2.384 KA NACD RATIO: 0.9627

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.477	2.477	2.477	2.477

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.015	1.000	1.000	1.000
	DUTY (KA) :	2.514	2.477	2.477	2.477

B-T-B17-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B18-PRI E/Z: 2.468 KA AT -63.45 DEG (58.98 MVA) X/R: 2.01
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.4432 + J 2.8883 OHMS
CONTRIBUTIONS: B-T-B17-PRI 2.468 KA ANG: -63.45

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.376	0.18	R

TOTAL REMOTE: 2.376 KA NACD RATIO: 0.9627

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.468	2.468	2.468	2.468

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.015	1.000	1.000	1.000
DUTY (KA) :	2.504	2.468	2.468	2.468

B-T-B18-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B19-PRI E/Z: 2.705 KA AT -69.21 DEG (64.65 MVA) X/R: 2.65
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.0457 + J 2.7538 OHMS
CONTRIBUTIONS: B-T-B82-PRI 0.011 KA ANG: -78.76
CBL-0023 B-T-B22-PRI 2.694 KA ANG: -69.17

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.605	0.06	R

TOTAL REMOTE: 2.605 KA NACD RATIO: 0.9629

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.705	2.705	2.705	2.705

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.023	1.000	1.000	1.000
DUTY (KA) :	2.766	2.705	2.705	2.705

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-T-B19-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B2-LED-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-T-B2-LED-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B2-PRI E/Z: 2.728 KA AT -69.81 DEG (65.20 MVA) X/R: 2.74
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.0082 + J 2.7413 OHMS
CONTRIBUTIONS: BUS-0019 2.697 KA ANG: -69.72
CBL-0017 B-T-B1-PRI 0.013 KA ANG: -78.58
T-B2 B-T-B2-SEC4 0.009 KA ANG: -76.50
T-B2A B-T-B2-SEC3 0.009 KA ANG: -77.91

GENERATOR NAME -- AT BUS -- KA VOLTS PU LOCAL/REMOTE
UTIL-STN 559-1 2.626 0.04 R
TOTAL REMOTE: 2.626 KA NACD RATIO: 0.9628

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.728	2.728	2.728	2.728

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.024	1.000	1.000	1.000
DUTY (KA) :	2.792	2.728	2.728	2.728

B-T-B2-SEC2 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B2-SEC3 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B2-SEC4 VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-T-B22-PRI E/Z: 2.744 KA AT -70.23 DEG (65.59 MVA) X/R: 2.80
VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.9822 + J 2.7323 OHMS
CONTRIBUTIONS: B-T-B19-PRI 0.011 KA ANG: -78.76
CBL-0024 B-T-B33-PRI 2.733 KA ANG: -70.19

GENERATOR NAME -- AT BUS -- KA VOLTS PU LOCAL/REMOTE
UTIL-STN 559-1 2.643 0.03 R
TOTAL REMOTE: 2.643 KA NACD RATIO: 0.9630

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.744	2.744	2.744	2.744

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.024	1.000	1.000	1.000
	DUTY (KA) :	2.811	2.744	2.744	2.744

B-T-B22-SEC VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-T-B3-PRI E/Z: 2.680 KA AT -68.59 DEG (64.06 MVA) X/R: 2.57
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.0853 + J 2.7678 OHMS
CONTRIBUTIONS: B-T-B78-PRI 0.024 KA ANG: -78.20
T-B3 B-T-B3-SEC 0.013 KA ANG: -78.05
CBL-0033 BUS-0065 2.643 KA ANG: -68.46

GENERATOR NAME	AT BUS	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1		2.580	0.07	R

TOTAL REMOTE: 2.580 KA NACD RATIO: 0.9626

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.680	2.680	2.680	2.680

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.022	1.000	1.000	1.000
DUTY (KA) :	2.738	2.680	2.680	2.680

B-T-B3-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B30-PRI E/Z: 2.599 KA AT -66.57 DEG (62.12 MVA) X/R: 2.32
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2192 + J 2.8127 OHMS
CONTRIBUTIONS: B-T-B70-PRI 2.599 KA ANG: -66.57

GENERATOR NAME	AT BUS	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1		2.502	0.12	R

TOTAL REMOTE: 2.502 KA NACD RATIO: 0.9627

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.599	2.599	2.599	2.599

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.019	1.000	1.000	1.000
DUTY (KA) :	2.647	2.599	2.599	2.599

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-T-B30-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B33-PRI E/Z: 2.774 KA AT -71.01 DEG (66.30 MVA) X/R: 2.93
VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.9346 + J 2.7161 OHMS
CONTRIBUTIONS: B-B27-SWGR 2.763 KA ANG: -70.98
CBL-0024 B-T-B22-PRI 0.011 KA ANG: -78.76

GENERATOR NAME -- AT BUS -- KA VOLTS PU LOCAL/REMOTE
UTIL-STN 559-1 2.671 0.02 R
TOTAL REMOTE: 2.671 KA NACD RATIO: 0.9630

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.774	2.774	2.774	2.774

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.026	1.000	1.000	1.000
DUTY (KA) :	2.846	2.774	2.774	2.774

B-T-B33-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B4-PRI E/Z: 2.630 KA AT -67.31 DEG (62.85 MVA) X/R: 2.41
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1688 + J 2.7955 OHMS
CONTRIBUTIONS: B-T-B4-SEC 0.011 KA ANG: -78.77
CBL-0022 B-T-B82-PRI 2.619 KA ANG: -67.26

GENERATOR NAME -- AT BUS -- KA VOLTS PU LOCAL/REMOTE
UTIL-STN 559-1 2.532 0.10 R
TOTAL REMOTE: 2.532 KA NACD RATIO: 0.9628

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.630	2.630	2.630	2.630

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.020	1.000	1.000	1.000
DUTY (KA) :	2.681	2.630	2.630	2.630

B-T-B4-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B5-PRI E/Z: 2.515 KA AT -64.56 DEG (60.11 MVA) X/R: 2.12
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3610 + J 2.8611 OHMS
CONTRIBUTIONS: B-T-B6-PRI 2.515 KA ANG: -64.56

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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CONTRIBUTIONS TO B-T-B5-PRI (CONTINUED)

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.421	0.16	R

TOTAL REMOTE: 2.421 KA NACD RATIO: 0.9625

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.515	2.515	2.515	2.515

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.016	1.000	1.000	1.000
DUTY (KA) :	2.555	2.515	2.515	2.515

B-T-B5-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B6-PRI E/Z: 2.543 KA AT -65.23 DEG (60.78 MVA) X/R: 2.19
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3130 + J 2.8449 OHMS
CONTRIBUTIONS: B-T-B7-PRI 2.536 KA ANG: -65.19
T-B6 B-T-B6-SEC 0.007 KA ANG: -80.26

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.448	0.14	R

TOTAL REMOTE: 2.448 KA NACD RATIO: 0.9625

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.543	2.543	2.543	2.543

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.017	1.000	1.000	1.000
DUTY (KA) :	2.586	2.543	2.543	2.543

B-T-B6-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B60-PRI E/Z: 2.505 KA AT -64.31 DEG (59.86 MVA) X/R: 2.09
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3792 + J 2.8667 OHMS
CONTRIBUTIONS: B-T-B30-PRI 2.505 KA ANG: -64.31

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

	GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
	UTIL-STN 559-1	2.411	0.16	R

TOTAL REMOTE: 2.411 KA NACD RATIO: 0.9627

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.505	2.505	2.505	2.505

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.016	1.000	1.000	1.000
DUTY (KA) :	2.544	2.505	2.505	2.505

B-T-B60-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B61-PRI E/Z: 2.626 KA AT -67.24 DEG (62.77 MVA) X/R: 2.40
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1739 + J 2.7977 OHMS

CONTRIBUTIONS:	B-T-B62-PRI	2.611 KA	ANG: -67.17
T-B61	B-T-B61-SEC	0.005 KA	ANG: -78.63
CBL-0007	B-T-B7-PRI	0.011 KA	ANG: -79.57

	GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
	UTIL-STN 559-1	2.528	0.10	R

TOTAL REMOTE: 2.528 KA NACD RATIO: 0.9626

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.626	2.626	2.626	2.626

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.020	1.000	1.000	1.000
DUTY (KA) :	2.677	2.626	2.626	2.626

B-T-B61-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B62-PRI E/Z: 2.655 KA AT -67.95 DEG (63.46 MVA) X/R: 2.49
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1265 + J 2.7816 OHMS

CONTRIBUTIONS:	B-T-B8-PRI	2.635 KA	ANG: -67.87
T-B62	B-T-B62-SEC	0.005 KA	ANG: -78.53
CBL-0008	B-T-B61-PRI	0.016 KA	ANG: -79.30

	GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
	UTIL-STN 559-1	2.556	0.09	R

TOTAL REMOTE: 2.556 KA NACD RATIO: 0.9627

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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		SYM2	SYM3	SYM5	SYM8
	MULT. FACT:	1.000	1.000	1.000	1.000
	DUTY (KA) :	2.655	2.655	2.655	2.655

		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.021	1.000	1.000	1.000
	DUTY (KA) :	2.710	2.655	2.655	2.655

B-T-B62-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B7-PRI E/Z: 2.581 KA AT -66.13 DEG (61.68 MVA) X/R: 2.28
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2493 + J 2.8234 OHMS
CONTRIBUTIONS: B-T-B61-PRI 2.570 KA ANG: -66.07
T-B7 B-T-B7-SEC 0.005 KA ANG: -78.57
CBL-0009 B-T-B6-PRI 0.007 KA ANG: -80.25

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.484	0.12	R

TOTAL REMOTE: 2.484 KA NACD RATIO: 0.9626

		SYM2	SYM3	SYM5	SYM8
	MULT. FACT:	1.000	1.000	1.000	1.000
	DUTY (KA) :	2.581	2.581	2.581	2.581

		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.018	1.000	1.000	1.000
	DUTY (KA) :	2.627	2.581	2.581	2.581

B-T-B7-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B70-PRI E/Z: 2.667 KA AT -68.25 DEG (63.74 MVA) X/R: 2.53
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1072 + J 2.7749 OHMS
CONTRIBUTIONS: B-T-B70-SEC 0.013 KA ANG: -78.59
CBL-0016 B-T-B1-PRI 2.654 KA ANG: -68.20

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.567	0.08	R

TOTAL REMOTE: 2.567 KA NACD RATIO: 0.9627

		SYM2	SYM3	SYM5	SYM8
	MULT. FACT:	1.000	1.000	1.000	1.000
	DUTY (KA) :	2.667	2.667	2.667	2.667

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.021	1.000	1.000	1.000
	DUTY (KA) :	2.723	2.667	2.667	2.667

B-T-B70-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B78-PRI E/Z: 2.661 KA AT -68.10 DEG (63.60 MVA) X/R: 2.51
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1167 + J 2.7785 OHMS
CONTRIBUTIONS: B-T-B78-SEC 0.024 KA ANG: -78.21
CBL-0032 B-T-B3-PRI 2.637 KA ANG: -68.01

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.561	0.08	R

TOTAL REMOTE: 2.561 KA NACD RATIO: 0.9625

		SYM2	SYM3	SYM5	SYM8
	MULT. FACT:	1.000	1.000	1.000	1.000
	DUTY (KA) :	2.661	2.661	2.661	2.661

		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.021	1.000	1.000	1.000
	DUTY (KA) :	2.716	2.661	2.661	2.661

B-T-B78-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B8-2-SEC VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-T-B8-PRI E/Z: 2.669 KA AT -68.32 DEG (63.80 MVA) X/R: 2.54
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1029 + J 2.7736 OHMS
CONTRIBUTIONS: B-B27-SWGR 2.645 KA ANG: -68.22
CBL-0006 B-T-B62-PRI 0.020 KA ANG: -79.12
T-B8-2 B-T-B8-2-SEC 0.005 KA ANG: -78.11

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.570	0.08	R

TOTAL REMOTE: 2.570 KA NACD RATIO: 0.9627

		SYM2	SYM3	SYM5	SYM8
	MULT. FACT:	1.000	1.000	1.000	1.000
	DUTY (KA) :	2.669	2.669	2.669	2.669

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.021	1.000	1.000	1.000
	DUTY (KA) :	2.726	2.669	2.669	2.669

B-T-B8-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B80-PRI E/Z: 2.615 KA AT -66.95 DEG (62.51 MVA) X/R: 2.37
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1928 + J 2.8036 OHMS
CONTRIBUTIONS: B-T-B4-PRI 2.615 KA ANG: -66.95

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.518	0.11	R

TOTAL REMOTE: 2.518 KA NACD RATIO: 0.9628

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.615	2.615	2.615	2.615

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.019	1.000	1.000	1.000
DUTY (KA) :	2.665	2.615	2.615	2.615

B-T-B80-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B81-PRI E/Z: 2.543 KA AT -65.23 DEG (60.79 MVA) X/R: 2.18
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3127 + J 2.8447 OHMS
CONTRIBUTIONS: B-T-B12-PRI 2.543 KA ANG: -65.23

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.448	0.14	R

TOTAL REMOTE: 2.448 KA NACD RATIO: 0.9625

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.543	2.543	2.543	2.543

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.017	1.000	1.000	1.000
DUTY (KA) :	2.586	2.543	2.543	2.543

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-T-B81-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B82-PRI E/Z: 2.658 KA AT -68.03 DEG (63.54 MVA) X/R: 2.50
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1212 + J 2.7794 OHMS
CONTRIBUTIONS: B-T-B4-PRI 0.011 KA ANG: -78.77
CBL-0021 B-T-B19-PRI 2.647 KA ANG: -67.99

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.560	0.08	R

TOTAL REMOTE: 2.560 KA NACD RATIO: 0.9629

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.658	2.658	2.658	2.658

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.021	1.000	1.000	1.000
DUTY (KA) :	2.713	2.658	2.658	2.658

B-T-B82-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B9-PRI E/Z: 2.600 KA AT -66.60 DEG (62.15 MVA) X/R: 2.33
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2167 + J 2.8123 OHMS
CONTRIBUTIONS: B-T-B10-PRI 2.600 KA ANG: -66.60

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.503	0.11	R

TOTAL REMOTE: 2.503 KA NACD RATIO: 0.9625

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.600	2.600	2.600	2.600

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.019	1.000	1.000	1.000
DUTY (KA) :	2.649	2.600	2.600	2.600

B-T-B9-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B0B70-LP2 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

BUS-0739 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

bB-B7-MC1 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-B27-SWGR	3 PHASE:	2.80	3.1	SYM2:	1.00	1.00	2.80	1.66
VOLTS: 13800.0	SLG:	1.66	3.0	SYM3:	1.00	1.00	2.80	1.66
NACD: 0.963	LN/LN:	2.43		SYM5:	1.00	1.00	2.80	1.66
	LN/LN/GND:	2.50		SYM8:	1.00	1.00	2.80	1.66
	GND RETURN:	1.17		TOT2:	1.03	1.03	2.88	1.70
	Z1(PU):		1.49233	TOT3:	1.00	1.00	2.80	1.66
	Z2(PU):		1.49233	TOT5:	1.00	1.00	2.80	1.66
	Z0(PU):		4.59903	TOT8:	1.00	1.00	2.80	1.66
B-B27-SWGR-M2	3 PHASE:	2.80	3.1	SYM2:	1.00	1.00	2.80	1.66
VOLTS: 13800.0	SLG:	1.66	3.0	SYM3:	1.00	1.00	2.80	1.66
NACD: 0.963	LN/LN:	2.43		SYM5:	1.00	1.00	2.80	1.66
	LN/LN/GND:	2.50		SYM8:	1.00	1.00	2.80	1.66
	GND RETURN:	1.17		TOT2:	1.03	1.03	2.88	1.70
	Z1(PU):		1.49227	TOT3:	1.00	1.00	2.80	1.66
	Z2(PU):		1.49227	TOT5:	1.00	1.00	2.80	1.66
	Z0(PU):		4.59894	TOT8:	1.00	1.00	2.80	1.66
B-SW-MV-1	3 PHASE:	2.51	2.1	SYM2:	1.00	1.00	2.51	1.51
VOLTS: 13800.0	SLG:	1.51	2.3	SYM3:	1.00	1.00	2.51	1.51
NACD: 0.963	LN/LN:	2.17		SYM5:	1.00	1.00	2.51	1.51
	LN/LN/GND:	2.21		SYM8:	1.00	1.00	2.51	1.51
	GND RETURN:	1.08		TOT2:	1.02	1.02	2.55	1.54
	Z1(PU):		1.66987	TOT3:	1.00	1.00	2.51	1.51
	Z2(PU):		1.66987	TOT5:	1.00	1.00	2.51	1.51
	Z0(PU):		4.95489	TOT8:	1.00	1.00	2.51	1.51
B-SW-MV-2	3 PHASE:	2.60	2.3	SYM2:	1.00	1.00	2.60	1.56
VOLTS: 13800.0	SLG:	1.56	2.5	SYM3:	1.00	1.00	2.60	1.56
NACD: 0.963	LN/LN:	2.25		SYM5:	1.00	1.00	2.60	1.56
	LN/LN/GND:	2.30		SYM8:	1.00	1.00	2.60	1.56
	GND RETURN:	1.11		TOT2:	1.02	1.02	2.65	1.59
	Z1(PU):		1.60875	TOT3:	1.00	1.00	2.60	1.56
	Z2(PU):		1.60875	TOT5:	1.00	1.00	2.60	1.56
	Z0(PU):		4.83509	TOT8:	1.00	1.00	2.60	1.56

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-SWGR27 TAP	3 PHASE:	2.80	3.1	SYM2:	1.00	1.00	2.80	1.66
VOLTS: 13800.0	SLG:	1.66	3.0	SYM3:	1.00	1.00	2.80	1.66
NACD: 0.963	LN/LN:	2.43		SYM5:	1.00	1.00	2.80	1.66
	LN/LN/GND:	2.50		SYM8:	1.00	1.00	2.80	1.66
	GND RETURN:	1.17		TOT2:	1.03	1.03	2.88	1.70
	Z1(PU):	1.49230		TOT3:	1.00	1.00	2.80	1.66
	Z2(PU):	1.49230		TOT5:	1.00	1.00	2.80	1.66
	Z0(PU):	4.59898		TOT8:	1.00	1.00	2.80	1.66
B-T-13-PRI	3 PHASE:	2.58	2.3	SYM2:	1.00	1.00	2.58	1.59
VOLTS: 13800.0	SLG:	1.59	2.6	SYM3:	1.00	1.00	2.58	1.59
NACD: 0.963	LN/LN:	2.24		SYM5:	1.00	1.00	2.58	1.59
	LN/LN/GND:	2.27		SYM8:	1.00	1.00	2.58	1.59
	GND RETURN:	1.15		TOT2:	1.02	1.02	2.63	1.62
	Z1(PU):	1.62094		TOT3:	1.00	1.00	2.58	1.59
	Z2(PU):	1.62094		TOT5:	1.00	1.00	2.58	1.59
	Z0(PU):	4.66065		TOT8:	1.00	1.00	2.58	1.59
B-T-B1-PRI	3 PHASE:	2.71	2.7	SYM2:	1.00	1.00	2.71	1.61
VOLTS: 13800.0	SLG:	1.61	2.7	SYM3:	1.00	1.00	2.71	1.61
NACD: 0.963	LN/LN:	2.35		SYM5:	1.00	1.00	2.71	1.61
	LN/LN/GND:	2.41		SYM8:	1.00	1.00	2.71	1.61
	GND RETURN:	1.14		TOT2:	1.02	1.02	2.77	1.65
	Z1(PU):	1.54481		TOT3:	1.00	1.00	2.71	1.61
	Z2(PU):	1.54481		TOT5:	1.00	1.00	2.71	1.61
	Z0(PU):	4.70875		TOT8:	1.00	1.00	2.71	1.61
B-T-B10-PRI	3 PHASE:	2.63	2.4	SYM2:	1.00	1.00	2.63	1.60
VOLTS: 13800.0	SLG:	1.60	2.7	SYM3:	1.00	1.00	2.63	1.60
NACD: 0.963	LN/LN:	2.28		SYM5:	1.00	1.00	2.63	1.60
	LN/LN/GND:	2.32		SYM8:	1.00	1.00	2.63	1.60
	GND RETURN:	1.15		TOT2:	1.02	1.02	2.68	1.64
	Z1(PU):	1.58985		TOT3:	1.00	1.00	2.63	1.60
	Z2(PU):	1.58985		TOT5:	1.00	1.00	2.63	1.60
	Z0(PU):	4.64662		TOT8:	1.00	1.00	2.63	1.60

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B12-PRI	3 PHASE:	2.55	2.2	SYM2:	1.00	1.00	2.55	1.58
VOLTS: 13800.0	SLG:	1.58	2.5	SYM3:	1.00	1.00	2.55	1.58
NACD: 0.963	LN/LN:	2.21		SYM5:	1.00	1.00	2.55	1.58
	LN/LN/GND:	2.24		SYM8:	1.00	1.00	2.55	1.58
	GND RETURN:	1.14		TOT2:	1.02	1.02	2.60	1.61
	Z1(PU):		1.63903	TOT3:	1.00	1.00	2.55	1.58
	Z2(PU):		1.63903	TOT5:	1.00	1.00	2.55	1.58
	Z0(PU):		4.69454	TOT8:	1.00	1.00	2.55	1.58
B-T-B17-PRI	3 PHASE:	2.48	2.0	SYM2:	1.00	1.00	2.48	1.50
VOLTS: 13800.0	SLG:	1.50	2.2	SYM3:	1.00	1.00	2.48	1.50
NACD: 0.963	LN/LN:	2.14		SYM5:	1.00	1.00	2.48	1.50
	LN/LN/GND:	2.18		SYM8:	1.00	1.00	2.48	1.50
	GND RETURN:	1.08		TOT2:	1.02	1.02	2.51	1.53
	Z1(PU):		1.68915	TOT3:	1.00	1.00	2.48	1.50
	Z2(PU):		1.68915	TOT5:	1.00	1.00	2.48	1.50
	Z0(PU):		4.99022	TOT8:	1.00	1.00	2.48	1.50
B-T-B18-PRI	3 PHASE:	2.47	2.0	SYM2:	1.00	1.00	2.47	1.50
VOLTS: 13800.0	SLG:	1.50	2.2	SYM3:	1.00	1.00	2.47	1.50
NACD: 0.963	LN/LN:	2.14		SYM5:	1.00	1.00	2.47	1.50
	LN/LN/GND:	2.18		SYM8:	1.00	1.00	2.47	1.50
	GND RETURN:	1.07		TOT2:	1.01	1.02	2.50	1.52
	Z1(PU):		1.69543	TOT3:	1.00	1.00	2.47	1.50
	Z2(PU):		1.69543	TOT5:	1.00	1.00	2.47	1.50
	Z0(PU):		5.00206	TOT8:	1.00	1.00	2.47	1.50
B-T-B19-PRI	3 PHASE:	2.70	2.7	SYM2:	1.00	1.00	2.70	1.61
VOLTS: 13800.0	SLG:	1.61	2.7	SYM3:	1.00	1.00	2.70	1.61
NACD: 0.963	LN/LN:	2.34		SYM5:	1.00	1.00	2.70	1.61
	LN/LN/GND:	2.41		SYM8:	1.00	1.00	2.70	1.61
	GND RETURN:	1.14		TOT2:	1.02	1.02	2.77	1.65
	Z1(PU):		1.54675	TOT3:	1.00	1.00	2.70	1.61
	Z2(PU):		1.54675	TOT5:	1.00	1.00	2.70	1.61
	Z0(PU):		4.71158	TOT8:	1.00	1.00	2.70	1.61

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B2-PRI	3 PHASE:	2.73	2.7	SYM2:	1.00	1.00	2.73	1.62
VOLTS: 13800.0	SLG:	1.62	2.8	SYM3:	1.00	1.00	2.73	1.62
NACD: 0.963	LN/LN:	2.36		SYM5:	1.00	1.00	2.73	1.62
	LN/LN/GND:	2.43		SYM8:	1.00	1.00	2.73	1.62
	GND RETURN:	1.15		TOT2:	1.02	1.02	2.79	1.66
	Z1(PU):		1.53371	TOT3:	1.00	1.00	2.73	1.62
	Z2(PU):		1.53371	TOT5:	1.00	1.00	2.73	1.62
	Z0(PU):		4.68608	TOT8:	1.00	1.00	2.73	1.62
B-T-B22-PRI	3 PHASE:	2.74	2.8	SYM2:	1.00	1.00	2.74	1.63
VOLTS: 13800.0	SLG:	1.63	2.8	SYM3:	1.00	1.00	2.74	1.63
NACD: 0.963	LN/LN:	2.38		SYM5:	1.00	1.00	2.74	1.63
	LN/LN/GND:	2.44		SYM8:	1.00	1.00	2.74	1.63
	GND RETURN:	1.16		TOT2:	1.02	1.02	2.81	1.67
	Z1(PU):		1.52460	TOT3:	1.00	1.00	2.74	1.63
	Z2(PU):		1.52460	TOT5:	1.00	1.00	2.74	1.63
	Z0(PU):		4.66629	TOT8:	1.00	1.00	2.74	1.63
B-T-B3-PRI	3 PHASE:	2.68	2.6	SYM2:	1.00	1.00	2.68	1.62
VOLTS: 13800.0	SLG:	1.62	2.7	SYM3:	1.00	1.00	2.68	1.62
NACD: 0.963	LN/LN:	2.32		SYM5:	1.00	1.00	2.68	1.62
	LN/LN/GND:	2.37		SYM8:	1.00	1.00	2.68	1.62
	GND RETURN:	1.16		TOT2:	1.02	1.02	2.74	1.66
	Z1(PU):		1.56112	TOT3:	1.00	1.00	2.68	1.62
	Z2(PU):		1.56112	TOT5:	1.00	1.00	2.68	1.62
	Z0(PU):		4.63324	TOT8:	1.00	1.00	2.68	1.62
B-T-B30-PRI	3 PHASE:	2.60	2.3	SYM2:	1.00	1.00	2.60	1.56
VOLTS: 13800.0	SLG:	1.56	2.5	SYM3:	1.00	1.00	2.60	1.56
NACD: 0.963	LN/LN:	2.25		SYM5:	1.00	1.00	2.60	1.56
	LN/LN/GND:	2.30		SYM8:	1.00	1.00	2.60	1.56
	GND RETURN:	1.11		TOT2:	1.02	1.02	2.65	1.59
	Z1(PU):		1.60972	TOT3:	1.00	1.00	2.60	1.56
	Z2(PU):		1.60972	TOT5:	1.00	1.00	2.60	1.56
	Z0(PU):		4.83788	TOT8:	1.00	1.00	2.60	1.56

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B33-PRI	3 PHASE:	2.77	2.9	SYM2:	1.00	1.00	2.77	1.64
VOLTS: 13800.0	SLG:	1.64	2.9	SYM3:	1.00	1.00	2.77	1.64
NACD: 0.963	LN/LN:	2.40		SYM5:	1.00	1.00	2.77	1.64
	LN/LN/GND:	2.47		SYM8:	1.00	1.00	2.77	1.64
	GND RETURN:	1.17		TOT2:	1.03	1.03	2.85	1.68
	Z1(PU):		1.50832	TOT3:	1.00	1.00	2.77	1.64
	Z2(PU):		1.50832	TOT5:	1.00	1.00	2.77	1.64
	Z0(PU):		4.63256	TOT8:	1.00	1.00	2.77	1.64
B-T-B4-PRI	3 PHASE:	2.63	2.4	SYM2:	1.00	1.00	2.63	1.57
VOLTS: 13800.0	SLG:	1.57	2.5	SYM3:	1.00	1.00	2.63	1.57
NACD: 0.963	LN/LN:	2.28		SYM5:	1.00	1.00	2.63	1.57
	LN/LN/GND:	2.33		SYM8:	1.00	1.00	2.63	1.57
	GND RETURN:	1.12		TOT2:	1.02	1.02	2.68	1.61
	Z1(PU):		1.59105	TOT3:	1.00	1.00	2.63	1.57
	Z2(PU):		1.59105	TOT5:	1.00	1.00	2.63	1.57
	Z0(PU):		4.80042	TOT8:	1.00	1.00	2.63	1.57
B-T-B5-PRI	3 PHASE:	2.51	2.1	SYM2:	1.00	1.00	2.51	1.52
VOLTS: 13800.0	SLG:	1.52	2.3	SYM3:	1.00	1.00	2.51	1.52
NACD: 0.963	LN/LN:	2.18		SYM5:	1.00	1.00	2.51	1.52
	LN/LN/GND:	2.22		SYM8:	1.00	1.00	2.51	1.52
	GND RETURN:	1.09		TOT2:	1.02	1.02	2.56	1.55
	Z1(PU):		1.66369	TOT3:	1.00	1.00	2.51	1.52
	Z2(PU):		1.66369	TOT5:	1.00	1.00	2.51	1.52
	Z0(PU):		4.94311	TOT8:	1.00	1.00	2.51	1.52
B-T-B6-PRI	3 PHASE:	2.54	2.2	SYM2:	1.00	1.00	2.54	1.53
VOLTS: 13800.0	SLG:	1.53	2.3	SYM3:	1.00	1.00	2.54	1.53
NACD: 0.963	LN/LN:	2.20		SYM5:	1.00	1.00	2.54	1.53
	LN/LN/GND:	2.25		SYM8:	1.00	1.00	2.54	1.53
	GND RETURN:	1.10		TOT2:	1.02	1.02	2.59	1.56
	Z1(PU):		1.64529	TOT3:	1.00	1.00	2.54	1.53
	Z2(PU):		1.64529	TOT5:	1.00	1.00	2.54	1.53
	Z0(PU):		4.90790	TOT8:	1.00	1.00	2.54	1.53

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B60-PRI	3 PHASE:	2.50	2.1	SYM2:	1.00	1.00	2.50	1.51
VOLTS: 13800.0	SLG:	1.51	2.3	SYM3:	1.00	1.00	2.50	1.51
NACD: 0.963	LN/LN:	2.17		SYM5:	1.00	1.00	2.50	1.51
	LN/LN/GND:	2.21		SYM8:	1.00	1.00	2.50	1.51
	GND RETURN:	1.08		TOT2:	1.02	1.02	2.54	1.54
	Z1(PU):		1.67045	TOT3:	1.00	1.00	2.50	1.51
	Z2(PU):		1.67045	TOT5:	1.00	1.00	2.50	1.51
	Z0(PU):		4.95478	TOT8:	1.00	1.00	2.50	1.51
B-T-B61-PRI	3 PHASE:	2.63	2.4	SYM2:	1.00	1.00	2.63	1.57
VOLTS: 13800.0	SLG:	1.57	2.5	SYM3:	1.00	1.00	2.63	1.57
NACD: 0.963	LN/LN:	2.27		SYM5:	1.00	1.00	2.63	1.57
	LN/LN/GND:	2.33		SYM8:	1.00	1.00	2.63	1.57
	GND RETURN:	1.12		TOT2:	1.02	1.02	2.68	1.60
	Z1(PU):		1.59316	TOT3:	1.00	1.00	2.63	1.57
	Z2(PU):		1.59316	TOT5:	1.00	1.00	2.63	1.57
	Z0(PU):		4.80607	TOT8:	1.00	1.00	2.63	1.57
B-T-B62-PRI	3 PHASE:	2.65	2.5	SYM2:	1.00	1.00	2.65	1.58
VOLTS: 13800.0	SLG:	1.58	2.6	SYM3:	1.00	1.00	2.65	1.58
NACD: 0.963	LN/LN:	2.30		SYM5:	1.00	1.00	2.65	1.58
	LN/LN/GND:	2.36		SYM8:	1.00	1.00	2.65	1.58
	GND RETURN:	1.13		TOT2:	1.02	1.02	2.71	1.62
	Z1(PU):		1.57584	TOT3:	1.00	1.00	2.65	1.58
	Z2(PU):		1.57584	TOT5:	1.00	1.00	2.65	1.58
	Z0(PU):		4.77154	TOT8:	1.00	1.00	2.65	1.58
B-T-B7-PRI	3 PHASE:	2.58	2.3	SYM2:	1.00	1.00	2.58	1.55
VOLTS: 13800.0	SLG:	1.55	2.4	SYM3:	1.00	1.00	2.58	1.55
NACD: 0.963	LN/LN:	2.23		SYM5:	1.00	1.00	2.58	1.55
	LN/LN/GND:	2.28		SYM8:	1.00	1.00	2.58	1.55
	GND RETURN:	1.11		TOT2:	1.02	1.02	2.63	1.58
	Z1(PU):		1.62121	TOT3:	1.00	1.00	2.58	1.55
	Z2(PU):		1.62121	TOT5:	1.00	1.00	2.58	1.55
	Z0(PU):		4.86121	TOT8:	1.00	1.00	2.58	1.55

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B70-PRI	3 PHASE:	2.67	2.5	SYM2:	1.00	1.00	2.67	1.59
VOLTS: 13800.0	SLG:	1.59	2.6	SYM3:	1.00	1.00	2.67	1.59
NACD: 0.963	LN/LN:	2.31		SYM5:	1.00	1.00	2.67	1.59
	LN/LN/GND:	2.37		SYM8:	1.00	1.00	2.67	1.59
	GND RETURN:	1.13		TOT2:	1.02	1.02	2.72	1.62
	Z1(PU):		1.56879	TOT3:	1.00	1.00	2.67	1.59
	Z2(PU):		1.56879	TOT5:	1.00	1.00	2.67	1.59
	Z0(PU):		4.75723	TOT8:	1.00	1.00	2.67	1.59
B-T-B78-PRI	3 PHASE:	2.66	2.5	SYM2:	1.00	1.00	2.66	1.61
VOLTS: 13800.0	SLG:	1.61	2.7	SYM3:	1.00	1.00	2.66	1.61
NACD: 0.963	LN/LN:	2.30		SYM5:	1.00	1.00	2.66	1.61
	LN/LN/GND:	2.35		SYM8:	1.00	1.00	2.66	1.61
	GND RETURN:	1.16		TOT2:	1.02	1.02	2.72	1.65
	Z1(PU):		1.57243	TOT3:	1.00	1.00	2.66	1.61
	Z2(PU):		1.57243	TOT5:	1.00	1.00	2.66	1.61
	Z0(PU):		4.63860	TOT8:	1.00	1.00	2.66	1.61
B-T-B8-PRI	3 PHASE:	2.67	2.5	SYM2:	1.00	1.00	2.67	1.59
VOLTS: 13800.0	SLG:	1.59	2.6	SYM3:	1.00	1.00	2.67	1.59
NACD: 0.963	LN/LN:	2.31		SYM5:	1.00	1.00	2.67	1.59
	LN/LN/GND:	2.37		SYM8:	1.00	1.00	2.67	1.59
	GND RETURN:	1.13		TOT2:	1.02	1.02	2.73	1.63
	Z1(PU):		1.56730	TOT3:	1.00	1.00	2.67	1.59
	Z2(PU):		1.56730	TOT5:	1.00	1.00	2.67	1.59
	Z0(PU):		4.75435	TOT8:	1.00	1.00	2.67	1.59
B-T-B80-PRI	3 PHASE:	2.62	2.4	SYM2:	1.00	1.00	2.62	1.57
VOLTS: 13800.0	SLG:	1.57	2.5	SYM3:	1.00	1.00	2.62	1.57
NACD: 0.963	LN/LN:	2.26		SYM5:	1.00	1.00	2.62	1.57
	LN/LN/GND:	2.32		SYM8:	1.00	1.00	2.62	1.57
	GND RETURN:	1.12		TOT2:	1.02	1.02	2.66	1.60
	Z1(PU):		1.59987	TOT3:	1.00	1.00	2.62	1.57
	Z2(PU):		1.59987	TOT5:	1.00	1.00	2.62	1.57
	Z0(PU):		4.81773	TOT8:	1.00	1.00	2.62	1.57

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B81-PRI	3 PHASE:	2.54	2.2	SYM2:	1.00	1.00	2.54	1.57
VOLTS: 13800.0	SLG:	1.57	2.5	SYM3:	1.00	1.00	2.54	1.57
NACD: 0.963	LN/LN:	2.20		SYM5:	1.00	1.00	2.54	1.57
	LN/LN/GND:	2.24		SYM8:	1.00	1.00	2.54	1.57
	GND RETURN:	1.14		TOT2:	1.02	1.02	2.59	1.60
	Z1(PU):		1.64511	TOT3:	1.00	1.00	2.54	1.57
	Z2(PU):		1.64511	TOT5:	1.00	1.00	2.54	1.57
	Z0(PU):		4.70588	TOT8:	1.00	1.00	2.54	1.57
B-T-B82-PRI	3 PHASE:	2.66	2.5	SYM2:	1.00	1.00	2.66	1.59
VOLTS: 13800.0	SLG:	1.59	2.6	SYM3:	1.00	1.00	2.66	1.59
NACD: 0.963	LN/LN:	2.30		SYM5:	1.00	1.00	2.66	1.59
	LN/LN/GND:	2.36		SYM8:	1.00	1.00	2.66	1.59
	GND RETURN:	1.13		TOT2:	1.02	1.02	2.71	1.62
	Z1(PU):		1.57372	TOT3:	1.00	1.00	2.66	1.59
	Z2(PU):		1.57372	TOT5:	1.00	1.00	2.66	1.59
	Z0(PU):		4.76592	TOT8:	1.00	1.00	2.66	1.59
B-T-B9-PRI	3 PHASE:	2.60	2.3	SYM2:	1.00	1.00	2.60	1.60
VOLTS: 13800.0	SLG:	1.60	2.6	SYM3:	1.00	1.00	2.60	1.60
NACD: 0.963	LN/LN:	2.25		SYM5:	1.00	1.00	2.60	1.60
	LN/LN/GND:	2.29		SYM8:	1.00	1.00	2.60	1.60
	GND RETURN:	1.15		TOT2:	1.02	1.02	2.65	1.63
	Z1(PU):		1.60901	TOT3:	1.00	1.00	2.60	1.60
	Z2(PU):		1.60901	TOT5:	1.00	1.00	2.60	1.60
	Z0(PU):		4.65531	TOT8:	1.00	1.00	2.60	1.60

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY ON LINE AND ALL MOTORS ON LINE

I N T E R R U P T I N G D U T Y S U M M A R Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

BUS RECORD NO NAME	VOLTAGE L-L	NACD RATIO	* 3 P H A S E * E/Z KA	X/R	* * * S L G * * * E/Z KA	X/R
B-B27-SWGR	13800.	0.963	2.803	3.07	1.655	2.98
B-B27-SWGR-M2	13800.	0.963	2.804	3.07	1.655	2.98
B-SW-MV-1	13800.	0.963	2.505	2.10	1.514	2.28
B-SW-MV-2	13800.	0.963	2.601	2.33	1.559	2.46
B-SWGR27 TAP	13800.	0.963	2.804	3.07	1.655	2.98
B-T-13-PRI	13800.	0.963	2.581	2.28	1.589	2.58
B-T-B1-PRI	13800.	0.963	2.708	2.67	1.609	2.71
B-T-B10-PRI	13800.	0.963	2.632	2.42	1.604	2.66
B-T-B12-PRI	13800.	0.963	2.553	2.21	1.576	2.51
B-T-B17-PRI	13800.	0.963	2.477	2.03	1.500	2.22
B-T-B18-PRI	13800.	0.963	2.468	2.01	1.496	2.21
B-T-B19-PRI	13800.	0.963	2.705	2.65	1.608	2.70
B-T-B2-PRI	13800.	0.963	2.728	2.74	1.619	2.76
B-T-B22-PRI	13800.	0.963	2.744	2.80	1.627	2.81
B-T-B3-PRI	13800.	0.963	2.680	2.57	1.619	2.74
B-T-B30-PRI	13800.	0.963	2.599	2.32	1.558	2.46
B-T-B33-PRI	13800.	0.963	2.774	2.93	1.641	2.89
B-T-B4-PRI	13800.	0.963	2.630	2.41	1.572	2.52
B-T-B5-PRI	13800.	0.963	2.515	2.12	1.518	2.29
B-T-B6-PRI	13800.	0.963	2.543	2.19	1.531	2.35
B-T-B60-PRI	13800.	0.963	2.505	2.09	1.514	2.27
B-T-B61-PRI	13800.	0.963	2.626	2.40	1.571	2.52
B-T-B62-PRI	13800.	0.963	2.655	2.49	1.584	2.58
B-T-B7-PRI	13800.	0.963	2.581	2.28	1.549	2.42
B-T-B70-PRI	13800.	0.963	2.667	2.53	1.590	2.61
B-T-B78-PRI	13800.	0.963	2.661	2.51	1.613	2.71
B-T-B8-PRI	13800.	0.963	2.669	2.54	1.591	2.61
B-T-B80-PRI	13800.	0.963	2.615	2.37	1.566	2.49
B-T-B81-PRI	13800.	0.963	2.543	2.18	1.571	2.49
B-T-B82-PRI	13800.	0.963	2.658	2.50	1.586	2.59
B-T-B9-PRI	13800.	0.963	2.600	2.33	1.595	2.61
BUS-0017	13800.	0.963	2.745	2.81	1.627	2.81
BUS-0019	13800.	0.963	2.745	2.81	1.627	2.81
BUS-0063	13800.	0.963	2.697	2.63	1.624	2.77
BUS-0065	13800.	0.963	2.697	2.63	1.624	2.77
BUS-0747	13800.	0.963	2.728	2.74	1.619	2.76

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  36 FAULTED BUSES,  679 BRANCHES,   29 CONTRIBUTIONS
UNBALANCED FAULTS REQUESTED

*** SHORT CIRCUIT STUDY COMPLETE ***
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE
Feb 03, 2005 10:19:17

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INTERPRETATION AND APPLICATION BY A REGISTERED ENGINEER ONLY
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SKM POWER*TOOLS FOR WINDOWS
A_FAULT SHORT CIRCUIT ANALYSIS REPORT
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T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B1-MDP	FAULT:	4.396 KA AT	-60.38 DEG (	1.58 MVA)	X/R:	1.76
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0135 + J	0.0237	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.396 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.414 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.396 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.396 KA			
	CONTRIBUTIONS: B-B1-MDP-M		4.396 KA	ANG:	-60.38	
B-B1-MDP-M	FAULT:	4.677 KA AT	-61.28 DEG (	1.69 MVA)	X/R:	1.82
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0123 + J	0.0225	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.677 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.740 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.677 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.677 KA			
	CONTRIBUTIONS: B-T-B1-SEC		4.677 KA	ANG:	-61.28	
B-B10 DISC	FAULT:	5.743 KA AT	-61.00 DEG (	2.07 MVA)	X/R:	1.80
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0101 + J	0.0183	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		5.743 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		5.803 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		5.743 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		5.743 KA			
	CONTRIBUTIONS: B-T-B10-SEC		5.743 KA	ANG:	-61.00	
B-B10-MDP	FAULT:	5.297 KA AT	-59.46 DEG (	1.91 MVA)	X/R:	1.70
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0115 + J	0.0195	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		5.297 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		5.297 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		5.297 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		5.297 KA			
	CONTRIBUTIONS: B-B10 DISC		5.297 KA	ANG:	-59.46	
B-B12-MAP-M	FAULT:	4.270 KA AT	-61.53 DEG (	1.54 MVA)	X/R:	1.84
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0134 + J	0.0247	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.270 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.340 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.270 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.270 KA			
	CONTRIBUTIONS: B-T-B12-SEC		4.270 KA	ANG:	-61.53	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B12-MDP	FAULT:	4.264 KA AT	-61.50 DEG (	1.54 MVA)	X/R:	1.84
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0134 + J	0.0248	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.264 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.332 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.264 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.264 KA				
	CONTRIBUTIONS: B-B12-MAP-M	4.264 KA	ANG:	-61.50		
B-B13-APT-13	FAULT:	6.438 KA AT	-54.21 DEG (	2.68 MVA)	X/R:	1.39
	VOLTAGE:	240.	EQUIV. IMPEDANCE=	0.0126 + J	0.0175	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.438 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.438 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.438 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.438 KA				
	CONTRIBUTIONS: B-B13-MDP	6.438 KA	ANG:	-54.21		
B-B13-APT-14	FAULT:	5.929 KA AT	-64.25 DEG (	2.46 MVA)	X/R:	2.07
	VOLTAGE:	240.	EQUIV. IMPEDANCE=	0.0102 + J	0.0211	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.929 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.217 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.929 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.929 KA				
	CONTRIBUTIONS: B-B13-MDP	5.929 KA	ANG:	-64.25		
B-B13-APT-15	FAULT:	4.580 KA AT	-64.29 DEG (	1.90 MVA)	X/R:	2.08
	VOLTAGE:	240.	EQUIV. IMPEDANCE=	0.0131 + J	0.0273	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.580 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.805 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.580 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.580 KA				
	CONTRIBUTIONS: B-B13-MDP	4.580 KA	ANG:	-64.29		
B-B13-GARAGE	FAULT:	4.776 KA AT	-50.99 DEG (	1.99 MVA)	X/R:	1.23
	VOLTAGE:	240.	EQUIV. IMPEDANCE=	0.0183 + J	0.0225	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.776 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.776 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.776 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.776 KA				
	CONTRIBUTIONS: B-B13-MDP	4.776 KA	ANG:	-50.99		
B-B13-MDP	FAULT:	8.658 KA AT	-67.26 DEG (	3.60 MVA)	X/R:	2.39
	VOLTAGE:	240.	EQUIV. IMPEDANCE=	0.0062 + J	0.0148	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	8.658 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.439 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.658 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.658 KA		
	CONTRIBUTIONS: B-B13-MDP-M	8.658 KA	ANG:	-67.26
B-B13-MDP-M	FAULT: 8.664 KA AT -67.30 DEG (3.60 MVA)		X/R:	2.39
	VOLTAGE: 240. EQUIV. IMPEDANCE= 0.0062 + J 0.0148 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.664 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.451 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.664 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.664 KA		
	CONTRIBUTIONS: B-B13-TXMR SEC	8.664 KA	ANG:	-67.30
B-B13-MGR H16	FAULT: 2.557 KA AT -42.43 DEG (1.06 MVA)		X/R:	0.91
	VOLTAGE: 240. EQUIV. IMPEDANCE= 0.0400 + J 0.0366 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.557 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.557 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.557 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.557 KA		
	CONTRIBUTIONS: B-B13-MDP	2.557 KA	ANG:	-42.43
B-B13-TXMR SEC	FAULT: 11.100 KA AT -71.13 DEG (4.61 MVA)		X/R:	2.93
	VOLTAGE: 240. EQUIV. IMPEDANCE= 0.0040 + J 0.0118 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.100 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.100 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.100 KA		
	CONTRIBUTIONS: B-T-13-PRI	11.100 KA	ANG:	-71.13
B-B13-UNKNOWN	FAULT: 6.438 KA AT -54.21 DEG (2.68 MVA)		X/R:	1.39
	VOLTAGE: 240. EQUIV. IMPEDANCE= 0.0126 + J 0.0175 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.438 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.438 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.438 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.438 KA		
	CONTRIBUTIONS: B-B13-MDP	6.438 KA	ANG:	-54.21

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B17-A/C       FAULT:    7.887 KA AT  -59.02 DEG (   2.84 MVA)  X/R:     1.67
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0078 + J  0.0131  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.887 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.887 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.887 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.887 KA
                CONTRIBUTIONS:  B-B17-DP           7.887 KA      ANG:   -59.02

B-B17-A/C-2     FAULT:    7.084 KA AT  -51.31 DEG (   2.55 MVA)  X/R:     1.25
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0106 + J  0.0132  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.084 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.084 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.084 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.084 KA
                CONTRIBUTIONS:  B-B17-DP           7.084 KA      ANG:   -51.31

B-B17-AC1       FAULT:    7.084 KA AT  -51.31 DEG (   2.55 MVA)  X/R:     1.25
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0106 + J  0.0132  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.084 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.084 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.084 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.084 KA
                CONTRIBUTIONS:  B-B17-DP           7.084 KA      ANG:   -51.31

B-B17-ACB       FAULT:    6.457 KA AT  -45.76 DEG (   2.33 MVA)  X/R:     1.03
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0130 + J  0.0133  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.457 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.457 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.457 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.457 KA
                CONTRIBUTIONS:  B-B17-DP           6.457 KA      ANG:   -45.76

B-B17-ANIMALRM  FAULT:    4.451 KA AT  -34.75 DEG (   1.60 MVA)  X/R:     0.69
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0222 + J  0.0154  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    4.451 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   4.451 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   4.451 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   4.451 KA
                CONTRIBUTIONS:  B-B17-EMERG        4.451 KA      ANG:   -34.75

B-B17-ATS       FAULT:    9.541 KA AT  -58.88 DEG (   3.44 MVA)  X/R:     1.66
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0065 + J  0.0108  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	9.541 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.541 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.541 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.541 KA		
	ATS-B17 BUS-0740	9.541 KA	ANG:	-58.88
B-B17-DP	FAULT: 8.748 KA AT -61.47 DEG (3.15 MVA)		X/R:	1.84
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0066 + J 0.0121			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.748 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.885 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.748 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.748 KA		
	CONTRIBUTIONS: B-B17-MAIN	8.748 KA	ANG:	-61.47
B-B17-EMAIN	FAULT: 10.646 KA AT -63.87 DEG (3.84 MVA)		X/R:	2.04
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0050 + J 0.0101			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.646 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.646 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.646 KA		
	CONTRIBUTIONS: B-B17-MAIN	10.646 KA	ANG:	-63.87
B-B17-EMERG	FAULT: 9.209 KA AT -57.45 DEG (3.32 MVA)		X/R:	1.57
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0070 + J 0.0110			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.209 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.209 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.209 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.209 KA		
	CONTRIBUTIONS: B-B17-ATS	9.209 KA	ANG:	-57.45

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B17-MAIN FAULT: 10.948 KA AT -65.30 DEG (3.94 MVA) X/R: 2.17
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0046 + J 0.0100 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 10.948 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 10.948 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 10.948 KA
CONTRIBUTIONS: B-T-B17-SEC 10.948 KA ANG: -65.30

B-B17-NEB1 FAULT: 4.005 KA AT -32.83 DEG (1.44 MVA) X/R: 0.65
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0252 + J 0.0163 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.005 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.005 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.005 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.005 KA
CONTRIBUTIONS: B-B17-EMERG 4.005 KA ANG: -32.83

B-B17-NEB2 FAULT: 5.704 KA AT -37.75 DEG (2.06 MVA) X/R: 0.77
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0166 + J 0.0129 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.704 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.704 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.704 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.704 KA
CONTRIBUTIONS: B-B17-EMERG 5.704 KA ANG: -37.75

B-B17-NP11 FAULT: 5.592 KA AT -38.71 DEG (2.01 MVA) X/R: 0.80
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0168 + J 0.0134 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.592 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.592 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.592 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.592 KA
CONTRIBUTIONS: B-B17-DP 5.592 KA ANG: -38.71

B-B17-NP12 FAULT: 7.780 KA AT -58.06 DEG (2.80 MVA) X/R: 1.60
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0082 + J 0.0131 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.780 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.780 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.780 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.780 KA
CONTRIBUTIONS: B-B17-DP 7.780 KA ANG: -58.06

B-B17-NP21 FAULT: 7.084 KA AT -51.31 DEG (2.55 MVA) X/R: 1.25
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0106 + J 0.0132 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    7.084 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.084 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.084 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.084 KA
                CONTRIBUTIONS:  B-B17-DP          7.084 KA      ANG:   -51.31

 B-B17-NP22     FAULT:    7.084 KA AT  -51.31 DEG (   2.55 MVA)  X/R:     1.25
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0106 + J  0.0132  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.084 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.084 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.084 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.084 KA
                CONTRIBUTIONS:  B-B17-DP          7.084 KA      ANG:   -51.31

 B-B17-NPA1     FAULT:    7.084 KA AT  -51.31 DEG (   2.55 MVA)  X/R:     1.25
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0106 + J  0.0132  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.084 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.084 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.084 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.084 KA
                CONTRIBUTIONS:  B-B17-DP          7.084 KA      ANG:   -51.31

 B-B17-NPB1     FAULT:    7.653 KA AT  -56.78 DEG (   2.76 MVA)  X/R:     1.53
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0086 + J  0.0131  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.653 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.653 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.653 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.653 KA
                CONTRIBUTIONS:  B-B17-DP          7.653 KA      ANG:   -56.78

 B-B17-NPB2     FAULT:    7.084 KA AT  -51.31 DEG (   2.55 MVA)  X/R:     1.25
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0106 + J  0.0132  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.084 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.084 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.084 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.084 KA
                CONTRIBUTIONS:  B-B17-DP          7.084 KA      ANG:   -51.31

 B-B18-1STFL    FAULT:    5.904 KA AT  -41.67 DEG (   2.13 MVA)  X/R:     0.89
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0152 + J  0.0135  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    5.904 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   5.904 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   5.904 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   5.904 KA
                CONTRIBUTIONS:  B-B18-1STFL-M      5.904 KA      ANG:   -41.67
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B18-1STFL-M	FAULT:	7.215 KA AT	-47.92 DEG (	2.60 MVA)	X/R:	1.11
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0112 + J 0.0124		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.215 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		7.215 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		7.215 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		7.215 KA			
	CONTRIBUTIONS:	B-B18-TAP BOX	7.215 KA		ANG:	-47.92
B-B18-2ND-FL-M	FAULT:	7.215 KA AT	-47.92 DEG (	2.60 MVA)	X/R:	1.11
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0112 + J 0.0124		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.215 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		7.215 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		7.215 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		7.215 KA			
	CONTRIBUTIONS:	B-B18-TAP BOX	7.215 KA		ANG:	-47.92
B-B18-2NDFL	FAULT:	4.961 KA AT	-37.38 DEG (	1.79 MVA)	X/R:	0.76
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0192 + J 0.0147		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.961 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.961 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.961 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.961 KA			
	CONTRIBUTIONS:	B-B18-2ND-FL-M	4.961 KA		ANG:	-37.38
B-B18-AC1	FAULT:	6.968 KA AT	-43.50 DEG (	2.51 MVA)	X/R:	0.95
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0125 + J 0.0119		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		6.968 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		6.968 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		6.968 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		6.968 KA			
	CONTRIBUTIONS:	B-B18-NMDP	6.968 KA		ANG:	-43.50
B-B18-AC2	FAULT:	8.846 KA AT	-58.84 DEG (	3.19 MVA)	X/R:	1.65
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0070 + J 0.0116		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		8.846 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		8.846 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		8.846 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.846 KA			
	CONTRIBUTIONS:	B-B18-NMDP	8.846 KA		ANG:	-58.84
B-B18-ATS-EMRG	FAULT:	7.941 KA AT	-50.96 DEG (	2.86 MVA)	X/R:	1.23
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0095 + J 0.0117		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	7.941 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.941 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.941 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.941 KA		
	CONTRIBUTIONS: BUS-0452	7.941 KA	ANG:	-50.96
B-B18-EMERG	FAULT: 7.116 KA AT -47.51 DEG (2.56 MVA)		X/R:	1.09
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0114 + J 0.0124			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.116 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.116 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.116 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.116 KA		
	CONTRIBUTIONS: B-B18-EMERG-M	7.116 KA	ANG:	-47.51
B-B18-EMERG-M	FAULT: 7.138 KA AT -47.54 DEG (2.57 MVA)		X/R:	1.09
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0114 + J 0.0124			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.138 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.138 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.138 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.138 KA		
	CONTRIBUTIONS: B-B18-TAP BOX	7.138 KA	ANG:	-47.54
B-B18-NCP	FAULT: 9.718 KA AT -60.47 DEG (3.50 MVA)		X/R:	1.77
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0061 + J 0.0108			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.718 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.766 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.718 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.718 KA		
	CONTRIBUTIONS: B-B18-NMDP	9.718 KA	ANG:	-60.47
B-B18-NMDP	FAULT: 10.708 KA AT -66.48 DEG (3.86 MVA)		X/R:	2.30
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0045 + J 0.0103			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.708 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.708 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.708 KA		
	CONTRIBUTIONS: B-B18-NMDP-M	10.708 KA	ANG:	-66.48

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B18-NMDP (CONTINUED)

B-B18-NMDP-M FAULT: 10.731 KA AT -66.54 DEG (3.87 MVA) X/R: 2.30
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0045 + J 0.0103 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 10.731 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 10.731 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 10.731 KA
CONTRIBUTIONS: B-T-B18-SEC 10.731 KA ANG: -66.54

B-B18-NP11 FAULT: 6.968 KA AT -43.50 DEG (2.51 MVA) X/R: 0.95
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0125 + J 0.0119 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.968 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.968 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.968 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.968 KA
CONTRIBUTIONS: B-B18-NMDP 6.968 KA ANG: -43.50

B-B18-NP12 FAULT: 6.968 KA AT -43.50 DEG (2.51 MVA) X/R: 0.95
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0125 + J 0.0119 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.968 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.968 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.968 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.968 KA
CONTRIBUTIONS: B-B18-NMDP 6.968 KA ANG: -43.50

B-B18-NP21 FAULT: 7.564 KA AT -46.67 DEG (2.73 MVA) X/R: 1.06
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0109 + J 0.0115 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.564 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.564 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.564 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.564 KA
CONTRIBUTIONS: B-B18-NMDP 7.564 KA ANG: -46.67

B-B18-NP22 FAULT: 8.271 KA AT -55.07 DEG (2.98 MVA) X/R: 1.43
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0083 + J 0.0119 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 8.271 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 8.271 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 8.271 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 8.271 KA
CONTRIBUTIONS: B-B18-NMDP 8.271 KA ANG: -55.07

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B18-NP23	FAULT:	9.047 KA AT	-60.74 DEG (	3.26 MVA)	X/R:	1.79
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0065 + J 0.0116		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.047 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.117 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.047 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.047 KA				
	CONTRIBUTIONS: B-B18-NMDP	9.047 KA	ANG:	-60.74		
B-B18-STRT LHT	FAULT:	4.677 KA AT	-29.60 DEG (	1.69 MVA)	X/R:	0.57
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0223 + J 0.0127		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.677 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.677 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.677 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.677 KA				
	CONTRIBUTIONS: B-B18-NMDP	4.677 KA	ANG:	-29.60		
B-B18-TAP BOX	FAULT:	7.454 KA AT	-49.10 DEG (	2.69 MVA)	X/R:	1.15
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0105 + J 0.0122		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.454 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.454 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.454 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.454 KA				
	CONTRIBUTIONS: B-B18-ATS-EMRG	7.454 KA	ANG:	-49.10		
B-B19-200A PNL	FAULT:	17.844 KA AT	-69.59 DEG (	6.43 MVA)	X/R:	2.69
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0023 + J 0.0063		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	17.844 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	17.844 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	17.844 KA				
	CONTRIBUTIONS: B-B19-MDP2	17.844 KA	ANG:	-69.59		
B-B19-B1	FAULT:	15.922 KA AT	-60.67 DEG (	5.74 MVA)	X/R:	1.78
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0037 + J 0.0066		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	15.922 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	15.922 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	15.922 KA				
	CONTRIBUTIONS: B-B19-MDP1	15.922 KA	ANG:	-60.67		
B-B19-L1	FAULT:	2.631 KA AT	-22.50 DEG (	0.95 MVA)	X/R:	0.41
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0422 + J 0.0175		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.631 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.631 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.631 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.631 KA		
	CONTRIBUTIONS: B-B19-MDP1	2.631 KA	ANG:	-22.50
B-B19-L2	FAULT: 7.344 KA AT -39.30 DEG (2.65 MVA)		X/R:	0.82
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0127 + J 0.0104			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.344 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.344 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.344 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.344 KA		
	CONTRIBUTIONS: B-B19-MDP1	7.344 KA	ANG:	-39.30
B-B19-MDP1	FAULT: 19.906 KA AT -72.90 DEG (7.17 MVA)		X/R:	3.25
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0018 + J 0.0058			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	19.906 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	19.906 KA		
	CONTRIBUTIONS: B-B19-MDP1-M	19.906 KA	ANG:	-72.90
B-B19-MDP1-M	FAULT: 19.934 KA AT -72.98 DEG (7.18 MVA)		X/R:	3.27
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0018 + J 0.0058			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	19.934 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	19.934 KA		
	CONTRIBUTIONS: B-T-B19-SEC	19.934 KA	ANG:	-72.98
B-B19-MDP2	FAULT: 18.903 KA AT -72.18 DEG (6.81 MVA)		X/R:	3.11
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0019 + J 0.0060			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	18.903 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	18.903 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	18.903 KA		
	CONTRIBUTIONS: B-B19-MDP2-M	18.903 KA	ANG:	-72.18

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B19-MDP2-M	FAULT:	19.226 KA AT	-72.43 DEG (	6.93 MVA)	X/R:	3.16
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0019 + J	0.0060	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	19.226 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	19.226 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	19.226 KA				
	CONTRIBUTIONS: B-T-B19-SEC	19.226 KA	ANG:	-72.43		
B-B19-MDPA	FAULT:	10.495 KA AT	-65.67 DEG (	3.78 MVA)	X/R:	2.21
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0047 + J	0.0104	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.495 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.495 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.495 KA				
	CONTRIBUTIONS: B-B19-MDP1	10.495 KA	ANG:	-65.67		
B-B19-P1	FAULT:	10.495 KA AT	-65.67 DEG (	3.78 MVA)	X/R:	2.21
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0047 + J	0.0104	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.495 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.495 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.495 KA				
	CONTRIBUTIONS: B-B19-MDP1	10.495 KA	ANG:	-65.67		
B-B19-P2	FAULT:	9.005 KA AT	-49.75 DEG (	3.24 MVA)	X/R:	1.18
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0086 + J	0.0102	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.005 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.005 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.005 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.005 KA				
	CONTRIBUTIONS: B-B19-MDP1	9.005 KA	ANG:	-49.75		
B-B19-P4	FAULT:	16.698 KA AT	-65.51 DEG (	6.02 MVA)	X/R:	2.19
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0030 + J	0.0065	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	16.698 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	16.698 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	16.698 KA				
	CONTRIBUTIONS: B-B19-MDP1	16.698 KA	ANG:	-65.51		
B-B19-P6	FAULT:	3.007 KA AT	-28.74 DEG (	1.08 MVA)	X/R:	0.55
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0350 + J	0.0192	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.007 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.007 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.007 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.007 KA
	CONTRIBUTIONS: B-B19-MDPA 3.007 KA ANG: -28.74	
B-B19-PS	FAULT: 4.831 KA AT -27.86 DEG (1.74 MVA) X/R: 0.53	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0220 + J 0.0116 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.831 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.831 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.831 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.831 KA
	CONTRIBUTIONS: B-B19-MDP1 4.831 KA ANG: -27.86	
B-B2-ATS-CRIT	FAULT: 11.032 KA AT -66.98 DEG (3.97 MVA) X/R: 2.35	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0043 + J 0.0100 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.032 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.032 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.032 KA
	CONTRIBUTIONS: BUS-0097* 11.032 KA ANG: -66.98	
B-B2-ATS-LED3	FAULT: 3.283 KA AT -54.37 DEG (1.18 MVA) X/R: 1.40	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0213 + J 0.0297 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.283 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.283 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.283 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.283 KA
	CONTRIBUTIONS: BUS-0076 3.283 KA ANG: -54.37	
B-B2-ATS-LS	FAULT: 11.318 KA AT -67.99 DEG (4.08 MVA) X/R: 2.47	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0040 + J 0.0098 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.318 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.318 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.318 KA
	CONTRIBUTIONS: BUS-0106* 11.318 KA ANG: -67.99	
B-B2-BATTERYCH	FAULT: 3.662 KA AT -24.35 DEG (1.32 MVA) X/R: 0.45	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0299 + J 0.0135 OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	3.662 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.662 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.662 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.662 KA			
	CONTRIBUTIONS: B-B2-PNL LS	3.662 KA	ANG:	-24.35	
B-B2-CATSCAN	FAULT: 8.806 KA AT -61.03 DEG (	7.32 MVA)	X/R:	1.81	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0152 + J	0.0275	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.806 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.902 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.806 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.806 KA			
	CONTRIBUTIONS: B-B2-MDP	8.806 KA	ANG:	-61.03	
B-B2-CRIT PNL	FAULT: 10.834 KA AT -66.28 DEG (	3.90 MVA)	X/R:	2.28	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0045 + J	0.0101	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.834 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.834 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.834 KA			
	CONTRIBUTIONS: B-B2-ATS-CRIT	10.834 KA	ANG:	-66.28	
B-B2-DENTAL LB	FAULT: 6.786 KA AT -44.88 DEG (	2.44 MVA)	X/R:	1.00	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0125 + J	0.0125	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.786 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.786 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.786 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.786 KA			
	CONTRIBUTIONS: B-B2-CRIT PNL	6.786 KA	ANG:	-44.88	
B-B2-DENTSUCPM	FAULT: 6.167 KA AT -41.97 DEG (	2.22 MVA)	X/R:	0.90	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0145 + J	0.0130	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.167 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.167 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.167 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.167 KA			
	CONTRIBUTIONS: B-B2-PNL LS	6.167 KA	ANG:	-41.97	
B-B2-ELEV	FAULT: 8.618 KA AT -60.14 DEG (	3.10 MVA)	X/R:	1.74	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0069 + J	0.0121	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	8.618 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.630 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.618 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.618 KA			
	CONTRIBUTIONS: B-B2-PNL LS	8.618 KA	ANG:	-60.14	
B-B2-ELEV-P1	FAULT: 6.452 KA AT -54.31 DEG (	2.32 MVA)	X/R:	1.39	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0109 + J	0.0151	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.452 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.452 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.452 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.452 KA			
	CONTRIBUTIONS: B-B2-CRIT PNL	6.452 KA	ANG:	-54.31	
B-B2-EMERG-M	FAULT: 3.228 KA AT -53.99 DEG (	1.16 MVA)	X/R:	1.38	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0219 + J	0.0301	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.228 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.228 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.228 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.228 KA			
	CONTRIBUTIONS: B-B2-ATS-LED3	3.228 KA	ANG:	-53.99	
B-B2-EMERG-PNL	FAULT: 3.224 KA AT -53.97 DEG (	1.16 MVA)	X/R:	1.37	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0219 + J	0.0301	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.224 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.224 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.224 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.224 KA			
	CONTRIBUTIONS: B-B2-EMERG-M	3.224 KA	ANG:	-53.97	
B-B2-L12	FAULT: 7.890 KA AT -56.49 DEG (	2.84 MVA)	X/R:	1.51	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0084 + J	0.0127	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.890 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.890 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.890 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.890 KA			
	CONTRIBUTIONS: B-B2-PNL LS	7.890 KA	ANG:	-56.49	
B-B2-L2A	FAULT: 7.844 KA AT -56.35 DEG (	2.83 MVA)	X/R:	1.50	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0085 + J	0.0127	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	7.844 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.844 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.844 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.844 KA
	CONTRIBUTIONS: B-B2-CRIT PNL 7.844 KA ANG: -56.35	
B-B2-L2E	FAULT: 7.890 KA AT -56.49 DEG (2.84 MVA) X/R: 1.51	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0084 + J 0.0127 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.890 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.890 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.890 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.890 KA
	CONTRIBUTIONS: B-B2-PNL LS 7.890 KA ANG: -56.49	
B-B2-L4	FAULT: 8.369 KA AT -58.03 DEG (3.02 MVA) X/R: 1.60	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0076 + J 0.0122 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.369 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.369 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.369 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.369 KA
	CONTRIBUTIONS: B-B2-MDPB 8.369 KA ANG: -58.03	
B-B2-L6	FAULT: 8.369 KA AT -58.03 DEG (3.02 MVA) X/R: 1.60	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0076 + J 0.0122 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.369 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.369 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.369 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.369 KA
	CONTRIBUTIONS: B-B2-MDPB 8.369 KA ANG: -58.03	
B-B2-L7	FAULT: 8.369 KA AT -58.03 DEG (3.02 MVA) X/R: 1.60	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0076 + J 0.0122 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.369 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.369 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.369 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.369 KA
	CONTRIBUTIONS: B-B2-MDPB 8.369 KA ANG: -58.03	
B-B2-L8	FAULT: 8.369 KA AT -58.03 DEG (3.02 MVA) X/R: 1.60	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0076 + J 0.0122 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.369 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.369 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.369 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.369 KA
	CONTRIBUTIONS: B-B2-MDPB 8.369 KA ANG: -58.03	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-L9E	FAULT:	7.178 KA AT	-49.89 DEG (	2.59 MVA)	X/R:	1.19
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0108 + J 0.0128		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.178 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.178 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.178 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.178 KA				
	CONTRIBUTIONS: B-B2-PNL LS	7.178 KA	ANG:	-49.89		
B-B2-LB1E	FAULT:	7.178 KA AT	-49.89 DEG (	2.59 MVA)	X/R:	1.19
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0108 + J 0.0128		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.178 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.178 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.178 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.178 KA				
	CONTRIBUTIONS: B-B2-PNL LS	7.178 KA	ANG:	-49.89		
B-B2-LB2	FAULT:	8.369 KA AT	-58.03 DEG (	3.02 MVA)	X/R:	1.60
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0076 + J 0.0122		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.369 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.369 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.369 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.369 KA				
	CONTRIBUTIONS: B-B2-MDPB	8.369 KA	ANG:	-58.03		
B-B2-LB2E	FAULT:	6.137 KA AT	-41.92 DEG (	2.21 MVA)	X/R:	0.90
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0146 + J 0.0131		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.137 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.137 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.137 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.137 KA				
	CONTRIBUTIONS: B-B2-CRIT PNL	6.137 KA	ANG:	-41.92		
B-B2-LED-3	FAULT:	3.378 KA AT	-55.21 DEG (	1.22 MVA)	X/R:	1.44
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0203 + J 0.0292		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.378 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.378 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.378 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.378 KA				
	CONTRIBUTIONS: B-T-B2-LED-SEC	3.378 KA	ANG:	-55.21		
B-B2-MDP	FAULT:	11.671 KA AT	-77.84 DEG (	9.70 MVA)	X/R:	4.64
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0050 + J 0.0232		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	11.671 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.827 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.671 KA			
	CONTRIBUTIONS: B-B2-MDP-M	11.671 KA	ANG:	-77.84	
B-B2-MDP-M	FAULT: 11.675 KA AT -77.87 DEG (	9.71 MVA)	X/R:	4.65	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0050 + J	0.0232	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.675 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.837 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.675 KA			
	CONTRIBUTIONS: B-T-B2-SEC4	11.675 KA	ANG:	-77.87	
B-B2-MDPA	FAULT: 7.580 KA AT -78.95 DEG (	2.73 MVA)	X/R:	5.12	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0030 + J	0.0155	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.580 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.514 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.654 KA			
	CBL-0057 B-B2-MDPA-M	7.580 KA	ANG:	-78.95	
B-B2-MDPA-M	FAULT: 7.620 KA AT -79.10 DEG (	2.75 MVA)	X/R:	5.19	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0030 + J	0.0155	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.620 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.585 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.717 KA			
	CONTRIBUTIONS: B-T-B2-SEC2	7.620 KA	ANG:	-79.10	
B-B2-MDPB	FAULT: 11.748 KA AT -69.54 DEG (	4.23 MVA)	X/R:	2.68	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0036 + J	0.0096	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.748 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.748 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.748 KA			
	CBL-0086 B-B2-MDPB-M	11.748 KA	ANG:	-69.54	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B2-MDPB (CONTINUED)

B-B2-MDPB-M	FAULT:	11.851 KA AT -69.69 DEG (	4.27 MVA)	X/R:	2.70
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0035 + J 0.0095		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.851 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.851 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.851 KA			
	CONTRIBUTIONS: B-T-B2-SEC3	11.851 KA		ANG:	-69.69
B-B2-MEDAIRCOM	FAULT:	6.137 KA AT -41.92 DEG (	2.21 MVA)	X/R:	0.90
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0146 + J 0.0131		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.137 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.137 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.137 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.137 KA			
	CONTRIBUTIONS: B-B2-CRIT PNL	6.137 KA		ANG:	-41.92
B-B2-NEWLAB	FAULT:	3.189 KA AT -53.56 DEG (	1.15 MVA)	X/R:	1.35
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0224 + J 0.0303		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.189 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.189 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.189 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.189 KA			
	CONTRIBUTIONS: B-B2-NEWLAB-M	3.189 KA		ANG:	-53.56
B-B2-NEWLAB-M	FAULT:	3.193 KA AT -53.58 DEG (	1.15 MVA)	X/R:	1.36
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0223 + J 0.0303		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.193 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.193 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.193 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.193 KA			
	CONTRIBUTIONS: B-B2-ATS-LED3	3.193 KA		ANG:	-53.58
B-B2-PNL 1	FAULT:	3.228 KA AT -53.99 DEG (	1.16 MVA)	X/R:	1.38
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0219 + J 0.0301		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.228 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.228 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.228 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.228 KA			
	CONTRIBUTIONS: B-B2-ATS-LED3	3.228 KA	ANG:	-53.99	
B-B2-PNL LS	FAULT: 10.912 KA AT -66.56 DEG (3.93 MVA)		X/R:	2.31	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0044 + J 0.0101				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.912 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.912 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.912 KA			
	CONTRIBUTIONS: B-B2-ATS-LS	10.912 KA	ANG:	-66.56	
B-B2-PNL-2	FAULT: 3.241 KA AT -53.68 DEG (1.17 MVA)		X/R:	1.36	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0219 + J 0.0299				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.241 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.241 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.241 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.241 KA			
	CONTRIBUTIONS: B-B2-ATS-LED3	3.241 KA	ANG:	-53.68	
B-B2-PNL-3-M	FAULT: 3.182 KA AT -52.99 DEG (1.15 MVA)		X/R:	1.33	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0227 + J 0.0301				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.182 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.182 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.182 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.182 KA			
	CONTRIBUTIONS: B-B2-ATS-LED3	3.182 KA	ANG:	-52.99	
B-B2-PNL-D2	FAULT: 6.080 KA AT -74.61 DEG (2.19 MVA)		X/R:	3.63	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0052 + J 0.0190				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.080 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.429 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.296 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.080 KA			
	CONTRIBUTIONS: B-B2-MDPA	6.080 KA	ANG:	-74.61	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-PNL-L11	FAULT:	7.844 KA AT	-56.35 DEG (	2.83 MVA)	X/R:	1.50
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0085 + J 0.0127	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.844 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.844 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.844 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.844 KA				
	CONTRIBUTIONS: B-B2-CRIT PNL	7.844 KA	ANG:	-56.35		
B-B2-PNL-M1	FAULT:	3.085 KA AT	-51.69 DEG (	1.11 MVA)	X/R:	1.27
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0241 + J 0.0305	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.085 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.085 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.085 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.085 KA				
	CONTRIBUTIONS: B-B2-PNL-3-M	3.085 KA	ANG:	-51.69		
B-B2-PNL-P	FAULT:	8.615 KA AT	-72.44 DEG (	7.16 MVA)	X/R:	3.16
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0097 + J 0.0307	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.615 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.615 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.615 KA				
	CONTRIBUTIONS: B-B2-MDP	8.615 KA	ANG:	-72.44		
B-B2-POD2PP	FAULT:	8.176 KA AT	-58.94 DEG (	2.95 MVA)	X/R:	1.66
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0076 + J 0.0126	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.176 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.176 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.176 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.176 KA				
	CONTRIBUTIONS: B-B2-PNL LS	8.176 KA	ANG:	-58.94		
B-B2-TEL COMM	FAULT:	8.369 KA AT	-58.03 DEG (	3.02 MVA)	X/R:	1.60
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0076 + J 0.0122	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.369 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.369 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.369 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.369 KA				
	CONTRIBUTIONS: B-B2-MDPB	8.369 KA	ANG:	-58.03		
B-B2-UNIT-1	FAULT:	7.789 KA AT	-67.21 DEG (	6.48 MVA)	X/R:	2.38
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0138 + J 0.0328	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	7.789 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.486 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.789 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.789 KA			
	CONTRIBUTIONS: B-B2-PNL-P	7.789 KA	ANG:	-67.21	
B-B2-UNIT-2	FAULT: 8.190 KA AT -69.69 DEG (	6.81 MVA)	X/R:	2.70	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0117 + J	0.0317	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.190 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.244 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.190 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.190 KA			
	CONTRIBUTIONS: B-B2-PNL-P	8.190 KA	ANG:	-69.69	
B-B2-XRAY	FAULT: 1.874 KA AT -12.48 DEG (	0.68 MVA)	X/R:	0.22	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0626 + J	0.0138	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.874 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.874 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.874 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.874 KA			
	CONTRIBUTIONS: B-B2-MDPB	1.874 KA	ANG:	-12.48	
B-B2-XRAY-124	FAULT: 6.035 KA AT -57.25 DEG (	5.02 MVA)	X/R:	1.55	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0248 + J	0.0386	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.035 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.035 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.035 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.035 KA			
	CONTRIBUTIONS: B-B2-MDP	6.035 KA	ANG:	-57.25	
B-B2-XRAY124	FAULT: 7.072 KA AT -47.04 DEG (	2.55 MVA)	X/R:	1.07	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0116 + J	0.0124	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.072 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.072 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.072 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.072 KA			
	CONTRIBUTIONS: B-B2-MDPB	7.072 KA	ANG:	-47.04	
B-B21-P1	FAULT: 3.177 KA AT -31.61 DEG (	1.14 MVA)	X/R:	0.62	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0322 + J	0.0198	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.177 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.177 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.177 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.177 KA			
	CONTRIBUTIONS: B-B21-P2	3.177 KA	ANG:	-31.61	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B21-P2	FAULT:	5.448 KA AT -43.34 DEG (	1.96 MVA)	X/R:	0.94
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0160 + J 0.0151		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.448 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.448 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.448 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.448 KA			
	CONTRIBUTIONS: B-B19-MDP2	5.448 KA		ANG:	-43.34
B-B22-ATS-EMER	FAULT:	6.504 KA AT -67.88 DEG (	5.41 MVA)	X/R:	2.46
	VOLTAGE:	480. EQUIV. IMPEDANCE=	0.0160 + J 0.0395		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.504 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.151 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.504 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.504 KA			
	CONTRIBUTIONS: BUS-0481	6.504 KA		ANG:	-67.88
B-B22-EMERG	FAULT:	6.182 KA AT -67.35 DEG (	5.14 MVA)	X/R:	2.40
	VOLTAGE:	480. EQUIV. IMPEDANCE=	0.0173 + J 0.0414		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.182 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.748 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.182 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.182 KA			
	CONTRIBUTIONS: B-B22-EMERG-M	6.182 KA		ANG:	-67.35
B-B22-EMERG-M	FAULT:	6.188 KA AT -67.38 DEG (	5.14 MVA)	X/R:	2.40
	VOLTAGE:	480. EQUIV. IMPEDANCE=	0.0172 + J 0.0413		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.188 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.758 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.188 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.188 KA			
	CONTRIBUTIONS: B-B22-ATS-EMER	6.188 KA		ANG:	-67.38
B-B22-L1	FAULT:	2.814 KA AT -57.49 DEG (	1.01 MVA)	X/R:	1.57
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0229 + J 0.0360		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    2.814 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.814 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.814 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.814 KA
                CONTRIBUTIONS:  B-B22-L1-M         2.814 KA      ANG:   -57.49

 B-B22-L1-M     FAULT:    2.817 KA AT  -57.52 DEG (   1.01 MVA)  X/R:     1.57
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0229 + J  0.0360  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.817 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.817 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.817 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.817 KA
                CONTRIBUTIONS:  B-B22-T4-SEC       2.817 KA      ANG:   -57.52

 B-B22-L2       FAULT:    2.814 KA AT  -57.49 DEG (   1.01 MVA)  X/R:     1.57
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0229 + J  0.0360  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.814 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.814 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.814 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.814 KA
                CONTRIBUTIONS:  B-B22-L2-M         2.814 KA      ANG:   -57.49

 B-B22-L2-M     FAULT:    2.817 KA AT  -57.52 DEG (   1.01 MVA)  X/R:     1.57
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0229 + J  0.0360  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.817 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.817 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.817 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.817 KA
                CONTRIBUTIONS:  B-B22-T22-SEC      2.817 KA      ANG:   -57.52

 B-B22-L3       FAULT:    2.821 KA AT  -57.59 DEG (   1.02 MVA)  X/R:     1.58
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0228 + J  0.0359  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.821 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.821 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.821 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.821 KA
                CONTRIBUTIONS:  B-B22-L3-M         2.821 KA      ANG:   -57.59

 B-B22-L3-M     FAULT:    2.824 KA AT  -57.62 DEG (   1.02 MVA)  X/R:     1.58
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0228 + J  0.0359  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.824 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.824 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.824 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.824 KA			
	CONTRIBUTIONS: B-B22-T2-SEC	2.824 KA	ANG:	-57.62	
B-B22-MDP	FAULT: 6.945 KA AT -68.57 DEG (	5.77 MVA)	X/R:	2.55	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0146 + J	0.0371	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.945 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.712 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.945 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.945 KA			
	CONTRIBUTIONS: B-B22-MDP-M	6.945 KA	ANG:	-68.57	
B-B22-MDP-M	FAULT: 6.948 KA AT -68.59 DEG (	5.78 MVA)	X/R:	2.55	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0146 + J	0.0371	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.948 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.717 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.948 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.948 KA			
	CONTRIBUTIONS: B-T-B22-SEC	6.948 KA	ANG:	-68.59	
B-B22-N1	FAULT: 4.783 KA AT -60.71 DEG (	1.72 MVA)	X/R:	1.78	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0123 + J	0.0219	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.783 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.819 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.783 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.783 KA			
	CONTRIBUTIONS: B-B22-N1-M	4.783 KA	ANG:	-60.71	
B-B22-N1-M	FAULT: 4.791 KA AT -60.74 DEG (	1.73 MVA)	X/R:	1.78	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0123 + J	0.0219	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.791 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.828 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.791 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.791 KA			
	CONTRIBUTIONS: B-B22-T1-SEC	4.791 KA	ANG:	-60.74	
B-B22-P1	FAULT: 5.947 KA AT -66.12 DEG (	4.94 MVA)	X/R:	2.26	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0189 + J	0.0426	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	5.947 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.385 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.947 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.947 KA			
	CONTRIBUTIONS: B-B22-EMERG	5.947 KA	ANG:	-66.12	
B-B22-P2	FAULT: 5.947 KA AT -66.12 DEG (	4.94 MVA)	X/R:	2.26	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0189 + J	0.0426	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.947 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.385 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.947 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.947 KA			
	CONTRIBUTIONS: B-B22-EMERG	5.947 KA	ANG:	-66.12	
B-B22-T1-PRI	FAULT: 6.826 KA AT -67.99 DEG (	5.67 MVA)	X/R:	2.47	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0152 + J	0.0376	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.826 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.517 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.826 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.826 KA			
	CONTRIBUTIONS: B-B22-MDP	6.826 KA	ANG:	-67.99	
B-B22-T1-SEC	FAULT: 5.069 KA AT -60.91 DEG (	1.83 MVA)	X/R:	1.80	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0115 + J	0.0207	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.069 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.118 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.069 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.069 KA			
	CONTRIBUTIONS: B-B22-T1-PRI	5.069 KA	ANG:	-60.91	
B-B22-T2-PRI	FAULT: 6.047 KA AT -66.13 DEG (	5.03 MVA)	X/R:	2.26	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0185 + J	0.0419	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.047 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.494 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.047 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.047 KA			
	CONTRIBUTIONS: B-B22-EMERG	6.047 KA	ANG:	-66.13	
B-B22-T2-SEC	FAULT: 2.902 KA AT -58.18 DEG (	1.05 MVA)	X/R:	1.61	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0218 + J	0.0352	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.902 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.902 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.902 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.902 KA			
	CONTRIBUTIONS: B-B22-T2-PRI	2.902 KA	ANG:	-58.18	
B-B22-T22-SEC	FAULT: 2.894 KA AT -58.08 DEG (	1.04 MVA)	X/R:	1.61	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0219 + J	0.0352	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.894 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.894 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.894 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.894 KA			
	CONTRIBUTIONS: B-B22-T3 PRI	2.894 KA	ANG:	-58.08	
B-B22-T3 PRI	FAULT: 5.980 KA AT -65.54 DEG (	4.97 MVA)	X/R:	2.20	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0192 + J	0.0422	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.980 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.374 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.980 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.980 KA			
	CONTRIBUTIONS: B-B22-EMERG	5.980 KA	ANG:	-65.54	
B-B22-T4-PRI	FAULT: 5.980 KA AT -65.54 DEG (	4.97 MVA)	X/R:	2.20	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0192 + J	0.0422	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.980 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.374 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.980 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.980 KA			
	CONTRIBUTIONS: B-B22-EMERG	5.980 KA	ANG:	-65.54	
B-B22-T4-SEC	FAULT: 2.894 KA AT -58.08 DEG (	1.04 MVA)	X/R:	1.61	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0219 + J	0.0352	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.894 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.894 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.894 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.894 KA			
	CONTRIBUTIONS: B-B22-T4-PRI	2.894 KA	ANG:	-58.08	
B-B27-SWGR	FAULT: 2.700 KA AT -71.57 DEG (	64.53 MVA)	X/R:	3.00	
	VOLTAGE: 13800. EQUIV. IMPEDANCE=	0.9332 + J	2.7996	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B27-SWGR (CONTINUED)
CONTRIBUTIONS: B-SWGR27 TAP 2.700 KA ANG: -71.57

B-B27-SWGR-M2 FAULT: 2.700 KA AT -71.57 DEG (64.54 MVA) X/R: 3.00
VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.9332 + J 2.7995 OHMS
CONTRIBUTIONS: UTIL-STN 559-1 2.700 KA ANG: -71.57

B-B3-1ST FL FAULT: 9.618 KA AT -54.03 DEG (3.47 MVA) X/R: 1.38
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0073 + J 0.0101 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.618 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.618 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.618 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.618 KA
CONTRIBUTIONS: B-B3-EP1 9.618 KA ANG: -54.03

B-B3-ALDN KIT FAULT: 7.143 KA AT -37.99 DEG (2.57 MVA) X/R: 0.78
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0132 + J 0.0103 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.143 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.143 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.143 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.143 KA
CONTRIBUTIONS: B-B3-EP2 7.143 KA ANG: -37.99

B-B3-ATS-COMP FAULT: 14.035 KA AT -67.55 DEG (5.06 MVA) X/R: 2.42
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0033 + J 0.0079 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 14.035 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 14.035 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 14.035 KA
CONTRIBUTIONS: BUS-0140 14.035 KA ANG: -67.55

B-B3-ATSTEL RM FAULT: 13.694 KA AT -68.00 DEG (4.93 MVA) X/R: 2.48
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0033 + J 0.0081 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.694 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.694 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.694 KA
CONTRIBUTIONS: BUS-0131 13.694 KA ANG: -68.00

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B3-COMP FAULT: 8.180 KA AT -46.96 DEG (2.95 MVA) X/R: 1.07
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0100 + J 0.0107 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 8.180 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 8.180 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 8.180 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 8.180 KA
CONTRIBUTIONS: B-B3-EP2 8.180 KA ANG: -46.96

B-B3-COMP AC FAULT: 2.962 KA AT -15.76 DEG (1.07 MVA) X/R: 0.28
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0390 + J 0.0110 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.962 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.962 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.962 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.962 KA
CONTRIBUTIONS: B-B3-EP2 2.962 KA ANG: -15.76

B-B3-COMP MF FAULT: 10.276 KA AT -58.91 DEG (3.70 MVA) X/R: 1.66
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0060 + J 0.0100 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 10.276 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 10.276 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 10.276 KA
CONTRIBUTIONS: B-B3-EP2 10.276 KA ANG: -58.91

B-B3-DBL GRILL FAULT: 8.224 KA AT -51.43 DEG (2.96 MVA) X/R: 1.25
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0091 + J 0.0114 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 8.224 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 8.224 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 8.224 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 8.224 KA
CONTRIBUTIONS: B-B3-EP1 8.224 KA ANG: -51.43

B-B3-ELEV FAULT: 9.100 KA AT -50.35 DEG (3.28 MVA) X/R: 1.21
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0084 + J 0.0102 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.100 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.100 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.100 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.100 KA
CONTRIBUTIONS: B-B3-EP2 9.100 KA ANG: -50.35

B-B3-EP1 FAULT: 13.087 KA AT -67.62 DEG (4.71 MVA) X/R: 2.43
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0035 + J 0.0085 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 13.087 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.087 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.087 KA
CONTRIBUTIONS: B-B3-EP1-M 13.087 KA ANG: -67.62

B-B3-EP1-M FAULT: 13.143 KA AT -67.72 DEG (4.73 MVA) X/R: 2.44
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0035 + J 0.0085 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.143 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.143 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.143 KA
CONTRIBUTIONS: B-B3-ATSTEL RM 13.143 KA ANG: -67.72

B-B3-EP2 FAULT: 13.062 KA AT -66.81 DEG (4.71 MVA) X/R: 2.33
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0036 + J 0.0085 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.062 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.062 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.062 KA
CONTRIBUTIONS: B-B3-EP2-M 13.062 KA ANG: -66.81

B-B3-EP2-M FAULT: 13.118 KA AT -66.91 DEG (4.73 MVA) X/R: 2.35
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0036 + J 0.0084 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.118 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.118 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.118 KA
CONTRIBUTIONS: B-B3-ATS-COMP 13.118 KA ANG: -66.91

B-B3-FRZN FOOD FAULT: 8.088 KA AT -32.05 DEG (2.91 MVA) X/R: 0.63
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0126 + J 0.0079 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	8.088 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.088 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.088 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.088 KA			
	CONTRIBUTIONS: B-B3-MDP	8.088 KA	ANG:	-32.05	
B-B3-HYDRO ELV	FAULT: 6.844 KA AT -44.20 DEG (	2.47 MVA)	X/R:	0.97	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0126 + J	0.0122	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.844 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.844 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.844 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.844 KA			
	CONTRIBUTIONS: B-B3-EP2	6.844 KA	ANG:	-44.20	
B-B3-KP1	FAULT: 9.077 KA AT -57.99 DEG (	3.27 MVA)	X/R:	1.60	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0070 + J	0.0112	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.077 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.077 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.077 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.077 KA			
	CONTRIBUTIONS: B-B3-EP1	9.077 KA	ANG:	-57.99	
B-B3-MDP	FAULT: 17.320 KA AT -69.88 DEG (	6.24 MVA)	X/R:	2.73	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0024 + J	0.0065	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	17.320 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	17.320 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	17.320 KA			
	CONTRIBUTIONS: B-B3-MDP-M	17.320 KA	ANG:	-69.88	
B-B3-MDP-M	FAULT: 17.348 KA AT -69.97 DEG (	6.25 MVA)	X/R:	2.74	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0024 + J	0.0065	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	17.348 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	17.348 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	17.348 KA			
	CONTRIBUTIONS: B-T-B3-SEC	17.348 KA	ANG:	-69.97	
B-B3-MECH HVAC	FAULT: 9.100 KA AT -50.35 DEG (	3.28 MVA)	X/R:	1.21	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0084 + J	0.0102	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	9.100 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.100 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.100 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.100 KA			
	CONTRIBUTIONS: B-B3-EP2	9.100 KA	ANG:	-50.35	
B-B3-MECH RM	FAULT: 10.552 KA AT -60.87 DEG (	3.80 MVA)	X/R:	1.79	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0055 + J	0.0099	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.552 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.552 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.552 KA			
	CONTRIBUTIONS: B-B3-EP2	10.552 KA	ANG:	-60.87	
B-B3-P3	FAULT: 11.712 KA AT -56.86 DEG (	4.22 MVA)	X/R:	1.53	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0056 + J	0.0086	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.712 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.712 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.712 KA			
	CONTRIBUTIONS: B-B3-MDP	11.712 KA	ANG:	-56.86	
B-B3-P7	FAULT: 8.575 KA AT -46.99 DEG (	3.09 MVA)	X/R:	1.07	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0096 + J	0.0102	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.575 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.575 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.575 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.575 KA			
	CONTRIBUTIONS: B-B3-EP1	8.575 KA	ANG:	-46.99	
B-B3-STRT LTS	FAULT: 8.088 KA AT -32.05 DEG (	2.91 MVA)	X/R:	0.63	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0126 + J	0.0079	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.088 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.088 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.088 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.088 KA			
	CONTRIBUTIONS: B-B3-MDP	8.088 KA	ANG:	-32.05	
B-B3-STRT PNL	FAULT: 10.204 KA AT -54.59 DEG (	3.68 MVA)	X/R:	1.41	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0068 + J	0.0096	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.204 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.204 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.204 KA			
	CONTRIBUTIONS: B-B3-EP2	10.204 KA	ANG:	-54.59	
B-B3-TELE PNL	FAULT: 10.580 KA AT -61.51 DEG (	3.81 MVA)	X/R:	1.84	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0054 + J	0.0100	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	10.580 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.580 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.580 KA			
	CONTRIBUTIONS: B-B3-EP1	10.580 KA		ANG:	-61.51
B-B3-TRAY LINE	FAULT: 9.100 KA AT -50.35 DEG (	3.28 MVA)	X/R:		1.21
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0084 + J	0.0102	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.100 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.100 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.100 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.100 KA			
	CONTRIBUTIONS: B-B3-EP2	9.100 KA		ANG:	-50.35
B-B33-MDP	FAULT: 4.841 KA AT -57.68 DEG (	1.74 MVA)	X/R:		1.58
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0133 + J	0.0210	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.841 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.841 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.841 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.841 KA			
	CONTRIBUTIONS: B-B33-MDP-M	4.841 KA		ANG:	-57.68
B-B33-MDP-M	FAULT: 4.849 KA AT -57.70 DEG (	1.75 MVA)	X/R:		1.58
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0132 + J	0.0209	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.849 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.849 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.849 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.849 KA			
	CONTRIBUTIONS: B-T-B33-SEC	4.849 KA		ANG:	-57.70
B-B4-4EQD	FAULT: 19.919 KA AT -68.73 DEG (	7.18 MVA)	X/R:		2.57
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0022 + J	0.0056	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	19.919 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	19.919 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	19.919 KA			
	CONTRIBUTIONS: B-B4-4EQD-M	19.919 KA		ANG:	-68.73

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-4EQD-M	FAULT:	20.048 KA AT -68.89 DEG (	7.22 MVA)	X/R:	2.59
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0022 + J 0.0056		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	20.048 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	20.048 KA			
	CONTRIBUTIONS: B-B4-ATS-EQ	20.048 KA	ANG:	-68.89	
B-B4-ATS-EQ	FAULT:	22.705 KA AT -70.38 DEG (	8.18 MVA)	X/R:	2.81
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0018 + J 0.0050		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	22.705 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	22.705 KA			
	CONTRIBUTIONS: BUS-0227	22.705 KA	ANG:	-70.38	
B-B4-ATS-LS	FAULT:	20.452 KA AT -65.33 DEG (	7.37 MVA)	X/R:	2.18
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0025 + J 0.0053		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	20.452 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	20.452 KA			
	CONTRIBUTIONS: BUS-0172*	20.452 KA	ANG:	-65.33	
B-B4-BUS	FAULT:	25.834 KA AT -73.56 DEG (	9.31 MVA)	X/R:	3.39
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0013 + J 0.0045		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	25.834 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	25.834 KA			
	CONTRIBUTIONS: B-T-B4-SEC	25.834 KA	ANG:	-73.56	
B-B4-ELEV#4	FAULT:	8.393 KA AT -43.68 DEG (	3.02 MVA)	X/R:	0.96
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0103 + J 0.0099		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.393 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.393 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.393 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.393 KA			
	CONTRIBUTIONS: B-B4-4EQD	8.393 KA	ANG:	-43.68	
B-B4-EQ1	FAULT:	12.719 KA AT -52.43 DEG (	4.58 MVA)	X/R:	1.30
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0058 + J 0.0075		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.719 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.719 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.719 KA			
	CONTRIBUTIONS: B-B4-4EQD	12.719 KA	ANG:	-52.43	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-EQ10	FAULT:	8.872 KA AT	-44.63 DEG (	3.20 MVA)	X/R:	0.99
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0096 + J 0.0095		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.872 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.872 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.872 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.872 KA				
	CONTRIBUTIONS: B-B4-EQ5	8.872 KA	ANG:	-44.63		
B-B4-EQ11	FAULT:	10.677 KA AT	-48.24 DEG (	3.85 MVA)	X/R:	1.12
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0075 + J 0.0084		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.677 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.677 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.677 KA				
	CONTRIBUTIONS: B-B4-EQ6	10.677 KA	ANG:	-48.24		
B-B4-EQ12	FAULT:	7.466 KA AT	-41.86 DEG (	2.69 MVA)	X/R:	0.90
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0120 + J 0.0107		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.466 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.466 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.466 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.466 KA				
	CONTRIBUTIONS: B-B4-EQ7	7.466 KA	ANG:	-41.86		
B-B4-EQ15	FAULT:	8.393 KA AT	-43.68 DEG (	3.02 MVA)	X/R:	0.96
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0103 + J 0.0099		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.393 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.393 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.393 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.393 KA				
	CONTRIBUTIONS: B-B4-4EQD	8.393 KA	ANG:	-43.68		
B-B4-EQ2	FAULT:	16.407 KA AT	-60.40 DEG (	5.91 MVA)	X/R:	1.76
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0036 + J 0.0064		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	16.407 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	16.407 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	16.407 KA				
	CONTRIBUTIONS: B-B4-4EQD	16.407 KA	ANG:	-60.40		
B-B4-EQ3	FAULT:	10.095 KA AT	-47.07 DEG (	3.64 MVA)	X/R:	1.07
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0081 + J 0.0087		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   10.095 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.095 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.095 KA
                CONTRIBUTIONS:  B-B4-4EQD         10.095 KA      ANG:   -47.07

 B-B4-EQ5       FAULT:   10.378 KA AT  -47.64 DEG (   3.74 MVA)  X/R:     1.10
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0078 + J  0.0085  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.378 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.378 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.378 KA
                CONTRIBUTIONS:  B-B4-EQ1          10.378 KA      ANG:   -47.64

 B-B4-EQ6       FAULT:   12.861 KA AT  -52.73 DEG (   4.63 MVA)  X/R:     1.31
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0057 + J  0.0074  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.861 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.861 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.861 KA
                CONTRIBUTIONS:  B-B4-EQ2          12.861 KA      ANG:   -52.73

 B-B4-EQ7       FAULT:    8.525 KA AT  -43.94 DEG (   3.07 MVA)  X/R:     0.96
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0101 + J  0.0098  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.525 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.525 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.525 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.525 KA
                CONTRIBUTIONS:  B-B4-EQ3           8.525 KA      ANG:   -43.94

 B-B4-EQ9       FAULT:    6.803 KA AT  -40.58 DEG (   2.45 MVA)  X/R:     0.86
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0134 + J  0.0115  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.803 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.803 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.803 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.803 KA
                CONTRIBUTIONS:  B-B4-4EQD          6.803 KA      ANG:   -40.58

 B-B4-HYDROELEV FAULT:    7.547 KA AT  -38.65 DEG (   2.72 MVA)  X/R:     0.80
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0124 + J  0.0099  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    7.547 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.547 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.547 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.547 KA
                CONTRIBUTIONS:  B-B4-4EQD          7.547 KA      ANG:   -38.65

 B-B4-JBOX      FAULT:   25.260 KA AT  -72.27 DEG (   9.10 MVA)  X/R:     3.13
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0014 + J  0.0045  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   25.260 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  25.260 KA
                CONTRIBUTIONS:  B-B4-BUS          25.260 KA      ANG:   -72.27

 B-B4-LP1       FAULT:   12.897 KA AT  -54.75 DEG (   4.65 MVA)  X/R:     1.42
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0054 + J  0.0076  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.897 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.897 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.897 KA
                CONTRIBUTIONS:  B-B4-LP1-M        12.897 KA      ANG:   -54.75

 B-B4-LP1-M     FAULT:   12.968 KA AT  -54.85 DEG (   4.67 MVA)  X/R:     1.42
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0053 + J  0.0076  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.968 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.968 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.968 KA
                CONTRIBUTIONS:  B-B4-LP2-M        12.968 KA      ANG:   -54.85

 B-B4-LP10      FAULT:   10.301 KA AT  -51.28 DEG (   3.71 MVA)  X/R:     1.25
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0073 + J  0.0091  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.301 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.301 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.301 KA
                CONTRIBUTIONS:  B-B4-LP10-M       10.301 KA      ANG:   -51.28

 B-B4-LP10-M    FAULT:   10.346 KA AT  -51.34 DEG (   3.73 MVA)  X/R:     1.25
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0073 + J  0.0091  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.346 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.346 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.346 KA
                CONTRIBUTIONS:  B-B4-LP5-M        10.346 KA      ANG:   -51.34

 B-B4-LP11      FAULT:   12.381 KA AT  -54.06 DEG (   4.46 MVA)  X/R:     1.38
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0057 + J  0.0079  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   12.381 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.381 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.381 KA
                CONTRIBUTIONS:  B-B4-LP11-M       12.381 KA      ANG:   -54.06

 B-B4-LP11-M    FAULT:   12.446 KA AT  -54.15 DEG (   4.48 MVA)  X/R:     1.38
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0057 + J  0.0078  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.446 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.446 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.446 KA
                CONTRIBUTIONS:  B-B4-LP6-M        12.446 KA      ANG:   -54.15

 B-B4-LP12      FAULT:   13.456 KA AT  -55.51 DEG (   4.85 MVA)  X/R:     1.46
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0051 + J  0.0074  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   13.456 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.456 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.456 KA
                CONTRIBUTIONS:  B-B4-LP12-M       13.456 KA      ANG:   -55.51

 B-B4-LP12-M    FAULT:   13.533 KA AT  -55.62 DEG (   4.88 MVA)  X/R:     1.46
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0050 + J  0.0073  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   13.533 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.533 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.533 KA
                CONTRIBUTIONS:  B-B4-MDP          13.533 KA      ANG:   -55.62

 B-B4-LP13      FAULT:   10.301 KA AT  -51.28 DEG (   3.71 MVA)  X/R:     1.25
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0073 + J  0.0091  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.301 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.301 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.301 KA
                CONTRIBUTIONS:  B-B4-LP13-M       10.301 KA      ANG:   -51.28

 B-B4-LP13-M    FAULT:   10.346 KA AT  -51.34 DEG (   3.73 MVA)  X/R:     1.25
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0073 + J  0.0091  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.346 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.346 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.346 KA
                CONTRIBUTIONS:  B-B4-LP8-M        10.346 KA      ANG:   -51.34

 B-B4-LP14      FAULT:    9.070 KA AT  -49.64 DEG (   3.27 MVA)  X/R:     1.18
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0086 + J  0.0101  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	9.070 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.070 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.070 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.070 KA			
	CONTRIBUTIONS: B-B4-LP14-M	9.070 KA	ANG:	-49.64	
B-B4-LP14-M	FAULT: 9.106 KA AT -49.69 DEG (	3.28 MVA)	X/R:	1.18	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0085 + J	0.0101	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.106 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.106 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.106 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.106 KA			
	CONTRIBUTIONS: B-B4-LP9-M	9.106 KA	ANG:	-49.69	
B-B4-LP15	FAULT: 6.722 KA AT -33.74 DEG (	2.42 MVA)	X/R:	0.67	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0149 + J	0.0099	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.722 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.722 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.722 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.722 KA			
	CONTRIBUTIONS: B-B4-LP15-M	6.722 KA	ANG:	-33.74	
B-B4-LP15-M	FAULT: 6.742 KA AT -33.73 DEG (	2.43 MVA)	X/R:	0.67	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0148 + J	0.0099	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.742 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.742 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.742 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.742 KA			
	CONTRIBUTIONS: B-B4-LSD	6.742 KA	ANG:	-33.73	
B-B4-LP2	FAULT: 18.060 KA AT -61.89 DEG (	6.51 MVA)	X/R:	1.87	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0031 + J	0.0059	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	18.060 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	18.060 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	18.060 KA			
	CONTRIBUTIONS: B-B4-LP2-M	18.060 KA	ANG:	-61.89	
B-B4-LP2-M	FAULT: 18.192 KA AT -62.08 DEG (	6.55 MVA)	X/R:	1.89	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0031 + J	0.0058	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	18.192 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	18.192 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	18.192 KA			
	CONTRIBUTIONS: B-B4-MDP	18.192 KA	ANG:	-62.08	
B-B4-LP3	FAULT: 18.060 KA AT -61.89 DEG (	6.51 MVA)	X/R:	1.87	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0031 + J	0.0059	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	18.060 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	18.060 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	18.060 KA			
	CONTRIBUTIONS: B-B4-LP3-M	18.060 KA	ANG:	-61.89	
B-B4-LP3-M	FAULT: 18.192 KA AT -62.08 DEG (	6.55 MVA)	X/R:	1.89	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0031 + J	0.0058	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	18.192 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	18.192 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	18.192 KA			
	CONTRIBUTIONS: B-B4-MDP	18.192 KA	ANG:	-62.08	
B-B4-LP4	FAULT: 12.381 KA AT -54.06 DEG (	4.46 MVA)	X/R:	1.38	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0057 + J	0.0079	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.381 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.381 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.381 KA			
	CONTRIBUTIONS: B-B4-LP4-M	12.381 KA	ANG:	-54.06	
B-B4-LP4-M	FAULT: 12.446 KA AT -54.15 DEG (	4.48 MVA)	X/R:	1.38	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0057 + J	0.0078	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.446 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.446 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.446 KA			
	CONTRIBUTIONS: B-B4-LP3-M	12.446 KA	ANG:	-54.15	
B-B4-LP5	FAULT: 11.903 KA AT -53.42 DEG (	4.29 MVA)	X/R:	1.35	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0060 + J	0.0081	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.903 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.903 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.903 KA			
	CONTRIBUTIONS: B-B4-LP5-M	11.903 KA	ANG:	-53.42	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LP5-M	FAULT:	11.963 KA AT	-53.50 DEG (	4.31 MVA)	X/R:	1.35
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0060 + J	0.0081	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.963 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.963 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.963 KA				
	CONTRIBUTIONS: B-B4-MDP	11.963 KA	ANG:	-53.50		
B-B4-LP6	FAULT:	14.724 KA AT	-57.24 DEG (	5.30 MVA)	X/R:	1.55
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0044 + J	0.0069	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.724 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.724 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.724 KA				
	CONTRIBUTIONS: B-B4-LP6-M	14.724 KA	ANG:	-57.24		
B-B4-LP6-M	FAULT:	14.815 KA AT	-57.37 DEG (	5.34 MVA)	X/R:	1.56
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0044 + J	0.0068	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.815 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.815 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.815 KA				
	CONTRIBUTIONS: B-B4-MDP	14.815 KA	ANG:	-57.37		
B-B4-LP7	FAULT:	14.724 KA AT	-57.24 DEG (	5.30 MVA)	X/R:	1.55
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0044 + J	0.0069	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.724 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.724 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.724 KA				
	CONTRIBUTIONS: B-B4-LP7-M	14.724 KA	ANG:	-57.24		
B-B4-LP7-M	FAULT:	14.815 KA AT	-57.37 DEG (	5.34 MVA)	X/R:	1.56
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0044 + J	0.0068	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.815 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.815 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.815 KA				
	CONTRIBUTIONS: B-B4-MDP	14.815 KA	ANG:	-57.37		
B-B4-LP8	FAULT:	11.903 KA AT	-53.42 DEG (	4.29 MVA)	X/R:	1.35
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0060 + J	0.0081	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   11.903 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.903 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.903 KA
                CONTRIBUTIONS:  B-B4-LP8-M        11.903 KA      ANG:   -53.42

 B-B4-LP8-M     FAULT:   11.963 KA AT  -53.50 DEG (   4.31 MVA)  X/R:     1.35
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0060 + J  0.0081  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.963 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.963 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.963 KA
                CONTRIBUTIONS:  B-B4-MDP          11.963 KA      ANG:   -53.50

 B-B4-LP9       FAULT:   10.301 KA AT  -51.28 DEG (   3.71 MVA)  X/R:     1.25
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0073 + J  0.0091  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.301 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.301 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.301 KA
                CONTRIBUTIONS:  B-B4-LP9-M        10.301 KA      ANG:   -51.28

 B-B4-LP9-M     FAULT:   10.346 KA AT  -51.34 DEG (   3.73 MVA)  X/R:     1.25
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0073 + J  0.0091  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.346 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.346 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.346 KA
                CONTRIBUTIONS:  B-B4-MDP          10.346 KA      ANG:   -51.34

 B-B4-LS1       FAULT:    8.311 KA AT  -39.34 DEG (   2.99 MVA)  X/R:     0.82
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0112 + J  0.0092  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.311 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.311 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.311 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.311 KA
                CONTRIBUTIONS:  B-B4-LS1-M         8.311 KA      ANG:   -39.34

 B-B4-LS1-M     FAULT:    8.342 KA AT  -39.34 DEG (   3.01 MVA)  X/R:     0.82
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0111 + J  0.0091  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.342 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.342 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.342 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.342 KA
                CONTRIBUTIONS:  B-B4-LS2-M         8.342 KA      ANG:   -39.34
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LS10	FAULT:	5.354 KA AT	-33.39 DEG (	1.93 MVA)	X/R: 0.66
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0187 + J 0.0123	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.354 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.354 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.354 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.354 KA			
	CONTRIBUTIONS: B-B4-LS10-M	5.354 KA	ANG:	-33.39	
B-B4-LS10-M	FAULT:	5.367 KA AT	-33.38 DEG (	1.93 MVA)	X/R: 0.66
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0187 + J 0.0123	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.367 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.367 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.367 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.367 KA			
	CONTRIBUTIONS: B-B4-LS5-M	5.367 KA	ANG:	-33.38	
B-B4-LS11	FAULT:	6.179 KA AT	-35.04 DEG (	2.23 MVA)	X/R: 0.70
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0159 + J 0.0112	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.179 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.179 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.179 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.179 KA			
	CONTRIBUTIONS: B-B4-LS11-M	6.179 KA	ANG:	-35.04	
B-B4-LS11-M	FAULT:	6.196 KA AT	-35.03 DEG (	2.23 MVA)	X/R: 0.70
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0159 + J 0.0111	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.196 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.196 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.196 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.196 KA			
	CONTRIBUTIONS: B-B4-LS6-M	6.196 KA	ANG:	-35.03	
B-B4-LS12	FAULT:	7.010 KA AT	-36.70 DEG (	2.53 MVA)	X/R: 0.75
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0137 + J 0.0102	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.010 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.010 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.010 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.010 KA			
	CONTRIBUTIONS: B-B4-LS12-M	7.010 KA	ANG:	-36.70	
B-B4-LS12-M	FAULT:	7.032 KA AT	-36.70 DEG (	2.53 MVA)	X/R: 0.75
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0137 + J 0.0102	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	7.032 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.032 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.032 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.032 KA			
	CONTRIBUTIONS: B-B4-LS7-M	7.032 KA	ANG:	-36.70	
B-B4-LS13	FAULT: 7.179 KA AT -37.04 DEG (	2.59 MVA)	X/R:	0.75	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0134 + J	0.0101	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.179 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.179 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.179 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.179 KA			
	CONTRIBUTIONS: B-B4-LS13-M	7.179 KA	ANG:	-37.04	
B-B4-LS13-M	FAULT: 7.202 KA AT -37.04 DEG (	2.59 MVA)	X/R:	0.75	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0133 + J	0.0100	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.202 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.202 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.202 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.202 KA			
	CONTRIBUTIONS: B-B4-LS8-M	7.202 KA	ANG:	-37.04	
B-B4-LS14	FAULT: 7.179 KA AT -37.04 DEG (	2.59 MVA)	X/R:	0.75	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0134 + J	0.0101	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.179 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.179 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.179 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.179 KA			
	CONTRIBUTIONS: B-B4-LS14-M	7.179 KA	ANG:	-37.04	
B-B4-LS14-M	FAULT: 7.202 KA AT -37.04 DEG (	2.59 MVA)	X/R:	0.75	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0133 + J	0.0100	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.202 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.202 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.202 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.202 KA			
	CONTRIBUTIONS: B-B4-LS9-M	7.202 KA	ANG:	-37.04	
B-B4-LS2	FAULT: 12.151 KA AT -47.35 DEG (	4.38 MVA)	X/R:	1.09	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0067 + J	0.0073	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 12.151 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 12.151 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 12.151 KA
CONTRIBUTIONS: B-B4-LS2-M 12.151 KA ANG: -47.35

B-B4-LS2-M FAULT: 12.216 KA AT -47.40 DEG (4.40 MVA) X/R: 1.09
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0067 + J 0.0072 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 12.216 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 12.216 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 12.216 KA
CONTRIBUTIONS: B-B4-LSD 12.216 KA ANG: -47.40

B-B4-LS3 FAULT: 14.950 KA AT -53.52 DEG (5.39 MVA) X/R: 1.35
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0048 + J 0.0065 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 14.950 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 14.950 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 14.950 KA
CONTRIBUTIONS: B-B4-LS3-M 14.950 KA ANG: -53.52

B-B4-LS3-M FAULT: 15.046 KA AT -53.63 DEG (5.42 MVA) X/R: 1.36
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0047 + J 0.0064 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 15.046 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 15.046 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 15.046 KA
CONTRIBUTIONS: B-B4-LSD 15.046 KA ANG: -53.63

B-B4-LS4 FAULT: 9.634 KA AT -42.05 DEG (3.47 MVA) X/R: 0.90
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0093 + J 0.0083 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.634 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.634 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.634 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.634 KA
CONTRIBUTIONS: B-B4-LS4-M 9.634 KA ANG: -42.05

B-B4-LS4-M FAULT: 9.675 KA AT -42.07 DEG (3.49 MVA) X/R: 0.90
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0092 + J 0.0083 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.675 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.675 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.675 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.675 KA
CONTRIBUTIONS: B-B4-LS3-M 9.675 KA ANG: -42.07

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LS5	FAULT:	6.094 KA	AT -34.87 DEG (	2.20 MVA)	X/R:	0.70
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0162 + J 0.0113		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.094 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.094 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.094 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.094 KA				
	CONTRIBUTIONS: B-B4-LS5-M	6.094 KA		ANG:	-34.87	
B-B4-LS5-M	FAULT:	6.111 KA	AT -34.86 DEG (	2.20 MVA)	X/R:	0.70
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0161 + J 0.0112		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.111 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.111 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.111 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.111 KA				
	CONTRIBUTIONS: B-B4-LSD	6.111 KA		ANG:	-34.86	
B-B4-LS6	FAULT:	7.179 KA	AT -37.04 DEG (	2.59 MVA)	X/R:	0.75
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0134 + J 0.0101		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.179 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.179 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.179 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.179 KA				
	CONTRIBUTIONS: B-B4-LS6-M	7.179 KA		ANG:	-37.04	
B-B4-LS6-M	FAULT:	7.202 KA	AT -37.04 DEG (	2.59 MVA)	X/R:	0.75
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0133 + J 0.0100		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.202 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.202 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.202 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.202 KA				
	CONTRIBUTIONS: B-B4-LSD	7.202 KA		ANG:	-37.04	
B-B4-LS7	FAULT:	8.311 KA	AT -39.34 DEG (	2.99 MVA)	X/R:	0.82
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0112 + J 0.0092		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.311 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.311 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.311 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.311 KA				
	CONTRIBUTIONS: B-B4-LS7-M	8.311 KA		ANG:	-39.34	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LS7-M	FAULT:	8.342 KA AT	-39.34 DEG (	3.01 MVA)	X/R:	0.82
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0111 + J	0.0091	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.342 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.342 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.342 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.342 KA				
	CONTRIBUTIONS: B-B4-LSD	8.342 KA	ANG:	-39.34		
B-B4-LS8	FAULT:	8.547 KA AT	-39.82 DEG (	3.08 MVA)	X/R:	0.83
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0108 + J	0.0090	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.547 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.547 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.547 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.547 KA				
	CONTRIBUTIONS: B-B4-LS8-M	8.547 KA	ANG:	-39.82		
B-B4-LS8-M	FAULT:	8.580 KA AT	-39.83 DEG (	3.09 MVA)	X/R:	0.83
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0107 + J	0.0090	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.580 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.580 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.580 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.580 KA				
	CONTRIBUTIONS: B-B4-LSD	8.580 KA	ANG:	-39.83		
B-B4-LS9	FAULT:	8.547 KA AT	-39.82 DEG (	3.08 MVA)	X/R:	0.83
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0108 + J	0.0090	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.547 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.547 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.547 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.547 KA				
	CONTRIBUTIONS: B-B4-LS9-M	8.547 KA	ANG:	-39.82		
B-B4-LS9-M	FAULT:	8.580 KA AT	-39.83 DEG (	3.09 MVA)	X/R:	0.83
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0107 + J	0.0090	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.580 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.580 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.580 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.580 KA				
	CONTRIBUTIONS: B-B4-LSD	8.580 KA	ANG:	-39.83		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LSD	FAULT:	19.117 KA AT -63.39 DEG (	6.89 MVA)	X/R:	2.00
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0028 + J 0.0056		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	19.117 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	19.117 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	19.117 KA			
	CONTRIBUTIONS: B-B4-LSD-M	19.117 KA		ANG:	-63.39
B-B4-LSD-M	FAULT:	19.264 KA AT -63.61 DEG (	6.94 MVA)	X/R:	2.02
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0028 + J 0.0056		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	19.264 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	19.264 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	19.264 KA			
	CONTRIBUTIONS: B-B4-ATS-LS	19.264 KA		ANG:	-63.61
B-B4-MDP	FAULT:	24.883 KA AT -72.01 DEG (	8.96 MVA)	X/R:	3.08
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0015 + J 0.0046		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	24.883 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	24.883 KA			
	CONTRIBUTIONS: B-B4-MDP-M	24.883 KA		ANG:	-72.01
B-B4-MDP-M	FAULT:	24.910 KA AT -72.07 DEG (	8.97 MVA)	X/R:	3.09
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0015 + J 0.0046		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	24.910 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	24.910 KA			
	CONTRIBUTIONS: B-B4-JBOX	24.910 KA	ANG:	-72.07	
B-B4-PP1	FAULT: 14.627 KA AT -59.98 DEG (	5.27 MVA)	X/R:	1.73	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0041 + J	0.0071	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.627 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.627 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.627 KA			
	CONTRIBUTIONS: B-B4-4EQD	14.627 KA	ANG:	-59.98	
B-B4-PP2	FAULT: 6.722 KA AT -33.74 DEG (	2.42 MVA)	X/R:	0.67	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0149 + J	0.0099	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.722 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.722 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.722 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.722 KA			
	CONTRIBUTIONS: B-B4-PP2-M	6.722 KA	ANG:	-33.74	
B-B4-PP2-M	FAULT: 6.742 KA AT -33.73 DEG (	2.43 MVA)	X/R:	0.67	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0148 + J	0.0099	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.742 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.742 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.742 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.742 KA			
	CONTRIBUTIONS: B-B4-LSD	6.742 KA	ANG:	-33.73	
B-B5-ATS-EQ	FAULT: 14.225 KA AT -62.43 DEG (	5.12 MVA)	X/R:	1.92	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0039 + J	0.0075	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.225 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.225 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.225 KA			
	CONTRIBUTIONS: BUS-0258*	14.225 KA	ANG:	-62.43	
B-B5-ATS-LS	FAULT: 14.134 KA AT -56.81 DEG (	5.09 MVA)	X/R:	1.53	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0047 + J	0.0071	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.134 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.134 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.134 KA			
	CONTRIBUTIONS: BUS-0269	14.134 KA	ANG:	-56.81	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B5-EQ1	FAULT:	8.744 KA AT	-46.64 DEG (	3.15 MVA)	X/R:	1.06
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0094 + J 0.0100		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		8.744 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		8.744 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		8.744 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.744 KA			
	CONTRIBUTIONS:	B-B5-EQD	8.744 KA		ANG:	-46.64
B-B5-EQ2	FAULT:	8.507 KA AT	-45.95 DEG (	3.06 MVA)	X/R:	1.03
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0098 + J 0.0101		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		8.507 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		8.507 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		8.507 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.507 KA			
	CONTRIBUTIONS:	B-B5-EQD	8.507 KA		ANG:	-45.95
B-B5-EQ5	FAULT:	8.744 KA AT	-46.64 DEG (	3.15 MVA)	X/R:	1.06
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0094 + J 0.0100		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		8.744 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		8.744 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		8.744 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.744 KA			
	CONTRIBUTIONS:	B-B5-EQD	8.744 KA		ANG:	-46.64
B-B5-EQ6	FAULT:	7.796 KA AT	-43.93 DEG (	2.81 MVA)	X/R:	0.96
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0111 + J 0.0107		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.796 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		7.796 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		7.796 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		7.796 KA			
	CONTRIBUTIONS:	B-B5-EQD	7.796 KA		ANG:	-43.93
B-B5-EQD	FAULT:	13.777 KA AT	-62.28 DEG (	4.96 MVA)	X/R:	1.90
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0041 + J 0.0077		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		13.777 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		13.777 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		13.777 KA			
	CONTRIBUTIONS:	B-B5-ATS-EQ	13.777 KA		ANG:	-62.28

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B5-HYDR ELEV	FAULT:	10.342 KA AT	-51.34 DEG (	3.73 MVA)	X/R:	1.25
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0073 + J 0.0091		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.342 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.342 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.342 KA				
	CONTRIBUTIONS:	B-B5-EQD	10.342 KA	ANG:	-51.34	
B-B5-LP1	FAULT:	13.940 KA AT	-56.58 DEG (	5.02 MVA)	X/R:	1.52
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0047 + J 0.0072		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	13.940 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.940 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	13.940 KA				
	CONTRIBUTIONS:	B-B5-LP1-M	13.940 KA	ANG:	-56.58	
B-B5-LP1-M	FAULT:	14.007 KA AT	-56.63 DEG (	5.05 MVA)	X/R:	1.52
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0047 + J 0.0072		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.007 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.007 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.007 KA				
	CONTRIBUTIONS:	B-B5-MDP	14.007 KA	ANG:	-56.63	
B-B5-LP2	FAULT:	11.727 KA AT	-53.52 DEG (	4.22 MVA)	X/R:	1.35
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0061 + J 0.0082		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.727 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.727 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.727 KA				
	CONTRIBUTIONS:	B-B5-LP2-M	11.727 KA	ANG:	-53.52	
B-B5-LP2-M	FAULT:	11.775 KA AT	-53.55 DEG (	4.24 MVA)	X/R:	1.35
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0061 + J 0.0082		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.775 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.775 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.775 KA				
	CONTRIBUTIONS:	B-B5-MDP	11.775 KA	ANG:	-53.55	
B-B5-LP3	FAULT:	11.817 KA AT	-53.64 DEG (	4.26 MVA)	X/R:	1.36
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0060 + J 0.0082		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 11.817 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 11.817 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 11.817 KA
CONTRIBUTIONS: B-B5-LP3-M 11.817 KA ANG: -53.64

B-B5-LP3-M FAULT: 11.865 KA AT -53.68 DEG (4.27 MVA) X/R: 1.36
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0060 + J 0.0082 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 11.865 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 11.865 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 11.865 KA
CONTRIBUTIONS: B-B5-LP1-M 11.865 KA ANG: -53.68

B-B5-LP4 FAULT: 10.169 KA AT -51.39 DEG (3.66 MVA) X/R: 1.25
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0074 + J 0.0092 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 10.169 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 10.169 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 10.169 KA
CONTRIBUTIONS: B-B5-LP4-M 10.169 KA ANG: -51.39

B-B5-LP4-M FAULT: 10.205 KA AT -51.41 DEG (3.68 MVA) X/R: 1.25
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0073 + J 0.0092 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 10.205 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 10.205 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 10.205 KA
CONTRIBUTIONS: B-B5-LP2-M 10.205 KA ANG: -51.41

B-B5-LP5 FAULT: 12.272 KA AT -46.30 DEG (4.42 MVA) X/R: 1.05
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0068 + J 0.0071 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 12.272 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 12.272 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 12.272 KA
CONTRIBUTIONS: B-B5-LP5-M 12.272 KA ANG: -46.30

B-B5-LP5-M FAULT: 12.325 KA AT -46.30 DEG (4.44 MVA) X/R: 1.05
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0067 + J 0.0070 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 12.325 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 12.325 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 12.325 KA
CONTRIBUTIONS: B-B5-MDP 12.325 KA ANG: -46.30

B-B5-LS1 FAULT: 10.349 KA AT -47.66 DEG (3.73 MVA) X/R: 1.10
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0078 + J 0.0086 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	10.349 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.349 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.349 KA			
	CONTRIBUTIONS: B-B5-LSD	10.349 KA	ANG:	-47.66	
B-B5-LS2	FAULT: 6.667 KA AT -38.54 DEG (	2.40 MVA)	X/R:	0.80	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0141 + J	0.0112	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.667 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.667 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.667 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.667 KA			
	CONTRIBUTIONS: B-B5-LSD	6.667 KA	ANG:	-38.54	
B-B5-LS4	FAULT: 5.801 KA AT -36.46 DEG (	2.09 MVA)	X/R:	0.74	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0166 + J	0.0123	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.801 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.801 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.801 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.801 KA			
	CONTRIBUTIONS: B-B5-LS2	5.801 KA	ANG:	-36.46	
B-B5-LSD	FAULT: 13.460 KA AT -55.91 DEG (	4.85 MVA)	X/R:	1.48	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0050 + J	0.0074	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	13.460 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.460 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	13.460 KA			
	CONTRIBUTIONS: B-B5-LSD-M	13.460 KA	ANG:	-55.91	
B-B5-LSD-M	FAULT: 13.522 KA AT -55.96 DEG (	4.87 MVA)	X/R:	1.48	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0050 + J	0.0074	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	13.522 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.522 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	13.522 KA			
	CONTRIBUTIONS: B-B5-ATS-LS	13.522 KA	ANG:	-55.96	
B-B5-MDP	FAULT: 19.220 KA AT -64.08 DEG (	6.92 MVA)	X/R:	2.06	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0027 + J	0.0056	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 19.220 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 19.220 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 19.220 KA
CONTRIBUTIONS: B-B5-MDP-M 19.220 KA ANG: -64.08

B-B5-MDP-M FAULT: 19.258 KA AT -64.17 DEG (6.94 MVA) X/R: 2.07
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0027 + J 0.0056 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 19.258 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 19.258 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 19.258 KA
CONTRIBUTIONS: B-T-B5-SEC 19.258 KA ANG: -64.17

B-B5-NEXTEL FAULT: 12.344 KA AT -52.28 DEG (4.45 MVA) X/R: 1.29
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0060 + J 0.0077 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 12.344 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 12.344 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 12.344 KA
CONTRIBUTIONS: B-B5-MDP 12.344 KA ANG: -52.28

B-B5-PNL-H FAULT: 14.725 KA AT -57.68 DEG (5.30 MVA) X/R: 1.58
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0044 + J 0.0069 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 14.725 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 14.725 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 14.725 KA
CONTRIBUTIONS: B-B5-PNL-H-M 14.725 KA ANG: -57.68

B-B5-PNL-H-M FAULT: 14.799 KA AT -57.74 DEG (5.33 MVA) X/R: 1.58
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0043 + J 0.0069 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 14.799 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 14.799 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 14.799 KA
CONTRIBUTIONS: B-B5-MDP 14.799 KA ANG: -57.74

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B5-STRT LGHT FAULT: 9.278 KA AT -33.80 DEG (3.34 MVA) X/R: 0.67
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0108 + J 0.0072 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 9.278 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 9.278 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 9.278 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 9.278 KA
CONTRIBUTIONS: B-B5-MDP 9.278 KA ANG: -33.80

B-B5-TEMP TRAI FAULT: 11.291 KA AT -50.56 DEG (4.07 MVA) X/R: 1.22
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0068 + J 0.0082 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 11.291 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 11.291 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 11.291 KA
CONTRIBUTIONS: B-B5-MDP 11.291 KA ANG: -50.56

B-B55-LS3 FAULT: 8.472 KA AT -42.94 DEG (3.05 MVA) X/R: 0.93
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0104 + J 0.0097 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 8.472 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 8.472 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 8.472 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 8.472 KA
CONTRIBUTIONS: B-B5-LS1 8.472 KA ANG: -42.94

B-B6-ATS-EQ FAULT: 14.346 KA AT -64.31 DEG (5.17 MVA) X/R: 2.08
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0036 + J 0.0075 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 14.346 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 14.346 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 14.346 KA
CONTRIBUTIONS: BUS-0302 14.346 KA ANG: -64.31

B-B6-ATS-LS FAULT: 15.303 KA AT -58.69 DEG (5.51 MVA) X/R: 1.64
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0041 + J 0.0067 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 15.303 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 15.303 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 15.303 KA
CONTRIBUTIONS: BUS-0290 15.303 KA ANG: -58.69

B-B6-EQ1 FAULT: 10.665 KA AT -54.26 DEG (3.84 MVA) X/R: 1.39
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0066 + J 0.0091 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   10.665 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.665 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.665 KA
                CONTRIBUTIONS:  B-B6-EQD          10.665 KA      ANG:   -54.26

 B-B6-EQ2       FAULT:    8.368 KA AT  -49.73 DEG (   3.01 MVA)  X/R:     1.18
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0093 + J  0.0110  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.368 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.368 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.368 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.368 KA
                CONTRIBUTIONS:  B-B6-EQD           8.368 KA      ANG:   -49.73

 B-B6-EQ3       FAULT:   10.144 KA AT  -54.78 DEG (   3.65 MVA)  X/R:     1.42
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0068 + J  0.0097  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.144 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.144 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.144 KA
                CONTRIBUTIONS:  B-B6-EQD          10.144 KA      ANG:   -54.78

 B-B6-EQ4       FAULT:    7.275 KA AT  -46.72 DEG (   2.62 MVA)  X/R:     1.06
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0113 + J  0.0120  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.275 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.275 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.275 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.275 KA
                CONTRIBUTIONS:  B-B6-EQ2           7.275 KA      ANG:   -46.72

 B-B6-EQ5       FAULT:    8.623 KA AT  -50.44 DEG (   3.11 MVA)  X/R:     1.21
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0089 + J  0.0107  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.623 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.623 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.623 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.623 KA
                CONTRIBUTIONS:  B-B6-EQ3           8.623 KA      ANG:   -50.44

 B-B6-EQ8       FAULT:    8.401 KA AT  -54.01 DEG (   3.03 MVA)  X/R:     1.38
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0084 + J  0.0116  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.401 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.401 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.401 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.401 KA
                CONTRIBUTIONS:  B-B6-EQD           8.401 KA      ANG:   -54.01
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-EQD	FAULT: 12.943 KA AT -63.25 DEG (4.66 MVA) X/R: 1.98	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0042 + J 0.0083 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 12.943 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 12.943 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 12.943 KA	
	CONTRIBUTIONS: B-B6-EQD-M 12.943 KA ANG: -63.25	
B-B6-EQD-M	FAULT: 12.960 KA AT -63.31 DEG (4.67 MVA) X/R: 1.99	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0042 + J 0.0083 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 12.960 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 12.960 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 12.960 KA	
	CONTRIBUTIONS: B-B6-ATS-EQ 12.960 KA ANG: -63.31	
B-B6-EQMACH	FAULT: 10.665 KA AT -54.26 DEG (3.84 MVA) X/R: 1.39	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0066 + J 0.0091 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 10.665 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 10.665 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 10.665 KA	
	CONTRIBUTIONS: B-B6-EQD 10.665 KA ANG: -54.26	
B-B6-LP1	FAULT: 10.897 KA AT -43.96 DEG (3.93 MVA) X/R: 0.96	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0079 + J 0.0077 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 10.897 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 10.897 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 10.897 KA	
	CONTRIBUTIONS: B-B6-LP1-M 10.897 KA ANG: -43.96	
B-B6-LP1-M	FAULT: 10.912 KA AT -43.99 DEG (3.93 MVA) X/R: 0.97	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0079 + J 0.0076 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER 10.912 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA 10.912 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA 10.912 KA	
	CONTRIBUTIONS: B-B6-MDP 10.912 KA ANG: -43.99	
B-B6-LP2	FAULT: 12.174 KA AT -46.58 DEG (4.39 MVA) X/R: 1.06	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0068 + J 0.0072 OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 12.174 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 12.174 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 12.174 KA
CONTRIBUTIONS: B-B6-LP2-M 12.174 KA ANG: -46.58

B-B6-LP2-M FAULT: 12.192 KA AT -46.61 DEG (4.39 MVA) X/R: 1.06
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0068 + J 0.0072 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 12.192 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 12.192 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 12.192 KA
CONTRIBUTIONS: B-B6-MDP 12.192 KA ANG: -46.61

B-B6-LP3 FAULT: 13.332 KA AT -55.88 DEG (4.80 MVA) X/R: 1.48
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0051 + J 0.0075 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.332 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.332 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.332 KA
CONTRIBUTIONS: B-B6-LP3-M 13.332 KA ANG: -55.88

B-B6-LP3-M FAULT: 13.352 KA AT -55.93 DEG (4.81 MVA) X/R: 1.48
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0050 + J 0.0075 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.352 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.352 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.352 KA
CONTRIBUTIONS: B-B6-MDP 13.352 KA ANG: -55.93

B-B6-LP4 FAULT: 13.683 KA AT -56.37 DEG (4.93 MVA) X/R: 1.50
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0049 + J 0.0073 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.683 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.683 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.683 KA
CONTRIBUTIONS: B-B6-LP4-M 13.683 KA ANG: -56.37

B-B6-LP4-M FAULT: 13.704 KA AT -56.43 DEG (4.94 MVA) X/R: 1.51
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0048 + J 0.0073 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.704 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.704 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.704 KA
CONTRIBUTIONS: B-B6-MDP 13.704 KA ANG: -56.43

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-LP5	FAULT:	11.372 KA	AT -53.15 DEG (	4.10 MVA)	X/R:	1.33
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0063 + J 0.0085		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.372 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.372 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.372 KA				
	CONTRIBUTIONS:	B-B6-LP5-M	11.372 KA	ANG:	-53.15	
B-B6-LP5-M	FAULT:	11.387 KA	AT -53.19 DEG (	4.10 MVA)	X/R:	1.34
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0063 + J 0.0084		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.387 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.387 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.387 KA				
	CONTRIBUTIONS:	B-B6-LP3-M	11.387 KA	ANG:	-53.19	
B-B6-LP6	FAULT:	11.630 KA	AT -53.51 DEG (	4.19 MVA)	X/R:	1.35
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0061 + J 0.0083		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.630 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.630 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.630 KA				
	CONTRIBUTIONS:	B-B6-LP6-M	11.630 KA	ANG:	-53.51	
B-B6-LP6-M	FAULT:	11.645 KA	AT -53.55 DEG (	4.20 MVA)	X/R:	1.35
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0061 + J 0.0083		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.645 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.645 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.645 KA				
	CONTRIBUTIONS:	B-B6-LP4-M	11.645 KA	ANG:	-53.55	
B-B6-LP7	FAULT:	16.478 KA	AT -55.84 DEG (	5.94 MVA)	X/R:	1.47
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0041 + J 0.0060		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	16.478 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	16.478 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	16.478 KA				
	CONTRIBUTIONS:	B-B6-LP7-M	16.478 KA	ANG:	-55.84	
B-B6-LP7-M	FAULT:	16.508 KA	AT -55.90 DEG (	5.95 MVA)	X/R:	1.48
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0041 + J 0.0060		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	16.508 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	16.508 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	16.508 KA				
	CONTRIBUTIONS:	B-B6-MDP	16.508 KA	ANG:	-55.90	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-LS1	FAULT:	9.391 KA	AT -44.73 DEG (	3.38 MVA)	X/R:	0.99
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0091 + J 0.0090		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.391 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.391 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.391 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.391 KA				
	CONTRIBUTIONS: B-B6-LSD	9.391 KA			ANG:	-44.73
B-B6-LS2	FAULT:	11.429 KA	AT -48.02 DEG (	4.12 MVA)	X/R:	1.11
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0070 + J 0.0078		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.429 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.429 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.429 KA				
	CONTRIBUTIONS: B-B6-LSD	11.429 KA			ANG:	-48.02
B-B6-LS3	FAULT:	9.391 KA	AT -44.73 DEG (	3.38 MVA)	X/R:	0.99
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0091 + J 0.0090		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.391 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.391 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.391 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.391 KA				
	CONTRIBUTIONS: B-B6-LSD	9.391 KA			ANG:	-44.73
B-B6-LS4	FAULT:	9.391 KA	AT -44.73 DEG (	3.38 MVA)	X/R:	0.99
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0091 + J 0.0090		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.391 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.391 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.391 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.391 KA				
	CBL-0258 B-B6-LSD	9.391 KA			ANG:	-44.73
B-B6-LS5	FAULT:	7.798 KA	AT -40.88 DEG (	2.81 MVA)	X/R:	0.87
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0116 + J 0.0101		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.798 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.798 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.798 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.798 KA				
	CONTRIBUTIONS: B-B6-LS3	7.798 KA			ANG:	-40.88
B-B6-LS6	FAULT:	7.798 KA	AT -40.88 DEG (	2.81 MVA)	X/R:	0.87
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0116 + J 0.0101		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	7.798 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.798 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.798 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.798 KA			
	CONTRIBUTIONS: B-B6-LS4	7.798 KA	ANG:	-40.88	
B-B6-LSD	FAULT: 14.179 KA AT -57.07 DEG (	5.11 MVA)	X/R:	1.54	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0046 + J	0.0071	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.179 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.179 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.179 KA			
	CONTRIBUTIONS: B-B6-LSD-M	14.179 KA	ANG:	-57.07	
B-B6-LSD-M	FAULT: 14.201 KA AT -57.13 DEG (	5.12 MVA)	X/R:	1.55	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0046 + J	0.0071	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.201 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.201 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.201 KA			
	CONTRIBUTIONS: B-B6-ATS-LS	14.201 KA	ANG:	-57.13	
B-B6-MACH SHOP	FAULT: 12.057 KA AT -51.63 DEG (	4.34 MVA)	X/R:	1.26	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0062 + J	0.0078	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.057 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.057 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.057 KA			
	CONTRIBUTIONS: B-B6-MDP	12.057 KA	ANG:	-51.63	
B-B6-MDP	FAULT: 21.282 KA AT -67.51 DEG (	7.67 MVA)	X/R:	2.42	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0022 + J	0.0052	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	21.282 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	21.282 KA			
	CONTRIBUTIONS: B-B6-MDP-M	21.282 KA	ANG:	-67.51	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-MDP-M	FAULT:	21.326 KA	AT -67.62 DEG (	7.68 MVA)	X/R:	2.43
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0021 + J 0.0052		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		21.326 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		21.326 KA			
	CONTRIBUTIONS:	B-T-B6-SEC	21.326 KA	ANG:	-67.62	
B-B6-P6-CS	FAULT:	14.698 KA	AT -55.96 DEG (	5.30 MVA)	X/R:	1.48
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0046 + J 0.0068		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		14.698 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		14.698 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		14.698 KA			
	CONTRIBUTIONS:	B-B6-MDP	14.698 KA	ANG:	-55.96	
B-B60-MDP	FAULT:	7.167 KA	AT -67.12 DEG (	2.58 MVA)	X/R:	2.37
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0065 + J 0.0154		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.167 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		7.798 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		7.167 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		7.167 KA			
	CONTRIBUTIONS:	B-B60-MDP-M	7.167 KA	ANG:	-67.12	
B-B60-MDP-M	FAULT:	7.184 KA	AT -67.17 DEG (	2.59 MVA)	X/R:	2.38
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0065 + J 0.0154		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.184 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		7.822 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		7.184 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		7.184 KA			
	CONTRIBUTIONS:	B-T-B60-SEC	7.184 KA	ANG:	-67.17	
B-B61 STRT LGH	FAULT:	7.064 KA	AT -40.49 DEG (	2.54 MVA)	X/R:	0.85
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0129 + J 0.0110		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.064 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		7.064 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		7.064 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		7.064 KA			
	CONTRIBUTIONS:	B-B61-MDP	7.064 KA	ANG:	-40.49	
B-B61-ATS-EQD	FAULT:	10.590 KA	AT -68.37 DEG (	3.82 MVA)	X/R:	2.52
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0042 + J 0.0105		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	10.590 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.590 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.590 KA			
	CONTRIBUTIONS: BUS-0520	10.590 KA	ANG:	-68.37	
B-B61-ATS-LSD	FAULT: 10.458 KA AT -64.75 DEG (	3.77 MVA)	X/R:	2.12	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0049 + J	0.0104	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.458 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.458 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.458 KA			
	CONTRIBUTIONS: BUS-0518	10.458 KA	ANG:	-64.75	
B-B61-COMP RM	FAULT: 8.656 KA AT -63.65 DEG (	3.12 MVA)	X/R:	2.02	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0062 + J	0.0124	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.656 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.012 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.656 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.656 KA			
	CONTRIBUTIONS: B-B61-EQA	8.656 KA	ANG:	-63.65	
B-B61-DP	FAULT: 10.590 KA AT -68.37 DEG (	3.82 MVA)	X/R:	2.52	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0042 + J	0.0105	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.590 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.590 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.590 KA			
	CONTRIBUTIONS: B-B61-MDP	10.590 KA	ANG:	-68.37	
B-B61-ELEV	FAULT: 6.939 KA AT -58.27 DEG (	2.50 MVA)	X/R:	1.62	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0091 + J	0.0147	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.939 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.939 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.939 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.939 KA			
	CONTRIBUTIONS: B-B61-EQD	6.939 KA	ANG:	-58.27	
B-B61-EQ1	FAULT: 7.078 KA AT -55.04 DEG (	2.55 MVA)	X/R:	1.43	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0097 + J	0.0139	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.078 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.078 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.078 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.078 KA			
	CONTRIBUTIONS: B-B61-EQD	7.078 KA	ANG:	-55.04	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B61-EQ2	FAULT:	8.882 KA AT	-62.93 DEG (	3.20 MVA)	X/R:	1.96
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0062 + J	0.0120	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.882 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.171 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.882 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.882 KA				
	CONTRIBUTIONS: B-B61-EQD	8.882 KA	ANG:	-62.93		
B-B61-EQ4	FAULT:	6.996 KA AT	-52.78 DEG (	2.52 MVA)	X/R:	1.32
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0104 + J	0.0137	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.996 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.996 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.996 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.996 KA				
	CONTRIBUTIONS: B-B61-EQD	6.996 KA	ANG:	-52.78		
B-B61-EQA	FAULT:	9.657 KA AT	-66.91 DEG (	3.48 MVA)	X/R:	2.35
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0049 + J	0.0114	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.657 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.657 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.657 KA				
	CONTRIBUTIONS: B-B61-EQD	9.657 KA	ANG:	-66.91		
B-B61-EQD	FAULT:	9.881 KA AT	-67.65 DEG (	3.56 MVA)	X/R:	2.43
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0046 + J	0.0112	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.881 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.881 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.881 KA				
	CONTRIBUTIONS: B-B61-ATS-EQD	9.881 KA	ANG:	-67.65		
B-B61-KITCHEN	FAULT:	7.991 KA AT	-58.07 DEG (	2.88 MVA)	X/R:	1.60
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0079 + J	0.0128	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.991 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.991 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.991 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.991 KA				
	CONTRIBUTIONS: B-B61-LSD	7.991 KA	ANG:	-58.07		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B61-LP1	FAULT:	4.044 KA AT	-36.79 DEG (	1.46 MVA)	X/R:	0.75
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0238 + J 0.0178		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.044 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.044 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.044 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.044 KA			
	CONTRIBUTIONS:	B-B61-MDP	4.044 KA		ANG:	-36.79
B-B61-LP2	FAULT:	4.044 KA AT	-36.79 DEG (	1.46 MVA)	X/R:	0.75
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0238 + J 0.0178		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.044 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.044 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.044 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.044 KA			
	CONTRIBUTIONS:	B-B61-MDP	4.044 KA		ANG:	-36.79
B-B61-LP3	FAULT:	7.343 KA AT	-56.36 DEG (	2.65 MVA)	X/R:	1.50
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0091 + J 0.0136		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.343 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		7.343 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		7.343 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		7.343 KA			
	CONTRIBUTIONS:	B-B61-MDP	7.343 KA		ANG:	-56.36
B-B61-LP4	FAULT:	8.702 KA AT	-61.38 DEG (	3.14 MVA)	X/R:	1.83
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0066 + J 0.0121		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		8.702 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		8.830 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		8.702 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.702 KA			
	CONTRIBUTIONS:	B-B61-MDP	8.702 KA		ANG:	-61.38
B-B61-LP5	FAULT:	6.030 KA AT	-35.87 DEG (	2.17 MVA)	X/R:	0.72
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0161 + J 0.0117		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		6.030 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		6.030 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		6.030 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		6.030 KA			
	CONTRIBUTIONS:	B-B61-MDP	6.030 KA		ANG:	-35.87
B-B61-LS1	FAULT:	5.877 KA AT	-45.39 DEG (	2.12 MVA)	X/R:	1.01
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0143 + J 0.0145		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	5.877 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.877 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.877 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.877 KA		
	CONTRIBUTIONS: B-B61-LSD	5.877 KA	ANG:	-45.39
B-B61-LS2	FAULT: 7.388 KA AT -49.10 DEG (2.66 MVA)		X/R:	1.15
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0106 + J 0.0123 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.388 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.388 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.388 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.388 KA		
	CONTRIBUTIONS: B-B61-LSD	7.388 KA	ANG:	-49.10
B-B61-LS3	FAULT: 5.216 KA AT -42.74 DEG (1.88 MVA)		X/R:	0.92
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0169 + J 0.0156 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.216 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.216 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.216 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.216 KA		
	CONTRIBUTIONS: B-B61-LSD	5.216 KA	ANG:	-42.74
B-B61-LS4	FAULT: 5.877 KA AT -45.39 DEG (2.12 MVA)		X/R:	1.01
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0143 + J 0.0145 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.877 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.877 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.877 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.877 KA		
	CONTRIBUTIONS: B-B61-LSD	5.877 KA	ANG:	-45.39
B-B61-LS5	FAULT: 5.216 KA AT -42.74 DEG (1.88 MVA)		X/R:	0.92
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0169 + J 0.0156 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.216 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.216 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.216 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.216 KA		
	CONTRIBUTIONS: B-B61-LSD	5.216 KA	ANG:	-42.74
B-B61-LSD	FAULT: 9.975 KA AT -63.41 DEG (3.59 MVA)		X/R:	2.00
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0054 + J 0.0108 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.975 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.975 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.975 KA		
	CONTRIBUTIONS: B-B61-LSD-M	9.975 KA	ANG:	-63.41

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B61-LSD (CONTINUED)

B-B61-LSD-M FAULT: 10.015 KA AT -63.52 DEG (3.61 MVA) X/R: 2.01
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0053 + J 0.0107 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 10.015 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 10.015 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 10.015 KA
CONTRIBUTIONS: B-B61-ATS-LSD 10.015 KA ANG: -63.52

B-B61-MCC FAULT: 7.064 KA AT -40.49 DEG (2.54 MVA) X/R: 0.85
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0129 + J 0.0110 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.064 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.064 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.064 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.064 KA
CONTRIBUTIONS: B-B61-MDP 7.064 KA ANG: -40.49

B-B61-MDP FAULT: 12.355 KA AT -70.16 DEG (4.45 MVA) X/R: 2.77
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0033 + J 0.0091 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 12.355 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 12.355 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 12.355 KA
CONTRIBUTIONS: B-B61-MDP-M 12.355 KA ANG: -70.16

B-B61-MDP-M FAULT: 12.378 KA AT -70.23 DEG (4.46 MVA) X/R: 2.78
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0033 + J 0.0091 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   12.378 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.378 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.378 KA
                CONTRIBUTIONS:  B-T-B61-SEC       12.378 KA      ANG:   -70.23

 B-B62-A        FAULT:   13.963 KA AT  -54.07 DEG (   5.03 MVA)  X/R:     1.38
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0050 + J  0.0070  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   13.963 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.963 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.963 KA
                CONTRIBUTIONS:  B-B62-MDP         13.963 KA      ANG:   -54.07

 B-B62-ATS-EQD  FAULT:   18.052 KA AT  -62.16 DEG (   6.50 MVA)  X/R:     1.89
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0031 + J  0.0059  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   18.052 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  18.052 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  18.052 KA
                CONTRIBUTIONS:  BUS-0546          18.052 KA      ANG:   -62.16

 B-B62-ATS-LSD  FAULT:   18.052 KA AT  -62.16 DEG (   6.50 MVA)  X/R:     1.89
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0031 + J  0.0059  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   18.052 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  18.052 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  18.052 KA
                CONTRIBUTIONS:  BUS-0554          18.052 KA      ANG:   -62.16

 B-B62-ATTC PNL FAULT:    9.602 KA AT  -46.20 DEG (   3.46 MVA)  X/R:     1.04
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0087 + J  0.0090  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.602 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.602 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.602 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.602 KA
                CONTRIBUTIONS:  B-B62-EQD          9.602 KA      ANG:   -46.20

 B-B62-B        FAULT:   14.724 KA AT  -55.29 DEG (   5.30 MVA)  X/R:     1.44
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0046 + J  0.0067  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   14.724 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  14.724 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  14.724 KA
                CONTRIBUTIONS:  B-B62-MDP         14.724 KA      ANG:   -55.29
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B62-BL	FAULT:	10.259 KA AT	-39.55 DEG (	3.70 MVA)	X/R:	0.83
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0090 + J 0.0075		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.259 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.259 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.259 KA				
	CONTRIBUTIONS: B-B62-MDP	10.259 KA	ANG:	-39.55		
B-B62-BP	FAULT:	12.971 KA AT	-47.06 DEG (	4.67 MVA)	X/R:	1.07
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0063 + J 0.0068		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.971 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.971 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.971 KA				
	CONTRIBUTIONS: B-B62-MDP	12.971 KA	ANG:	-47.06		
B-B62-ELEV-1	FAULT:	9.602 KA AT	-46.20 DEG (	3.46 MVA)	X/R:	1.04
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0087 + J 0.0090		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.602 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.602 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.602 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.602 KA				
	CONTRIBUTIONS: B-B62-EQD	9.602 KA	ANG:	-46.20		
B-B62-ELEV-2	FAULT:	9.602 KA AT	-46.20 DEG (	3.46 MVA)	X/R:	1.04
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0087 + J 0.0090		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.602 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.602 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.602 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.602 KA				
	CONTRIBUTIONS: B-B62-EQD	9.602 KA	ANG:	-46.20		
B-B62-EQ	FAULT:	13.992 KA AT	-53.74 DEG (	5.04 MVA)	X/R:	1.36
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0051 + J 0.0069		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	13.992 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.992 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	13.992 KA				
	CONTRIBUTIONS: B-B62-EQD	13.992 KA	ANG:	-53.74		
B-B62-EQD	FAULT:	15.444 KA AT	-58.47 DEG (	5.56 MVA)	X/R:	1.63
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0041 + J 0.0066		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	15.444 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	15.444 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	15.444 KA				
	CONTRIBUTIONS: B-B62-ATS-EQD	15.444 KA	ANG:	-58.47		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B62-EQD (CONTINUED)

B-B62-KP FAULT: 13.089 KA AT -49.92 DEG (4.72 MVA) X/R: 1.19
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0059 + J 0.0070 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.089 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.089 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.089 KA
CONTRIBUTIONS: B-B62-MDP 13.089 KA ANG: -49.92

B-B62-LP1 FAULT: 13.524 KA AT -48.17 DEG (4.87 MVA) X/R: 1.12
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0059 + J 0.0066 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.524 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.524 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.524 KA
CONTRIBUTIONS: B-B62-MDP 13.524 KA ANG: -48.17

B-B62-LP2 FAULT: 13.089 KA AT -49.92 DEG (4.72 MVA) X/R: 1.19
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0059 + J 0.0070 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.089 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.089 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.089 KA
CONTRIBUTIONS: B-B62-MDP 13.089 KA ANG: -49.92

B-B62-LP3 FAULT: 14.191 KA AT -56.73 DEG (5.11 MVA) X/R: 1.52
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0046 + J 0.0071 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 14.191 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 14.191 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 14.191 KA
CONTRIBUTIONS: B-B62-MDP 14.191 KA ANG: -56.73

B-B62-LP4 FAULT: 14.723 KA AT -57.46 DEG (5.30 MVA) X/R: 1.57
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0044 + J 0.0069 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 14.723 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 14.723 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 14.723 KA
CONTRIBUTIONS: B-B62-MDP 14.723 KA ANG: -57.46

B-B62-LS1 FAULT: 6.693 KA AT -33.18 DEG (2.41 MVA) X/R: 0.65
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0150 + J 0.0098 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	6.693 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.693 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.693 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.693 KA			
	CONTRIBUTIONS: B-B62-LSD	6.693 KA	ANG:	-33.18	
B-B62-LS2	FAULT: 9.964 KA AT -42.00 DEG (	3.59 MVA)	X/R:	0.90	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0090 + J	0.0081	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.964 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.964 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.964 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.964 KA			
	CONTRIBUTIONS: B-B62-LSD	9.964 KA	ANG:	-42.00	
B-B62-LS3	FAULT: 7.937 KA AT -40.33 DEG (	2.86 MVA)	X/R:	0.85	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0115 + J	0.0098	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.937 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.937 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.937 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.937 KA			
	CONTRIBUTIONS: B-B62-LSD	7.937 KA	ANG:	-40.33	
B-B62-LS4	FAULT: 10.234 KA AT -45.63 DEG (	3.69 MVA)	X/R:	1.02	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0082 + J	0.0084	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.234 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.234 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.234 KA			
	CONTRIBUTIONS: B-B62-LSD	10.234 KA	ANG:	-45.63	
B-B62-LSD	FAULT: 15.345 KA AT -58.33 DEG (	5.53 MVA)	X/R:	1.62	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0041 + J	0.0067	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	15.345 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	15.345 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	15.345 KA			
	CONTRIBUTIONS: B-B62-LSD-M	15.345 KA	ANG:	-58.33	
B-B62-LSD-M	FAULT: 15.444 KA AT -58.47 DEG (	5.56 MVA)	X/R:	1.63	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0041 + J	0.0066	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 15.444 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 15.444 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 15.444 KA
CONTRIBUTIONS: B-B62-ATS-LSD 15.444 KA ANG: -58.47

B-B62-MDP FAULT: 23.012 KA AT -69.51 DEG (8.29 MVA) X/R: 2.68
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0018 + J 0.0049 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 23.012 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 23.012 KA
CONTRIBUTIONS: B-B62-MDP-M 23.012 KA ANG: -69.51

B-B62-MDP-M FAULT: 23.051 KA AT -69.60 DEG (8.30 MVA) X/R: 2.69
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0018 + J 0.0049 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 23.051 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 23.051 KA
CONTRIBUTIONS: B-T-B62-SEC 23.051 KA ANG: -69.60

B-B62-OT FAULT: 11.859 KA AT -42.83 DEG (4.27 MVA) X/R: 0.93
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0074 + J 0.0069 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 11.859 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 11.859 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 11.859 KA
CONTRIBUTIONS: B-B62-MDP 11.859 KA ANG: -42.83

B-B62-PAD RM FAULT: 12.418 KA AT -50.78 DEG (4.47 MVA) X/R: 1.23
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0061 + J 0.0075 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER   12.418 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.418 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.418 KA
                CONTRIBUTIONS:  B-B62-EQD         12.418 KA      ANG:   -50.78

 B-B62-STRT LGT FAULT:   10.190 KA AT  -33.29 DEG (   3.67 MVA)  X/R:     0.66
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0099 + J  0.0065  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.190 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.190 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.190 KA
                CONTRIBUTIONS:  B-B62-MDP         10.190 KA      ANG:   -33.29

 B-B7-ATS-EQ    FAULT:   10.018 KA AT  -65.51 DEG (   3.61 MVA)  X/R:     2.20
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0050 + J  0.0109  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.018 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.018 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.018 KA
                CONTRIBUTIONS:  BUS-0327          10.018 KA      ANG:   -65.51

 B-B7-ATS-LS    FAULT:    9.374 KA AT  -61.29 DEG (   3.38 MVA)  X/R:     1.83
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0062 + J  0.0112  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.374 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.503 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.374 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.374 KA
                CONTRIBUTIONS:  BUS-0344           9.374 KA      ANG:   -61.29

 B-B7-ELEV      FAULT:    6.679 KA AT  -57.46 DEG (   2.41 MVA)  X/R:     1.57
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0097 + J  0.0152  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.679 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.679 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.679 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.679 KA
                CONTRIBUTIONS:  B-B7-EQD           6.679 KA      ANG:   -57.46

 B-B7-EQ1       FAULT:    6.762 KA AT  -54.58 DEG (   2.44 MVA)  X/R:     1.41
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0103 + J  0.0145  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.762 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.762 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.762 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.762 KA
                CONTRIBUTIONS:  B-B7-EQD           6.762 KA      ANG:   -54.58
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B7-EQ2	FAULT:	8.132 KA AT -60.67 DEG (	2.93 MVA)	X/R:	1.78
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0072 + J 0.0129		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		8.132 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		8.189 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		8.132 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.132 KA		
	CONTRIBUTIONS: B-B7-EQD		8.132 KA	ANG:	-60.67
B-B7-EQ4	FAULT:	7.094 KA AT -54.63 DEG (	2.56 MVA)	X/R:	1.41
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0098 + J 0.0138		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.094 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		7.094 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		7.094 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		7.094 KA		
	CONTRIBUTIONS: B-B7-EQD		7.094 KA	ANG:	-54.63
B-B7-EQD	FAULT:	8.993 KA AT -64.72 DEG (	3.24 MVA)	X/R:	2.12
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0057 + J 0.0121		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		8.993 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		9.485 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		8.993 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.993 KA		
	CONTRIBUTIONS: B-B7-ATS-EQ		8.993 KA	ANG:	-64.72
B-B7-LP2	FAULT:	8.852 KA AT -60.92 DEG (	3.19 MVA)	X/R:	1.80
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0066 + J 0.0119		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		8.852 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		8.937 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		8.852 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.852 KA		
	CONTRIBUTIONS: B-B7-LP2-M		8.852 KA	ANG:	-60.92
B-B7-LP2-M	FAULT:	8.884 KA AT -61.01 DEG (	3.20 MVA)	X/R:	1.80
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0066 + J 0.0118		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    8.884 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.978 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.884 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.884 KA
                CONTRIBUTIONS:  B-B7-MDP           8.884 KA      ANG:   -61.01

 B-B7-LP3       FAULT:    6.860 KA AT  -54.77 DEG (   2.47 MVA)  X/R:     1.42
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0101 + J  0.0143  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.860 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.860 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.860 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.860 KA
                CONTRIBUTIONS:  B-B7-LP3-M         6.860 KA      ANG:   -54.77

 B-B7-LP3-M     FAULT:    6.880 KA AT  -54.82 DEG (   2.48 MVA)  X/R:     1.42
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0101 + J  0.0143  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.880 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.880 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.880 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.880 KA
                CONTRIBUTIONS:  B-B7-MDP           6.880 KA      ANG:   -54.82

 B-B7-LP4       FAULT:    8.852 KA AT  -60.92 DEG (   3.19 MVA)  X/R:     1.80
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0066 + J  0.0119  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.852 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.937 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.852 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.852 KA
                CONTRIBUTIONS:  B-B7-LP4-M         8.852 KA      ANG:   -60.92

 B-B7-LP4-M     FAULT:    8.884 KA AT  -61.01 DEG (   3.20 MVA)  X/R:     1.80
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0066 + J  0.0118  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    8.884 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   8.978 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.884 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.884 KA
                CONTRIBUTIONS:  B-B7-MDP           8.884 KA      ANG:   -61.01

 B-B7-LP5       FAULT:    6.860 KA AT  -54.77 DEG (   2.47 MVA)  X/R:     1.42
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0101 + J  0.0143  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	6.860 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.860 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.860 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.860 KA			
	CONTRIBUTIONS: B-B7-LP5-M	6.860 KA	ANG:	-54.77	
B-B7-LP5-M	FAULT: 6.880 KA AT -54.82 DEG (	2.48 MVA)	X/R:	1.42	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0101 + J	0.0143	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.880 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.880 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.880 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.880 KA			
	CONTRIBUTIONS: B-B7-MDP	6.880 KA	ANG:	-54.82	
B-B7-LP6	FAULT: 6.300 KA AT -53.35 DEG (	2.27 MVA)	X/R:	1.34	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0114 + J	0.0153	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.300 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.300 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.300 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.300 KA			
	CONTRIBUTIONS: B-B7-LP6-M	6.300 KA	ANG:	-53.35	
B-B7-LP6-M	FAULT: 6.317 KA AT -53.39 DEG (	2.28 MVA)	X/R:	1.35	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0113 + J	0.0153	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.317 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.317 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.317 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.317 KA			
	CONTRIBUTIONS: B-B7-LP3-M	6.317 KA	ANG:	-53.39	
B-B7-LP7	FAULT: 8.019 KA AT -59.07 DEG (	2.89 MVA)	X/R:	1.67	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0077 + J	0.0128	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.019 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.019 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.019 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.019 KA			
	CONTRIBUTIONS: B-B7-LP7-M	8.019 KA	ANG:	-59.07	
B-B7-LP7-M	FAULT: 8.045 KA AT -59.14 DEG (	2.90 MVA)	X/R:	1.67	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0077 + J	0.0128	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	8.045 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.045 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.045 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.045 KA			
	CONTRIBUTIONS: B-B7-LP4-M	8.045 KA	ANG:	-59.14	
B-B7-LP8	FAULT: 6.300 KA AT -53.35 DEG (	2.27 MVA)	X/R:	1.34	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0114 + J	0.0153	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.300 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.300 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.300 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.300 KA			
	CONTRIBUTIONS: B-B7-LP8-M	6.300 KA	ANG:	-53.35	
B-B7-LP8-M	FAULT: 6.317 KA AT -53.39 DEG (	2.28 MVA)	X/R:	1.35	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0113 + J	0.0153	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.317 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.317 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.317 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.317 KA			
	CONTRIBUTIONS: B-B7-LP5-M	6.317 KA	ANG:	-53.39	
B-B7-LS1	FAULT: 5.865 KA AT -46.11 DEG (	2.11 MVA)	X/R:	1.04	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0142 + J	0.0148	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.865 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.865 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.865 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.865 KA			
	CONTRIBUTIONS: B-B7-LSD	5.865 KA	ANG:	-46.11	
B-B7-LS2	FAULT: 7.276 KA AT -50.24 DEG (	2.62 MVA)	X/R:	1.20	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0106 + J	0.0127	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.276 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.276 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.276 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.276 KA			
	CONTRIBUTIONS: B-B7-LSD	7.276 KA	ANG:	-50.24	
B-B7-LS4	FAULT: 5.619 KA AT -45.08 DEG (	2.02 MVA)	X/R:	1.00	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0151 + J	0.0151	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	5.619 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.619 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.619 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.619 KA
	CONTRIBUTIONS: B-B7-LSD	5.619 KA ANG: -45.08
B-B7-LS5	FAULT: 6.975 KA AT -50.86 DEG (2.51 MVA)	X/R: 1.23
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0109 + J 0.0134	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.975 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.975 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.975 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.975 KA
	CONTRIBUTIONS: B-B7-LSD	6.975 KA ANG: -50.86
B-B7-LSD	FAULT: 9.076 KA AT -60.50 DEG (3.27 MVA)	X/R: 1.77
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0065 + J 0.0115	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.076 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.123 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.076 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.076 KA
	CONTRIBUTIONS: B-B7-LSD-M	9.076 KA ANG: -60.50
B-B7-LSD-M	FAULT: 9.109 KA AT -60.59 DEG (3.28 MVA)	X/R: 1.77
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0065 + J 0.0115	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.109 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.165 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.109 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	9.109 KA
	CONTRIBUTIONS: B-B7-ATS-LS	9.109 KA ANG: -60.59
B-B7-MCC-1	FAULT: 7.174 KA AT -51.07 DEG (2.58 MVA)	X/R: 1.24
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0105 + J 0.0130	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.174 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.174 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.174 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.174 KA
	CONTRIBUTIONS: B-B7-EQD	7.174 KA ANG: -51.07
B-B7-MCC-2	FAULT: 8.573 KA AT -49.76 DEG (3.09 MVA)	X/R: 1.18
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0090 + J 0.0107	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	8.573 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.573 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.573 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.573 KA			
	CONTRIBUTIONS: B-B7-MDP	8.573 KA	ANG:	-49.76	
B-B7-MDP	FAULT: 11.303 KA AT -66.52 DEG (	4.07 MVA)	X/R:	2.30	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0042 + J	0.0097	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.303 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.303 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.303 KA			
	CONTRIBUTIONS: B-B7-MDP-M	11.303 KA	ANG:	-66.52	
B-B7-MDP-M	FAULT: 11.322 KA AT -66.57 DEG (	4.08 MVA)	X/R:	2.31	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0042 + J	0.0097	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.322 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.322 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.322 KA			
	CONTRIBUTIONS: B-T-B7-SEC	11.322 KA	ANG:	-66.57	
B-B7-SRTLGHT-M	FAULT: 6.634 KA AT -40.02 DEG (	2.39 MVA)	X/R:	0.84	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0139 + J	0.0116	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.634 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.634 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.634 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.634 KA			
	CONTRIBUTIONS: B-B7-MDP	6.634 KA	ANG:	-40.02	
B-B7-STRT LGHT	FAULT: 6.614 KA AT -40.01 DEG (	2.38 MVA)	X/R:	0.84	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0139 + J	0.0117	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	6.614 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.614 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.614 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.614 KA			
	CONTRIBUTIONS: B-B7-SRTLGHT-M	6.614 KA	ANG:	-40.01	
B-B70 -BLDG-71	FAULT: 1.080 KA AT -20.13 DEG (0.39 MVA)		X/R:	0.37	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.1044 + J 0.0383				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.080 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.080 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.080 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.080 KA			
	CONTRIBUTIONS: B-B70-MDP	1.080 KA	ANG:	-20.13	
B-B70-A	FAULT: 8.195 KA AT -51.33 DEG (2.95 MVA)		X/R:	1.25	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0092 + J 0.0114				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.195 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.195 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.195 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.195 KA			
	CONTRIBUTIONS: B-B70-MDP	8.195 KA	ANG:	-51.33	
B-B70-ATS-EQD	FAULT: 11.428 KA AT -68.04 DEG (4.12 MVA)		X/R:	2.48	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0039 + J 0.0097				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.428 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.428 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.428 KA			
	CONTRIBUTIONS: BUS-0582	11.428 KA	ANG:	-68.04	
B-B70-ATS-LSD	FAULT: 10.950 KA AT -65.78 DEG (3.95 MVA)		X/R:	2.22	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0045 + J 0.0100				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.950 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.950 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.950 KA			
	CONTRIBUTIONS: BUS-0581	10.950 KA	ANG:	-65.78	
B-B70-ATTIC	FAULT: 7.271 KA AT -47.89 DEG (2.62 MVA)		X/R:	1.11	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0111 + J 0.0123				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.271 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.271 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.271 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.271 KA			
	CONTRIBUTIONS: B-B70-MDP	7.271 KA	ANG:	-47.89	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B70-B FAULT: 8.195 KA AT -51.33 DEG (2.95 MVA) X/R: 1.25
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0092 + J 0.0114 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 8.195 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 8.195 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 8.195 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 8.195 KA
CONTRIBUTIONS: B-B70-MDP 8.195 KA ANG: -51.33

B-B70-CHLLR FAULT: 5.512 KA AT -59.81 DEG (1.99 MVA) X/R: 1.72
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0110 + J 0.0188 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.512 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.512 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.512 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.512 KA
CONTRIBUTIONS: B-B70-MDP 5.512 KA ANG: -59.81

B-B70-EQ1 FAULT: 6.138 KA AT -48.70 DEG (2.21 MVA) X/R: 1.14
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0129 + J 0.0147 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.138 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.138 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.138 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.138 KA
CONTRIBUTIONS: B-B70-EQD 6.138 KA ANG: -48.70

B-B70-EQ2 FAULT: 4.908 KA AT -44.33 DEG (1.77 MVA) X/R: 0.98
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0175 + J 0.0171 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.908 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.908 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.908 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.908 KA
CONTRIBUTIONS: B-B70-EQD 4.908 KA ANG: -44.33

B-B70-EQ3 FAULT: 5.669 KA AT -47.02 DEG (2.04 MVA) X/R: 1.07
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0144 + J 0.0155 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.669 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.669 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.669 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.669 KA
CONTRIBUTIONS: B-B70-EQ1 5.669 KA ANG: -47.02

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-EQ4	FAULT:	4.597 KA AT	-43.24 DEG (	1.66 MVA)	X/R:	0.94
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0190 + J 0.0179		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.597 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.597 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.597 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.597 KA			
	CONTRIBUTIONS:	B-B70-EQ2	4.597 KA		ANG:	-43.24
B-B70-EQ5	FAULT:	5.262 KA AT	-45.58 DEG (	1.90 MVA)	X/R:	1.02
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0160 + J 0.0163		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		5.262 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		5.262 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		5.262 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		5.262 KA			
	CONTRIBUTIONS:	B-B70-EQ3	5.262 KA		ANG:	-45.58
B-B70-EQ6	FAULT:	4.321 KA AT	-42.28 DEG (	1.56 MVA)	X/R:	0.91
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0206 + J 0.0187		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.321 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.321 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.321 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.321 KA			
	CONTRIBUTIONS:	B-B70-EQ4	4.321 KA		ANG:	-42.28
B-B70-EQD	FAULT:	10.899 KA AT	-67.35 DEG (	3.93 MVA)	X/R:	2.40
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0042 + J 0.0102		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		10.899 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		10.899 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		10.899 KA			
	CONTRIBUTIONS:	B-B70-EQD-M	10.899 KA		ANG:	-67.35
B-B70-EQD-M	FAULT:	10.938 KA AT	-67.43 DEG (	3.94 MVA)	X/R:	2.41
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0042 + J 0.0101		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		10.938 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		10.938 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		10.938 KA			
	CONTRIBUTIONS:	B-B70-ATS-EQD	10.938 KA		ANG:	-67.43
B-B70-FIRE PMP	FAULT:	3.224 KA AT	-21.72 DEG (	1.16 MVA)	X/R:	0.40
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0346 + J 0.0138		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.224 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.224 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.224 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.224 KA
	CONTRIBUTIONS: B-B70-FPMP M 3.224 KA ANG: -21.72	
B-B70-FP-TAP	FAULT: 12.326 KA AT -69.31 DEG (4.44 MVA) X/R: 2.65	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0034 + J 0.0091 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.326 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.326 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.326 KA
	CONTRIBUTIONS: B-T-B70-SEC 12.326 KA ANG: -69.31	
B-B70-FPMP M	FAULT: 11.468 KA AT -67.49 DEG (4.13 MVA) X/R: 2.41	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0040 + J 0.0097 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.468 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.468 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.468 KA
	CONTRIBUTIONS: B-B70-FP-TAP 11.468 KA ANG: -67.49	
B-B70-K	FAULT: 6.513 KA AT -37.49 DEG (2.35 MVA) X/R: 0.77	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0146 + J 0.0112 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.513 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.513 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.513 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.513 KA
	CONTRIBUTIONS: B-B70-MDP 6.513 KA ANG: -37.49	
B-B70-LP-4	FAULT: 5.518 KA AT -51.21 DEG (1.99 MVA) X/R: 1.24	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0136 + J 0.0170 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.518 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.518 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.518 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.518 KA
	CONTRIBUTIONS: B-B70-MDP 5.518 KA ANG: -51.21	
B-B70-LP1	FAULT: 6.091 KA AT -43.62 DEG (2.19 MVA) X/R: 0.95	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0143 + J 0.0136 OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.091 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.091 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.091 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.091 KA
	CONTRIBUTIONS: B-B70-MDP 6.091 KA ANG: -43.62	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B70-LP3 FAULT: 6.585 KA AT -53.86 DEG (2.37 MVA) X/R: 1.37
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0108 + J 0.0147 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.585 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.585 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.585 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.585 KA
CONTRIBUTIONS: B-B70-MDP 6.585 KA ANG: -53.86

B-B70-LS1 FAULT: 4.475 KA AT -35.01 DEG (1.61 MVA) X/R: 0.70
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0220 + J 0.0154 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.475 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.475 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.475 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.475 KA
CONTRIBUTIONS: B-B70-LSD 4.475 KA ANG: -35.01

B-B70-LS2 FAULT: 3.653 KA AT -31.45 DEG (1.32 MVA) X/R: 0.61
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0280 + J 0.0172 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.653 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.653 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.653 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.653 KA
CONTRIBUTIONS: B-B70-LSD 3.653 KA ANG: -31.45

B-B70-LS3 FAULT: 5.072 KA AT -41.94 DEG (1.83 MVA) X/R: 0.90
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0176 + J 0.0158 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.072 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.072 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.072 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.072 KA
CONTRIBUTIONS: B-B70-LSD 5.072 KA ANG: -41.94

B-B70-LS4 FAULT: 4.049 KA AT -37.99 DEG (1.46 MVA) X/R: 0.78
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0234 + J 0.0183 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.049 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.049 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.049 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.049 KA
CONTRIBUTIONS: B-B70-LSD 4.049 KA ANG: -37.99

B-B70-LS5 FAULT: 4.681 KA AT -40.42 DEG (1.69 MVA) X/R: 0.85
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0195 + J 0.0166 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	4.681 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.681 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.681 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.681 KA		
	CONTRIBUTIONS: B-B70-LS3	4.681 KA	ANG:	-40.42
B-B70-LS6	FAULT: 3.792 KA AT -37.01 DEG (1.37 MVA)		X/R:	0.75
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0253 + J 0.0191			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.792 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.792 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.792 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.792 KA		
	CONTRIBUTIONS: B-B70-LS4	3.792 KA	ANG:	-37.01
B-B70-LSD	FAULT: 10.460 KA AT -65.21 DEG (3.77 MVA)		X/R:	2.17
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0048 + J 0.0104			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.460 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.460 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.460 KA		
	CBL-0541 B-B70-LSD-M	10.460 KA	ANG:	-65.21
B-B70-LSD-M	FAULT: 10.496 KA AT -65.28 DEG (3.78 MVA)		X/R:	2.17
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0048 + J 0.0104			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.496 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	10.496 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.496 KA		
	CONTRIBUTIONS: B-B70-ATS-LSD	10.496 KA	ANG:	-65.28
B-B70-MDP	FAULT: 12.471 KA AT -69.36 DEG (4.49 MVA)		X/R:	2.65
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0034 + J 0.0090			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.471 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.471 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.471 KA		
	CONTRIBUTIONS: B-B70-MDP-M	12.471 KA	ANG:	-69.36

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B70-MDP (CONTINUED)

B-B70-MDP-M	FAULT:	12.494 KA AT -69.42 DEG (	4.50 MVA)	X/R:	2.66
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0034 + J 0.0090		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.494 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.494 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.494 KA			
	CONTRIBUTIONS: B-T-B70-SEC	12.494 KA		ANG:	-69.42
B-B70-PP2	FAULT:	7.928 KA AT -57.25 DEG (	2.86 MVA)	X/R:	1.55
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0082 + J 0.0127		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.928 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.928 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.928 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.928 KA			
	CONTRIBUTIONS: B-B70-MDP	7.928 KA		ANG:	-57.25
B-B70-PP220	FAULT:	5.851 KA AT -49.03 DEG (	2.11 MVA)	X/R:	1.15
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0135 + J 0.0155		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.851 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.851 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.851 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.851 KA			
	CONTRIBUTIONS: B-B70-MDP	5.851 KA		ANG:	-49.03
B-B70-STRTLGHT	FAULT:	7.069 KA AT -39.94 DEG (	2.55 MVA)	X/R:	0.84
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0130 + J 0.0109		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.069 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.069 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.069 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.069 KA			
	CONTRIBUTIONS: B-B70-MDP	7.069 KA		ANG:	-39.94
B-B78-1P	FAULT:	5.697 KA AT -37.49 DEG (	2.05 MVA)	X/R:	0.77
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0167 + J 0.0128		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	5.697 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.697 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.697 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.697 KA			
	CONTRIBUTIONS: B-B78-MDP	5.697 KA	ANG:	-37.49	
B-B78-78AE1	FAULT: 14.822 KA AT -57.55 DEG (	5.34 MVA)	X/R:	1.57	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0043 + J	0.0068	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.822 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.822 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.822 KA			
	CONTRIBUTIONS: B-B78-ATSG9578	14.822 KA	ANG:	-57.55	
B-B78-A/C	FAULT: 3.665 KA AT -26.65 DEG (	1.32 MVA)	X/R:	0.50	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0293 + J	0.0147	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.665 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.665 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.665 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.665 KA			
	CONTRIBUTIONS: B-B78-MDP	3.665 KA	ANG:	-26.65	
B-B78-ATS TAP	FAULT: 17.234 KA AT -60.84 DEG (	6.21 MVA)	X/R:	1.79	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0034 + J	0.0061	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	17.234 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	17.234 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	17.234 KA			
	CONTRIBUTIONS: B-B78-MDP	17.234 KA	ANG:	-60.84	
B-B78-ATS-CRD	FAULT: 5.238 KA AT -36.94 DEG (	1.89 MVA)	X/R:	0.75	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0183 + J	0.0138	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.238 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.238 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.238 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.238 KA			
	CONTRIBUTIONS: BUS-0652	5.238 KA	ANG:	-36.94	
B-B78-ATS-E1	FAULT: 7.687 KA AT -55.67 DEG (	2.77 MVA)	X/R:	1.46	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0088 + J	0.0129	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

```
                LOW VOLTAGE POWER CIRCUIT BREAKER    7.687 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   7.687 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   7.687 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   7.687 KA
                CONTRIBUTIONS:  BUS-0730           7.687 KA      ANG:   -55.67

 B-B78-ATS-LS1  FAULT:   13.737 KA AT  -56.89 DEG (   4.95 MVA)  X/R:     1.53
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0048 + J  0.0073  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   13.737 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.737 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.737 KA
                CONTRIBUTIONS:  BUS-0620          13.737 KA      ANG:   -56.89

 B-B78-ATSG9578 FAULT:   15.343 KA AT  -57.55 DEG (   5.53 MVA)  X/R:     1.57
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0042 + J  0.0066  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   15.343 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  15.343 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  15.343 KA
                CONTRIBUTIONS:  BUS-0618          15.343 KA      ANG:   -57.55

 B-B78-BARBER   FAULT:    3.029 KA AT  -10.52 DEG (   1.09 MVA)  X/R:     0.19
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0390 + J  0.0072  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    3.029 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.029 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   3.029 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.029 KA
                CONTRIBUTIONS:  B-B78-MDP          3.029 KA      ANG:   -10.52

 B-B78-CONRM-AC FAULT:    2.171 KA AT  -15.68 DEG (   0.78 MVA)  X/R:     0.28
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0532 + J  0.0150  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.171 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.171 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.171 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.171 KA
                CONTRIBUTIONS:  B-B78-MDP          2.171 KA      ANG:   -15.68

 B-B78-CRD      FAULT:    2.894 KA AT  -34.17 DEG (   1.04 MVA)  X/R:     0.68
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0343 + J  0.0233  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.894 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.894 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.894 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.894 KA
	CONTRIBUTIONS: B-B78-ATS-CRD	2.894 KA ANG: -34.17
B-B78-E1	FAULT: 7.554 KA AT -55.71 DEG (2.72 MVA)	X/R: 1.47
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0090 + J 0.0131	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.554 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.554 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.554 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.554 KA
	CONTRIBUTIONS: B-B78-ATS-E1	7.554 KA ANG: -55.71
B-B78-ELEV-1	FAULT: 14.512 KA AT -48.11 DEG (5.23 MVA)	X/R: 1.11
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0055 + J 0.0062	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.512 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.512 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.512 KA
	CONTRIBUTIONS: B-B78-MDP	14.512 KA ANG: -48.11
B-B78-ELEV-2	FAULT: 14.512 KA AT -48.11 DEG (5.23 MVA)	X/R: 1.11
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0055 + J 0.0062	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.512 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.512 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.512 KA
	CONTRIBUTIONS: B-B78-MDP	14.512 KA ANG: -48.11
B-B78-FLPNL	FAULT: 4.863 KA AT -32.39 DEG (1.75 MVA)	X/R: 0.63
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0208 + J 0.0132	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.863 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.863 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.863 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.863 KA
	CONTRIBUTIONS: B-B78-MDP	4.863 KA ANG: -32.39
B-B78-KK	FAULT: 6.667 KA AT -34.68 DEG (2.40 MVA)	X/R: 0.69
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0148 + J 0.0103	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.667 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.667 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.667 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.667 KA
	CONTRIBUTIONS: B-B78-MDP	6.667 KA ANG: -34.68

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B78-L10 FAULT: 6.528 KA AT -51.68 DEG (2.35 MVA) X/R: 1.27
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0114 + J 0.0144 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.528 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.528 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.528 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.528 KA
CONTRIBUTIONS: B-B78-MDP 6.528 KA ANG: -51.68

B-B78-LP-1 FAULT: 6.208 KA AT -41.34 DEG (2.24 MVA) X/R: 0.88
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0145 + J 0.0128 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.208 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.208 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.208 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.208 KA
CONTRIBUTIONS: B-B78-MDP 6.208 KA ANG: -41.34

B-B78-LP-13 FAULT: 6.025 KA AT -51.26 DEG (2.17 MVA) X/R: 1.25
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0125 + J 0.0155 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.025 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.025 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.025 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.025 KA
CONTRIBUTIONS: B-B78-L10 6.025 KA ANG: -51.26

B-B78-LP-14 FAULT: 5.594 KA AT -50.89 DEG (2.02 MVA) X/R: 1.23
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0135 + J 0.0167 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.594 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.594 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.594 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.594 KA
CONTRIBUTIONS: B-B78-LP-13 5.594 KA ANG: -50.89

B-B78-LP-15 FAULT: 5.220 KA AT -50.58 DEG (1.88 MVA) X/R: 1.22
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0146 + J 0.0178 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.220 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.220 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.220 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.220 KA
CONTRIBUTIONS: B-B78-LP-14 5.220 KA ANG: -50.58

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B78-LP-2 FAULT: 10.837 KA AT -46.52 DEG (3.90 MVA) X/R: 1.05
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0076 + J 0.0080 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 10.837 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 10.837 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 10.837 KA
CONTRIBUTIONS: B-B78-MDP 10.837 KA ANG: -46.52

B-B78-LP-4 FAULT: 3.683 KA AT -33.23 DEG (1.33 MVA) X/R: 0.66
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0273 + J 0.0179 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.683 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.683 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.683 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.683 KA
CONTRIBUTIONS: B-B78-LP-1 3.683 KA ANG: -33.23

B-B78-LP-8 FAULT: 12.443 KA AT -55.62 DEG (4.48 MVA) X/R: 1.46
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0054 + J 0.0080 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 12.443 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 12.443 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 12.443 KA
CONTRIBUTIONS: B-B78-MDP 12.443 KA ANG: -55.62

B-B78-LP10 FAULT: 5.797 KA AT -50.42 DEG (2.09 MVA) X/R: 1.21
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0132 + J 0.0160 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.797 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.797 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.797 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.797 KA
CONTRIBUTIONS: B-B78-LP7 5.797 KA ANG: -50.42

B-B78-LP13 FAULT: 5.320 KA AT -50.58 DEG (1.92 MVA) X/R: 1.22
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0143 + J 0.0174 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.320 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.320 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.320 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.320 KA
CONTRIBUTIONS: B-B78-LP10 5.320 KA ANG: -50.58

B-B78-LP3 FAULT: 10.837 KA AT -46.52 DEG (3.90 MVA) X/R: 1.05
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0076 + J 0.0080 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

```
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.837 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.837 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.837 KA
                CONTRIBUTIONS:  B-B78-MDP         10.837 KA      ANG:   -46.52

 B-B78-LP6      FAULT:    9.030 KA AT  -45.74 DEG (   3.25 MVA)  X/R:     1.03
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0093 + J  0.0095  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    9.030 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   9.030 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   9.030 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   9.030 KA
                CONTRIBUTIONS:  B-B78-LP3          9.030 KA      ANG:   -45.74

 B-B78-LP7      FAULT:    6.368 KA AT  -50.22 DEG (   2.29 MVA)  X/R:     1.20
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0121 + J  0.0145  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    6.368 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   6.368 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   6.368 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   6.368 KA
                CONTRIBUTIONS:  B-B78-MDP          6.368 KA      ANG:   -50.22

 B-B78-LSD      FAULT:   13.159 KA AT  -56.06 DEG (   4.74 MVA)  X/R:     1.49
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0051 + J  0.0076  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   13.159 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  13.159 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  13.159 KA
                CONTRIBUTIONS:  B-B78-ATS-LS1     13.159 KA      ANG:   -56.06

 B-B78-MDP      FAULT:   35.514 KA AT  -77.62 DEG (  12.79 MVA)  X/R:     4.56
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0007 + J  0.0033  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   35.514 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  35.514 KA
                CONTRIBUTIONS:  B-B78-MDP-M       35.514 KA      ANG:   -77.62
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B78-MDP (CONTINUED)

B-B78-MDP-M	FAULT:	35.541 KA AT	-77.67 DEG (12.80 MVA)	X/R:	4.57
	VOLTAGE:	208.	EQUIV. IMPEDANCE= 0.0007 + J 0.0033		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		35.541 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		35.541 KA		
	CONTRIBUTIONS: B-T-B78-SEC		35.541 KA	ANG:	-77.67
B-B78-MEC-1 AC	FAULT:	7.166 KA AT	-55.28 DEG (2.58 MVA)	X/R:	1.44
	VOLTAGE:	208.	EQUIV. IMPEDANCE= 0.0095 + J 0.0138		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.166 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		7.166 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		7.166 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		7.166 KA		
	CONTRIBUTIONS: B-B78-MDP		7.166 KA	ANG:	-55.28
B-B78-MEC2-A/C	FAULT:	16.154 KA AT	-55.55 DEG (5.82 MVA)	X/R:	1.46
	VOLTAGE:	208.	EQUIV. IMPEDANCE= 0.0042 + J 0.0061		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		16.154 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		16.154 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		16.154 KA		
	CONTRIBUTIONS: B-B78-MDP		16.154 KA	ANG:	-55.55
B-B78-PHARM AC	FAULT:	3.029 KA AT	-10.52 DEG (1.09 MVA)	X/R:	0.19
	VOLTAGE:	208.	EQUIV. IMPEDANCE= 0.0390 + J 0.0072		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    3.029 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.029 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   3.029 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.029 KA
                CONTRIBUTIONS:  B-B78-MDP          3.029 KA      ANG:   -10.52

 B-B78-PHV      FAULT:    2.784 KA AT  -19.23 DEG (   1.00 MVA)  X/R:     0.35
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0407 + J  0.0142  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.784 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.784 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.784 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.784 KA
                CONTRIBUTIONS:  B-B78-MDP          2.784 KA      ANG:   -19.23

 B-B78-PK       FAULT:    5.716 KA AT  -40.79 DEG (   2.06 MVA)  X/R:     0.86
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0159 + J  0.0137  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    5.716 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   5.716 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   5.716 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   5.716 KA
                CONTRIBUTIONS:  B-B78-MDP          5.716 KA      ANG:   -40.79

 B-B78-PNL-330A FAULT:   10.175 KA AT  -49.37 DEG (   3.67 MVA)  X/R:     1.17
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0077 + J  0.0090  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   10.175 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  10.175 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  10.175 KA
                CONTRIBUTIONS:  B-B78-MDP         10.175 KA      ANG:   -49.37

 B-B78-PULM 78B FAULT:   17.234 KA AT  -60.84 DEG (   6.21 MVA)  X/R:     1.79
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0034 + J  0.0061  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   17.234 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  17.234 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  17.234 KA
                CONTRIBUTIONS:  B-B78-MDP         17.234 KA      ANG:   -60.84

 B-B78-QP       FAULT:   11.423 KA AT  -37.19 DEG (   4.12 MVA)  X/R:     0.76
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0084 + J  0.0064  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   11.423 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  11.423 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  11.423 KA
                CONTRIBUTIONS:  B-B78-MDP         11.423 KA      ANG:   -37.19

 B-B78A-PNL-2   FAULT:   14.512 KA AT  -48.11 DEG (   5.23 MVA)  X/R:     1.11
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0055 + J  0.0062  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	14.512 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.512 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.512 KA			
	CONTRIBUTIONS: B-B78-MDP	14.512 KA	ANG:	-48.11	
B-B8 2ND FLR	FAULT: 12.341 KA AT -66.64 DEG (	4.45 MVA)	X/R:	2.32	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0039 + J	0.0089	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	12.341 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.341 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.341 KA			
	CONTRIBUTIONS: B-B8-MDP-8	12.341 KA	ANG:	-66.64	
B-B8 HYDRO ELV	FAULT: 3.727 KA AT -35.11 DEG (	3.10 MVA)	X/R:	0.70	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0608 + J	0.0428	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.727 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.727 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.727 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.727 KA			
	CONTRIBUTIONS: B-B8-480V PNL	3.727 KA	ANG:	-35.11	
B-B8-208V-MAIN	FAULT: 17.851 KA AT -70.39 DEG (	6.43 MVA)	X/R:	2.81	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0023 + J	0.0063	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	17.851 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	17.851 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	17.851 KA			
	CONTRIBUTIONS: B-T-B8-SEC	17.851 KA	ANG:	-70.39	
B-B8-480V ATS	FAULT: 7.912 KA AT -69.43 DEG (	6.58 MVA)	X/R:	2.67	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0123 + J	0.0328	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.912 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.896 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.912 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.912 KA			
	CONTRIBUTIONS: BUS-0380	7.912 KA	ANG:	-69.43	
B-B8-480V PNL	FAULT: 7.780 KA AT -69.14 DEG (	6.47 MVA)	X/R:	2.62	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0127 + J	0.0333	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.780 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.711 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.780 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.780 KA			
	CONTRIBUTIONS: B-B8-480V ATS	7.780 KA	ANG:	-69.14	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B8-480V PNL (CONTINUED)

B-B8-ATS	FAULT:	14.184 KA AT -65.96 DEG (	5.11 MVA)	X/R:	2.24
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0034 + J 0.0077		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.184 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.184 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.184 KA			
	CONTRIBUTIONS: BUS-0375	14.184 KA		ANG:	-65.96
B-B8-BS	FAULT:	3.527 KA AT -25.75 DEG (	1.27 MVA)	X/R:	0.48
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0307 + J 0.0148		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.527 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.527 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.527 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.527 KA			
	CONTRIBUTIONS: B-B8-MDP-8	3.527 KA		ANG:	-25.75
B-B8-CMOP	FAULT:	4.207 KA AT -56.12 DEG (	1.52 MVA)	X/R:	1.49
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0159 + J 0.0237		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.207 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.207 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.207 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.207 KA			
	CONTRIBUTIONS: B-B8-TXMR SEC	4.207 KA		ANG:	-56.12
B-B8-COMP	FAULT:	2.351 KA AT -21.05 DEG (	1.95 MVA)	X/R:	0.38
	VOLTAGE:	480. EQUIV. IMPEDANCE=	0.1100 + J 0.0423		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.351 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.351 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.351 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.351 KA			
	CONTRIBUTIONS: B-B8-480V PNL	2.351 KA		ANG:	-21.05
B-B8-ELEV	FAULT:	4.165 KA AT -59.29 DEG (	1.50 MVA)	X/R:	1.68
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0147 + J 0.0248		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.165 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.165 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.165 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.165 KA			
	CONTRIBUTIONS: B-B8-J-BOX	4.165 KA		ANG:	-59.29
B-B8-FDR	FAULT:	4.662 KA AT -60.12 DEG (	1.68 MVA)	X/R:	1.74
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0128 + J 0.0223		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	4.662 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.668 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.662 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.662 KA			
	CONTRIBUTIONS: B-B8-TXMR SEC	4.662 KA	ANG:	-60.12	
B-B8-FLEXPMACH	FAULT: 3.053 KA AT -25.94 DEG (	2.54 MVA)	X/R:	0.49	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0816 + J	0.0397	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.053 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.053 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.053 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.053 KA			
	CONTRIBUTIONS: B-B8-480V PNL	3.053 KA	ANG:	-25.94	
B-B8-GE BKR	FAULT: 8.020 KA AT -69.67 DEG (	6.67 MVA)	X/R:	2.70	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0120 + J	0.0324	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.020 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.050 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.020 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.020 KA			
	CONTRIBUTIONS: B-T-B8-2-SEC	8.020 KA	ANG:	-69.67	
B-B8-J-BOX	FAULT: 4.351 KA AT -59.60 DEG (	1.57 MVA)	X/R:	1.70	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0140 + J	0.0238	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.351 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.351 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.351 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.351 KA			
	CONTRIBUTIONS: B-B8-FDR	4.351 KA	ANG:	-59.60	
B-B8-L8B	FAULT: 5.802 KA AT -32.08 DEG (	2.09 MVA)	X/R:	0.63	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0175 + J	0.0110	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.802 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.802 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.802 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.802 KA			
	CONTRIBUTIONS: B-B8-MDP-8	5.802 KA	ANG:	-32.08	
B-B8-LB1	FAULT: 7.109 KA AT -50.66 DEG (	2.56 MVA)	X/R:	1.22	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0107 + J	0.0131	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	7.109 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.109 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.109 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.109 KA		
	CONTRIBUTIONS: B-B8-MDP-8	7.109 KA	ANG:	-50.66
B-B8-LB2	FAULT: 6.642 KA AT -49.81 DEG (2.39 MVA)		X/R:	1.18
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0117 + J 0.0138			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.642 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.642 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.642 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.642 KA		
	CONTRIBUTIONS: B-B8-LB1	6.642 KA	ANG:	-49.81
B-B8-MAIN BUS	FAULT: 17.406 KA AT -70.23 DEG (6.27 MVA)		X/R:	2.78
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0023 + J 0.0065			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	17.406 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	17.406 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	17.406 KA		
	CONTRIBUTIONS: B-B8-208V-MAIN	17.406 KA	ANG:	-70.23
B-B8-MDP-8	FAULT: 17.101 KA AT -70.12 DEG (6.16 MVA)		X/R:	2.77
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0024 + J 0.0066			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	17.101 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	17.101 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	17.101 KA		
	CONTRIBUTIONS: B-B8-MAIN BUS	17.101 KA	ANG:	-70.12
B-B8-PNL-PK	FAULT: 13.155 KA AT -60.60 DEG (4.74 MVA)		X/R:	1.77
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0045 + J 0.0080			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	13.155 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.155 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	13.155 KA		
	CONTRIBUTIONS: B-B8-MDP-8	13.155 KA	ANG:	-60.60

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B8-PP1	FAULT:	16.134 KA	AT -67.62 DEG (	5.81 MVA)	X/R:	2.43
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0028 + J 0.0069		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			16.134 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			16.134 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			16.134 KA		
	CONTRIBUTIONS:	B-B8-PP1-M		16.134 KA	ANG:	-67.62
B-B8-PP1-M	FAULT:	16.185 KA	AT -67.71 DEG (	5.83 MVA)	X/R:	2.44
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0028 + J 0.0069		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			16.185 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			16.185 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			16.185 KA		
	CONTRIBUTIONS:	B-B8-MAIN BUS		16.185 KA	ANG:	-67.71
B-B8-SYLV	FAULT:	14.882 KA	AT -67.82 DEG (	5.36 MVA)	X/R:	2.45
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0030 + J 0.0075		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			14.882 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			14.882 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			14.882 KA		
	CONTRIBUTIONS:	B-B8-MAIN BUS		14.882 KA	ANG:	-67.82
B-B8-TXMR PRI	FAULT:	7.680 KA	AT -68.46 DEG (	6.39 MVA)	X/R:	2.53
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0132 + J 0.0336		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			7.680 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			8.515 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			7.680 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			7.680 KA		
	CONTRIBUTIONS:	B-B8-480V PNL		7.680 KA	ANG:	-68.46
B-B8-TXMR SEC	FAULT:	4.957 KA	AT -60.61 DEG (	1.79 MVA)	X/R:	1.78
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0119 + J 0.0211		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			4.957 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			4.989 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			4.957 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			4.957 KA		
	CONTRIBUTIONS:	B-B8-TXMR PRI		4.957 KA	ANG:	-60.61

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B80-ATS-EQ	FAULT:	6.831 KA AT -44.22 DEG (	2.46 MVA)	X/R:	0.97
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0126 + J 0.0123	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.831 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.831 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.831 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.831 KA			
	CONTRIBUTIONS: BUS-0664	6.831 KA	ANG:	-44.22	
B-B80-E1	FAULT:	5.881 KA AT -40.05 DEG (	2.12 MVA)	X/R:	0.84
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0156 + J 0.0131	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.881 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.881 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.881 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.881 KA			
	CONTRIBUTIONS: B-B80-ATS-EQ	5.881 KA	ANG:	-40.05	
B-B80-L1-1	FAULT:	2.978 KA AT -20.88 DEG (	1.07 MVA)	X/R:	0.38
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0377 + J 0.0144	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.978 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.978 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.978 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.978 KA			
	CONTRIBUTIONS: B-B80-MDP	2.978 KA	ANG:	-20.88	
B-B80-L1-3	FAULT:	3.410 KA AT -20.89 DEG (	1.23 MVA)	X/R:	0.38
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0329 + J 0.0126	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.410 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.410 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.410 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.410 KA			
	CONTRIBUTIONS: B-B80-MDP	3.410 KA	ANG:	-20.89	
B-B80-LB-1	FAULT:	7.770 KA AT -51.41 DEG (	2.80 MVA)	X/R:	1.25
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0096 + J 0.0121	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.770 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.770 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.770 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.770 KA			
	CONTRIBUTIONS: B-B80-MDP	7.770 KA	ANG:	-51.41	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B80-LB-E	FAULT:	3.959 KA AT	-31.98 DEG (	1.43 MVA)	X/R: 0.62
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0257 + J 0.0161	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.959 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.959 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.959 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.959 KA			
	CONTRIBUTIONS: B-B80-E1	3.959 KA	ANG:	-31.98	
B-B80-MDP	FAULT:	11.016 KA AT	-65.51 DEG (	3.97 MVA)	X/R: 2.19
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0045 + J 0.0099	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.016 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.016 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.016 KA			
	CONTRIBUTIONS: B-B80-MDP-M	11.016 KA	ANG:	-65.51	
B-B80-MDP-M	FAULT:	11.701 KA AT	-66.72 DEG (	4.22 MVA)	X/R: 2.32
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0041 + J 0.0094	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.701 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.701 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.701 KA			
	CONTRIBUTIONS: B-T-B80-SEC	11.701 KA	ANG:	-66.72	
B-B80-P1	FAULT:	8.087 KA AT	-52.69 DEG (	2.91 MVA)	X/R: 1.31
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0090 + J 0.0118	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	8.087 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.087 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.087 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.087 KA			
	CONTRIBUTIONS: B-B80-MDP	8.087 KA	ANG:	-52.69	
B-B80-P5	FAULT:	1.698 KA AT	-15.15 DEG (	0.61 MVA)	X/R: 0.27
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0683 + J 0.0185	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.698 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.698 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.698 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.698 KA			
	CONTRIBUTIONS: B-B80-MDP	1.698 KA	ANG:	-15.15	
B-B80-PB-1	FAULT: 3.067 KA AT -19.29 DEG (	1.10 MVA)	X/R:	0.35	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0370 + J	0.0129	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.067 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.067 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.067 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.067 KA			
	CONTRIBUTIONS: B-B80-MDP	3.067 KA	ANG:	-19.29	
B-B80-PB-2	FAULT: 4.564 KA AT -34.47 DEG (	1.64 MVA)	X/R:	0.69	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0217 + J	0.0149	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.564 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.564 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.564 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.564 KA			
	CONTRIBUTIONS: B-B80-E1	4.564 KA	ANG:	-34.47	
B-B81-MDP	FAULT: 4.266 KA AT -60.19 DEG (	1.54 MVA)	X/R:	1.75	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0140 + J	0.0244	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.266 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.275 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.266 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.266 KA			
	CONTRIBUTIONS: B-B81-MDP-M	4.266 KA	ANG:	-60.19	
B-B81-MDP-M	FAULT: 4.272 KA AT -60.21 DEG (	1.54 MVA)	X/R:	1.75	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0140 + J	0.0244	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.272 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.282 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.272 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.272 KA			
	CONTRIBUTIONS: B-T-B81-SEC	4.272 KA	ANG:	-60.21	
B-B82-ATS-EMER	FAULT: 6.553 KA AT -64.42 DEG (	2.36 MVA)	X/R:	2.09	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0079 + J	0.0165	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	6.553 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.887 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.553 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.553 KA		
	CONTRIBUTIONS: BUS-0744	6.553 KA	ANG:	-64.42
B-B82-EMER	FAULT: 6.289 KA AT -63.29 DEG (2.27 MVA)		X/R:	1.99
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0086 + J 0.0171			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.289 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.521 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.289 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.289 KA		
	CONTRIBUTIONS: B-B82-EMERG-M	6.289 KA	ANG:	-63.29
B-B82-EMERG-M	FAULT: 6.303 KA AT -63.33 DEG (2.27 MVA)		X/R:	1.99
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0086 + J 0.0170			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.303 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.538 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.303 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.303 KA		
	CONTRIBUTIONS: B-B82-ATS-EMER	6.303 KA	ANG:	-63.33
B-B82-MDP	FAULT: 7.109 KA AT -66.88 DEG (2.56 MVA)		X/R:	2.34
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0066 + J 0.0155			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.109 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.711 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.109 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.109 KA		
	CONTRIBUTIONS: B-B82-MDP-M	7.109 KA	ANG:	-66.88
B-B82-MDP-M	FAULT: 7.119 KA AT -66.92 DEG (2.56 MVA)		X/R:	2.35
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0066 + J 0.0155			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.119 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.726 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.119 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.119 KA		
	CONTRIBUTIONS: B-T-B82-SEC	7.119 KA	ANG:	-66.92
B-B9-*PNLXX	FAULT: 8.246 KA AT -41.43 DEG (2.97 MVA)		X/R:	0.88
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0109 + J 0.0096			OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	8.246 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.246 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.246 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.246 KA			
	CONTRIBUTIONS: B-B9-MDP	8.246 KA	ANG:	-41.43	
B-B9-*PNLYY	FAULT: 7.403 KA AT -36.74 DEG (	2.67 MVA)	X/R:	0.75	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0130 + J	0.0097	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.403 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.403 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.403 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.403 KA			
	CONTRIBUTIONS: B-B9-MDP	7.403 KA	ANG:	-36.74	
B-B9-*PNLZZ	FAULT: 11.439 KA AT -63.77 DEG (	4.12 MVA)	X/R:	2.03	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0046 + J	0.0094	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.439 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.439 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.439 KA			
	CONTRIBUTIONS: B-B9-MDP	11.439 KA	ANG:	-63.77	
B-B9-ATS BKR	FAULT: 13.628 KA AT -67.15 DEG (	4.91 MVA)	X/R:	2.37	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0034 + J	0.0081	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	13.628 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.628 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	13.628 KA			
	CONTRIBUTIONS: B-B9-MDP	13.628 KA	ANG:	-67.15	
B-B9-EM	FAULT: 13.225 KA AT -66.35 DEG (	4.76 MVA)	X/R:	2.28	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0036 + J	0.0083	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	13.225 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.225 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	13.225 KA			
	CONTRIBUTIONS: B-B9-ATS BKR	13.225 KA	ANG:	-66.35	
B-B9-L91A	FAULT: 3.692 KA AT -36.96 DEG (	1.33 MVA)	X/R:	0.75	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0260 + J	0.0196	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.692 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.692 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.692 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.692 KA			
	CONTRIBUTIONS: B-B9-L91A-M	3.692 KA	ANG:	-36.96	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B9-L91A-M	FAULT:	3.698 KA AT	-36.96 DEG (	1.33 MVA)	X/R:	0.75
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0259 + J 0.0195		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			3.698 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			3.698 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			3.698 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			3.698 KA		
	CONTRIBUTIONS:	B-B9-MDP		3.698 KA	ANG:	-36.96
B-B9-L92	FAULT:	4.823 KA AT	-27.91 DEG (	1.74 MVA)	X/R:	0.53
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0220 + J 0.0117		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			4.823 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			4.823 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			4.823 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			4.823 KA		
	CONTRIBUTIONS:	B-B9-MDP		4.823 KA	ANG:	-27.91
B-B9-L9A	FAULT:	6.862 KA AT	-41.26 DEG (	2.47 MVA)	X/R:	0.88
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0132 + J 0.0115		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			6.862 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			6.862 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			6.862 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			6.862 KA		
	CONTRIBUTIONS:	B-B9-MDP		6.862 KA	ANG:	-41.26
B-B9-L9B	FAULT:	11.306 KA AT	-55.33 DEG (	4.07 MVA)	X/R:	1.45
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0060 + J 0.0087		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			11.306 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			11.306 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			11.306 KA		
	CONTRIBUTIONS:	B-B9-MDP		11.306 KA	ANG:	-55.33
B-B9-LPN	FAULT:	2.601 KA AT	-27.28 DEG (	0.94 MVA)	X/R:	0.52
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0410 + J 0.0212		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			2.601 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.601 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			2.601 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			2.601 KA		
	CONTRIBUTIONS:	B-B9-TAP		2.601 KA	ANG:	-27.28
B-B9-LPS	FAULT:	5.763 KA AT	-34.64 DEG (	2.08 MVA)	X/R:	0.69
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0171 + J 0.0118		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	5.763 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.763 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.763 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.763 KA		
	CONTRIBUTIONS: B-B9-TAP	5.763 KA	ANG:	-34.64
B-B9-MAIN	FAULT: 15.875 KA AT -69.08 DEG (	5.72 MVA)	X/R:	2.62
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0027 + J 0.0071		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	15.875 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	15.875 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	15.875 KA		
	CONTRIBUTIONS: B-T-B9-SEC	15.875 KA	ANG:	-69.08
B-B9-MDP	FAULT: 14.816 KA AT -68.32 DEG (	5.34 MVA)	X/R:	2.52
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0030 + J 0.0075		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	14.816 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	14.816 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	14.816 KA		
	CONTRIBUTIONS: B-B9-MAIN	14.816 KA	ANG:	-68.32
B-B9-STRT LGHT	FAULT: 5.814 KA AT -27.66 DEG (	2.09 MVA)	X/R:	0.52
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0183 + J 0.0096		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.814 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.814 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.814 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.814 KA		
	CONTRIBUTIONS: B-B9-MDP	5.814 KA	ANG:	-27.66
B-B9-TAP	FAULT: 12.339 KA AT -58.90 DEG (	4.45 MVA)	X/R:	1.66
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0050 + J 0.0083		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	12.339 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.339 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	12.339 KA			
	CONTRIBUTIONS: B-B9-MDP	12.339 KA	ANG:	-58.90	
B-B92-ATS	FAULT: 3.699 KA AT -46.76 DEG (1.33 MVA)	X/R:	1.06		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0222 + J 0.0236	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.699 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.699 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.699 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.699 KA			
	CONTRIBUTIONS: BUS-0091	3.699 KA	ANG:	-46.76	
B-B92-PNL-E1	FAULT: 3.502 KA AT -44.97 DEG (1.26 MVA)	X/R:	1.00		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0243 + J 0.0242	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.502 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.502 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.502 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.502 KA			
	CONTRIBUTIONS: B-B92-ATS	3.502 KA	ANG:	-44.97	
B-B94-ATS	FAULT: 5.269 KA AT -41.64 DEG (1.90 MVA)	X/R:	0.89		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0170 + J 0.0151	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.269 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.269 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.269 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.269 KA			
	CONTRIBUTIONS: BUS-0360	5.269 KA	ANG:	-41.64	
B-B94-E1	FAULT: 4.506 KA AT -37.75 DEG (1.62 MVA)	X/R:	0.77		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0211 + J 0.0163	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.506 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.506 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.506 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.506 KA			
	CONTRIBUTIONS: B-B94-ATS	4.506 KA	ANG:	-37.75	
B-SW-MV-1	FAULT: 2.419 KA AT -64.28 DEG (57.82 MVA)	X/R:	2.08		
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.4294 + J 2.9670	OHMS			
	CONTRIBUTIONS: B-T-B5-PRI	2.419 KA	ANG:	-64.28	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-SW-MV-2	FAULT:	2.510 KA AT -66.51 DEG (59.99 MVA)	X/R:	2.30
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.2654 + J 2.9117	OHMS	
	CONTRIBUTIONS:	B-T-B80-PRI 2.510 KA	ANG:	-66.51
B-SWGR27 TAP	FAULT:	2.700 KA AT -71.57 DEG (64.53 MVA)	X/R:	3.00
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 0.9332 + J 2.7995	OHMS	
	CONTRIBUTIONS:	B-B27-SWGR-M2 2.700 KA	ANG:	-71.57
B-T-13-PRI	FAULT:	2.490 KA AT -66.01 DEG (59.51 MVA)	X/R:	2.25
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.3012 + J 2.9238	OHMS	
	CONTRIBUTIONS:	B-T-B9-PRI 2.490 KA	ANG:	-66.01
B-T-B1-PRI	FAULT:	2.610 KA AT -69.10 DEG (62.37 MVA)	X/R:	2.62
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.0892 + J 2.8523	OHMS	
	CBL-0017	B-T-B2-PRI 2.610 KA	ANG:	-69.10
B-T-B1-SEC	FAULT:	4.946 KA AT -62.44 DEG (1.78 MVA)	X/R:	1.92
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0112 + J 0.0215	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.946 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.077 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.946 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.946 KA		
	CONTRIBUTIONS:	B-T-B1-PRI 4.946 KA	ANG:	-62.44
B-T-B10-PRI	FAULT:	2.537 KA AT -67.20 DEG (60.63 MVA)	X/R:	2.38
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.2172 + J 2.8955	OHMS	
	CONTRIBUTIONS:	B-T-B78-PRI 2.537 KA	ANG:	-67.20
B-T-B10-SEC	FAULT:	6.153 KA AT -62.42 DEG (2.22 MVA)	X/R:	1.91
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0090 + J 0.0173	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 6.153 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.316 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.153 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.153 KA
CONTRIBUTIONS: B-T-B10-PRI 6.153 KA ANG: -62.42

B-T-B12-PRI FAULT: 2.463 KA AT -65.35 DEG (58.87 MVA) X/R: 2.18
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3492 + J 2.9400 OHMS
CONTRIBUTIONS: B-T-13-PRI 2.463 KA ANG: -65.35

B-T-B12-SEC FAULT: 4.724 KA AT -62.33 DEG (1.70 MVA) X/R: 1.91
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0118 + J 0.0225 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.724 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.844 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.724 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.724 KA
CONTRIBUTIONS: B-T-B12-PRI 4.724 KA ANG: -62.33

B-T-B17-PRI FAULT: 2.393 KA AT -63.66 DEG (57.21 MVA) X/R: 2.02
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.4772 + J 2.9832 OHMS
CBL-0013 B-T-B60-PRI 2.393 KA ANG: -63.66

B-T-B17-SEC FAULT: 12.386 KA AT -67.84 DEG (4.46 MVA) X/R: 2.46
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0037 + J 0.0090 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 12.386 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 12.386 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 12.386 KA
CONTRIBUTIONS: B-T-B17-PRI 12.386 KA ANG: -67.84

B-T-B18-PRI FAULT: 2.385 KA AT -63.45 DEG (57.00 MVA) X/R: 2.00
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.4932 + J 2.9886 OHMS
CONTRIBUTIONS: B-T-B17-PRI 2.385 KA ANG: -63.45

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-T-B18-SEC FAULT: 11.821 KA AT -67.84 DEG (4.26 MVA) X/R: 2.46
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0038 + J 0.0094 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 11.821 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 11.821 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 11.821 KA
CONTRIBUTIONS: B-T-B18-PRI 11.821 KA ANG: -67.84

B-T-B19-PRI FAULT: 2.607 KA AT -69.04 DEG (62.32 MVA) X/R: 2.61
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.0932 + J 2.8536 OHMS
CBL-0023 B-T-B22-PRI 2.607 KA ANG: -69.04

B-T-B19-SEC FAULT: 22.577 KA AT -75.06 DEG (8.13 MVA) X/R: 3.75
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0014 + J 0.0051 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 22.577 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 22.577 KA
CONTRIBUTIONS: B-T-B19-PRI 22.577 KA ANG: -75.06

B-T-B2-LED-PRI FAULT: 7.916 KA AT -52.81 DEG (6.58 MVA) X/R: 1.32
VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0212 + J 0.0279 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.916 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.916 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.916 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.916 KA
CONTRIBUTIONS: B-B2-MDP 7.916 KA ANG: -52.81

B-T-B2-LED-SEC FAULT: 3.448 KA AT -55.49 DEG (1.24 MVA) X/R: 1.45
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0197 + J 0.0287 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.448 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.448 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.448 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.448 KA
CONTRIBUTIONS: B-T-B2-LED-PRI 3.448 KA ANG: -55.49

B-T-B2-PRI FAULT: 2.628 KA AT -69.59 DEG (62.81 MVA) X/R: 2.69
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.0572 + J 2.8415 OHMS
CONTRIBUTIONS: BUS-0019 2.628 KA ANG: -69.59

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-T-B2-PRI (CONTINUED)

B-T-B2-SEC2	FAULT:	7.660 KA AT	-79.25 DEG (	2.76 MVA)	X/R: 5.27
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0029 + J 0.0154	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.660 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		8.657 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		7.782 KA		
	T -B2	BUS-0747	7.660 KA	ANG:	-79.25
B-T-B2-SEC3	FAULT:	13.524 KA AT	-71.41 DEG (	4.87 MVA)	X/R: 2.97
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0028 + J 0.0084	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		13.524 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		13.524 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		13.524 KA		
	CONTRIBUTIONS:	B-T-B2-PRI	13.524 KA	ANG:	-71.41
B-T-B2-SEC4	FAULT:	11.749 KA AT	-78.13 DEG (	9.77 MVA)	X/R: 4.76
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0049 + J 0.0231	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		11.749 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		12.985 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		11.749 KA		
	CONTRIBUTIONS:	B-T-B2-PRI	11.749 KA	ANG:	-78.13
B-T-B22-PRI	FAULT:	2.644 KA AT	-70.03 DEG (	63.20 MVA)	X/R: 2.75
	VOLTAGE:	13800.	EQUIV. IMPEDANCE=	1.0292 + J 2.8320	OHMS
	CBL-0024	B-T-B33-PRI	2.644 KA	ANG:	-70.03
B-T-B22-SEC	FAULT:	8.713 KA AT	-71.39 DEG (	7.24 MVA)	X/R: 2.97
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0102 + J 0.0301	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		8.713 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		8.713 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.713 KA		
	CONTRIBUTIONS:	B-T-B22-PRI	8.713 KA	ANG:	-71.39

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-T-B3-PRI	FAULT:	2.582 KA AT -68.37 DEG (61.72 MVA)	X/R:	2.52
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.1372 + J 2.8685		OHMS
	CBL-0033	BUS-0065 2.582 KA	ANG:	-68.37
B-T-B3-SEC	FAULT:	19.075 KA AT -71.21 DEG (6.87 MVA)	X/R:	2.94
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0020 + J 0.0060		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	19.075 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	19.075 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	19.075 KA		
	CONTRIBUTIONS:	B-T-B3-PRI 19.075 KA	ANG:	-71.21
B-T-B30-PRI	FAULT:	2.507 KA AT -66.46 DEG (59.93 MVA)	X/R:	2.30
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.2692 + J 2.9130		OHMS
	CBL-0014	B-T-B70-PRI 2.507 KA	ANG:	-66.46
B-T-B30-SEC	FAULT:	4.939 KA AT -62.37 DEG (1.78 MVA)	X/R:	1.91
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0113 + J 0.0215		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.939 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.067 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.939 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.939 KA		
	CONTRIBUTIONS:	B-T-B30-PRI 4.939 KA	ANG:	-62.37
B-T-B33-PRI	FAULT:	2.672 KA AT -70.79 DEG (63.87 MVA)	X/R:	2.87
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 0.9812 + J 2.8158		OHMS
	CONTRIBUTIONS:	B-B27-SWGR 2.672 KA	ANG:	-70.79
B-T-B33-SEC	FAULT:	6.278 KA AT -62.54 DEG (2.26 MVA)	X/R:	1.92
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0088 + J 0.0170		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.278 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.453 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.278 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.278 KA		
	CONTRIBUTIONS:	B-T-B33-PRI 6.278 KA	ANG:	-62.54

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-T-B4-PRI	FAULT:	2.537 KA AT -67.20 DEG (60.63 MVA)	X/R:	2.38
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.2174 + J 2.8955		OHMS
	CBL-0022	B-T-B82-PRI 2.537 KA	ANG:	-67.20
B-T-B4-SEC	FAULT:	27.392 KA AT -74.54 DEG (9.87 MVA)	X/R:	3.62
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0012 + J 0.0042		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	27.392 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	27.392 KA		
	CONTRIBUTIONS:	B-T-B4-PRI 27.392 KA	ANG:	-74.54
B-T-B5-PRI	FAULT:	2.428 KA AT -64.49 DEG (58.03 MVA)	X/R:	2.10
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.4134 + J 2.9616		OHMS
	CONTRIBUTIONS:	B-T-B6-PRI 2.428 KA	ANG:	-64.49
B-T-B5-SEC	FAULT:	25.832 KA AT -70.43 DEG (9.31 MVA)	X/R:	2.81
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0016 + J 0.0044		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	25.832 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	25.832 KA		
	CONTRIBUTIONS:	B-T-B5-PRI 25.832 KA	ANG:	-70.43
B-T-B6-PRI	FAULT:	2.454 KA AT -65.13 DEG (58.66 MVA)	X/R:	2.16
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.3654 + J 2.9454		OHMS
	CONTRIBUTIONS:	B-T-B7-PRI 2.454 KA	ANG:	-65.13
B-T-B6-SEC	FAULT:	25.791 KA AT -70.55 DEG (9.29 MVA)	X/R:	2.83
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0016 + J 0.0044		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	25.791 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	25.791 KA		
	CONTRIBUTIONS:	B-T-B6-PRI 25.791 KA	ANG:	-70.55
B-T-B60-PRI	FAULT:	2.419 KA AT -64.28 DEG (57.83 MVA)	X/R:	2.08
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.4292 + J 2.9670		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-T-B60-PRI (CONTINUED)
CBL-0015 B-T-B30-PRI 2.419 KA ANG: -64.28

B-T-B60-SEC FAULT: 7.818 KA AT -68.01 DEG (2.82 MVA) X/R: 2.48
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0058 + J 0.0142 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 7.818 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 8.613 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 7.818 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 7.818 KA
CONTRIBUTIONS: B-T-B60-PRI 7.818 KA ANG: -68.01

B-T-B61-PRI FAULT: 2.532 KA AT -67.08 DEG (60.52 MVA) X/R: 2.37
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2252 + J 2.8981 OHMS
CONTRIBUTIONS: B-T-B62-PRI 2.532 KA ANG: -67.08

B-T-B61-SEC FAULT: 13.664 KA AT -71.20 DEG (4.92 MVA) X/R: 2.94
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0028 + J 0.0083 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 13.664 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 13.664 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 13.664 KA
CONTRIBUTIONS: B-T-B61-PRI 13.664 KA ANG: -71.20

B-T-B62-PRI FAULT: 2.559 KA AT -67.78 DEG (61.17 MVA) X/R: 2.45
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1772 + J 2.8819 OHMS
CONTRIBUTIONS: B-T-B8-PRI 2.559 KA ANG: -67.78

B-T-B62-SEC FAULT: 25.705 KA AT -70.99 DEG (9.26 MVA) X/R: 2.90
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0015 + J 0.0044 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 25.705 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 25.705 KA
CONTRIBUTIONS: B-T-B62-PRI 25.705 KA ANG: -70.99

B-T-B7-PRI FAULT: 2.490 KA AT -66.01 DEG (59.51 MVA) X/R: 2.25
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3014 + J 2.9238 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-T-B7-PRI (CONTINUED)
CONTRIBUTIONS: B-T-B61-PRI 2.490 KA ANG: -66.01

B-T-B7-SEC FAULT: 19.975 KA AT -70.89 DEG (7.20 MVA) X/R: 2.89
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0020 + J 0.0057 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 19.975 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 19.975 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 19.975 KA
CONTRIBUTIONS: B-T-B7-PRI 19.975 KA ANG: -70.89

B-T-B70-PRI FAULT: 2.571 KA AT -68.08 DEG (61.45 MVA) X/R: 2.48
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1572 + J 2.8752 OHMS
CBL-0016 B-T-B1-PRI 2.571 KA ANG: -68.08

B-T-B70-SEC FAULT: 15.175 KA AT -71.25 DEG (5.47 MVA) X/R: 2.95
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0025 + J 0.0075 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 15.175 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 15.175 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 15.175 KA
CONTRIBUTIONS: B-T-B70-PRI 15.175 KA ANG: -71.25

B-T-B78-PRI FAULT: 2.564 KA AT -67.90 DEG (61.28 MVA) X/R: 2.46
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1692 + J 2.8793 OHMS
CBL-0032 B-T-B3-PRI 2.564 KA ANG: -67.90

B-T-B78-SEC FAULT: 35.676 KA AT -77.91 DEG (12.85 MVA) X/R: 4.67
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0007 + J 0.0033 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 35.676 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 35.676 KA
CONTRIBUTIONS: B-T-B78-PRI 35.676 KA ANG: -77.91

B-T-B8-2-SEC FAULT: 8.687 KA AT -71.16 DEG (7.22 MVA) X/R: 2.93
VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0103 + J 0.0302 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    8.687 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   8.687 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   8.687 KA
                CONTRIBUTIONS:  B-T-B8-PRI         8.687 KA      ANG:   -71.16

 B-T-B8-PRI     FAULT:    2.573 KA AT  -68.14 DEG (  61.50 MVA)  X/R:     2.49
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.1532 + J  2.8738  OHMS
                CONTRIBUTIONS:  B-B27-SWGR         2.573 KA      ANG:   -68.14

 B-T-B8-SEC     FAULT:   20.047 KA AT  -71.16 DEG (   7.22 MVA)  X/R:     2.93
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0019 + J  0.0057  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   20.047 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  20.047 KA
                CONTRIBUTIONS:  B-T-B8-PRI        20.047 KA      ANG:   -71.16

 B-T-B80-PRI    FAULT:    2.523 KA AT  -66.85 DEG (  60.31 MVA)  X/R:     2.34
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.2414 + J  2.9036  OHMS
                CBL-0020        B-T-B4-PRI         2.523 KA      ANG:   -66.85

 B-T-B80-SEC    FAULT:   12.471 KA AT  -68.10 DEG (   4.49 MVA)  X/R:     2.49
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0036 + J  0.0089  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER   12.471 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA  12.471 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA  12.471 KA
                CONTRIBUTIONS:  B-T-B80-PRI       12.471 KA      ANG:   -68.10

 B-T-B81-PRI    FAULT:    2.454 KA AT  -65.13 DEG (  58.66 MVA)  X/R:     2.16
                VOLTAGE:  13800.   EQUIV. IMPEDANCE=  1.3652 + J  2.9454  OHMS
                CONTRIBUTIONS:  B-T-B12-PRI        2.454 KA      ANG:   -65.13

 B-T-B81-SEC    FAULT:    4.745 KA AT  -62.33 DEG (   1.71 MVA)  X/R:     1.91
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0118 + J  0.0224  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	4.745 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.865 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.745 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.745 KA		
	CONTRIBUTIONS: B-T-B81-PRI	4.745 KA	ANG:	-62.33
B-T-B82-PRI	FAULT: 2.564 KA AT -67.90 DEG (61.28 MVA)		X/R:	2.46
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1694 + J 2.8793 OHMS			
	CBL-0021 B-T-B19-PRI	2.564 KA	ANG:	-67.90
B-T-B82-SEC	FAULT: 7.800 KA AT -68.19 DEG (2.81 MVA)		X/R:	2.50
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0057 + J 0.0143 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.800 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	8.613 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	7.800 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.800 KA		
	CONTRIBUTIONS: B-T-B82-PRI	7.800 KA	ANG:	-68.19
B-T-B9-PRI	FAULT: 2.507 KA AT -66.46 DEG (59.93 MVA)		X/R:	2.30
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2692 + J 2.9130 OHMS			
	CONTRIBUTIONS: B-T-B10-PRI	2.507 KA	ANG:	-66.46
B-T-B9-SEC	FAULT: 18.510 KA AT -71.00 DEG (6.67 MVA)		X/R:	2.90
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0021 + J 0.0061 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	18.510 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	18.510 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	18.510 KA		
	CONTRIBUTIONS: B-T-B9-PRI	18.510 KA	ANG:	-71.00
B0B70-LP2	FAULT: 5.075 KA AT -40.04 DEG (1.83 MVA)		X/R:	0.84
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0181 + J 0.0152 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.075 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.075 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.075 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.075 KA		
	CONTRIBUTIONS: B-B70-MDP	5.075 KA	ANG:	-40.04

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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BUS-0739	FAULT:	13.568 KA AT	-67.05 DEG (	4.89 MVA)	X/R:	2.36
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0035 + J	0.0082	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	13.568 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.568 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	13.568 KA				
	CONTRIBUTIONS: B-B9-ATS BKR	13.568 KA	ANG:	-67.05		
bB-B7-MC1	FAULT:	4.001 KA AT	-29.58 DEG (	1.44 MVA)	X/R:	0.57
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0261 + J	0.0148	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOW VOLTAGE POWER CIRCUIT BREAKER	4.001 KA		
MOLDED CASE CIRCUIT BREAKER < 10KA	4.001 KA		
MOLDED CASE CIRCUIT BREAKER < 20KA	4.001 KA		
MOLDED CASE CIRCUIT BREAKER > 20KA	4.001 KA		
CONTRIBUTIONS: B-B7-EQD	4.001 KA	ANG:	-29.58

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B1-MDP	3 PHASE:	4.396	2.	Z1= 63.1412	4.518	4.457
	SLG DUTY:	4.509	2.	Z2= 63.1412	4.632	
208. VOLTS	LN/LN	3.807		Z0= 58.3865		
	LN/LN/GND	4.462	(	4.628 GND RETURN KA)		
B-B1-MDP-M	3 PHASE:	4.677	2.	Z1= 59.3467	4.824	4.751
	SLG DUTY:	4.990	2.	Z2= 59.3467	5.169	
208. VOLTS	LN/LN	4.051		Z0= 48.2430		
	LN/LN/GND	4.772	(	5.346 GND RETURN KA)		
B-B10 DISC	3 PHASE:	5.743	2.	Z1= 48.3340	5.917	5.830
	SLG DUTY:	5.749	2.	Z2= 48.3340	5.955	
208. VOLTS	LN/LN	4.973		Z0= 48.2430		
	LN/LN/GND	5.640	(	5.753 GND RETURN KA)		
B-B10-MDP	3 PHASE:	5.297	2.	Z1= 52.4010	5.426	5.362
	SLG DUTY:	5.077	2.	Z2= 52.4010	5.195	
208. VOLTS	LN/LN	4.587		Z0= 59.2262		
	LN/LN/GND	5.213	(	4.874 GND RETURN KA)		
B-B12-MAP-M	3 PHASE:	4.270	2.	Z1= 65.0031	4.409	4.340
	SLG DUTY:	4.477	2.	Z2= 65.0031	4.641	
208. VOLTS	LN/LN	3.698		Z0= 56.0423		
	LN/LN/GND	4.322	(	4.704 GND RETURN KA)		
B-B12-MDP	3 PHASE:	4.264	2.	Z1= 65.0964	4.403	4.334
	SLG DUTY:	4.460	2.	Z2= 65.0964	4.622	
208. VOLTS	LN/LN	3.693		Z0= 56.5516		
	LN/LN/GND	4.313	(	4.674 GND RETURN KA)		
B-B13-APT-13	3 PHASE:	6.438	1.	Z1= 37.3676	6.507	6.472
	SLG DUTY:	0.000	1.	Z2= 37.3676	0.000	
240. VOLTS	LN/LN	5.575		Z0= INFINITE		
	LN/LN/GND	5.575	(	0.000 GND RETURN KA)		
B-B13-APT-14	3 PHASE:	5.929	2.	Z1= 40.5773	6.208	6.069
	SLG DUTY:	0.000	1.	Z2= 40.5773	0.000	
240. VOLTS	LN/LN	5.134		Z0= INFINITE		
	LN/LN/GND	5.134	(	0.000 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B13-APT-15	3 PHASE:	4.580	2.	Z1= 52.5280	4.797	4.689
	SLG DUTY:	0.000	1.	Z2= 52.5280	0.000	
240. VOLTS	LN/LN	3.966		Z0= INFINITE		
	LN/LN/GND	3.966	(	0.000 GND RETURN KA)		
B-B13-GARAGE	3 PHASE:	4.776	1.	Z1= 50.3700	4.805	4.791
	SLG DUTY:	0.000	1.	Z2= 50.3700	0.000	
240. VOLTS	LN/LN	4.136		Z0= INFINITE		
	LN/LN/GND	4.136	(	0.000 GND RETURN KA)		
B-B13-MDP	3 PHASE:	8.658	2.	Z1= 27.7846	9.259	8.961
	SLG DUTY:	0.000	1.	Z2= 27.7846	0.000	
240. VOLTS	LN/LN	7.498		Z0= INFINITE		
	LN/LN/GND	7.498	(	0.000 GND RETURN KA)		
B-B13-MDP-M	3 PHASE:	8.664	2.	Z1= 27.7645	9.269	8.969
	SLG DUTY:	0.000	1.	Z2= 27.7645	0.000	
240. VOLTS	LN/LN	7.504		Z0= INFINITE		
	LN/LN/GND	7.504	(	0.000 GND RETURN KA)		
B-B13-MGR H16	3 PHASE:	2.557	1.	Z1= 94.0744	2.560	2.558
	SLG DUTY:	0.000	1.	Z2= 94.0744	0.000	
240. VOLTS	LN/LN	2.215		Z0= INFINITE		
	LN/LN/GND	2.215	(	0.000 GND RETURN KA)		
B-B13-TXMR SEC	3 PHASE:	11.100	3.	Z1= 21.6732	12.328	11.722
	SLG DUTY:	0.000	1.	Z2= 21.6732	0.000	
240. VOLTS	LN/LN	9.612		Z0= INFINITE		
	LN/LN/GND	9.612	(	0.000 GND RETURN KA)		
B-B13-UNKNOWN	3 PHASE:	6.438	1.	Z1= 37.3676	6.507	6.472
	SLG DUTY:	0.000	1.	Z2= 37.3676	0.000	
240. VOLTS	LN/LN	5.575		Z0= INFINITE		
	LN/LN/GND	5.575	(	0.000 GND RETURN KA)		
B-B17-A/C	3 PHASE:	7.887	2.	Z1= 35.1938	8.066	7.977
	SLG DUTY:	6.617	1.	Z2= 35.1938	6.692	
208. VOLTS	LN/LN	6.830		Z0= 55.9484		
	LN/LN/GND	7.740	(	5.677 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B17-A/C-2	3 PHASE:	7.084	1.	Z1= 39.1806	7.131	7.107
	SLG DUTY:	5.603	1.	Z2= 39.1806	5.612	
208. VOLTS	LN/LN	6.135		Z0= 71.4008		
	LN/LN/GND	6.954	(	4.599 GND RETURN KA)		
B-B17-AC1	3 PHASE:	7.084	1.	Z1= 39.1806	7.131	7.107
	SLG DUTY:	5.603	1.	Z2= 39.1806	5.612	
208. VOLTS	LN/LN	6.135		Z0= 71.4008		
	LN/LN/GND	6.954	(	4.599 GND RETURN KA)		
B-B17-ACB	3 PHASE:	6.457	1.	Z1= 42.9906	6.471	6.464
	SLG DUTY:	4.882	1.	Z2= 42.9906	4.883	
208. VOLTS	LN/LN	5.592		Z0= 86.1222		
	LN/LN/GND	6.298	(	3.891 GND RETURN KA)		
B-B17-ANIMALRM	3 PHASE:	4.451	1.	Z1= 62.3591	4.452	4.451
	SLG DUTY:	3.034	1.	Z2= 62.3591	3.034	
208. VOLTS	LN/LN	3.855		Z0= 151.6332		
	LN/LN/GND	4.226	(	2.286 GND RETURN KA)		
B-B17-ATS	3 PHASE:	9.541	2.	Z1= 29.0924	9.754	9.648
	SLG DUTY:	8.540	1.	Z2= 29.0924	8.631	
208. VOLTS	LN/LN	8.263		Z0= 39.8120		
	LN/LN/GND	9.621	(	7.691 GND RETURN KA)		
B-B17-DP	3 PHASE:	8.748	2.	Z1= 31.7301	9.031	8.890
	SLG DUTY:	7.650	2.	Z2= 31.7301	7.798	
208. VOLTS	LN/LN	7.576		Z0= 45.6758		
	LN/LN/GND	8.629	(	6.779 GND RETURN KA)		
B-B17-EMAIN	3 PHASE:	10.646	2.	Z1= 26.0740	11.123	10.886
	SLG DUTY:	10.143	2.	Z2= 26.0740	10.484	
208. VOLTS	LN/LN	9.219		Z0= 30.0465		
	LN/LN/GND	10.708	(	9.674 GND RETURN KA)		
B-B17-EMERG	3 PHASE:	9.209	2.	Z1= 30.1409	9.375	9.292
	SLG DUTY:	8.089	1.	Z2= 30.1409	8.150	
208. VOLTS	LN/LN	7.975		Z0= 43.2906		
	LN/LN/GND	9.268	(	7.168 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B17-MAIN	3 PHASE:	10.948	2.	Z1= 25.3547	11.540	11.246
	SLG DUTY:	10.604	2.	Z2= 25.3547	11.096	
208. VOLTS	LN/LN	9.481		Z0= 27.8498		
	LN/LN/GND	10.962	(10.277 GND RETURN KA)			
B-B17-NEB1	3 PHASE:	4.005	1.	Z1= 69.3086	4.005	4.005
	SLG DUTY:	2.679	0.	Z2= 69.3086	2.679	
208. VOLTS	LN/LN	3.468		Z0= 174.0367		
	LN/LN/GND	3.780	(2.002 GND RETURN KA)			
B-B17-NEB2	3 PHASE:	5.704	1.	Z1= 48.6599	5.706	5.705
	SLG DUTY:	4.073	1.	Z2= 48.6599	4.073	
208. VOLTS	LN/LN	4.940		Z0= 109.0335		
	LN/LN/GND	5.503	(3.139 GND RETURN KA)			
B-B17-NP11	3 PHASE:	5.592	1.	Z1= 49.6366	5.594	5.593
	SLG DUTY:	3.996	1.	Z2= 49.6366	3.996	
208. VOLTS	LN/LN	4.843		Z0= 110.9723		
	LN/LN/GND	5.389	(3.082 GND RETURN KA)			
B-B17-NP12	3 PHASE:	7.780	2.	Z1= 35.6786	7.933	7.857
	SLG DUTY:	6.479	1.	Z2= 35.6786	6.538	
208. VOLTS	LN/LN	6.738		Z0= 57.7398		
	LN/LN/GND	7.640	(5.527 GND RETURN KA)			
B-B17-NP21	3 PHASE:	7.084	1.	Z1= 39.1806	7.131	7.107
	SLG DUTY:	5.603	1.	Z2= 39.1806	5.612	
208. VOLTS	LN/LN	6.135		Z0= 71.4008		
	LN/LN/GND	6.954	(4.599 GND RETURN KA)			
B-B17-NP22	3 PHASE:	7.084	1.	Z1= 39.1806	7.131	7.107
	SLG DUTY:	5.603	1.	Z2= 39.1806	5.612	
208. VOLTS	LN/LN	6.135		Z0= 71.4008		
	LN/LN/GND	6.954	(4.599 GND RETURN KA)			
B-B17-NPA1	3 PHASE:	7.084	1.	Z1= 39.1806	7.131	7.107
	SLG DUTY:	5.603	1.	Z2= 39.1806	5.612	
208. VOLTS	LN/LN	6.135		Z0= 71.4008		
	LN/LN/GND	6.954	(4.599 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B17-NPB1	3 PHASE:	7.653	2.	Z1= 36.2684	7.777	7.715
	SLG DUTY:	6.314	1.	Z2= 36.2684	6.357	
208. VOLTS	LN/LN	6.628		Z0= 60.0186		
	LN/LN/GND	7.521	(	5.347 GND RETURN KA)		
B-B17-NPB2	3 PHASE:	7.084	1.	Z1= 39.1806	7.131	7.107
	SLG DUTY:	5.603	1.	Z2= 39.1806	5.612	
208. VOLTS	LN/LN	6.135		Z0= 71.4008		
	LN/LN/GND	6.954	(	4.599 GND RETURN KA)		
B-B18-1STFL	3 PHASE:	5.904	1.	Z1= 47.0165	5.909	5.906
	SLG DUTY:	4.361	1.	Z2= 47.0165	4.361	
208. VOLTS	LN/LN	5.113		Z0= 98.8314		
	LN/LN/GND	5.748	(	3.424 GND RETURN KA)		
B-B18-1STFL-M	3 PHASE:	7.215	1.	Z1= 38.4718	7.240	7.227
	SLG DUTY:	5.741	1.	Z2= 38.4718	5.744	
208. VOLTS	LN/LN	6.248		Z0= 69.7171		
	LN/LN/GND	7.169	(	4.716 GND RETURN KA)		
B-B18-2ND-FL-M	3 PHASE:	7.215	1.	Z1= 38.4718	7.240	7.227
	SLG DUTY:	5.741	1.	Z2= 38.4718	5.744	
208. VOLTS	LN/LN	6.248		Z0= 69.7171		
	LN/LN/GND	7.169	(	4.716 GND RETURN KA)		
B-B18-2NDFL	3 PHASE:	4.961	1.	Z1= 55.9468	4.963	4.962
	SLG DUTY:	3.494	1.	Z2= 55.9468	3.494	
208. VOLTS	LN/LN	4.297		Z0= 128.4349		
	LN/LN/GND	4.763	(	2.675 GND RETURN KA)		
B-B18-AC1	3 PHASE:	6.968	1.	Z1= 39.8329	6.978	6.973
	SLG DUTY:	5.381	1.	Z2= 39.8329	5.381	
208. VOLTS	LN/LN	6.035		Z0= 77.0460		
	LN/LN/GND	6.900	(	4.329 GND RETURN KA)		
B-B18-AC2	3 PHASE:	8.846	2.	Z1= 31.3770	9.042	8.945
	SLG DUTY:	7.886	1.	Z2= 31.3770	7.967	
208. VOLTS	LN/LN	7.661		Z0= 43.4067		
	LN/LN/GND	8.919	(	7.076 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B18-ATS-EMRG	3 PHASE:	7.941	1.	Z1= 34.9540	7.990	7.965
	SLG DUTY:	6.589	1.	Z2= 34.9540	6.598	
208. VOLTS	LN/LN	6.877		Z0= 57.8411		
	LN/LN/GND	7.980	(5.571 GND RETURN KA)			
B-B18-EMERG	3 PHASE:	7.116	1.	Z1= 39.0073	7.138	7.127
	SLG DUTY:	5.617	1.	Z2= 39.0073	5.620	
208. VOLTS	LN/LN	6.163		Z0= 71.8580		
	LN/LN/GND	7.055	(4.591 GND RETURN KA)			
B-B18-EMERG-M	3 PHASE:	7.138	1.	Z1= 38.8859	7.161	7.149
	SLG DUTY:	5.653	1.	Z2= 38.8859	5.656	
208. VOLTS	LN/LN	6.182		Z0= 71.1519		
	LN/LN/GND	7.084	(4.630 GND RETURN KA)			
B-B18-NCP	3 PHASE:	9.718	2.	Z1= 28.5616	9.991	9.855
	SLG DUTY:	9.059	1.	Z2= 28.5616	9.194	
208. VOLTS	LN/LN	8.416		Z0= 35.2018		
	LN/LN/GND	9.921	(8.447 GND RETURN KA)			
B-B18-NMDP	3 PHASE:	10.708	2.	Z1= 25.9220	11.382	11.048
	SLG DUTY:	10.627	2.	Z2= 25.9220	11.260	
208. VOLTS	LN/LN	9.273		Z0= 26.5158		
	LN/LN/GND	10.739	(10.548 GND RETURN KA)			
B-B18-NMDP-M	3 PHASE:	10.731	2.	Z1= 25.8674	11.412	11.074
	SLG DUTY:	10.684	2.	Z2= 25.8674	11.333	
208. VOLTS	LN/LN	9.293		Z0= 26.2088		
	LN/LN/GND	10.763	(10.637 GND RETURN KA)			
B-B18-NP11	3 PHASE:	6.968	1.	Z1= 39.8329	6.978	6.973
	SLG DUTY:	5.381	1.	Z2= 39.8329	5.381	
208. VOLTS	LN/LN	6.035		Z0= 77.0460		
	LN/LN/GND	6.900	(4.329 GND RETURN KA)			
B-B18-NP12	3 PHASE:	6.968	1.	Z1= 39.8329	6.978	6.973
	SLG DUTY:	5.381	1.	Z2= 39.8329	5.381	
208. VOLTS	LN/LN	6.035		Z0= 77.0460		
	LN/LN/GND	6.900	(4.329 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B18-NP21	3 PHASE:	7.564	1.	Z1= 36.6951	7.584	7.574
	SLG DUTY:	6.059	1.	Z2= 36.6951	6.061	
208. VOLTS	LN/LN	6.551		Z0= 65.8014		
	LN/LN/GND	7.566	(4.991 GND RETURN KA)			
B-B18-NP22	3 PHASE:	8.271	1.	Z1= 33.5613	8.373	8.322
	SLG DUTY:	7.086	1.	Z2= 33.5613	7.114	
208. VOLTS	LN/LN	7.163		Z0= 51.3539		
	LN/LN/GND	8.319	(6.148 GND RETURN KA)			
B-B18-NP23	3 PHASE:	9.047	2.	Z1= 30.6819	9.311	9.179
	SLG DUTY:	8.191	2.	Z2= 30.6819	8.323	
208. VOLTS	LN/LN	7.835		Z0= 40.6764		
	LN/LN/GND	9.097	(7.456 GND RETURN KA)			
B-B18-STRT LHT	3 PHASE:	4.677	1.	Z1= 59.3447	4.677	4.677
	SLG DUTY:	3.170	0.	Z2= 59.3447	3.170	
208. VOLTS	LN/LN	4.051		Z0= 146.1110		
	LN/LN/GND	4.456	(2.379 GND RETURN KA)			
B-B18-TAP BOX	3 PHASE:	7.454	1.	Z1= 37.2399	7.486	7.470
	SLG DUTY:	6.017	1.	Z2= 37.2399	6.022	
208. VOLTS	LN/LN	6.455		Z0= 65.4327		
	LN/LN/GND	7.433	(4.991 GND RETURN KA)			
B-B19-200A PNL	3 PHASE:	17.844	3.	Z1= 15.5557	19.490	18.676
	SLG DUTY:	18.102	2.	Z2= 15.5557	18.977	
208. VOLTS	LN/LN	15.453		Z0= 15.2742		
	LN/LN/GND	19.304	(18.214 GND RETURN KA)			
B-B19-B1	3 PHASE:	15.922	2.	Z1= 17.4337	16.382	16.152
	SLG DUTY:	14.593	1.	Z2= 17.4337	14.682	
208. VOLTS	LN/LN	13.789		Z0= 23.4523		
	LN/LN/GND	17.002	(13.176 GND RETURN KA)			
B-B19-L1	3 PHASE:	2.631	0.	Z1= 105.5099	2.631	2.631
	SLG DUTY:	1.606	0.	Z2= 105.5099	1.606	
208. VOLTS	LN/LN	2.278		Z0= 308.6572		
	LN/LN/GND	2.418	(1.154 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B19-L2	3 PHASE:	7.344	1.	Z1= 37.7949	7.348	7.346
	SLG DUTY:	5.041	1.	Z2= 37.7949	5.041	
208. VOLTS	LN/LN	6.360		Z0= 91.3018		
	LN/LN/GND	7.055	(3.800	GND RETURN KA)		
B-B19-MDP1	3 PHASE:	19.906	3.	Z1= 13.9439	22.603	21.277
	SLG DUTY:	21.765	3.	Z2= 13.9439	23.865	
208. VOLTS	LN/LN	17.239		Z0= 10.5058		
	LN/LN/GND	22.059	(23.923	GND RETURN KA)		
B-B19-MDP1-M	3 PHASE:	19.934	3.	Z1= 13.9249	22.661	21.320
	SLG DUTY:	21.852	3.	Z2= 13.9249	24.022	
208. VOLTS	LN/LN	17.263		Z0= 10.3783		
	LN/LN/GND	22.082	(24.103	GND RETURN KA)		
B-B19-MDP2	3 PHASE:	18.903	3.	Z1= 14.6841	21.263	20.101
	SLG DUTY:	19.998	3.	Z2= 14.6841	21.676	
208. VOLTS	LN/LN	16.370		Z0= 12.4433		
	LN/LN/GND	20.564	(21.141	GND RETURN KA)		
B-B19-MDP2-M	3 PHASE:	19.226	3.	Z1= 14.4375	21.696	20.480
	SLG DUTY:	20.565	3.	Z2= 14.4375	22.382	
208. VOLTS	LN/LN	16.650		Z0= 11.7722		
	LN/LN/GND	21.031	(22.021	GND RETURN KA)		
B-B19-MDPA	3 PHASE:	10.495	2.	Z1= 26.4473	11.091	10.795
	SLG DUTY:	8.603	2.	Z2= 26.4473	8.835	
208. VOLTS	LN/LN	9.089		Z0= 44.4287		
	LN/LN/GND	10.312	(7.250	GND RETURN KA)		
B-B19-P1	3 PHASE:	10.495	2.	Z1= 26.4473	11.091	10.795
	SLG DUTY:	8.603	2.	Z2= 26.4473	8.835	
208. VOLTS	LN/LN	9.089		Z0= 44.4287		
	LN/LN/GND	10.312	(7.250	GND RETURN KA)		
B-B19-P2	3 PHASE:	9.005	1.	Z1= 30.8228	9.049	9.027
	SLG DUTY:	6.672	1.	Z2= 30.8228	6.676	
208. VOLTS	LN/LN	7.799		Z0= 64.6580		
	LN/LN/GND	8.817	(5.238	GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B19-P4	3 PHASE:	16.698	2.	Z1= 16.6227	17.626	17.166
	SLG DUTY:	16.058	2.	Z2= 16.6227	16.371	
208. VOLTS	LN/LN	14.461		Z0= 19.3902		
	LN/LN/GND	17.938	(15.233 GND RETURN KA)			
B-B19-P6	3 PHASE:	3.007	1.	Z1= 92.3015	3.007	3.007
	SLG DUTY:	1.873	0.	Z2= 92.3015	1.873	
208. VOLTS	LN/LN	2.604		Z0= 261.4752		
	LN/LN/GND	2.783	(1.356 GND RETURN KA)			
B-B19-PS	3 PHASE:	4.831	1.	Z1= 57.4508	4.832	4.831
	SLG DUTY:	3.070	0.	Z2= 57.4508	3.070	
208. VOLTS	LN/LN	4.184		Z0= 157.8952		
	LN/LN/GND	4.521	(2.238 GND RETURN KA)			
B-B2-ATS-CRIT	3 PHASE:	11.032	2.	Z1= 25.1611	11.771	11.404
	SLG DUTY:	11.418	2.	Z2= 25.1611	11.867	
208. VOLTS	LN/LN	9.554		Z0= 23.0167		
	LN/LN/GND	11.933	(11.766 GND RETURN KA)			
B-B2-ATS-LED3	3 PHASE:	3.283	1.	Z1= 84.5407	3.319	3.301
	SLG DUTY:	3.387	1.	Z2= 84.5407	3.419	
208. VOLTS	LN/LN	2.843		Z0= 76.8266		
	LN/LN/GND	3.387	(3.497 GND RETURN KA)			
B-B2-ATS-LS	3 PHASE:	11.318	2.	Z1= 24.5238	12.179	11.753
	SLG DUTY:	11.936	2.	Z2= 24.5238	12.529	
208. VOLTS	LN/LN	9.802		Z0= 20.9988		
	LN/LN/GND	12.280	(12.574 GND RETURN KA)			
B-B2-BATTERYCH	3 PHASE:	3.662	0.	Z1= 75.8030	3.662	3.662
	SLG DUTY:	2.359	0.	Z2= 75.8030	2.359	
208. VOLTS	LN/LN	3.171		Z0= 203.8535		
	LN/LN/GND	3.447	(1.729 GND RETURN KA)			
B-B2-CATSCAN	3 PHASE:	8.806	2.	Z1= 13.6584	9.074	8.941
	SLG DUTY:	7.652	1.	Z2= 13.6584	7.708	
480. VOLTS	LN/LN	7.627		Z0= 20.6240		
	LN/LN/GND	9.112	(6.655 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-CRIT PNL	3 PHASE:	10.834	2.	Z1= 25.6209	11.499	11.169
	SLG DUTY:	11.069	2.	Z2= 25.6209	11.440	
208. VOLTS	LN/LN	9.382		Z0= 24.4883		
	LN/LN/GND	11.688	(11.240 GND RETURN KA)			
B-B2-DENTAL LB	3 PHASE:	6.786	1.	Z1= 40.9044	6.798	6.792
	SLG DUTY:	5.209	1.	Z2= 40.9044	5.210	
208. VOLTS	LN/LN	5.877		Z0= 80.7723		
	LN/LN/GND	6.778	(4.158 GND RETURN KA)			
B-B2-DENTSUCPM	3 PHASE:	6.167	1.	Z1= 45.0085	6.173	6.170
	SLG DUTY:	4.570	1.	Z2= 45.0085	4.570	
208. VOLTS	LN/LN	5.341		Z0= 94.9658		
	LN/LN/GND	6.085	(3.578 GND RETURN KA)			
B-B2-ELEV	3 PHASE:	8.618	2.	Z1= 32.2083	8.849	8.734
	SLG DUTY:	7.705	1.	Z2= 32.2083	7.772	
208. VOLTS	LN/LN	7.463		Z0= 44.9030		
	LN/LN/GND	8.894	(6.888 GND RETURN KA)			
B-B2-ELEV-P1	3 PHASE:	6.452	1.	Z1= 43.0240	6.522	6.487
	SLG DUTY:	5.133	1.	Z2= 43.0240	5.146	
208. VOLTS	LN/LN	5.587		Z0= 77.9001		
	LN/LN/GND	6.402	(4.218 GND RETURN KA)			
B-B2-EMERG-M	3 PHASE:	3.228	1.	Z1= 85.9839	3.262	3.245
	SLG DUTY:	3.293	1.	Z2= 85.9839	3.321	
208. VOLTS	LN/LN	2.796		Z0= 81.0246		
	LN/LN/GND	3.325	(3.359 GND RETURN KA)			
B-B2-EMERG-PNL	3 PHASE:	3.224	1.	Z1= 86.1020	3.257	3.240
	SLG DUTY:	3.281	1.	Z2= 86.1020	3.308	
208. VOLTS	LN/LN	2.792		Z0= 81.7061		
	LN/LN/GND	3.318	(3.339 GND RETURN KA)			
B-B2-L12	3 PHASE:	7.890	2.	Z1= 35.1823	8.012	7.951
	SLG DUTY:	6.715	1.	Z2= 35.1823	6.740	
208. VOLTS	LN/LN	6.833		Z0= 55.2979		
	LN/LN/GND	8.046	(5.769 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-L2A	3 PHASE:	7.844	2.	Z1= 35.3852	7.963	7.904
	SLG DUTY:	6.660	1.	Z2= 35.3852	6.683	
208. VOLTS	LN/LN	6.793		Z0= 55.9427		
	LN/LN/GND	7.992	(	5.710 GND RETURN KA)		
B-B2-L2E	3 PHASE:	7.890	2.	Z1= 35.1823	8.012	7.951
	SLG DUTY:	6.715	1.	Z2= 35.1823	6.740	
208. VOLTS	LN/LN	6.833		Z0= 55.2979		
	LN/LN/GND	8.046	(	5.769 GND RETURN KA)		
B-B2-L4	3 PHASE:	8.369	2.	Z1= 33.1668	8.533	8.451
	SLG DUTY:	7.325	1.	Z2= 33.1668	7.363	
208. VOLTS	LN/LN	7.248		Z0= 48.8677		
	LN/LN/GND	8.615	(	6.427 GND RETURN KA)		
B-B2-L6	3 PHASE:	8.369	2.	Z1= 33.1668	8.533	8.451
	SLG DUTY:	7.325	1.	Z2= 33.1668	7.363	
208. VOLTS	LN/LN	7.248		Z0= 48.8677		
	LN/LN/GND	8.615	(	6.427 GND RETURN KA)		
B-B2-L7	3 PHASE:	8.369	2.	Z1= 33.1668	8.533	8.451
	SLG DUTY:	7.325	1.	Z2= 33.1668	7.363	
208. VOLTS	LN/LN	7.248		Z0= 48.8677		
	LN/LN/GND	8.615	(	6.427 GND RETURN KA)		
B-B2-L8	3 PHASE:	8.369	2.	Z1= 33.1668	8.533	8.451
	SLG DUTY:	7.325	1.	Z2= 33.1668	7.363	
208. VOLTS	LN/LN	7.248		Z0= 48.8677		
	LN/LN/GND	8.615	(	6.427 GND RETURN KA)		
B-B2-L9E	3 PHASE:	7.178	1.	Z1= 38.6714	7.214	7.196
	SLG DUTY:	5.740	1.	Z2= 38.6714	5.743	
208. VOLTS	LN/LN	6.216		Z0= 70.0808		
	LN/LN/GND	7.231	(	4.707 GND RETURN KA)		
B-B2-LB1E	3 PHASE:	7.178	1.	Z1= 38.6714	7.214	7.196
	SLG DUTY:	5.740	1.	Z2= 38.6714	5.743	
208. VOLTS	LN/LN	6.216		Z0= 70.0808		
	LN/LN/GND	7.231	(	4.707 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-LB2	3 PHASE:	8.369	2.	Z1= 33.1668	8.533	8.451
	SLG DUTY:	7.325	1.	Z2= 33.1668	7.363	
208. VOLTS	LN/LN	7.248		Z0= 48.8677		
	LN/LN/GND	8.615	(6.427 GND RETURN KA)			
B-B2-LB2E	3 PHASE:	6.137	1.	Z1= 45.2271	6.143	6.140
	SLG DUTY:	4.543	1.	Z2= 45.2271	4.543	
208. VOLTS	LN/LN	5.315		Z0= 95.6202		
	LN/LN/GND	6.053	(3.554 GND RETURN KA)			
B-B2-LED-3	3 PHASE:	3.378	1.	Z1= 82.1748	3.420	3.399
	SLG DUTY:	3.554	1.	Z2= 82.1748	3.598	
208. VOLTS	LN/LN	2.925		Z0= 69.9354		
	LN/LN/GND	3.484	(3.750 GND RETURN KA)			
B-B2-MDP	3 PHASE:	11.671	5.	Z1= 10.3059	14.373	13.059
	SLG DUTY:	12.248	5.	Z2= 10.3059	15.141	
480. VOLTS	LN/LN	10.107		Z0= 8.8495		
	LN/LN/GND	11.948	(12.885 GND RETURN KA)			
B-B2-MDP-M	3 PHASE:	11.675	5.	Z1= 10.3027	14.385	13.067
	SLG DUTY:	12.258	5.	Z2= 10.3027	15.173	
480. VOLTS	LN/LN	10.111		Z0= 8.8320		
	LN/LN/GND	11.947	(12.903 GND RETURN KA)			
B-B2-MDPA	3 PHASE:	7.580	5.	Z1= 36.6188	9.547	8.593
	SLG DUTY:	7.648	5.	Z2= 36.6188	9.611	
208. VOLTS	LN/LN	6.565		Z0= 35.6452		
	LN/LN/GND	7.627	(7.717 GND RETURN KA)			
B-B2-MDPA-M	3 PHASE:	7.620	5.	Z1= 36.4267	9.628	8.655
	SLG DUTY:	7.710	5.	Z2= 36.4267	9.745	
208. VOLTS	LN/LN	6.599		Z0= 35.1543		
	LN/LN/GND	7.664	(7.802 GND RETURN KA)			
B-B2-MDPB	3 PHASE:	11.748	3.	Z1= 23.6277	12.825	12.293
	SLG DUTY:	12.738	2.	Z2= 23.6277	13.642	
208. VOLTS	LN/LN	10.174		Z0= 18.2314		
	LN/LN/GND	12.769	(13.887 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-MDPB-M	3 PHASE:	11.851	3.	Z1= 23.4225	12.958	12.411
	SLG DUTY:	12.928	2.	Z2= 23.4225	13.879	
208. VOLTS	LN/LN	10.263		Z0= 17.6681		
	LN/LN/GND	12.912	(14.199 GND RETURN KA)			
B-B2-MEDAIRCOM	3 PHASE:	6.137	1.	Z1= 45.2271	6.143	6.140
	SLG DUTY:	4.543	1.	Z2= 45.2271	4.543	
208. VOLTS	LN/LN	5.315		Z0= 95.6202		
	LN/LN/GND	6.053	(3.554 GND RETURN KA)			
B-B2-NEWLAB	3 PHASE:	3.189	1.	Z1= 87.0421	3.220	3.204
	SLG DUTY:	3.222	1.	Z2= 87.0421	3.245	
208. VOLTS	LN/LN	2.762		Z0= 84.6050		
	LN/LN/GND	3.283	(3.252 GND RETURN KA)			
B-B2-NEWLAB-M	3 PHASE:	3.193	1.	Z1= 86.9237	3.224	3.209
	SLG DUTY:	3.233	1.	Z2= 86.9237	3.257	
208. VOLTS	LN/LN	2.765		Z0= 83.9193		
	LN/LN/GND	3.290	(3.271 GND RETURN KA)			
B-B2-PNL 1	3 PHASE:	3.228	1.	Z1= 85.9839	3.262	3.245
	SLG DUTY:	3.293	1.	Z2= 85.9839	3.321	
208. VOLTS	LN/LN	2.796		Z0= 81.0246		
	LN/LN/GND	3.325	(3.359 GND RETURN KA)			
B-B2-PNL LS	3 PHASE:	10.912	2.	Z1= 25.4366	11.606	11.262
	SLG DUTY:	11.207	2.	Z2= 25.4366	11.607	
208. VOLTS	LN/LN	9.450		Z0= 23.8970		
	LN/LN/GND	11.786	(11.445 GND RETURN KA)			
B-B2-PNL-2	3 PHASE:	3.241	1.	Z1= 85.6489	3.273	3.257
	SLG DUTY:	3.311	1.	Z2= 85.6489	3.336	
208. VOLTS	LN/LN	2.807		Z0= 80.3675		
	LN/LN/GND	3.350	(3.382 GND RETURN KA)			
B-B2-PNL-3-M	3 PHASE:	3.182	1.	Z1= 87.2393	3.210	3.196
	SLG DUTY:	3.209	1.	Z2= 87.2393	3.229	
208. VOLTS	LN/LN	2.755		Z0= 85.3234		
	LN/LN/GND	3.289	(3.233 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-PNL-D2	3 PHASE:	6.080	4.	Z1= 45.6550	7.077	6.588
	SLG DUTY:	5.533	3.	Z2= 45.6550	6.186	
208. VOLTS	LN/LN	5.265		Z0= 59.4890		
	LN/LN/GND	6.053	(	5.067 GND RETURN KA)		
B-B2-PNL-L11	3 PHASE:	7.844	2.	Z1= 35.3852	7.963	7.904
	SLG DUTY:	6.660	1.	Z2= 35.3852	6.683	
208. VOLTS	LN/LN	6.793		Z0= 55.9427		
	LN/LN/GND	7.992	(	5.710 GND RETURN KA)		
B-B2-PNL-M1	3 PHASE:	3.085	1.	Z1= 89.9856	3.106	3.095
	SLG DUTY:	3.044	1.	Z2= 89.9856	3.056	
208. VOLTS	LN/LN	2.671		Z0= 94.2384		
	LN/LN/GND	3.188	(	2.997 GND RETURN KA)		
B-B2-PNL-P	3 PHASE:	8.615	3.	Z1= 13.9614	9.724	9.178
	SLG DUTY:	7.787	3.	Z2= 13.9614	8.454	
480. VOLTS	LN/LN	7.461		Z0= 18.5468		
	LN/LN/GND	8.603	(	7.084 GND RETURN KA)		
B-B2-POD2PP	3 PHASE:	8.176	2.	Z1= 33.9485	8.360	8.268
	SLG DUTY:	7.130	1.	Z2= 33.9485	7.177	
208. VOLTS	LN/LN	7.081		Z0= 50.2621		
	LN/LN/GND	8.366	(	6.248 GND RETURN KA)		
B-B2-TEL COMM	3 PHASE:	8.369	2.	Z1= 33.1668	8.533	8.451
	SLG DUTY:	7.325	1.	Z2= 33.1668	7.363	
208. VOLTS	LN/LN	7.248		Z0= 48.8677		
	LN/LN/GND	8.615	(	6.427 GND RETURN KA)		
B-B2-UNIT-1	3 PHASE:	7.789	2.	Z1= 15.4423	8.326	8.060
	SLG DUTY:	6.691	2.	Z2= 15.4423	6.908	
480. VOLTS	LN/LN	6.746		Z0= 23.4005		
	LN/LN/GND	7.798	(	5.826 GND RETURN KA)		
B-B2-UNIT-2	3 PHASE:	8.190	3.	Z1= 14.6866	8.955	8.577
	SLG DUTY:	7.213	2.	Z2= 14.6866	7.586	
480. VOLTS	LN/LN	7.093		Z0= 20.8974		
	LN/LN/GND	8.202	(	6.413 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-XRAY	3 PHASE:	1.874	0.	Z1= 148.1304	1.874	1.874
	SLG DUTY:	1.133	0.	Z2= 148.1304	1.133	
208. VOLTS	LN/LN	1.623		Z0= 440.2068		
	LN/LN/GND	1.714	(	0.810 GND RETURN KA)		
B-B2-XRAY-124	3 PHASE:	6.035	2.	Z1= 19.9298	6.140	6.088
	SLG DUTY:	4.663	1.	Z2= 19.9298	4.684	
480. VOLTS	LN/LN	5.227		Z0= 38.3090		
	LN/LN/GND	5.937	(	3.762 GND RETURN KA)		
B-B2-XRAY124	3 PHASE:	7.072	1.	Z1= 39.2515	7.092	7.082
	SLG DUTY:	5.547	1.	Z2= 39.2515	5.548	
208. VOLTS	LN/LN	6.124		Z0= 74.2376		
	LN/LN/GND	7.106	(	4.486 GND RETURN KA)		
B-B21-P1	3 PHASE:	3.177	1.	Z1= 87.3687	3.177	3.177
	SLG DUTY:	1.999	0.	Z2= 87.3687	1.999	
208. VOLTS	LN/LN	2.751		Z0= 243.3374		
	LN/LN/GND	2.949	(	1.454 GND RETURN KA)		
B-B21-P2	3 PHASE:	5.448	1.	Z1= 50.9533	5.455	5.451
	SLG DUTY:	3.688	1.	Z2= 50.9533	3.689	
208. VOLTS	LN/LN	4.718		Z0= 125.4073		
	LN/LN/GND	5.168	(	2.770 GND RETURN KA)		
B-B22-ATS-EMER	3 PHASE:	6.504	2.	Z1= 18.4945	6.991	6.750
	SLG DUTY:	5.759	2.	Z2= 18.4945	6.069	
480. VOLTS	LN/LN	5.632		Z0= 25.7600		
	LN/LN/GND	6.385	(	5.160 GND RETURN KA)		
B-B22-EMERG	3 PHASE:	6.182	2.	Z1= 19.4570	6.616	6.401
	SLG DUTY:	5.370	2.	Z2= 19.4570	5.630	
480. VOLTS	LN/LN	5.354		Z0= 28.4003		
	LN/LN/GND	6.046	(	4.738 GND RETURN KA)		
B-B22-EMERG-M	3 PHASE:	6.188	2.	Z1= 19.4369	6.624	6.408
	SLG DUTY:	5.383	2.	Z2= 19.4369	5.645	
480. VOLTS	LN/LN	5.359		Z0= 28.2810		
	LN/LN/GND	6.052	(	4.754 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B22-L1	3 PHASE:	2.814	2.	Z1= 98.6535	2.864	2.839
	SLG DUTY:	2.960	2.	Z2= 98.6535	3.005	
208. VOLTS	LN/LN	2.437		Z0= 84.1608		
	LN/LN/GND	2.949	(	3.121 GND RETURN KA)		
B-B22-L1-M	3 PHASE:	2.817	2.	Z1= 98.5377	2.868	2.843
	SLG DUTY:	2.969	2.	Z2= 98.5377	3.015	
208. VOLTS	LN/LN	2.440		Z0= 83.4928		
	LN/LN/GND	2.954	(	3.138 GND RETURN KA)		
B-B22-L2	3 PHASE:	2.814	2.	Z1= 98.6535	2.864	2.839
	SLG DUTY:	2.960	2.	Z2= 98.6535	3.005	
208. VOLTS	LN/LN	2.437		Z0= 84.1608		
	LN/LN/GND	2.949	(	3.121 GND RETURN KA)		
B-B22-L2-M	3 PHASE:	2.817	2.	Z1= 98.5377	2.868	2.843
	SLG DUTY:	2.969	2.	Z2= 98.5377	3.015	
208. VOLTS	LN/LN	2.440		Z0= 83.4928		
	LN/LN/GND	2.954	(	3.138 GND RETURN KA)		
B-B22-L3	3 PHASE:	2.821	2.	Z1= 98.4055	2.872	2.847
	SLG DUTY:	2.965	2.	Z2= 98.4055	3.010	
208. VOLTS	LN/LN	2.443		Z0= 84.1608		
	LN/LN/GND	2.957	(	3.124 GND RETURN KA)		
B-B22-L3-M	3 PHASE:	2.824	2.	Z1= 98.2899	2.876	2.850
	SLG DUTY:	2.975	2.	Z2= 98.2899	3.020	
208. VOLTS	LN/LN	2.446		Z0= 83.4928		
	LN/LN/GND	2.962	(	3.141 GND RETURN KA)		
B-B22-MDP	3 PHASE:	6.945	3.	Z1= 17.3187	7.512	7.231
	SLG DUTY:	6.309	2.	Z2= 17.3187	6.700	
480. VOLTS	LN/LN	6.015		Z0= 22.6208		
	LN/LN/GND	6.854	(	5.774 GND RETURN KA)		
B-B22-MDP-M	3 PHASE:	6.948	3.	Z1= 17.3109	7.516	7.235
	SLG DUTY:	6.316	2.	Z2= 17.3109	6.709	
480. VOLTS	LN/LN	6.017		Z0= 22.5750		
	LN/LN/GND	6.857	(	5.783 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B22-N1	3 PHASE:	4.783	2.	Z1= 58.0308	4.922	4.853
	SLG DUTY:	4.743	2.	Z2= 58.0308	4.848	
208. VOLTS	LN/LN	4.142		Z0= 59.6906		
	LN/LN/GND	4.891	(	4.698 GND RETURN KA)		
B-B22-N1-M	3 PHASE:	4.791	2.	Z1= 57.9372	4.931	4.861
	SLG DUTY:	4.762	2.	Z2= 57.9372	4.869	
208. VOLTS	LN/LN	4.149		Z0= 59.1568		
	LN/LN/GND	4.903	(	4.729 GND RETURN KA)		
B-B22-P1	3 PHASE:	5.947	2.	Z1= 20.2268	6.304	6.127
	SLG DUTY:	5.086	2.	Z2= 20.2268	5.280	
480. VOLTS	LN/LN	5.150		Z0= 30.6609		
	LN/LN/GND	5.817	(	4.433 GND RETURN KA)		
B-B22-P2	3 PHASE:	5.947	2.	Z1= 20.2268	6.304	6.127
	SLG DUTY:	5.086	2.	Z2= 20.2268	5.280	
480. VOLTS	LN/LN	5.150		Z0= 30.6609		
	LN/LN/GND	5.817	(	4.433 GND RETURN KA)		
B-B22-T1-PRI	3 PHASE:	6.826	2.	Z1= 17.6219	7.344	7.087
	SLG DUTY:	6.152	2.	Z2= 17.6219	6.491	
480. VOLTS	LN/LN	5.911		Z0= 23.4982		
	LN/LN/GND	6.739	(	5.591 GND RETURN KA)		
B-B22-T1-SEC	3 PHASE:	5.069	2.	Z1= 54.7579	5.221	5.145
	SLG DUTY:	5.203	2.	Z2= 54.7579	5.328	
208. VOLTS	LN/LN	4.390		Z0= 50.6666		
	LN/LN/GND	5.260	(	5.339 GND RETURN KA)		
B-B22-T2-PRI	3 PHASE:	6.047	2.	Z1= 19.8917	6.411	6.230
	SLG DUTY:	5.199	2.	Z2= 19.8917	5.397	
480. VOLTS	LN/LN	5.237		Z0= 29.7917		
	LN/LN/GND	5.925	(	4.549 GND RETURN KA)		
B-B22-T2-SEC	3 PHASE:	2.902	2.	Z1= 95.6510	2.960	2.931
	SLG DUTY:	3.116	2.	Z2= 95.6510	3.173	
208. VOLTS	LN/LN	2.513		Z0= 75.9999		
	LN/LN/GND	3.055	(	3.363 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B22-T22-SEC	3 PHASE:	2.894	2.	Z1= 95.8971	2.952	2.923
	SLG DUTY:	3.110	2.	Z2= 95.8971	3.166	
208. VOLTS	LN/LN	2.507		Z0= 75.9999		
	LN/LN/GND	3.047	(	3.360 GND RETURN KA)		
B-B22-T3 PRI	3 PHASE:	5.980	2.	Z1= 20.1124	6.314	6.149
	SLG DUTY:	5.116	2.	Z2= 20.1124	5.290	
480. VOLTS	LN/LN	5.179		Z0= 30.5055		
	LN/LN/GND	5.865	(	4.457 GND RETURN KA)		
B-B22-T4-PRI	3 PHASE:	5.980	2.	Z1= 20.1124	6.314	6.149
	SLG DUTY:	5.116	2.	Z2= 20.1124	5.290	
480. VOLTS	LN/LN	5.179		Z0= 30.5055		
	LN/LN/GND	5.865	(	4.457 GND RETURN KA)		
B-B22-T4-SEC	3 PHASE:	2.894	2.	Z1= 95.8971	2.952	2.923
	SLG DUTY:	3.110	2.	Z2= 95.8971	3.166	
208. VOLTS	LN/LN	2.507		Z0= 75.9999		
	LN/LN/GND	3.047	(	3.360 GND RETURN KA)		
B-B27-SWGR	3 PHASE:	2.700	3.	Z1= 1.5496	3.014	2.859
	SLG DUTY:	1.630	3.	Z2= 1.5496	1.815	
13800. VOLTS	LN/LN	2.338		Z0= 4.5990		
	LN/LN/GND	2.414	(	1.168 GND RETURN KA)		
B-B27-SWGR-M2	3 PHASE:	2.700	3.	Z1= 1.5495	3.014	2.859
	SLG DUTY:	1.630	3.	Z2= 1.5495	1.815	
13800. VOLTS	LN/LN	2.338		Z0= 4.5989		
	LN/LN/GND	2.414	(	1.168 GND RETURN KA)		
B-B3-1ST FL	3 PHASE:	9.618	1.	Z1= 28.8592	9.718	9.668
	SLG DUTY:	7.546	1.	Z2= 28.8592	7.565	
208. VOLTS	LN/LN	8.330		Z0= 53.6724		
	LN/LN/GND	9.477	(	6.152 GND RETURN KA)		
B-B3-ALDN KIT	3 PHASE:	7.143	1.	Z1= 38.8568	7.146	7.145
	SLG DUTY:	4.954	1.	Z2= 38.8568	4.954	
208. VOLTS	LN/LN	6.186		Z0= 91.9703		
	LN/LN/GND	6.860	(	3.758 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B3-ATS-COMP	3 PHASE:	14.035	2.	Z1= 19.7775	15.045	14.544
	SLG DUTY:	13.136	2.	Z2= 19.7775	13.769	
208. VOLTS	LN/LN	12.154		Z0= 23.9929		
	LN/LN/GND	14.179	(12.315 GND RETURN KA)			
B-B3-ATSTEL RM	3 PHASE:	13.694	2.	Z1= 20.2689	14.737	14.221
	SLG DUTY:	12.702	2.	Z2= 20.2689	13.374	
208. VOLTS	LN/LN	11.860		Z0= 25.1523		
	LN/LN/GND	13.737	(11.820 GND RETURN KA)			
B-B3-COMP	3 PHASE:	8.180	1.	Z1= 33.9346	8.203	8.191
	SLG DUTY:	6.020	1.	Z2= 33.9346	6.022	
208. VOLTS	LN/LN	7.084		Z0= 71.8330		
	LN/LN/GND	7.955	(4.717 GND RETURN KA)			
B-B3-COMP AC	3 PHASE:	2.962	0.	Z1= 93.7129	2.962	2.962
	SLG DUTY:	1.802	0.	Z2= 93.7129	1.802	
208. VOLTS	LN/LN	2.565		Z0= 275.5982		
	LN/LN/GND	2.717	(1.293 GND RETURN KA)			
B-B3-COMP MF	3 PHASE:	10.276	2.	Z1= 27.0122	10.506	10.391
	SLG DUTY:	8.366	1.	Z2= 27.0122	8.433	
208. VOLTS	LN/LN	8.899		Z0= 46.2358		
	LN/LN/GND	10.150	(7.005 GND RETURN KA)			
B-B3-DBL GRILL	3 PHASE:	8.224	1.	Z1= 33.7503	8.279	8.252
	SLG DUTY:	6.177	1.	Z2= 33.7503	6.186	
208. VOLTS	LN/LN	7.122		Z0= 68.4419		
	LN/LN/GND	7.998	(4.906 GND RETURN KA)			
B-B3-ELEV	3 PHASE:	9.100	1.	Z1= 30.5011	9.150	9.125
	SLG DUTY:	6.939	1.	Z2= 30.5011	6.945	
208. VOLTS	LN/LN	7.881		Z0= 60.2520		
	LN/LN/GND	8.930	(5.551 GND RETURN KA)			
B-B3-EP1	3 PHASE:	13.087	2.	Z1= 21.2094	14.037	13.567
	SLG DUTY:	11.865	2.	Z2= 21.2094	12.440	
208. VOLTS	LN/LN	11.334		Z0= 27.9262		
	LN/LN/GND	13.043	(10.827 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B3-EP1-M	3 PHASE:	13.143	2.	Z1= 21.1195	14.109	13.630
	SLG DUTY:	11.983	2.	Z2= 21.1195	12.581	
208. VOLTS	LN/LN	11.382		Z0= 27.4033		
	LN/LN/GND	13.111	(10.988 GND RETURN KA)			
B-B3-EP2	3 PHASE:	13.062	2.	Z1= 21.2497	13.920	13.495
	SLG DUTY:	11.807	2.	Z2= 21.2497	12.293	
208. VOLTS	LN/LN	11.312		Z0= 28.2360		
	LN/LN/GND	13.062	(10.740 GND RETURN KA)			
B-B3-EP2-M	3 PHASE:	13.118	2.	Z1= 21.1593	13.990	13.557
	SLG DUTY:	11.925	2.	Z2= 21.1593	12.430	
208. VOLTS	LN/LN	11.361		Z0= 27.7082		
	LN/LN/GND	13.133	(10.900 GND RETURN KA)			
B-B3-FRZN FOOD	3 PHASE:	8.088	1.	Z1= 34.3210	8.088	8.088
	SLG DUTY:	5.567	0.	Z2= 34.3210	5.567	
208. VOLTS	LN/LN	7.004		Z0= 82.7220		
	LN/LN/GND	7.805	(4.197 GND RETURN KA)			
B-B3-HYDRO ELV	3 PHASE:	6.844	1.	Z1= 40.5543	6.855	6.850
	SLG DUTY:	4.843	1.	Z2= 40.5543	4.844	
208. VOLTS	LN/LN	5.927		Z0= 92.2477		
	LN/LN/GND	6.573	(3.718 GND RETURN KA)			
B-B3-KP1	3 PHASE:	9.077	2.	Z1= 30.5807	9.254	9.165
	SLG DUTY:	7.144	1.	Z2= 30.5807	7.195	
208. VOLTS	LN/LN	7.861		Z0= 56.1516		
	LN/LN/GND	8.863	(5.853 GND RETURN KA)			
B-B3-MDP	3 PHASE:	17.320	3.	Z1= 16.0258	18.975	18.157
	SLG DUTY:	18.115	3.	Z2= 16.0258	19.573	
208. VOLTS	LN/LN	15.000		Z0= 13.9493		
	LN/LN/GND	18.160	(18.973 GND RETURN KA)			
B-B3-MDP-M	3 PHASE:	17.348	3.	Z1= 16.0002	19.023	18.195
	SLG DUTY:	18.194	3.	Z2= 16.0002	19.704	
208. VOLTS	LN/LN	15.024		Z0= 13.7941		
	LN/LN/GND	18.176	(19.116 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B3-MECH HVAC	3 PHASE:	9.100		1. Z1= 30.5011	9.150	9.125
	SLG DUTY:	6.939		1. Z2= 30.5011	6.945	
208. VOLTS	LN/LN	7.881		Z0= 60.2520		
	LN/LN/GND	8.930	(	5.551 GND RETURN KA)		
B-B3-MECH RM	3 PHASE:	10.552		2. Z1= 26.3062	10.865	10.709
	SLG DUTY:	8.718		1. Z2= 26.3062	8.827	
208. VOLTS	LN/LN	9.138		Z0= 43.4867		
	LN/LN/GND	10.421	(	7.383 GND RETURN KA)		
B-B3-P3	3 PHASE:	11.712		2. Z1= 23.7006	11.904	11.808
	SLG DUTY:	9.836		1. Z2= 23.7006	9.880	
208. VOLTS	LN/LN	10.143		Z0= 38.1868		
	LN/LN/GND	11.815	(	8.387 GND RETURN KA)		
B-B3-P7	3 PHASE:	8.575		1. Z1= 32.3700	8.599	8.587
	SLG DUTY:	6.365		1. Z2= 32.3700	6.367	
208. VOLTS	LN/LN	7.426		Z0= 67.4909		
	LN/LN/GND	8.371	(	5.009 GND RETURN KA)		
B-B3-STRT LTS	3 PHASE:	8.088		1. Z1= 34.3210	8.088	8.088
	SLG DUTY:	5.567		0. Z2= 34.3210	5.567	
208. VOLTS	LN/LN	7.004		Z0= 82.7220		
	LN/LN/GND	7.805	(	4.197 GND RETURN KA)		
B-B3-STRT PNL	3 PHASE:	10.204		1. Z1= 27.2012	10.321	10.263
	SLG DUTY:	8.140		1. Z2= 27.2012	8.163	
208. VOLTS	LN/LN	8.837		Z0= 48.9213		
	LN/LN/GND	10.117	(	6.705 GND RETURN KA)		
B-B3-TELE PNL	3 PHASE:	10.580		2. Z1= 26.2347	10.924	10.753
	SLG DUTY:	8.770		1. Z2= 26.2347	8.895	
208. VOLTS	LN/LN	9.163		Z0= 43.0263		
	LN/LN/GND	10.440	(	7.447 GND RETURN KA)		
B-B3-TRAY LINE	3 PHASE:	9.100		1. Z1= 30.5011	9.150	9.125
	SLG DUTY:	6.939		1. Z2= 30.5011	6.945	
208. VOLTS	LN/LN	7.881		Z0= 60.2520		
	LN/LN/GND	8.930	(	5.551 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B33-MDP	3 PHASE:	4.841	2.	Z1= 57.3432	4.931	4.886
	SLG DUTY:	4.374	1.	Z2= 57.3432	4.437	
208. VOLTS	LN/LN	4.192		Z0= 75.8117		
	LN/LN/GND	4.738	(3.987 GND RETURN KA)			
B-B33-MDP-M	3 PHASE:	4.849	2.	Z1= 57.2484	4.939	4.894
	SLG DUTY:	4.391	1.	Z2= 57.2484	4.454	
208. VOLTS	LN/LN	4.199		Z0= 75.2745		
	LN/LN/GND	4.749	(4.010 GND RETURN KA)			
B-B4-4EQD	3 PHASE:	19.919	3.	Z1= 13.9348	21.577	20.756
	SLG DUTY:	18.425	2.	Z2= 13.9348	19.162	
208. VOLTS	LN/LN	17.251		Z0= 17.6834		
	LN/LN/GND	20.585	(17.004 GND RETURN KA)			
B-B4-4EQD-M	3 PHASE:	20.048	3.	Z1= 13.8456	21.747	20.906
	SLG DUTY:	18.714	2.	Z2= 13.8456	19.495	
208. VOLTS	LN/LN	17.362		Z0= 17.1474		
	LN/LN/GND	20.776	(17.412 GND RETURN KA)			
B-B4-ATS-EQ	3 PHASE:	22.705	3.	Z1= 12.2253	25.007	23.870
	SLG DUTY:	22.570	2.	Z2= 12.2253	23.790	
208. VOLTS	LN/LN	19.663		Z0= 12.7276		
	LN/LN/GND	24.232	(22.264 GND RETURN KA)			
B-B4-ATS-LS	3 PHASE:	20.452	2.	Z1= 13.5717	21.563	21.012
	SLG DUTY:	18.946	2.	Z2= 13.5717	19.302	
208. VOLTS	LN/LN	17.712		Z0= 17.4190		
	LN/LN/GND	21.547	(17.403 GND RETURN KA)			
B-B4-BUS	3 PHASE:	25.834	3.	Z1= 10.7444	29.605	27.753
	SLG DUTY:	28.643	3.	Z2= 10.7444	32.094	
208. VOLTS	LN/LN	22.373		Z0= 7.6192		
	LN/LN/GND	28.386	(32.098 GND RETURN KA)			
B-B4-ELEV#4	3 PHASE:	8.393	1.	Z1= 33.0711	8.405	8.399
	SLG DUTY:	5.754	1.	Z2= 33.0711	5.755	
208. VOLTS	LN/LN	7.269		Z0= 79.7679		
	LN/LN/GND	8.016	(4.344 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-EQ1	3 PHASE:	12.719	1.	Z1= 21.8235	12.820	12.769
	SLG DUTY:	9.608	1.	Z2= 21.8235	9.620	
208. VOLTS	LN/LN	11.015		Z0= 44.1093		
	LN/LN/GND	12.525	(7.627 GND RETURN KA)			
B-B4-EQ10	3 PHASE:	8.872	1.	Z1= 31.2862	8.887	8.880
	SLG DUTY:	6.142	1.	Z2= 31.2862	6.144	
208. VOLTS	LN/LN	7.683		Z0= 74.1925		
	LN/LN/GND	8.500	(4.658 GND RETURN KA)			
B-B4-EQ11	3 PHASE:	10.677	1.	Z1= 25.9968	10.716	10.697
	SLG DUTY:	7.686	1.	Z2= 25.9968	7.689	
208. VOLTS	LN/LN	9.247		Z0= 57.5145		
	LN/LN/GND	10.359	(5.943 GND RETURN KA)			
B-B4-EQ12	3 PHASE:	7.466	1.	Z1= 37.1791	7.473	7.469
	SLG DUTY:	5.026	1.	Z2= 37.1791	5.027	
208. VOLTS	LN/LN	6.466		Z0= 92.5304		
	LN/LN/GND	7.087	(3.762 GND RETURN KA)			
B-B4-EQ15	3 PHASE:	8.393	1.	Z1= 33.0711	8.405	8.399
	SLG DUTY:	5.754	1.	Z2= 33.0711	5.755	
208. VOLTS	LN/LN	7.269		Z0= 79.7679		
	LN/LN/GND	8.016	(4.344 GND RETURN KA)			
B-B4-EQ2	3 PHASE:	16.407	2.	Z1= 16.9177	16.863	16.636
	SLG DUTY:	13.675	1.	Z2= 16.9177	13.775	
208. VOLTS	LN/LN	14.209		Z0= 27.8673		
	LN/LN/GND	16.617	(11.571 GND RETURN KA)			
B-B4-EQ3	3 PHASE:	10.095	1.	Z1= 27.4961	10.124	10.110
	SLG DUTY:	7.173	1.	Z2= 27.4961	7.176	
208. VOLTS	LN/LN	8.742		Z0= 62.2701		
	LN/LN/GND	9.754	(5.510 GND RETURN KA)			
B-B4-EQ5	3 PHASE:	10.378	1.	Z1= 26.7451	10.412	10.395
	SLG DUTY:	7.421	1.	Z2= 26.7451	7.424	
208. VOLTS	LN/LN	8.988		Z0= 59.8911		
	LN/LN/GND	10.047	(5.718 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-EQ6	3 PHASE:	12.861	1.	Z1= 21.5824	12.968	12.915
	SLG DUTY:	9.749	1.	Z2= 21.5824	9.763	
208. VOLTS	LN/LN	11.138		Z0= 43.3253		
	LN/LN/GND	12.679	(	7.755 GND RETURN KA)		
B-B4-EQ7	3 PHASE:	8.525	1.	Z1= 32.5602	8.537	8.531
	SLG DUTY:	5.860	1.	Z2= 32.5602	5.861	
208. VOLTS	LN/LN	7.383		Z0= 78.1743		
	LN/LN/GND	8.149	(	4.429 GND RETURN KA)		
B-B4-EQ9	3 PHASE:	6.803	1.	Z1= 40.7986	6.808	6.806
	SLG DUTY:	4.523	1.	Z2= 40.7986	4.524	
208. VOLTS	LN/LN	5.892		Z0= 103.7131		
	LN/LN/GND	6.431	(	3.367 GND RETURN KA)		
B-B4-HYDROELEV	3 PHASE:	7.547	1.	Z1= 36.7790	7.550	7.548
	SLG DUTY:	5.023	1.	Z2= 36.7790	5.023	
208. VOLTS	LN/LN	6.536		Z0= 93.4594		
	LN/LN/GND	7.155	(	3.738 GND RETURN KA)		
B-B4-JBOX	3 PHASE:	25.260	3.	Z1= 10.9887	28.449	26.879
	SLG DUTY:	26.849	3.	Z2= 10.9887	28.966	
208. VOLTS	LN/LN	21.876		Z0= 9.2180		
	LN/LN/GND	27.806	(	28.485 GND RETURN KA)		
B-B4-LP1	3 PHASE:	12.897	1.	Z1= 21.5221	13.048	12.973
	SLG DUTY:	9.868	1.	Z2= 21.5221	9.891	
208. VOLTS	LN/LN	11.169		Z0= 42.3352		
	LN/LN/GND	12.715	(	7.901 GND RETURN KA)		
B-B4-LP1-M	3 PHASE:	12.968	1.	Z1= 21.4045	13.123	13.045
	SLG DUTY:	9.979	1.	Z2= 21.4045	10.003	
208. VOLTS	LN/LN	11.231		Z0= 41.6284		
	LN/LN/GND	12.804	(	8.017 GND RETURN KA)		
B-B4-LP10	3 PHASE:	10.301	1.	Z1= 26.9473	10.367	10.334
	SLG DUTY:	7.470	1.	Z2= 26.9473	7.479	
208. VOLTS	LN/LN	8.921		Z0= 58.6304		
	LN/LN/GND	9.973	(	5.807 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LP10-M	3 PHASE:	10.346		1. Z1= 26.8277	10.414	10.380
	SLG DUTY:	7.534		1. Z2= 26.8277	7.543	
208. VOLTS	LN/LN	8.960		Z0= 57.9228		
	LN/LN/GND	10.028	(	5.870 GND RETURN KA)		
B-B4-LP11	3 PHASE:	12.381		1. Z1= 22.4197	12.510	12.446
	SLG DUTY:	9.369		1. Z2= 22.4197	9.388	
208. VOLTS	LN/LN	10.722		Z0= 45.0478		
	LN/LN/GND	12.160	(	7.454 GND RETURN KA)		
B-B4-LP11-M	3 PHASE:	12.446		1. Z1= 22.3016	12.578	12.512
	SLG DUTY:	9.469		1. Z2= 22.3016	9.489	
208. VOLTS	LN/LN	10.779		Z0= 44.3408		
	LN/LN/GND	12.242	(	7.558 GND RETURN KA)		
B-B4-LP12	3 PHASE:	13.456		1. Z1= 20.6280	13.635	13.545
	SLG DUTY:	10.422		1. Z2= 20.6280	10.450	
208. VOLTS	LN/LN	11.653		Z0= 39.6245		
	LN/LN/GND	13.321	(	8.404 GND RETURN KA)		
B-B4-LP12-M	3 PHASE:	13.533		1. Z1= 20.5109	13.716	13.624
	SLG DUTY:	10.545		1. Z2= 20.5109	10.574	
208. VOLTS	LN/LN	11.720		Z0= 38.9180		
	LN/LN/GND	13.419	(	8.536 GND RETURN KA)		
B-B4-LP13	3 PHASE:	10.301		1. Z1= 26.9473	10.367	10.334
	SLG DUTY:	7.470		1. Z2= 26.9473	7.479	
208. VOLTS	LN/LN	8.921		Z0= 58.6304		
	LN/LN/GND	9.973	(	5.807 GND RETURN KA)		
B-B4-LP13-M	3 PHASE:	10.346		1. Z1= 26.8277	10.414	10.380
	SLG DUTY:	7.534		1. Z2= 26.8277	7.543	
208. VOLTS	LN/LN	8.960		Z0= 57.9228		
	LN/LN/GND	10.028	(	5.870 GND RETURN KA)		
B-B4-LP14	3 PHASE:	9.070		1. Z1= 30.6030	9.114	9.092
	SLG DUTY:	6.423		1. Z2= 30.6030	6.429	
208. VOLTS	LN/LN	7.855		Z0= 69.5107		
	LN/LN/GND	8.712	(	4.933 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LP14-M	3 PHASE:	9.106	1.	Z1= 30.4825	9.150	9.128
	SLG DUTY:	6.471	1.	Z2= 30.4825	6.476	
208. VOLTS	LN/LN	7.886		Z0= 68.8030		
	LN/LN/GND	8.754	(4.979 GND RETURN KA)			
B-B4-LP15	3 PHASE:	6.722	1.	Z1= 41.2942	6.722	6.722
	SLG DUTY:	4.347	0.	Z2= 41.2942	4.347	
208. VOLTS	LN/LN	5.821		Z0= 110.1821		
	LN/LN/GND	6.322	(3.193 GND RETURN KA)			
B-B4-LP15-M	3 PHASE:	6.742	1.	Z1= 41.1711	6.742	6.742
	SLG DUTY:	4.369	0.	Z2= 41.1711	4.369	
208. VOLTS	LN/LN	5.839		Z0= 109.4944		
	LN/LN/GND	6.344	(3.212 GND RETURN KA)			
B-B4-LP2	3 PHASE:	18.060	2.	Z1= 15.3696	18.679	18.371
	SLG DUTY:	15.597	1.	Z2= 15.3696	15.742	
208. VOLTS	LN/LN	15.640		Z0= 23.4387		
	LN/LN/GND	18.568	(13.526 GND RETURN KA)			
B-B4-LP2-M	3 PHASE:	18.192	2.	Z1= 15.2575	18.833	18.514
	SLG DUTY:	15.866	1.	Z2= 15.2575	16.022	
208. VOLTS	LN/LN	15.755		Z0= 22.7376		
	LN/LN/GND	18.762	(13.864 GND RETURN KA)			
B-B4-LP3	3 PHASE:	18.060	2.	Z1= 15.3696	18.679	18.371
	SLG DUTY:	15.597	1.	Z2= 15.3696	15.742	
208. VOLTS	LN/LN	15.640		Z0= 23.4387		
	LN/LN/GND	18.568	(13.526 GND RETURN KA)			
B-B4-LP3-M	3 PHASE:	18.192	2.	Z1= 15.2575	18.833	18.514
	SLG DUTY:	15.866	1.	Z2= 15.2575	16.022	
208. VOLTS	LN/LN	15.755		Z0= 22.7376		
	LN/LN/GND	18.762	(13.864 GND RETURN KA)			
B-B4-LP4	3 PHASE:	12.381	1.	Z1= 22.4197	12.510	12.446
	SLG DUTY:	9.369	1.	Z2= 22.4197	9.388	
208. VOLTS	LN/LN	10.722		Z0= 45.0478		
	LN/LN/GND	12.160	(7.454 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LP4-M	3 PHASE:	12.446		1. Z1= 22.3016	12.578	12.512
	SLG DUTY:	9.469		1. Z2= 22.3016	9.489	
208. VOLTS	LN/LN	10.779		Z0= 44.3408		
	LN/LN/GND	12.242	(	7.558 GND RETURN KA)		
B-B4-LP5	3 PHASE:	11.903		1. Z1= 23.3203	12.014	11.959
	SLG DUTY:	8.917		1. Z2= 23.3203	8.933	
208. VOLTS	LN/LN	10.308		Z0= 47.7620		
	LN/LN/GND	11.651	(	7.055 GND RETURN KA)		
B-B4-LP5-M	3 PHASE:	11.963		1. Z1= 23.2019	12.077	12.020
	SLG DUTY:	9.008		1. Z2= 23.2019	9.024	
208. VOLTS	LN/LN	10.361		Z0= 47.0548		
	LN/LN/GND	11.726	(	7.147 GND RETURN KA)		
B-B4-LP6	3 PHASE:	14.724		2. Z1= 18.8521	14.980	14.852
	SLG DUTY:	11.732		1. Z2= 18.8521	11.777	
208. VOLTS	LN/LN	12.751		Z0= 34.2108		
	LN/LN/GND	14.719	(	9.626 GND RETURN KA)		
B-B4-LP6-M	3 PHASE:	14.815		2. Z1= 18.7362	15.078	14.946
	SLG DUTY:	11.888		1. Z2= 18.7362	11.934	
208. VOLTS	LN/LN	12.830		Z0= 33.5052		
	LN/LN/GND	14.839	(	9.799 GND RETURN KA)		
B-B4-LP7	3 PHASE:	14.724		2. Z1= 18.8521	14.980	14.852
	SLG DUTY:	11.732		1. Z2= 18.8521	11.777	
208. VOLTS	LN/LN	12.751		Z0= 34.2108		
	LN/LN/GND	14.719	(	9.626 GND RETURN KA)		
B-B4-LP7-M	3 PHASE:	14.815		2. Z1= 18.7362	15.078	14.946
	SLG DUTY:	11.888		1. Z2= 18.7362	11.934	
208. VOLTS	LN/LN	12.830		Z0= 33.5052		
	LN/LN/GND	14.839	(	9.799 GND RETURN KA)		
B-B4-LP8	3 PHASE:	11.903		1. Z1= 23.3203	12.014	11.959
	SLG DUTY:	8.917		1. Z2= 23.3203	8.933	
208. VOLTS	LN/LN	10.308		Z0= 47.7620		
	LN/LN/GND	11.651	(	7.055 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LP8-M	3 PHASE:	11.963		1. Z1= 23.2019	12.077	12.020
	SLG DUTY:	9.008		1. Z2= 23.2019	9.024	
208. VOLTS	LN/LN	10.361		Z0= 47.0548		
	LN/LN/GND	11.726	(	7.147 GND RETURN KA)		
B-B4-LP9	3 PHASE:	10.301		1. Z1= 26.9473	10.367	10.334
	SLG DUTY:	7.470		1. Z2= 26.9473	7.479	
208. VOLTS	LN/LN	8.921		Z0= 58.6304		
	LN/LN/GND	9.973	(	5.807 GND RETURN KA)		
B-B4-LP9-M	3 PHASE:	10.346		1. Z1= 26.8277	10.414	10.380
	SLG DUTY:	7.534		1. Z2= 26.8277	7.543	
208. VOLTS	LN/LN	8.960		Z0= 57.9228		
	LN/LN/GND	10.028	(	5.870 GND RETURN KA)		
B-B4-LS1	3 PHASE:	8.311		1. Z1= 33.3980	8.315	8.313
	SLG DUTY:	5.577		1. Z2= 33.3980	5.578	
208. VOLTS	LN/LN	7.198		Z0= 83.7549		
	LN/LN/GND	7.911	(	4.164 GND RETURN KA)		
B-B4-LS1-M	3 PHASE:	8.342		1. Z1= 33.2747	8.346	8.344
	SLG DUTY:	5.613		1. Z2= 33.2747	5.613	
208. VOLTS	LN/LN	7.224		Z0= 83.0579		
	LN/LN/GND	7.946	(	4.196 GND RETURN KA)		
B-B4-LS10	3 PHASE:	5.354		1. Z1= 51.8456	5.354	5.354
	SLG DUTY:	3.413		1. Z2= 51.8456	3.413	
208. VOLTS	LN/LN	4.637		Z0= 141.4738		
	LN/LN/GND	5.000	(	2.494 GND RETURN KA)		
B-B4-LS10-M	3 PHASE:	5.367		1. Z1= 51.7225	5.367	5.367
	SLG DUTY:	3.427		1. Z2= 51.7225	3.427	
208. VOLTS	LN/LN	4.648		Z0= 140.7829		
	LN/LN/GND	5.014	(	2.505 GND RETURN KA)		
B-B4-LS11	3 PHASE:	6.179		1. Z1= 44.9184	6.180	6.180
	SLG DUTY:	3.993		1. Z2= 44.9184	3.993	
208. VOLTS	LN/LN	5.352		Z0= 119.9287		
	LN/LN/GND	5.801	(	2.933 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LS11-M	3 PHASE:	6.196		1. Z1= 44.7951	6.197	6.197
	SLG DUTY:	4.011		1. Z2= 44.7951	4.011	
208. VOLTS	LN/LN	5.366		Z0= 119.2361		
	LN/LN/GND	5.820	(	2.949 GND RETURN KA)		
B-B4-LS12	3 PHASE:	7.010		1. Z1= 39.5988	7.011	7.010
	SLG DUTY:	4.594		1. Z2= 39.5988	4.594	
208. VOLTS	LN/LN	6.071		Z0= 103.2953		
	LN/LN/GND	6.615	(	3.395 GND RETURN KA)		
B-B4-LS12-M	3 PHASE:	7.032		1. Z1= 39.4754	7.033	7.032
	SLG DUTY:	4.618		1. Z2= 39.4754	4.618	
208. VOLTS	LN/LN	6.089		Z0= 102.6009		
	LN/LN/GND	6.640	(	3.416 GND RETURN KA)		
B-B4-LS13	3 PHASE:	7.179		1. Z1= 38.6641	7.181	7.180
	SLG DUTY:	4.719		1. Z2= 38.6641	4.719	
208. VOLTS	LN/LN	6.217		Z0= 100.3619		
	LN/LN/GND	6.783	(	3.492 GND RETURN KA)		
B-B4-LS13-M	3 PHASE:	7.202		1. Z1= 38.5407	7.204	7.203
	SLG DUTY:	4.745		1. Z2= 38.5407	4.745	
208. VOLTS	LN/LN	6.237		Z0= 99.6672		
	LN/LN/GND	6.808	(	3.514 GND RETURN KA)		
B-B4-LS14	3 PHASE:	7.179		1. Z1= 38.6641	7.181	7.180
	SLG DUTY:	4.719		1. Z2= 38.6641	4.719	
208. VOLTS	LN/LN	6.217		Z0= 100.3619		
	LN/LN/GND	6.783	(	3.492 GND RETURN KA)		
B-B4-LS14-M	3 PHASE:	7.202		1. Z1= 38.5407	7.204	7.203
	SLG DUTY:	4.745		1. Z2= 38.5407	4.745	
208. VOLTS	LN/LN	6.237		Z0= 99.6672		
	LN/LN/GND	6.808	(	3.514 GND RETURN KA)		
B-B4-LS2	3 PHASE:	12.151		1. Z1= 22.8430	12.188	12.170
	SLG DUTY:	8.842		1. Z2= 22.8430	8.845	
208. VOLTS	LN/LN	10.523		Z0= 49.7375		
	LN/LN/GND	11.891	(	6.862 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LS2-M	3 PHASE:	12.216		1. Z1= 22.7215	12.254	12.235
	SLG DUTY:	8.933		1. Z2= 22.7215	8.935	
208. VOLTS	LN/LN	10.580		Z0= 49.0333		
	LN/LN/GND	11.972	(	6.950 GND RETURN KA)		
B-B4-LS3	3 PHASE:	14.950		1. Z1= 18.5668	15.093	15.021
	SLG DUTY:	11.671		1. Z2= 18.5668	11.687	
208. VOLTS	LN/LN	12.947		Z0= 35.3620		
	LN/LN/GND	14.962	(	9.424 GND RETURN KA)		
B-B4-LS3-M	3 PHASE:	15.046		1. Z1= 18.4484	15.192	15.119
	SLG DUTY:	11.827		1. Z2= 18.4484	11.844	
208. VOLTS	LN/LN	13.030		Z0= 34.6545		
	LN/LN/GND	15.092	(	9.591 GND RETURN KA)		
B-B4-LS4	3 PHASE:	9.634		1. Z1= 28.8112	9.643	9.639
	SLG DUTY:	6.636		1. Z2= 28.8112	6.636	
208. VOLTS	LN/LN	8.343		Z0= 69.1346		
	LN/LN/GND	9.254	(	5.013 GND RETURN KA)		
B-B4-LS4-M	3 PHASE:	9.675		1. Z1= 28.6882	9.685	9.680
	SLG DUTY:	6.686		1. Z2= 28.6882	6.687	
208. VOLTS	LN/LN	8.379		Z0= 68.4349		
	LN/LN/GND	9.303	(	5.059 GND RETURN KA)		
B-B4-LS5	3 PHASE:	6.094		1. Z1= 45.5464	6.095	6.095
	SLG DUTY:	3.932		1. Z2= 45.5464	3.932	
208. VOLTS	LN/LN	5.278		Z0= 121.8866		
	LN/LN/GND	5.718	(	2.887 GND RETURN KA)		
B-B4-LS5-M	3 PHASE:	6.111		1. Z1= 45.4231	6.112	6.111
	SLG DUTY:	3.950		1. Z2= 45.4231	3.950	
208. VOLTS	LN/LN	5.292		Z0= 121.1941		
	LN/LN/GND	5.736	(	2.902 GND RETURN KA)		
B-B4-LS6	3 PHASE:	7.179		1. Z1= 38.6641	7.181	7.180
	SLG DUTY:	4.719		1. Z2= 38.6641	4.719	
208. VOLTS	LN/LN	6.217		Z0= 100.3619		
	LN/LN/GND	6.783	(	3.492 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LS6-M	3 PHASE:	7.202	1.	Z1= 38.5407	7.204	7.203
	SLG DUTY:	4.745	1.	Z2= 38.5407	4.745	
208. VOLTS	LN/LN	6.237		Z0= 99.6672		
	LN/LN/GND	6.808	(3.514 GND RETURN KA)			
B-B4-LS7	3 PHASE:	8.311	1.	Z1= 33.3980	8.315	8.313
	SLG DUTY:	5.577	1.	Z2= 33.3980	5.578	
208. VOLTS	LN/LN	7.198		Z0= 83.7549		
	LN/LN/GND	7.911	(4.164 GND RETURN KA)			
B-B4-LS7-M	3 PHASE:	8.342	1.	Z1= 33.2747	8.346	8.344
	SLG DUTY:	5.613	1.	Z2= 33.2747	5.613	
208. VOLTS	LN/LN	7.224		Z0= 83.0579		
	LN/LN/GND	7.946	(4.196 GND RETURN KA)			
B-B4-LS8	3 PHASE:	8.547	1.	Z1= 32.4753	8.552	8.549
	SLG DUTY:	5.762	1.	Z2= 32.4753	5.762	
208. VOLTS	LN/LN	7.402		Z0= 80.8278		
	LN/LN/GND	8.149	(4.310 GND RETURN KA)			
B-B4-LS8-M	3 PHASE:	8.580	1.	Z1= 32.3521	8.584	8.582
	SLG DUTY:	5.800	1.	Z2= 32.3521	5.800	
208. VOLTS	LN/LN	7.430		Z0= 80.1303		
	LN/LN/GND	8.186	(4.345 GND RETURN KA)			
B-B4-LS9	3 PHASE:	8.547	1.	Z1= 32.4753	8.552	8.549
	SLG DUTY:	5.762	1.	Z2= 32.4753	5.762	
208. VOLTS	LN/LN	7.402		Z0= 80.8278		
	LN/LN/GND	8.149	(4.310 GND RETURN KA)			
B-B4-LS9-M	3 PHASE:	8.580	1.	Z1= 32.3521	8.584	8.582
	SLG DUTY:	5.800	1.	Z2= 32.3521	5.800	
208. VOLTS	LN/LN	7.430		Z0= 80.1303		
	LN/LN/GND	8.186	(4.345 GND RETURN KA)			
B-B4-LSD	3 PHASE:	19.117	2.	Z1= 14.5195	19.922	19.522
	SLG DUTY:	16.965	1.	Z2= 14.5195	17.177	
208. VOLTS	LN/LN	16.556		Z0= 20.7676		
	LN/LN/GND	19.844	(15.027 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LSD-M	3 PHASE:	19.264	2.	Z1= 14.4088	20.099	19.684
	SLG DUTY:	17.280	1.	Z2= 14.4088	17.510	
208. VOLTS	LN/LN	16.683		Z0= 20.0693		
	LN/LN/GND	20.066	(15.443 GND RETURN KA)			
B-B4-MDP	3 PHASE:	24.883	3.	Z1= 11.1553	27.929	26.429
	SLG DUTY:	26.156	2.	Z2= 11.1553	28.098	
208. VOLTS	LN/LN	21.549		Z0= 9.7247		
	LN/LN/GND	27.253	(27.395 GND RETURN KA)			
B-B4-MDP-M	3 PHASE:	24.910	3.	Z1= 11.1429	27.982	26.469
	SLG DUTY:	26.239	2.	Z2= 11.1429	28.226	
208. VOLTS	LN/LN	21.573		Z0= 9.6403		
	LN/LN/GND	27.287	(27.552 GND RETURN KA)			
B-B4-PP1	3 PHASE:	14.627	2.	Z1= 18.9768	15.010	14.819
	SLG DUTY:	11.802	1.	Z2= 18.9768	11.890	
208. VOLTS	LN/LN	12.667		Z0= 33.3760		
	LN/LN/GND	14.584	(9.787 GND RETURN KA)			
B-B4-PP2	3 PHASE:	6.722	1.	Z1= 41.2942	6.722	6.722
	SLG DUTY:	4.347	0.	Z2= 41.2942	4.347	
208. VOLTS	LN/LN	5.821		Z0= 110.1821		
	LN/LN/GND	6.322	(3.193 GND RETURN KA)			
B-B4-PP2-M	3 PHASE:	6.742	1.	Z1= 41.1711	6.742	6.742
	SLG DUTY:	4.369	0.	Z2= 41.1711	4.369	
208. VOLTS	LN/LN	5.839		Z0= 109.4944		
	LN/LN/GND	6.344	(3.212 GND RETURN KA)			
B-B5-ATS-EQ	3 PHASE:	14.225	2.	Z1= 19.5130	14.750	14.489
	SLG DUTY:	11.445	2.	Z2= 19.5130	11.672	
208. VOLTS	LN/LN	12.319		Z0= 33.9706		
	LN/LN/GND	13.758	(9.543 GND RETURN KA)			
B-B5-ATS-LS	3 PHASE:	14.134	2.	Z1= 19.6391	14.364	14.249
	SLG DUTY:	11.134	1.	Z2= 19.6391	11.200	
208. VOLTS	LN/LN	12.240		Z0= 35.9689		
	LN/LN/GND	13.781	(9.130 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B5-EQ1	3 PHASE:	8.744	1.	Z1= 31.7443	8.767	8.756
	SLG DUTY:	6.118	1.	Z2= 31.7443	6.122	
208. VOLTS	LN/LN	7.573		Z0= 73.3990		
	LN/LN/GND	8.309	(	4.680 GND RETURN KA)		
B-B5-EQ2	3 PHASE:	8.507	1.	Z1= 32.6283	8.527	8.517
	SLG DUTY:	5.919	1.	Z2= 32.6283	5.922	
208. VOLTS	LN/LN	7.367		Z0= 76.2328		
	LN/LN/GND	8.074	(	4.514 GND RETURN KA)		
B-B5-EQ5	3 PHASE:	8.744	1.	Z1= 31.7443	8.767	8.756
	SLG DUTY:	6.118	1.	Z2= 31.7443	6.122	
208. VOLTS	LN/LN	7.573		Z0= 73.3990		
	LN/LN/GND	8.309	(	4.680 GND RETURN KA)		
B-B5-EQ6	3 PHASE:	7.796	1.	Z1= 35.6046	7.807	7.802
	SLG DUTY:	5.335	1.	Z2= 35.6046	5.336	
208. VOLTS	LN/LN	6.752		Z0= 85.7330		
	LN/LN/GND	7.371	(	4.034 GND RETURN KA)		
B-B5-EQD	3 PHASE:	13.777	2.	Z1= 20.1477	14.275	14.027
	SLG DUTY:	10.997	2.	Z2= 20.1477	11.210	
208. VOLTS	LN/LN	11.931		Z0= 35.6732		
	LN/LN/GND	13.296	(	9.122 GND RETURN KA)		
B-B5-HYDR ELEV	3 PHASE:	10.342	1.	Z1= 26.8385	10.410	10.376
	SLG DUTY:	7.530	1.	Z2= 26.8385	7.544	
208. VOLTS	LN/LN	8.957		Z0= 57.5524		
	LN/LN/GND	9.904	(	5.888 GND RETURN KA)		
B-B5-LP1	3 PHASE:	13.940	2.	Z1= 19.9114	14.159	14.050
	SLG DUTY:	10.899	1.	Z2= 19.9114	10.960	
208. VOLTS	LN/LN	12.073		Z0= 37.0469		
	LN/LN/GND	13.567	(	8.894 GND RETURN KA)		
B-B5-LP1-M	3 PHASE:	14.007	2.	Z1= 19.8163	14.229	14.118
	SLG DUTY:	11.004	1.	Z2= 19.8163	11.067	
208. VOLTS	LN/LN	12.131		Z0= 36.5005		
	LN/LN/GND	13.650	(	9.008 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B5-LP2	3 PHASE:	11.727		1. Z1= 23.6696	11.839	11.783
	SLG DUTY:	8.761		1. Z2= 23.6696	8.787	
208. VOLTS	LN/LN	10.156		Z0= 48.2834		
	LN/LN/GND	11.295	(	6.952 GND RETURN KA)		
B-B5-LP2-M	3 PHASE:	11.775		1. Z1= 23.5737	11.888	11.831
	SLG DUTY:	8.829		1. Z2= 23.5737	8.856	
208. VOLTS	LN/LN	10.197		Z0= 47.7373		
	LN/LN/GND	11.352	(	7.022 GND RETURN KA)		
B-B5-LP3	3 PHASE:	11.817		1. Z1= 23.4893	11.932	11.875
	SLG DUTY:	8.844		1. Z2= 23.4893	8.871	
208. VOLTS	LN/LN	10.234		Z0= 47.7460		
	LN/LN/GND	11.387	(	7.025 GND RETURN KA)		
B-B5-LP3-M	3 PHASE:	11.865		1. Z1= 23.3934	11.982	11.924
	SLG DUTY:	8.914		1. Z2= 23.3934	8.941	
208. VOLTS	LN/LN	10.276		Z0= 47.1999		
	LN/LN/GND	11.445	(	7.097 GND RETURN KA)		
B-B5-LP4	3 PHASE:	10.169		1. Z1= 27.2948	10.237	10.203
	SLG DUTY:	7.369		1. Z2= 27.2948	7.382	
208. VOLTS	LN/LN	8.807		Z0= 59.0619		
	LN/LN/GND	9.723	(	5.746 GND RETURN KA)		
B-B5-LP4-M	3 PHASE:	10.205		1. Z1= 27.1984	10.273	10.239
	SLG DUTY:	7.417		1. Z2= 27.1984	7.431	
208. VOLTS	LN/LN	8.838		Z0= 58.5166		
	LN/LN/GND	9.765	(	5.794 GND RETURN KA)		
B-B5-LP5	3 PHASE:	12.272		1. Z1= 22.6176	12.303	12.288
	SLG DUTY:	8.976		1. Z2= 22.6176	8.979	
208. VOLTS	LN/LN	10.628		Z0= 48.3444		
	LN/LN/GND	11.877	(	7.017 GND RETURN KA)		
B-B5-LP5-M	3 PHASE:	12.325		1. Z1= 22.5208	12.356	12.340
	SLG DUTY:	9.048		1. Z2= 22.5208	9.051	
208. VOLTS	LN/LN	10.674		Z0= 47.8096		
	LN/LN/GND	11.943	(	7.087 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B5-LS1	3 PHASE:	10.349		1. Z1= 26.8222	10.382	10.365
	SLG DUTY:	7.412		1. Z2= 26.8222	7.417	
208. VOLTS	LN/LN	8.962		Z0= 59.4519		
	LN/LN/GND	9.909	(	5.737 GND RETURN KA)		
B-B5-LS2	3 PHASE:	6.667		1. Z1= 41.6332	6.670	6.668
	SLG DUTY:	4.410		1. Z2= 41.6332	4.410	
208. VOLTS	LN/LN	5.774		Z0= 106.4951		
	LN/LN/GND	6.257	(	3.279 GND RETURN KA)		
B-B5-LS4	3 PHASE:	5.801		1. Z1= 47.8481	5.802	5.802
	SLG DUTY:	3.773		1. Z2= 47.8481	3.773	
208. VOLTS	LN/LN	5.024		Z0= 125.9270		
	LN/LN/GND	5.418	(	2.785 GND RETURN KA)		
B-B5-LSD	3 PHASE:	13.460		1. Z1= 20.6222	13.650	13.555
	SLG DUTY:	10.418		1. Z2= 20.6222	10.469	
208. VOLTS	LN/LN	11.657		Z0= 39.1775		
	LN/LN/GND	13.070	(	8.447 GND RETURN KA)		
B-B5-LSD-M	3 PHASE:	13.522		1. Z1= 20.5269	13.715	13.619
	SLG DUTY:	10.514		1. Z2= 20.5269	10.566	
208. VOLTS	LN/LN	11.711		Z0= 38.6312		
	LN/LN/GND	13.147	(	8.550 GND RETURN KA)		
B-B5-MDP	3 PHASE:	19.220		2. Z1= 14.4417	20.107	19.666
	SLG DUTY:	16.968		2. Z2= 14.4417	17.423	
208. VOLTS	LN/LN	16.645		Z0= 20.3563		
	LN/LN/GND	19.111	(	15.138 GND RETURN KA)		
B-B5-MDP-M	3 PHASE:	19.258		2. Z1= 14.4137	20.156	19.710
	SLG DUTY:	17.047		2. Z2= 14.4137	17.517	
208. VOLTS	LN/LN	16.678		Z0= 20.1770		
	LN/LN/GND	19.146	(	15.243 GND RETURN KA)		
B-B5-NEXTEL	3 PHASE:	12.344		1. Z1= 22.4856	12.440	12.392
	SLG DUTY:	9.291		1. Z2= 22.4856	9.310	
208. VOLTS	LN/LN	10.691		Z0= 45.2757		
	LN/LN/GND	11.948	(	7.399 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B5-PNL-H	3 PHASE:	14.725	2.	Z1= 18.8507	14.999	14.862
	SLG DUTY:	11.705	1.	Z2= 18.8507	11.788	
208. VOLTS	LN/LN	12.752		Z0= 33.8630		
	LN/LN/GND	14.382	(	9.657 GND RETURN KA)		
B-B5-PNL-H-M	3 PHASE:	14.799	2.	Z1= 18.7560	15.077	14.938
	SLG DUTY:	11.827	1.	Z2= 18.7560	11.912	
208. VOLTS	LN/LN	12.816		Z0= 33.3170		
	LN/LN/GND	14.475	(	9.792 GND RETURN KA)		
B-B5-STRT LGHT	3 PHASE:	9.278	1.	Z1= 29.9170	9.279	9.278
	SLG DUTY:	6.231	0.	Z2= 29.9170	6.231	
208. VOLTS	LN/LN	8.035		Z0= 74.7704		
	LN/LN/GND	8.801	(	4.659 GND RETURN KA)		
B-B5-TEMP TRAI	3 PHASE:	11.291	1.	Z1= 24.5839	11.355	11.323
	SLG DUTY:	8.310	1.	Z2= 24.5839	8.322	
208. VOLTS	LN/LN	9.778		Z0= 51.7139		
	LN/LN/GND	10.870	(	6.532 GND RETURN KA)		
B-B55-LS3	3 PHASE:	8.472	1.	Z1= 32.7637	8.482	8.477
	SLG DUTY:	5.816	1.	Z2= 32.7637	5.817	
208. VOLTS	LN/LN	7.337		Z0= 78.4981		
	LN/LN/GND	8.030	(	4.403 GND RETURN KA)		
B-B6-ATS-EQ	3 PHASE:	14.346	2.	Z1= 19.3484	15.029	14.689
	SLG DUTY:	11.635	2.	Z2= 19.3484	11.967	
208. VOLTS	LN/LN	12.424		Z0= 33.0527		
	LN/LN/GND	13.836	(	9.762 GND RETURN KA)		
B-B6-ATS-LS	3 PHASE:	15.303	2.	Z1= 18.1389	15.634	15.469
	SLG DUTY:	12.379	1.	Z2= 18.1389	12.487	
208. VOLTS	LN/LN	13.252		Z0= 31.3811		
	LN/LN/GND	15.005	(	10.335 GND RETURN KA)		
B-B6-EQ1	3 PHASE:	10.665	1.	Z1= 26.0270	10.780	10.723
	SLG DUTY:	7.880	1.	Z2= 26.0270	7.909	
208. VOLTS	LN/LN	9.236		Z0= 54.1772		
	LN/LN/GND	10.220	(	6.217 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-EQ2	3 PHASE:	8.368	1.	Z1= 33.1716	8.409	8.388
	SLG DUTY:	5.886	1.	Z2= 33.1716	5.894	
208. VOLTS	LN/LN	7.247		Z0= 75.8461		
	LN/LN/GND	7.938	(	4.518 GND RETURN KA)		
B-B6-EQ3	3 PHASE:	10.144	1.	Z1= 27.3641	10.263	10.203
	SLG DUTY:	7.451	1.	Z2= 27.3641	7.482	
208. VOLTS	LN/LN	8.785		Z0= 57.5781		
	LN/LN/GND	9.692	(	5.860 GND RETURN KA)		
B-B6-EQ4	3 PHASE:	7.275	1.	Z1= 38.1522	7.295	7.285
	SLG DUTY:	4.990	1.	Z2= 38.1522	4.993	
208. VOLTS	LN/LN	6.301		Z0= 91.3803		
	LN/LN/GND	6.866	(	3.780 GND RETURN KA)		
B-B6-EQ5	3 PHASE:	8.623	1.	Z1= 32.1885	8.671	8.647
	SLG DUTY:	6.103	1.	Z2= 32.1885	6.113	
208. VOLTS	LN/LN	7.468		Z0= 72.7660		
	LN/LN/GND	8.190	(	4.700 GND RETURN KA)		
B-B6-EQ8	3 PHASE:	8.401	1.	Z1= 33.0398	8.488	8.445
	SLG DUTY:	5.999	1.	Z2= 33.0398	6.022	
208. VOLTS	LN/LN	7.276		Z0= 73.3130		
	LN/LN/GND	7.963	(	4.647 GND RETURN KA)		
B-B6-EQD	3 PHASE:	12.943	2.	Z1= 21.4460	13.477	13.211
	SLG DUTY:	10.212	2.	Z2= 21.4460	10.450	
208. VOLTS	LN/LN	11.209		Z0= 38.8809		
	LN/LN/GND	12.422	(	8.410 GND RETURN KA)		
B-B6-EQD-M	3 PHASE:	12.960	2.	Z1= 21.4176	13.499	13.231
	SLG DUTY:	10.240	2.	Z2= 21.4176	10.483	
208. VOLTS	LN/LN	11.224		Z0= 38.7018		
	LN/LN/GND	12.438	(	8.442 GND RETURN KA)		
B-B6-EQMACH	3 PHASE:	10.665	1.	Z1= 26.0270	10.780	10.723
	SLG DUTY:	7.880	1.	Z2= 26.0270	7.909	
208. VOLTS	LN/LN	9.236		Z0= 54.1772		
	LN/LN/GND	10.220	(	6.217 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-LP1	3 PHASE:	10.897	1.	Z1= 25.4726	10.913	10.905
	SLG DUTY:	7.761	1.	Z2= 25.4726	7.762	
208. VOLTS	LN/LN	9.437		Z0= 57.2193		
	LN/LN/GND	10.471	(	5.980 GND RETURN KA)		
B-B6-LP1-M	3 PHASE:	10.912	1.	Z1= 25.4384	10.928	10.920
	SLG DUTY:	7.781	1.	Z2= 25.4384	7.782	
208. VOLTS	LN/LN	9.450		Z0= 57.0094		
	LN/LN/GND	10.487	(	6.000 GND RETURN KA)		
B-B6-LP2	3 PHASE:	12.174	1.	Z1= 22.7999	12.206	12.190
	SLG DUTY:	8.919	1.	Z2= 22.7999	8.923	
208. VOLTS	LN/LN	10.543		Z0= 48.5825		
	LN/LN/GND	11.788	(	6.979 GND RETURN KA)		
B-B6-LP2-M	3 PHASE:	12.192	1.	Z1= 22.7663	12.224	12.208
	SLG DUTY:	8.945	1.	Z2= 22.7663	8.949	
208. VOLTS	LN/LN	10.559		Z0= 48.3735		
	LN/LN/GND	11.809	(	7.005 GND RETURN KA)		
B-B6-LP3	3 PHASE:	13.332	1.	Z1= 20.8193	13.520	13.426
	SLG DUTY:	10.322	1.	Z2= 20.8193	10.372	
208. VOLTS	LN/LN	11.546		Z0= 39.5350		
	LN/LN/GND	12.953	(	8.371 GND RETURN KA)		
B-B6-LP3-M	3 PHASE:	13.352	1.	Z1= 20.7883	13.542	13.447
	SLG DUTY:	10.355	1.	Z2= 20.7883	10.406	
208. VOLTS	LN/LN	11.563		Z0= 39.3369		
	LN/LN/GND	12.975	(	8.406 GND RETURN KA)		
B-B6-LP4	3 PHASE:	13.683	2.	Z1= 20.2858	13.891	13.787
	SLG DUTY:	10.673	1.	Z2= 20.2858	10.730	
208. VOLTS	LN/LN	11.850		Z0= 37.9355		
	LN/LN/GND	13.316	(	8.696 GND RETURN KA)		
B-B6-LP4-M	3 PHASE:	13.704	2.	Z1= 20.2549	13.914	13.809
	SLG DUTY:	10.707	1.	Z2= 20.2549	10.765	
208. VOLTS	LN/LN	11.868		Z0= 37.7381		
	LN/LN/GND	13.339	(	8.734 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-LP5	3 PHASE:	11.372		1. Z1= 24.4085	11.474	11.423
	SLG DUTY:	8.456		1. Z2= 24.4085	8.479	
208. VOLTS	LN/LN	9.848		Z0= 50.2584		
	LN/LN/GND	10.944	(	6.691 GND RETURN KA)		
B-B6-LP5-M	3 PHASE:	11.387		1. Z1= 24.3766	11.490	11.438
	SLG DUTY:	8.478		1. Z2= 24.3766	8.502	
208. VOLTS	LN/LN	9.861		Z0= 50.0571		
	LN/LN/GND	10.960	(	6.714 GND RETURN KA)		
B-B6-LP6	3 PHASE:	11.630		1. Z1= 23.8671	11.741	11.685
	SLG DUTY:	8.693		1. Z2= 23.8671	8.718	
208. VOLTS	LN/LN	10.072		Z0= 48.6446		
	LN/LN/GND	11.207	(	6.900 GND RETURN KA)		
B-B6-LP6-M	3 PHASE:	11.645		1. Z1= 23.8353	11.757	11.701
	SLG DUTY:	8.716		1. Z2= 23.8353	8.742	
208. VOLTS	LN/LN	10.085		Z0= 48.4438		
	LN/LN/GND	11.223	(	6.924 GND RETURN KA)		
B-B6-LP7	3 PHASE:	16.478		1. Z1= 16.8450	16.708	16.593
	SLG DUTY:	13.418		1. Z2= 16.8450	13.474	
208. VOLTS	LN/LN	14.270		Z0= 28.9006		
	LN/LN/GND	16.352	(	11.222 GND RETURN KA)		
B-B6-LP7-M	3 PHASE:	16.508		1. Z1= 16.8140	16.741	16.625
	SLG DUTY:	13.474		1. Z2= 16.8140	13.531	
208. VOLTS	LN/LN	14.297		Z0= 28.6998		
	LN/LN/GND	16.388	(	11.287 GND RETURN KA)		
B-B6-LS1	3 PHASE:	9.391		1. Z1= 29.5557	9.408	9.400
	SLG DUTY:	6.576		1. Z2= 29.5557	6.578	
208. VOLTS	LN/LN	8.133		Z0= 68.3496		
	LN/LN/GND	8.952	(	5.028 GND RETURN KA)		
B-B6-LS2	3 PHASE:	11.429		1. Z1= 24.2871	11.469	11.449
	SLG DUTY:	8.335		1. Z2= 24.2871	8.341	
208. VOLTS	LN/LN	9.898		Z0= 52.0935		
	LN/LN/GND	11.018	(	6.512 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-LS3	3 PHASE:	9.391	1.	Z1= 29.5557	9.408	9.400
	SLG DUTY:	6.576	1.	Z2= 29.5557	6.578	
208. VOLTS	LN/LN	8.133		Z0= 68.3496		
	LN/LN/GND	8.952	(	5.028 GND RETURN KA)		
B-B6-LS4	3 PHASE:	9.391	1.	Z1= 29.5557	9.408	9.400
	SLG DUTY:	6.576	1.	Z2= 29.5557	6.578	
208. VOLTS	LN/LN	8.133		Z0= 68.3496		
	LN/LN/GND	8.952	(	5.028 GND RETURN KA)		
B-B6-LS5	3 PHASE:	7.798	1.	Z1= 35.5967	7.803	7.800
	SLG DUTY:	5.275	1.	Z2= 35.5967	5.275	
208. VOLTS	LN/LN	6.753		Z0= 87.5707		
	LN/LN/GND	7.367	(	3.964 GND RETURN KA)		
B-B6-LS6	3 PHASE:	7.798	1.	Z1= 35.5967	7.803	7.800
	SLG DUTY:	5.275	1.	Z2= 35.5967	5.275	
208. VOLTS	LN/LN	6.753		Z0= 87.5707		
	LN/LN/GND	7.367	(	3.964 GND RETURN KA)		
B-B6-LSD	3 PHASE:	14.179	2.	Z1= 19.5770	14.419	14.299
	SLG DUTY:	11.177	1.	Z2= 19.5770	11.246	
208. VOLTS	LN/LN	12.279		Z0= 35.8080		
	LN/LN/GND	13.831	(	9.169 GND RETURN KA)		
B-B6-LSD-M	3 PHASE:	14.201	2.	Z1= 19.5463	14.443	14.322
	SLG DUTY:	11.215	1.	Z2= 19.5463	11.285	
208. VOLTS	LN/LN	12.298		Z0= 35.6116		
	LN/LN/GND	13.855	(	9.212 GND RETURN KA)		
B-B6-MACH SHOP	3 PHASE:	12.057	1.	Z1= 23.0222	12.140	12.098
	SLG DUTY:	9.013	1.	Z2= 23.0222	9.029	
208. VOLTS	LN/LN	10.441		Z0= 47.0005		
	LN/LN/GND	11.658	(	7.147 GND RETURN KA)		
B-B6-MDP	3 PHASE:	21.282	2.	Z1= 13.0426	22.807	22.051
	SLG DUTY:	19.738	2.	Z2= 13.0426	20.800	
208. VOLTS	LN/LN	18.431		Z0= 16.1561		
	LN/LN/GND	21.189	(	18.380 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-MDP-M	3 PHASE:	21.326	2.	Z1= 13.0160	22.874	22.107
	SLG DUTY:	19.837	2.	Z2= 13.0160	20.941	
208. VOLTS	LN/LN	18.468		Z0= 15.9922		
	LN/LN/GND	21.220	(18.522 GND RETURN KA)			
B-B6-P6-CS	3 PHASE:	14.698	1.	Z1= 18.8852	14.907	14.803
	SLG DUTY:	11.648	1.	Z2= 18.8852	11.702	
208. VOLTS	LN/LN	12.729		Z0= 34.2222		
	LN/LN/GND	14.405	(9.581 GND RETURN KA)			
B-B60-MDP	3 PHASE:	7.167	2.	Z1= 38.7303	7.655	7.413
	SLG DUTY:	7.387	2.	Z2= 38.7303	7.874	
208. VOLTS	LN/LN	6.207		Z0= 35.2752		
	LN/LN/GND	7.313	(7.620 GND RETURN KA)			
B-B60-MDP-M	3 PHASE:	7.184	2.	Z1= 38.6400	7.677	7.432
	SLG DUTY:	7.431	2.	Z2= 38.6400	7.931	
208. VOLTS	LN/LN	6.221		Z0= 34.7742		
	LN/LN/GND	7.334	(7.697 GND RETURN KA)			
B-B61 STRT LGH	3 PHASE:	7.064	1.	Z1= 39.2943	7.068	7.066
	SLG DUTY:	5.243	1.	Z2= 39.2943	5.244	
208. VOLTS	LN/LN	6.118		Z0= 82.8157		
	LN/LN/GND	6.989	(4.104 GND RETURN KA)			
B-B61-ATS-EQD	3 PHASE:	10.590	3.	Z1= 26.2105	11.433	11.016
	SLG DUTY:	10.242	2.	Z2= 26.2105	10.825	
208. VOLTS	LN/LN	9.171		Z0= 29.0445		
	LN/LN/GND	10.806	(9.896 GND RETURN KA)			
B-B61-ATS-LSD	3 PHASE:	10.458	2.	Z1= 26.5412	10.985	10.723
	SLG DUTY:	9.937	2.	Z2= 26.5412	10.195	
208. VOLTS	LN/LN	9.057		Z0= 31.2263		
	LN/LN/GND	10.853	(9.408 GND RETURN KA)			
B-B61-COMP RM	3 PHASE:	8.656	2.	Z1= 32.0684	9.033	8.845
	SLG DUTY:	7.598	2.	Z2= 32.0684	7.761	
208. VOLTS	LN/LN	7.496		Z0= 46.0473		
	LN/LN/GND	8.678	(6.735 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B61-DP	3 PHASE:	10.590	3.	Z1= 26.2105	11.433	11.016
	SLG DUTY:	10.242	2.	Z2= 26.2105	10.825	
208. VOLTS	LN/LN	9.171		Z0= 29.0444		
	LN/LN/GND	10.806	(9.896 GND RETURN KA)			
B-B61-ELEV	3 PHASE:	6.939	2.	Z1= 40.0003	7.080	7.010
	SLG DUTY:	5.588	1.	Z2= 40.0003	5.628	
208. VOLTS	LN/LN	6.010		Z0= 70.1019		
	LN/LN/GND	6.833	(4.644 GND RETURN KA)			
B-B61-EQ1	3 PHASE:	7.078	1.	Z1= 39.2160	7.165	7.122
	SLG DUTY:	5.650	1.	Z2= 39.2160	5.668	
208. VOLTS	LN/LN	6.130		Z0= 70.3613		
	LN/LN/GND	7.008	(4.658 GND RETURN KA)			
B-B61-EQ2	3 PHASE:	8.882	2.	Z1= 31.2501	9.234	9.059
	SLG DUTY:	7.847	2.	Z2= 31.2501	7.990	
208. VOLTS	LN/LN	7.692		Z0= 44.2808		
	LN/LN/GND	8.963	(6.985 GND RETURN KA)			
B-B61-EQ4	3 PHASE:	6.996	1.	Z1= 39.6757	7.055	7.026
	SLG DUTY:	5.512	1.	Z2= 39.6757	5.521	
208. VOLTS	LN/LN	6.059		Z0= 73.3565		
	LN/LN/GND	6.928	(4.500 GND RETURN KA)			
B-B61-EQA	3 PHASE:	9.657	2.	Z1= 28.7428	10.298	9.980
	SLG DUTY:	8.931	2.	Z2= 28.7428	9.307	
208. VOLTS	LN/LN	8.363		Z0= 36.0300		
	LN/LN/GND	9.745	(8.282 GND RETURN KA)			
B-B61-EQD	3 PHASE:	9.881	2.	Z1= 28.0904	10.601	10.245
	SLG DUTY:	9.247	2.	Z2= 28.0904	9.700	
208. VOLTS	LN/LN	8.558		Z0= 34.0922		
	LN/LN/GND	9.978	(8.668 GND RETURN KA)			
B-B61-KITCHEN	3 PHASE:	7.991	2.	Z1= 34.7359	8.149	8.070
	SLG DUTY:	6.663	1.	Z2= 34.7359	6.704	
208. VOLTS	LN/LN	6.920		Z0= 56.6678		
	LN/LN/GND	8.005	(5.662 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B61-LP1	3 PHASE:	4.044	1.	Z1= 68.6315	4.045	4.045
	SLG DUTY:	2.726	1.	Z2= 68.6315	2.726	
208. VOLTS	LN/LN	3.503		Z0= 170.4409		
	LN/LN/GND	3.839	(	2.042 GND RETURN KA)		
B-B61-LP2	3 PHASE:	4.044	1.	Z1= 68.6315	4.045	4.045
	SLG DUTY:	2.726	1.	Z2= 68.6315	2.726	
208. VOLTS	LN/LN	3.503		Z0= 170.4409		
	LN/LN/GND	3.839	(	2.042 GND RETURN KA)		
B-B61-LP3	3 PHASE:	7.343	2.	Z1= 37.8005	7.455	7.399
	SLG DUTY:	5.951	1.	Z2= 37.8005	5.977	
208. VOLTS	LN/LN	6.359		Z0= 65.6233		
	LN/LN/GND	7.293	(	4.958 GND RETURN KA)		
B-B61-LP4	3 PHASE:	8.702	2.	Z1= 31.8959	8.980	8.842
	SLG DUTY:	7.586	1.	Z2= 31.8959	7.684	
208. VOLTS	LN/LN	7.537		Z0= 46.8136		
	LN/LN/GND	8.786	(	6.673 GND RETURN KA)		
B-B61-LP5	3 PHASE:	6.030	1.	Z1= 46.0349	6.031	6.030
	SLG DUTY:	4.256	0.	Z2= 46.0349	4.256	
208. VOLTS	LN/LN	5.222		Z0= 106.1237		
	LN/LN/GND	5.861	(	3.249 GND RETURN KA)		
B-B61-LS1	3 PHASE:	5.877	1.	Z1= 47.2268	5.889	5.883
	SLG DUTY:	4.310	1.	Z2= 47.2268	4.310	
208. VOLTS	LN/LN	5.090		Z0= 100.8484		
	LN/LN/GND	5.724	(	3.367 GND RETURN KA)		
B-B61-LS2	3 PHASE:	7.388	1.	Z1= 37.5696	7.420	7.404
	SLG DUTY:	5.778	1.	Z2= 37.5696	5.781	
208. VOLTS	LN/LN	6.398		Z0= 71.0034		
	LN/LN/GND	7.364	(	4.680 GND RETURN KA)		
B-B61-LS3	3 PHASE:	5.216	1.	Z1= 53.2163	5.222	5.219
	SLG DUTY:	3.709	1.	Z2= 53.2163	3.709	
208. VOLTS	LN/LN	4.517		Z0= 120.2108		
	LN/LN/GND	5.032	(	2.852 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B61-LS4	3 PHASE:	5.877	1.	Z1= 47.2268	5.889	5.883
	SLG DUTY:	4.310	1.	Z2= 47.2268	4.310	
208. VOLTS	LN/LN	5.090		Z0= 100.8484		
	LN/LN/GND	5.724	(	3.367 GND RETURN KA)		
B-B61-LS5	3 PHASE:	5.216	1.	Z1= 53.2163	5.222	5.219
	SLG DUTY:	3.709	1.	Z2= 53.2163	3.709	
208. VOLTS	LN/LN	4.517		Z0= 120.2108		
	LN/LN/GND	5.032	(	2.852 GND RETURN KA)		
B-B61-LSD	3 PHASE:	9.975	2.	Z1= 27.8273	10.395	10.186
	SLG DUTY:	9.201	2.	Z2= 27.8273	9.378	
208. VOLTS	LN/LN	8.638		Z0= 35.5134		
	LN/LN/GND	10.277	(	8.477 GND RETURN KA)		
B-B61-LSD-M	3 PHASE:	10.015	2.	Z1= 27.7166	10.443	10.230
	SLG DUTY:	9.292	2.	Z2= 27.7166	9.476	
208. VOLTS	LN/LN	8.673		Z0= 34.8296		
	LN/LN/GND	10.333	(	8.604 GND RETURN KA)		
B-B61-MCC	3 PHASE:	7.064	1.	Z1= 39.2943	7.068	7.066
	SLG DUTY:	5.243	1.	Z2= 39.2943	5.244	
208. VOLTS	LN/LN	6.118		Z0= 82.8157		
	LN/LN/GND	6.989	(	4.104 GND RETURN KA)		
B-B61-MDP	3 PHASE:	12.355	3.	Z1= 22.4663	13.575	12.972
	SLG DUTY:	13.021	3.	Z2= 22.4663	14.134	
208. VOLTS	LN/LN	10.700		Z0= 19.0505		
	LN/LN/GND	12.975	(	13.757 GND RETURN KA)		
B-B61-MDP-M	3 PHASE:	12.378	3.	Z1= 22.4256	13.610	13.001
	SLG DUTY:	13.085	3.	Z2= 22.4256	14.229	
208. VOLTS	LN/LN	10.719		Z0= 18.8147		
	LN/LN/GND	13.000	(	13.873 GND RETURN KA)		
B-B62-A	3 PHASE:	13.963	1.	Z1= 19.8795	14.109	14.036
	SLG DUTY:	10.851	1.	Z2= 19.8795	10.883	
208. VOLTS	LN/LN	12.092		Z0= 37.5862		
	LN/LN/GND	13.660	(	8.806 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B62-ATS-EQD	3 PHASE:	18.052	2.	Z1= 15.3761	18.694	18.375
	SLG DUTY:	15.520	2.	Z2= 15.3761	15.784	
208. VOLTS	LN/LN	15.634		Z0= 23.1824		
	LN/LN/GND	17.966	(13.541 GND RETURN KA)			
B-B62-ATS-LSD	3 PHASE:	18.052	2.	Z1= 15.3761	18.694	18.375
	SLG DUTY:	15.520	2.	Z2= 15.3761	15.784	
208. VOLTS	LN/LN	15.634		Z0= 23.1824		
	LN/LN/GND	17.966	(13.541 GND RETURN KA)			
B-B62-ATTC PNL	3 PHASE:	9.602	1.	Z1= 28.9075	9.625	9.614
	SLG DUTY:	6.783	1.	Z2= 28.9075	6.786	
208. VOLTS	LN/LN	8.316		Z0= 65.7676		
	LN/LN/GND	9.172	(5.211 GND RETURN KA)			
B-B62-B	3 PHASE:	14.724	1.	Z1= 18.8521	14.912	14.818
	SLG DUTY:	11.640	1.	Z2= 18.8521	11.685	
208. VOLTS	LN/LN	12.751		Z0= 34.3950		
	LN/LN/GND	14.464	(9.552 GND RETURN KA)			
B-B62-BL	3 PHASE:	10.259	1.	Z1= 27.0575	10.264	10.261
	SLG DUTY:	7.120	1.	Z2= 27.0575	7.121	
208. VOLTS	LN/LN	8.884		Z0= 63.7981		
	LN/LN/GND	9.817	(5.410 GND RETURN KA)			
B-B62-BP	3 PHASE:	12.971	1.	Z1= 21.4001	13.008	12.989
	SLG DUTY:	9.635	1.	Z2= 21.4001	9.639	
208. VOLTS	LN/LN	11.233		Z0= 44.4713		
	LN/LN/GND	12.635	(7.593 GND RETURN KA)			
B-B62-ELEV-1	3 PHASE:	9.602	1.	Z1= 28.9075	9.625	9.614
	SLG DUTY:	6.783	1.	Z2= 28.9075	6.786	
208. VOLTS	LN/LN	8.316		Z0= 65.7676		
	LN/LN/GND	9.172	(5.211 GND RETURN KA)			
B-B62-ELEV-2	3 PHASE:	9.602	1.	Z1= 28.9075	9.625	9.614
	SLG DUTY:	6.783	1.	Z2= 28.9075	6.786	
208. VOLTS	LN/LN	8.316		Z0= 65.7676		
	LN/LN/GND	9.172	(5.211 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B62-EQ	3 PHASE:	13.992	1.	Z1= 19.8382	14.130	14.061
	SLG DUTY:	10.863	1.	Z2= 19.8382	10.892	
208. VOLTS	LN/LN	12.117		Z0= 37.5961		
	LN/LN/GND	13.694	(	8.809 GND RETURN KA)		
B-B62-EQD	3 PHASE:	15.444	2.	Z1= 17.9734	15.767	15.606
	SLG DUTY:	12.514	1.	Z2= 17.9734	12.613	
208. VOLTS	LN/LN	13.374		Z0= 31.0263		
	LN/LN/GND	15.190	(	10.453 GND RETURN KA)		
B-B62-KP	3 PHASE:	13.089	1.	Z1= 21.2062	13.155	13.122
	SLG DUTY:	9.863	1.	Z2= 21.2062	9.873	
208. VOLTS	LN/LN	11.336		Z0= 42.7671		
	LN/LN/GND	12.757	(	7.845 GND RETURN KA)		
B-B62-LP1	3 PHASE:	13.524	1.	Z1= 20.5252	13.572	13.548
	SLG DUTY:	10.176	1.	Z2= 20.5252	10.182	
208. VOLTS	LN/LN	11.712		Z0= 41.6049		
	LN/LN/GND	13.220	(	8.078 GND RETURN KA)		
B-B62-LP2	3 PHASE:	13.089	1.	Z1= 21.2062	13.155	13.122
	SLG DUTY:	9.863	1.	Z2= 21.2062	9.873	
208. VOLTS	LN/LN	11.336		Z0= 42.7671		
	LN/LN/GND	12.757	(	7.845 GND RETURN KA)		
B-B62-LP3	3 PHASE:	14.191	2.	Z1= 19.5599	14.419	14.305
	SLG DUTY:	11.188	1.	Z2= 19.5599	11.250	
208. VOLTS	LN/LN	12.290		Z0= 35.8049		
	LN/LN/GND	13.872	(	9.175 GND RETURN KA)		
B-B62-LP4	3 PHASE:	14.723	2.	Z1= 18.8527	14.988	14.856
	SLG DUTY:	11.743	1.	Z2= 18.8527	11.818	
208. VOLTS	LN/LN	12.751		Z0= 33.6765		
	LN/LN/GND	14.431	(	9.703 GND RETURN KA)		
B-B62-LS1	3 PHASE:	6.693	1.	Z1= 41.4721	6.693	6.693
	SLG DUTY:	4.347	1.	Z2= 41.4721	4.347	
208. VOLTS	LN/LN	5.796		Z0= 109.5649		
	LN/LN/GND	6.268	(	3.204 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B62-LS2	3 PHASE:	9.964	1.	Z1= 27.8580	9.973	9.968
	SLG DUTY:	6.937	1.	Z2= 27.8580	6.938	
208. VOLTS	LN/LN	8.629		Z0= 65.2357		
	LN/LN/GND	9.521	(5.283 GND RETURN KA)			
B-B62-LS3	3 PHASE:	7.937	1.	Z1= 34.9702	7.942	7.940
	SLG DUTY:	5.357	1.	Z2= 34.9702	5.358	
208. VOLTS	LN/LN	6.874		Z0= 86.4193		
	LN/LN/GND	7.503	(4.021 GND RETURN KA)			
B-B62-LS4	3 PHASE:	10.234	1.	Z1= 27.1218	10.256	10.245
	SLG DUTY:	7.254	1.	Z2= 27.1218	7.256	
208. VOLTS	LN/LN	8.863		Z0= 61.3976		
	LN/LN/GND	9.802	(5.579 GND RETURN KA)			
B-B62-LSD	3 PHASE:	15.345	2.	Z1= 18.0885	15.660	15.503
	SLG DUTY:	12.345	1.	Z2= 18.0885	12.439	
208. VOLTS	LN/LN	13.289		Z0= 31.7212		
	LN/LN/GND	15.071	(10.260 GND RETURN KA)			
B-B62-LSD-M	3 PHASE:	15.444	2.	Z1= 17.9734	15.767	15.606
	SLG DUTY:	12.514	1.	Z2= 17.9734	12.613	
208. VOLTS	LN/LN	13.374		Z0= 31.0263		
	LN/LN/GND	15.190	(10.453 GND RETURN KA)			
B-B62-MDP	3 PHASE:	23.012	3.	Z1= 12.0619	25.115	24.075
	SLG DUTY:	22.222	3.	Z2= 12.0619	23.960	
208. VOLTS	LN/LN	19.929		Z0= 13.3660		
	LN/LN/GND	23.043	(21.474 GND RETURN KA)			
B-B62-MDP-M	3 PHASE:	23.051	3.	Z1= 12.0417	25.181	24.128
	SLG DUTY:	22.315	3.	Z2= 12.0417	24.113	
208. VOLTS	LN/LN	19.963		Z0= 13.2456		
	LN/LN/GND	23.063	(21.618 GND RETURN KA)			
B-B62-OT	3 PHASE:	11.859	1.	Z1= 23.4052	11.873	11.866
	SLG DUTY:	8.517	1.	Z2= 23.4052	8.518	
208. VOLTS	LN/LN	10.271		Z0= 51.8965		
	LN/LN/GND	11.466	(6.584 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B62-PAD RM	3 PHASE:	12.418	1.	Z1= 22.3522	12.492	12.455
	SLG DUTY:	9.298	1.	Z2= 22.3522	9.311	
208. VOLTS	LN/LN	10.754		Z0= 45.5661		
	LN/LN/GND	12.049	(	7.375 GND RETURN KA)		
B-B62-STRT LGT	3 PHASE:	10.190	1.	Z1= 27.2407	10.190	10.190
	SLG DUTY:	6.894	0.	Z2= 27.2407	6.894	
208. VOLTS	LN/LN	8.824		Z0= 67.3327		
	LN/LN/GND	9.715	(	5.168 GND RETURN KA)		
B-B7-ATS-EQ	3 PHASE:	10.018	2.	Z1= 27.7084	10.575	10.298
	SLG DUTY:	7.922	2.	Z2= 27.7084	8.203	
208. VOLTS	LN/LN	8.676		Z0= 49.8964		
	LN/LN/GND	9.564	(	6.540 GND RETURN KA)		
B-B7-ATS-LS	3 PHASE:	9.374	2.	Z1= 29.6097	9.670	9.523
	SLG DUTY:	7.228	2.	Z2= 29.6097	7.344	
208. VOLTS	LN/LN	8.118		Z0= 56.3691		
	LN/LN/GND	8.982	(	5.863 GND RETURN KA)		
B-B7-ELEV	3 PHASE:	6.679	2.	Z1= 41.5564	6.800	6.740
	SLG DUTY:	4.828	1.	Z2= 41.5564	4.867	
208. VOLTS	LN/LN	5.785		Z0= 89.9623		
	LN/LN/GND	6.323	(	3.768 GND RETURN KA)		
B-B7-EQ1	3 PHASE:	6.762	1.	Z1= 41.0509	6.839	6.800
	SLG DUTY:	4.850	1.	Z2= 41.0509	4.871	
208. VOLTS	LN/LN	5.856		Z0= 90.3128		
	LN/LN/GND	6.414	(	3.766 GND RETURN KA)		
B-B7-EQ2	3 PHASE:	8.132	2.	Z1= 34.1325	8.367	8.250
	SLG DUTY:	6.106	1.	Z2= 34.1325	6.195	
208. VOLTS	LN/LN	7.043		Z0= 68.5517		
	LN/LN/GND	7.740	(	4.873 GND RETURN KA)		
B-B7-EQ4	3 PHASE:	7.094	1.	Z1= 39.1262	7.176	7.135
	SLG DUTY:	5.121	1.	Z2= 39.1262	5.143	
208. VOLTS	LN/LN	6.144		Z0= 85.0778		
	LN/LN/GND	6.742	(	3.990 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B7-EQD	3 PHASE:	8.993	2.	Z1= 30.8661	9.444	9.220
	SLG DUTY:	6.949	2.	Z2= 30.8661	7.163	
208. VOLTS	LN/LN	7.788		Z0= 58.3557		
	LN/LN/GND	8.551	(	5.650 GND RETURN KA)		
B-B7-LP2	3 PHASE:	8.852	2.	Z1= 31.3574	9.117	8.985
	SLG DUTY:	6.728	1.	Z2= 31.3574	6.829	
208. VOLTS	LN/LN	7.666		Z0= 61.4657		
	LN/LN/GND	8.456	(	5.409 GND RETURN KA)		
B-B7-LP2-M	3 PHASE:	8.884	2.	Z1= 31.2445	9.153	9.019
	SLG DUTY:	6.777	2.	Z2= 31.2445	6.881	
208. VOLTS	LN/LN	7.694		Z0= 60.7897		
	LN/LN/GND	8.490	(	5.461 GND RETURN KA)		
B-B7-LP3	3 PHASE:	6.860	1.	Z1= 40.4651	6.940	6.900
	SLG DUTY:	4.922	1.	Z2= 40.4651	4.944	
208. VOLTS	LN/LN	5.941		Z0= 88.9797		
	LN/LN/GND	6.508	(	3.822 GND RETURN KA)		
B-B7-LP3-M	3 PHASE:	6.880	1.	Z1= 40.3475	6.961	6.920
	SLG DUTY:	4.949	1.	Z2= 40.3475	4.971	
208. VOLTS	LN/LN	5.958		Z0= 88.2823		
	LN/LN/GND	6.529	(	3.849 GND RETURN KA)		
B-B7-LP4	3 PHASE:	8.852	2.	Z1= 31.3574	9.117	8.985
	SLG DUTY:	6.728	1.	Z2= 31.3574	6.829	
208. VOLTS	LN/LN	7.666		Z0= 61.4657		
	LN/LN/GND	8.456	(	5.409 GND RETURN KA)		
B-B7-LP4-M	3 PHASE:	8.884	2.	Z1= 31.2445	9.153	9.019
	SLG DUTY:	6.777	2.	Z2= 31.2445	6.881	
208. VOLTS	LN/LN	7.694		Z0= 60.7897		
	LN/LN/GND	8.490	(	5.461 GND RETURN KA)		
B-B7-LP5	3 PHASE:	6.860	1.	Z1= 40.4651	6.940	6.900
	SLG DUTY:	4.922	1.	Z2= 40.4651	4.944	
208. VOLTS	LN/LN	5.941		Z0= 88.9797		
	LN/LN/GND	6.508	(	3.822 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B7-LP5-M	3 PHASE:	6.880	1.	Z1= 40.3475	6.961	6.920
	SLG DUTY:	4.949	1.	Z2= 40.3475	4.971	
208. VOLTS	LN/LN	5.958		Z0= 88.2823		
	LN/LN/GND	6.529	(	3.849 GND RETURN KA)		
B-B7-LP6	3 PHASE:	6.300	1.	Z1= 44.0621	6.358	6.329
	SLG DUTY:	4.454	1.	Z2= 44.0621	4.469	
208. VOLTS	LN/LN	5.456		Z0= 99.6399		
	LN/LN/GND	5.960	(	3.431 GND RETURN KA)		
B-B7-LP6-M	3 PHASE:	6.317	1.	Z1= 43.9436	6.376	6.346
	SLG DUTY:	4.476	1.	Z2= 43.9436	4.491	
208. VOLTS	LN/LN	5.470		Z0= 98.9398		
	LN/LN/GND	5.979	(	3.452 GND RETURN KA)		
B-B7-LP7	3 PHASE:	8.019	2.	Z1= 34.6156	8.202	8.111
	SLG DUTY:	5.963	1.	Z2= 34.6156	6.026	
208. VOLTS	LN/LN	6.944		Z0= 70.9354		
	LN/LN/GND	7.638	(	4.729 GND RETURN KA)		
B-B7-LP7-M	3 PHASE:	8.045	2.	Z1= 34.5011	8.232	8.139
	SLG DUTY:	6.002	1.	Z2= 34.5011	6.066	
208. VOLTS	LN/LN	6.967		Z0= 70.2516		
	LN/LN/GND	7.666	(	4.769 GND RETURN KA)		
B-B7-LP8	3 PHASE:	6.300	1.	Z1= 44.0621	6.358	6.329
	SLG DUTY:	4.454	1.	Z2= 44.0621	4.469	
208. VOLTS	LN/LN	5.456		Z0= 99.6399		
	LN/LN/GND	5.960	(	3.431 GND RETURN KA)		
B-B7-LP8-M	3 PHASE:	6.317	1.	Z1= 43.9436	6.376	6.346
	SLG DUTY:	4.476	1.	Z2= 43.9436	4.491	
208. VOLTS	LN/LN	5.470		Z0= 98.9398		
	LN/LN/GND	5.979	(	3.452 GND RETURN KA)		
B-B7-LS1	3 PHASE:	5.865	1.	Z1= 47.3287	5.879	5.872
	SLG DUTY:	4.015	1.	Z2= 47.3287	4.017	
208. VOLTS	LN/LN	5.079		Z0= 113.7695		
	LN/LN/GND	5.537	(	3.038 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B7-LS2	3 PHASE:	7.276	1.	Z1= 38.1466	7.315	7.296
	SLG DUTY:	5.178	1.	Z2= 38.1466	5.185	
208. VOLTS	LN/LN	6.302		Z0= 85.4250		
	LN/LN/GND	6.929	(	3.998 GND RETURN KA)		
B-B7-LS4	3 PHASE:	5.619	1.	Z1= 49.4021	5.629	5.624
	SLG DUTY:	3.818	1.	Z2= 49.4021	3.819	
208. VOLTS	LN/LN	4.866		Z0= 120.3788		
	LN/LN/GND	5.296	(	2.878 GND RETURN KA)		
B-B7-LS5	3 PHASE:	6.975	1.	Z1= 39.7936	7.017	6.996
	SLG DUTY:	4.948	1.	Z2= 39.7936	4.957	
208. VOLTS	LN/LN	6.041		Z0= 89.5675		
	LN/LN/GND	6.630	(	3.815 GND RETURN KA)		
B-B7-LSD	3 PHASE:	9.076	2.	Z1= 30.5844	9.331	9.204
	SLG DUTY:	6.920	1.	Z2= 30.5844	7.014	
208. VOLTS	LN/LN	7.860		Z0= 59.6073		
	LN/LN/GND	8.686	(	5.572 GND RETURN KA)		
B-B7-LSD-M	3 PHASE:	9.109	2.	Z1= 30.4711	9.370	9.240
	SLG DUTY:	6.971	1.	Z2= 30.4711	7.069	
208. VOLTS	LN/LN	7.889		Z0= 58.9287		
	LN/LN/GND	8.722	(	5.627 GND RETURN KA)		
B-B7-MCC-1	3 PHASE:	7.174	1.	Z1= 38.6927	7.218	7.196
	SLG DUTY:	5.122	1.	Z2= 38.6927	5.131	
208. VOLTS	LN/LN	6.213		Z0= 86.0513		
	LN/LN/GND	6.829	(	3.963 GND RETURN KA)		
B-B7-MCC-2	3 PHASE:	8.573	1.	Z1= 32.3766	8.615	8.594
	SLG DUTY:	6.247	1.	Z2= 32.3766	6.254	
208. VOLTS	LN/LN	7.425		Z0= 69.4604		
	LN/LN/GND	8.239	(	4.881 GND RETURN KA)		
B-B7-MDP	3 PHASE:	11.303	2.	Z1= 24.5574	12.018	11.663
	SLG DUTY:	9.209	2.	Z2= 24.5574	9.601	
208. VOLTS	LN/LN	9.789		Z0= 41.4612		
	LN/LN/GND	10.846	(	7.757 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B7-MDP-M	3 PHASE:	11.322	2.	Z1= 24.5152	12.044	11.686
	SLG DUTY:	9.243	2.	Z2= 24.5152	9.642	
208. VOLTS	LN/LN	9.806		Z0= 41.2106		
	LN/LN/GND	10.865	(7.796 GND RETURN KA)			
B-B7-SRTLGHT-M	3 PHASE:	6.634	1.	Z1= 41.8419	6.638	6.636
	SLG DUTY:	4.507	1.	Z2= 41.8419	4.508	
208. VOLTS	LN/LN	5.745		Z0= 102.2199		
	LN/LN/GND	6.285	(3.393 GND RETURN KA)			
B-B7-STRT LGHT	3 PHASE:	6.614	1.	Z1= 41.9651	6.618	6.616
	SLG DUTY:	4.484	1.	Z2= 41.9651	4.485	
208. VOLTS	LN/LN	5.728		Z0= 102.9221		
	LN/LN/GND	6.263	(3.372 GND RETURN KA)			
B-B70 -BLDG-71	3 PHASE:	1.080	0.	Z1= 256.9937	1.080	1.080
	SLG DUTY:	0.651	0.	Z2= 256.9937	0.651	
208. VOLTS	LN/LN	0.935		Z0= 767.7156		
	LN/LN/GND	0.985	(0.465 GND RETURN KA)			
B-B70-A	3 PHASE:	8.195	1.	Z1= 33.8695	8.249	8.222
	SLG DUTY:	6.583	1.	Z2= 33.8695	6.589	
208. VOLTS	LN/LN	7.097		Z0= 60.5867		
	LN/LN/GND	8.236	(5.424 GND RETURN KA)			
B-B70-ATS-EQD	3 PHASE:	11.428	2.	Z1= 24.2892	12.302	11.869
	SLG DUTY:	11.185	2.	Z2= 24.2892	11.764	
208. VOLTS	LN/LN	9.897		Z0= 26.0713		
	LN/LN/GND	11.797	(10.923 GND RETURN KA)			
B-B70-ATS-LSD	3 PHASE:	10.950	2.	Z1= 25.3482	11.581	11.268
	SLG DUTY:	10.427	2.	Z2= 25.3482	10.758	
208. VOLTS	LN/LN	9.483		Z0= 29.5802		
	LN/LN/GND	11.324	(9.900 GND RETURN KA)			
B-B70-ATTIC	3 PHASE:	7.271	1.	Z1= 38.1731	7.296	7.284
	SLG DUTY:	5.577	1.	Z2= 38.1731	5.579	
208. VOLTS	LN/LN	6.297		Z0= 74.9755		
	LN/LN/GND	7.201	(4.464 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-B	3 PHASE:	8.195	1.	Z1= 33.8695	8.249	8.222
	SLG DUTY:	6.583	1.	Z2= 33.8695	6.589	
208. VOLTS	LN/LN	7.097		Z0= 60.5867		
	LN/LN/GND	8.236	(	5.424 GND RETURN KA)		
B-B70-CHLLR	3 PHASE:	5.512	2.	Z1= 50.3560	5.653	5.583
	SLG DUTY:	4.204	1.	Z2= 50.3560	4.251	
208. VOLTS	LN/LN	4.774		Z0= 98.2545		
	LN/LN/GND	5.299	(	3.383 GND RETURN KA)		
B-B70-EQ1	3 PHASE:	6.138	1.	Z1= 45.2232	6.162	6.150
	SLG DUTY:	4.562	1.	Z2= 45.2232	4.565	
208. VOLTS	LN/LN	5.316		Z0= 93.8879		
	LN/LN/GND	5.979	(	3.596 GND RETURN KA)		
B-B70-EQ2	3 PHASE:	4.908	1.	Z1= 56.5548	4.916	4.912
	SLG DUTY:	3.459	1.	Z2= 56.5548	3.460	
208. VOLTS	LN/LN	4.250		Z0= 129.5559		
	LN/LN/GND	4.707	(	2.650 GND RETURN KA)		
B-B70-EQ3	3 PHASE:	5.669	1.	Z1= 48.9666	5.685	5.677
	SLG DUTY:	4.126	1.	Z2= 48.9666	4.128	
208. VOLTS	LN/LN	4.909		Z0= 105.7441		
	LN/LN/GND	5.488	(	3.215 GND RETURN KA)		
B-B70-EQ4	3 PHASE:	4.597	1.	Z1= 60.3868	4.602	4.599
	SLG DUTY:	3.199	1.	Z2= 60.3868	3.199	
208. VOLTS	LN/LN	3.981		Z0= 141.4948		
	LN/LN/GND	4.391	(	2.436 GND RETURN KA)		
B-B70-EQ5	3 PHASE:	5.262	1.	Z1= 52.7462	5.274	5.268
	SLG DUTY:	3.764	1.	Z2= 52.7462	3.765	
208. VOLTS	LN/LN	4.557		Z0= 117.6368		
	LN/LN/GND	5.069	(	2.906 GND RETURN KA)		
B-B70-EQ6	3 PHASE:	4.321	1.	Z1= 64.2381	4.325	4.323
	SLG DUTY:	2.975	1.	Z2= 64.2381	2.975	
208. VOLTS	LN/LN	3.742		Z0= 153.4489		
	LN/LN/GND	4.114	(	2.253 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-EQD	3 PHASE:	10.899	2.	Z1= 25.4672	11.664	11.285
	SLG DUTY:	10.376	2.	Z2= 25.4672	10.837	
208. VOLTS	LN/LN	9.439		Z0= 29.5846		
	LN/LN/GND	11.156	(9.869 GND RETURN KA)			
B-B70-EQD-M	3 PHASE:	10.938	2.	Z1= 25.3771	11.713	11.329
	SLG DUTY:	10.467	2.	Z2= 25.3771	10.943	
208. VOLTS	LN/LN	9.473		Z0= 29.0564		
	LN/LN/GND	11.211	(10.003 GND RETURN KA)			
B-B70-FIRE PMP	3 PHASE:	3.224	0.	Z1= 86.1074	3.224	3.224
	SLG DUTY:	2.024	0.	Z2= 86.1074	2.024	
208. VOLTS	LN/LN	2.792		Z0= 241.0214		
	LN/LN/GND	2.999	(1.469 GND RETURN KA)			
B-B70-FP-TAP	3 PHASE:	12.326	3.	Z1= 22.5195	13.425	12.882
	SLG DUTY:	12.614	2.	Z2= 22.5195	13.479	
208. VOLTS	LN/LN	10.675		Z0= 21.0774		
	LN/LN/GND	12.886	(12.896 GND RETURN KA)			
B-B70-FPMP M	3 PHASE:	11.468	2.	Z1= 24.2046	12.287	11.881
	SLG DUTY:	11.244	2.	Z2= 24.2046	11.762	
208. VOLTS	LN/LN	9.931		Z0= 25.8979		
	LN/LN/GND	11.896	(10.991 GND RETURN KA)			
B-B70-K	3 PHASE:	6.513	1.	Z1= 42.6201	6.515	6.514
	SLG DUTY:	4.648	1.	Z2= 42.6201	4.648	
208. VOLTS	LN/LN	5.640		Z0= 96.3593		
	LN/LN/GND	6.353	(3.567 GND RETURN KA)			
B-B70-LP-4	3 PHASE:	5.518	1.	Z1= 50.3050	5.553	5.535
	SLG DUTY:	4.074	1.	Z2= 50.3050	4.080	
208. VOLTS	LN/LN	4.779		Z0= 105.3343		
	LN/LN/GND	5.333	(3.206 GND RETURN KA)			
B-B70-LP1	3 PHASE:	6.091	1.	Z1= 45.5745	6.099	6.095
	SLG DUTY:	4.424	1.	Z2= 45.5745	4.425	
208. VOLTS	LN/LN	5.275		Z0= 99.1769		
	LN/LN/GND	5.927	(3.437 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-LP3	3 PHASE:	6.585	1.	Z1= 42.1504	6.652	6.619
	SLG DUTY:	5.083	1.	Z2= 42.1504	5.096	
208. VOLTS	LN/LN	5.703		Z0= 80.9582		
	LN/LN/GND	6.448	(	4.104 GND RETURN KA)		
B-B70-LS1	3 PHASE:	4.475	1.	Z1= 62.0335	4.475	4.475
	SLG DUTY:	3.007	1.	Z2= 62.0335	3.007	
208. VOLTS	LN/LN	3.875		Z0= 155.0379		
	LN/LN/GND	4.252	(	2.248 GND RETURN KA)		
B-B70-LS2	3 PHASE:	3.653	1.	Z1= 75.9799	3.653	3.653
	SLG DUTY:	2.380	0.	Z2= 75.9799	2.380	
208. VOLTS	LN/LN	3.164		Z0= 199.9610		
	LN/LN/GND	3.435	(	1.755 GND RETURN KA)		
B-B70-LS3	3 PHASE:	5.072	1.	Z1= 54.7267	5.077	5.074
	SLG DUTY:	3.555	1.	Z2= 54.7267	3.555	
208. VOLTS	LN/LN	4.392		Z0= 126.8357		
	LN/LN/GND	4.869	(	2.714 GND RETURN KA)		
B-B70-LS4	3 PHASE:	4.049	1.	Z1= 68.5468	4.051	4.050
	SLG DUTY:	2.724	1.	Z2= 68.5468	2.724	
208. VOLTS	LN/LN	3.507		Z0= 170.6480		
	LN/LN/GND	3.837	(	2.040 GND RETURN KA)		
B-B70-LS5	3 PHASE:	4.681	1.	Z1= 59.3001	4.684	4.682
	SLG DUTY:	3.228	1.	Z2= 59.3001	3.228	
208. VOLTS	LN/LN	4.054		Z0= 141.4146		
	LN/LN/GND	4.471	(	2.445 GND RETURN KA)		
B-B70-LS6	3 PHASE:	3.792	1.	Z1= 73.2076	3.792	3.792
	SLG DUTY:	2.526	1.	Z2= 73.2076	2.526	
208. VOLTS	LN/LN	3.284		Z0= 185.2906		
	LN/LN/GND	3.582	(	1.883 GND RETURN KA)		
B-B70-LSD	3 PHASE:	10.460	2.	Z1= 26.5369	11.020	10.742
	SLG DUTY:	9.711	2.	Z2= 26.5369	9.984	
208. VOLTS	LN/LN	9.058		Z0= 33.1456		
	LN/LN/GND	10.716	(	9.013 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-LSD-M	3 PHASE:	10.496	2.	Z1= 26.4456	11.063	10.781
	SLG DUTY:	9.792	2.	Z2= 26.4456	10.073	
208. VOLTS	LN/LN	9.090		Z0= 32.6076		
	LN/LN/GND	10.769	(9.127 GND RETURN KA)			
B-B70-MDP	3 PHASE:	12.471	3.	Z1= 22.2578	13.590	13.036
	SLG DUTY:	12.823	2.	Z2= 22.2578	13.707	
208. VOLTS	LN/LN	10.800		Z0= 20.5223		
	LN/LN/GND	13.078	(13.176 GND RETURN KA)			
B-B70-MDP-M	3 PHASE:	12.494	3.	Z1= 22.2168	13.624	13.065
	SLG DUTY:	12.886	2.	Z2= 22.2168	13.794	
208. VOLTS	LN/LN	10.820		Z0= 20.2777		
	LN/LN/GND	13.106	(13.285 GND RETURN KA)			
B-B70-PP2	3 PHASE:	7.928	2.	Z1= 35.0110	8.066	7.997
	SLG DUTY:	6.494	1.	Z2= 35.0110	6.528	
208. VOLTS	LN/LN	6.866		Z0= 59.4038		
	LN/LN/GND	7.901	(5.449 GND RETURN KA)			
B-B70-PP220	3 PHASE:	5.851	1.	Z1= 47.4438	5.875	5.863
	SLG DUTY:	4.324	1.	Z2= 47.4438	4.327	
208. VOLTS	LN/LN	5.067		Z0= 99.4494		
	LN/LN/GND	5.680	(3.399 GND RETURN KA)			
B-B70-STRTLGHT	3 PHASE:	7.069	1.	Z1= 39.2680	7.073	7.071
	SLG DUTY:	5.178	1.	Z2= 39.2680	5.178	
208. VOLTS	LN/LN	6.122		Z0= 84.7311		
	LN/LN/GND	6.958	(4.026 GND RETURN KA)			
B-B78-1P	3 PHASE:	5.697	1.	Z1= 48.7193	5.699	5.698
	SLG DUTY:	3.665	1.	Z2= 48.7193	3.665	
208. VOLTS	LN/LN	4.934		Z0= 130.9230		
	LN/LN/GND	5.330	(2.689 GND RETURN KA)			
B-B78-78AE1	3 PHASE:	14.822	2.	Z1= 18.7273	15.092	14.957
	SLG DUTY:	11.474	1.	Z2= 18.7273	11.521	
208. VOLTS	LN/LN	12.836		Z0= 35.9905		
	LN/LN/GND	14.661	(9.252 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-A/C	3 PHASE:	3.665	1.	Z1= 75.7370	3.665	3.665
	SLG DUTY:	2.248	0.	Z2= 75.7370	2.248	
208. VOLTS	LN/LN	3.174		Z0= 219.9489		
	LN/LN/GND	3.375	(1.617	GND RETURN KA)		
B-B78-ATS TAP	3 PHASE:	17.234	2.	Z1= 16.1065	17.744	17.490
	SLG DUTY:	14.023	1.	Z2= 16.1065	14.131	
208. VOLTS	LN/LN	14.925		Z0= 27.9504		
	LN/LN/GND	17.325	(11.670	GND RETURN KA)		
B-B78-ATS-CRD	3 PHASE:	5.238	1.	Z1= 52.9961	5.239	5.238
	SLG DUTY:	3.349	1.	Z2= 52.9961	3.349	
208. VOLTS	LN/LN	4.536		Z0= 143.7752		
	LN/LN/GND	4.888	(2.451	GND RETURN KA)		
B-B78-ATS-E1	3 PHASE:	7.687	1.	Z1= 36.1076	7.792	7.740
	SLG DUTY:	5.386	1.	Z2= 36.1076	5.410	
208. VOLTS	LN/LN	6.657		Z0= 83.2218		
	LN/LN/GND	7.296	(4.124	GND RETURN KA)		
B-B78-ATS-LS1	3 PHASE:	13.737	2.	Z1= 20.2064	13.963	13.850
	SLG DUTY:	10.448	1.	Z2= 20.2064	10.488	
208. VOLTS	LN/LN	11.896		Z0= 40.1534		
	LN/LN/GND	13.491	(8.342	GND RETURN KA)		
B-B78-ATSG95783	PHASE:	15.343	2.	Z1= 18.0906	15.623	15.484
	SLG DUTY:	11.961	1.	Z2= 18.0906	12.009	
208. VOLTS	LN/LN	13.288		Z0= 34.3208		
	LN/LN/GND	15.233	(9.681	GND RETURN KA)		
B-B78-BARBER	3 PHASE:	3.029	0.	Z1= 91.6277	3.029	3.029
	SLG DUTY:	1.796	0.	Z2= 91.6277	1.796	
208. VOLTS	LN/LN	2.623		Z0= 280.9860		
	LN/LN/GND	2.749	(1.275	GND RETURN KA)		
B-B78-CONRM-AC	3 PHASE:	2.171	0.	Z1= 127.8296	2.171	2.171
	SLG DUTY:	1.291	0.	Z2= 127.8296	1.291	
208. VOLTS	LN/LN	1.881		Z0= 389.9942		
	LN/LN/GND	1.972	(0.918	GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-CRD	3 PHASE:	2.894		1. Z1= 95.8975	2.895	2.895
	SLG DUTY:	1.799		1. Z2= 95.8975	1.799	
208. VOLTS	LN/LN	2.507		Z0= 272.3061		
	LN/LN/GND	2.670	(	1.302 GND RETURN KA)		
B-B78-E1	3 PHASE:	7.554		1. Z1= 36.7440	7.658	7.606
	SLG DUTY:	5.285		1. Z2= 36.7440	5.309	
208. VOLTS	LN/LN	6.542		Z0= 84.9119		
	LN/LN/GND	7.165	(	4.044 GND RETURN KA)		
B-B78-ELEV-1	3 PHASE:	14.512		1. Z1= 19.1267	14.564	14.538
	SLG DUTY:	10.672		1. Z2= 19.1267	10.676	
208. VOLTS	LN/LN	12.568		Z0= 40.9862		
	LN/LN/GND	14.305	(	8.315 GND RETURN KA)		
B-B78-ELEV-2	3 PHASE:	14.512		1. Z1= 19.1267	14.564	14.538
	SLG DUTY:	10.672		1. Z2= 19.1267	10.676	
208. VOLTS	LN/LN	12.568		Z0= 40.9862		
	LN/LN/GND	14.305	(	8.315 GND RETURN KA)		
B-B78-FLPNL	3 PHASE:	4.863		1. Z1= 57.0730	4.864	4.864
	SLG DUTY:	3.057		0. Z2= 57.0730	3.057	
208. VOLTS	LN/LN	4.212		Z0= 159.3458		
	LN/LN/GND	4.519	(	2.221 GND RETURN KA)		
B-B78-KK	3 PHASE:	6.667		1. Z1= 41.6358	6.667	6.667
	SLG DUTY:	4.284		1. Z2= 41.6358	4.284	
208. VOLTS	LN/LN	5.774		Z0= 112.2184		
	LN/LN/GND	6.252	(	3.139 GND RETURN KA)		
B-B78-L10	3 PHASE:	6.528		1. Z1= 42.5183	6.574	6.551
	SLG DUTY:	4.448		1. Z2= 42.5183	4.457	
208. VOLTS	LN/LN	5.654		Z0= 103.1479		
	LN/LN/GND	6.163	(	3.357 GND RETURN KA)		
B-B78-LP-1	3 PHASE:	6.208		1. Z1= 44.7150	6.212	6.210
	SLG DUTY:	4.065		1. Z2= 44.7150	4.066	
208. VOLTS	LN/LN	5.376		Z0= 116.5422		
	LN/LN/GND	5.832	(	3.007 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-LP-13	3 PHASE:	6.025		1. Z1= 46.0685	6.064	6.045
	SLG DUTY:	4.076		1. Z2= 46.0685	4.083	
208. VOLTS	LN/LN	5.218		Z0= 113.1774		
	LN/LN/GND	5.674	(	3.065 GND RETURN KA)		
B-B78-LP-14	3 PHASE:	5.594		1. Z1= 49.6209	5.628	5.611
	SLG DUTY:	3.761		1. Z2= 49.6209	3.767	
208. VOLTS	LN/LN	4.844		Z0= 123.2071		
	LN/LN/GND	5.257	(	2.820 GND RETURN KA)		
B-B78-LP-15	3 PHASE:	5.220		1. Z1= 53.1751	5.250	5.235
	SLG DUTY:	3.491		1. Z2= 53.1751	3.497	
208. VOLTS	LN/LN	4.521		Z0= 133.2368		
	LN/LN/GND	4.898	(	2.611 GND RETURN KA)		
B-B78-LP-2	3 PHASE:	10.837		1. Z1= 25.6124	10.865	10.851
	SLG DUTY:	7.594		1. Z2= 25.6124	7.597	
208. VOLTS	LN/LN	9.385		Z0= 59.5411		
	LN/LN/GND	10.446	(	5.789 GND RETURN KA)		
B-B78-LP-4	3 PHASE:	3.683		1. Z1= 75.3632	3.683	3.683
	SLG DUTY:	2.299		1. Z2= 75.3632	2.299	
208. VOLTS	LN/LN	3.190		Z0= 212.6663		
	LN/LN/GND	3.407	(	1.666 GND RETURN KA)		
B-B78-LP-8	3 PHASE:	12.443		1. Z1= 22.3081	12.611	12.527
	SLG DUTY:	9.253		1. Z2= 22.3081	9.282	
208. VOLTS	LN/LN	10.776		Z0= 46.2644		
	LN/LN/GND	12.123	(	7.296 GND RETURN KA)		
B-B78-LP10	3 PHASE:	5.797		1. Z1= 47.8810	5.829	5.813
	SLG DUTY:	3.900		1. Z2= 47.8810	3.906	
208. VOLTS	LN/LN	5.020		Z0= 118.7635		
	LN/LN/GND	5.453	(	2.925 GND RETURN KA)		
B-B78-LP13	3 PHASE:	5.320		1. Z1= 52.1754	5.350	5.335
	SLG DUTY:	3.562		1. Z2= 52.1754	3.568	
208. VOLTS	LN/LN	4.607		Z0= 130.4678		
	LN/LN/GND	4.993	(	2.666 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-LP3	3 PHASE:	10.837	1.	Z1= 25.6124	10.865	10.851
	SLG DUTY:	7.594	1.	Z2= 25.6124	7.597	
208. VOLTS	LN/LN	9.385		Z0= 59.5411		
	LN/LN/GND	10.446	(5.789 GND RETURN KA)			
B-B78-LP6	3 PHASE:	9.030	1.	Z1= 30.7396	9.050	9.040
	SLG DUTY:	6.186	1.	Z2= 30.7396	6.188	
208. VOLTS	LN/LN	7.820		Z0= 74.2251		
	LN/LN/GND	8.617	(4.669 GND RETURN KA)			
B-B78-LP7	3 PHASE:	6.368	1.	Z1= 43.5871	6.402	6.385
	SLG DUTY:	4.309	1.	Z2= 43.5871	4.315	
208. VOLTS	LN/LN	5.515		Z0= 107.0731		
	LN/LN/GND	6.006	(3.240 GND RETURN KA)			
B-B78-LSD	3 PHASE:	13.159	1.	Z1= 21.0938	13.349	13.254
	SLG DUTY:	9.895	1.	Z2= 21.0938	9.928	
208. VOLTS	LN/LN	11.396		Z0= 42.8498		
	LN/LN/GND	12.878	(7.849 GND RETURN KA)			
B-B78-MDP	3 PHASE:	35.514	5.	Z1= 7.8159	43.547	39.638
	SLG DUTY:	44.251	4.	Z2= 7.8159	52.630	
208. VOLTS	LN/LN	30.756		Z0= 3.2259		
	LN/LN/GND	44.087	(58.578 GND RETURN KA)			
B-B78-MDP-M	3 PHASE:	35.541	5.	Z1= 7.8100	43.620	39.689
	SLG DUTY:	44.359	4.	Z2= 7.8100	52.899	
208. VOLTS	LN/LN	30.779		Z0= 3.1873		
	LN/LN/GND	44.122	(58.898 GND RETURN KA)			
B-B78-MEC-1 AC	3 PHASE:	7.166	1.	Z1= 38.7320	7.258	7.212
	SLG DUTY:	4.982	1.	Z2= 38.7320	5.004	
208. VOLTS	LN/LN	6.206		Z0= 90.5195		
	LN/LN/GND	6.785	(3.800 GND RETURN KA)			
B-B78-MEC2-A/C	3 PHASE:	16.154	1.	Z1= 17.1827	16.370	16.262
	SLG DUTY:	12.605	1.	Z2= 17.1827	12.633	
208. VOLTS	LN/LN	13.990		Z0= 32.7030		
	LN/LN/GND	16.136	(10.183 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-PHARM AC	3 PHASE:	3.029	0.	Z1= 91.6277	3.029	3.029
	SLG DUTY:	1.796	0.	Z2= 91.6277	1.796	
208. VOLTS	LN/LN	2.623		Z0= 280.9860		
	LN/LN/GND	2.749	(1.275 GND RETURN KA)			
B-B78-PHV	3 PHASE:	2.784	0.	Z1= 99.6916	2.784	2.784
	SLG DUTY:	1.671	0.	Z2= 99.6916	1.671	
208. VOLTS	LN/LN	2.411		Z0= 299.7025		
	LN/LN/GND	2.541	(1.192 GND RETURN KA)			
B-B78-PK	3 PHASE:	5.716	1.	Z1= 48.5586	5.720	5.718
	SLG DUTY:	3.719	1.	Z2= 48.5586	3.719	
208. VOLTS	LN/LN	4.950		Z0= 127.9443		
	LN/LN/GND	5.357	(2.743 GND RETURN KA)			
B-B78-PNL-330A	3 PHASE:	10.175	1.	Z1= 27.2805	10.221	10.198
	SLG DUTY:	7.165	1.	Z2= 27.2805	7.170	
208. VOLTS	LN/LN	8.812		Z0= 62.6965		
	LN/LN/GND	9.781	(5.483 GND RETURN KA)			
B-B78-PULM 78B	3 PHASE:	17.234	2.	Z1= 16.1065	17.744	17.490
	SLG DUTY:	14.023	1.	Z2= 16.1065	14.131	
208. VOLTS	LN/LN	14.925		Z0= 27.9504		
	LN/LN/GND	17.325	(11.670 GND RETURN KA)			
B-B78-QP	3 PHASE:	11.423	1.	Z1= 24.3005	11.425	11.424
	SLG DUTY:	7.724	1.	Z2= 24.3005	7.724	
208. VOLTS	LN/LN	9.892		Z0= 60.4661		
	LN/LN/GND	10.981	(5.771 GND RETURN KA)			
B-B78A-PNL-2	3 PHASE:	14.512	1.	Z1= 19.1267	14.564	14.538
	SLG DUTY:	10.672	1.	Z2= 19.1267	10.676	
208. VOLTS	LN/LN	12.568		Z0= 40.9862		
	LN/LN/GND	14.305	(8.315 GND RETURN KA)			
B-B8 2ND FLR	3 PHASE:	12.341	2.	Z1= 22.4928	13.133	12.740
	SLG DUTY:	10.282	2.	Z2= 22.4928	10.725	
208. VOLTS	LN/LN	10.687		Z0= 36.1469		
	LN/LN/GND	11.925	(8.797 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B8 HYDRO ELV	3 PHASE:	3.727	1.	Z1= 32.2744	3.727	3.727
	SLG DUTY:	2.558	1.	Z2= 32.2744	2.558	
480. VOLTS	LN/LN	3.228		Z0= 77.8337		
	LN/LN/GND	3.569	(1.930 GND RETURN KA)			
B-B8-208V-MAIN	3 PHASE:	17.851	3.	Z1= 15.5493	19.661	18.767
	SLG DUTY:	17.063	3.	Z2= 15.5493	18.639	
208. VOLTS	LN/LN	15.460		Z0= 17.7107		
	LN/LN/GND	17.675	(16.340 GND RETURN KA)			
B-B8-480V ATS	3 PHASE:	7.912	3.	Z1= 15.2025	8.628	8.274
	SLG DUTY:	7.628	2.	Z2= 15.2025	8.216	
480. VOLTS	LN/LN	6.852		Z0= 16.9255		
	LN/LN/GND	7.921	(7.359 GND RETURN KA)			
B-B8-480V PNL	3 PHASE:	7.780	3.	Z1= 15.4599	8.461	8.124
	SLG DUTY:	7.439	2.	Z2= 15.4599	7.978	
480. VOLTS	LN/LN	6.738		Z0= 17.6182		
	LN/LN/GND	7.781	(7.122 GND RETURN KA)			
B-B8-ATS	3 PHASE:	14.184	2.	Z1= 19.5688	15.020	14.605
	SLG DUTY:	12.294	2.	Z2= 19.5688	12.758	
208. VOLTS	LN/LN	12.284		Z0= 28.7557		
	LN/LN/GND	13.927	(10.823 GND RETURN KA)			
B-B8-BS	3 PHASE:	3.527	0.	Z1= 78.7020	3.527	3.527
	SLG DUTY:	2.195	0.	Z2= 78.7020	2.195	
208. VOLTS	LN/LN	3.054		Z0= 223.0648		
	LN/LN/GND	3.256	(1.589 GND RETURN KA)			
B-B8-CMOP	3 PHASE:	4.207	1.	Z1= 65.9853	4.268	4.237
	SLG DUTY:	4.129	1.	Z2= 65.9853	4.159	
208. VOLTS	LN/LN	3.643		Z0= 70.7522		
	LN/LN/GND	4.414	(4.033 GND RETURN KA)			
B-B8-COMP	3 PHASE:	2.351	0.	Z1= 51.1575	2.351	2.351
	SLG DUTY:	1.478	0.	Z2= 51.1575	1.478	
480. VOLTS	LN/LN	2.036		Z0= 142.9084		
	LN/LN/GND	2.186	(1.073 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B8-ELEV	3 PHASE:	4.165	2.	Z1= 66.6408	4.264	4.215
	SLG DUTY:	4.112	2.	Z2= 66.6408	4.180	
208. VOLTS	LN/LN	3.607		Z0= 69.5710		
	LN/LN/GND	4.277	(	4.053 GND RETURN KA)		
B-B8-FDR	3 PHASE:	4.662	2.	Z1= 59.5373	4.787	4.725
	SLG DUTY:	4.924	2.	Z2= 59.5373	5.030	
208. VOLTS	LN/LN	4.038		Z0= 50.1634		
	LN/LN/GND	4.922	(	5.213 GND RETURN KA)		
B-B8-FLEXPMACH	3 PHASE:	3.053	0.	Z1= 39.3915	3.053	3.053
	SLG DUTY:	1.984	0.	Z2= 39.3915	1.984	
480. VOLTS	LN/LN	2.644		Z0= 104.2895		
	LN/LN/GND	2.877	(	1.460 GND RETURN KA)		
B-B8-GE BKR	3 PHASE:	8.020	3.	Z1= 14.9969	8.768	8.398
	SLG DUTY:	7.785	3.	Z2= 14.9969	8.417	
480. VOLTS	LN/LN	6.946		Z0= 16.3741		
	LN/LN/GND	8.035	(	7.560 GND RETURN KA)		
B-B8-J-BOX	3 PHASE:	4.351	2.	Z1= 63.7979	4.458	4.405
	SLG DUTY:	4.403	2.	Z2= 63.7979	4.483	
208. VOLTS	LN/LN	3.768		Z0= 61.7924		
	LN/LN/GND	4.511	(	4.450 GND RETURN KA)		
B-B8-L8B	3 PHASE:	5.802	1.	Z1= 47.8401	5.802	5.802
	SLG DUTY:	3.786	0.	Z2= 47.8401	3.786	
208. VOLTS	LN/LN	5.025		Z0= 125.4476		
	LN/LN/GND	5.448	(	2.796 GND RETURN KA)		
B-B8-LB1	3 PHASE:	7.109	1.	Z1= 39.0447	7.150	7.130
	SLG DUTY:	5.059	1.	Z2= 39.0447	5.067	
208. VOLTS	LN/LN	6.157		Z0= 87.3937		
	LN/LN/GND	6.766	(	3.907 GND RETURN KA)		
B-B8-LB2	3 PHASE:	6.642	1.	Z1= 41.7887	6.675	6.659
	SLG DUTY:	4.674	1.	Z2= 41.7887	4.680	
208. VOLTS	LN/LN	5.752		Z0= 95.5092		
	LN/LN/GND	6.304	(	3.588 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B8-MAIN BUS	3 PHASE:	17.406	3.	Z1= 15.9471	19.138	18.283
	SLG DUTY:	16.450	3.	Z2= 15.9471	17.912	
208. VOLTS	LN/LN	15.074		Z0= 18.7383		
	LN/LN/GND	17.187	(15.590 GND RETURN KA)			
B-B8-MDP-8	3 PHASE:	17.101	3.	Z1= 16.2314	18.782	17.951
	SLG DUTY:	16.038	3.	Z2= 16.2314	17.427	
208. VOLTS	LN/LN	14.810		Z0= 19.4733		
	LN/LN/GND	16.855	(15.095 GND RETURN KA)			
B-B8-PNL-PK	3 PHASE:	13.155	2.	Z1= 21.1000	13.531	13.344
	SLG DUTY:	10.948	1.	Z2= 21.1000	11.085	
208. VOLTS	LN/LN	11.393		Z0= 34.2900		
	LN/LN/GND	12.991	(9.323 GND RETURN KA)			
B-B8-PP1	3 PHASE:	16.134	2.	Z1= 17.2038	17.305	16.725
	SLG DUTY:	14.661	2.	Z2= 17.2038	15.424	
208. VOLTS	LN/LN	13.973		Z0= 22.4816		
	LN/LN/GND	15.995	(13.413 GND RETURN KA)			
B-B8-PP1-M	3 PHASE:	16.185	2.	Z1= 17.1497	17.374	16.785
	SLG DUTY:	14.770	2.	Z2= 17.1497	15.561	
208. VOLTS	LN/LN	14.017		Z0= 22.1635		
	LN/LN/GND	16.051	(13.562 GND RETURN KA)			
B-B8-SYLV	3 PHASE:	14.882	2.	Z1= 18.6519	15.990	15.441
	SLG DUTY:	13.171	2.	Z2= 18.6519	13.886	
208. VOLTS	LN/LN	12.888		Z0= 26.0049		
	LN/LN/GND	14.586	(11.797 GND RETURN KA)			
B-B8-TXMR PRI	3 PHASE:	7.680	3.	Z1= 15.6608	8.299	7.993
	SLG DUTY:	7.291	2.	Z2= 15.6608	7.750	
480. VOLTS	LN/LN	6.651		Z0= 18.2232		
	LN/LN/GND	7.699	(6.931 GND RETURN KA)			
B-B8-TXMR SEC	3 PHASE:	4.957	2.	Z1= 55.9911	5.099	5.029
	SLG DUTY:	5.461	2.	Z2= 55.9911	5.601	
208. VOLTS	LN/LN	4.293		Z0= 40.5339		
	LN/LN/GND	5.337	(6.078 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B80-ATS-EQ	3 PHASE:	6.831	1.	Z1= 40.6360	6.841	6.836
	SLG DUTY:	5.175	1.	Z2= 40.6360	5.176	
208. VOLTS	LN/LN	5.916		Z0= 81.3127		
	LN/LN/GND	6.694	(	4.124 GND RETURN KA)		
B-B80-E1	3 PHASE:	5.881	1.	Z1= 47.1946	5.885	5.883
	SLG DUTY:	4.250	1.	Z2= 47.1946	4.251	
208. VOLTS	LN/LN	5.093		Z0= 103.3341		
	LN/LN/GND	5.687	(	3.298 GND RETURN KA)		
B-B80-L1-1	3 PHASE:	2.978	0.	Z1= 93.1927	2.978	2.978
	SLG DUTY:	1.875	0.	Z2= 93.1927	1.875	
208. VOLTS	LN/LN	2.579		Z0= 259.4004		
	LN/LN/GND	2.761	(	1.363 GND RETURN KA)		
B-B80-L1-3	3 PHASE:	3.410	0.	Z1= 81.4083	3.410	3.410
	SLG DUTY:	2.165	0.	Z2= 81.4083	2.165	
208. VOLTS	LN/LN	2.953		Z0= 223.3901		
	LN/LN/GND	3.174	(	1.580 GND RETURN KA)		
B-B80-LB-1	3 PHASE:	7.770	1.	Z1= 35.7235	7.821	7.796
	SLG DUTY:	6.275	1.	Z2= 35.7235	6.285	
208. VOLTS	LN/LN	6.729		Z0= 62.4317		
	LN/LN/GND	7.700	(	5.217 GND RETURN KA)		
B-B80-LB-E	3 PHASE:	3.959	1.	Z1= 70.1101	3.959	3.959
	SLG DUTY:	2.633	0.	Z2= 70.1101	2.633	
208. VOLTS	LN/LN	3.429		Z0= 177.8439		
	LN/LN/GND	3.732	(	1.962 GND RETURN KA)		
B-B80-MDP	3 PHASE:	11.016	2.	Z1= 25.1982	11.628	11.324
	SLG DUTY:	10.647	2.	Z2= 25.1982	11.149	
208. VOLTS	LN/LN	9.540		Z0= 27.8498		
	LN/LN/GND	11.031	(	10.298 GND RETURN KA)		
B-B80-MDP-M	3 PHASE:	11.701	2.	Z1= 23.7220	12.460	12.084
	SLG DUTY:	11.681	2.	Z2= 23.7220	12.416	
208. VOLTS	LN/LN	10.133		Z0= 23.8434		
	LN/LN/GND	11.735	(	11.661 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B80-P1	3 PHASE:	8.087	1.	Z1= 34.3216	8.154	8.121
	SLG DUTY:	6.643	1.	Z2= 34.3216	6.658	
208. VOLTS	LN/LN	7.004		Z0= 57.7823		
	LN/LN/GND	8.045	(	5.589 GND RETURN KA)		
B-B80-P5	3 PHASE:	1.698	0.	Z1= 163.4795	1.698	1.698
	SLG DUTY:	1.030	0.	Z2= 163.4795	1.030	
208. VOLTS	LN/LN	1.470		Z0= 483.0396		
	LN/LN/GND	1.550	(	0.738 GND RETURN KA)		
B-B80-PB-1	3 PHASE:	3.067	0.	Z1= 90.5108	3.067	3.067
	SLG DUTY:	1.926	0.	Z2= 90.5108	1.926	
208. VOLTS	LN/LN	2.656		Z0= 252.8602		
	LN/LN/GND	2.843	(	1.399 GND RETURN KA)		
B-B80-PB-2	3 PHASE:	4.564	1.	Z1= 60.8146	4.565	4.564
	SLG DUTY:	3.111	1.	Z2= 60.8146	3.111	
208. VOLTS	LN/LN	3.953		Z0= 147.9281		
	LN/LN/GND	4.336	(	2.344 GND RETURN KA)		
B-B81-MDP	3 PHASE:	4.266	2.	Z1= 65.0645	4.381	4.324
	SLG DUTY:	4.438	2.	Z2= 65.0645	4.554	
208. VOLTS	LN/LN	3.695		Z0= 57.5109		
	LN/LN/GND	4.372	(	4.624 GND RETURN KA)		
B-B81-MDP-M	3 PHASE:	4.272	2.	Z1= 64.9707	4.388	4.330
	SLG DUTY:	4.455	2.	Z2= 64.9707	4.573	
208. VOLTS	LN/LN	3.700		Z0= 56.9875		
	LN/LN/GND	4.381	(	4.654 GND RETURN KA)		
B-B82-ATS-EMER	3 PHASE:	6.553	2.	Z1= 42.3582	6.869	6.712
	SLG DUTY:	6.414	2.	Z2= 42.3582	6.635	
208. VOLTS	LN/LN	5.675		Z0= 45.3369		
	LN/LN/GND	6.713	(	6.270 GND RETURN KA)		
B-B82-EMER	3 PHASE:	6.289	2.	Z1= 44.1334	6.551	6.421
	SLG DUTY:	6.003	2.	Z2= 44.1334	6.162	
208. VOLTS	LN/LN	5.447		Z0= 50.8302		
	LN/LN/GND	6.421	(	5.726 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B82-EMERG-M	3 PHASE:	6.303	2.	Z1= 44.0410	6.566	6.435
	SLG DUTY:	6.034	2.	Z2= 44.0410	6.196	
208. VOLTS	LN/LN	5.458		Z0= 50.2948		
	LN/LN/GND	6.440	(5.772 GND RETURN KA)			
B-B82-MDP	3 PHASE:	7.109	2.	Z1= 39.0445	7.580	7.346
	SLG DUTY:	7.309	2.	Z2= 39.0445	7.757	
208. VOLTS	LN/LN	6.157		Z0= 35.8554		
	LN/LN/GND	7.284	(7.520 GND RETURN KA)			
B-B82-MDP-M	3 PHASE:	7.119	2.	Z1= 38.9901	7.593	7.358
	SLG DUTY:	7.336	2.	Z2= 38.9901	7.792	
208. VOLTS	LN/LN	6.165		Z0= 35.5476		
	LN/LN/GND	7.296	(7.565 GND RETURN KA)			
B-B9-*PNLXX	3 PHASE:	8.246	1.	Z1= 33.6632	8.252	8.249
	SLG DUTY:	6.504	1.	Z2= 33.6632	6.506	
208. VOLTS	LN/LN	7.141		Z0= 60.9330		
	LN/LN/GND	7.859	(5.361 GND RETURN KA)			
B-B9-*PNLYY	3 PHASE:	7.403	1.	Z1= 37.4930	7.405	7.404
	SLG DUTY:	5.774	1.	Z2= 37.4930	5.775	
208. VOLTS	LN/LN	6.411		Z0= 69.4610		
	LN/LN/GND	7.027	(4.725 GND RETURN KA)			
B-B9-*PNLZZ	3 PHASE:	11.439	2.	Z1= 24.2651	11.946	11.694
	SLG DUTY:	9.590	2.	Z2= 24.2651	9.924	
208. VOLTS	LN/LN	9.907		Z0= 38.3544		
	LN/LN/GND	10.931	(8.251 GND RETURN KA)			
B-B9-ATS BKR	3 PHASE:	13.628	2.	Z1= 20.3672	14.562	14.099
	SLG DUTY:	12.205	2.	Z2= 20.3672	12.786	
208. VOLTS	LN/LN	11.803		Z0= 27.6139		
	LN/LN/GND	13.467	(11.032 GND RETURN KA)			
B-B9-EM	3 PHASE:	13.225	2.	Z1= 20.9892	14.043	13.637
	SLG DUTY:	11.692	2.	Z2= 20.9892	12.167	
208. VOLTS	LN/LN	11.453		Z0= 29.4037		
	LN/LN/GND	13.059	(10.454 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B9-L91A	3 PHASE:	3.692	1.	Z1= 75.1754	3.693	3.693
	SLG DUTY:	2.390	1.	Z2= 75.1754	2.390	
208. VOLTS	LN/LN	3.198		Z0= 199.4456		
	LN/LN/GND	3.443	(	1.760 GND RETURN KA)		
B-B9-L91A-M	3 PHASE:	3.698	1.	Z1= 75.0520	3.699	3.699
	SLG DUTY:	2.397	1.	Z2= 75.0520	2.397	
208. VOLTS	LN/LN	3.203		Z0= 198.7444		
	LN/LN/GND	3.450	(	1.766 GND RETURN KA)		
B-B9-L92	3 PHASE:	4.823	1.	Z1= 57.5541	4.823	4.823
	SLG DUTY:	3.622	0.	Z2= 57.5541	3.622	
208. VOLTS	LN/LN	4.177		Z0= 114.9092		
	LN/LN/GND	4.482	(	2.898 GND RETURN KA)		
B-B9-L9A	3 PHASE:	6.862	1.	Z1= 40.4503	6.867	6.865
	SLG DUTY:	5.241	1.	Z2= 40.4503	5.243	
208. VOLTS	LN/LN	5.943		Z0= 78.0844		
	LN/LN/GND	6.420	(	4.237 GND RETURN KA)		
B-B9-L9B	3 PHASE:	11.306	1.	Z1= 24.5504	11.452	11.379
	SLG DUTY:	9.504	1.	Z2= 24.5504	9.573	
208. VOLTS	LN/LN	9.791		Z0= 38.7126		
	LN/LN/GND	10.990	(	8.179 GND RETURN KA)		
B-B9-LPN	3 PHASE:	2.601	1.	Z1= 106.6974	2.602	2.601
	SLG DUTY:	1.626	0.	Z2= 106.6974	1.626	
208. VOLTS	LN/LN	2.253		Z0= 299.9341		
	LN/LN/GND	2.396	(	1.180 GND RETURN KA)		
B-B9-LPS	3 PHASE:	5.763	1.	Z1= 48.1684	5.763	5.763
	SLG DUTY:	3.897	1.	Z2= 48.1684	3.897	
208. VOLTS	LN/LN	4.990		Z0= 118.4834		
	LN/LN/GND	5.436	(	2.929 GND RETURN KA)		
B-B9-MAIN	3 PHASE:	15.875	3.	Z1= 17.4849	17.253	16.572
	SLG DUTY:	15.198	2.	Z2= 17.4849	16.283	
208. VOLTS	LN/LN	13.748		Z0= 19.8607		
	LN/LN/GND	15.898	(	14.566 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B9-MDP	3 PHASE:	14.816	3.	Z1= 18.7353	15.988	15.407
	SLG DUTY:	13.744	2.	Z2= 18.7353	14.575	
208. VOLTS	LN/LN	12.831		Z0= 23.1865		
	LN/LN/GND	14.734	(12.802 GND RETURN KA)			
B-B9-STRT LGHT	3 PHASE:	5.814	1.	Z1= 47.7404	5.814	5.814
	SLG DUTY:	3.778	0.	Z2= 47.7404	3.778	
208. VOLTS	LN/LN	5.035		Z0= 126.2842		
	LN/LN/GND	5.469	(2.782 GND RETURN KA)			
B-B9-TAP	3 PHASE:	12.339	2.	Z1= 22.4960	12.615	12.477
	SLG DUTY:	10.656	1.	Z2= 22.4960	10.799	
208. VOLTS	LN/LN	10.686		Z0= 33.3317		
	LN/LN/GND	12.095	(9.356 GND RETURN KA)			
B-B92-ATS	3 PHASE:	3.699	1.	Z1= 75.0309	3.709	3.704
	SLG DUTY:	2.652	1.	Z2= 75.0309	2.653	
208. VOLTS	LN/LN	3.204		Z0= 167.7536		
	LN/LN/GND	3.600	(2.043 GND RETURN KA)			
B-B92-PNL-E1	3 PHASE:	3.502	1.	Z1= 79.2530	3.509	3.506
	SLG DUTY:	2.472	1.	Z2= 79.2530	2.472	
208. VOLTS	LN/LN	3.033		Z0= 182.2937		
	LN/LN/GND	3.393	(1.889 GND RETURN KA)			
B-B94-ATS	3 PHASE:	5.269	1.	Z1= 52.6824	5.273	5.271
	SLG DUTY:	3.524	1.	Z2= 52.6824	3.525	
208. VOLTS	LN/LN	4.563		Z0= 132.0610		
	LN/LN/GND	4.954	(2.636 GND RETURN KA)			
B-B94-E1	3 PHASE:	4.506	1.	Z1= 61.6001	4.507	4.507
	SLG DUTY:	2.942	1.	Z2= 61.6001	2.942	
208. VOLTS	LN/LN	3.902		Z0= 161.0885		
	LN/LN/GND	4.212	(2.175 GND RETURN KA)			
B-SW-MV-1	3 PHASE:	2.419	2.	Z1= 1.7294	2.534	2.477
	SLG DUTY:	1.492	2.	Z2= 1.7294	1.582	
13800. VOLTS	LN/LN	2.095		Z0= 4.9549		
	LN/LN/GND	2.139	(1.079 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-SW-MV-2	3 PHASE:	2.510	2.	Z1= 1.6671	2.668	2.590
	SLG DUTY:	1.537	2.	Z2= 1.6671	1.650	
13800. VOLTS	LN/LN	2.173		Z0= 4.8351		
	LN/LN/GND	2.226	(	1.107 GND RETURN KA)		
B-SWGR27 TAP	3 PHASE:	2.700	3.	Z1= 1.5496	3.014	2.859
	SLG DUTY:	1.630	3.	Z2= 1.5496	1.815	
13800. VOLTS	LN/LN	2.338		Z0= 4.5990		
	LN/LN/GND	2.414	(	1.168 GND RETURN KA)		
B-T-13-PRI	3 PHASE:	2.490	2.	Z1= 1.6805	2.637	2.564
	SLG DUTY:	1.566	3.	Z2= 1.6805	1.694	
13800. VOLTS	LN/LN	2.156		Z0= 4.6606		
	LN/LN/GND	2.194	(	1.141 GND RETURN KA)		
B-T-B1-PRI	3 PHASE:	2.610	3.	Z1= 1.6032	2.837	2.724
	SLG DUTY:	1.586	3.	Z2= 1.6032	1.732	
13800. VOLTS	LN/LN	2.260		Z0= 4.7088		
	LN/LN/GND	2.324	(	1.139 GND RETURN KA)		
B-T-B1-SEC	3 PHASE:	4.946	2.	Z1= 56.1252	5.128	5.037
	SLG DUTY:	5.483	2.	Z2= 56.1252	5.762	
208. VOLTS	LN/LN	4.283		Z0= 39.9994		
	LN/LN/GND	5.030	(	6.136 GND RETURN KA)		
B-T-B10-PRI	3 PHASE:	2.537	2.	Z1= 1.6493	2.711	2.625
	SLG DUTY:	1.580	3.	Z2= 1.6493	1.720	
13800. VOLTS	LN/LN	2.197		Z0= 4.6466		
	LN/LN/GND	2.242	(	1.147 GND RETURN KA)		
B-T-B10-SEC	3 PHASE:	6.153	2.	Z1= 45.1094	6.380	6.267
	SLG DUTY:	6.412	2.	Z2= 45.1094	6.756	
208. VOLTS	LN/LN	5.329		Z0= 39.9994		
	LN/LN/GND	5.993	(	6.676 GND RETURN KA)		
B-T-B12-PRI	3 PHASE:	2.463	2.	Z1= 1.6986	2.597	2.531
	SLG DUTY:	1.552	2.	Z2= 1.6986	1.672	
13800. VOLTS	LN/LN	2.133		Z0= 4.6945		
	LN/LN/GND	2.168	(	1.132 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B12-SEC	3 PHASE:	4.724	2.	Z1= 58.7635	4.896	4.810
	SLG DUTY:	5.299	2.	Z2= 58.7635	5.563	
208. VOLTS	LN/LN	4.091		Z0= 39.9994		
	LN/LN/GND	4.849	(6.020 GND RETURN KA)			
B-T-B17-PRI	3 PHASE:	2.393	2.	Z1= 1.7480	2.498	2.446
	SLG DUTY:	1.480	2.	Z2= 1.7480	1.564	
13800. VOLTS	LN/LN	2.073		Z0= 4.9902		
	LN/LN/GND	2.114	(1.070 GND RETURN KA)			
B-T-B17-SEC	3 PHASE:	12.386	2.	Z1= 22.4100	13.310	12.853
	SLG DUTY:	12.852	3.	Z2= 22.4100	13.956	
208. VOLTS	LN/LN	10.727		Z0= 19.9997		
	LN/LN/GND	12.396	(13.349 GND RETURN KA)			
B-T-B18-PRI	3 PHASE:	2.385	2.	Z1= 1.7543	2.486	2.436
	SLG DUTY:	1.475	2.	Z2= 1.7543	1.558	
13800. VOLTS	LN/LN	2.065		Z0= 5.0021		
	LN/LN/GND	2.106	(1.068 GND RETURN KA)			
B-T-B18-SEC	3 PHASE:	11.821	2.	Z1= 23.4820	12.703	12.266
	SLG DUTY:	12.441	3.	Z2= 23.4820	13.504	
208. VOLTS	LN/LN	10.237		Z0= 19.9997		
	LN/LN/GND	11.931	(13.124 GND RETURN KA)			
B-T-B19-PRI	3 PHASE:	2.607	3.	Z1= 1.6046	2.832	2.721
	SLG DUTY:	1.585	3.	Z2= 1.6046	1.730	
13800. VOLTS	LN/LN	2.258		Z0= 4.7116		
	LN/LN/GND	2.322	(1.138 GND RETURN KA)			
B-T-B19-SEC	3 PHASE:	22.577	4.	Z1= 12.2945	26.465	24.561
	SLG DUTY:	27.231	4.	Z2= 12.2945	31.582	
208. VOLTS	LN/LN	19.552		Z0= 5.9999		
	LN/LN/GND	26.391	(34.292 GND RETURN KA)			
B-T-B2-LED-PRI	3 PHASE:	7.916	1.	Z1= 15.1956	7.983	7.949
	SLG DUTY:	6.360	1.	Z2= 15.1956	6.365	
480. VOLTS	LN/LN	6.855		Z0= 27.5094		
	LN/LN/GND	8.054	(5.210 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B2-LED-SEC3	3 PHASE:	3.448	1.	Z1= 80.5081	3.493	3.471
	SLG DUTY:	3.679	1.	Z2= 80.5081	3.729	
208. VOLTS	LN/LN	2.986		Z0= 65.3330		
	LN/LN/GND	3.567	(3.943 GND RETURN KA)			
B-T-B2-PRI	3 PHASE:	2.628	3.	Z1= 1.5920	2.871	2.751
	SLG DUTY:	1.595	3.	Z2= 1.5920	1.748	
13800. VOLTS	LN/LN	2.276		Z0= 4.6861		
	LN/LN/GND	2.342	(1.145 GND RETURN KA)			
B-T-B2-SEC2	3 PHASE:	7.660	5.	Z1= 36.2349	9.711	8.718
	SLG DUTY:	7.773	5.	Z2= 36.2349	9.883	
208. VOLTS	LN/LN	6.634		Z0= 34.6665		
	LN/LN/GND	7.701	(7.888 GND RETURN KA)			
B-T-B2-SEC3	3 PHASE:	13.524	3.	Z1= 20.5244	15.070	14.308
	SLG DUTY:	16.312	3.	Z2= 20.5244	18.184	
208. VOLTS	LN/LN	11.712		Z0= 9.9999		
	LN/LN/GND	15.570	(20.549 GND RETURN KA)			
B-T-B2-SEC4	3 PHASE:	11.749	5.	Z1= 10.2377	14.552	13.190
	SLG DUTY:	12.383	5.	Z2= 10.2377	15.482	
480. VOLTS	LN/LN	10.175		Z0= 8.6666		
	LN/LN/GND	12.003	(13.089 GND RETURN KA)			
B-T-B22-PRI	3 PHASE:	2.644	3.	Z1= 1.5822	2.901	2.774
	SLG DUTY:	1.603	3.	Z2= 1.5822	1.763	
13800. VOLTS	LN/LN	2.290		Z0= 4.6663		
	LN/LN/GND	2.358	(1.150 GND RETURN KA)			
B-T-B22-SEC	3 PHASE:	8.713	3.	Z1= 13.8041	9.707	9.217
	SLG DUTY:	8.814	3.	Z2= 13.8041	9.825	
480. VOLTS	LN/LN	7.546		Z0= 13.3331		
	LN/LN/GND	8.757	(8.916 GND RETURN KA)			
B-T-B3-PRI	3 PHASE:	2.582	3.	Z1= 1.6203	2.788	2.686
	SLG DUTY:	1.594	3.	Z2= 1.6203	1.745	
13800. VOLTS	LN/LN	2.236		Z0= 4.6332		
	LN/LN/GND	2.289	(1.153 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B3-SEC	3 PHASE:	19.075	3.	Z1= 14.5515	21.206	20.155
	SLG DUTY:	21.296	3.	Z2= 14.5515	23.699	
208. VOLTS	LN/LN	16.520		Z0= 9.9999		
	LN/LN/GND	20.413	(24.101 GND RETURN KA)			
B-T-B30-PRI	3 PHASE:	2.507	2.	Z1= 1.6685	2.665	2.587
	SLG DUTY:	1.536	2.	Z2= 1.6685	1.648	
13800. VOLTS	LN/LN	2.172		Z0= 4.8379		
	LN/LN/GND	2.224	(1.106 GND RETURN KA)			
B-T-B30-SEC	3 PHASE:	4.939	2.	Z1= 56.1973	5.120	5.030
	SLG DUTY:	5.478	2.	Z2= 56.1973	5.755	
208. VOLTS	LN/LN	4.278		Z0= 39.9994		
	LN/LN/GND	5.023	(6.133 GND RETURN KA)			
B-T-B33-PRI	3 PHASE:	2.672	3.	Z1= 1.5658	2.956	2.816
	SLG DUTY:	1.617	3.	Z2= 1.5658	1.788	
13800. VOLTS	LN/LN	2.314		Z0= 4.6326		
	LN/LN/GND	2.386	(1.159 GND RETURN KA)			
B-T-B33-SEC	3 PHASE:	6.278	2.	Z1= 44.2153	6.513	6.396
	SLG DUTY:	6.501	2.	Z2= 44.2153	6.855	
208. VOLTS	LN/LN	5.437		Z0= 39.9994		
	LN/LN/GND	6.096	(6.723 GND RETURN KA)			
B-T-B4-PRI	3 PHASE:	2.537	2.	Z1= 1.6493	2.711	2.625
	SLG DUTY:	1.550	3.	Z2= 1.6493	1.671	
13800. VOLTS	LN/LN	2.197		Z0= 4.8004		
	LN/LN/GND	2.252	(1.116 GND RETURN KA)			
B-T-B4-SEC	3 PHASE:	27.392	4.	Z1= 10.1332	31.850	29.665
	SLG DUTY:	31.710	3.	Z2= 10.1332	36.497	
208. VOLTS	LN/LN	23.723		Z0= 5.9999		
	LN/LN/GND	30.692	(37.636 GND RETURN KA)			
B-T-B5-PRI	3 PHASE:	2.428	2.	Z1= 1.7232	2.546	2.487
	SLG DUTY:	1.497	2.	Z2= 1.7232	1.589	
13800. VOLTS	LN/LN	2.103		Z0= 4.9431		
	LN/LN/GND	2.147	(1.081 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B5-SEC	3 PHASE:	25.832	3.	Z1= 10.7454	28.466	27.165
	SLG DUTY:	26.444	3.	Z2= 10.7454	29.257	
208. VOLTS	LN/LN	22.371		Z0= 9.9999		
	LN/LN/GND	26.002	(27.086 GND RETURN KA)			
B-T-B6-PRI	3 PHASE:	2.454	2.	Z1= 1.7047	2.584	2.520
	SLG DUTY:	1.509	2.	Z2= 1.7047	1.608	
13800. VOLTS	LN/LN	2.125		Z0= 4.9079		
	LN/LN/GND	2.172	(1.090 GND RETURN KA)			
B-T-B6-SEC	3 PHASE:	25.791	3.	Z1= 10.7624	28.457	27.141
	SLG DUTY:	26.416	3.	Z2= 10.7624	29.251	
208. VOLTS	LN/LN	22.336		Z0= 9.9999		
	LN/LN/GND	25.983	(27.071 GND RETURN KA)			
B-T-B60-PRI	3 PHASE:	2.419	2.	Z1= 1.7293	2.534	2.477
	SLG DUTY:	1.492	2.	Z2= 1.7293	1.582	
13800. VOLTS	LN/LN	2.095		Z0= 4.9548		
	LN/LN/GND	2.139	(1.079 GND RETURN KA)			
B-T-B60-SEC	3 PHASE:	7.818	2.	Z1= 35.5029	8.414	8.119
	SLG DUTY:	8.529	3.	Z2= 35.5029	9.260	
208. VOLTS	LN/LN	6.771		Z0= 26.6663		
	LN/LN/GND	8.091	(9.378 GND RETURN KA)			
B-T-B61-PRI	3 PHASE:	2.532	2.	Z1= 1.6522	2.704	2.619
	SLG DUTY:	1.548	2.	Z2= 1.6522	1.668	
13800. VOLTS	LN/LN	2.193		Z0= 4.8061		
	LN/LN/GND	2.248	(1.114 GND RETURN KA)			
B-T-B61-SEC	3 PHASE:	13.664	3.	Z1= 20.3144	15.188	14.436
	SLG DUTY:	15.432	3.	Z2= 20.3144	17.171	
208. VOLTS	LN/LN	11.833		Z0= 13.3331		
	LN/LN/GND	14.758	(17.725 GND RETURN KA)			
B-T-B62-PRI	3 PHASE:	2.559	2.	Z1= 1.6347	2.749	2.655
	SLG DUTY:	1.561	3.	Z2= 1.6347	1.690	
13800. VOLTS	LN/LN	2.216		Z0= 4.7715		
	LN/LN/GND	2.274	(1.123 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B62-SEC	3 PHASE:	25.705	3.	Z1= 10.7985	28.503	27.123
	SLG DUTY:	26.355	3.	Z2= 10.7985	29.285	
208. VOLTS	LN/LN	22.261		Z0= 9.9999		
	LN/LN/GND	25.969	(27.038 GND RETURN KA)			
B-T-B7-PRI	3 PHASE:	2.490	2.	Z1= 1.6805	2.637	2.564
	SLG DUTY:	1.527	2.	Z2= 1.6805	1.635	
13800. VOLTS	LN/LN	2.156		Z0= 4.8612		
	LN/LN/GND	2.206	(1.101 GND RETURN KA)			
B-T-B7-SEC	3 PHASE:	19.975	3.	Z1= 13.8960	22.125	21.064
	SLG DUTY:	20.249	3.	Z2= 13.8960	22.484	
208. VOLTS	LN/LN	17.299		Z0= 13.3331		
	LN/LN/GND	20.047	(20.530 GND RETURN KA)			
B-T-B70-PRI	3 PHASE:	2.571	2.	Z1= 1.6275	2.768	2.670
	SLG DUTY:	1.567	3.	Z2= 1.6275	1.699	
13800. VOLTS	LN/LN	2.226		Z0= 4.7572		
	LN/LN/GND	2.286	(1.127 GND RETURN KA)			
B-T-B70-SEC	3 PHASE:	15.175	3.	Z1= 18.2914	16.879	16.038
	SLG DUTY:	17.876	3.	Z2= 18.2914	19.898	
208. VOLTS	LN/LN	13.142		Z0= 9.9999		
	LN/LN/GND	17.033	(21.747 GND RETURN KA)			
B-T-B78-PRI	3 PHASE:	2.564	2.	Z1= 1.6318	2.757	2.661
	SLG DUTY:	1.589	3.	Z2= 1.6318	1.734	
13800. VOLTS	LN/LN	2.220		Z0= 4.6386		
	LN/LN/GND	2.271	(1.151 GND RETURN KA)			
B-T-B78-SEC	3 PHASE:	35.676	5.	Z1= 7.7804	43.991	39.947
	SLG DUTY:	44.901	4.	Z2= 7.7804	54.303	
208. VOLTS	LN/LN	30.896		Z0= 3.0000		
	LN/LN/GND	44.275	(60.519 GND RETURN KA)			
B-T-B8-2-SEC	3 PHASE:	8.687	3.	Z1= 13.8459	9.652	9.176
	SLG DUTY:	8.796	3.	Z2= 13.8459	9.788	
480. VOLTS	LN/LN	7.523		Z0= 13.3331		
	LN/LN/GND	8.725	(8.907 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B8-PRI	3 PHASE:	2.573	2.	Z1= 1.6260	2.772	2.673
	SLG DUTY:	1.568	3.	Z2= 1.6260	1.701	
13800. VOLTS	LN/LN	2.228		Z0= 4.7544		
	LN/LN/GND	2.288	(1.127 GND RETURN KA)			
B-T-B8-SEC	3 PHASE:	20.047	3.	Z1= 13.8459	22.274	21.176
	SLG DUTY:	20.298	3.	Z2= 13.8459	22.587	
208. VOLTS	LN/LN	17.361		Z0= 13.3331		
	LN/LN/GND	20.134	(20.555 GND RETURN KA)			
B-T-B80-PRI	3 PHASE:	2.523	2.	Z1= 1.6582	2.690	2.607
	SLG DUTY:	1.543	2.	Z2= 1.6582	1.661	
13800. VOLTS	LN/LN	2.185		Z0= 4.8177		
	LN/LN/GND	2.239	(1.111 GND RETURN KA)			
B-T-B80-SEC	3 PHASE:	12.471	2.	Z1= 22.2578	13.431	12.956
	SLG DUTY:	12.912	3.	Z2= 22.2578	14.046	
208. VOLTS	LN/LN	10.800		Z0= 19.9997		
	LN/LN/GND	12.481	(13.381 GND RETURN KA)			
B-T-B81-PRI	3 PHASE:	2.454	2.	Z1= 1.7047	2.584	2.520
	SLG DUTY:	1.548	2.	Z2= 1.7047	1.665	
13800. VOLTS	LN/LN	2.125		Z0= 4.7059		
	LN/LN/GND	2.160	(1.130 GND RETURN KA)			
B-T-B81-SEC	3 PHASE:	4.745	2.	Z1= 58.5033	4.917	4.831
	SLG DUTY:	5.317	2.	Z2= 58.5033	5.582	
208. VOLTS	LN/LN	4.109		Z0= 39.9994		
	LN/LN/GND	4.865	(6.031 GND RETURN KA)			
B-T-B82-PRI	3 PHASE:	2.564	2.	Z1= 1.6318	2.756	2.661
	SLG DUTY:	1.563	3.	Z2= 1.6318	1.694	
13800. VOLTS	LN/LN	2.220		Z0= 4.7659		
	LN/LN/GND	2.279	(1.124 GND RETURN KA)			
B-T-B82-SEC	3 PHASE:	7.800	2.	Z1= 35.5875	8.407	8.106
	SLG DUTY:	8.514	3.	Z2= 35.5875	9.255	
208. VOLTS	LN/LN	6.755		Z0= 26.6663		
	LN/LN/GND	8.083	(9.369 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B9-PRI	3 PHASE:	2.507	2.	Z1= 1.6685	2.665	2.587
	SLG DUTY:	1.571	3.	Z2= 1.6685	1.704	
13800. VOLTS	LN/LN	2.172		Z0= 4.6553		
	LN/LN/GND	2.212	(1.144 GND RETURN KA)			
B-T-B9-SEC	3 PHASE:	18.510	3.	Z1= 14.9958	20.527	19.532
	SLG DUTY:	19.221	3.	Z2= 14.9958	21.358	
208. VOLTS	LN/LN	16.030		Z0= 13.3331		
	LN/LN/GND	18.836	(19.988 GND RETURN KA)			
B0B70-LP2	3 PHASE:	5.075	1.	Z1= 54.6899	5.078	5.077
	SLG DUTY:	3.534	1.	Z2= 54.6899	3.534	
208. VOLTS	LN/LN	4.395		Z0= 128.3897		
	LN/LN/GND	4.871	(2.688 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
BUS-0739	3 PHASE:	13.568	2.	Z1= 20.4575	14.486	14.031
	SLG DUTY:	12.083	2.	Z2= 20.4575	12.642	
208. VOLTS	LN/LN	11.750		Z0= 28.1364		
	LN/LN/GND	13.395	(10.869 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
bB-B7-MC1	3 PHASE:	4.001	1.	Z1= 69.3749	4.001	4.001
	SLG DUTY:	2.531	0.	Z2= 69.3749	2.531	
208. VOLTS	LN/LN	3.465		Z0= 191.3778		
	LN/LN/GND	3.712	(	1.845 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B1-MDP	208.	4.396	1.76	4.509	1.75
B-B1-MDP-M	208.	4.677	1.82	4.990	1.90
B-B10 DISC	208.	5.743	1.80	5.749	1.90
B-B10-MDP	208.	5.297	1.70	5.077	1.68
B-B12-MAP-M	208.	4.270	1.84	4.477	1.91
B-B12-MDP	208.	4.264	1.84	4.460	1.90
B-B13-APT-13	240.	6.438	1.39	0.000	1.00
B-B13-APT-14	240.	5.929	2.07	0.000	1.00
B-B13-APT-15	240.	4.580	2.08	0.000	1.00
B-B13-GARAGE	240.	4.776	1.23	0.000	1.00
B-B13-MDP	240.	8.658	2.39	0.000	1.00
B-B13-MDP-M	240.	8.664	2.39	0.000	1.00
B-B13-MGR H16	240.	2.557	0.91	0.000	1.00
B-B13-TXMR SEC	240.	11.100	2.93	0.000	1.00
B-B13-UNKNOWN	240.	6.438	1.39	0.000	1.00
B-B17-A/C	208.	7.887	1.67	6.617	1.40
B-B17-A/C-2	208.	7.084	1.25	5.603	0.99
B-B17-AC1	208.	7.084	1.25	5.603	0.99
B-B17-ACB	208.	6.457	1.03	4.882	0.78
B-B17-ANIMALRM	208.	4.451	0.69	3.034	0.52
B-B17-ATS	208.	9.541	1.66	8.540	1.38
B-B17-DP	208.	8.748	1.84	7.650	1.60
B-B17-EMAIN	208.	10.646	2.04	10.143	1.86
B-B17-EMERG	208.	9.209	1.57	8.089	1.28
B-B17-MAIN	208.	10.948	2.17	10.604	2.06
B-B17-NEB1	208.	4.005	0.65	2.679	0.48
B-B17-NEB2	208.	5.704	0.77	4.073	0.57
B-B17-NP11	208.	5.592	0.80	3.996	0.59
B-B17-NP12	208.	7.780	1.60	6.479	1.34
B-B17-NP21	208.	7.084	1.25	5.603	0.99
B-B17-NP22	208.	7.084	1.25	5.603	0.99
B-B17-NPA1	208.	7.084	1.25	5.603	0.99
B-B17-NPB1	208.	7.653	1.53	6.314	1.26
B-B17-NPB2	208.	7.084	1.25	5.603	0.99
B-B18-1STFL	208.	5.904	0.89	4.361	0.66
B-B18-1STFL-M	208.	7.215	1.11	5.741	0.83
B-B18-2ND-FL-M	208.	7.215	1.11	5.741	0.83

B-B18-2NDFL	208.	4.961	0.76	3.494	0.56
B-B18-AC1	208.	6.968	0.95	5.381	0.69
B-B18-AC2	208.	8.846	1.65	7.886	1.37
B-B18-ATS-EMRG	208.	7.941	1.23	6.589	0.94
B-B18-EMERG	208.	7.116	1.09	5.617	0.82
B-B18-EMERG-M	208.	7.138	1.09	5.653	0.82
B-B18-NCP	208.	9.718	1.77	9.059	1.50

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B18-NMDP	208.	10.708	2.30	10.627	2.25
B-B18-NMDP-M	208.	10.731	2.30	10.684	2.27
B-B18-NP11	208.	6.968	0.95	5.381	0.69
B-B18-NP12	208.	6.968	0.95	5.381	0.69
B-B18-NP21	208.	7.564	1.06	6.059	0.78
B-B18-NP22	208.	8.271	1.43	7.086	1.14
B-B18-NP23	208.	9.047	1.79	8.191	1.52
B-B18-STRT LHT	208.	4.677	0.57	3.170	0.39
B-B18-TAP BOX	208.	7.454	1.15	6.017	0.88
B-B19-200A PNL	208.	17.844	2.69	18.102	2.09
B-B19-B1	208.	15.922	1.78	14.593	1.23
B-B19-L1	208.	2.631	0.41	1.606	0.32
B-B19-L2	208.	7.344	0.82	5.041	0.58
B-B19-MDP1	208.	19.906	3.25	21.765	2.74
B-B19-MDP1-M	208.	19.934	3.27	21.852	2.78
B-B19-MDP2	208.	18.903	3.11	19.998	2.58
B-B19-MDP2-M	208.	19.226	3.16	20.565	2.64
B-B19-MDPA	208.	10.495	2.21	8.603	1.75
B-B19-P1	208.	10.495	2.21	8.603	1.75
B-B19-P2	208.	9.005	1.18	6.672	0.86
B-B19-P4	208.	16.698	2.19	16.058	1.60
B-B19-P6	208.	3.007	0.55	1.873	0.43
B-B19-PS	208.	4.831	0.53	3.070	0.38
B-B2-ATS-CRIT	208.	11.032	2.35	11.418	1.95
B-B2-ATS-LED3	208.	3.283	1.40	3.387	1.35
B-B2-ATS-LS	208.	11.318	2.47	11.936	2.11
B-B2-BATTERYCH	208.	3.662	0.45	2.359	0.30
B-B2-CATSCAN	480.	8.806	1.81	7.652	1.28
B-B2-CRIT PNL	208.	10.834	2.28	11.069	1.86
B-B2-DENTAL LB	208.	6.786	1.00	5.209	0.69
B-B2-DENTSUCPM	208.	6.167	0.90	4.570	0.62
B-B2-ELEV	208.	8.618	1.74	7.705	1.32
B-B2-ELEV-P1	208.	6.452	1.39	5.133	1.05
B-B2-EMERG-M	208.	3.228	1.38	3.293	1.31
B-B2-EMERG-PNL	208.	3.224	1.37	3.281	1.31
B-B2-L12	208.	7.890	1.51	6.715	1.12
B-B2-L2A	208.	7.844	1.50	6.660	1.11

B-B2-L2E	208.	7.890	1.51	6.715	1.12
B-B2-L4	208.	8.369	1.60	7.325	1.19
B-B2-L6	208.	8.369	1.60	7.325	1.19
B-B2-L7	208.	8.369	1.60	7.325	1.19

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B2-L8	208.	8.369	1.60	7.325	1.19
B-B2-L9E	208.	7.178	1.19	5.740	0.84
B-B2-LB1E	208.	7.178	1.19	5.740	0.84
B-B2-LB2	208.	8.369	1.60	7.325	1.19
B-B2-LB2E	208.	6.137	0.90	4.543	0.62
B-B2-LED-3	208.	3.378	1.44	3.554	1.43
B-B2-MDP	480.	11.671	4.64	12.248	4.72
B-B2-MDP-M	480.	11.675	4.65	12.258	4.75
B-B2-MDPA	208.	7.580	5.12	7.648	5.07
B-B2-MDPA-M	208.	7.620	5.19	7.710	5.20
B-B2-MDPB	208.	11.748	2.68	12.738	2.41
B-B2-MDPB-M	208.	11.851	2.70	12.928	2.44
B-B2-MEDAIRCOM	208.	6.137	0.90	4.543	0.62
B-B2-NEWLAB	208.	3.189	1.35	3.222	1.28
B-B2-NEWLAB-M	208.	3.193	1.36	3.233	1.28
B-B2-PNL 1	208.	3.228	1.38	3.293	1.31
B-B2-PNL LS	208.	10.912	2.31	11.207	1.90
B-B2-PNL-2	208.	3.241	1.36	3.311	1.29
B-B2-PNL-3-M	208.	3.182	1.33	3.209	1.24
B-B2-PNL-D2	208.	6.080	3.63	5.533	3.02
B-B2-PNL-L11	208.	7.844	1.50	6.660	1.11
B-B2-PNL-M1	208.	3.085	1.27	3.044	1.14
B-B2-PNL-P	480.	8.615	3.16	7.787	2.60
B-B2-POD2PP	208.	8.176	1.66	7.130	1.26
B-B2-TEL COMM	208.	8.369	1.60	7.325	1.19
B-B2-UNIT-1	480.	7.789	2.38	6.691	1.84
B-B2-UNIT-2	480.	8.190	2.70	7.213	2.14
B-B2-XRAY	208.	1.874	0.22	1.133	0.14
B-B2-XRAY-124	480.	6.035	1.55	4.663	1.16
B-B2-XRAY124	208.	7.072	1.07	5.547	0.75
B-B21-P1	208.	3.177	0.62	1.999	0.48
B-B21-P2	208.	5.448	0.94	3.688	0.72
B-B22-ATS-EMER	480.	6.504	2.46	5.759	2.17
B-B22-EMERG	480.	6.182	2.40	5.370	2.09
B-B22-EMERG-M	480.	6.188	2.40	5.383	2.10
B-B22-L1	208.	2.814	1.57	2.960	1.50
B-B22-L1-M	208.	2.817	1.57	2.969	1.50

B-B22-L2	208.	2.814	1.57	2.960	1.50
B-B22-L2-M	208.	2.817	1.57	2.969	1.50
B-B22-L3	208.	2.821	1.58	2.965	1.50
B-B22-L3-M	208.	2.824	1.58	2.975	1.51

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
B-B22-MDP	480.	6.945	2.55	6.309	2.28
B-B22-MDP-M	480.	6.948	2.55	6.316	2.29
B-B22-N1	208.	4.783	1.78	4.743	1.66
B-B22-N1-M	208.	4.791	1.78	4.762	1.66
B-B22-P1	480.	5.947	2.26	5.086	1.93
B-B22-P2	480.	5.947	2.26	5.086	1.93
B-B22-T1-PRI	480.	6.826	2.47	6.152	2.19
B-B22-T1-SEC	208.	5.069	1.80	5.203	1.69
B-B22-T2-PRI	480.	6.047	2.26	5.199	1.94
B-B22-T2-SEC	208.	2.902	1.61	3.116	1.58
B-B22-T22-SEC	208.	2.894	1.61	3.110	1.57
B-B22-T3 PRI	480.	5.980	2.20	5.116	1.87
B-B22-T4-PRI	480.	5.980	2.20	5.116	1.87
B-B22-T4-SEC	208.	2.894	1.61	3.110	1.57
B-B27-SWGR	13800.	2.700	3.00	1.630	2.96
B-B27-SWGR-M2	13800.	2.700	3.00	1.630	2.96
B-B3-1ST FL	208.	9.618	1.38	7.546	1.05
B-B3-ALDN KIT	208.	7.143	0.78	4.954	0.56
B-B3-ATS-COMP	208.	14.035	2.42	13.136	2.09
B-B3-ATSTEL RM	208.	13.694	2.48	12.702	2.16
B-B3-COMP	208.	8.180	1.07	6.020	0.80
B-B3-COMP AC	208.	2.962	0.28	1.802	0.20
B-B3-COMP MF	208.	10.276	1.66	8.366	1.31
B-B3-DBL GRILL	208.	8.224	1.25	6.177	0.96
B-B3-ELEV	208.	9.100	1.21	6.939	0.91
B-B3-EP1	208.	13.087	2.43	11.865	2.09
B-B3-EP1-M	208.	13.143	2.44	11.983	2.11
B-B3-EP2	208.	13.062	2.33	11.807	1.98
B-B3-EP2-M	208.	13.118	2.35	11.925	2.00
B-B3-FRZN FOOD	208.	8.088	0.63	5.567	0.41
B-B3-HYDRO ELV	208.	6.844	0.97	4.843	0.74
B-B3-KP1	208.	9.077	1.60	7.144	1.27
B-B3-MDP	208.	17.320	2.73	18.115	2.53
B-B3-MDP-M	208.	17.348	2.74	18.194	2.57
B-B3-MECH HVAC	208.	9.100	1.21	6.939	0.91
B-B3-MECH RM	208.	10.552	1.79	8.718	1.43
B-B3-P3	208.	11.712	1.53	9.836	1.16

B-B3-P7	208.	8.575	1.07	6.365	0.80
B-B3-STRT LTS	208.	8.088	0.63	5.567	0.41
B-B3-STRT PNL	208.	10.204	1.41	8.140	1.07
B-B3-TELE PNL	208.	10.580	1.84	8.770	1.48

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E 3 PHASE	X/R	F A U L T LINE/GRND	D U T I E S (KA) X/R
B-B3-TRAY LINE	208.	9.100	1.21	6.939	0.91
B-B33-MDP	208.	4.841	1.58	4.374	1.48
B-B33-MDP-M	208.	4.849	1.58	4.391	1.48
B-B4-4EQD	208.	19.919	2.57	18.425	1.96
B-B4-4EQD-M	208.	20.048	2.59	18.714	1.99
B-B4-ATS-EQ	208.	22.705	2.81	22.570	2.17
B-B4-ATS-LS	208.	20.452	2.18	18.946	1.58
B-B4-BUS	208.	25.834	3.39	28.643	3.05
B-B4-ELEV#4	208.	8.393	0.96	5.754	0.72
B-B4-EQ1	208.	12.719	1.30	9.608	0.94
B-B4-EQ10	208.	8.872	0.99	6.142	0.74
B-B4-EQ11	208.	10.677	1.12	7.686	0.82
B-B4-EQ12	208.	7.466	0.90	5.026	0.68
B-B4-EQ15	208.	8.393	0.96	5.754	0.72
B-B4-EQ2	208.	16.407	1.76	13.675	1.28
B-B4-EQ3	208.	10.095	1.07	7.173	0.79
B-B4-EQ5	208.	10.378	1.10	7.421	0.81
B-B4-EQ6	208.	12.861	1.31	9.749	0.95
B-B4-EQ7	208.	8.525	0.96	5.860	0.72
B-B4-EQ9	208.	6.803	0.86	4.523	0.65
B-B4-HYDROELEV	208.	7.547	0.80	5.023	0.60
B-B4-JBOX	208.	25.260	3.13	26.849	2.51
B-B4-LP1	208.	12.897	1.42	9.868	1.04
B-B4-LP1-M	208.	12.968	1.42	9.979	1.04
B-B4-LP10	208.	10.301	1.25	7.470	0.94
B-B4-LP10-M	208.	10.346	1.25	7.534	0.94
B-B4-LP11	208.	12.381	1.38	9.369	1.02
B-B4-LP11-M	208.	12.446	1.38	9.469	1.02
B-B4-LP12	208.	13.456	1.46	10.422	1.06
B-B4-LP12-M	208.	13.533	1.46	10.545	1.07
B-B4-LP13	208.	10.301	1.25	7.470	0.94
B-B4-LP13-M	208.	10.346	1.25	7.534	0.94
B-B4-LP14	208.	9.070	1.18	6.423	0.89
B-B4-LP14-M	208.	9.106	1.18	6.471	0.90
B-B4-LP15	208.	6.722	0.67	4.347	0.49
B-B4-LP15-M	208.	6.742	0.67	4.369	0.49
B-B4-LP2	208.	18.060	1.87	15.597	1.34

B-B4-LP2-M	208.	18.192	1.89	15.866	1.36
B-B4-LP3	208.	18.060	1.87	15.597	1.34
B-B4-LP3-M	208.	18.192	1.89	15.866	1.36
B-B4-LP4	208.	12.381	1.38	9.369	1.02

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B4-LP4-M	208.	12.446	1.38	9.469	1.02
B-B4-LP5	208.	11.903	1.35	8.917	1.00
B-B4-LP5-M	208.	11.963	1.35	9.008	1.00
B-B4-LP6	208.	14.724	1.55	11.732	1.13
B-B4-LP6-M	208.	14.815	1.56	11.888	1.13
B-B4-LP7	208.	14.724	1.55	11.732	1.13
B-B4-LP7-M	208.	14.815	1.56	11.888	1.13
B-B4-LP8	208.	11.903	1.35	8.917	1.00
B-B4-LP8-M	208.	11.963	1.35	9.008	1.00
B-B4-LP9	208.	10.301	1.25	7.470	0.94
B-B4-LP9-M	208.	10.346	1.25	7.534	0.94
B-B4-LS1	208.	8.311	0.82	5.577	0.60
B-B4-LS1-M	208.	8.342	0.82	5.613	0.60
B-B4-LS10	208.	5.354	0.66	3.413	0.50
B-B4-LS10-M	208.	5.367	0.66	3.427	0.50
B-B4-LS11	208.	6.179	0.70	3.993	0.53
B-B4-LS11-M	208.	6.196	0.70	4.011	0.53
B-B4-LS12	208.	7.010	0.75	4.594	0.56
B-B4-LS12-M	208.	7.032	0.75	4.618	0.56
B-B4-LS13	208.	7.179	0.75	4.719	0.56
B-B4-LS13-M	208.	7.202	0.75	4.745	0.56
B-B4-LS14	208.	7.179	0.75	4.719	0.56
B-B4-LS14-M	208.	7.202	0.75	4.745	0.56
B-B4-LS2	208.	12.151	1.09	8.842	0.77
B-B4-LS2-M	208.	12.216	1.09	8.933	0.77
B-B4-LS3	208.	14.950	1.35	11.671	0.95
B-B4-LS3-M	208.	15.046	1.36	11.827	0.96
B-B4-LS4	208.	9.634	0.90	6.636	0.65
B-B4-LS4-M	208.	9.675	0.90	6.686	0.65
B-B4-LS5	208.	6.094	0.70	3.932	0.53
B-B4-LS5-M	208.	6.111	0.70	3.950	0.53
B-B4-LS6	208.	7.179	0.75	4.719	0.56
B-B4-LS6-M	208.	7.202	0.75	4.745	0.56
B-B4-LS7	208.	8.311	0.82	5.577	0.60
B-B4-LS7-M	208.	8.342	0.82	5.613	0.60
B-B4-LS8	208.	8.547	0.83	5.762	0.61
B-B4-LS8-M	208.	8.580	0.83	5.800	0.61

B-B4-LS9	208.	8.547	0.83	5.762	0.61
B-B4-LS9-M	208.	8.580	0.83	5.800	0.61
B-B4-LSD	208.	19.117	2.00	16.965	1.44
B-B4-LSD-M	208.	19.264	2.02	17.280	1.46

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E 3 PHASE	X/R	F A U L T LINE/GRND	D U T I E S (KA) X/R
B-B4-MDP	208.	24.883	3.08	26.156	2.45
B-B4-MDP-M	208.	24.910	3.09	26.239	2.47
B-B4-PP1	208.	14.627	1.73	11.802	1.28
B-B4-PP2	208.	6.722	0.67	4.347	0.49
B-B4-PP2-M	208.	6.742	0.67	4.369	0.49
B-B5-ATS-EQ	208.	14.225	1.92	11.445	1.61
B-B5-ATS-LS	208.	14.134	1.53	11.134	1.23
B-B5-EQ1	208.	8.744	1.06	6.118	0.84
B-B5-EQ2	208.	8.507	1.03	5.919	0.82
B-B5-EQ5	208.	8.744	1.06	6.118	0.84
B-B5-EQ6	208.	7.796	0.96	5.335	0.76
B-B5-EQD	208.	13.777	1.90	10.997	1.60
B-B5-HYDR ELEV	208.	10.342	1.25	7.530	1.00
B-B5-LP1	208.	13.940	1.52	10.899	1.21
B-B5-LP1-M	208.	14.007	1.52	11.004	1.22
B-B5-LP2	208.	11.727	1.35	8.761	1.08
B-B5-LP2-M	208.	11.775	1.35	8.829	1.08
B-B5-LP3	208.	11.817	1.36	8.844	1.08
B-B5-LP3-M	208.	11.865	1.36	8.914	1.09
B-B5-LP4	208.	10.169	1.25	7.369	1.00
B-B5-LP4-M	208.	10.205	1.25	7.417	1.00
B-B5-LP5	208.	12.272	1.05	8.976	0.80
B-B5-LP5-M	208.	12.325	1.05	9.048	0.79
B-B5-LS1	208.	10.349	1.10	7.412	0.86
B-B5-LS2	208.	6.667	0.80	4.410	0.63
B-B5-LS4	208.	5.801	0.74	3.773	0.59
B-B5-LSD	208.	13.460	1.48	10.418	1.18
B-B5-LSD-M	208.	13.522	1.48	10.514	1.18
B-B5-MDP	208.	19.220	2.06	16.968	1.74
B-B5-MDP-M	208.	19.258	2.07	17.047	1.76
B-B5-NEXTEL	208.	12.344	1.29	9.291	1.02
B-B5-PNL-H	208.	14.725	1.58	11.705	1.27
B-B5-PNL-H-M	208.	14.799	1.58	11.827	1.27
B-B5-STRT LGHT	208.	9.278	0.67	6.231	0.49
B-B5-TEMP TRAI	208.	11.291	1.22	8.310	0.96
B-B55-LS3	208.	8.472	0.93	5.816	0.73
B-B6-ATS-EQ	208.	14.346	2.08	11.635	1.77

B-B6-ATS-LS	208.	15.303	1.64	12.379	1.33
B-B6-EQ1	208.	10.665	1.39	7.880	1.12
B-B6-EQ2	208.	8.368	1.18	5.886	0.95
B-B6-EQ3	208.	10.144	1.42	7.451	1.15

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B6-EQ4	208.	7.275	1.06	4.990	0.86
B-B6-EQ5	208.	8.623	1.21	6.103	0.98
B-B6-EQ8	208.	8.401	1.38	5.999	1.13
B-B6-EQD	208.	12.943	1.98	10.212	1.68
B-B6-EQD-M	208.	12.960	1.99	10.240	1.68
B-B6-EQMACH	208.	10.665	1.39	7.880	1.12
B-B6-LP1	208.	10.897	0.96	7.761	0.73
B-B6-LP1-M	208.	10.912	0.97	7.781	0.73
B-B6-LP2	208.	12.174	1.06	8.919	0.80
B-B6-LP2-M	208.	12.192	1.06	8.945	0.80
B-B6-LP3	208.	13.332	1.48	10.322	1.18
B-B6-LP3-M	208.	13.352	1.48	10.355	1.18
B-B6-LP4	208.	13.683	1.50	10.673	1.20
B-B6-LP4-M	208.	13.704	1.51	10.707	1.21
B-B6-LP5	208.	11.372	1.33	8.456	1.06
B-B6-LP5-M	208.	11.387	1.34	8.478	1.07
B-B6-LP6	208.	11.630	1.35	8.693	1.08
B-B6-LP6-M	208.	11.645	1.35	8.716	1.08
B-B6-LP7	208.	16.478	1.47	13.418	1.15
B-B6-LP7-M	208.	16.508	1.48	13.474	1.15
B-B6-LS1	208.	9.391	0.99	6.576	0.77
B-B6-LS2	208.	11.429	1.11	8.335	0.86
B-B6-LS3	208.	9.391	0.99	6.576	0.77
B-B6-LS4	208.	9.391	0.99	6.576	0.77
B-B6-LS5	208.	7.798	0.87	5.275	0.68
B-B6-LS6	208.	7.798	0.87	5.275	0.68
B-B6-LSD	208.	14.179	1.54	11.177	1.24
B-B6-LSD-M	208.	14.201	1.55	11.215	1.24
B-B6-MACH SHOP	208.	12.057	1.26	9.013	0.99
B-B6-MDP	208.	21.282	2.42	19.738	2.17
B-B6-MDP-M	208.	21.326	2.43	19.837	2.20
B-B6-P6-CS	208.	14.698	1.48	11.648	1.17
B-B60-MDP	208.	7.167	2.37	7.387	2.34
B-B60-MDP-M	208.	7.184	2.38	7.431	2.36
B-B61 STRT LGH	208.	7.064	0.85	5.243	0.58
B-B61-ATS-EQD	208.	10.590	2.52	10.242	2.21
B-B61-ATS-LSD	208.	10.458	2.12	9.937	1.73

B-B61-COMP RM	208.	8.656	2.02	7.598	1.64
B-B61-DP	208.	10.590	2.52	10.242	2.21
B-B61-ELEV	208.	6.939	1.62	5.588	1.27
B-B61-EQ1	208.	7.078	1.43	5.650	1.09

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B61-EQ2	208.	8.882	1.96	7.847	1.57
B-B61-EQ4	208.	6.996	1.32	5.512	0.99
B-B61-EQA	208.	9.657	2.35	8.931	2.00
B-B61-EQD	208.	9.881	2.43	9.247	2.10
B-B61-KITCHEN	208.	7.991	1.60	6.663	1.24
B-B61-LP1	208.	4.044	0.75	2.726	0.56
B-B61-LP2	208.	4.044	0.75	2.726	0.56
B-B61-LP3	208.	7.343	1.50	5.951	1.16
B-B61-LP4	208.	8.702	1.83	7.586	1.45
B-B61-LP5	208.	6.030	0.72	4.256	0.49
B-B61-LS1	208.	5.877	1.01	4.310	0.75
B-B61-LS2	208.	7.388	1.15	5.778	0.83
B-B61-LS3	208.	5.216	0.92	3.709	0.68
B-B61-LS4	208.	5.877	1.01	4.310	0.75
B-B61-LS5	208.	5.216	0.92	3.709	0.68
B-B61-LSD	208.	9.975	2.00	9.201	1.59
B-B61-LSD-M	208.	10.015	2.01	9.292	1.61
B-B61-MCC	208.	7.064	0.85	5.243	0.58
B-B61-MDP	208.	12.355	2.77	13.021	2.60
B-B61-MDP-M	208.	12.378	2.78	13.085	2.62
B-B62-A	208.	13.963	1.38	10.851	1.08
B-B62-ATS-EQD	208.	18.052	1.89	15.520	1.55
B-B62-ATS-LSD	208.	18.052	1.89	15.520	1.55
B-B62-ATTC PNL	208.	9.602	1.04	6.783	0.81
B-B62-B	208.	14.724	1.44	11.640	1.13
B-B62-BL	208.	10.259	0.83	7.120	0.61
B-B62-BP	208.	12.971	1.07	9.635	0.81
B-B62-ELEV-1	208.	9.602	1.04	6.783	0.81
B-B62-ELEV-2	208.	9.602	1.04	6.783	0.81
B-B62-EQ	208.	13.992	1.36	10.863	1.06
B-B62-EQD	208.	15.444	1.63	12.514	1.30
B-B62-KP	208.	13.089	1.19	9.863	0.91
B-B62-LP1	208.	13.524	1.12	10.176	0.84
B-B62-LP2	208.	13.089	1.19	9.863	0.91
B-B62-LP3	208.	14.191	1.52	11.188	1.21
B-B62-LP4	208.	14.723	1.57	11.743	1.25
B-B62-LS1	208.	6.693	0.65	4.347	0.50

B-B62-LS2	208.	9.964	0.90	6.937	0.68
B-B62-LS3	208.	7.937	0.85	5.357	0.66
B-B62-LS4	208.	10.234	1.02	7.254	0.79
B-B62-LSD	208.	15.345	1.62	12.345	1.29

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B62-LSD-M	208.	15.444	1.63	12.514	1.30
B-B62-MDP	208.	23.012	2.68	22.222	2.50
B-B62-MDP-M	208.	23.051	2.69	22.315	2.53
B-B62-OT	208.	11.859	0.93	8.517	0.69
B-B62-PAD RM	208.	12.418	1.23	9.298	0.95
B-B62-STRT LGT	208.	10.190	0.66	6.894	0.47
B-B7-ATS-EQ	208.	10.018	2.20	7.922	1.89
B-B7-ATS-LS	208.	9.374	1.83	7.228	1.52
B-B7-ELEV	208.	6.679	1.57	4.828	1.30
B-B7-EQ1	208.	6.762	1.41	4.850	1.15
B-B7-EQ2	208.	8.132	1.78	6.106	1.49
B-B7-EQ4	208.	7.094	1.41	5.121	1.15
B-B7-EQD	208.	8.993	2.12	6.949	1.81
B-B7-LP2	208.	8.852	1.80	6.728	1.50
B-B7-LP2-M	208.	8.884	1.80	6.777	1.51
B-B7-LP3	208.	6.860	1.42	4.922	1.16
B-B7-LP3-M	208.	6.880	1.42	4.949	1.16
B-B7-LP4	208.	8.852	1.80	6.728	1.50
B-B7-LP4-M	208.	8.884	1.80	6.777	1.51
B-B7-LP5	208.	6.860	1.42	4.922	1.16
B-B7-LP5-M	208.	6.880	1.42	4.949	1.16
B-B7-LP6	208.	6.300	1.34	4.454	1.10
B-B7-LP6-M	208.	6.317	1.35	4.476	1.10
B-B7-LP7	208.	8.019	1.67	5.963	1.38
B-B7-LP7-M	208.	8.045	1.67	6.002	1.39
B-B7-LP8	208.	6.300	1.34	4.454	1.10
B-B7-LP8-M	208.	6.317	1.35	4.476	1.10
B-B7-LS1	208.	5.865	1.04	4.015	0.83
B-B7-LS2	208.	7.276	1.20	5.178	0.96
B-B7-LS4	208.	5.619	1.00	3.818	0.80
B-B7-LS5	208.	6.975	1.23	4.948	0.99
B-B7-LSD	208.	9.076	1.77	6.920	1.47
B-B7-LSD-M	208.	9.109	1.77	6.971	1.47
B-B7-MCC-1	208.	7.174	1.24	5.122	1.00
B-B7-MCC-2	208.	8.573	1.18	6.247	0.93
B-B7-MDP	208.	11.303	2.30	9.209	2.00
B-B7-MDP-M	208.	11.322	2.31	9.243	2.01

B-B7-SRTLGHT-M	208.	6.634	0.84	4.507	0.65
B-B7-STRT LGHT	208.	6.614	0.84	4.484	0.65
B-B70 -BLDG-71	208.	1.080	0.37	0.651	0.29
B-B70-A	208.	8.195	1.25	6.583	0.91

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B70-ATS-EQD	208.	11.428	2.48	11.185	2.14
B-B70-ATS-LSD	208.	10.950	2.22	10.427	1.83
B-B70-ATTIC	208.	7.271	1.11	5.577	0.80
B-B70-B	208.	8.195	1.25	6.583	0.91
B-B70-CHLLR	208.	5.512	1.72	4.204	1.40
B-B70-EQ1	208.	6.138	1.14	4.562	0.86
B-B70-EQ2	208.	4.908	0.98	3.459	0.74
B-B70-EQ3	208.	5.669	1.07	4.126	0.81
B-B70-EQ4	208.	4.597	0.94	3.199	0.72
B-B70-EQ5	208.	5.262	1.02	3.764	0.77
B-B70-EQ6	208.	4.321	0.91	2.975	0.70
B-B70-EQD	208.	10.899	2.40	10.376	2.03
B-B70-EQD-M	208.	10.938	2.41	10.467	2.05
B-B70-FIRE PMP	208.	3.224	0.40	2.024	0.27
B-B70-FP-TAP	208.	12.326	2.65	12.614	2.37
B-B70-FPMP M	208.	11.468	2.41	11.244	2.06
B-B70-K	208.	6.513	0.77	4.648	0.52
B-B70-LP-4	208.	5.518	1.24	4.074	0.96
B-B70-LP1	208.	6.091	0.95	4.424	0.69
B-B70-LP3	208.	6.585	1.37	5.083	1.05
B-B70-LS1	208.	4.475	0.70	3.007	0.51
B-B70-LS2	208.	3.653	0.61	2.380	0.45
B-B70-LS3	208.	5.072	0.90	3.555	0.67
B-B70-LS4	208.	4.049	0.78	2.724	0.59
B-B70-LS5	208.	4.681	0.85	3.228	0.64
B-B70-LS6	208.	3.792	0.75	2.526	0.57
B-B70-LSD	208.	10.460	2.17	9.711	1.77
B-B70-LSD-M	208.	10.496	2.17	9.792	1.78
B-B70-MDP	208.	12.471	2.65	12.823	2.38
B-B70-MDP-M	208.	12.494	2.66	12.886	2.40
B-B70-PP2	208.	7.928	1.55	6.494	1.19
B-B70-PP220	208.	5.851	1.15	4.324	0.87
B-B70-STRTLGHT	208.	7.069	0.84	5.178	0.57
B-B78-1P	208.	5.697	0.77	3.665	0.60
B-B78-78AE1	208.	14.822	1.57	11.474	1.15
B-B78-A/C	208.	3.665	0.50	2.248	0.39
B-B78-ATS TAP	208.	17.234	1.79	14.023	1.29

B-B78-ATS-CRD	208.	5.238	0.75	3.349	0.59
B-B78-ATS-E1	208.	7.687	1.46	5.386	1.16
B-B78-ATS-LS1	208.	13.737	1.53	10.448	1.13
B-B78-ATSG9578	208.	15.343	1.57	11.961	1.14

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B78-BARBER	208.	3.029	0.19	1.796	0.13
B-B78-CONRM-AC	208.	2.171	0.28	1.291	0.22
B-B78-CRD	208.	2.894	0.68	1.799	0.55
B-B78-E1	208.	7.554	1.47	5.285	1.17
B-B78-ELEV-1	208.	14.512	1.11	10.672	0.77
B-B78-ELEV-2	208.	14.512	1.11	10.672	0.77
B-B78-FLPNL	208.	4.863	0.63	3.057	0.49
B-B78-KK	208.	6.667	0.69	4.284	0.52
B-B78-L10	208.	6.528	1.27	4.448	1.01
B-B78-LP-1	208.	6.208	0.88	4.065	0.69
B-B78-LP-13	208.	6.025	1.25	4.076	1.00
B-B78-LP-14	208.	5.594	1.23	3.761	0.99
B-B78-LP-15	208.	5.220	1.22	3.491	0.99
B-B78-LP-2	208.	10.837	1.05	7.594	0.77
B-B78-LP-4	208.	3.683	0.66	2.299	0.53
B-B78-LP-8	208.	12.443	1.46	9.253	1.09
B-B78-LP10	208.	5.797	1.21	3.900	0.97
B-B78-LP13	208.	5.320	1.22	3.562	0.98
B-B78-LP3	208.	10.837	1.05	7.594	0.77
B-B78-LP6	208.	9.030	1.03	6.186	0.77
B-B78-LP7	208.	6.368	1.20	4.309	0.96
B-B78-LSD	208.	13.159	1.49	9.895	1.10
B-B78-MDP	208.	35.514	4.56	44.251	3.99
B-B78-MDP-M	208.	35.541	4.57	44.359	4.04
B-B78-MEC-1 AC	208.	7.166	1.44	4.982	1.15
B-B78-MEC2-A/C	208.	16.154	1.46	12.605	1.03
B-B78-PHARM AC	208.	3.029	0.19	1.796	0.13
B-B78-PHV	208.	2.784	0.35	1.671	0.27
B-B78-PK	208.	5.716	0.86	3.719	0.68
B-B78-PNL-330A	208.	10.175	1.17	7.165	0.88
B-B78-PULM 78B	208.	17.234	1.79	14.023	1.29
B-B78-QP	208.	11.423	0.76	7.724	0.52
B-B78A-PNL-2	208.	14.512	1.11	10.672	0.77
B-B8 2ND FLR	208.	12.341	2.32	10.282	2.01
B-B8 HYDRO ELV	480.	3.727	0.70	2.558	0.50
B-B8-208V-MAIN	208.	17.851	2.81	17.063	2.69
B-B8-480V ATS	480.	7.912	2.67	7.628	2.49

B-B8-480V PNL	480.	7.780	2.62	7.439	2.43
B-B8-ATS	208.	14.184	2.24	12.294	1.93
B-B8-BS	208.	3.527	0.48	2.195	0.37
B-B8-CMOP	208.	4.207	1.49	4.129	1.27

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E 3 PHASE	X/R	F A U L T LINE/GRND	D U T I E S (KA) X/R
B-B8-COMP	480.	2.351	0.38	1.478	0.26
B-B8-ELEV	208.	4.165	1.68	4.112	1.54
B-B8-FDR	208.	4.662	1.74	4.924	1.64
B-B8-FLEXPMACH	480.	3.053	0.49	1.984	0.33
B-B8-GE BKR	480.	8.020	2.70	7.785	2.54
B-B8-J-BOX	208.	4.351	1.70	4.403	1.57
B-B8-L8B	208.	5.802	0.63	3.786	0.47
B-B8-LB1	208.	7.109	1.22	5.059	0.98
B-B8-LB2	208.	6.642	1.18	4.674	0.95
B-B8-MAIN BUS	208.	17.406	2.78	16.450	2.64
B-B8-MDP-8	208.	17.101	2.77	16.038	2.61
B-B8-PNL-PK	208.	13.155	1.77	10.948	1.44
B-B8-PP1	208.	16.134	2.43	14.661	2.14
B-B8-PP1-M	208.	16.185	2.44	14.770	2.17
B-B8-SYLV	208.	14.882	2.45	13.171	2.18
B-B8-TXMR PRI	480.	7.680	2.53	7.291	2.30
B-B8-TXMR SEC	208.	4.957	1.78	5.461	1.72
B-B80-ATS-EQ	208.	6.831	0.97	5.175	0.73
B-B80-E1	208.	5.881	0.84	4.250	0.62
B-B80-L1-1	208.	2.978	0.38	1.875	0.27
B-B80-L1-3	208.	3.410	0.38	2.165	0.26
B-B80-LB-1	208.	7.770	1.25	6.275	0.98
B-B80-LB-E	208.	3.959	0.62	2.633	0.47
B-B80-MDP	208.	11.016	2.19	10.647	2.07
B-B80-MDP-M	208.	11.701	2.32	11.681	2.30
B-B80-P1	208.	8.087	1.31	6.643	1.03
B-B80-P5	208.	1.698	0.27	1.030	0.20
B-B80-PB-1	208.	3.067	0.35	1.926	0.24
B-B80-PB-2	208.	4.564	0.69	3.111	0.51
B-B81-MDP	208.	4.266	1.75	4.438	1.73
B-B81-MDP-M	208.	4.272	1.75	4.455	1.74
B-B82-ATS-EMER	208.	6.553	2.09	6.414	1.88
B-B82-EMER	208.	6.289	1.99	6.003	1.74
B-B82-EMERG-M	208.	6.303	1.99	6.034	1.74
B-B82-MDP	208.	7.109	2.34	7.309	2.27
B-B82-MDP-M	208.	7.119	2.35	7.336	2.29
B-B9-*PNLXX	208.	8.246	0.88	6.504	0.79

B-B9-*PNLYY	208.	7.403	0.75	5.774	0.66
B-B9-*PNLZZ	208.	11.439	2.03	9.590	1.88
B-B9-ATS BKR	208.	13.628	2.37	12.205	2.08
B-B9-EM	208.	13.225	2.28	11.692	1.97

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B9-L91A	208.	3.692	0.75	2.390	0.60
B-B9-L91A-M	208.	3.698	0.75	2.397	0.60
B-B9-L92	208.	4.823	0.53	3.622	0.49
B-B9-L9A	208.	6.862	0.88	5.241	0.82
B-B9-L9B	208.	11.306	1.45	9.504	1.28
B-B9-LPN	208.	2.601	0.52	1.626	0.42
B-B9-LPS	208.	5.763	0.69	3.897	0.53
B-B9-MAIN	208.	15.875	2.62	15.198	2.41
B-B9-MDP	208.	14.816	2.52	13.744	2.26
B-B9-STRT LGHT	208.	5.814	0.52	3.778	0.37
B-B9-TAP	208.	12.339	1.66	10.656	1.46
B-B92-ATS	208.	3.699	1.06	2.652	0.76
B-B92-PNL-E1	208.	3.502	1.00	2.472	0.72
B-B94-ATS	208.	5.269	0.89	3.524	0.71
B-B94-E1	208.	4.506	0.77	2.942	0.62
B-SW-MV-1	13800.	2.419	2.08	1.492	2.26
B-SW-MV-2	13800.	2.510	2.30	1.537	2.45
B-SWGR27 TAP	13800.	2.700	3.00	1.630	2.96
B-T-13-PRI	13800.	2.490	2.25	1.566	2.55
B-T-B1-PRI	13800.	2.610	2.62	1.586	2.69
B-T-B1-SEC	208.	4.946	1.92	5.483	2.13
B-T-B10-PRI	13800.	2.537	2.38	1.580	2.63
B-T-B10-SEC	208.	6.153	1.91	6.412	2.17
B-T-B12-PRI	13800.	2.463	2.18	1.552	2.49
B-T-B12-SEC	208.	4.724	1.91	5.299	2.11
B-T-B17-PRI	13800.	2.393	2.02	1.480	2.21
B-T-B17-SEC	208.	12.386	2.46	12.852	2.60
B-T-B18-PRI	13800.	2.385	2.00	1.475	2.20
B-T-B18-SEC	208.	11.821	2.46	12.441	2.60
B-T-B19-PRI	13800.	2.607	2.61	1.585	2.68
B-T-B19-SEC	208.	22.577	3.75	27.231	3.58
B-T-B2-LED-PRI	480.	7.916	1.32	6.360	0.90
B-T-B2-LED-SEC	208.	3.448	1.45	3.679	1.46
B-T-B2-PRI	13800.	2.628	2.69	1.595	2.74
B-T-B2-SEC2	208.	7.660	5.27	7.773	5.34
B-T-B2-SEC3	208.	13.524	2.97	16.312	2.98
B-T-B2-SEC4	480.	11.749	4.76	12.383	4.96

B-T-B22-PRI	13800.	2.644	2.75	1.603	2.79
B-T-B22-SEC	480.	8.713	2.97	8.814	2.98
B-T-B3-PRI	13800.	2.582	2.52	1.594	2.71
B-T-B3-SEC	208.	19.075	2.94	21.296	2.95

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
B-T-B30-PRI	13800.	2.507	2.30	1.536	2.44
B-T-B30-SEC	208.	4.939	1.91	5.478	2.12
B-T-B33-PRI	13800.	2.672	2.87	1.617	2.87
B-T-B33-SEC	208.	6.278	1.92	6.501	2.18
B-T-B4-PRI	13800.	2.537	2.38	1.550	2.51
B-T-B4-SEC	208.	27.392	3.62	31.710	3.46
B-T-B5-PRI	13800.	2.428	2.10	1.497	2.28
B-T-B5-SEC	208.	25.832	2.81	26.444	2.87
B-T-B6-PRI	13800.	2.454	2.16	1.509	2.33
B-T-B6-SEC	208.	25.791	2.83	26.416	2.88
B-T-B60-PRI	13800.	2.419	2.08	1.492	2.26
B-T-B60-SEC	208.	7.818	2.48	8.529	2.60
B-T-B61-PRI	13800.	2.532	2.37	1.548	2.50
B-T-B61-SEC	208.	13.664	2.94	15.432	2.95
B-T-B62-PRI	13800.	2.559	2.45	1.561	2.56
B-T-B62-SEC	208.	25.705	2.90	26.355	2.93
B-T-B7-PRI	13800.	2.490	2.25	1.527	2.40
B-T-B7-SEC	208.	19.975	2.89	20.249	2.92
B-T-B70-PRI	13800.	2.571	2.48	1.567	2.59
B-T-B70-SEC	208.	15.175	2.95	17.876	2.96
B-T-B78-PRI	13800.	2.564	2.46	1.589	2.68
B-T-B78-SEC	208.	35.676	4.67	44.901	4.29
B-T-B8-2-SEC	480.	8.687	2.93	8.796	2.95
B-T-B8-PRI	13800.	2.573	2.49	1.568	2.59
B-T-B8-SEC	208.	20.047	2.93	20.298	2.95
B-T-B80-PRI	13800.	2.523	2.34	1.543	2.48
B-T-B80-SEC	208.	12.471	2.49	12.912	2.63
B-T-B81-PRI	13800.	2.454	2.16	1.548	2.47
B-T-B81-SEC	208.	4.745	1.91	5.317	2.11
B-T-B82-PRI	13800.	2.564	2.46	1.563	2.57
B-T-B82-SEC	208.	7.800	2.50	8.514	2.62
B-T-B9-PRI	13800.	2.507	2.30	1.571	2.58
B-T-B9-SEC	208.	18.510	2.90	19.221	2.93
B0B70-LP2	208.	5.075	0.84	3.534	0.62
BUS-0017	13800.	2.644	2.75	1.603	2.79
BUS-0019	13800.	2.644	2.75	1.603	2.79
BUS-0063	13800.	2.598	2.58	1.599	2.74

BUS-0065	13800.	2.598	2.58	1.599	2.74
BUS-0076	208.	3.283	1.40	3.387	1.35
BUS-0091	208.	3.699	1.06	2.652	0.76
BUS-0097*	208.	11.032	2.35	11.418	1.95

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
BUS-0106*	208.	11.318	2.47	11.936	2.11
BUS-0131	208.	13.695	2.48	12.702	2.16
BUS-0140	208.	14.035	2.42	13.136	2.09
BUS-0172*	208.	20.452	2.18	18.946	1.58
BUS-0227	208.	22.705	2.81	22.570	2.17
BUS-0258*	208.	14.225	1.92	11.445	1.61
BUS-0269	208.	14.134	1.53	11.134	1.23
BUS-0290	208.	15.303	1.64	12.379	1.33
BUS-0302	208.	14.346	2.08	11.635	1.77
BUS-0327	208.	10.018	2.20	7.922	1.89
BUS-0344	208.	9.374	1.83	7.228	1.52
BUS-0360	208.	5.269	0.89	3.524	0.71
BUS-0375	208.	14.184	2.24	12.294	1.93
BUS-0376	208.	14.051	2.21	12.130	1.89
BUS-0380	480.	7.912	2.67	7.628	2.49
BUS-0452	208.	7.941	1.23	6.589	0.94
BUS-0481	480.	6.504	2.46	5.759	2.17
BUS-0518	208.	10.458	2.12	9.937	1.73
BUS-0520	208.	10.590	2.52	10.242	2.21
BUS-0546	208.	18.052	1.89	15.520	1.55
BUS-0554	208.	18.052	1.89	15.520	1.55
BUS-0581	208.	10.950	2.22	10.427	1.83
BUS-0582	208.	11.428	2.48	11.185	2.14
BUS-0618	208.	15.344	1.57	11.961	1.14
BUS-0620	208.	13.737	1.53	10.448	1.13
BUS-0652	208.	5.238	0.75	3.349	0.59
BUS-0664	208.	6.831	0.97	5.175	0.73
BUS-0730	208.	7.687	1.46	5.386	1.16
BUS-0739	208.	13.568	2.36	12.083	2.06
BUS-0740	208.	9.541	1.66	8.540	1.38
BUS-0744	208.	6.553	2.09	6.414	1.88
BUS-0747	13800.	2.628	2.69	1.595	2.74
bB-B7-MC1	208.	4.001	0.57	2.531	0.44

651 FAULTED BUSES, 651 BRANCHES, 1 CONTRIBUTIONS
UNBALANCED FAULTS REQUESTED

*** SHORT CIRCUIT STUDY COMPLETE ***

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B1-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B1-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B10 DISC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B10-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B12-MAP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B12-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-13	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-14	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-15	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-GARAGE	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MDP	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MDP-M	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MGR H16	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-TXMR SEC	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-UNKNOWN	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B17-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-A/C-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-AC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ACB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ANIMALRM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-DP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B17-EMAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP21	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP22	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPA1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2ND-FL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2NDFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-AC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-AC2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-ATS-EMRG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NCP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B18-NMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP21	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP22	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP23	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-STRT LHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-TAP BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-200A PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-B1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-L1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-L2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDPA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B19-PS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-CRIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LED3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-BATTERYCH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-CATSCAN	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-CRIT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTAL LB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTSUCPM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ELEV-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L9E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB1E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-LB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LED-3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-MDP-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPA-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPB-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MEDAIRCOM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL 1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-D2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-L11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-M1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-P	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-POD2PP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-TEL COMM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-UNIT-1	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-UNIT-2	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY-124	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY124	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B21-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B21-P2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-ATS-EMER	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-EMERG	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-EMERG-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-L1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-MDP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-MDP-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-N1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-N1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-P1	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-P2	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B22-T1-PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-T1-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-T2-PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-T2-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-T22-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-T3 PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-T4-PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-T4-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

B-B27-SWGR
E/Z: 2.700 KA AT -71.57 DEG (64.53 MVA) X/R: 3.00
SYM*1.6: 4.320 KA MOMENTARY BASED ON X/R: 3.014 KA
SYM*2.7: 7.290 KA CREST BASED ON X/R: 5.158 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.9332 + J 2.7996 OHMS
CONTRIBUTIONS: B-SWGR27 TAP 2.700 KA ANG: -71.57

B-B27-SWGR-M2
E/Z: 2.700 KA AT -71.57 DEG (64.54 MVA) X/R: 3.00
SYM*1.6: 4.320 KA MOMENTARY BASED ON X/R: 3.014 KA
SYM*2.7: 7.290 KA CREST BASED ON X/R: 5.158 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.9332 + J 2.7995 OHMS
CONTRIBUTIONS: UTIL-STN 559-1 2.700 KA ANG: -71.57

B-B3-1ST FL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ALDN KIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ATS-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ATSTEL RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B3-COMP MF	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-DBL GRILL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-FRZN FOOD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-HYDRO ELV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-KP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH HVAC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-P3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-P7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-STRT LTS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-STRT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TELE PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TRAY LINE	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B33-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B33-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-4EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-4EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-BUS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ELEV#4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-HYDROELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-JBOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LP10-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP11-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP12-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP13-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP14-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP9-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS12-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS13-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LS4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B5-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-HYDR ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-NEXTEL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B5-PNL-H	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-PNL-H-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-TEMP TRAI	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B55-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQMACH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MACH SHOP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-P6-CS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B60-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B60-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B61 STRT LGH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-COMP RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-DP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-KITCHEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B61-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MCC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATTC PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-BL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-BP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-KP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B62-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-OT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-PAD RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-STRT LGT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MCC-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MCC-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-SRTLGHT-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70 -BLDG-71	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATTIC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-CHLLR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FIRE PMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FP-TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FPMP M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-K	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP-4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-PP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-PP220	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-STRTLGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-1P	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-78AE1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATSG9578	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-BARBER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-CONRM-AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B78-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ELEV-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ELEV-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-FLPNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-KK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-L10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B78-MEC-1 AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MEC2-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PHARM AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PHV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PNL-330A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PULM 78B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-QP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78A-PNL-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8 2ND FLR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8 HYDRO ELV	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-208V-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-480V ATS	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-480V PNL	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-BS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-CMOP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-COMP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FDR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FLEXPMACH	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-GE BKR	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B8-J-BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-L8B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-LB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-LB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-MAIN BUS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-MDP-8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PNL-PK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-SYLV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-TXMR PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-TXMR SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-L1-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-L1-3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-LB-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-LB-E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-P5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B80-PB-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-PB-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B81-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B81-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-ATS-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLXX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLYY	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLZZ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-ATS BKR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-EM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L91A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L91A-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L92	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L9A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L9B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-LPN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-LPS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B9-MDP VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-STRT LGHT VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B9-TAP VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B92-ATS VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B92-PNL-E1 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B94-ATS VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B94-E1 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-SW-MV-1 E/Z: 2.419 KA AT -64.28 DEG (57.82 MVA) X/R: 2.08
SYM*1.6: 3.871 KA MOMENTARY BASED ON X/R: 2.534 KA
SYM*2.7: 6.532 KA CREST BASED ON X/R: 4.174 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.4294 + J 2.9670 OHMS
CONTRIBUTIONS: B-T-B5-PRI 2.419 KA ANG: -64.28

B-SW-MV-2 E/Z: 2.510 KA AT -66.51 DEG (59.99 MVA) X/R: 2.30
SYM*1.6: 4.015 KA MOMENTARY BASED ON X/R: 2.668 KA
SYM*2.7: 6.776 KA CREST BASED ON X/R: 4.455 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2654 + J 2.9117 OHMS
CONTRIBUTIONS: B-T-B80-PRI 2.510 KA ANG: -66.51

B-SWGR27 TAP E/Z: 2.700 KA AT -71.57 DEG (64.53 MVA) X/R: 3.00
SYM*1.6: 4.320 KA MOMENTARY BASED ON X/R: 3.014 KA
SYM*2.7: 7.290 KA CREST BASED ON X/R: 5.158 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.9332 + J 2.7995 OHMS
CONTRIBUTIONS: B-B27-SWGR-M2 2.700 KA ANG: -71.57

B-T-13-PRI E/Z: 2.490 KA AT -66.01 DEG (59.51 MVA) X/R: 2.25
SYM*1.6: 3.983 KA MOMENTARY BASED ON X/R: 2.637 KA
SYM*2.7: 6.722 KA CREST BASED ON X/R: 4.391 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3012 + J 2.9238 OHMS
CONTRIBUTIONS: B-T-B9-PRI 2.490 KA ANG: -66.01

B-T-B1-PRI E/Z: 2.610 KA AT -69.10 DEG (62.37 MVA) X/R: 2.62
SYM*1.6: 4.175 KA MOMENTARY BASED ON X/R: 2.837 KA
SYM*2.7: 7.046 KA CREST BASED ON X/R: 4.802 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.0892 + J 2.8523 OHMS
CONTRIBUTIONS: B-T-B70-PRI 0.000 KA ANG: 53.89

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-T-B1-PRI (CONTINUED)
CBL-0017 B-T-B2-PRI 2.610 KA ANG: -69.10

B-T-B1-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B10-PRI E/Z: 2.537 KA AT -67.20 DEG (60.63 MVA) X/R: 2.38
SYM*1.6: 4.059 KA MOMENTARY BASED ON X/R: 2.711 KA
SYM*2.7: 6.849 KA CREST BASED ON X/R: 4.545 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2172 + J 2.8955 OHMS
CONTRIBUTIONS: B-T-B78-PRI 2.537 KA ANG: -67.20

B-T-B10-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B12-PRI E/Z: 2.463 KA AT -65.35 DEG (58.87 MVA) X/R: 2.18
SYM*1.6: 3.941 KA MOMENTARY BASED ON X/R: 2.597 KA
SYM*2.7: 6.650 KA CREST BASED ON X/R: 4.307 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3492 + J 2.9400 OHMS
CONTRIBUTIONS: B-T-13-PRI 2.463 KA ANG: -65.35

B-T-B12-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B17-PRI E/Z: 2.393 KA AT -63.66 DEG (57.21 MVA) X/R: 2.02
SYM*1.6: 3.829 KA MOMENTARY BASED ON X/R: 2.498 KA
SYM*2.7: 6.462 KA CREST BASED ON X/R: 4.099 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.4772 + J 2.9832 OHMS
CONTRIBUTIONS: B-T-B17-SEC 0.000 KA ANG: -28.41
CBL-0013 B-T-B60-PRI 2.393 KA ANG: -63.66

B-T-B17-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B18-PRI E/Z: 2.385 KA AT -63.45 DEG (57.00 MVA) X/R: 2.00
SYM*1.6: 3.816 KA MOMENTARY BASED ON X/R: 2.486 KA
SYM*2.7: 6.439 KA CREST BASED ON X/R: 4.075 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.4932 + J 2.9886 OHMS
CONTRIBUTIONS: B-T-B17-PRI 2.385 KA ANG: -63.45

B-T-B18-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-T-B19-PRI	E/Z:	2.607 KA AT	-69.04 DEG (62.32 MVA)	X/R:	2.61
	SYM*1.6:	4.172 KA	MOMENTARY BASED ON X/R:		2.832 KA
	SYM*2.7:	7.040 KA	CREST BASED ON X/R:		4.794 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE= 1.0932 + J 2.8536		OHMS
	CONTRIBUTIONS:	B-T-B82-PRI	0.000 KA	ANG:	-21.35
	CBL-0023	B-T-B22-PRI	2.607 KA	ANG:	-69.04
B-T-B19-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)			
B-T-B2-LED-PRI	VOLTAGE:	480. (SEE LOW VOLTAGE REPORT)			
B-T-B2-LED-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)			
B-T-B2-PRI	E/Z:	2.628 KA AT	-69.59 DEG (62.81 MVA)	X/R:	2.69
	SYM*1.6:	4.205 KA	MOMENTARY BASED ON X/R:		2.871 KA
	SYM*2.7:	7.096 KA	CREST BASED ON X/R:		4.871 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE= 1.0572 + J 2.8415		OHMS
	CONTRIBUTIONS:	BUS-0019	2.628 KA	ANG:	-69.59
B-T-B2-SEC2	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)			
B-T-B2-SEC3	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)			
B-T-B2-SEC4	VOLTAGE:	480. (SEE LOW VOLTAGE REPORT)			
B-T-B22-PRI	E/Z:	2.644 KA AT	-70.03 DEG (63.20 MVA)	X/R:	2.75
	SYM*1.6:	4.231 KA	MOMENTARY BASED ON X/R:		2.901 KA
	SYM*2.7:	7.139 KA	CREST BASED ON X/R:		4.933 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE= 1.0292 + J 2.8320		OHMS
	CONTRIBUTIONS:	B-T-B19-PRI	0.000 KA	ANG:	-21.35
	CBL-0024	B-T-B33-PRI	2.644 KA	ANG:	-70.03
B-T-B22-SEC	VOLTAGE:	480. (SEE LOW VOLTAGE REPORT)			
B-T-B3-PRI	E/Z:	2.582 KA AT	-68.37 DEG (61.72 MVA)	X/R:	2.52
	SYM*1.6:	4.131 KA	MOMENTARY BASED ON X/R:		2.788 KA
	SYM*2.7:	6.972 KA	CREST BASED ON X/R:		4.703 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE= 1.1372 + J 2.8685		OHMS
	CONTRIBUTIONS:	B-T-B78-PRI	0.000 KA	ANG:	-33.89

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-T-B3-PRI (CONTINUED)
CBL-0033 BUS-0065 2.582 KA ANG: -68.37

B-T-B3-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B30-PRI E/Z: 2.507 KA AT -66.46 DEG (59.93 MVA) X/R: 2.30
SYM*1.6: 4.012 KA MOMENTARY BASED ON X/R: 2.665 KA
SYM*2.7: 6.770 KA CREST BASED ON X/R: 4.448 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2692 + J 2.9130 OHMS
CONTRIBUTIONS: B-T-B60-PRI 0.000 KA ANG: -20.00
CBL-0014 B-T-B70-PRI 2.507 KA ANG: -66.46

B-T-B30-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B33-PRI E/Z: 2.672 KA AT -70.79 DEG (63.87 MVA) X/R: 2.87
SYM*1.6: 4.275 KA MOMENTARY BASED ON X/R: 2.956 KA
SYM*2.7: 7.214 KA CREST BASED ON X/R: 5.043 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.9812 + J 2.8158 OHMS
CONTRIBUTIONS: B-B27-SWGR 2.672 KA ANG: -70.79

B-T-B33-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B4-PRI E/Z: 2.537 KA AT -67.20 DEG (60.63 MVA) X/R: 2.38
SYM*1.6: 4.059 KA MOMENTARY BASED ON X/R: 2.711 KA
SYM*2.7: 6.849 KA CREST BASED ON X/R: 4.545 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2174 + J 2.8955 OHMS
CONTRIBUTIONS: B-T-B80-PRI 0.000 KA ANG: 16.51
CBL-0022 B-T-B82-PRI 2.537 KA ANG: -67.20

B-T-B4-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B5-PRI E/Z: 2.428 KA AT -64.49 DEG (58.03 MVA) X/R: 2.10
SYM*1.6: 3.885 KA MOMENTARY BASED ON X/R: 2.546 KA
SYM*2.7: 6.555 KA CREST BASED ON X/R: 4.200 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.4134 + J 2.9616 OHMS
CONTRIBUTIONS: B-T-B6-PRI 2.428 KA ANG: -64.49

B-T-B5-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-T-B6-PRI	E/Z:	2.454 KA AT -65.13 DEG (58.66 MVA)	X/R:	2.16
	SYM*1.6:	3.927 KA	MOMENTARY BASED ON X/R:	2.584 KA
	SYM*2.7:	6.626 KA	CREST BASED ON X/R:	4.280 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.3654 + J 2.9454 OHMS		
	CONTRIBUTIONS:	B-T-B7-PRI 2.454 KA	ANG:	-65.13
B-T-B6-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)		
B-T-B60-PRI	E/Z:	2.419 KA AT -64.28 DEG (57.83 MVA)	X/R:	2.08
	SYM*1.6:	3.871 KA	MOMENTARY BASED ON X/R:	2.534 KA
	SYM*2.7:	6.532 KA	CREST BASED ON X/R:	4.175 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.4292 + J 2.9670 OHMS		
	CONTRIBUTIONS:	B-T-B17-PRI 0.000 KA	ANG:	-20.00
	CBL-0015	B-T-B30-PRI 2.419 KA	ANG:	-64.28
B-T-B60-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)		
B-T-B61-PRI	E/Z:	2.532 KA AT -67.08 DEG (60.52 MVA)	X/R:	2.37
	SYM*1.6:	4.051 KA	MOMENTARY BASED ON X/R:	2.704 KA
	SYM*2.7:	6.837 KA	CREST BASED ON X/R:	4.530 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.2252 + J 2.8981 OHMS		
	CONTRIBUTIONS:	B-T-B62-PRI 2.532 KA	ANG:	-67.08
B-T-B61-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)		
B-T-B62-PRI	E/Z:	2.559 KA AT -67.78 DEG (61.17 MVA)	X/R:	2.45
	SYM*1.6:	4.095 KA	MOMENTARY BASED ON X/R:	2.749 KA
	SYM*2.7:	6.910 KA	CREST BASED ON X/R:	4.623 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.1772 + J 2.8819 OHMS		
	CONTRIBUTIONS:	B-T-B8-PRI 2.559 KA	ANG:	-67.78
B-T-B62-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)		
B-T-B7-PRI	E/Z:	2.490 KA AT -66.01 DEG (59.51 MVA)	X/R:	2.25
	SYM*1.6:	3.983 KA	MOMENTARY BASED ON X/R:	2.637 KA
	SYM*2.7:	6.722 KA	CREST BASED ON X/R:	4.390 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 1.3014 + J 2.9238 OHMS		
	CONTRIBUTIONS:	B-T-B61-PRI 2.490 KA	ANG:	-66.01

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

CONTRIBUTIONS TO B-T-B7-PRI (CONTINUED)

B-T-B7-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-T-B70-PRI	E/Z:	2.571 KA AT	-68.08 DEG (61.45 MVA)	X/R:	2.48
	SYM*1.6:	4.113 KA	MOMENTARY BASED ON X/R:		2.768 KA
	SYM*2.7:	6.941 KA	CREST BASED ON X/R:		4.662 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE= 1.1572 + J 2.8752		OHMS
	CONTRIBUTIONS:	B-T-B30-PRI	0.000 KA	ANG:	-20.00
	CBL-0016	B-T-B1-PRI	2.571 KA	ANG:	-68.08
B-T-B70-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-T-B78-PRI	E/Z:	2.564 KA AT	-67.90 DEG (61.28 MVA)	X/R:	2.46
	SYM*1.6:	4.102 KA	MOMENTARY BASED ON X/R:		2.757 KA
	SYM*2.7:	6.922 KA	CREST BASED ON X/R:		4.638 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE= 1.1692 + J 2.8793		OHMS
	CONTRIBUTIONS:	B-T-B78-SEC	0.000 KA	ANG:	-26.95
	CBL-0032	B-T-B3-PRI	2.564 KA	ANG:	-67.90
B-T-B78-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-T-B8-2-SEC	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)		
B-T-B8-PRI	E/Z:	2.573 KA AT	-68.14 DEG (61.50 MVA)	X/R:	2.49
	SYM*1.6:	4.117 KA	MOMENTARY BASED ON X/R:		2.772 KA
	SYM*2.7:	6.947 KA	CREST BASED ON X/R:		4.670 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE= 1.1532 + J 2.8738		OHMS
	CONTRIBUTIONS:	B-B27-SWGR	2.573 KA	ANG:	-68.14
B-T-B8-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-T-B80-PRI	E/Z:	2.523 KA AT	-66.85 DEG (60.31 MVA)	X/R:	2.34
	SYM*1.6:	4.037 KA	MOMENTARY BASED ON X/R:		2.690 KA
	SYM*2.7:	6.812 KA	CREST BASED ON X/R:		4.500 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE= 1.2414 + J 2.9036		OHMS
	CONTRIBUTIONS:	B-T-B80-SEC	0.000 KA	ANG:	16.54
	CBL-0020	B-T-B4-PRI	2.523 KA	ANG:	-66.85

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-T-B80-SEC	VOLTAGE: 208.	(SEE LOW VOLTAGE REPORT)
B-T-B81-PRI	E/Z: 2.454 KA AT -65.13 DEG (58.66 MVA)	X/R: 2.16
	SYM*1.6: 3.927 KA MOMENTARY BASED ON X/R:	2.584 KA
	SYM*2.7: 6.626 KA CREST BASED ON X/R:	4.280 KA
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3652 + J 2.9454	OHMS
	CONTRIBUTIONS: B-T-B12-PRI 2.454 KA	ANG: -65.13
B-T-B81-SEC	VOLTAGE: 208.	(SEE LOW VOLTAGE REPORT)
B-T-B82-PRI	E/Z: 2.564 KA AT -67.90 DEG (61.28 MVA)	X/R: 2.46
	SYM*1.6: 4.102 KA MOMENTARY BASED ON X/R:	2.756 KA
	SYM*2.7: 6.922 KA CREST BASED ON X/R:	4.638 KA
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1694 + J 2.8793	OHMS
	CONTRIBUTIONS: B-T-B4-PRI 0.000 KA	ANG: -21.35
	CBL-0021 B-T-B19-PRI 2.564 KA	ANG: -67.90
B-T-B82-SEC	VOLTAGE: 208.	(SEE LOW VOLTAGE REPORT)
B-T-B9-PRI	E/Z: 2.507 KA AT -66.46 DEG (59.93 MVA)	X/R: 2.30
	SYM*1.6: 4.012 KA MOMENTARY BASED ON X/R:	2.665 KA
	SYM*2.7: 6.770 KA CREST BASED ON X/R:	4.448 KA
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2692 + J 2.9130	OHMS
	CONTRIBUTIONS: B-T-B10-PRI 2.507 KA	ANG: -66.46
B-T-B9-SEC	VOLTAGE: 208.	(SEE LOW VOLTAGE REPORT)
B0B70-LP2	VOLTAGE: 208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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BUS-0739 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

bB-B7-MC1 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT TYPE	E/Z KA	X/R	EQUIVALENT IMPEDANCE (PU)	MOMENTARY FAULT DUTIES E/Z * 1.6	@ 0.5 CYCLE
	3 PHASE:	2.70	3.0	Z1= 1.5496	4.32	3.01
B-B27-SWGR	SLG DUTY:	1.63	3.0	Z2= 1.5496	2.61	1.81
13800. VOLTS	LN/LN	2.34		Z0= 4.5990		
	LN/LN/GND	2.41	(	1.17 GND RETURN KA)		
	3 PHASE:	2.70	3.0	Z1= 1.5495	4.32	3.01
B-B27-SWGR-M2	SLG DUTY:	1.63	3.0	Z2= 1.5495	2.61	1.81
13800. VOLTS	LN/LN	2.34		Z0= 4.5989		
	LN/LN/GND	2.41	(	1.17 GND RETURN KA)		
	3 PHASE:	2.42	2.1	Z1= 1.7294	3.87	2.53
B-SW-MV-1	SLG DUTY:	1.49	2.3	Z2= 1.7294	2.39	1.58
13800. VOLTS	LN/LN	2.10		Z0= 4.9549		
	LN/LN/GND	2.14	(	1.08 GND RETURN KA)		
	3 PHASE:	2.51	2.3	Z1= 1.6671	4.02	2.67
B-SW-MV-2	SLG DUTY:	1.54	2.4	Z2= 1.6671	2.46	1.65
13800. VOLTS	LN/LN	2.17		Z0= 4.8351		
	LN/LN/GND	2.23	(	1.11 GND RETURN KA)		
	3 PHASE:	2.70	3.0	Z1= 1.5496	4.32	3.01
B-SWGR27 TAP	SLG DUTY:	1.63	3.0	Z2= 1.5496	2.61	1.81
13800. VOLTS	LN/LN	2.34		Z0= 4.5990		
	LN/LN/GND	2.41	(	1.17 GND RETURN KA)		
	3 PHASE:	2.49	2.2	Z1= 1.6805	3.98	2.64
B-T-13-PRI	SLG DUTY:	1.57	2.6	Z2= 1.6805	2.51	1.69
13800. VOLTS	LN/LN	2.16		Z0= 4.6606		
	LN/LN/GND	2.19	(	1.14 GND RETURN KA)		
	3 PHASE:	2.61	2.6	Z1= 1.6032	4.18	2.84
B-T-B1-PRI	SLG DUTY:	1.59	2.7	Z2= 1.6032	2.54	1.73
13800. VOLTS	LN/LN	2.26		Z0= 4.7088		
	LN/LN/GND	2.32	(	1.14 GND RETURN KA)		
	3 PHASE:	2.54	2.4	Z1= 1.6493	4.06	2.71
B-T-B10-PRI	SLG DUTY:	1.58	2.6	Z2= 1.6493	2.53	1.72
13800. VOLTS	LN/LN	2.20		Z0= 4.6466		
	LN/LN/GND	2.24	(	1.15 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT TYPE	E/Z KA	X/R	EQUIVALENT IMPEDANCE (PU)	MOMENTARY FAULT DUTIES E/Z * 1.6	@ 0.5 CYCLE
	3 PHASE:	2.46	2.2	Z1= 1.6986	3.94	2.60
B-T-B12-PRI	SLG DUTY:	1.55	2.5	Z2= 1.6986	2.48	1.67
13800. VOLTS	LN/LN	2.13		Z0= 4.6945		
	LN/LN/GND	2.17	(1.13 GND RETURN KA)			
	3 PHASE:	2.39	2.0	Z1= 1.7480	3.83	2.50
B-T-B17-PRI	SLG DUTY:	1.48	2.2	Z2= 1.7480	2.37	1.56
13800. VOLTS	LN/LN	2.07		Z0= 4.9902		
	LN/LN/GND	2.11	(1.07 GND RETURN KA)			
	3 PHASE:	2.38	2.0	Z1= 1.7543	3.82	2.49
B-T-B18-PRI	SLG DUTY:	1.48	2.2	Z2= 1.7543	2.36	1.56
13800. VOLTS	LN/LN	2.07		Z0= 5.0021		
	LN/LN/GND	2.11	(1.07 GND RETURN KA)			
	3 PHASE:	2.61	2.6	Z1= 1.6046	4.17	2.83
B-T-B19-PRI	SLG DUTY:	1.58	2.7	Z2= 1.6046	2.54	1.73
13800. VOLTS	LN/LN	2.26		Z0= 4.7116		
	LN/LN/GND	2.32	(1.14 GND RETURN KA)			
	3 PHASE:	2.63	2.7	Z1= 1.5920	4.20	2.87
B-T-B2-PRI	SLG DUTY:	1.59	2.7	Z2= 1.5920	2.55	1.75
13800. VOLTS	LN/LN	2.28		Z0= 4.6861		
	LN/LN/GND	2.34	(1.14 GND RETURN KA)			
	3 PHASE:	2.64	2.8	Z1= 1.5822	4.23	2.90
B-T-B22-PRI	SLG DUTY:	1.60	2.8	Z2= 1.5822	2.56	1.76
13800. VOLTS	LN/LN	2.29		Z0= 4.6663		
	LN/LN/GND	2.36	(1.15 GND RETURN KA)			
	3 PHASE:	2.58	2.5	Z1= 1.6203	4.13	2.79
B-T-B3-PRI	SLG DUTY:	1.59	2.7	Z2= 1.6203	2.55	1.74
13800. VOLTS	LN/LN	2.24		Z0= 4.6332		
	LN/LN/GND	2.29	(1.15 GND RETURN KA)			
	3 PHASE:	2.51	2.3	Z1= 1.6685	4.01	2.66
B-T-B30-PRI	SLG DUTY:	1.54	2.4	Z2= 1.6685	2.46	1.65
13800. VOLTS	LN/LN	2.17		Z0= 4.8379		
	LN/LN/GND	2.22	(1.11 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT TYPE	E/Z KA	X/R	EQUIVALENT IMPEDANCE (PU)	MOMENTARY FAULT DUTIES E/Z * 1.6	@ 0.5 CYCLE
	3 PHASE:	2.67	2.9	Z1= 1.5658	4.28	2.96
B-T-B33-PRI	SLG DUTY:	1.62	2.9	Z2= 1.5658	2.59	1.79
13800. VOLTS	LN/LN	2.31		Z0= 4.6326		
	LN/LN/GND	2.39	(	1.16 GND RETURN KA)		
	3 PHASE:	2.54	2.4	Z1= 1.6493	4.06	2.71
B-T-B4-PRI	SLG DUTY:	1.55	2.5	Z2= 1.6493	2.48	1.67
13800. VOLTS	LN/LN	2.20		Z0= 4.8004		
	LN/LN/GND	2.25	(	1.12 GND RETURN KA)		
	3 PHASE:	2.43	2.1	Z1= 1.7232	3.88	2.55
B-T-B5-PRI	SLG DUTY:	1.50	2.3	Z2= 1.7232	2.39	1.59
13800. VOLTS	LN/LN	2.10		Z0= 4.9431		
	LN/LN/GND	2.15	(	1.08 GND RETURN KA)		
	3 PHASE:	2.45	2.2	Z1= 1.7047	3.93	2.58
B-T-B6-PRI	SLG DUTY:	1.51	2.3	Z2= 1.7047	2.42	1.61
13800. VOLTS	LN/LN	2.13		Z0= 4.9079		
	LN/LN/GND	2.17	(	1.09 GND RETURN KA)		
	3 PHASE:	2.42	2.1	Z1= 1.7293	3.87	2.53
B-T-B60-PRI	SLG DUTY:	1.49	2.3	Z2= 1.7293	2.39	1.58
13800. VOLTS	LN/LN	2.10		Z0= 4.9548		
	LN/LN/GND	2.14	(	1.08 GND RETURN KA)		
	3 PHASE:	2.53	2.4	Z1= 1.6522	4.05	2.70
B-T-B61-PRI	SLG DUTY:	1.55	2.5	Z2= 1.6522	2.48	1.67
13800. VOLTS	LN/LN	2.19		Z0= 4.8061		
	LN/LN/GND	2.25	(	1.11 GND RETURN KA)		
	3 PHASE:	2.56	2.4	Z1= 1.6347	4.09	2.75
B-T-B62-PRI	SLG DUTY:	1.56	2.6	Z2= 1.6347	2.50	1.69
13800. VOLTS	LN/LN	2.22		Z0= 4.7715		
	LN/LN/GND	2.27	(	1.12 GND RETURN KA)		
	3 PHASE:	2.49	2.2	Z1= 1.6805	3.98	2.64
B-T-B7-PRI	SLG DUTY:	1.53	2.4	Z2= 1.6805	2.44	1.63
13800. VOLTS	LN/LN	2.16		Z0= 4.8612		
	LN/LN/GND	2.21	(	1.10 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT TYPE	E/Z KA	X/R	EQUIVALENT IMPEDANCE (PU)	MOMENTARY FAULT DUTIES E/Z * 1.6	@ 0.5 CYCLE
	3 PHASE:	2.57	2.5	Z1= 1.6275	4.11	2.77
B-T-B70-PRI	SLG DUTY:	1.57	2.6	Z2= 1.6275	2.51	1.70
13800. VOLTS	LN/LN	2.23		Z0= 4.7572		
	LN/LN/GND	2.29	(1.13 GND RETURN KA)			
	3 PHASE:	2.56	2.5	Z1= 1.6318	4.10	2.76
B-T-B78-PRI	SLG DUTY:	1.59	2.7	Z2= 1.6318	2.54	1.73
13800. VOLTS	LN/LN	2.22		Z0= 4.6386		
	LN/LN/GND	2.27	(1.15 GND RETURN KA)			
	3 PHASE:	2.57	2.5	Z1= 1.6260	4.12	2.77
B-T-B8-PRI	SLG DUTY:	1.57	2.6	Z2= 1.6260	2.51	1.70
13800. VOLTS	LN/LN	2.23		Z0= 4.7544		
	LN/LN/GND	2.29	(1.13 GND RETURN KA)			
	3 PHASE:	2.52	2.3	Z1= 1.6582	4.04	2.69
B-T-B80-PRI	SLG DUTY:	1.54	2.5	Z2= 1.6582	2.47	1.66
13800. VOLTS	LN/LN	2.19		Z0= 4.8177		
	LN/LN/GND	2.24	(1.11 GND RETURN KA)			
	3 PHASE:	2.45	2.2	Z1= 1.7047	3.93	2.58
B-T-B81-PRI	SLG DUTY:	1.55	2.5	Z2= 1.7047	2.48	1.67
13800. VOLTS	LN/LN	2.13		Z0= 4.7059		
	LN/LN/GND	2.16	(1.13 GND RETURN KA)			
	3 PHASE:	2.56	2.5	Z1= 1.6318	4.10	2.76
B-T-B82-PRI	SLG DUTY:	1.56	2.6	Z2= 1.6318	2.50	1.69
13800. VOLTS	LN/LN	2.22		Z0= 4.7659		
	LN/LN/GND	2.28	(1.12 GND RETURN KA)			
	3 PHASE:	2.51	2.3	Z1= 1.6685	4.01	2.66
B-T-B9-PRI	SLG DUTY:	1.57	2.6	Z2= 1.6685	2.51	1.70
13800. VOLTS	LN/LN	2.17		Z0= 4.6553		
	LN/LN/GND	2.21	(1.14 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

M O M E N T A R Y D U T Y S U M M A R Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	* 3 P H A S E * E/Z	X/R	* * * SLG * * * E/Z	X/R
B-B27-SWGR	13800.	3.014	3.00	1.815	2.96
B-B27-SWGR-M2	13800.	3.014	3.00	1.815	2.96
B-SW-MV-1	13800.	2.534	2.08	1.582	2.26
B-SW-MV-2	13800.	2.668	2.30	1.650	2.45
B-SWGR27 TAP	13800.	3.014	3.00	1.815	2.96
B-T-13-PRI	13800.	2.637	2.25	1.694	2.55
B-T-B1-PRI	13800.	2.837	2.62	1.732	2.69
B-T-B10-PRI	13800.	2.711	2.38	1.720	2.63
B-T-B12-PRI	13800.	2.597	2.18	1.672	2.49
B-T-B17-PRI	13800.	2.498	2.02	1.564	2.21
B-T-B18-PRI	13800.	2.486	2.00	1.558	2.20
B-T-B19-PRI	13800.	2.832	2.61	1.730	2.68
B-T-B2-PRI	13800.	2.871	2.69	1.748	2.74
B-T-B22-PRI	13800.	2.901	2.75	1.763	2.79
B-T-B3-PRI	13800.	2.788	2.52	1.745	2.71
B-T-B30-PRI	13800.	2.665	2.30	1.648	2.44
B-T-B33-PRI	13800.	2.956	2.87	1.788	2.87
B-T-B4-PRI	13800.	2.711	2.38	1.671	2.51
B-T-B5-PRI	13800.	2.546	2.10	1.589	2.28
B-T-B6-PRI	13800.	2.584	2.16	1.608	2.33
B-T-B60-PRI	13800.	2.534	2.08	1.582	2.26
B-T-B61-PRI	13800.	2.704	2.37	1.668	2.50
B-T-B62-PRI	13800.	2.749	2.45	1.690	2.56
B-T-B7-PRI	13800.	2.637	2.25	1.635	2.40
B-T-B70-PRI	13800.	2.768	2.48	1.699	2.59
B-T-B78-PRI	13800.	2.757	2.46	1.734	2.68
B-T-B8-PRI	13800.	2.772	2.49	1.701	2.59
B-T-B80-PRI	13800.	2.690	2.34	1.661	2.48
B-T-B81-PRI	13800.	2.584	2.16	1.665	2.47
B-T-B82-PRI	13800.	2.756	2.46	1.694	2.57
B-T-B9-PRI	13800.	2.665	2.30	1.704	2.58
BUS-0017	13800.	2.901	2.75	1.763	2.79
BUS-0019	13800.	2.901	2.75	1.763	2.79
BUS-0063	13800.	2.816	2.58	1.754	2.74
BUS-0065	13800.	2.816	2.58	1.754	2.74
BUS-0747	13800.	2.870	2.69	1.748	2.74

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  36 FAULTED BUSES,  651 BRANCHES,    1 CONTRIBUTIONS
UNBALANCED FAULTS REQUESTED

*** SHORT CIRCUIT STUDY COMPLETE ***
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B1-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B1-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B10 DISC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B10-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B12-MAP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B12-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-13	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-14	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-15	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-GARAGE	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MDP	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MDP-M	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MGR H16	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-TXMR SEC	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-UNKNOWN	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B17-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-A/C-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-AC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ACB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ANIMALRM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-DP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B17-EMAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP21	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP22	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPA1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2ND-FL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2NDFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-AC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-AC2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-ATS-EMRG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NCP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B18-NMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP21	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP22	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP23	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-STRT LHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-TAP BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-200A PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-B1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-L1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-L2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDPA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B19-PS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-CRIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LED3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-BATTERYCH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-CATSCAN	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-CRIT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTAL LB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTSUCPM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ELEV-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L9E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB1E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-LB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LED-3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-MDP-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPA-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPB-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MEDAIRCOM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL 1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-D2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-L11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-M1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-P	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-POD2PP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-TEL COMM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-UNIT-1	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-UNIT-2	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY-124	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY124	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B21-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B21-P2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-ATS-EMER	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-EMERG	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-EMERG-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-L1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-MDP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-MDP-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-N1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-N1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-P1	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-P2	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B22-T1-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T1-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-T2-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T2-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-T22-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-T3 PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T4-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T4-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B27-SWGR E/Z: 2.700 KA AT -71.57 DEG (64.53 MVA) X/R: 3.00
VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.9332 + J 2.7996 OHMS
CONTRIBUTIONS: B-SWGR27 TAP 2.700 KA ANG: -71.57

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.700	0.00	R

TOTAL REMOTE: 2.700 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.700	2.700	2.700	2.700

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.028	1.000	1.000	1.000
DUTY (KA) :	2.775	2.700	2.700	2.700

B-B27-SWGR-M2 E/Z: 2.700 KA AT -71.57 DEG (64.54 MVA) X/R: 3.00
VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.9332 + J 2.7995 OHMS
CONTRIBUTIONS: UTIL-STN 559-1 2.700 KA ANG: -71.57

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.700	0.00	R

TOTAL REMOTE: 2.700 KA NACD RATIO: 1.0000

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.700	2.700	2.700	2.700

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.028	1.000	1.000	1.000
DUTY (KA) :	2.775	2.700	2.700	2.700

B-B3-1ST FL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ALDN KIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ATS-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ATSTEL RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP MF	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-DBL GRILL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-FRZN FOOD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-HYDRO ELV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-KP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B3-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH HVAC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-P3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-P7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-STRT LTS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-STRT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TELE PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TRAY LINE	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B33-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B33-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-4EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-4EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-BUS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ELEV#4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-HYDROELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-JBOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP10-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP11-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP12-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP13-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP14-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP9-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LS12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS12-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS13-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-HYDR ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B5-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-NEXTEL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-PNL-H	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-PNL-H-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-TEMP TRAI	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B55-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQMACH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MACH SHOP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-P6-CS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B60-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B60-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61 STRT LGH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-COMP RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-DP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B61-KITCHEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MCC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATTC PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-BL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B62-BP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-KP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-OT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-PAD RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-STRT LGT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MCC-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MCC-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-SRTLGHT-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70 -BLDG-71	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATTIC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-CHLLR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FIRE PMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FP-TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FPMP M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-K	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP-4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-PP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-PP220	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-STRTLGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-1P	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-78AE1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATSG9578	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-BARBER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-CONRM-AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ELEV-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ELEV-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-FLPNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-KK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-L10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B78-LP-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MEC-1 AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MEC2-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PHARM AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PHV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PNL-330A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PULM 78B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-QP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78A-PNL-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8 2ND FLR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8 HYDRO ELV	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B8-208V-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-480V ATS	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-480V PNL	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-BS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-CMOP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-COMP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FDR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FLEXPMACH	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-GE BKR	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-J-BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-L8B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-LB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-LB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-MAIN BUS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-MDP-8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PNL-PK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-SYLV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-TXMR PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B8-TXMR SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-L1-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-L1-3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-LB-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-LB-E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-P5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-PB-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-PB-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B81-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B81-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-ATS-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLXX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLYY	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B9-*PNLZZ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-ATS BKR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-EM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L91A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L91A-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L92	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L9A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L9B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-LPN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-LPS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-PNL-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

B-SW-MV-1 E/Z: 2.419 KA AT -64.28 DEG (57.82 MVA) X/R: 2.08
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.4294 + J 2.9670 OHMS
CONTRIBUTIONS: B-T-B5-PRI 2.419 KA ANG: -64.28

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.419	0.16	R

TOTAL REMOTE: 2.419 KA NACD RATIO: 1.0000

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.419	2.419	2.419	2.419

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.016	1.000	1.000	1.000
DUTY (KA) :	2.458	2.419	2.419	2.419

B-SW-MV-2 E/Z: 2.510 KA AT -66.51 DEG (59.99 MVA) X/R: 2.30
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2654 + J 2.9117 OHMS
CONTRIBUTIONS: B-T-B80-PRI 2.510 KA ANG: -66.51

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.510	0.11	R

TOTAL REMOTE: 2.510 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.510	2.510	2.510	2.510

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.019	1.000	1.000	1.000
DUTY (KA) :	2.557	2.510	2.510	2.510

B-SWGR27 TAP E/Z: 2.700 KA AT -71.57 DEG (64.53 MVA) X/R: 3.00
VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.9332 + J 2.7995 OHMS
CONTRIBUTIONS: B-B27-SWGR-M2 2.700 KA ANG: -71.57

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.700	0.00	R

TOTAL REMOTE: 2.700 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.700	2.700	2.700	2.700

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.028	1.000	1.000	1.000
DUTY (KA) :	2.775	2.700	2.700	2.700

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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B-T-13-PRI E/Z: 2.490 KA AT -66.01 DEG (59.51 MVA) X/R: 2.25
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3012 + J 2.9238 OHMS
CONTRIBUTIONS: B-T-B9-PRI 2.490 KA ANG: -66.01

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.490	0.12	R

TOTAL REMOTE: 2.490 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.490	2.490	2.490	2.490

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.018	1.000	1.000	1.000
DUTY (KA) :	2.535	2.490	2.490	2.490

B-T-B1-PRI E/Z: 2.610 KA AT -69.10 DEG (62.37 MVA) X/R: 2.62
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.0892 + J 2.8523 OHMS
CONTRIBUTIONS: B-T-B2-PRI 2.610 KA ANG: -69.10

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.610	0.05	R

TOTAL REMOTE: 2.610 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.610	2.610	2.610	2.610

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.023	1.000	1.000	1.000
DUTY (KA) :	2.670	2.610	2.610	2.610

B-T-B1-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B10-PRI E/Z: 2.537 KA AT -67.20 DEG (60.63 MVA) X/R: 2.38
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2172 + J 2.8955 OHMS
CONTRIBUTIONS: B-T-B78-PRI 2.537 KA ANG: -67.20

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.537	0.10	R

TOTAL REMOTE: 2.537 KA NACD RATIO: 1.0000

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.537	2.537	2.537	2.537

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.020	1.000	1.000	1.000
DUTY (KA) :	2.587	2.537	2.537	2.537

B-T-B10-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B12-PRI E/Z: 2.463 KA AT -65.35 DEG (58.87 MVA) X/R: 2.18
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3492 + J 2.9400 OHMS
CONTRIBUTIONS: B-T-13-PRI 2.463 KA ANG: -65.35

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.463	0.14	R

TOTAL REMOTE: 2.463 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.463	2.463	2.463	2.463

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.017	1.000	1.000	1.000
DUTY (KA) :	2.506	2.463	2.463	2.463

B-T-B12-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B17-PRI E/Z: 2.393 KA AT -63.66 DEG (57.21 MVA) X/R: 2.02
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.4772 + J 2.9832 OHMS
CONTRIBUTIONS: B-T-B60-PRI 2.393 KA ANG: -63.66

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.393	0.17	R

TOTAL REMOTE: 2.393 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.393	2.393	2.393	2.393

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.015	1.000	1.000	1.000
	DUTY (KA) :	2.430	2.393	2.393	2.393

B-T-B17-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B18-PRI E/Z: 2.385 KA AT -63.45 DEG (57.00 MVA) X/R: 2.00
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.4932 + J 2.9886 OHMS
CONTRIBUTIONS: B-T-B17-PRI 2.385 KA ANG: -63.45

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.385	0.18	R

TOTAL REMOTE: 2.385 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.385	2.385	2.385	2.385

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.015	1.000	1.000	1.000
DUTY (KA) :	2.421	2.385	2.385	2.385

B-T-B18-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B19-PRI E/Z: 2.607 KA AT -69.04 DEG (62.32 MVA) X/R: 2.61
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.0932 + J 2.8536 OHMS
CONTRIBUTIONS: B-T-B22-PRI 2.607 KA ANG: -69.04

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.607	0.06	R

TOTAL REMOTE: 2.607 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.607	2.607	2.607	2.607

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.023	1.000	1.000	1.000
DUTY (KA) :	2.667	2.607	2.607	2.607

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-T-B19-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B2-LED-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-T-B2-LED-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B2-PRI E/Z: 2.628 KA AT -69.59 DEG (62.81 MVA) X/R: 2.69
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.0572 + J 2.8415 OHMS
CONTRIBUTIONS: BUS-0019 2.628 KA ANG: -69.59

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.628	0.04	R

TOTAL REMOTE: 2.628 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.628	2.628	2.628	2.628

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.024	1.000	1.000	1.000
DUTY (KA) :	2.691	2.628	2.628	2.628

B-T-B2-SEC2 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B2-SEC3 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B2-SEC4 VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-T-B22-PRI E/Z: 2.644 KA AT -70.03 DEG (63.20 MVA) X/R: 2.75
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.0292 + J 2.8320 OHMS
CONTRIBUTIONS: B-T-B33-PRI 2.644 KA ANG: -70.03

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.644	0.03	R

TOTAL REMOTE: 2.644 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.644	2.644	2.644	2.644

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.025	1.000	1.000	1.000
DUTY (KA) :	2.709	2.644	2.644	2.644

B-T-B22-SEC VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-T-B3-PRI E/Z: 2.582 KA AT -68.37 DEG (61.72 MVA) X/R: 2.52
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1372 + J 2.8685 OHMS
CONTRIBUTIONS: BUS-0065 2.582 KA ANG: -68.37

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.582	0.07	R

TOTAL REMOTE: 2.582 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.582	2.582	2.582	2.582

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.022	1.000	1.000	1.000
DUTY (KA) :	2.638	2.582	2.582	2.582

B-T-B3-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B30-PRI E/Z: 2.507 KA AT -66.46 DEG (59.93 MVA) X/R: 2.30
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2692 + J 2.9130 OHMS
CONTRIBUTIONS: B-T-B70-PRI 2.507 KA ANG: -66.46

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.507	0.11	R

TOTAL REMOTE: 2.507 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.507	2.507	2.507	2.507

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.019	1.000	1.000	1.000
DUTY (KA) :	2.555	2.507	2.507	2.507

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-T-B30-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B33-PRI E/Z: 2.672 KA AT -70.79 DEG (63.87 MVA) X/R: 2.87
VOLTAGE: 13800. EQUIV. IMPEDANCE= 0.9812 + J 2.8158 OHMS
CONTRIBUTIONS: B-B27-SWGR 2.672 KA ANG: -70.79

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.672	0.02	R

TOTAL REMOTE: 2.672 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.672	2.672	2.672	2.672

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.026	1.000	1.000	1.000
DUTY (KA) :	2.742	2.672	2.672	2.672

B-T-B33-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B4-PRI E/Z: 2.537 KA AT -67.20 DEG (60.63 MVA) X/R: 2.38
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2174 + J 2.8955 OHMS
CONTRIBUTIONS: B-T-B82-PRI 2.537 KA ANG: -67.20

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.537	0.10	R

TOTAL REMOTE: 2.537 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.537	2.537	2.537	2.537

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.020	1.000	1.000	1.000
DUTY (KA) :	2.587	2.537	2.537	2.537

B-T-B4-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B5-PRI E/Z: 2.428 KA AT -64.49 DEG (58.03 MVA) X/R: 2.10
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.4134 + J 2.9616 OHMS
CONTRIBUTIONS: B-T-B6-PRI 2.428 KA ANG: -64.49

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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CONTRIBUTIONS TO B-T-B5-PRI (CONTINUED)

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.428	0.15	R

TOTAL REMOTE: 2.428 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.428	2.428	2.428	2.428

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.016	1.000	1.000	1.000
DUTY (KA) :	2.468	2.428	2.428	2.428

B-T-B5-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B6-PRI E/Z: 2.454 KA AT -65.13 DEG (58.66 MVA) X/R: 2.16
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3654 + J 2.9454 OHMS
CONTRIBUTIONS: B-T-B7-PRI 2.454 KA ANG: -65.13

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.454	0.14	R

TOTAL REMOTE: 2.454 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.454	2.454	2.454	2.454

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.017	1.000	1.000	1.000
DUTY (KA) :	2.496	2.454	2.454	2.454

B-T-B6-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B60-PRI E/Z: 2.419 KA AT -64.28 DEG (57.83 MVA) X/R: 2.08
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.4292 + J 2.9670 OHMS
CONTRIBUTIONS: B-T-B30-PRI 2.419 KA ANG: -64.28

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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	GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
	UTIL-STN 559-1	2.419	0.16	R

TOTAL REMOTE: 2.419 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.419	2.419	2.419	2.419

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.016	1.000	1.000	1.000
DUTY (KA) :	2.458	2.419	2.419	2.419

B-T-B60-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B61-PRI E/Z: 2.532 KA AT -67.08 DEG (60.52 MVA) X/R: 2.37
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2252 + J 2.8981 OHMS
CONTRIBUTIONS: B-T-B62-PRI 2.532 KA ANG: -67.08

	GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
	UTIL-STN 559-1	2.532	0.10	R

TOTAL REMOTE: 2.532 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.532	2.532	2.532	2.532

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.020	1.000	1.000	1.000
DUTY (KA) :	2.582	2.532	2.532	2.532

B-T-B61-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B62-PRI E/Z: 2.559 KA AT -67.78 DEG (61.17 MVA) X/R: 2.45
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1772 + J 2.8819 OHMS
CONTRIBUTIONS: B-T-B8-PRI 2.559 KA ANG: -67.78

	GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
	UTIL-STN 559-1	2.559	0.08	R

TOTAL REMOTE: 2.559 KA NACD RATIO: 1.0000

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.559	2.559	2.559	2.559

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.021	1.000	1.000	1.000
DUTY (KA) :	2.613	2.559	2.559	2.559

B-T-B62-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B7-PRI E/Z: 2.490 KA AT -66.01 DEG (59.51 MVA) X/R: 2.25
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3014 + J 2.9238 OHMS
CONTRIBUTIONS: B-T-B61-PRI 2.490 KA ANG: -66.01

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.490	0.12	R

TOTAL REMOTE: 2.490 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.490	2.490	2.490	2.490

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.018	1.000	1.000	1.000
DUTY (KA) :	2.535	2.490	2.490	2.490

B-T-B7-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B70-PRI E/Z: 2.571 KA AT -68.08 DEG (61.45 MVA) X/R: 2.48
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1572 + J 2.8752 OHMS
CONTRIBUTIONS: B-T-B1-PRI 2.571 KA ANG: -68.08

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.571	0.08	R

TOTAL REMOTE: 2.571 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.571	2.571	2.571	2.571

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.021	1.000	1.000	1.000
	DUTY (KA) :	2.625	2.571	2.571	2.571

B-T-B70-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B78-PRI E/Z: 2.564 KA AT -67.90 DEG (61.28 MVA) X/R: 2.46
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1692 + J 2.8793 OHMS
CONTRIBUTIONS: B-T-B3-PRI 2.564 KA ANG: -67.90

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.564	0.08	R

TOTAL REMOTE: 2.564 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.564	2.564	2.564	2.564

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.021	1.000	1.000	1.000
DUTY (KA) :	2.618	2.564	2.564	2.564

B-T-B78-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B8-2-SEC VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-T-B8-PRI E/Z: 2.573 KA AT -68.14 DEG (61.50 MVA) X/R: 2.49
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1532 + J 2.8738 OHMS
CONTRIBUTIONS: B-B27-SWGR 2.573 KA ANG: -68.14

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.573	0.08	R

TOTAL REMOTE: 2.573 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.573	2.573	2.573	2.573

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.021	1.000	1.000	1.000
	DUTY (KA) :	2.628	2.573	2.573	2.573

B-T-B8-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B80-PRI E/Z: 2.523 KA AT -66.85 DEG (60.31 MVA) X/R: 2.34
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2414 + J 2.9036 OHMS
CONTRIBUTIONS: B-T-B4-PRI 2.523 KA ANG: -66.85

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.523	0.10	R

TOTAL REMOTE: 2.523 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.523	2.523	2.523	2.523

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.019	1.000	1.000	1.000
DUTY (KA) :	2.572	2.523	2.523	2.523

B-T-B80-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B81-PRI E/Z: 2.454 KA AT -65.13 DEG (58.66 MVA) X/R: 2.16
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.3652 + J 2.9454 OHMS
CONTRIBUTIONS: B-T-B12-PRI 2.454 KA ANG: -65.13

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.454	0.14	R

TOTAL REMOTE: 2.454 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.454	2.454	2.454	2.454

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.017	1.000	1.000	1.000
DUTY (KA) :	2.496	2.454	2.454	2.454

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-T-B81-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B82-PRI E/Z: 2.564 KA AT -67.90 DEG (61.28 MVA) X/R: 2.46
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.1694 + J 2.8793 OHMS
CONTRIBUTIONS: B-T-B19-PRI 2.564 KA ANG: -67.90

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.564	0.08	R

TOTAL REMOTE: 2.564 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.564	2.564	2.564	2.564

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.021	1.000	1.000	1.000
DUTY (KA) :	2.618	2.564	2.564	2.564

B-T-B82-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B9-PRI E/Z: 2.507 KA AT -66.46 DEG (59.93 MVA) X/R: 2.30
VOLTAGE: 13800. EQUIV. IMPEDANCE= 1.2692 + J 2.9130 OHMS
CONTRIBUTIONS: B-T-B10-PRI 2.507 KA ANG: -66.46

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
UTIL-STN 559-1	2.507	0.11	R

TOTAL REMOTE: 2.507 KA NACD RATIO: 1.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	2.507	2.507	2.507	2.507

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.019	1.000	1.000	1.000
DUTY (KA) :	2.555	2.507	2.507	2.507

B-T-B9-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B0B70-LP2 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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BUS-0739 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

bB-B7-MC1 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-B27-SWGR	3 PHASE:	2.70	3.0	SYM2:	1.00	1.00	2.70	1.63
VOLTS: 13800.0	SLG:	1.63	3.0	SYM3:	1.00	1.00	2.70	1.63
NACD: 1.000	LN/LN:	2.34		SYM5:	1.00	1.00	2.70	1.63
	LN/LN/GND:	2.41		SYM8:	1.00	1.00	2.70	1.63
	GND RETURN:	1.17		TOT2:	1.03	1.03	2.77	1.67
	Z1(PU):		1.54959	TOT3:	1.00	1.00	2.70	1.63
	Z2(PU):		1.54959	TOT5:	1.00	1.00	2.70	1.63
	Z0(PU):		4.59903	TOT8:	1.00	1.00	2.70	1.63
B-B27-SWGR-M2	3 PHASE:	2.70	3.0	SYM2:	1.00	1.00	2.70	1.63
VOLTS: 13800.0	SLG:	1.63	3.0	SYM3:	1.00	1.00	2.70	1.63
NACD: 1.000	LN/LN:	2.34		SYM5:	1.00	1.00	2.70	1.63
	LN/LN/GND:	2.41		SYM8:	1.00	1.00	2.70	1.63
	GND RETURN:	1.17		TOT2:	1.03	1.03	2.78	1.67
	Z1(PU):		1.54952	TOT3:	1.00	1.00	2.70	1.63
	Z2(PU):		1.54952	TOT5:	1.00	1.00	2.70	1.63
	Z0(PU):		4.59894	TOT8:	1.00	1.00	2.70	1.63
B-SW-MV-1	3 PHASE:	2.42	2.1	SYM2:	1.00	1.00	2.42	1.49
VOLTS: 13800.0	SLG:	1.49	2.3	SYM3:	1.00	1.00	2.42	1.49
NACD: 1.000	LN/LN:	2.10		SYM5:	1.00	1.00	2.42	1.49
	LN/LN/GND:	2.14		SYM8:	1.00	1.00	2.42	1.49
	GND RETURN:	1.08		TOT2:	1.02	1.02	2.46	1.52
	Z1(PU):		1.72936	TOT3:	1.00	1.00	2.42	1.49
	Z2(PU):		1.72936	TOT5:	1.00	1.00	2.42	1.49
	Z0(PU):		4.95489	TOT8:	1.00	1.00	2.42	1.49
B-SW-MV-2	3 PHASE:	2.51	2.3	SYM2:	1.00	1.00	2.51	1.54
VOLTS: 13800.0	SLG:	1.54	2.4	SYM3:	1.00	1.00	2.51	1.54
NACD: 1.000	LN/LN:	2.17		SYM5:	1.00	1.00	2.51	1.54
	LN/LN/GND:	2.23		SYM8:	1.00	1.00	2.51	1.54
	GND RETURN:	1.11		TOT2:	1.02	1.02	2.56	1.57
	Z1(PU):		1.66707	TOT3:	1.00	1.00	2.51	1.54
	Z2(PU):		1.66707	TOT5:	1.00	1.00	2.51	1.54
	Z0(PU):		4.83509	TOT8:	1.00	1.00	2.51	1.54

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-SWGR27 TAP	3 PHASE:	2.70	3.0	SYM2:	1.00	1.00	2.70	1.63
VOLTS: 13800.0	SLG:	1.63	3.0	SYM3:	1.00	1.00	2.70	1.63
NACD: 1.000	LN/LN:	2.34		SYM5:	1.00	1.00	2.70	1.63
	LN/LN/GND:	2.41		SYM8:	1.00	1.00	2.70	1.63
	GND RETURN:	1.17		TOT2:	1.03	1.03	2.78	1.67
	Z1(PU):		1.54955	TOT3:	1.00	1.00	2.70	1.63
	Z2(PU):		1.54955	TOT5:	1.00	1.00	2.70	1.63
	Z0(PU):		4.59898	TOT8:	1.00	1.00	2.70	1.63
B-T-13-PRI	3 PHASE:	2.49	2.2	SYM2:	1.00	1.00	2.49	1.57
VOLTS: 13800.0	SLG:	1.57	2.6	SYM3:	1.00	1.00	2.49	1.57
NACD: 1.000	LN/LN:	2.16		SYM5:	1.00	1.00	2.49	1.57
	LN/LN/GND:	2.19		SYM8:	1.00	1.00	2.49	1.57
	GND RETURN:	1.14		TOT2:	1.02	1.02	2.54	1.60
	Z1(PU):		1.68047	TOT3:	1.00	1.00	2.49	1.57
	Z2(PU):		1.68047	TOT5:	1.00	1.00	2.49	1.57
	Z0(PU):		4.66065	TOT8:	1.00	1.00	2.49	1.57
B-T-B1-PRI	3 PHASE:	2.61	2.6	SYM2:	1.00	1.00	2.61	1.59
VOLTS: 13800.0	SLG:	1.59	2.7	SYM3:	1.00	1.00	2.61	1.59
NACD: 1.000	LN/LN:	2.26		SYM5:	1.00	1.00	2.61	1.59
	LN/LN/GND:	2.32		SYM8:	1.00	1.00	2.61	1.59
	GND RETURN:	1.14		TOT2:	1.02	1.02	2.67	1.62
	Z1(PU):		1.60321	TOT3:	1.00	1.00	2.61	1.59
	Z2(PU):		1.60321	TOT5:	1.00	1.00	2.61	1.59
	Z0(PU):		4.70875	TOT8:	1.00	1.00	2.61	1.59
B-T-B10-PRI	3 PHASE:	2.54	2.4	SYM2:	1.00	1.00	2.54	1.58
VOLTS: 13800.0	SLG:	1.58	2.6	SYM3:	1.00	1.00	2.54	1.58
NACD: 1.000	LN/LN:	2.20		SYM5:	1.00	1.00	2.54	1.58
	LN/LN/GND:	2.24		SYM8:	1.00	1.00	2.54	1.58
	GND RETURN:	1.15		TOT2:	1.02	1.02	2.59	1.62
	Z1(PU):		1.64929	TOT3:	1.00	1.00	2.54	1.58
	Z2(PU):		1.64929	TOT5:	1.00	1.00	2.54	1.58
	Z0(PU):		4.64662	TOT8:	1.00	1.00	2.54	1.58

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B12-PRI	3 PHASE:	2.46	2.2	SYM2:	1.00	1.00	2.46	1.55
VOLTS: 13800.0	SLG:	1.55	2.5	SYM3:	1.00	1.00	2.46	1.55
NACD: 1.000	LN/LN:	2.13		SYM5:	1.00	1.00	2.46	1.55
	LN/LN/GND:	2.17		SYM8:	1.00	1.00	2.46	1.55
	GND RETURN:	1.13		TOT2:	1.02	1.02	2.51	1.59
	Z1(PU):		1.69860	TOT3:	1.00	1.00	2.46	1.55
	Z2(PU):		1.69860	TOT5:	1.00	1.00	2.46	1.55
	Z0(PU):		4.69454	TOT8:	1.00	1.00	2.46	1.55
B-T-B17-PRI	3 PHASE:	2.39	2.0	SYM2:	1.00	1.00	2.39	1.48
VOLTS: 13800.0	SLG:	1.48	2.2	SYM3:	1.00	1.00	2.39	1.48
NACD: 1.000	LN/LN:	2.07		SYM5:	1.00	1.00	2.39	1.48
	LN/LN/GND:	2.11		SYM8:	1.00	1.00	2.39	1.48
	GND RETURN:	1.07		TOT2:	1.02	1.02	2.43	1.51
	Z1(PU):		1.74802	TOT3:	1.00	1.00	2.39	1.48
	Z2(PU):		1.74802	TOT5:	1.00	1.00	2.39	1.48
	Z0(PU):		4.99022	TOT8:	1.00	1.00	2.39	1.48
B-T-B18-PRI	3 PHASE:	2.38	2.0	SYM2:	1.00	1.00	2.38	1.48
VOLTS: 13800.0	SLG:	1.48	2.2	SYM3:	1.00	1.00	2.38	1.48
NACD: 1.000	LN/LN:	2.07		SYM5:	1.00	1.00	2.38	1.48
	LN/LN/GND:	2.11		SYM8:	1.00	1.00	2.38	1.48
	GND RETURN:	1.07		TOT2:	1.02	1.02	2.42	1.50
	Z1(PU):		1.75430	TOT3:	1.00	1.00	2.38	1.48
	Z2(PU):		1.75430	TOT5:	1.00	1.00	2.38	1.48
	Z0(PU):		5.00206	TOT8:	1.00	1.00	2.38	1.48
B-T-B19-PRI	3 PHASE:	2.61	2.6	SYM2:	1.00	1.00	2.61	1.58
VOLTS: 13800.0	SLG:	1.58	2.7	SYM3:	1.00	1.00	2.61	1.58
NACD: 1.000	LN/LN:	2.26		SYM5:	1.00	1.00	2.61	1.58
	LN/LN/GND:	2.32		SYM8:	1.00	1.00	2.61	1.58
	GND RETURN:	1.14		TOT2:	1.02	1.02	2.67	1.62
	Z1(PU):		1.60461	TOT3:	1.00	1.00	2.61	1.58
	Z2(PU):		1.60461	TOT5:	1.00	1.00	2.61	1.58
	Z0(PU):		4.71158	TOT8:	1.00	1.00	2.61	1.58

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B2-PRI	3 PHASE:	2.63	2.7	SYM2:	1.00	1.00	2.63	1.59
VOLTS: 13800.0	SLG:	1.59	2.7	SYM3:	1.00	1.00	2.63	1.59
NACD: 1.000	LN/LN:	2.28		SYM5:	1.00	1.00	2.63	1.59
	LN/LN/GND:	2.34		SYM8:	1.00	1.00	2.63	1.59
	GND RETURN:	1.14		TOT2:	1.02	1.02	2.69	1.63
	Z1(PU):		1.59198	TOT3:	1.00	1.00	2.63	1.59
	Z2(PU):		1.59198	TOT5:	1.00	1.00	2.63	1.59
	Z0(PU):		4.68608	TOT8:	1.00	1.00	2.63	1.59
B-T-B22-PRI	3 PHASE:	2.64	2.8	SYM2:	1.00	1.00	2.64	1.60
VOLTS: 13800.0	SLG:	1.60	2.8	SYM3:	1.00	1.00	2.64	1.60
NACD: 1.000	LN/LN:	2.29		SYM5:	1.00	1.00	2.64	1.60
	LN/LN/GND:	2.36		SYM8:	1.00	1.00	2.64	1.60
	GND RETURN:	1.15		TOT2:	1.02	1.03	2.71	1.64
	Z1(PU):		1.58224	TOT3:	1.00	1.00	2.64	1.60
	Z2(PU):		1.58224	TOT5:	1.00	1.00	2.64	1.60
	Z0(PU):		4.66629	TOT8:	1.00	1.00	2.64	1.60
B-T-B3-PRI	3 PHASE:	2.58	2.5	SYM2:	1.00	1.00	2.58	1.59
VOLTS: 13800.0	SLG:	1.59	2.7	SYM3:	1.00	1.00	2.58	1.59
NACD: 1.000	LN/LN:	2.24		SYM5:	1.00	1.00	2.58	1.59
	LN/LN/GND:	2.29		SYM8:	1.00	1.00	2.58	1.59
	GND RETURN:	1.15		TOT2:	1.02	1.02	2.64	1.63
	Z1(PU):		1.62028	TOT3:	1.00	1.00	2.58	1.59
	Z2(PU):		1.62028	TOT5:	1.00	1.00	2.58	1.59
	Z0(PU):		4.63324	TOT8:	1.00	1.00	2.58	1.59
B-T-B30-PRI	3 PHASE:	2.51	2.3	SYM2:	1.00	1.00	2.51	1.54
VOLTS: 13800.0	SLG:	1.54	2.4	SYM3:	1.00	1.00	2.51	1.54
NACD: 1.000	LN/LN:	2.17		SYM5:	1.00	1.00	2.51	1.54
	LN/LN/GND:	2.22		SYM8:	1.00	1.00	2.51	1.54
	GND RETURN:	1.11		TOT2:	1.02	1.02	2.55	1.57
	Z1(PU):		1.66851	TOT3:	1.00	1.00	2.51	1.54
	Z2(PU):		1.66851	TOT5:	1.00	1.00	2.51	1.54
	Z0(PU):		4.83788	TOT8:	1.00	1.00	2.51	1.54

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B33-PRI	3 PHASE:	2.67	2.9	SYM2:	1.00	1.00	2.67	1.62
VOLTS: 13800.0	SLG:	1.62	2.9	SYM3:	1.00	1.00	2.67	1.62
NACD: 1.000	LN/LN:	2.31		SYM5:	1.00	1.00	2.67	1.62
	LN/LN/GND:	2.39		SYM8:	1.00	1.00	2.67	1.62
	GND RETURN:	1.16		TOT2:	1.03	1.03	2.74	1.66
	Z1(PU):		1.56577	TOT3:	1.00	1.00	2.67	1.62
	Z2(PU):		1.56577	TOT5:	1.00	1.00	2.67	1.62
	Z0(PU):		4.63256	TOT8:	1.00	1.00	2.67	1.62
B-T-B4-PRI	3 PHASE:	2.54	2.4	SYM2:	1.00	1.00	2.54	1.55
VOLTS: 13800.0	SLG:	1.55	2.5	SYM3:	1.00	1.00	2.54	1.55
NACD: 1.000	LN/LN:	2.20		SYM5:	1.00	1.00	2.54	1.55
	LN/LN/GND:	2.25		SYM8:	1.00	1.00	2.54	1.55
	GND RETURN:	1.12		TOT2:	1.02	1.02	2.59	1.58
	Z1(PU):		1.64934	TOT3:	1.00	1.00	2.54	1.55
	Z2(PU):		1.64934	TOT5:	1.00	1.00	2.54	1.55
	Z0(PU):		4.80042	TOT8:	1.00	1.00	2.54	1.55
B-T-B5-PRI	3 PHASE:	2.43	2.1	SYM2:	1.00	1.00	2.43	1.50
VOLTS: 13800.0	SLG:	1.50	2.3	SYM3:	1.00	1.00	2.43	1.50
NACD: 1.000	LN/LN:	2.10		SYM5:	1.00	1.00	2.43	1.50
	LN/LN/GND:	2.15		SYM8:	1.00	1.00	2.43	1.50
	GND RETURN:	1.08		TOT2:	1.02	1.02	2.47	1.52
	Z1(PU):		1.72317	TOT3:	1.00	1.00	2.43	1.50
	Z2(PU):		1.72317	TOT5:	1.00	1.00	2.43	1.50
	Z0(PU):		4.94311	TOT8:	1.00	1.00	2.43	1.50
B-T-B6-PRI	3 PHASE:	2.45	2.2	SYM2:	1.00	1.00	2.45	1.51
VOLTS: 13800.0	SLG:	1.51	2.3	SYM3:	1.00	1.00	2.45	1.51
NACD: 1.000	LN/LN:	2.13		SYM5:	1.00	1.00	2.45	1.51
	LN/LN/GND:	2.17		SYM8:	1.00	1.00	2.45	1.51
	GND RETURN:	1.09		TOT2:	1.02	1.02	2.50	1.54
	Z1(PU):		1.70474	TOT3:	1.00	1.00	2.45	1.51
	Z2(PU):		1.70474	TOT5:	1.00	1.00	2.45	1.51
	Z0(PU):		4.90790	TOT8:	1.00	1.00	2.45	1.51

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B60-PRI	3 PHASE:	2.42	2.1	SYM2:	1.00	1.00	2.42	1.49
VOLTS: 13800.0	SLG:	1.49	2.3	SYM3:	1.00	1.00	2.42	1.49
NACD: 1.000	LN/LN:	2.10		SYM5:	1.00	1.00	2.42	1.49
	LN/LN/GND:	2.14		SYM8:	1.00	1.00	2.42	1.49
	GND RETURN:	1.08		TOT2:	1.02	1.02	2.46	1.52
	Z1(PU):		1.72931	TOT3:	1.00	1.00	2.42	1.49
	Z2(PU):		1.72931	TOT5:	1.00	1.00	2.42	1.49
	Z0(PU):		4.95478	TOT8:	1.00	1.00	2.42	1.49
B-T-B61-PRI	3 PHASE:	2.53	2.4	SYM2:	1.00	1.00	2.53	1.55
VOLTS: 13800.0	SLG:	1.55	2.5	SYM3:	1.00	1.00	2.53	1.55
NACD: 1.000	LN/LN:	2.19		SYM5:	1.00	1.00	2.53	1.55
	LN/LN/GND:	2.25		SYM8:	1.00	1.00	2.53	1.55
	GND RETURN:	1.11		TOT2:	1.02	1.02	2.58	1.58
	Z1(PU):		1.65222	TOT3:	1.00	1.00	2.53	1.55
	Z2(PU):		1.65222	TOT5:	1.00	1.00	2.53	1.55
	Z0(PU):		4.80607	TOT8:	1.00	1.00	2.53	1.55
B-T-B62-PRI	3 PHASE:	2.56	2.4	SYM2:	1.00	1.00	2.56	1.56
VOLTS: 13800.0	SLG:	1.56	2.6	SYM3:	1.00	1.00	2.56	1.56
NACD: 1.000	LN/LN:	2.22		SYM5:	1.00	1.00	2.56	1.56
	LN/LN/GND:	2.27		SYM8:	1.00	1.00	2.56	1.56
	GND RETURN:	1.12		TOT2:	1.02	1.02	2.61	1.60
	Z1(PU):		1.63469	TOT3:	1.00	1.00	2.56	1.56
	Z2(PU):		1.63469	TOT5:	1.00	1.00	2.56	1.56
	Z0(PU):		4.77154	TOT8:	1.00	1.00	2.56	1.56
B-T-B7-PRI	3 PHASE:	2.49	2.2	SYM2:	1.00	1.00	2.49	1.53
VOLTS: 13800.0	SLG:	1.53	2.4	SYM3:	1.00	1.00	2.49	1.53
NACD: 1.000	LN/LN:	2.16		SYM5:	1.00	1.00	2.49	1.53
	LN/LN/GND:	2.21		SYM8:	1.00	1.00	2.49	1.53
	GND RETURN:	1.10		TOT2:	1.02	1.02	2.54	1.56
	Z1(PU):		1.68052	TOT3:	1.00	1.00	2.49	1.53
	Z2(PU):		1.68052	TOT5:	1.00	1.00	2.49	1.53
	Z0(PU):		4.86121	TOT8:	1.00	1.00	2.49	1.53

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B70-PRI	3 PHASE:	2.57	2.5	SYM2:	1.00	1.00	2.57	1.57
VOLTS: 13800.0	SLG:	1.57	2.6	SYM3:	1.00	1.00	2.57	1.57
NACD: 1.000	LN/LN:	2.23		SYM5:	1.00	1.00	2.57	1.57
	LN/LN/GND:	2.29		SYM8:	1.00	1.00	2.57	1.57
	GND RETURN:	1.13		TOT2:	1.02	1.02	2.63	1.60
	Z1(PU):		1.62747	TOT3:	1.00	1.00	2.57	1.57
	Z2(PU):		1.62747	TOT5:	1.00	1.00	2.57	1.57
	Z0(PU):		4.75723	TOT8:	1.00	1.00	2.57	1.57
B-T-B78-PRI	3 PHASE:	2.56	2.5	SYM2:	1.00	1.00	2.56	1.59
VOLTS: 13800.0	SLG:	1.59	2.7	SYM3:	1.00	1.00	2.56	1.59
NACD: 1.000	LN/LN:	2.22		SYM5:	1.00	1.00	2.56	1.59
	LN/LN/GND:	2.27		SYM8:	1.00	1.00	2.56	1.59
	GND RETURN:	1.15		TOT2:	1.02	1.02	2.62	1.63
	Z1(PU):		1.63180	TOT3:	1.00	1.00	2.56	1.59
	Z2(PU):		1.63180	TOT5:	1.00	1.00	2.56	1.59
	Z0(PU):		4.63860	TOT8:	1.00	1.00	2.56	1.59
B-T-B8-PRI	3 PHASE:	2.57	2.5	SYM2:	1.00	1.00	2.57	1.57
VOLTS: 13800.0	SLG:	1.57	2.6	SYM3:	1.00	1.00	2.57	1.57
NACD: 1.000	LN/LN:	2.23		SYM5:	1.00	1.00	2.57	1.57
	LN/LN/GND:	2.29		SYM8:	1.00	1.00	2.57	1.57
	GND RETURN:	1.13		TOT2:	1.02	1.02	2.63	1.60
	Z1(PU):		1.62602	TOT3:	1.00	1.00	2.57	1.57
	Z2(PU):		1.62602	TOT5:	1.00	1.00	2.57	1.57
	Z0(PU):		4.75435	TOT8:	1.00	1.00	2.57	1.57
B-T-B80-PRI	3 PHASE:	2.52	2.3	SYM2:	1.00	1.00	2.52	1.54
VOLTS: 13800.0	SLG:	1.54	2.5	SYM3:	1.00	1.00	2.52	1.54
NACD: 1.000	LN/LN:	2.19		SYM5:	1.00	1.00	2.52	1.54
	LN/LN/GND:	2.24		SYM8:	1.00	1.00	2.52	1.54
	GND RETURN:	1.11		TOT2:	1.02	1.02	2.57	1.58
	Z1(PU):		1.65817	TOT3:	1.00	1.00	2.52	1.54
	Z2(PU):		1.65817	TOT5:	1.00	1.00	2.52	1.54
	Z0(PU):		4.81773	TOT8:	1.00	1.00	2.52	1.54

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B81-PRI	3 PHASE:	2.45	2.2	SYM2:	1.00	1.00	2.45	1.55
VOLTS: 13800.0	SLG:	1.55	2.5	SYM3:	1.00	1.00	2.45	1.55
NACD: 1.000	LN/LN:	2.13		SYM5:	1.00	1.00	2.45	1.55
	LN/LN/GND:	2.16		SYM8:	1.00	1.00	2.45	1.55
	GND RETURN:	1.13		TOT2:	1.02	1.02	2.50	1.58
	Z1(PU):		1.70470	TOT3:	1.00	1.00	2.45	1.55
	Z2(PU):		1.70470	TOT5:	1.00	1.00	2.45	1.55
	Z0(PU):		4.70588	TOT8:	1.00	1.00	2.45	1.55
B-T-B82-PRI	3 PHASE:	2.56	2.5	SYM2:	1.00	1.00	2.56	1.56
VOLTS: 13800.0	SLG:	1.56	2.6	SYM3:	1.00	1.00	2.56	1.56
NACD: 1.000	LN/LN:	2.22		SYM5:	1.00	1.00	2.56	1.56
	LN/LN/GND:	2.28		SYM8:	1.00	1.00	2.56	1.56
	GND RETURN:	1.12		TOT2:	1.02	1.02	2.62	1.60
	Z1(PU):		1.63185	TOT3:	1.00	1.00	2.56	1.56
	Z2(PU):		1.63185	TOT5:	1.00	1.00	2.56	1.56
	Z0(PU):		4.76592	TOT8:	1.00	1.00	2.56	1.56
B-T-B9-PRI	3 PHASE:	2.51	2.3	SYM2:	1.00	1.00	2.51	1.57
VOLTS: 13800.0	SLG:	1.57	2.6	SYM3:	1.00	1.00	2.51	1.57
NACD: 1.000	LN/LN:	2.17		SYM5:	1.00	1.00	2.51	1.57
	LN/LN/GND:	2.21		SYM8:	1.00	1.00	2.51	1.57
	GND RETURN:	1.14		TOT2:	1.02	1.02	2.55	1.61
	Z1(PU):		1.66851	TOT3:	1.00	1.00	2.51	1.57
	Z2(PU):		1.66851	TOT5:	1.00	1.00	2.51	1.57
	Z0(PU):		4.65531	TOT8:	1.00	1.00	2.51	1.57

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 UTILITY ON LINE AND ALL MOTORS OFF LINE

I N T E R R U P T I N G D U T Y S U M M A R Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

BUS RECORD NO	NAME	VOLTAGE L-L	NACD RATIO	* 3 P H A S E * E/Z KA	X/R	* * * S L G * * * E/Z KA	X/R
B-B27-SWGR		13800.	1.000	2.700	3.00	1.630	2.96
B-B27-SWGR-M2		13800.	1.000	2.700	3.00	1.630	2.96
B-SW-MV-1		13800.	1.000	2.419	2.08	1.492	2.26
B-SW-MV-2		13800.	1.000	2.510	2.30	1.537	2.45
B-SWGR27 TAP		13800.	1.000	2.700	3.00	1.630	2.96
B-T-13-PRI		13800.	1.000	2.490	2.25	1.566	2.55
B-T-B1-PRI		13800.	1.000	2.610	2.62	1.586	2.69
B-T-B10-PRI		13800.	1.000	2.537	2.38	1.580	2.63
B-T-B12-PRI		13800.	1.000	2.463	2.18	1.552	2.49
B-T-B17-PRI		13800.	1.000	2.393	2.02	1.480	2.21
B-T-B18-PRI		13800.	1.000	2.385	2.00	1.475	2.20
B-T-B19-PRI		13800.	1.000	2.607	2.61	1.585	2.68
B-T-B2-PRI		13800.	1.000	2.628	2.69	1.595	2.74
B-T-B22-PRI		13800.	1.000	2.644	2.75	1.603	2.79
B-T-B3-PRI		13800.	1.000	2.582	2.52	1.594	2.71
B-T-B30-PRI		13800.	1.000	2.507	2.30	1.536	2.44
B-T-B33-PRI		13800.	1.000	2.672	2.87	1.617	2.87
B-T-B4-PRI		13800.	1.000	2.537	2.38	1.550	2.51
B-T-B5-PRI		13800.	1.000	2.428	2.10	1.497	2.28
B-T-B6-PRI		13800.	1.000	2.454	2.16	1.509	2.33
B-T-B60-PRI		13800.	1.000	2.419	2.08	1.492	2.26
B-T-B61-PRI		13800.	1.000	2.532	2.37	1.548	2.50
B-T-B62-PRI		13800.	1.000	2.559	2.45	1.561	2.56
B-T-B7-PRI		13800.	1.000	2.490	2.25	1.527	2.40
B-T-B70-PRI		13800.	1.000	2.571	2.48	1.567	2.59
B-T-B78-PRI		13800.	1.000	2.564	2.46	1.589	2.68
B-T-B8-PRI		13800.	1.000	2.573	2.49	1.568	2.59
B-T-B80-PRI		13800.	1.000	2.523	2.34	1.543	2.48
B-T-B81-PRI		13800.	1.000	2.454	2.16	1.548	2.47
B-T-B82-PRI		13800.	1.000	2.564	2.46	1.563	2.57
B-T-B9-PRI		13800.	1.000	2.507	2.30	1.571	2.58
BUS-0017		13800.	1.000	2.644	2.75	1.603	2.79
BUS-0019		13800.	1.000	2.644	2.75	1.603	2.79
BUS-0063		13800.	1.000	2.598	2.58	1.599	2.74
BUS-0065		13800.	1.000	2.598	2.58	1.599	2.74
BUS-0747		13800.	1.000	2.628	2.69	1.595	2.74

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  36 FAULTED BUSES,  651 BRANCHES,    1 CONTRIBUTIONS
UNBALANCED FAULTS REQUESTED

*** SHORT CIRCUIT STUDY COMPLETE ***
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2.5.2Computer Output Data – Emergency Generator Case

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE
Dec 23, 2004 14:44:01

ALL INFORMATION PRESENTED IS FOR REVIEW, APPROVAL
INTERPRETATION AND APPLICATION BY A REGISTERED ENGINEER ONLY
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SKM POWER*TOOLS FOR WINDOWS
A_FAULT SHORT CIRCUIT ANALYSIS REPORT
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T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B10 EMRG TAP FAULT: 3.351 KA AT -66.97 DEG (1.21 MVA) X/R: 2.44
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0140 + J 0.0330 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.351 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.674 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.351 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.351 KA
CONTRIBUTIONS: B-B95-EMDP 3.351 KA ANG: -66.97

B-B17-ANIMALRM FAULT: 1.749 KA AT -30.80 DEG (0.63 MVA) X/R: 0.60
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0590 + J 0.0352 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.749 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.749 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.749 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.749 KA
CONTRIBUTIONS: B-B17-EMERG 1.749 KA ANG: -30.80

B-B17-ATS FAULT: 2.265 KA AT -35.19 DEG (0.82 MVA) X/R: 0.71
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0433 + J 0.0306 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.265 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.265 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.265 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.265 KA
ATS-B17 BUS-0680 2.265 KA ANG: -35.19

B-B17-EMERG FAULT: 2.242 KA AT -35.06 DEG (0.81 MVA) X/R: 0.71
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0438 + J 0.0308 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.242 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.242 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.242 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.242 KA
CONTRIBUTIONS: B-B17-ATS 2.242 KA ANG: -35.06

B-B17-NEB1 FAULT: 1.674 KA AT -30.16 DEG (0.60 MVA) X/R: 0.58
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0620 + J 0.0360 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.674 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.674 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.674 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.674 KA
CONTRIBUTIONS: B-B17-EMERG 1.674 KA ANG: -30.16

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B17-NEB2	FAULT:	1.917 KA AT -31.42 DEG (	0.69 MVA)	X/R:	0.62
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0535 + J 0.0327	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.917 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.917 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.917 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.917 KA			
	CONTRIBUTIONS: B-B17-EMERG	1.917 KA	ANG:	-31.42	
B-B18-1STFL	FAULT:	2.362 KA AT -42.34 DEG (	0.85 MVA)	X/R:	0.92
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0376 + J 0.0342	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.362 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.362 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.362 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.362 KA			
	CONTRIBUTIONS: B-B18-1STFL-M	2.362 KA	ANG:	-42.34	
B-B18-1STFL-M	FAULT:	2.549 KA AT -44.60 DEG (	0.92 MVA)	X/R:	1.00
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0335 + J 0.0331	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.549 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.549 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.549 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.549 KA			
	CONTRIBUTIONS: B-B18-TAP BOX	2.549 KA	ANG:	-44.60	
B-B18-2ND-FL-M	FAULT:	2.549 KA AT -44.60 DEG (	0.92 MVA)	X/R:	1.00
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0335 + J 0.0331	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.549 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.549 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.549 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.549 KA			
	CONTRIBUTIONS: B-B18-TAP BOX	2.549 KA	ANG:	-44.60	
B-B18-2NDFL	FAULT:	2.197 KA AT -40.39 DEG (	0.79 MVA)	X/R:	0.86
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0416 + J 0.0354	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.197 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.197 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.197 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.197 KA			
	CONTRIBUTIONS: B-B18-2ND-FL-M	2.197 KA	ANG:	-40.39	
B-B18-ATS-EMRG	FAULT:	2.638 KA AT -45.49 DEG (	0.95 MVA)	X/R:	1.04
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0319 + J 0.0325	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.638 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.638 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.638 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.638 KA		
	ATS-B18-EMERG BUS-0677	2.638 KA	ANG:	-45.49
B-B18-EMERG	FAULT: 2.536 KA AT -44.47 DEG (0.91 MVA)		X/R:	1.00
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0338 + J 0.0332 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.536 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.536 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.536 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.536 KA		
	CONTRIBUTIONS: B-B18-EMERG-M	2.536 KA	ANG:	-44.47
B-B18-EMERG-M	FAULT: 2.539 KA AT -44.47 DEG (0.91 MVA)		X/R:	1.00
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0337 + J 0.0331 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.539 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.539 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.539 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.539 KA		
	CONTRIBUTIONS: B-B18-TAP BOX	2.539 KA	ANG:	-44.47
B-B18-TAP BOX	FAULT: 2.580 KA AT -44.97 DEG (0.93 MVA)		X/R:	1.02
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0329 + J 0.0329 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.580 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.580 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.580 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.580 KA		
	CONTRIBUTIONS: B-B18-ATS-EMRG	2.580 KA	ANG:	-44.97
B-B2-ATS-CRIT	FAULT: 4.887 KA AT -68.79 DEG (1.76 MVA)		X/R:	2.82
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0089 + J 0.0229 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.887 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.581 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.887 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.887 KA		
	CONTRIBUTIONS: B-B2-CRIT PNL	1.798 KA	ANG:	-76.09
	ATS-B2-CRIT BUS-0736	3.112 KA	ANG:	-64.58

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-ATS-LED3	FAULT:	2.811 KA AT -57.63 DEG (1.01 MVA)		X/R:	1.62
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0229 + J 0.0361			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.811 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.811 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.811 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.811 KA		
	ATS-B2-LED3	BUS-0723	2.811 KA	ANG:	-57.63
B-B2-ATS-LS	FAULT:	4.246 KA AT -67.38 DEG (1.53 MVA)		X/R:	2.61
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0109 + J 0.0261			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.246 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.746 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.246 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.246 KA		
	CONTRIBUTIONS:	B-B2-PNL LS	1.353 KA	ANG:	-75.49
	ATS-B2-LS	BUS-0722	2.912 KA	ANG:	-63.61
B-B2-BATTERYCH	FAULT:	2.553 KA AT -39.10 DEG (0.92 MVA)		X/R:	0.83
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0365 + J 0.0297			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.553 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.553 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.553 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.553 KA		
	CONTRIBUTIONS:	B-B2-PNL LS	2.553 KA	ANG:	-39.10
B-B2-CRIT PNL	FAULT:	4.874 KA AT -68.74 DEG (1.76 MVA)		X/R:	2.83
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0089 + J 0.0230			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.874 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		5.570 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.874 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.874 KA		
	CONTRIBUTIONS:	B-B2-ATS-CRIT	3.096 KA	ANG:	-64.39
	CBL-0067	B-B2-MEDAIRCOM	0.454 KA	ANG:	-74.63
	CBL-0068	B-B2-ELEV-P1	0.893 KA	ANG:	-77.21
	CBL-0070	B-B2-PNL-L11	0.457 KA	ANG:	-75.89

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-DENTAL LB	FAULT:	3.939 KA AT	-56.08 DEG (	1.42 MVA)	X/R:	1.55
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0170 + J 0.0253		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			3.939 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			3.939 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			3.939 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			3.939 KA		
	CONTRIBUTIONS:	B-B2-CRIT PNL		3.939 KA	ANG:	-56.08
B-B2-DENTSUCPM	FAULT:	3.619 KA AT	-60.84 DEG (	1.30 MVA)	X/R:	2.32
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0162 + J 0.0290		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			3.619 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			3.915 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			3.619 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			3.619 KA		
	CONTRIBUTIONS:	MTRI-0007		0.936 KA	ANG:	-79.51
	CBL-0076	B-B2-PNL LS		2.749 KA	ANG:	-54.59
B-B2-ELEV	FAULT:	3.908 KA AT	-65.16 DEG (	1.41 MVA)	X/R:	2.37
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0129 + J 0.0279		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			3.908 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			4.252 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			3.908 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			3.908 KA		
	CONTRIBUTIONS:	MTRI-0005		0.463 KA	ANG:	-76.61
	CBL-0073	B-B2-PNL LS		3.455 KA	ANG:	-63.63
B-B2-ELEV-P1	FAULT:	4.111 KA AT	-65.00 DEG (	1.48 MVA)	X/R:	2.58
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0123 + J 0.0265		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			4.111 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			4.583 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			4.111 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			4.111 KA		
	CONTRIBUTIONS:	M-B2-ELEV-P1		0.936 KA	ANG:	-79.51
	CBL-0068	B-B2-CRIT PNL		3.214 KA	ANG:	-60.82
B-B2-EMERG-M	FAULT:	2.771 KA AT	-57.26 DEG (	1.00 MVA)	X/R:	1.60
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0234 + J 0.0364		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			2.771 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.771 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			2.771 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			2.771 KA		
	CONTRIBUTIONS:	B-B2-ATS-LED3		2.771 KA	ANG:	-57.26

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-EMERG-PNL	FAULT:	2.768 KA AT -57.23 DEG (1.00 MVA)		X/R:	1.60
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0235 + J 0.0365			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.768 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.768 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.768 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.768 KA			
	CONTRIBUTIONS: B-B2-EMERG-M	2.768 KA	ANG:	-57.23	
B-B2-EPNL-B	FAULT:	4.440 KA AT -67.26 DEG (1.60 MVA)		X/R:	2.56
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0105 + J 0.0249			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.440 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.938 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.440 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.440 KA			
	CONTRIBUTIONS: B-B2-EPNL-B-M	3.146 KA	ANG:	-64.09	
	CBL-0646 BUS-0722	1.310 KA	ANG:	-74.90	
B-B2-EPNL-B-M	FAULT:	4.441 KA AT -67.27 DEG (1.60 MVA)		X/R:	2.56
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0104 + J 0.0249			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.441 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.940 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.441 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.441 KA			
	CONTRIBUTIONS: B-B92-EMDP	3.148 KA	ANG:	-64.10	
	CBL-0645 B-B2-EPNL-B	1.310 KA	ANG:	-74.90	
B-B2-L12	FAULT:	3.693 KA AT -62.47 DEG (1.33 MVA)		X/R:	2.04
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0150 + J 0.0288			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.693 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.857 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.693 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.693 KA			
	CONTRIBUTIONS: B-B2-PNL LS	3.693 KA	ANG:	-62.47	
B-B2-L2A	FAULT:	4.191 KA AT -63.11 DEG (1.51 MVA)		X/R:	2.10
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0130 + J 0.0256			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.191 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.409 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.191 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.191 KA			
	CONTRIBUTIONS: B-B2-CRIT PNL	4.191 KA	ANG:	-63.11	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B2-L2E	FAULT:	3.693 KA AT	-62.47 DEG (	1.33 MVA)	X/R:	2.04
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0150 + J	0.0288	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.693 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.857 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.693 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.693 KA				
	CONTRIBUTIONS:	B-B2-PNL LS	3.693 KA	ANG:	-62.47	
B-B2-L9E	FAULT:	3.556 KA AT	-58.98 DEG (	1.28 MVA)	X/R:	1.75
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0174 + J	0.0289	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.556 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.566 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.556 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.556 KA				
	CONTRIBUTIONS:	B-B2-PNL LS	3.556 KA	ANG:	-58.98	
B-B2-LB1E	FAULT:	3.556 KA AT	-58.98 DEG (	1.28 MVA)	X/R:	1.75
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0174 + J	0.0289	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.556 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.566 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.556 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.556 KA				
	CONTRIBUTIONS:	B-B2-PNL LS	3.556 KA	ANG:	-58.98	
B-B2-LB2E	FAULT:	3.738 KA AT	-53.68 DEG (	1.35 MVA)	X/R:	1.41
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0190 + J	0.0259	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.738 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.738 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.738 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.738 KA				
	CONTRIBUTIONS:	B-B2-CRIT PNL	3.738 KA	ANG:	-53.68	
B-B2-MEDAIRCOM	FAULT:	3.900 KA AT	-56.88 DEG (	1.41 MVA)	X/R:	1.72
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0168 + J	0.0258	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.900 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.900 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.900 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.900 KA				
	CONTRIBUTIONS:	M-B2 MEDAIRCOM	0.463 KA	ANG:	-76.61	
	CBL-0067	B-B2-CRIT PNL	3.468 KA	ANG:	-54.30	
B-B2-NEWLAB	FAULT:	2.743 KA AT	-56.85 DEG (	0.99 MVA)	X/R:	1.57
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0239 + J	0.0366	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.743 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.743 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.743 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.743 KA			
	CONTRIBUTIONS: B-B2-NEWLAB-M	2.743 KA	ANG:	-56.85	
B-B2-NEWLAB-M	FAULT: 2.747 KA AT -56.87 DEG (	0.99 MVA)	X/R:	1.58	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0239 + J	0.0366	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.747 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.747 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.747 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.747 KA			
	CONTRIBUTIONS: B-B2-ATS-LED3	2.747 KA	ANG:	-56.87	
B-B2-PNL 1	FAULT: 2.771 KA AT -57.26 DEG (	1.00 MVA)	X/R:	1.60	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0234 + J	0.0364	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.771 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.771 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.771 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.771 KA			
	CONTRIBUTIONS: B-B2-ATS-LED3	2.771 KA	ANG:	-57.26	
B-B2-PNL LS	FAULT: 4.220 KA AT -67.25 DEG (	1.52 MVA)	X/R:	2.61	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0110 + J	0.0262	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.220 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.717 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.220 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.220 KA			
	CONTRIBUTIONS: B-B2-ATS-LS	2.883 KA	ANG:	-63.28	
	CBL-0076 B-B2-DENTSUCPM	0.900 KA	ANG:	-75.47	
	CBL-0073 B-B2-ELEV	0.458 KA	ANG:	-76.16	
B-B2-PNL-2	FAULT: 2.781 KA AT -57.00 DEG (	1.00 MVA)	X/R:	1.58	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0235 + J	0.0362	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.781 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.781 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.781 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.781 KA			
	CONTRIBUTIONS: B-B2-ATS-LED3	2.781 KA	ANG:	-57.00	
B-B2-PNL-3-M	FAULT: 2.739 KA AT -56.35 DEG (0.99 MVA)		X/R:	1.54	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0243 + J 0.0365				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.739 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.739 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.739 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.739 KA			
	CONTRIBUTIONS: B-B2-ATS-LED3	2.739 KA	ANG:	-56.35	
B-B2-PNL-L11	FAULT: 4.301 KA AT -64.39 DEG (1.55 MVA)		X/R:	2.29	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0121 + J 0.0252				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.301 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.635 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.301 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.301 KA			
	CONTRIBUTIONS: MTRI-0003	0.463 KA	ANG:	-76.61	
	CBL-0070 B-B2-CRIT PNL	3.849 KA	ANG:	-62.93	
B-B2-PNL-M1	FAULT: 2.670 KA AT -55.14 DEG (0.96 MVA)		X/R:	1.47	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0257 + J 0.0369				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.670 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.670 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.670 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.670 KA			
	CONTRIBUTIONS: B-B2-PNL-3-M	2.670 KA	ANG:	-55.14	
B-B2-POD2PP	FAULT: 3.747 KA AT -63.69 DEG (1.35 MVA)		X/R:	2.16	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0142 + J 0.0287				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.747 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.975 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.747 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.747 KA			
	CONTRIBUTIONS: B-B2-PNL LS	3.747 KA	ANG:	-63.69	
B-B22-ATS-EMER	FAULT: 1.772 KA AT -86.33 DEG (1.47 MVA)		X/R:	15.61	
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0100 + J 0.1561				OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.987 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.770 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.347 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.110 KA		
	ATS-B22-EMERG BUS-0727	1.772 KA	ANG:	-86.33
B-B22-EMERG	FAULT: 1.750 KA AT -85.94 DEG (1.45 MVA)		X/R:	14.08
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0112 + J 0.1580 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.943 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.708 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.295 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.063 KA		
	CONTRIBUTIONS: B-B22-EMERG-M	1.750 KA	ANG:	-85.94
B-B22-EMERG-M	FAULT: 1.750 KA AT -85.95 DEG (1.46 MVA)		X/R:	14.13
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0112 + J 0.1579 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.945 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.710 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.297 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.065 KA		
	CONTRIBUTIONS: B-B22-ATS-EMER	1.750 KA	ANG:	-85.95
B-B22-GEN	FAULT: 1.802 KA AT -87.14 DEG (1.50 MVA)		X/R:	20.00
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0077 + J 0.1536 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.062 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.874 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.435 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.189 KA		
	CONTRIBUTIONS: G-B22-GEN	1.802 KA	ANG:	-87.14
B-B22-L1	FAULT: 1.941 KA AT -69.36 DEG (0.70 MVA)		X/R:	2.65
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0218 + J 0.0579 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.941 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.181 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.941 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.941 KA		
	CONTRIBUTIONS: B-B22-L1-M	1.941 KA	ANG:	-69.36

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B22-L1-M FAULT: 1.943 KA AT -69.39 DEG (0.70 MVA) X/R: 2.66
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0218 + J 0.0579 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.943 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.183 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.943 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.943 KA
CONTRIBUTIONS: B-B22-T4-SEC 1.943 KA ANG: -69.39

B-B22-L2 FAULT: 1.941 KA AT -69.36 DEG (0.70 MVA) X/R: 2.65
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0218 + J 0.0579 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.941 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.181 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.941 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.941 KA
CONTRIBUTIONS: B-B22-L2-M 1.941 KA ANG: -69.36

B-B22-L2-M FAULT: 1.943 KA AT -69.39 DEG (0.70 MVA) X/R: 2.66
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0218 + J 0.0579 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.943 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.183 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.943 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.943 KA
CONTRIBUTIONS: B-B22-T22-SEC 1.943 KA ANG: -69.39

B-B22-L3 FAULT: 1.944 KA AT -69.45 DEG (0.70 MVA) X/R: 2.67
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0217 + J 0.0578 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.944 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.186 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.944 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.944 KA
CONTRIBUTIONS: B-B22-L3-M 1.944 KA ANG: -69.45

B-B22-L3-M FAULT: 1.946 KA AT -69.48 DEG (0.70 MVA) X/R: 2.67
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0216 + J 0.0578 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.946 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.189 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.946 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.946 KA
CONTRIBUTIONS: B-B22-T2-SEC 1.946 KA ANG: -69.48

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B22-P1	FAULT:	1.735 KA AT	-85.40 DEG (	1.44 MVA)	X/R: 12.42
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0128 + J 0.1592	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.902 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.650 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.246 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.019 KA		
	CONTRIBUTIONS: B-B22-EMERG		1.735 KA	ANG:	-85.40
B-B22-P2	FAULT:	1.735 KA AT	-85.40 DEG (	1.44 MVA)	X/R: 12.42
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0128 + J 0.1592	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.902 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.650 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.246 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.019 KA		
	CONTRIBUTIONS: B-B22-EMERG		1.735 KA	ANG:	-85.40
B-B22-T2-PRI	FAULT:	1.743 KA AT	-85.49 DEG (	1.45 MVA)	X/R: 12.68
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0125 + J 0.1585	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.915 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.669 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.262 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.033 KA		
	CONTRIBUTIONS: B-B22-EMERG		1.743 KA	ANG:	-85.49
B-B22-T2-SEC	FAULT:	1.979 KA AT	-70.08 DEG (	0.71 MVA)	X/R: 2.76
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0207 + J 0.0571	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.979 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.246 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.979 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.979 KA		
	CONTRIBUTIONS: B-B22-T2-PRI		1.979 KA	ANG:	-70.08
B-B22-T22-SEC	FAULT:	1.976 KA AT	-69.99 DEG (	0.71 MVA)	X/R: 2.75
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0208 + J 0.0571	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.976 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.240 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.976 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.976 KA		
	CONTRIBUTIONS: B-B22-T3 PRI		1.976 KA	ANG:	-69.99

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B22-T3 PRI	FAULT:	1.740 KA AT	-85.27 DEG (	1.45 MVA)	X/R:	12.08
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0131 + J 0.1588		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.901 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.649 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			2.245 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			2.018 KA		
	CONTRIBUTIONS:	B-B22-EMERG		1.740 KA	ANG:	-85.27
B-B22-T4-PRI	FAULT:	1.740 KA AT	-85.27 DEG (	1.45 MVA)	X/R:	12.08
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0131 + J 0.1588		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.901 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.649 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			2.245 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			2.018 KA		
	CONTRIBUTIONS:	B-B22-EMERG		1.740 KA	ANG:	-85.27
B-B22-T4-SEC	FAULT:	1.976 KA AT	-69.99 DEG (	0.71 MVA)	X/R:	2.75
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0208 + J 0.0571		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.976 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.240 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			1.976 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			1.976 KA		
	CONTRIBUTIONS:	B-B22-T4-PRI		1.976 KA	ANG:	-69.99
B-B3-1ST FL	FAULT:	4.999 KA AT	-66.89 DEG (	1.80 MVA)	X/R:	2.47
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0094 + J 0.0221		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			4.999 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			5.502 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			4.999 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			4.999 KA		
	CONTRIBUTIONS:	B-B3-EP1		4.999 KA	ANG:	-66.89
B-B3-ALDN KIT	FAULT:	5.421 KA AT	-53.24 DEG (	1.95 MVA)	X/R:	1.34
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0133 + J 0.0177		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			5.421 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			5.421 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			5.421 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			5.421 KA		
	CONTRIBUTIONS:	B-B3-EP2		5.421 KA	ANG:	-53.24

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B3-ATS-COMP	FAULT:	7.460 KA AT	-77.33 DEG (	2.69 MVA)	X/R: 4.46
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0035 + J 0.0157	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.460 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		9.584 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		8.122 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		7.460 KA		
	CONTRIBUTIONS:	B-B3-EP2-M	2.697 KA	ANG:	-77.12
	ATS-B3-COMP	BUS-0719	4.763 KA	ANG:	-77.44
B-B3-ATSTEL RM	FAULT:	5.766 KA AT	-75.03 DEG (	2.08 MVA)	X/R: 4.12
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0054 + J 0.0201	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		5.766 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		7.271 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		6.162 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		5.766 KA		
	ATS-B3-TEL RM	BUS-0718	5.766 KA	ANG:	-75.03
B-B3-COMP	FAULT:	5.796 KA AT	-61.06 DEG (	2.09 MVA)	X/R: 1.81
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0100 + J 0.0181	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		5.796 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		5.862 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		5.796 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		5.796 KA		
	CONTRIBUTIONS:	B-B3-EP2	5.796 KA	ANG:	-61.06
B-B3-COMP AC	FAULT:	2.783 KA AT	-25.26 DEG (	1.00 MVA)	X/R: 0.47
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0390 + J 0.0184	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.783 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.783 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.783 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.783 KA		
	CONTRIBUTIONS:	B-B3-EP2	2.783 KA	ANG:	-25.26
B-B3-COMP MF	FAULT:	6.718 KA AT	-72.50 DEG (	2.42 MVA)	X/R: 3.30
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0054 + J 0.0170	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		6.718 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		8.003 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		6.783 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		6.718 KA		
	CONTRIBUTIONS:	MTRI-0010	0.936 KA	ANG:	-79.51
	CBL-0117	B-B3-EP2	5.791 KA	ANG:	-71.37

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B3-DBL GRILL	FAULT:	4.628 KA AT	-64.43 DEG (	1.67 MVA)	X/R:	2.18
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0112 + J	0.0234	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.628 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.923 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.628 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.628 KA				
	CONTRIBUTIONS:	B-B3-EP1	4.628 KA	ANG:	-64.43	
B-B3-ELEV	FAULT:	6.437 KA AT	-67.65 DEG (	2.32 MVA)	X/R:	2.65
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0071 + J	0.0173	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.437 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.222 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.437 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.437 KA				
	CONTRIBUTIONS:	M-B3-ELEV	0.936 KA	ANG:	-79.51	
	CBL-0113	B-B3-EP2	5.525 KA	ANG:	-65.65	
B-B3-EP1	FAULT:	5.658 KA AT	-74.73 DEG (	2.04 MVA)	X/R:	4.02
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0056 + J	0.0205	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.658 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.093 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.011 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.658 KA				
	CONTRIBUTIONS:	B-B3-EP1-M	5.658 KA	ANG:	-74.73	
B-B3-EP1-M	FAULT:	5.668 KA AT	-74.79 DEG (	2.04 MVA)	X/R:	4.04
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0056 + J	0.0204	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.668 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.112 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.028 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.668 KA				
	CONTRIBUTIONS:	B-B3-ATSTEL RM	5.668 KA	ANG:	-74.79	
B-B3-EP2	FAULT:	7.385 KA AT	-77.12 DEG (	2.66 MVA)	X/R:	4.38
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0036 + J	0.0159	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	7.385 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.451 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.010 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.385 KA			
	CONTRIBUTIONS: B-B3-EP2-M	4.651 KA	ANG:	-76.94	
	CBL-0110 B-B3-HYDRO ELV	0.897 KA	ANG:	-76.03	
	CBL-0113 B-B3-ELEV	0.917 KA	ANG:	-77.58	
	CBL-0117 B-B3-COMP MF	0.921 KA	ANG:	-78.59	
B-B3-EP2-M	FAULT: 7.389 KA AT -77.13 DEG (2.66 MVA)	X/R:	4.39		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0036 + J 0.0158	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.389 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	9.460 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.017 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	7.389 KA			
	CONTRIBUTIONS: B-B3-ATS-COMP	4.657 KA	ANG:	-76.99	
	CBL-0107 B-B3-EP2	2.732 KA	ANG:	-77.38	
B-B3-HYDRO ELV	FAULT: 5.609 KA AT -62.48 DEG (2.02 MVA)	X/R:	2.22		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0099 + J 0.0190	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.609 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.998 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.609 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.609 KA			
	CONTRIBUTIONS: M-B3-HYDR ELEV	0.936 KA	ANG:	-79.51	
	CBL-0110 B-B3-EP2	4.722 KA	ANG:	-59.15	
B-B3-KP1	FAULT: 4.817 KA AT -68.57 DEG (1.74 MVA)	X/R:	2.69		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0091 + J 0.0232	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.817 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.430 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.817 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.817 KA			
	CONTRIBUTIONS: B-B3-EP1	4.817 KA	ANG:	-68.57	
B-B3-MECH HVAC	FAULT: 6.165 KA AT -64.37 DEG (2.22 MVA)	X/R:	2.09		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0084 + J 0.0176	OHMS			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	6.165 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.477 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.165 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.165 KA		
	CONTRIBUTIONS: B-B3-EP2	6.165 KA	ANG:	-64.37
B-B3-MECH RM	FAULT: 6.595 KA AT -72.27 DEG (2.38 MVA)		X/R:	3.13
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0055 + J 0.0173 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.595 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.751 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.595 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.595 KA		
	CONTRIBUTIONS: B-B3-EP2	6.595 KA	ANG:	-72.27
B-B3-P7	FAULT: 4.785 KA AT -62.35 DEG (1.72 MVA)		X/R:	1.99
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0116 + J 0.0222 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.785 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.962 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.785 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.785 KA		
	CONTRIBUTIONS: B-B3-EP1	4.785 KA	ANG:	-62.35
B-B3-STRT PNL	FAULT: 6.558 KA AT -68.11 DEG (2.36 MVA)		X/R:	2.49
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0068 + J 0.0170 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.558 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.238 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.558 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.558 KA		
	CONTRIBUTIONS: B-B3-EP2	6.558 KA	ANG:	-68.11
B-B3-TELE PNL	FAULT: 5.173 KA AT -71.13 DEG (1.86 MVA)		X/R:	3.13
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0075 + J 0.0220 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.173 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.078 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.173 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.173 KA		
	CONTRIBUTIONS: B-B3-EP1	5.173 KA	ANG:	-71.13
B-B3-TRAY LINE	FAULT: 6.165 KA AT -64.37 DEG (2.22 MVA)		X/R:	2.09
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0084 + J 0.0176 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.165 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.477 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.165 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.165 KA		
	CONTRIBUTIONS: B-B3-EP2	6.165 KA	ANG:	-64.37

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B4-4EQD	FAULT:	6.547 KA AT -73.35 DEG (	2.36 MVA)	X/R:	3.50
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0053 + J 0.0176	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER		6.547 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		7.921 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		6.713 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		6.547 KA		
	CONTRIBUTIONS:	B-B4-4EQD-M	4.341 KA	ANG:	-72.01
	CBL-0201	B-B4-ELEV#4	0.895 KA	ANG:	-76.41
	CBL-0202	B-B4-HYDROELEV	1.315 KA	ANG:	-75.66
B-B4-4EQD-M	FAULT:	6.552 KA AT -73.36 DEG (	2.36 MVA)	X/R:	3.50
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0052 + J 0.0176	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER		6.552 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		7.928 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		6.719 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		6.552 KA		
	CONTRIBUTIONS:	B-B4-ATS-EQ	4.347 KA	ANG:	-72.05
	CBL-0195	B-B4-4EQD	2.209 KA	ANG:	-75.94
B-B4-ATS-EQ	FAULT:	6.637 KA AT -73.51 DEG (	2.39 MVA)	X/R:	3.53
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0051 + J 0.0173	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER		6.637 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		8.049 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		6.821 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		6.637 KA		
	CONTRIBUTIONS:	B-B4-4EQD-M	2.181 KA	ANG:	-75.71
	ATS-B4-EQ	BUS-0691	4.458 KA	ANG:	-72.43
B-B4-ATS-LS	FAULT:	4.196 KA AT -55.61 DEG (	1.51 MVA)	X/R:	1.52
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0162 + J 0.0236	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.196 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.196 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.196 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.196 KA		
	ATS-B4-LS	BUS-0694	4.196 KA	ANG:	-55.61

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B4-ELEV#4 FAULT: 5.106 KA AT -63.16 DEG (1.84 MVA) X/R: 2.33
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0106 + J 0.0210 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.106 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.530 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.106 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.106 KA
CONTRIBUTIONS: M-B4-ELEV#4 0.936 KA ANG: -79.51
CBL-0201 B-B4-4EQD 4.217 KA ANG: -59.58

B-B4-EQ1 FAULT: 5.625 KA AT -65.58 DEG (2.03 MVA) X/R: 2.26
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0088 + J 0.0194 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.625 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.039 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.625 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.625 KA
CONTRIBUTIONS: B-B4-4EQD 5.625 KA ANG: -65.58

B-B4-EQ10 FAULT: 4.815 KA AT -59.38 DEG (1.73 MVA) X/R: 1.72
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0127 + J 0.0215 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.815 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.815 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.815 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.815 KA
CONTRIBUTIONS: B-B4-EQ5 4.815 KA ANG: -59.38

B-B4-EQ11 FAULT: 5.239 KA AT -62.57 DEG (1.89 MVA) X/R: 1.97
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0106 + J 0.0203 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.239 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.416 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.239 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.239 KA
CONTRIBUTIONS: B-B4-EQ6 5.239 KA ANG: -62.57

B-B4-EQ12 FAULT: 4.411 KA AT -56.45 DEG (1.59 MVA) X/R: 1.53
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0150 + J 0.0227 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.411 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.411 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.411 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.411 KA
CONTRIBUTIONS: B-B4-EQ7 4.411 KA ANG: -56.45

B-B4-EQ15 FAULT: 4.686 KA AT -58.43 DEG (1.69 MVA) X/R: 1.65
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0134 + J 0.0218 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 4.686 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.686 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.686 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.686 KA
CONTRIBUTIONS: B-B4-4EQD 4.686 KA ANG: -58.43

B-B4-EQ2 FAULT: 6.158 KA AT -69.95 DEG (2.22 MVA) X/R: 2.84
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0067 + J 0.0183 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 6.158 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 7.043 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 6.158 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 6.158 KA
CONTRIBUTIONS: B-B4-4EQD 6.158 KA ANG: -69.95

B-B4-EQ3 FAULT: 5.112 KA AT -61.60 DEG (1.84 MVA) X/R: 1.88
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0112 + J 0.0207 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.112 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.225 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.112 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.112 KA
CONTRIBUTIONS: B-B4-4EQD 5.112 KA ANG: -61.60

B-B4-EQ5 FAULT: 5.175 KA AT -62.08 DEG (1.86 MVA) X/R: 1.92
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0109 + J 0.0205 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.175 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 5.319 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.175 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.175 KA
CONTRIBUTIONS: B-B4-EQ1 5.175 KA ANG: -62.08

B-B4-EQ6 FAULT: 5.649 KA AT -65.77 DEG (2.04 MVA) X/R: 2.28
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0087 + J 0.0194 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 5.649 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.081 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.649 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 5.649 KA
CONTRIBUTIONS: B-B4-EQ2 5.649 KA ANG: -65.77

B-B4-EQ7 FAULT: 4.722 KA AT -58.70 DEG (1.70 MVA) X/R: 1.67
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0132 + J 0.0217 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	4.722 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.722 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.722 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.722 KA			
	CONTRIBUTIONS: B-B4-EQ3	4.722 KA	ANG:	-58.70	
B-B4-EQ9	FAULT: 4.192 KA AT -54.89 DEG (	1.51 MVA)	X/R:	1.44	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0165 + J	0.0234	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.192 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.192 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.192 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.192 KA			
	CONTRIBUTIONS: B-B4-4EQD	4.192 KA	ANG:	-54.89	
B-B4-HYDROELEV	FAULT: 5.156 KA AT -63.55 DEG (	1.86 MVA)	X/R:	2.81	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0104 + J	0.0209	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.156 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.881 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.156 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.156 KA			
	CONTRIBUTIONS: MTRI-0012	1.412 KA	ANG:	-81.63	
	CBL-0202 B-B4-4EQD	3.839 KA	ANG:	-57.00	
B-B4-LP15	FAULT: 2.991 KA AT -44.63 DEG (	1.08 MVA)	X/R:	1.01	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0286 + J	0.0282	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.991 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.991 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.991 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.991 KA			
	CONTRIBUTIONS: B-B4-LP15-M	2.991 KA	ANG:	-44.63	
B-B4-LP15-M	FAULT: 2.995 KA AT -44.64 DEG (	1.08 MVA)	X/R:	1.01	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0285 + J	0.0282	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.995 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.995 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.995 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.995 KA			
	CONTRIBUTIONS: B-B4-LSD	2.995 KA	ANG:	-44.64	
B-B4-LS1	FAULT: 3.242 KA AT -47.79 DEG (	1.17 MVA)	X/R:	1.13	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0249 + J	0.0274	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 3.242 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.242 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.242 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.242 KA
CONTRIBUTIONS: B-B4-LS1-M 3.242 KA ANG: -47.79

B-B4-LS1-M FAULT: 3.246 KA AT -47.81 DEG (1.17 MVA) X/R: 1.13
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0248 + J 0.0274 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.246 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.246 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.246 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.246 KA
CONTRIBUTIONS: B-B4-LS2-M 3.246 KA ANG: -47.81

B-B4-LS10 FAULT: 2.692 KA AT -43.35 DEG (0.97 MVA) X/R: 0.96
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0324 + J 0.0306 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.692 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.692 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.692 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.692 KA
CONTRIBUTIONS: B-B4-LS10-M 2.692 KA ANG: -43.35

B-B4-LS10-M FAULT: 2.695 KA AT -43.36 DEG (0.97 MVA) X/R: 0.96
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0324 + J 0.0306 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.695 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.695 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.695 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.695 KA
CONTRIBUTIONS: B-B4-LS5-M 2.695 KA ANG: -43.36

B-B4-LS11 FAULT: 2.876 KA AT -44.82 DEG (1.04 MVA) X/R: 1.01
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0296 + J 0.0294 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.876 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.876 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.876 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.876 KA
CONTRIBUTIONS: B-B4-LS11-M 2.876 KA ANG: -44.82

B-B4-LS11-M FAULT: 2.879 KA AT -44.83 DEG (1.04 MVA) X/R: 1.01
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0296 + J 0.0294 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.879 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.879 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.879 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.879 KA		
	CONTRIBUTIONS: B-B4-LS6-M	2.879 KA	ANG:	-44.83
B-B4-LS12	FAULT: 3.034 KA AT -46.10 DEG (1.09 MVA)		X/R:	1.06
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0274 + J 0.0285 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.034 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.034 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.034 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.034 KA		
	CONTRIBUTIONS: B-B4-LS12-M	3.034 KA	ANG:	-46.10
B-B4-LS12-M	FAULT: 3.038 KA AT -46.11 DEG (1.09 MVA)		X/R:	1.06
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0274 + J 0.0285 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.038 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.038 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.038 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.038 KA		
	CONTRIBUTIONS: B-B4-LS7-M	3.038 KA	ANG:	-46.11
B-B4-LS13	FAULT: 3.064 KA AT -46.34 DEG (1.10 MVA)		X/R:	1.07
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0271 + J 0.0284 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.064 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.064 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.064 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.064 KA		
	CONTRIBUTIONS: B-B4-LS13-M	3.064 KA	ANG:	-46.34
B-B4-LS13-M	FAULT: 3.068 KA AT -46.35 DEG (1.11 MVA)		X/R:	1.07
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0270 + J 0.0283 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.068 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.068 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.068 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.068 KA		
	CONTRIBUTIONS: B-B4-LS8-M	3.068 KA	ANG:	-46.35
B-B4-LS14	FAULT: 3.064 KA AT -46.34 DEG (1.10 MVA)		X/R:	1.07
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0271 + J 0.0284 OHMS			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.064 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.064 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.064 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.064 KA			
	CONTRIBUTIONS: B-B4-LS14-M	3.064 KA	ANG:	-46.34	
B-B4-LS14-M	FAULT: 3.068 KA AT -46.35 DEG (	1.11 MVA)	X/R:	1.07	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0270 + J	0.0283	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.068 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.068 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.068 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.068 KA			
	CONTRIBUTIONS: B-B4-LS9-M	3.068 KA	ANG:	-46.35	
B-B4-LS2	FAULT: 3.673 KA AT -51.38 DEG (	1.32 MVA)	X/R:	1.29	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0204 + J	0.0255	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.673 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.673 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.673 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.673 KA			
	CONTRIBUTIONS: B-B4-LS2-M	3.673 KA	ANG:	-51.38	
B-B4-LS2-M	FAULT: 3.678 KA AT -51.41 DEG (	1.33 MVA)	X/R:	1.29	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0204 + J	0.0255	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.678 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.678 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.678 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.678 KA			
	CONTRIBUTIONS: B-B4-LSD	3.678 KA	ANG:	-51.41	
B-B4-LS3	FAULT: 3.888 KA AT -53.23 DEG (	1.40 MVA)	X/R:	1.38	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0185 + J	0.0247	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.888 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.888 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.888 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.888 KA			
	CONTRIBUTIONS: B-B4-LS3-M	3.888 KA	ANG:	-53.23	
B-B4-LS3-M	FAULT: 3.895 KA AT -53.26 DEG (	1.40 MVA)	X/R:	1.38	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0184 + J	0.0247	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.895 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.895 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.895 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.895 KA		
	CONTRIBUTIONS: B-B4-LSD	3.895 KA	ANG:	-53.26
B-B4-LS4	FAULT: 3.415 KA AT -49.22 DEG (1.23 MVA)		X/R:	1.19
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0230 + J 0.0266 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.415 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.415 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.415 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.415 KA		
	CONTRIBUTIONS: B-B4-LS4-M	3.415 KA	ANG:	-49.22
B-B4-LS4-M	FAULT: 3.420 KA AT -49.24 DEG (1.23 MVA)		X/R:	1.19
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0229 + J 0.0266 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.420 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.420 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.420 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.420 KA		
	CONTRIBUTIONS: B-B4-LS3-M	3.420 KA	ANG:	-49.24
B-B4-LS5	FAULT: 2.858 KA AT -44.68 DEG (1.03 MVA)		X/R:	1.01
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0299 + J 0.0295 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.858 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.858 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.858 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.858 KA		
	CONTRIBUTIONS: B-B4-LS5-M	2.858 KA	ANG:	-44.68
B-B4-LS5-M	FAULT: 2.861 KA AT -44.69 DEG (1.03 MVA)		X/R:	1.01
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0298 + J 0.0295 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.861 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.861 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.861 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.861 KA		
	CONTRIBUTIONS: B-B4-LSD	2.861 KA	ANG:	-44.69
B-B4-LS6	FAULT: 3.064 KA AT -46.34 DEG (1.10 MVA)		X/R:	1.07
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0271 + J 0.0284 OHMS			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.064 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.064 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.064 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.064 KA			
	CONTRIBUTIONS: B-B4-LS6-M	3.064 KA	ANG:	-46.34	
B-B4-LS6-M	FAULT: 3.068 KA AT -46.35 DEG (	1.11 MVA)	X/R:	1.07	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0270 + J	0.0283	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.068 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.068 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.068 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.068 KA			
	CONTRIBUTIONS: B-B4-LSD	3.068 KA	ANG:	-46.35	
B-B4-LS7	FAULT: 3.242 KA AT -47.79 DEG (	1.17 MVA)	X/R:	1.13	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0249 + J	0.0274	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.242 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.242 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.242 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.242 KA			
	CONTRIBUTIONS: B-B4-LS7-M	3.242 KA	ANG:	-47.79	
B-B4-LS7-M	FAULT: 3.246 KA AT -47.81 DEG (	1.17 MVA)	X/R:	1.13	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0248 + J	0.0274	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.246 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.246 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.246 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.246 KA			
	CONTRIBUTIONS: B-B4-LSD	3.246 KA	ANG:	-47.81	
B-B4-LS8	FAULT: 3.275 KA AT -48.07 DEG (	1.18 MVA)	X/R:	1.14	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0245 + J	0.0273	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.275 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.275 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.275 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.275 KA			
	CONTRIBUTIONS: B-B4-LS8-M	3.275 KA	ANG:	-48.07	
B-B4-LS8-M	FAULT: 3.280 KA AT -48.08 DEG (	1.18 MVA)	X/R:	1.14	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0245 + J	0.0272	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.280 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.280 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.280 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.280 KA		
	CONTRIBUTIONS: B-B4-LSD	3.280 KA	ANG:	-48.08
B-B4-LS9	FAULT: 3.275 KA AT -48.07 DEG (1.18 MVA)		X/R:	1.14
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0245 + J 0.0273 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.275 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.275 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.275 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.275 KA		
	CONTRIBUTIONS: B-B4-LS9-M	3.275 KA	ANG:	-48.07
B-B4-LS9-M	FAULT: 3.280 KA AT -48.08 DEG (1.18 MVA)		X/R:	1.14
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0245 + J 0.0272 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.280 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.280 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.280 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.280 KA		
	CONTRIBUTIONS: B-B4-LSD	3.280 KA	ANG:	-48.08
B-B4-LSD	FAULT: 4.133 KA AT -55.33 DEG (1.49 MVA)		X/R:	1.50
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0165 + J 0.0239 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.133 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.133 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.133 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.133 KA		
	CONTRIBUTIONS: B-B4-LSD-M	4.133 KA	ANG:	-55.33
B-B4-LSD-M	FAULT: 4.141 KA AT -55.37 DEG (1.49 MVA)		X/R:	1.50
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0165 + J 0.0239 OHMS			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	4.141 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.141 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.141 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.141 KA			
	CONTRIBUTIONS: B-B4-ATS-LS	4.141 KA	ANG:	-55.37	
B-B4-PP1	FAULT: 5.895 KA AT -69.37 DEG (	2.12 MVA)	X/R:	2.74	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0072 + J	0.0191	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.895 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.680 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.895 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.895 KA			
	CONTRIBUTIONS: B-B4-4EQD	5.895 KA	ANG:	-69.37	
B-B4-PP2	FAULT: 2.991 KA AT -44.63 DEG (	1.08 MVA)	X/R:	1.01	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0286 + J	0.0282	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.991 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.991 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.991 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.991 KA			
	CONTRIBUTIONS: B-B4-PP2-M	2.991 KA	ANG:	-44.63	
B-B4-PP2-M	FAULT: 2.995 KA AT -44.64 DEG (	1.08 MVA)	X/R:	1.01	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0285 + J	0.0282	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.995 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.995 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.995 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.995 KA			
	CONTRIBUTIONS: B-B4-LSD	2.995 KA	ANG:	-44.64	
B-B5-ATS-EQ	FAULT: 4.008 KA AT -69.66 DEG (	1.44 MVA)	X/R:	2.99	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0104 + J	0.0281	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.008 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.651 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.008 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.008 KA			
	CONTRIBUTIONS: B-B5-EQD	1.637 KA	ANG:	-76.83	
	ATS-B5-EQ BUS-0692	2.392 KA	ANG:	-64.75	
B-B5-ATS-LS	FAULT: 1.867 KA AT -45.64 DEG (	0.67 MVA)	X/R:	1.04	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0450 + J	0.0460	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.867 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.867 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.867 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.867 KA		
	ATS-B5-LS BUS-0695	1.867 KA	ANG:	-45.64
B-B5-EQ1	FAULT: 3.503 KA AT -62.56 DEG (1.26 MVA)		X/R:	2.05
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0158 + J 0.0304 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.503 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.664 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.503 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.503 KA		
	CONTRIBUTIONS: B-B5-EQD	3.503 KA	ANG:	-62.56
B-B5-EQ2	FAULT: 3.471 KA AT -62.12 DEG (1.25 MVA)		X/R:	2.01
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0162 + J 0.0306 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.471 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.610 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.471 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.471 KA		
	CONTRIBUTIONS: B-B5-EQD	3.471 KA	ANG:	-62.12
B-B5-EQ5	FAULT: 3.503 KA AT -62.56 DEG (1.26 MVA)		X/R:	2.05
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0158 + J 0.0304 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.503 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.664 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.503 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.503 KA		
	CONTRIBUTIONS: B-B5-EQD	3.503 KA	ANG:	-62.56
B-B5-EQ6	FAULT: 3.579 KA AT -64.97 DEG (1.29 MVA)		X/R:	2.56
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0142 + J 0.0304 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.579 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.979 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.579 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.579 KA		
	CONTRIBUTIONS: M-B5-EQ6	0.840 KA	ANG:	-78.69
	CBL-0227 B-B5-EQD	2.770 KA	ANG:	-60.84
B-B5-EQD	FAULT: 4.000 KA AT -69.69 DEG (1.44 MVA)		X/R:	3.00
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0104 + J 0.0282 OHMS			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	4.000 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.646 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.000 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.000 KA			
	CONTRIBUTIONS: B-B5-ATS-EQ	2.379 KA	ANG:	-64.72	
	CBL-0227 B-B5-EQ6	0.815 KA	ANG:	-76.23	
	CBL-0228 B-B5-HYDR ELEV	0.828 KA	ANG:	-77.55	
B-B5-HYDR ELEV	FAULT: 3.800 KA AT -67.34 DEG (1.37 MVA)	X/R:	2.77		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0122 + J 0.0292	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.800 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.317 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.800 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.800 KA			
	CONTRIBUTIONS: M-B5-HYDR ELEV	0.840 KA	ANG:	-78.69	
	CBL-0228 B-B5-EQD	2.981 KA	ANG:	-64.17	
B-B5-LS1	FAULT: 1.777 KA AT -44.59 DEG (0.64 MVA)	X/R:	1.00		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0481 + J 0.0474	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.777 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.777 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.777 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.777 KA			
	CONTRIBUTIONS: B-B5-LSD	1.777 KA	ANG:	-44.59	
B-B5-LS2	FAULT: 1.624 KA AT -42.64 DEG (0.59 MVA)	X/R:	0.93		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0544 + J 0.0501	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.624 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.624 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.624 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.624 KA			
	CONTRIBUTIONS: B-B5-LSD	1.624 KA	ANG:	-42.64	
B-B5-LS4	FAULT: 1.568 KA AT -41.94 DEG (0.57 MVA)	X/R:	0.91		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0570 + J 0.0512	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.568 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.568 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.568 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.568 KA			
	CONTRIBUTIONS: B-B5-LS2	1.568 KA	ANG:	-41.94	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B5-LSD	FAULT:	1.855 KA AT -45.59 DEG (	0.67 MVA)	X/R:	1.03
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0453 + J 0.0463		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.855 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.855 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.855 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.855 KA		
	CONTRIBUTIONS: B-B5-LSD-M		1.855 KA	ANG:	-45.59
B-B5-LSD-M	FAULT:	1.856 KA AT -45.59 DEG (	0.67 MVA)	X/R:	1.03
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0453 + J 0.0462		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.856 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.856 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.856 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.856 KA		
	CONTRIBUTIONS: B-B5-ATS-LS		1.856 KA	ANG:	-45.59
B-B55-LS3	FAULT:	1.711 KA AT -43.75 DEG (	0.62 MVA)	X/R:	0.97
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0507 + J 0.0485		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.711 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.711 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.711 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.711 KA		
	CONTRIBUTIONS: B-B5-LS1		1.711 KA	ANG:	-43.75
B-B6-ATS-EQ	FAULT:	4.318 KA AT -70.05 DEG (	1.56 MVA)	X/R:	3.15
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0095 + J 0.0261		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.318 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		5.080 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.318 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.318 KA		
	CONTRIBUTIONS: B-B6-EQD-M		1.337 KA	ANG:	-78.99
	ATS-B6-EQ BUS-0701		3.004 KA	ANG:	-66.08
B-B6-ATS-LS	FAULT:	2.625 KA AT -48.43 DEG (	0.95 MVA)	X/R:	1.15
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0304 + J 0.0342		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.625 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.625 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.625 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.625 KA		
	ATS-B6-LS BUS-0707		2.625 KA	ANG:	-48.43

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B6-EQ1 FAULT: 4.021 KA AT -66.25 DEG (1.45 MVA) X/R: 2.54
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0120 + J 0.0273 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.021 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.460 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.021 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.021 KA
CONTRIBUTIONS: B-B6-EQD 4.021 KA ANG: -66.25

B-B6-EQ2 FAULT: 3.678 KA AT -63.19 DEG (1.32 MVA) X/R: 2.16
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0147 + J 0.0291 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.678 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.900 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.678 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.678 KA
CONTRIBUTIONS: B-B6-EQD 3.678 KA ANG: -63.19

B-B6-EQ3 FAULT: 3.944 KA AT -66.22 DEG (1.42 MVA) X/R: 2.53
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0123 + J 0.0279 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.944 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.370 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.944 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.944 KA
CONTRIBUTIONS: B-B6-EQD 3.944 KA ANG: -66.22

B-B6-EQ4 FAULT: 3.476 KA AT -60.97 DEG (1.25 MVA) X/R: 1.94
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0168 + J 0.0302 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.476 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.581 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.476 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.476 KA
CONTRIBUTIONS: B-B6-EQ2 3.476 KA ANG: -60.97

B-B6-EQ5 FAULT: 3.720 KA AT -63.67 DEG (1.34 MVA) X/R: 2.21
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0143 + J 0.0289 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.720 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.971 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.720 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.720 KA
CONTRIBUTIONS: B-B6-EQ3 3.720 KA ANG: -63.67

B-B6-EQ8 FAULT: 3.991 KA AT -69.26 DEG (1.44 MVA) X/R: 3.54
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0107 + J 0.0281 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.991 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.846 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.107 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.991 KA		
	CONTRIBUTIONS: M-B6-ELEV	1.412 KA	ANG:	-81.63
	CBL-0266 B-B6-EQD	2.630 KA	ANG:	-62.65
B-B6-EQD	FAULT: 4.262 KA AT -70.02 DEG (1.54 MVA)		X/R:	3.18
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0096 + J 0.0265 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.262 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.028 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.262 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.262 KA		
	CONTRIBUTIONS: B-B6-EQD-M	2.938 KA	ANG:	-65.80
	CBL-0266 B-B6-EQ8	1.350 KA	ANG:	-79.25
B-B6-EQD-M	FAULT: 4.263 KA AT -70.03 DEG (1.54 MVA)		X/R:	3.18
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0096 + J 0.0265 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.263 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.029 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.263 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.263 KA		
	CONTRIBUTIONS: B-B6-ATS-EQ	2.939 KA	ANG:	-65.81
	CBL-0265 B-B6-EQD	1.350 KA	ANG:	-79.24
B-B6-EQMACH	FAULT: 4.021 KA AT -66.25 DEG (1.45 MVA)		X/R:	2.54
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0120 + J 0.0273 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.021 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.460 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.021 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.021 KA		
	CONTRIBUTIONS: B-B6-EQD	4.021 KA	ANG:	-66.25
B-B6-LS1	FAULT: 2.362 KA AT -45.93 DEG (0.85 MVA)		X/R:	1.05
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0354 + J 0.0365 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.362 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.362 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.362 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.362 KA		
	CONTRIBUTIONS: B-B6-LSD	2.362 KA	ANG:	-45.93

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B6-LS2 FAULT: 2.473 KA AT -46.69 DEG (0.89 MVA) X/R: 1.08
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0333 + J 0.0353 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.473 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.473 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.473 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.473 KA
CONTRIBUTIONS: B-B6-LSD 2.473 KA ANG: -46.69

B-B6-LS3 FAULT: 2.362 KA AT -45.93 DEG (0.85 MVA) X/R: 1.05
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0354 + J 0.0365 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.362 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.362 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.362 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.362 KA
CONTRIBUTIONS: B-B6-LSD 2.362 KA ANG: -45.93

B-B6-LS4 FAULT: 2.362 KA AT -45.93 DEG (0.85 MVA) X/R: 1.05
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0354 + J 0.0365 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.362 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.362 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.362 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.362 KA
CBL-0258 B-B6-LSD 2.362 KA ANG: -45.93

B-B6-LS5 FAULT: 2.249 KA AT -44.76 DEG (0.81 MVA) X/R: 1.00
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0379 + J 0.0376 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.249 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.249 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.249 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.249 KA
CONTRIBUTIONS: B-B6-LS3 2.249 KA ANG: -44.76

B-B6-LS6 FAULT: 2.249 KA AT -44.76 DEG (0.81 MVA) X/R: 1.00
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0379 + J 0.0376 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.249 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.249 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.249 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.249 KA
CONTRIBUTIONS: B-B6-LS4 2.249 KA ANG: -44.76

B-B6-LSD FAULT: 2.588 KA AT -48.28 DEG (0.93 MVA) X/R: 1.14
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0309 + J 0.0346 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.588 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.588 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.588 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.588 KA		
	CONTRIBUTIONS: B-B6-LSD-M	2.588 KA	ANG:	-48.28
B-B6-LSD-M	FAULT: 2.589 KA AT -48.29 DEG (0.93 MVA)		X/R:	1.14
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0309 + J 0.0346			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.589 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.589 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.589 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.589 KA		
	CONTRIBUTIONS: B-B6-ATS-LS	2.589 KA	ANG:	-48.29
B-B61-ATS-EQD	FAULT: 3.632 KA AT -68.17 DEG (1.31 MVA)		X/R:	2.76
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0123 + J 0.0307			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.632 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.126 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.632 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.632 KA		
	CONTRIBUTIONS: B-B61-EQD	0.900 KA	ANG:	-77.76
	ATS-B61-EQD BUS-0703	2.749 KA	ANG:	-65.04
B-B61-ATS-LSD	FAULT: 2.154 KA AT -46.52 DEG (0.78 MVA)		X/R:	1.07
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0384 + J 0.0404			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.154 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.154 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.154 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.154 KA		
	ATS-B61-LSD BUS-0705	2.154 KA	ANG:	-46.52
B-B61-COMP RM	FAULT: 3.414 KA AT -66.56 DEG (1.23 MVA)		X/R:	2.53
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0140 + J 0.0323			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.414 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.784 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.414 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.414 KA		
	CONTRIBUTIONS: B-B61-EQA	3.414 KA	ANG:	-66.56

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B61-ELEV FAULT: 3.324 KA AT -66.80 DEG (1.20 MVA) X/R: 2.81
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0142 + J 0.0332 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.324 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.792 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.324 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.324 KA
CONTRIBUTIONS: B61-ELEV 0.936 KA ANG: -79.51
CBL-0472 B-B61-EQD 2.420 KA ANG: -61.92

B-B61-EQ1 FAULT: 3.157 KA AT -62.51 DEG (1.14 MVA) X/R: 2.06
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0176 + J 0.0337 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.157 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.307 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.157 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.157 KA
CONTRIBUTIONS: B-B61-EQD 3.157 KA ANG: -62.51

B-B61-EQ2 FAULT: 3.449 KA AT -66.31 DEG (1.24 MVA) X/R: 2.50
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0140 + J 0.0319 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.449 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.810 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.449 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.449 KA
CONTRIBUTIONS: B-B61-EQD 3.449 KA ANG: -66.31

B-B61-EQ4 FAULT: 3.148 KA AT -61.47 DEG (1.13 MVA) X/R: 1.97
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0182 + J 0.0335 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.148 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.256 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.148 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.148 KA
CONTRIBUTIONS: B-B61-EQD 3.148 KA ANG: -61.47

B-B61-EQA FAULT: 3.557 KA AT -67.88 DEG (1.28 MVA) X/R: 2.73
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0127 + J 0.0313 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.557 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.025 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.557 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.557 KA
CONTRIBUTIONS: B-B61-EQD 3.557 KA ANG: -67.88

B-B61-EQD FAULT: 3.586 KA AT -68.16 DEG (1.29 MVA) X/R: 2.77
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0125 + J 0.0311 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.586 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.078 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.586 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.586 KA			
	CONTRIBUTIONS: B-B61-ATS-EQD	2.698 KA	ANG:	-64.91	
	CBL-0472 B-B61-ELEV	0.905 KA	ANG:	-77.88	
B-B61-KITCHEN	FAULT: 2.016 KA AT -45.96 DEG (0.73 MVA)	X/R:	1.05		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0414 + J 0.0428	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.016 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.016 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.016 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.016 KA			
	CONTRIBUTIONS: B-B61-LSD	2.016 KA	ANG:	-45.96	
B-B61-LS1	FAULT: 1.837 KA AT -43.01 DEG (0.66 MVA)	X/R:	0.94		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0478 + J 0.0446	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.837 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.837 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.837 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.837 KA			
	CONTRIBUTIONS: B-B61-LSD	1.837 KA	ANG:	-43.01	
B-B61-LS2	FAULT: 1.964 KA AT -43.84 DEG (0.71 MVA)	X/R:	0.97		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0441 + J 0.0423	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.964 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.964 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.964 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.964 KA			
	CONTRIBUTIONS: B-B61-LSD	1.964 KA	ANG:	-43.84	
B-B61-LS3	FAULT: 1.766 KA AT -42.21 DEG (0.64 MVA)	X/R:	0.92		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0504 + J 0.0457	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.766 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.766 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.766 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.766 KA			
	CONTRIBUTIONS: B-B61-LSD	1.766 KA	ANG:	-42.21	
B-B61-LS4	FAULT: 1.837 KA AT -43.01 DEG (0.66 MVA)	X/R:	0.94		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0478 + J 0.0446	OHMS			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.837 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.837 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.837 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.837 KA		
	CONTRIBUTIONS: B-B61-LSD	1.837 KA	ANG:	-43.01
B-B61-LS5	FAULT: 1.766 KA AT -42.21 DEG (0.64 MVA)		X/R:	0.92
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0504 + J 0.0457			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.766 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.766 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.766 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.766 KA		
	CONTRIBUTIONS: B-B61-LSD	1.766 KA	ANG:	-42.21
B-B61-LSD	FAULT: 2.131 KA AT -46.42 DEG (0.77 MVA)		X/R:	1.06
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0388 + J 0.0408			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.131 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.131 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.131 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.131 KA		
	CONTRIBUTIONS: B-B61-LSD-M	2.131 KA	ANG:	-46.42
B-B61-LSD-M	FAULT: 2.133 KA AT -46.43 DEG (0.77 MVA)		X/R:	1.06
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0388 + J 0.0408			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.133 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.133 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.133 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.133 KA		
	CONTRIBUTIONS: B-B61-ATS-LSD	2.133 KA	ANG:	-46.43
B-B62-ATS-EQD	FAULT: 3.088 KA AT -67.59 DEG (1.11 MVA)		X/R:	2.71
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0148 + J 0.0360			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.088 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.489 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.088 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.088 KA		
	CONTRIBUTIONS: B-B62-EQD	0.906 KA	ANG:	-77.40
	ATS-B62-EQD BUS-0700	2.201 KA	ANG:	-63.57

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B62-ATS-LSD FAULT: 1.672 KA AT -44.56 DEG (0.60 MVA) X/R: 0.99
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0512 + J 0.0504 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.672 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.672 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.672 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.672 KA
ATS-B62-LSD BUS-0706 1.672 KA ANG: -44.56

B-B62-ATTC PNL FAULT: 2.761 KA AT -63.01 DEG (0.99 MVA) X/R: 2.15
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0197 + J 0.0388 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.761 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.926 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.761 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.761 KA
CONTRIBUTIONS: B-B62-EQD 2.761 KA ANG: -63.01

B-B62-ELEV-1 FAULT: 2.761 KA AT -63.01 DEG (0.99 MVA) X/R: 2.15
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0197 + J 0.0388 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.761 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.926 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.761 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.761 KA
CONTRIBUTIONS: B-B62-EQD 2.761 KA ANG: -63.01

B-B62-ELEV-2 FAULT: 2.902 KA AT -66.29 DEG (1.05 MVA) X/R: 2.83
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0166 + J 0.0379 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.902 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.317 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.902 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.902 KA
CONTRIBUTIONS: MTRI-0021 0.936 KA ANG: -79.51
CBL-0497 B-B62-EQD 2.003 KA ANG: -60.15

B-B62-EQ FAULT: 2.998 KA AT -66.21 DEG (1.08 MVA) X/R: 2.55
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0162 + J 0.0367 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.998 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.329 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.998 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.998 KA
CONTRIBUTIONS: B-B62-EQD 2.998 KA ANG: -66.21

B-B62-EQD FAULT: 3.049 KA AT -67.38 DEG (1.10 MVA) X/R: 2.72
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0151 + J 0.0364 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.049 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.448 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.049 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.049 KA		
	CONTRIBUTIONS: B-B62-ATS-EQD	2.157 KA	ANG:	-63.02
	CBL-0497 B-B62-ELEV-2	0.913 KA	ANG:	-77.73
B-B62-LS1	FAULT: 1.443 KA AT -40.74 DEG (0.52 MVA)		X/R:	0.87
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0631 + J 0.0543			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.443 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.443 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.443 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.443 KA		
	CONTRIBUTIONS: B-B62-LSD	1.443 KA	ANG:	-40.74
B-B62-LS2	FAULT: 1.549 KA AT -42.68 DEG (0.56 MVA)		X/R:	0.93
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0570 + J 0.0526			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.549 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.549 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.549 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.549 KA		
	CONTRIBUTIONS: B-B62-LSD	1.549 KA	ANG:	-42.68
B-B62-LS3	FAULT: 1.490 KA AT -42.34 DEG (0.54 MVA)		X/R:	0.92
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0596 + J 0.0543			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.490 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.490 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.490 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.490 KA		
	CONTRIBUTIONS: B-B62-LSD	1.490 KA	ANG:	-42.34
B-B62-LS4	FAULT: 1.555 KA AT -43.23 DEG (0.56 MVA)		X/R:	0.95
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0563 + J 0.0529			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.555 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.555 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.555 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.555 KA		
	CONTRIBUTIONS: B-B62-LSD	1.555 KA	ANG:	-43.23
B-B62-LSD	FAULT: 1.644 KA AT -44.45 DEG (0.59 MVA)		X/R:	0.99
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0522 + J 0.0512			OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.644 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.644 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.644 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.644 KA			
	CONTRIBUTIONS: B-B62-LSD-M	1.644 KA	ANG:	-44.45	
B-B62-LSD-M	FAULT: 1.645 KA AT -44.45 DEG (0.59 MVA)	X/R:	0.99		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0521 + J 0.0511	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.645 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.645 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.645 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.645 KA			
	CONTRIBUTIONS: B-B62-ATS-LSD	1.645 KA	ANG:	-44.45	
B-B62-PAD RM	FAULT: 2.929 KA AT -65.20 DEG (1.06 MVA)	X/R:	2.41		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0172 + J 0.0372	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.929 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.203 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.929 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.929 KA			
	CONTRIBUTIONS: B-B62-EQD	2.929 KA	ANG:	-65.20	
B-B7-ATS-EQ	FAULT: 5.486 KA AT -71.34 DEG (1.98 MVA)	X/R:	3.20		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0070 + J 0.0207	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.486 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.484 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.496 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.486 KA			
	CONTRIBUTIONS: B-B7-EQD	0.900 KA	ANG:	-77.85	
	ATS-B7-EQ BUS-0702	4.593 KA	ANG:	-70.07	
B-B7-ATS-LS	FAULT: 4.007 KA AT -54.14 DEG (1.44 MVA)	X/R:	1.42		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0176 + J 0.0243	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.007 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.007 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.007 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.007 KA			
	ATS-B7-LS BUS-0708	4.007 KA	ANG:	-54.14	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B7-ELEV	FAULT:	4.677 KA AT -67.64 DEG (	1.69 MVA)	X/R:	2.79
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0098 + J 0.0237	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.677 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.327 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.677 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.677 KA			
	CONTRIBUTIONS: MTRI-0017	0.936 KA	ANG:	-79.51	
	CBL-0287 B-B7-EQD	3.767 KA	ANG:	-64.71	
B-B7-EQ1	FAULT:	4.481 KA AT -63.31 DEG (	1.61 MVA)	X/R:	2.08
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0120 + J 0.0239	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.481 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.707 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.481 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.481 KA			
	CONTRIBUTIONS: B-B7-EQD	4.481 KA	ANG:	-63.31	
B-B7-EQ2	FAULT:	4.987 KA AT -68.11 DEG (	1.80 MVA)	X/R:	2.66
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0090 + J 0.0223	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.987 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.603 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.987 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.987 KA			
	CONTRIBUTIONS: B-B7-EQD	4.987 KA	ANG:	-68.11	
B-B7-EQ4	FAULT:	4.623 KA AT -63.62 DEG (	1.67 MVA)	X/R:	2.12
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0115 + J 0.0233	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.623 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.876 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.623 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.623 KA			
	CONTRIBUTIONS: B-B7-EQD	4.623 KA	ANG:	-63.62	
B-B7-EQD	FAULT:	5.268 KA AT -70.93 DEG (	1.90 MVA)	X/R:	3.14
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0074 + J 0.0215	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.268 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.193 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.268 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.268 KA			
	CONTRIBUTIONS: B-B7-ATS-EQ	4.368 KA	ANG:	-69.45	
	CBL-0287 B-B7-ELEV	0.909 KA	ANG:	-78.06	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B7-EQD (CONTINUED)

B-B7-LS1 FAULT: 3.177 KA AT -47.37 DEG (1.14 MVA) X/R: 1.11
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0256 + J 0.0278 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.177 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.177 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.177 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.177 KA
CONTRIBUTIONS: B-B7-LSD 3.177 KA ANG: -47.37

B-B7-LS2 FAULT: 3.549 KA AT -49.53 DEG (1.28 MVA) X/R: 1.20
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0220 + J 0.0257 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.549 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.549 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.549 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.549 KA
CONTRIBUTIONS: B-B7-LSD 3.549 KA ANG: -49.53

B-B7-LS4 FAULT: 3.104 KA AT -46.77 DEG (1.12 MVA) X/R: 1.08
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0265 + J 0.0282 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.104 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.104 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.104 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.104 KA
CONTRIBUTIONS: B-B7-LSD 3.104 KA ANG: -46.77

B-B7-LS5 FAULT: 3.476 KA AT -49.86 DEG (1.25 MVA) X/R: 1.21
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0223 + J 0.0264 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.476 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.476 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.476 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.476 KA
CONTRIBUTIONS: B-B7-LSD 3.476 KA ANG: -49.86

B-B7-LSD FAULT: 3.949 KA AT -53.90 DEG (1.42 MVA) X/R: 1.41
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0179 + J 0.0246 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.949 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.949 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.949 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.949 KA
CONTRIBUTIONS: B-B7-LSD-M 3.949 KA ANG: -53.90

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-LSD-M	FAULT:	3.955 KA AT	-53.93 DEG (	1.42 MVA)	X/R: 1.41
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0179 + J 0.0245	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			3.955 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA			3.955 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA			3.955 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA			3.955 KA	
	CONTRIBUTIONS:	B-B7-ATS-LS		3.955 KA	ANG: -53.93
B-B7-MCC-1	FAULT:	4.688 KA AT	-61.40 DEG (	1.69 MVA)	X/R: 1.92
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0123 + J 0.0225	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			4.688 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA			4.815 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA			4.688 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA			4.688 KA	
	CONTRIBUTIONS:	B-B7-EQD		4.688 KA	ANG: -61.40
B-B70 GEN-M	FAULT:	2.860 KA AT	-86.88 DEG (	1.03 MVA)	X/R: 18.34
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0023 + J 0.0419	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			3.251 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA			4.531 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA			3.840 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA			3.452 KA	
	CONTRIBUTIONS:	B-B70-GEN		2.860 KA	ANG: -86.88
B-B70-ATS-EQD	FAULT:	2.762 KA AT	-85.78 DEG (	1.00 MVA)	X/R: 13.56
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0032 + J 0.0434	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			3.056 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA			4.259 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA			3.610 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA			3.245 KA	
	ATS-B70-EQD	BUS-0612		2.762 KA	ANG: -85.78
B-B70-ATS-LSD	FAULT:	2.751 KA AT	-84.43 DEG (	0.99 MVA)	X/R: 10.26
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0042 + J 0.0434	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			2.947 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA			4.107 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA			3.480 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA			3.129 KA	
	ATS-B70-LSD	BUS-0613		2.751 KA	ANG: -84.43

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B70-EM-TAP FAULT: 2.858 KA AT -86.84 DEG (1.03 MVA) X/R: 18.12
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0023 + J 0.0420 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.246 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.523 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.834 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.446 KA
CONTRIBUTIONS: B-B70 GEN-M 2.858 KA ANG: -86.84

B-B70-EQ1 FAULT: 2.411 KA AT -75.85 DEG (0.87 MVA) X/R: 3.97
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0122 + J 0.0483 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.411 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.011 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.552 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.411 KA
CONTRIBUTIONS: B-B70-EQD 2.411 KA ANG: -75.85

B-B70-EQ2 FAULT: 2.249 KA AT -71.70 DEG (0.81 MVA) X/R: 3.02
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0168 + J 0.0507 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.249 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.617 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.249 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.249 KA
CONTRIBUTIONS: B-B70-EQD 2.249 KA ANG: -71.70

B-B70-EQ3 FAULT: 2.355 KA AT -74.40 DEG (0.85 MVA) X/R: 3.58
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0137 + J 0.0491 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.355 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.868 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.430 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.355 KA
CONTRIBUTIONS: B-B70-EQ1 2.355 KA ANG: -74.40

B-B70-EQ4 FAULT: 2.197 KA AT -70.44 DEG (0.79 MVA) X/R: 2.81
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0183 + J 0.0515 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.197 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.508 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.197 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.197 KA
CONTRIBUTIONS: B-B70-EQ2 2.197 KA ANG: -70.44

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-EQ5 FAULT: 2.301 KA AT -73.02 DEG (0.83 MVA) X/R: 3.27
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0152 + J 0.0499 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.301 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.737 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.319 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.301 KA
CONTRIBUTIONS: B-B70-EQ3 2.301 KA ANG: -73.02

B-B70-EQ6 FAULT: 2.147 KA AT -69.24 DEG (0.77 MVA) X/R: 2.64
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0198 + J 0.0523 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.147 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.407 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.147 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.147 KA
CONTRIBUTIONS: B-B70-EQ4 2.147 KA ANG: -69.24

B-B70-EQD FAULT: 2.734 KA AT -85.41 DEG (0.99 MVA) X/R: 12.47
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0035 + J 0.0438 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.998 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.179 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.541 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.183 KA
CONTRIBUTIONS: B-B70-EQD-M 2.734 KA ANG: -85.41

B-B70-EQD-M FAULT: 2.736 KA AT -85.45 DEG (0.99 MVA) X/R: 12.56
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0035 + J 0.0437 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.003 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.185 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.547 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.188 KA
CONTRIBUTIONS: B-B70-ATS-EQD 2.736 KA ANG: -85.45

B-B70-GEN FAULT: 2.883 KA AT -87.14 DEG (1.04 MVA) X/R: 20.00
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0021 + J 0.0416 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.299 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.598 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.896 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.503 KA
CONTRIBUTIONS: B70-GEN 2.883 KA ANG: -87.14

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-LS1	FAULT:	2.247 KA AT -66.03 DEG (	0.81 MVA)	X/R:	2.25
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0217 + J 0.0488		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.247 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.409 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.247 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.247 KA			
	CONTRIBUTIONS: B-B70-LSD	2.247 KA	ANG:	-66.03	
B-B70-LS2	FAULT:	2.081 KA AT -61.23 DEG (	0.75 MVA)	X/R:	1.82
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0278 + J 0.0506		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.081 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.108 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.081 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.081 KA			
	CONTRIBUTIONS: B-B70-LSD	2.081 KA	ANG:	-61.23	
B-B70-LS3	FAULT:	2.299 KA AT -70.60 DEG (	0.83 MVA)	X/R:	2.84
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0173 + J 0.0493		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.299 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.631 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.299 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.299 KA			
	CONTRIBUTIONS: B-B70-LSD	2.299 KA	ANG:	-70.60	
B-B70-LS4	FAULT:	2.121 KA AT -65.92 DEG (	0.76 MVA)	X/R:	2.24
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0231 + J 0.0517		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.121 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.271 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.121 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.121 KA			
	CONTRIBUTIONS: B-B70-LSD	2.121 KA	ANG:	-65.92	
B-B70-LS5	FAULT:	2.238 KA AT -68.96 DEG (	0.81 MVA)	X/R:	2.60
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0193 + J 0.0501		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.238 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.499 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.238 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.238 KA			
	CONTRIBUTIONS: B-B70-LS3	2.238 KA	ANG:	-68.96	
B-B70-LS6	FAULT:	2.064 KA AT -64.52 DEG (	0.74 MVA)	X/R:	2.10
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0250 + J 0.0525		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.064 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.172 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.064 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.064 KA		
	CONTRIBUTIONS: B-B70-LS4	2.064 KA	ANG:	-64.52
B-B70-LSD	FAULT: 2.723 KA AT -84.08 DEG (0.98 MVA)		X/R:	9.64
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0045 + J 0.0439			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.893 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.031 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.417 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.071 KA		
	CBL-0541 B-B70-LSD-M	2.723 KA	ANG:	-84.08
B-B70-LSD-M	FAULT: 2.725 KA AT -84.11 DEG (0.98 MVA)		X/R:	9.70
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0045 + J 0.0438			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.897 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.038 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.422 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.076 KA		
	CONTRIBUTIONS: B-B70-ATS-LSD	2.725 KA	ANG:	-84.11
B-B78-78AE1	FAULT: 2.623 KA AT -45.90 DEG (0.95 MVA)		X/R:	1.05
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0319 + J 0.0329			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.623 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.623 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.623 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.623 KA		
	CONTRIBUTIONS: B-B78-ATSG9578	2.623 KA	ANG:	-45.90
B-B78-ATS-CRD	FAULT: 5.124 KA AT -61.67 DEG (1.85 MVA)		X/R:	1.94
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0111 + J 0.0206			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.124 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.274 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.124 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.124 KA		
	ATS-B78-CRD BUS-0712	5.124 KA	ANG:	-61.67

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B78-ATS-E1	FAULT:	5.713 KA AT	-73.60 DEG (	2.06 MVA)	X/R:	3.71
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0059 + J 0.0202	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER		5.713 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		7.017 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		5.947 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		5.713 KA			
	CONTRIBUTIONS:	BUS-0715	5.713 KA	ANG:	-73.60	
B-B78-ATS-LS1	FAULT:	5.264 KA AT	-64.55 DEG (	1.90 MVA)	X/R:	2.21
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0098 + J 0.0206	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER		5.264 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		5.616 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		5.264 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		5.264 KA			
	ATS-B78-LS1	BUS-0714	5.264 KA	ANG:	-64.55	
B-B78-ATSG9578	FAULT:	2.639 KA AT	-45.82 DEG (	0.95 MVA)	X/R:	1.04
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0317 + J 0.0326	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.639 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.639 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.639 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.639 KA			
	ATS-B78-G95-78	BUS-0713	2.639 KA	ANG:	-45.82	
B-B78-CRD	FAULT:	2.961 KA AT	-48.03 DEG (	1.07 MVA)	X/R:	1.13
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0271 + J 0.0302	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.961 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.961 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.961 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.961 KA			
	CONTRIBUTIONS:	B-B78-ATS-CRD	2.961 KA	ANG:	-48.03	
B-B78-E1	FAULT:	5.642 KA AT	-73.40 DEG (	2.03 MVA)	X/R:	3.65
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0061 + J 0.0204	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER		5.642 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		6.903 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		5.850 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		5.642 KA			
	CONTRIBUTIONS:	B-B78-ATS-E1	5.642 KA	ANG:	-73.40	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B78-LSD	FAULT:	5.181 KA AT -64.10 DEG (	1.87 MVA)	X/R:	2.16
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0101 + J 0.0208		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		5.181 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		5.495 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		5.181 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		5.181 KA		
	CONTRIBUTIONS:	B-B78-ATS-LS1	5.181 KA	ANG:	-64.10
B-B8 HYDRO ELV	FAULT:	2.404 KA AT -66.16 DEG (	2.00 MVA)	X/R:	2.63
	VOLTAGE:	480. EQUIV. IMPEDANCE=	0.0466 + J 0.1055		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.404 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.693 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.404 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.404 KA		
	CONTRIBUTIONS:	MTRI-0018	0.405 KA	ANG:	-79.51
	CBL-0336	B-B8-480V PNL	2.011 KA	ANG:	-63.49
B-B8-480V ATS	FAULT:	2.812 KA AT -82.33 DEG (	2.34 MVA)	X/R:	11.23
	VOLTAGE:	480. EQUIV. IMPEDANCE=	0.0131 + J 0.0977		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		3.047 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.246 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.599 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.235 KA		
	CONTRIBUTIONS:	B-B8-480V PNL	1.057 KA	ANG:	-75.59
	ATS-B8-480V	BUS-0725	1.767 KA	ANG:	-86.36
B-B8-480V PNL	FAULT:	2.809 KA AT -82.26 DEG (	2.34 MVA)	X/R:	10.90
	VOLTAGE:	480. EQUIV. IMPEDANCE=	0.0133 + J 0.0977		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		3.032 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.226 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.582 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.220 KA		
	CONTRIBUTIONS:	B-B8-480V ATS	1.761 KA	ANG:	-86.24
	CBL-0336	B-B8 HYDRO ELV	0.394 KA	ANG:	-75.79
	CBL-0337	B-B8-TXMR PRI	0.432 KA	ANG:	-77.11
	CBL-0341	B-B8-COMP	0.234 KA	ANG:	-72.69
B-B8-CMOP	FAULT:	3.760 KA AT -68.37 DEG (	1.35 MVA)	X/R:	2.71
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0118 + J 0.0297		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.760 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.247 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.760 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.760 KA			
	CONTRIBUTIONS: B-B8-TXMR SEC	3.760 KA	ANG:	-68.37	
B-B8-COMP	FAULT: 1.945 KA AT -50.05 DEG (	1.62 MVA)	X/R:	1.39	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0915 + J	0.1092	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.945 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.945 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.945 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.945 KA			
	CONTRIBUTIONS: MTRI-0019	0.241 KA	ANG:	-77.20	
	CBL-0341 B-B8-480V PNL	1.734 KA	ANG:	-46.41	
B-B8-ELEV	FAULT: 3.979 KA AT -73.24 DEG (	1.43 MVA)	X/R:	3.98	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0087 + J	0.0289	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.979 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.975 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.216 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.979 KA			
	CONTRIBUTIONS: M-B8-ELEV	1.200 KA	ANG:	-81.63	
	CBL-0658 B-B8-J-BOX	2.797 KA	ANG:	-69.64	
B-B8-FDR	FAULT: 4.160 KA AT -73.71 DEG (	1.50 MVA)	X/R:	3.91	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0081 + J	0.0277	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.160 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.179 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.389 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.160 KA			
	CONTRIBUTIONS: B-B8-TXMR SEC	3.003 KA	ANG:	-70.96	
	CBL-0340 B-B8-J-BOX	1.169 KA	ANG:	-80.79	
B-B8-FLEXPMACH	FAULT: 2.088 KA AT -51.71 DEG (	1.74 MVA)	X/R:	1.33	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0822 + J	0.1042	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.088 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.088 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.088 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.088 KA			
	CONTRIBUTIONS: B-B8-480V PNL	2.088 KA	ANG:	-51.71	
B-B8-GEN	FAULT: 2.832 KA AT -82.79 DEG (	2.35 MVA)	X/R:	13.95	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0123 + J	0.0971	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.142 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.378 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.711 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.336 KA		
	CONTRIBUTIONS: G-B8 GEN	1.802 KA	ANG:	-87.14
	CBL-0648 BUS-0725	1.044 KA	ANG:	-75.27
B-B8-J-BOX	FAULT: 4.048 KA AT -73.40 DEG (1.46 MVA)	X/R:		3.94
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0085 + J 0.0284	OHMS		
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.048 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.048 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.278 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.048 KA		
	CONTRIBUTIONS: B-B8-FDR	2.876 KA	ANG:	-70.15
	CBL-0658 B-B8-ELEV	1.188 KA	ANG:	-81.29
B-B8-TXMR PRI	FAULT: 2.803 KA AT -82.05 DEG (2.33 MVA)	X/R:		10.35
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0137 + J 0.0979	OHMS		
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.006 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.189 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.550 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.191 KA		
	CONTRIBUTIONS: B-B8-480V PNL	2.373 KA	ANG:	-82.94
	XF2-0032 B-B8-TXMR SEC	0.432 KA	ANG:	-77.15
B-B8-TXMR SEC	FAULT: 4.261 KA AT -74.04 DEG (1.54 MVA)	X/R:		3.92
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0078 + J 0.0271	OHMS		
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.261 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.310 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.500 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.261 KA		
	CONTRIBUTIONS: B-B8-TXMR PRI	3.118 KA	ANG:	-71.69
	CBL-0339 B-B8-FDR	1.153 KA	ANG:	-80.39
B-B80-ATS-EQ	FAULT: 1.737 KA AT -25.64 DEG (0.63 MVA)	X/R:		0.48
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0623 + J 0.0299	OHMS		
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.737 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.737 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.737 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.737 KA		
	ATS-B80-EQ BUS-0688	1.737 KA	ANG:	-25.64

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B80-E1	FAULT:	1.663 KA AT	-25.22 DEG (	0.60 MVA)	X/R:	0.47
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0653 + J 0.0308		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.663 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			1.663 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			1.663 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			1.663 KA		
	CONTRIBUTIONS:	B-B80-ATS-EQ		1.663 KA	ANG:	-25.22
B-B80-LB-E	FAULT:	1.453 KA AT	-24.07 DEG (	0.52 MVA)	X/R:	0.45
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0754 + J 0.0337		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.453 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			1.453 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			1.453 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			1.453 KA		
	CONTRIBUTIONS:	B-B80-E1		1.453 KA	ANG:	-24.07
B-B80-PB-2	FAULT:	1.530 KA AT	-24.50 DEG (	0.55 MVA)	X/R:	0.46
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0714 + J 0.0325		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.530 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			1.530 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			1.530 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			1.530 KA		
	CONTRIBUTIONS:	B-B80-E1		1.530 KA	ANG:	-24.50
B-B82-ATS-EMER	FAULT:	4.210 KA AT	-55.61 DEG (	1.52 MVA)	X/R:	1.52
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0161 + J 0.0235		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			4.210 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			4.210 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			4.210 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			4.210 KA		
	CONTRIBUTIONS:	BUS-0689		4.210 KA	ANG:	-55.61
B-B82-EMER	FAULT:	4.093 KA AT	-55.11 DEG (	1.47 MVA)	X/R:	1.49
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0168 + J 0.0241		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			4.093 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			4.093 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			4.093 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			4.093 KA		
	CONTRIBUTIONS:	B-B82-EMERG-M		4.093 KA	ANG:	-55.11

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B82-EMERG-M	FAULT:	4.099 KA AT	-55.12 DEG (	1.48 MVA)	X/R:	1.49
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0168 + J	0.0240	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.099 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.099 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.099 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.099 KA			
	CONTRIBUTIONS:	B-B82-ATS-EMER	4.099 KA	ANG:	-55.12	
B-B92 GEN	FAULT:	9.218 KA AT	-82.76 DEG (	3.32 MVA)	X/R:	15.40
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0016 + J	0.0129	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		10.325 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		12.195 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		10.962 KA			
	CONTRIBUTIONS:	GEN-B92	6.931 KA	ANG:	-87.14	
	CBL-0604	B-B92-EMDP-M	2.368 KA	ANG:	-69.86	
B-B92-ATS	FAULT:	7.517 KA AT	-64.90 DEG (	2.71 MVA)	X/R:	2.38
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0068 + J	0.0145	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.517 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		8.188 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		7.517 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		7.517 KA			
	ATS-B92	BUS-0676	7.517 KA	ANG:	-64.90	
B-B92-EMDP	FAULT:	9.154 KA AT	-82.44 DEG (	3.30 MVA)	X/R:	13.60
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0017 + J	0.0130	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		10.131 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		11.965 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		10.756 KA			
	CONTRIBUTIONS:	B-B92-EMDP-M	6.852 KA	ANG:	-86.75	
	CBL-0611	B-B2-EPNL-B-M	1.044 KA	ANG:	-70.17	
	CBL-0610	BUS-0736	1.334 KA	ANG:	-69.74	
B-B92-EMDP-M	FAULT:	9.156 KA AT	-82.46 DEG (	3.30 MVA)	X/R:	13.74
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0017 + J	0.0130	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	10.143 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.980 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.769 KA			
	CONTRIBUTIONS: B-B92 GEN	6.855 KA	ANG:	-86.78	
	CBL-0605 B-B92-EMDP	2.378 KA	ANG:	-69.92	
B-B92-PNL-E1	FAULT: 6.888 KA AT -59.70 DEG (2.48 MVA)	X/R:	1.85		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0088 + J 0.0151	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.888 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.008 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.888 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.888 KA			
	CONTRIBUTIONS: B-B92-ATS	6.888 KA	ANG:	-59.70	
B-B93-EMDP	FAULT: 9.627 KA AT -82.10 DEG (3.47 MVA)	X/R:	12.29		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0017 + J 0.0124	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.539 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.448 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.190 KA			
	CONTRIBUTIONS: B-B93-EMDP-M	6.802 KA	ANG:	-86.52	
	CBL-0617 BUS-0691	1.794 KA	ANG:	-72.44	
	CBL-0618 BUS-0692	1.100 KA	ANG:	-70.44	
B-B93-EMDP-M	FAULT: 9.629 KA AT -82.13 DEG (3.47 MVA)	X/R:	12.41		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0017 + J 0.0124	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.552 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.463 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.203 KA			
	CONTRIBUTIONS: B-B93-GEN	6.805 KA	ANG:	-86.55	
	CBL-0613 B-B93-EMDP	2.892 KA	ANG:	-71.66	
B-B93-EMDP1	FAULT: 9.563 KA AT -81.93 DEG (3.45 MVA)	X/R:	11.79		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0018 + J 0.0124	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.419 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.307 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.063 KA			
	CONTRIBUTIONS: B-B93-EMDP	9.563 KA	ANG:	-81.93	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B93-GEN	FAULT:	9.723 KA AT	-82.59 DEG (	3.50 MVA)	X/R: 14.84
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0016 + J 0.0122	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		10.853 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		12.819 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		11.523 KA		
	CONTRIBUTIONS:	GEN-B93	6.931 KA	ANG:	-87.14
	CBL-0612	B-B93-EMDP-M	2.868 KA	ANG:	-71.54
B-B94-ATS	FAULT:	8.464 KA AT	-66.76 DEG (	3.05 MVA)	X/R: 2.58
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0056 + J 0.0130	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		8.464 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		9.430 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		8.464 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.464 KA		
	CONTRIBUTIONS:	BUS-0704	8.464 KA	ANG:	-66.76
B-B94-E1	FAULT:	6.995 KA AT	-55.85 DEG (	2.52 MVA)	X/R: 1.56
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0096 + J 0.0142	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		6.995 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		6.995 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		6.995 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		6.995 KA		
	CONTRIBUTIONS:	B-B94-ATS	6.995 KA	ANG:	-55.85
B-B94-EMDP	FAULT:	10.034 KA AT	-82.52 DEG (	3.61 MVA)	X/R: 12.14
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0016 + J 0.0119	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		10.969 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		12.956 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		11.646 KA		
	CONTRIBUTIONS:	B-B94-EMDP-M	6.802 KA	ANG:	-86.52
	CBL-0626	BUS-0700	0.693 KA	ANG:	-72.65
	CBL-0627	BUS-0701	1.036 KA	ANG:	-74.05
	CBL-0628	BUS-0702	0.820 KA	ANG:	-76.00
	CBL-0629	BUS-0703	0.734 KA	ANG:	-73.96
B-B94-EMDP-M	FAULT:	10.035 KA AT	-82.54 DEG (	3.62 MVA)	X/R: 12.25
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0016 + J 0.0119	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	10.982 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.970 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.660 KA		
	CONTRIBUTIONS: B-B94-GEN	6.805 KA	ANG:	-86.55
	CBL-0625 B-B94-EMDP	3.282 KA	ANG:	-74.21
B-B94-GEN	FAULT: 10.123 KA AT -82.97 DEG (3.65 MVA)		X/R:	14.60
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0015 + J 0.0118 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	11.282 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	13.325 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	11.979 KA		
	CONTRIBUTIONS: B94-GEN	6.931 KA	ANG:	-87.14
	CBL-0624 B-B94-EMDP-M	3.250 KA	ANG:	-74.05
B-B95-EMDP	FAULT: 9.054 KA AT -83.40 DEG (3.26 MVA)		X/R:	13.09
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0015 + J 0.0132 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.980 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.788 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.596 KA		
	CONTRIBUTIONS: B-B95-EMDP-M	6.802 KA	ANG:	-86.52
	CBL-0643 BUS-0719	2.292 KA	ANG:	-74.12
B-B95-EMDP-M	FAULT: 9.056 KA AT -83.43 DEG (3.26 MVA)		X/R:	13.21
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0015 + J 0.0132 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	9.992 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	11.802 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.609 KA		
	CONTRIBUTIONS: B-B95-GEN	6.805 KA	ANG:	-86.55
	CBL-0636 B-B95-EMDP	2.292 KA	ANG:	-74.11
B-B95-GEN	FAULT: 9.162 KA AT -83.90 DEG (3.30 MVA)		X/R:	15.80
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0014 + J 0.0130 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	10.286 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	12.149 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	10.921 KA		
	CONTRIBUTIONS: B-95 GEN	6.931 KA	ANG:	-87.14
	CBL-0635 B-B95-EMDP-M	2.276 KA	ANG:	-74.00

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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bB-B7-MC1	FAULT:	3.250 KA AT -41.09 DEG (	1.17 MVA)	X/R:	0.89
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0278 + J 0.0243		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		3.250 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.250 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.250 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.250 KA		
	CONTRIBUTIONS: B-B7-EQD		3.250 KA	ANG:	-41.09

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B10 EMRG TAP	3 PHASE:	3.351	2.	Z1= 82.8311	3.596	3.475
	SLG DUTY:	2.408	2.	Z2= 82.8311	2.502	
208. VOLTS	LN/LN	2.902		Z0= 181.1375		
	LN/LN/GND	3.154	(	1.874 GND RETURN KA)		
B-B17-ANIMALRM	3 PHASE:	1.749	1.	Z1= 158.7252	1.749	1.749
	SLG DUTY:	1.085	0.	Z2= 158.7252	1.085	
208. VOLTS	LN/LN	1.514		Z0= 452.1606		
	LN/LN/GND	1.615	(	0.785 GND RETURN KA)		
B-B17-ATS	3 PHASE:	2.265	1.	Z1= 122.5414	2.265	2.265
	SLG DUTY:	1.437	1.	Z2= 122.5414	1.437	
208. VOLTS	LN/LN	1.962		Z0= 336.9455		
	LN/LN/GND	2.107	(	1.048 GND RETURN KA)		
B-B17-EMERG	3 PHASE:	2.242	1.	Z1= 123.7965	2.242	2.242
	SLG DUTY:	1.421	1.	Z2= 123.7965	1.421	
208. VOLTS	LN/LN	1.942		Z0= 340.8474		
	LN/LN/GND	2.085	(	1.036 GND RETURN KA)		
B-B17-NEB1	3 PHASE:	1.674	1.	Z1= 165.7899	1.674	1.674
	SLG DUTY:	1.036	0.	Z2= 165.7899	1.036	
208. VOLTS	LN/LN	1.450		Z0= 474.5273		
	LN/LN/GND	1.544	(	0.748 GND RETURN KA)		
B-B17-NEB2	3 PHASE:	1.917	1.	Z1= 144.8256	1.917	1.917
	SLG DUTY:	1.195	0.	Z2= 144.8256	1.195	
208. VOLTS	LN/LN	1.660		Z0= 409.5618		
	LN/LN/GND	1.773	(	0.865 GND RETURN KA)		
B-B18-1STFL	3 PHASE:	2.362	1.	Z1= 117.5224	2.365	2.363
	SLG DUTY:	1.535	1.	Z2= 117.5224	1.535	
208. VOLTS	LN/LN	2.045		Z0= 309.9273		
	LN/LN/GND	2.207	(	1.132 GND RETURN KA)		
B-B18-1STFL-M	3 PHASE:	2.549	1.	Z1= 108.8831	2.554	2.552
	SLG DUTY:	1.676	1.	Z2= 108.8831	1.676	
208. VOLTS	LN/LN	2.208		Z0= 281.5273		
	LN/LN/GND	2.388	(	1.242 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B18-2ND-FL-M3	3 PHASE:	2.549		1. Z1= 108.8831	2.554	2.552
	SLG DUTY:	1.676		1. Z2= 108.8831	1.676	
208. VOLTS	LN/LN	2.208		Z0= 281.5273		
	LN/LN/GND	2.388		(1.242 GND RETURN KA)		
B-B18-2NDFL	3 PHASE:	2.197		1. Z1= 126.3192	2.199	2.198
	SLG DUTY:	1.414		1. Z2= 126.3192	1.414	
208. VOLTS	LN/LN	1.903		Z0= 338.6339		
	LN/LN/GND	2.048		(1.039 GND RETURN KA)		
B-B18-ATS-EMRG	3 PHASE:	2.638		1. Z1= 105.2272	2.644	2.641
	SLG DUTY:	1.742		1. Z2= 105.2272	1.743	
208. VOLTS	LN/LN	2.284		Z0= 269.7430		
	LN/LN/GND	2.474		(1.295 GND RETURN KA)		
B-B18-EMERG	3 PHASE:	2.536		1. Z1= 109.4331	2.541	2.539
	SLG DUTY:	1.665		1. Z2= 109.4331	1.665	
208. VOLTS	LN/LN	2.197		Z0= 283.6462		
	LN/LN/GND	2.376		(1.234 GND RETURN KA)		
B-B18-EMERG-M	3 PHASE:	2.539		1. Z1= 109.3107	2.544	2.542
	SLG DUTY:	1.668		1. Z2= 109.3107	1.669	
208. VOLTS	LN/LN	2.199		Z0= 282.9385		
	LN/LN/GND	2.379		(1.236 GND RETURN KA)		
B-B18-TAP BOX	3 PHASE:	2.580		1. Z1= 107.6031	2.585	2.582
	SLG DUTY:	1.699		1. Z2= 107.6031	1.699	
208. VOLTS	LN/LN	2.234		Z0= 277.2996		
	LN/LN/GND	2.418		(1.261 GND RETURN KA)		
B-B2-ATS-CRIT	3 PHASE:	4.887		3. Z1= 56.7961	5.388	5.141
	SLG DUTY:	2.764		2. Z2= 56.7961	2.834	
208. VOLTS	LN/LN	4.232		Z0= 190.2008		
	LN/LN/GND	4.549		(1.912 GND RETURN KA)		
B-B2-ATS-LED3	3 PHASE:	2.811		2. Z1= 98.7513	2.869	2.840
	SLG DUTY:	1.690		1. Z2= 98.7513	1.701	
208. VOLTS	LN/LN	2.434		Z0= 297.2949		
	LN/LN/GND	2.601		(1.204 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-ATS-LS	3 PHASE:	4.246	3.	Z1= 65.3772	4.612	4.431
	SLG DUTY:	2.465	2.	Z2= 65.3772	2.522	
208. VOLTS	LN/LN	3.677		Z0= 209.5292		
	LN/LN/GND	3.950	(	1.725 GND RETURN KA)		
B-B2-BATTERYCH	3 PHASE:	2.553	1.	Z1= 108.7235	2.554	2.554
	SLG DUTY:	1.429	1.	Z2= 108.7235	1.430	
208. VOLTS	LN/LN	2.211		Z0= 366.4431		
	LN/LN/GND	2.324	(	0.991 GND RETURN KA)		
B-B2-CRIT PNL	3 PHASE:	4.874	3.	Z1= 56.9472	5.376	5.128
	SLG DUTY:	2.749	2.	Z2= 56.9472	2.816	
208. VOLTS	LN/LN	4.221		Z0= 191.6678		
	LN/LN/GND	4.537	(	1.899 GND RETURN KA)		
B-B2-DENTAL LB	3 PHASE:	3.939	2.	Z1= 70.4721	4.007	3.973
	SLG DUTY:	2.193	1.	Z2= 70.4721	2.202	
208. VOLTS	LN/LN	3.411		Z0= 240.7444		
	LN/LN/GND	3.628	(	1.512 GND RETURN KA)		
B-B2-DENTSUCPM	3 PHASE:	3.619	2.	Z1= 76.6924	3.853	3.737
	SLG DUTY:	1.969	1.	Z2= 76.6924	1.980	
208. VOLTS	LN/LN	3.134		Z0= 274.4920		
	LN/LN/GND	3.380	(	1.338 GND RETURN KA)		
B-B2-ELEV	3 PHASE:	3.908	2.	Z1= 71.0329	4.174	4.042
	SLG DUTY:	2.237	2.	Z2= 71.0329	2.274	
208. VOLTS	LN/LN	3.384		Z0= 232.8901		
	LN/LN/GND	3.632	(	1.557 GND RETURN KA)		
B-B2-ELEV-P1	3 PHASE:	4.111	3.	Z1= 67.5167	4.458	4.286
	SLG DUTY:	2.224	1.	Z2= 67.5167	2.253	
208. VOLTS	LN/LN	3.560		Z0= 243.0811		
	LN/LN/GND	3.821	(	1.511 GND RETURN KA)		
B-B2-EMERG-M	3 PHASE:	2.771	2.	Z1= 100.1600	2.825	2.798
	SLG DUTY:	1.666	1.	Z2= 100.1600	1.676	
208. VOLTS	LN/LN	2.400		Z0= 301.6182		
	LN/LN/GND	2.564	(	1.186 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-EMERG-PNL3	3 PHASE:	2.768	2.	Z1= 100.2760	2.822	2.795
	SLG DUTY:	1.663	1.	Z2= 100.2760	1.673	
208. VOLTS	LN/LN	2.397		Z0= 302.3104		
	LN/LN/GND	2.560	(	1.184 GND RETURN KA)		
B-B2-EPNL-B	3 PHASE:	4.440	3.	Z1= 62.5202	4.807	4.625
	SLG DUTY:	2.658	2.	Z2= 62.5202	2.722	
208. VOLTS	LN/LN	3.845		Z0= 190.4634		
	LN/LN/GND	4.142	(	1.884 GND RETURN KA)		
B-B2-EPNL-B-M	3 PHASE:	4.441	3.	Z1= 62.5008	4.809	4.627
	SLG DUTY:	2.660	2.	Z2= 62.5008	2.725	
208. VOLTS	LN/LN	3.846		Z0= 190.2008		
	LN/LN/GND	4.144	(	1.887 GND RETURN KA)		
B-B2-L12	3 PHASE:	3.693	2.	Z1= 75.1594	3.859	3.777
	SLG DUTY:	2.134	1.	Z2= 75.1594	2.159	
208. VOLTS	LN/LN	3.198		Z0= 242.3785		
	LN/LN/GND	3.423	(	1.492 GND RETURN KA)		
B-B2-L2A	3 PHASE:	4.191	2.	Z1= 66.2294	4.395	4.294
	SLG DUTY:	2.368	1.	Z2= 66.2294	2.397	
208. VOLTS	LN/LN	3.630		Z0= 221.5229		
	LN/LN/GND	3.882	(	1.640 GND RETURN KA)		
B-B2-L2E	3 PHASE:	3.693	2.	Z1= 75.1594	3.859	3.777
	SLG DUTY:	2.134	1.	Z2= 75.1594	2.159	
208. VOLTS	LN/LN	3.198		Z0= 242.3785		
	LN/LN/GND	3.423	(	1.492 GND RETURN KA)		
B-B2-L9E	3 PHASE:	3.556	2.	Z1= 78.0569	3.653	3.605
	SLG DUTY:	2.040	1.	Z2= 78.0569	2.054	
208. VOLTS	LN/LN	3.080		Z0= 254.3953		
	LN/LN/GND	3.288	(	1.423 GND RETURN KA)		
B-B2-LB1E	3 PHASE:	3.556	2.	Z1= 78.0569	3.653	3.605
	SLG DUTY:	2.040	1.	Z2= 78.0569	2.054	
208. VOLTS	LN/LN	3.080		Z0= 254.3953		
	LN/LN/GND	3.288	(	1.423 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-LB2E	3 PHASE:	3.738		1. Z1= 74.2650	3.781	3.759
	SLG DUTY:	2.080		1. Z2= 74.2650	2.085	
208. VOLTS	LN/LN	3.237		Z0= 253.7737		
	LN/LN/GND	3.436		(1.434 GND RETURN KA)		
B-B2-MEDAIRCOM	3 PHASE:	3.900		2. Z1= 71.1731	4.000	3.950
	SLG DUTY:	2.118		1. Z2= 71.1731	2.126	
208. VOLTS	LN/LN	3.377		Z0= 253.7737		
	LN/LN/GND	3.608		(1.444 GND RETURN KA)		
B-B2-NEWLAB	3 PHASE:	2.743		2. Z1= 101.1792	2.794	2.769
	SLG DUTY:	1.647		1. Z2= 101.1792	1.657	
208. VOLTS	LN/LN	2.376		Z0= 305.3063		
	LN/LN/GND	2.537		(1.172 GND RETURN KA)		
B-B2-NEWLAB-M	3 PHASE:	2.747		2. Z1= 101.0629	2.797	2.772
	SLG DUTY:	1.650		1. Z2= 101.0629	1.660	
208. VOLTS	LN/LN	2.379		Z0= 304.6133		
	LN/LN/GND	2.540		(1.175 GND RETURN KA)		
B-B2-PNL 1	3 PHASE:	2.771		2. Z1= 100.1600	2.825	2.798
	SLG DUTY:	1.666		1. Z2= 100.1600	1.676	
208. VOLTS	LN/LN	2.400		Z0= 301.6182		
	LN/LN/GND	2.564		(1.186 GND RETURN KA)		
B-B2-PNL LS	3 PHASE:	4.220		3. Z1= 65.7690	4.584	4.404
	SLG DUTY:	2.439		2. Z2= 65.7690	2.493	
208. VOLTS	LN/LN	3.655		Z0= 212.4717		
	LN/LN/GND	3.928		(1.703 GND RETURN KA)		
B-B2-PNL-2	3 PHASE:	2.781		2. Z1= 99.7986	2.833	2.807
	SLG DUTY:	1.670		1. Z2= 99.7986	1.680	
208. VOLTS	LN/LN	2.409		Z0= 301.0383		
	LN/LN/GND	2.572		(1.189 GND RETURN KA)		
B-B2-PNL-3-M	3 PHASE:	2.739		2. Z1= 101.3257	2.786	2.763
	SLG DUTY:	1.644		1. Z2= 101.3257	1.652	
208. VOLTS	LN/LN	2.372		Z0= 306.1086		
	LN/LN/GND	2.533		(1.170 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-PNL-L11	3 PHASE:	4.301	2.	Z1= 64.5438	4.569	4.436
	SLG DUTY:	2.394	1.	Z2= 64.5438	2.426	
208. VOLTS	LN/LN	3.724		Z0= 221.5229		
	LN/LN/GND	3.991	(	1.647 GND RETURN KA)		
B-B2-PNL-M1	3 PHASE:	2.670	1.	Z1= 103.9478	2.707	2.689
	SLG DUTY:	1.599	1.	Z2= 103.9478	1.606	
208. VOLTS	LN/LN	2.313		Z0= 315.0298		
	LN/LN/GND	2.467	(	1.137 GND RETURN KA)		
B-B2-POD2PP	3 PHASE:	3.747	2.	Z1= 74.0693	3.947	3.848
	SLG DUTY:	2.170	1.	Z2= 74.0693	2.201	
208. VOLTS	LN/LN	3.245		Z0= 238.0334		
	LN/LN/GND	3.477	(	1.518 GND RETURN KA)		
B-B22-ATS-EMER	3 PHASE:	1.772	16.	Z1= 67.8755	2.709	2.268
	SLG DUTY:	1.757	13.	Z2= 67.8755	2.639	
480. VOLTS	LN/LN	1.535		Z0= 69.6060		
	LN/LN/GND	1.780	(	1.743 GND RETURN KA)		
B-B22-EMERG	3 PHASE:	1.750	14.	Z1= 68.7323	2.642	2.221
	SLG DUTY:	1.724	12.	Z2= 68.7323	2.537	
480. VOLTS	LN/LN	1.516		Z0= 71.8398		
	LN/LN/GND	1.759	(	1.699 GND RETURN KA)		
B-B22-EMERG-M	3 PHASE:	1.750	14.	Z1= 68.7170	2.644	2.222
	SLG DUTY:	1.725	12.	Z2= 68.7170	2.541	
480. VOLTS	LN/LN	1.516		Z0= 71.7528		
	LN/LN/GND	1.759	(	1.701 GND RETURN KA)		
B-B22-GEN	3 PHASE:	1.802	20.	Z1= 66.7500	2.827	2.346
	SLG DUTY:	1.802	20.	Z2= 66.7500	2.827	
480. VOLTS	LN/LN	1.561		Z0= 66.7500		
	LN/LN/GND	1.802	(	1.802 GND RETURN KA)		
B-B22-L1	3 PHASE:	1.941	3.	Z1= 142.9745	2.116	2.030
	SLG DUTY:	2.265	2.	Z2= 142.9745	2.396	
208. VOLTS	LN/LN	1.681		Z0= 84.1608		
	LN/LN/GND	2.307	(	2.700 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B22-L1-M	3 PHASE:	1.943	3.	Z1= 142.8700	2.118	2.031
	SLG DUTY:	2.270	2.	Z2= 142.8700	2.402	
208. VOLTS	LN/LN	1.683		Z0= 83.4928		
	LN/LN/GND	2.311	(2.712 GND RETURN KA)			
B-B22-L2	3 PHASE:	1.941	3.	Z1= 142.9745	2.116	2.030
	SLG DUTY:	2.265	2.	Z2= 142.9745	2.396	
208. VOLTS	LN/LN	1.681		Z0= 84.1608		
	LN/LN/GND	2.307	(2.700 GND RETURN KA)			
B-B22-L2-M	3 PHASE:	1.943	3.	Z1= 142.8700	2.118	2.031
	SLG DUTY:	2.270	2.	Z2= 142.8700	2.402	
208. VOLTS	LN/LN	1.683		Z0= 83.4928		
	LN/LN/GND	2.311	(2.712 GND RETURN KA)			
B-B22-L3	3 PHASE:	1.944	3.	Z1= 142.7671	2.121	2.033
	SLG DUTY:	2.268	2.	Z2= 142.7671	2.400	
208. VOLTS	LN/LN	1.684		Z0= 84.1608		
	LN/LN/GND	2.311	(2.702 GND RETURN KA)			
B-B22-L3-M	3 PHASE:	1.946	3.	Z1= 142.6627	2.123	2.035
	SLG DUTY:	2.273	2.	Z2= 142.6627	2.406	
208. VOLTS	LN/LN	1.685		Z0= 83.4928		
	LN/LN/GND	2.314	(2.715 GND RETURN KA)			
B-B22-P1	3 PHASE:	1.735	12.	Z1= 69.3225	2.577	2.179
	SLG DUTY:	1.702	10.	Z2= 69.3225	2.439	
480. VOLTS	LN/LN	1.503		Z0= 73.4376		
	LN/LN/GND	1.749	(1.670 GND RETURN KA)			
B-B22-P2	3 PHASE:	1.735	12.	Z1= 69.3225	2.577	2.179
	SLG DUTY:	1.702	10.	Z2= 69.3225	2.439	
480. VOLTS	LN/LN	1.503		Z0= 73.4376		
	LN/LN/GND	1.749	(1.670 GND RETURN KA)			
B-B22-T2-PRI	3 PHASE:	1.743	13.	Z1= 69.0075	2.596	2.193
	SLG DUTY:	1.714	10.	Z2= 69.0075	2.466	
480. VOLTS	LN/LN	1.509		Z0= 72.6325		
	LN/LN/GND	1.758	(1.685 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B22-T2-SEC	3 PHASE:	1.979	3.	Z1= 140.2787	2.172	2.077
	SLG DUTY:	2.347	2.	Z2= 140.2787	2.507	
208. VOLTS	LN/LN	1.714		Z0= 75.9999		
	LN/LN/GND	2.370	(	2.870 GND RETURN KA)		
B-B22-T22-SEC	3 PHASE:	1.976	3.	Z1= 140.4837	2.167	2.073
	SLG DUTY:	2.344	2.	Z2= 140.4837	2.503	
208. VOLTS	LN/LN	1.711		Z0= 75.9999		
	LN/LN/GND	2.367	(	2.868 GND RETURN KA)		
B-B22-T3 PRI	3 PHASE:	1.740	12.	Z1= 69.1467	2.574	2.179
	SLG DUTY:	1.708	9.	Z2= 69.1467	2.433	
480. VOLTS	LN/LN	1.506		Z0= 73.0431		
	LN/LN/GND	1.757	(	1.677 GND RETURN KA)		
B-B22-T4-PRI	3 PHASE:	1.740	12.	Z1= 69.1467	2.574	2.179
	SLG DUTY:	1.708	9.	Z2= 69.1467	2.433	
480. VOLTS	LN/LN	1.506		Z0= 73.0431		
	LN/LN/GND	1.757	(	1.677 GND RETURN KA)		
B-B22-T4-SEC	3 PHASE:	1.976	3.	Z1= 140.4837	2.167	2.073
	SLG DUTY:	2.344	2.	Z2= 140.4837	2.503	
208. VOLTS	LN/LN	1.711		Z0= 75.9999		
	LN/LN/GND	2.367	(	2.868 GND RETURN KA)		
B-B3-1ST FL	3 PHASE:	4.999	2.	Z1= 55.5238	5.377	5.190
	SLG DUTY:	3.762	2.	Z2= 55.5238	3.897	
208. VOLTS	LN/LN	4.329		Z0= 111.2143		
	LN/LN/GND	4.783	(	3.004 GND RETURN KA)		
B-B3-ALDN KIT	3 PHASE:	5.421	1.	Z1= 51.2014	5.471	5.446
	SLG DUTY:	3.387	1.	Z2= 51.2014	3.396	
208. VOLTS	LN/LN	4.695		Z0= 144.7234		
	LN/LN/GND	5.056	(	2.451 GND RETURN KA)		
B-B3-ATS-COMP	3 PHASE:	7.460	4.	Z1= 37.2089	9.101	8.302
	SLG DUTY:	5.117	3.	Z2= 37.2089	5.699	
208. VOLTS	LN/LN	6.460		Z0= 89.0608		
	LN/LN/GND	7.031	(	3.877 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B3-ATSTEL RM3	3 PHASE:	5.766	4.	Z1= 48.1388	6.908	6.351
	SLG DUTY:	4.543	3.	Z2= 48.1388	5.147	
208. VOLTS	LN/LN	4.994		Z0= 87.2881		
	LN/LN/GND	5.481	(	3.743 GND RETURN KA)		
B-B3-COMP	3 PHASE:	5.796	2.	Z1= 47.8897	5.974	5.885
	SLG DUTY:	3.714	1.	Z2= 47.8897	3.753	
208. VOLTS	LN/LN	5.020		Z0= 129.6565		
	LN/LN/GND	5.427	(	2.719 GND RETURN KA)		
B-B3-COMP AC	3 PHASE:	2.783	0.	Z1= 99.7412	2.783	2.783
	SLG DUTY:	1.629	0.	Z2= 99.7412	1.629	
208. VOLTS	LN/LN	2.410		Z0= 312.5574		
	LN/LN/GND	2.533	(	1.150 GND RETURN KA)		
B-B3-COMP MF	3 PHASE:	6.718	3.	Z1= 41.3163	7.652	7.193
	SLG DUTY:	4.370	2.	Z2= 41.3163	4.601	
208. VOLTS	LN/LN	5.818		Z0= 109.2175		
	LN/LN/GND	6.332	(	3.218 GND RETURN KA)		
B-B3-DBL GRILL	3 PHASE:	4.628	2.	Z1= 59.9728	4.881	4.756
	SLG DUTY:	3.419	2.	Z2= 59.9728	3.500	
208. VOLTS	LN/LN	4.008		Z0= 124.7217		
	LN/LN/GND	4.421	(	2.699 GND RETURN KA)		
B-B3-ELEV	3 PHASE:	6.437	3.	Z1= 43.1210	7.010	6.727
	SLG DUTY:	4.079	2.	Z2= 43.1210	4.175	
208. VOLTS	LN/LN	5.575		Z0= 119.7496		
	LN/LN/GND	6.084	(	2.960 GND RETURN KA)		
B-B3-EP1	3 PHASE:	5.658	4.	Z1= 49.0552	6.741	6.212
	SLG DUTY:	4.434	3.	Z2= 49.0552	4.995	
208. VOLTS	LN/LN	4.900		Z0= 89.9770		
	LN/LN/GND	5.377	(	3.640 GND RETURN KA)		
B-B3-EP1-M	3 PHASE:	5.668	4.	Z1= 48.9704	6.759	6.226
	SLG DUTY:	4.450	3.	Z2= 48.9704	5.020	
208. VOLTS	LN/LN	4.909		Z0= 89.4833		
	LN/LN/GND	5.386	(	3.657 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B3-EP2	3 PHASE:	7.385	4.	Z1= 37.5857	8.975	8.200
	SLG DUTY:	4.971	3.	Z2= 37.5857	5.499	
208. VOLTS	LN/LN	6.396		Z0= 93.1852		
	LN/LN/GND	6.953	(	3.729 GND RETURN KA)		
B-B3-EP2-M	3 PHASE:	7.389	4.	Z1= 37.5640	8.984	8.207
	SLG DUTY:	4.987	3.	Z2= 37.5640	5.522	
208. VOLTS	LN/LN	6.399		Z0= 92.6813		
	LN/LN/GND	6.957	(	3.746 GND RETURN KA)		
B-B3-HYDRO ELV	3 PHASE:	5.609	2.	Z1= 49.4867	5.933	5.772
	SLG DUTY:	3.399	1.	Z2= 49.4867	3.431	
208. VOLTS	LN/LN	4.858		Z0= 148.5742		
	LN/LN/GND	5.288	(	2.415 GND RETURN KA)		
B-B3-KP1	3 PHASE:	4.817	3.	Z1= 57.6255	5.262	5.042
	SLG DUTY:	3.623	2.	Z2= 57.6255	3.797	
208. VOLTS	LN/LN	4.171		Z0= 115.3513		
	LN/LN/GND	4.590	(	2.894 GND RETURN KA)		
B-B3-MECH HVAC	3 PHASE:	6.165	2.	Z1= 45.0223	6.462	6.314
	SLG DUTY:	3.991	2.	Z2= 45.0223	4.063	
208. VOLTS	LN/LN	5.339		Z0= 119.7497		
	LN/LN/GND	5.784	(	2.936 GND RETURN KA)		
B-B3-MECH RM	3 PHASE:	6.595	3.	Z1= 42.0854	7.430	7.019
	SLG DUTY:	4.376	2.	Z2= 42.0854	4.628	
208. VOLTS	LN/LN	5.712		Z0= 107.0856		
	LN/LN/GND	6.198	(	3.259 GND RETURN KA)		
B-B3-P7	3 PHASE:	4.785	2.	Z1= 58.0071	4.984	4.885
	SLG DUTY:	3.526	2.	Z2= 58.0071	3.581	
208. VOLTS	LN/LN	4.144		Z0= 121.4757		
	LN/LN/GND	4.586	(	2.776 GND RETURN KA)		
B-B3-STRT PNL	3 PHASE:	6.558	2.	Z1= 42.3250	7.066	6.814
	SLG DUTY:	4.296	2.	Z2= 42.3250	4.430	
208. VOLTS	LN/LN	5.679		Z0= 110.2806		
	LN/LN/GND	6.163	(	3.177 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B3-TELE PNL	3 PHASE:	5.173	3.	Z1= 53.6545	5.827	5.505
	SLG DUTY:	3.960	2.	Z2= 53.6545	4.247	
208. VOLTS	LN/LN	4.480		Z0= 103.5117		
	LN/LN/GND	4.928	(	3.200 GND RETURN KA)		
B-B3-TRAY LINE	3 PHASE:	6.165	2.	Z1= 45.0223	6.462	6.314
	SLG DUTY:	3.991	2.	Z2= 45.0223	4.063	
208. VOLTS	LN/LN	5.339		Z0= 119.7497		
	LN/LN/GND	5.784	(	2.936 GND RETURN KA)		
B-B4-4EQD	3 PHASE:	6.547	3.	Z1= 42.3954	7.555	7.060
	SLG DUTY:	4.109	2.	Z2= 42.3954	4.394	
208. VOLTS	LN/LN	5.670		Z0= 118.7629		
	LN/LN/GND	6.090	(	2.982 GND RETURN KA)		
B-B4-4EQD-M	3 PHASE:	6.552	3.	Z1= 42.3660	7.561	7.066
	SLG DUTY:	4.120	2.	Z2= 42.3660	4.408	
208. VOLTS	LN/LN	5.674		Z0= 118.2479		
	LN/LN/GND	6.095	(	2.993 GND RETURN KA)		
B-B4-ATS-EQ	3 PHASE:	6.637	4.	Z1= 41.8198	7.674	7.165
	SLG DUTY:	4.233	2.	Z2= 41.8198	4.543	
208. VOLTS	LN/LN	5.748		Z0= 113.9101		
	LN/LN/GND	6.179	(	3.095 GND RETURN KA)		
B-B4-ATS-LS	3 PHASE:	4.196	2.	Z1= 66.1450	4.263	4.230
	SLG DUTY:	2.945	1.	Z2= 66.1450	2.960	
208. VOLTS	LN/LN	3.634		Z0= 151.8736		
	LN/LN/GND	3.977	(	2.258 GND RETURN KA)		
B-B4-ELEV#4	3 PHASE:	5.106	2.	Z1= 54.3599	5.439	5.274
	SLG DUTY:	2.981	1.	Z2= 54.3599	3.019	
208. VOLTS	LN/LN	4.422		Z0= 172.8070		
	LN/LN/GND	4.761	(	2.090 GND RETURN KA)		
B-B4-EQ1	3 PHASE:	5.625	2.	Z1= 49.3441	5.963	5.795
	SLG DUTY:	3.483	2.	Z2= 49.3441	3.569	
208. VOLTS	LN/LN	4.872		Z0= 141.3667		
	LN/LN/GND	5.217	(	2.513 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-EQ10	3 PHASE:	4.815	2.	Z1= 57.6476	4.937	4.876
	SLG DUTY:	2.952	1.	Z2= 57.6476	2.981	
208. VOLTS	LN/LN	4.170		Z0= 167.7930		
	LN/LN/GND	4.452	(	2.122 GND RETURN KA)		
B-B4-EQ11	3 PHASE:	5.239	2.	Z1= 52.9813	5.449	5.345
	SLG DUTY:	3.228	2.	Z2= 52.9813	3.279	
208. VOLTS	LN/LN	4.537		Z0= 153.0022		
	LN/LN/GND	4.852	(	2.324 GND RETURN KA)		
B-B4-EQ12	3 PHASE:	4.411	2.	Z1= 62.9305	4.482	4.447
	SLG DUTY:	2.693	1.	Z2= 62.9305	2.709	
208. VOLTS	LN/LN	3.820		Z0= 184.3983		
	LN/LN/GND	4.072	(	1.932 GND RETURN KA)		
B-B4-EQ15	3 PHASE:	4.686	2.	Z1= 59.2384	4.789	4.738
	SLG DUTY:	2.869	1.	Z2= 59.2384	2.893	
208. VOLTS	LN/LN	4.058		Z0= 172.8071		
	LN/LN/GND	4.331	(	2.061 GND RETURN KA)		
B-B4-EQ2	3 PHASE:	6.158	3.	Z1= 45.0727	6.797	6.481
	SLG DUTY:	3.842	2.	Z2= 45.0727	4.014	
208. VOLTS	LN/LN	5.333		Z0= 127.5434		
	LN/LN/GND	5.721	(	2.780 GND RETURN KA)		
B-B4-EQ3	3 PHASE:	5.112	2.	Z1= 54.2968	5.291	5.202
	SLG DUTY:	3.145	1.	Z2= 54.2968	3.188	
208. VOLTS	LN/LN	4.427		Z0= 157.1859		
	LN/LN/GND	4.732	(	2.263 GND RETURN KA)		
B-B4-EQ5	3 PHASE:	5.175	2.	Z1= 53.6372	5.369	5.272
	SLG DUTY:	3.186	1.	Z2= 53.6372	3.233	
208. VOLTS	LN/LN	4.482		Z0= 155.0894		
	LN/LN/GND	4.791	(	2.293 GND RETURN KA)		
B-B4-EQ6	3 PHASE:	5.649	2.	Z1= 49.1347	5.997	5.824
	SLG DUTY:	3.499	2.	Z2= 49.1347	3.588	
208. VOLTS	LN/LN	4.892		Z0= 140.6935		
	LN/LN/GND	5.239	(	2.525 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-EQ7	3 PHASE:	4.722	2.	Z1= 58.7823	4.831	4.776
	SLG DUTY:	2.892	1.	Z2= 58.7823	2.918	
208. VOLTS	LN/LN	4.089		Z0= 171.3707		
	LN/LN/GND	4.365	(	2.078 GND RETURN KA)		
B-B4-EQ9	3 PHASE:	4.192	1.	Z1= 66.2166	4.245	4.218
	SLG DUTY:	2.554	1.	Z2= 66.2166	2.566	
208. VOLTS	LN/LN	3.630		Z0= 194.6691		
	LN/LN/GND	3.867	(	1.831 GND RETURN KA)		
B-B4-HYDROELEV	3 PHASE:	5.156	3.	Z1= 53.8349	5.679	5.421
	SLG DUTY:	2.896	1.	Z2= 53.8349	2.925	
208. VOLTS	LN/LN	4.465		Z0= 183.4160		
	LN/LN/GND	4.837	(	1.991 GND RETURN KA)		
B-B4-LP15	3 PHASE:	2.991	1.	Z1= 92.7892	2.997	2.994
	SLG DUTY:	1.967	1.	Z2= 92.7892	1.968	
208. VOLTS	LN/LN	2.591		Z0= 239.6704		
	LN/LN/GND	2.803	(	1.459 GND RETURN KA)		
B-B4-LP15-M	3 PHASE:	2.995	1.	Z1= 92.6668	3.001	2.998
	SLG DUTY:	1.972	1.	Z2= 92.6668	1.972	
208. VOLTS	LN/LN	2.594		Z0= 238.9627		
	LN/LN/GND	2.807	(	1.463 GND RETURN KA)		
B-B4-LS1	3 PHASE:	3.242	1.	Z1= 85.6239	3.254	3.248
	SLG DUTY:	2.165	1.	Z2= 85.6239	2.167	
208. VOLTS	LN/LN	2.807		Z0= 215.2211		
	LN/LN/GND	3.046	(	1.618 GND RETURN KA)		
B-B4-LS1-M	3 PHASE:	3.246	1.	Z1= 85.5026	3.259	3.253
	SLG DUTY:	2.170	1.	Z2= 85.5026	2.172	
208. VOLTS	LN/LN	2.811		Z0= 214.5138		
	LN/LN/GND	3.051	(	1.623 GND RETURN KA)		
B-B4-LS10	3 PHASE:	2.692	1.	Z1= 103.1152	2.696	2.694
	SLG DUTY:	1.753	1.	Z2= 103.1152	1.753	
208. VOLTS	LN/LN	2.331		Z0= 270.8251		
	LN/LN/GND	2.515	(	1.295 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LS10-M	3 PHASE:	2.695		1. Z1= 102.9925	2.699	2.697
	SLG DUTY:	1.757		1. Z2= 102.9925	1.757	
208. VOLTS	LN/LN	2.334		Z0= 270.1177		
	LN/LN/GND	2.518	(	1.298 GND RETURN KA)		
B-B4-LS11	3 PHASE:	2.876		1. Z1= 96.5289	2.881	2.878
	SLG DUTY:	1.888		1. Z2= 96.5289	1.889	
208. VOLTS	LN/LN	2.490		Z0= 249.9684		
	LN/LN/GND	2.692	(	1.400 GND RETURN KA)		
B-B4-LS11-M	3 PHASE:	2.879		1. Z1= 96.4066	2.885	2.882
	SLG DUTY:	1.892		1. Z2= 96.4066	1.893	
208. VOLTS	LN/LN	2.493		Z0= 249.2607		
	LN/LN/GND	2.696	(	1.403 GND RETURN KA)		
B-B4-LS12	3 PHASE:	3.034		1. Z1= 91.4883	3.042	3.038
	SLG DUTY:	2.007		1. Z2= 91.4883	2.008	
208. VOLTS	LN/LN	2.627		Z0= 233.9440		
	LN/LN/GND	2.845	(	1.492 GND RETURN KA)		
B-B4-LS12-M	3 PHASE:	3.038		1. Z1= 91.3664	3.046	3.042
	SLG DUTY:	2.011		1. Z2= 91.3664	2.012	
208. VOLTS	LN/LN	2.631		Z0= 233.2363		
	LN/LN/GND	2.849	(	1.497 GND RETURN KA)		
B-B4-LS13	3 PHASE:	3.064		1. Z1= 90.6038	3.072	3.068
	SLG DUTY:	2.029		1. Z2= 90.6038	2.030	
208. VOLTS	LN/LN	2.653		Z0= 231.1259		
	LN/LN/GND	2.873	(	1.510 GND RETURN KA)		
B-B4-LS13-M	3 PHASE:	3.068		1. Z1= 90.4820	3.076	3.072
	SLG DUTY:	2.034		1. Z2= 90.4820	2.035	
208. VOLTS	LN/LN	2.657		Z0= 230.4182		
	LN/LN/GND	2.878	(	1.514 GND RETURN KA)		
B-B4-LS14	3 PHASE:	3.064		1. Z1= 90.6038	3.072	3.068
	SLG DUTY:	2.029		1. Z2= 90.6038	2.030	
208. VOLTS	LN/LN	2.653		Z0= 231.1259		
	LN/LN/GND	2.873	(	1.510 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LS14-M	3 PHASE:	3.068		1. Z1= 90.4820	3.076	3.072
	SLG DUTY:	2.034		1. Z2= 90.4820	2.035	
208. VOLTS	LN/LN	2.657		Z0= 230.4182		
	LN/LN/GND	2.878	(	1.514 GND RETURN KA)		
B-B4-LS2	3 PHASE:	3.673		1. Z1= 75.5797	3.700	3.687
	SLG DUTY:	2.505		1. Z2= 75.5797	2.510	
208. VOLTS	LN/LN	3.181		Z0= 182.9164		
	LN/LN/GND	3.465	(	1.892 GND RETURN KA)		
B-B4-LS2-M	3 PHASE:	3.678		1. Z1= 75.4601	3.706	3.692
	SLG DUTY:	2.512		1. Z2= 75.4601	2.517	
208. VOLTS	LN/LN	3.186		Z0= 182.2120		
	LN/LN/GND	3.471	(	1.898 GND RETURN KA)		
B-B4-LS3	3 PHASE:	3.888		1. Z1= 71.3842	3.930	3.909
	SLG DUTY:	2.682		1. Z2= 71.3842	2.690	
208. VOLTS	LN/LN	3.367		Z0= 169.3194		
	LN/LN/GND	3.675	(	2.037 GND RETURN KA)		
B-B4-LS3-M	3 PHASE:	3.895		1. Z1= 71.2656	3.936	3.916
	SLG DUTY:	2.690		1. Z2= 71.2656	2.698	
208. VOLTS	LN/LN	3.373		Z0= 168.6176		
	LN/LN/GND	3.682	(	2.044 GND RETURN KA)		
B-B4-LS4	3 PHASE:	3.415		1. Z1= 81.2810	3.432	3.424
	SLG DUTY:	2.300		1. Z2= 81.2810	2.303	
208. VOLTS	LN/LN	2.957		Z0= 201.2929		
	LN/LN/GND	3.214	(	1.726 GND RETURN KA)		
B-B4-LS4-M	3 PHASE:	3.420		1. Z1= 81.1603	3.437	3.429
	SLG DUTY:	2.306		1. Z2= 81.1603	2.309	
208. VOLTS	LN/LN	2.962		Z0= 200.5865		
	LN/LN/GND	3.220	(	1.731 GND RETURN KA)		
B-B4-LS5	3 PHASE:	2.858		1. Z1= 97.1249	2.863	2.861
	SLG DUTY:	1.875		1. Z2= 97.1249	1.876	
208. VOLTS	LN/LN	2.475		Z0= 251.8593		
	LN/LN/GND	2.675	(	1.389 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LS5-M	3 PHASE:	2.861		1. Z1= 97.0025	2.867	2.864
	SLG DUTY:	1.879		1. Z2= 97.0025	1.880	
208. VOLTS	LN/LN	2.478		Z0= 251.1516		
	LN/LN/GND	2.678	(	1.393 GND RETURN KA)		
B-B4-LS6	3 PHASE:	3.064		1. Z1= 90.6038	3.072	3.068
	SLG DUTY:	2.029		1. Z2= 90.6038	2.030	
208. VOLTS	LN/LN	2.653		Z0= 231.1259		
	LN/LN/GND	2.873	(	1.510 GND RETURN KA)		
B-B4-LS6-M	3 PHASE:	3.068		1. Z1= 90.4820	3.076	3.072
	SLG DUTY:	2.034		1. Z2= 90.4820	2.035	
208. VOLTS	LN/LN	2.657		Z0= 230.4182		
	LN/LN/GND	2.878	(	1.514 GND RETURN KA)		
B-B4-LS7	3 PHASE:	3.242		1. Z1= 85.6239	3.254	3.248
	SLG DUTY:	2.165		1. Z2= 85.6239	2.167	
208. VOLTS	LN/LN	2.807		Z0= 215.2211		
	LN/LN/GND	3.046	(	1.618 GND RETURN KA)		
B-B4-LS7-M	3 PHASE:	3.246		1. Z1= 85.5026	3.259	3.253
	SLG DUTY:	2.170		1. Z2= 85.5026	2.172	
208. VOLTS	LN/LN	2.811		Z0= 214.5139		
	LN/LN/GND	3.051	(	1.623 GND RETURN KA)		
B-B4-LS8	3 PHASE:	3.275		1. Z1= 84.7512	3.288	3.282
	SLG DUTY:	2.191		1. Z2= 84.7512	2.193	
208. VOLTS	LN/LN	2.836		Z0= 212.4268		
	LN/LN/GND	3.078	(	1.638 GND RETURN KA)		
B-B4-LS8-M	3 PHASE:	3.280		1. Z1= 84.6300	3.293	3.286
	SLG DUTY:	2.196		1. Z2= 84.6300	2.198	
208. VOLTS	LN/LN	2.840		Z0= 211.7197		
	LN/LN/GND	3.083	(	1.643 GND RETURN KA)		
B-B4-LS9	3 PHASE:	3.275		1. Z1= 84.7512	3.288	3.282
	SLG DUTY:	2.191		1. Z2= 84.7512	2.193	
208. VOLTS	LN/LN	2.836		Z0= 212.4268		
	LN/LN/GND	3.078	(	1.638 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LS9-M	3 PHASE:	3.280	1.	Z1= 84.6300	3.293	3.286
	SLG DUTY:	2.196	1.	Z2= 84.6300	2.198	
208. VOLTS	LN/LN	2.840		Z0= 211.7197		
	LN/LN/GND	3.083	(	1.643 GND RETURN KA)		
B-B4-LSD	3 PHASE:	4.133	2.	Z1= 67.1546	4.196	4.165
	SLG DUTY:	2.890	1.	Z2= 67.1546	2.904	
208. VOLTS	LN/LN	3.580		Z0= 155.2297		
	LN/LN/GND	3.915	(	2.212 GND RETURN KA)		
B-B4-LSD-M	3 PHASE:	4.141	2.	Z1= 67.0374	4.203	4.172
	SLG DUTY:	2.899	1.	Z2= 67.0374	2.913	
208. VOLTS	LN/LN	3.586		Z0= 154.5319		
	LN/LN/GND	3.922	(	2.220 GND RETURN KA)		
B-B4-PP1	3 PHASE:	5.895	3.	Z1= 47.0822	6.464	6.183
	SLG DUTY:	3.680	2.	Z2= 47.0822	3.836	
208. VOLTS	LN/LN	5.106		Z0= 133.0263		
	LN/LN/GND	5.474	(	2.665 GND RETURN KA)		
B-B4-PP2	3 PHASE:	2.991	1.	Z1= 92.7892	2.997	2.994
	SLG DUTY:	1.967	1.	Z2= 92.7892	1.968	
208. VOLTS	LN/LN	2.591		Z0= 239.6704		
	LN/LN/GND	2.803	(	1.459 GND RETURN KA)		
B-B4-PP2-M	3 PHASE:	2.995	1.	Z1= 92.6668	3.001	2.998
	SLG DUTY:	1.972	1.	Z2= 92.6668	1.972	
208. VOLTS	LN/LN	2.594		Z0= 238.9627		
	LN/LN/GND	2.807	(	1.463 GND RETURN KA)		
B-B5-ATS-EQ	3 PHASE:	4.008	3.	Z1= 69.2631	4.471	4.242
	SLG DUTY:	2.072	2.	Z2= 69.2631	2.138	
208. VOLTS	LN/LN	3.471		Z0= 265.8302		
	LN/LN/GND	3.678	(	1.390 GND RETURN KA)		
B-B5-ATS-LS	3 PHASE:	1.867	1.	Z1= 148.6471	1.872	1.869
	SLG DUTY:	1.207	1.	Z2= 148.6471	1.208	
208. VOLTS	LN/LN	1.617		Z0= 394.8720		
	LN/LN/GND	1.735	(	0.889 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B5-EQ1	3 PHASE:	3.503	2.	Z1= 79.2355	3.664	3.584
	SLG DUTY:	1.820	1.	Z2= 79.2355	1.844	
208. VOLTS	LN/LN	3.034		Z0= 301.1343		
	LN/LN/GND	3.197	(	1.224 GND RETURN KA)		
B-B5-EQ2	3 PHASE:	3.471	2.	Z1= 79.9792	3.620	3.546
	SLG DUTY:	1.804	1.	Z2= 79.9792	1.827	
208. VOLTS	LN/LN	3.006		Z0= 303.6068		
	LN/LN/GND	3.166	(	1.214 GND RETURN KA)		
B-B5-EQ5	3 PHASE:	3.503	2.	Z1= 79.2355	3.664	3.584
	SLG DUTY:	1.820	1.	Z2= 79.2355	1.844	
208. VOLTS	LN/LN	3.034		Z0= 301.1343		
	LN/LN/GND	3.197	(	1.224 GND RETURN KA)		
B-B5-EQ6	3 PHASE:	3.579	3.	Z1= 77.5580	3.874	3.728
	SLG DUTY:	1.797	1.	Z2= 77.5580	1.822	
208. VOLTS	LN/LN	3.099		Z0= 311.9075		
	LN/LN/GND	3.288	(	1.191 GND RETURN KA)		
B-B5-EQD	3 PHASE:	4.000	3.	Z1= 69.3933	4.466	4.236
	SLG DUTY:	2.062	2.	Z2= 69.3933	2.128	
208. VOLTS	LN/LN	3.464		Z0= 267.5273		
	LN/LN/GND	3.671	(	1.382 GND RETURN KA)		
B-B5-HYDR ELEV	3 PHASE:	3.800	3.	Z1= 73.0512	4.174	3.989
	SLG DUTY:	1.935	2.	Z2= 73.0512	1.977	
208. VOLTS	LN/LN	3.291		Z0= 287.2923		
	LN/LN/GND	3.489	(	1.290 GND RETURN KA)		
B-B5-LS1	3 PHASE:	1.777	1.	Z1= 156.2118	1.780	1.779
	SLG DUTY:	1.143	1.	Z2= 156.2118	1.143	
208. VOLTS	LN/LN	1.539		Z0= 418.7309		
	LN/LN/GND	1.650	(	0.839 GND RETURN KA)		
B-B5-LS2	3 PHASE:	1.624	1.	Z1= 170.9284	1.626	1.625
	SLG DUTY:	1.035	1.	Z2= 170.9284	1.036	
208. VOLTS	LN/LN	1.406		Z0= 464.9379		
	LN/LN/GND	1.505	(	0.758 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B5-LS4	3 PHASE:	1.568	1.	Z1= 176.9855	1.570	1.569
	SLG DUTY:	0.997	1.	Z2= 176.9855	0.997	
208. VOLTS	LN/LN	1.358		Z0= 483.9041		
	LN/LN/GND	1.452	(	0.729 GND RETURN KA)		
B-B5-LSD	3 PHASE:	1.855	1.	Z1= 149.6717	1.859	1.857
	SLG DUTY:	1.198	1.	Z2= 149.6717	1.199	
208. VOLTS	LN/LN	1.606		Z0= 398.1311		
	LN/LN/GND	1.723	(	0.882 GND RETURN KA)		
B-B5-LSD-M	3 PHASE:	1.856	1.	Z1= 149.5750	1.860	1.858
	SLG DUTY:	1.199	1.	Z2= 149.5750	1.200	
208. VOLTS	LN/LN	1.607		Z0= 397.5885		
	LN/LN/GND	1.724	(	0.883 GND RETURN KA)		
B-B55-LS3	3 PHASE:	1.711	1.	Z1= 162.1955	1.714	1.713
	SLG DUTY:	1.096	1.	Z2= 162.1955	1.097	
208. VOLTS	LN/LN	1.482		Z0= 437.5415		
	LN/LN/GND	1.587	(	0.804 GND RETURN KA)		
B-B6-ATS-EQ	3 PHASE:	4.318	3.	Z1= 64.2860	4.868	4.597
	SLG DUTY:	2.499	2.	Z2= 64.2860	2.601	
208. VOLTS	LN/LN	3.739		Z0= 206.5030		
	LN/LN/GND	3.996	(	1.749 GND RETURN KA)		
B-B6-ATS-LS	3 PHASE:	2.625	1.	Z1= 105.7540	2.636	2.630
	SLG DUTY:	1.728	1.	Z2= 105.7540	1.730	
208. VOLTS	LN/LN	2.273		Z0= 272.2818		
	LN/LN/GND	2.450	(	1.283 GND RETURN KA)		
B-B6-EQ1	3 PHASE:	4.021	3.	Z1= 69.0276	4.346	4.185
	SLG DUTY:	2.298	2.	Z2= 69.0276	2.355	
208. VOLTS	LN/LN	3.482		Z0= 226.1539		
	LN/LN/GND	3.712	(	1.601 GND RETURN KA)		
B-B6-EQ2	3 PHASE:	3.678	2.	Z1= 75.4778	3.873	3.776
	SLG DUTY:	2.106	2.	Z2= 75.4778	2.141	
208. VOLTS	LN/LN	3.185		Z0= 246.2023		
	LN/LN/GND	3.388	(	1.470 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-EQ3	3 PHASE:	3.944	3.	Z1= 70.3852	4.260	4.103
	SLG DUTY:	2.259	2.	Z2= 70.3852	2.315	
208. VOLTS	LN/LN	3.415		Z0= 229.6766		
	LN/LN/GND	3.640	(	1.576 GND RETURN KA)		
B-B6-EQ4	3 PHASE:	3.476	2.	Z1= 79.8635	3.610	3.543
	SLG DUTY:	1.991	1.	Z2= 79.8635	2.015	
208. VOLTS	LN/LN	3.010		Z0= 260.2608		
	LN/LN/GND	3.197	(	1.390 GND RETURN KA)		
B-B6-EQ5	3 PHASE:	3.720	2.	Z1= 74.6152	3.931	3.826
	SLG DUTY:	2.131	2.	Z2= 74.6152	2.168	
208. VOLTS	LN/LN	3.222		Z0= 243.4202		
	LN/LN/GND	3.428	(	1.487 GND RETURN KA)		
B-B6-EQ8	3 PHASE:	3.991	4.	Z1= 69.5416	4.619	4.311
	SLG DUTY:	2.186	2.	Z2= 69.5416	2.250	
208. VOLTS	LN/LN	3.457		Z0= 245.1395		
	LN/LN/GND	3.706	(	1.494 GND RETURN KA)		
B-B6-EQD	3 PHASE:	4.262	3.	Z1= 65.1256	4.816	4.543
	SLG DUTY:	2.445	2.	Z2= 65.1256	2.542	
208. VOLTS	LN/LN	3.691		Z0= 212.2941		
	LN/LN/GND	3.944	(	1.705 GND RETURN KA)		
B-B6-EQD-M	3 PHASE:	4.263	3.	Z1= 65.1134	4.817	4.544
	SLG DUTY:	2.447	2.	Z2= 65.1134	2.544	
208. VOLTS	LN/LN	3.692		Z0= 212.1201		
	LN/LN/GND	3.945	(	1.706 GND RETURN KA)		
B-B6-EQMACH	3 PHASE:	4.021	3.	Z1= 69.0276	4.346	4.185
	SLG DUTY:	2.298	2.	Z2= 69.0276	2.355	
208. VOLTS	LN/LN	3.482		Z0= 226.1539		
	LN/LN/GND	3.712	(	1.601 GND RETURN KA)		
B-B6-LS1	3 PHASE:	2.362	1.	Z1= 117.5114	2.368	2.365
	SLG DUTY:	1.535	1.	Z2= 117.5114	1.536	
208. VOLTS	LN/LN	2.046		Z0= 309.3174		
	LN/LN/GND	2.200	(	1.133 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-LS2	3 PHASE:	2.473		1. Z1= 112.2431	2.480	2.477
	SLG DUTY:	1.614		1. Z2= 112.2431	1.616	
208. VOLTS	LN/LN	2.142		Z0= 293.2536		
	LN/LN/GND	2.305	(	1.194 GND RETURN KA)		
B-B6-LS3	3 PHASE:	2.362		1. Z1= 117.5114	2.368	2.365
	SLG DUTY:	1.535		1. Z2= 117.5114	1.536	
208. VOLTS	LN/LN	2.046		Z0= 309.3174		
	LN/LN/GND	2.200	(	1.133 GND RETURN KA)		
B-B6-LS4	3 PHASE:	2.362		1. Z1= 117.5114	2.368	2.365
	SLG DUTY:	1.535		1. Z2= 117.5114	1.536	
208. VOLTS	LN/LN	2.046		Z0= 309.3174		
	LN/LN/GND	2.200	(	1.133 GND RETURN KA)		
B-B6-LS5	3 PHASE:	2.249		1. Z1= 123.4464	2.253	2.251
	SLG DUTY:	1.453		1. Z2= 123.4464	1.454	
208. VOLTS	LN/LN	1.947		Z0= 328.0604		
	LN/LN/GND	2.092	(	1.070 GND RETURN KA)		
B-B6-LS6	3 PHASE:	2.249		1. Z1= 123.4464	2.253	2.251
	SLG DUTY:	1.453		1. Z2= 123.4464	1.454	
208. VOLTS	LN/LN	1.947		Z0= 328.0604		
	LN/LN/GND	2.092	(	1.070 GND RETURN KA)		
B-B6-LSD	3 PHASE:	2.588		1. Z1= 107.2604	2.598	2.593
	SLG DUTY:	1.701		1. Z2= 107.2604	1.703	
208. VOLTS	LN/LN	2.241		Z0= 276.8147		
	LN/LN/GND	2.415	(	1.263 GND RETURN KA)		
B-B6-LSD-M	3 PHASE:	2.589		1. Z1= 107.2272	2.599	2.594
	SLG DUTY:	1.702		1. Z2= 107.2272	1.704	
208. VOLTS	LN/LN	2.242		Z0= 276.6110		
	LN/LN/GND	2.416	(	1.263 GND RETURN KA)		
B-B61-ATS-EQD	3 PHASE:	3.632		3. Z1= 76.4142	3.989	3.813
	SLG DUTY:	2.174		2. Z2= 76.4142	2.251	
208. VOLTS	LN/LN	3.146		Z0= 231.9101		
	LN/LN/GND	3.363	(	1.545 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B61-ATS-LSD	3 PHASE:	2.154		1. Z1= 128.8383	2.160	2.157
	SLG DUTY:	1.398		1. Z2= 128.8383	1.399	
208. VOLTS	LN/LN	1.866		Z0= 340.0240		
	LN/LN/GND	2.004	(	1.031 GND RETURN KA)		
B-B61-COMP RM	3 PHASE:	3.414		3. Z1= 81.3072	3.688	3.552
	SLG DUTY:	2.033		2. Z2= 81.3072	2.090	
208. VOLTS	LN/LN	2.956		Z0= 248.8701		
	LN/LN/GND	3.157	(	1.441 GND RETURN KA)		
B-B61-ELEV	3 PHASE:	3.324		3. Z1= 83.5041	3.662	3.495
	SLG DUTY:	1.910		2. Z2= 83.5041	1.957	
208. VOLTS	LN/LN	2.879		Z0= 271.9414		
	LN/LN/GND	3.084	(	1.332 GND RETURN KA)		
B-B61-EQ1	3 PHASE:	3.157		2. Z1= 87.9257	3.304	3.231
	SLG DUTY:	1.871		2. Z2= 87.9257	1.901	
208. VOLTS	LN/LN	2.734		Z0= 270.9898		
	LN/LN/GND	2.913	(	1.325 GND RETURN KA)		
B-B61-EQ2	3 PHASE:	3.449		3. Z1= 80.4684	3.719	3.585
	SLG DUTY:	2.050		2. Z2= 80.4684	2.106	
208. VOLTS	LN/LN	2.987		Z0= 247.0008		
	LN/LN/GND	3.190	(	1.453 GND RETURN KA)		
B-B61-EQ4	3 PHASE:	3.148		2. Z1= 88.1626	3.275	3.212
	SLG DUTY:	1.861		1. Z2= 88.1626	1.886	
208. VOLTS	LN/LN	2.727		Z0= 272.9411		
	LN/LN/GND	2.904	(	1.316 GND RETURN KA)		
B-B61-EQA	3 PHASE:	3.557		3. Z1= 78.0430	3.896	3.728
	SLG DUTY:	2.118		2. Z2= 78.0430	2.189	
208. VOLTS	LN/LN	3.080		Z0= 238.9657		
	LN/LN/GND	3.291	(	1.501 GND RETURN KA)		
B-B61-EQD	3 PHASE:	3.586		3. Z1= 77.3954	3.941	3.766
	SLG DUTY:	2.135		2. Z2= 77.3954	2.210	
208. VOLTS	LN/LN	3.106		Z0= 236.9954		
	LN/LN/GND	3.320	(	1.514 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B61-KITCHEN	3 PHASE:	2.016		1. Z1= 137.6687	2.021	2.019
	SLG DUTY:	1.302		1. Z2= 137.6687	1.303	
208. VOLTS	LN/LN	1.746		Z0= 366.2431		
	LN/LN/GND	1.873	(	0.959 GND RETURN KA)		
B-B61-LS1	3 PHASE:	1.837		1. Z1= 151.1293	1.839	1.838
	SLG DUTY:	1.172		1. Z2= 151.1293	1.173	
208. VOLTS	LN/LN	1.591		Z0= 410.2233		
	LN/LN/GND	1.703	(	0.859 GND RETURN KA)		
B-B61-LS2	3 PHASE:	1.964		1. Z1= 141.3152	1.967	1.966
	SLG DUTY:	1.260		1. Z2= 141.3152	1.260	
208. VOLTS	LN/LN	1.701		Z0= 380.6564		
	LN/LN/GND	1.823	(	0.924 GND RETURN KA)		
B-B61-LS3	3 PHASE:	1.766		1. Z1= 157.1743	1.768	1.767
	SLG DUTY:	1.123		1. Z2= 157.1743	1.124	
208. VOLTS	LN/LN	1.529		Z0= 429.1671		
	LN/LN/GND	1.636	(	0.821 GND RETURN KA)		
B-B61-LS4	3 PHASE:	1.837		1. Z1= 151.1293	1.839	1.838
	SLG DUTY:	1.172		1. Z2= 151.1293	1.173	
208. VOLTS	LN/LN	1.591		Z0= 410.2233		
	LN/LN/GND	1.703	(	0.859 GND RETURN KA)		
B-B61-LS5	3 PHASE:	1.766		1. Z1= 157.1743	1.768	1.767
	SLG DUTY:	1.123		1. Z2= 157.1743	1.124	
208. VOLTS	LN/LN	1.529		Z0= 429.1671		
	LN/LN/GND	1.636	(	0.821 GND RETURN KA)		
B-B61-LSD	3 PHASE:	2.131		1. Z1= 130.2563	2.137	2.134
	SLG DUTY:	1.381		1. Z2= 130.2563	1.382	
208. VOLTS	LN/LN	1.845		Z0= 344.5296		
	LN/LN/GND	1.982	(	1.018 GND RETURN KA)		
B-B61-LSD-M	3 PHASE:	2.133		1. Z1= 130.1345	2.139	2.136
	SLG DUTY:	1.383		1. Z2= 130.1345	1.384	
208. VOLTS	LN/LN	1.847		Z0= 343.8225		
	LN/LN/GND	1.984	(	1.020 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B62-ATS-EQD	3 PHASE:	3.088		3. Z1= 89.8883	3.379	3.235
	SLG DUTY:	1.745		2. Z2= 89.8883	1.797	
208. VOLTS	LN/LN	2.674		Z0= 299.7852		
	LN/LN/GND	2.847	(	1.211 GND RETURN KA)		
B-B62-ATS-LSD	3 PHASE:	1.672		1. Z1= 165.9643	1.675	1.674
	SLG DUTY:	1.070		1. Z2= 165.9643	1.070	
208. VOLTS	LN/LN	1.448		Z0= 448.6792		
	LN/LN/GND	1.550	(	0.784 GND RETURN KA)		
B-B62-ATTC PNL	3 PHASE:	2.761		2. Z1= 100.5392	2.906	2.834
	SLG DUTY:	1.551		2. Z2= 100.5392	1.576	
208. VOLTS	LN/LN	2.391		Z0= 338.1913		
	LN/LN/GND	2.539	(	1.074 GND RETURN KA)		
B-B62-ELEV-1	3 PHASE:	2.761		2. Z1= 100.5392	2.906	2.834
	SLG DUTY:	1.551		2. Z2= 100.5392	1.576	
208. VOLTS	LN/LN	2.391		Z0= 338.1913		
	LN/LN/GND	2.539	(	1.074 GND RETURN KA)		
B-B62-ELEV-2	3 PHASE:	2.902		3. Z1= 95.6461	3.201	3.054
	SLG DUTY:	1.585		2. Z2= 95.6461	1.616	
208. VOLTS	LN/LN	2.513		Z0= 338.1913		
	LN/LN/GND	2.686	(	1.082 GND RETURN KA)		
B-B62-EQ	3 PHASE:	2.998		3. Z1= 92.5905	3.243	3.122
	SLG DUTY:	1.681		2. Z2= 92.5905	1.721	
208. VOLTS	LN/LN	2.596		Z0= 312.8858		
	LN/LN/GND	2.763	(	1.162 GND RETURN KA)		
B-B62-EQD	3 PHASE:	3.049		3. Z1= 91.0492	3.338	3.195
	SLG DUTY:	1.711		2. Z2= 91.0492	1.758	
208. VOLTS	LN/LN	2.640		Z0= 307.2573		
	LN/LN/GND	2.812	(	1.183 GND RETURN KA)		
B-B62-LS1	3 PHASE:	1.443		1. Z1= 192.3922	1.444	1.443
	SLG DUTY:	0.909		1. Z2= 192.3922	0.909	
208. VOLTS	LN/LN	1.249		Z0= 533.5969		
	LN/LN/GND	1.333	(	0.662 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B62-LS2	3 PHASE:	1.549		1. Z1= 179.2346	1.550	1.550
	SLG DUTY:	0.983		1. Z2= 179.2346	0.983	
208. VOLTS	LN/LN	1.341		Z0= 491.1310		
	LN/LN/GND	1.433	(	0.718 GND RETURN KA)		
B-B62-LS3	3 PHASE:	1.490		1. Z1= 186.3226	1.491	1.491
	SLG DUTY:	0.944		1. Z2= 186.3226	0.944	
208. VOLTS	LN/LN	1.290		Z0= 512.1948		
	LN/LN/GND	1.377	(	0.689 GND RETURN KA)		
B-B62-LS4	3 PHASE:	1.555		1. Z1= 178.4727	1.557	1.556
	SLG DUTY:	0.989		1. Z2= 178.4727	0.989	
208. VOLTS	LN/LN	1.347		Z0= 487.6313		
	LN/LN/GND	1.439	(	0.723 GND RETURN KA)		
B-B62-LSD	3 PHASE:	1.644		1. Z1= 168.8771	1.647	1.645
	SLG DUTY:	1.050		1. Z2= 168.8771	1.051	
208. VOLTS	LN/LN	1.423		Z0= 457.5438		
	LN/LN/GND	1.523	(	0.769 GND RETURN KA)		
B-B62-LSD-M	3 PHASE:	1.645		1. Z1= 168.7547	1.648	1.646
	SLG DUTY:	1.051		1. Z2= 168.7547	1.052	
208. VOLTS	LN/LN	1.424		Z0= 456.8362		
	LN/LN/GND	1.524	(	0.771 GND RETURN KA)		
B-B62-PAD RM	3 PHASE:	2.929		2. Z1= 94.7816	3.138	3.034
	SLG DUTY:	1.643		2. Z2= 94.7816	1.677	
208. VOLTS	LN/LN	2.536		Z0= 319.9862		
	LN/LN/GND	2.697	(	1.136 GND RETURN KA)		
B-B7-ATS-EQ	3 PHASE:	5.486		3. Z1= 50.5983	6.209	5.853
	SLG DUTY:	3.738		2. Z2= 50.5983	3.986	
208. VOLTS	LN/LN	4.751		Z0= 122.2579		
	LN/LN/GND	5.133	(	2.827 GND RETURN KA)		
B-B7-ATS-LS	3 PHASE:	4.007		1. Z1= 69.2779	4.055	4.031
	SLG DUTY:	2.759		1. Z2= 69.2779	2.770	
208. VOLTS	LN/LN	3.470		Z0= 164.6249		
	LN/LN/GND	3.780	(	2.095 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B7-ELEV	3 PHASE:	4.677	3.	Z1= 59.3426	5.147	4.915
	SLG DUTY:	2.997	2.	Z2= 59.3426	3.095	
208. VOLTS	LN/LN	4.051		Z0= 160.7530		
	LN/LN/GND	4.383	(	2.193 GND RETURN KA)		
B-B7-EQ1	3 PHASE:	4.481	2.	Z1= 61.9428	4.696	4.589
	SLG DUTY:	2.942	2.	Z2= 61.9428	3.000	
208. VOLTS	LN/LN	3.881		Z0= 160.2297		
	LN/LN/GND	4.182	(	2.182 GND RETURN KA)		
B-B7-EQ2	3 PHASE:	4.987	3.	Z1= 55.6593	5.436	5.214
	SLG DUTY:	3.323	2.	Z2= 55.6593	3.459	
208. VOLTS	LN/LN	4.319		Z0= 140.1566		
	LN/LN/GND	4.660	(	2.484 GND RETURN KA)		
B-B7-EQ4	3 PHASE:	4.623	2.	Z1= 60.0462	4.855	4.739
	SLG DUTY:	3.039	2.	Z2= 60.0462	3.101	
208. VOLTS	LN/LN	4.003		Z0= 155.0234		
	LN/LN/GND	4.317	(	2.255 GND RETURN KA)		
B-B7-EQD	3 PHASE:	5.268	3.	Z1= 52.6901	5.936	5.607
	SLG DUTY:	3.540	2.	Z2= 52.6901	3.757	
208. VOLTS	LN/LN	4.562		Z0= 130.6277		
	LN/LN/GND	4.924	(	2.658 GND RETURN KA)		
B-B7-LS1	3 PHASE:	3.177	1.	Z1= 87.3720	3.188	3.182
	SLG DUTY:	2.103	1.	Z2= 87.3720	2.105	
208. VOLTS	LN/LN	2.751		Z0= 222.8793		
	LN/LN/GND	2.976	(	1.566 GND RETURN KA)		
B-B7-LS2	3 PHASE:	3.549	1.	Z1= 78.2094	3.568	3.558
	SLG DUTY:	2.383	1.	Z2= 78.2094	2.386	
208. VOLTS	LN/LN	3.074		Z0= 194.6721		
	LN/LN/GND	3.336	(	1.786 GND RETURN KA)		
B-B7-LS4	3 PHASE:	3.104	1.	Z1= 89.4222	3.113	3.109
	SLG DUTY:	2.049	1.	Z2= 89.4222	2.050	
208. VOLTS	LN/LN	2.688		Z0= 229.4125		
	LN/LN/GND	2.906	(	1.523 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B7-LS5	3 PHASE:	3.476	1.	Z1= 79.8498	3.496	3.486
	SLG DUTY:	2.333	1.	Z2= 79.8498	2.337	
208. VOLTS	LN/LN	3.010		Z0= 198.8136		
	LN/LN/GND	3.265	(	1.748 GND RETURN KA)		
B-B7-LSD	3 PHASE:	3.949	1.	Z1= 70.2954	3.994	3.972
	SLG DUTY:	2.711	1.	Z2= 70.2954	2.721	
208. VOLTS	LN/LN	3.420		Z0= 167.9939		
	LN/LN/GND	3.723	(	2.055 GND RETURN KA)		
B-B7-LSD-M	3 PHASE:	3.955	1.	Z1= 70.1772	4.001	3.978
	SLG DUTY:	2.719	1.	Z2= 70.1772	2.729	
208. VOLTS	LN/LN	3.425		Z0= 167.2940		
	LN/LN/GND	3.730	(	2.063 GND RETURN KA)		
B-B7-MCC-1	3 PHASE:	4.688	2.	Z1= 59.2137	4.862	4.775
	SLG DUTY:	3.061	1.	Z2= 59.2137	3.104	
208. VOLTS	LN/LN	4.060		Z0= 154.7277		
	LN/LN/GND	4.378	(	2.264 GND RETURN KA)		
B-B70 GEN-M	3 PHASE:	2.860	18.	Z1= 97.0517	4.449	3.702
	SLG DUTY:	2.849	17.	Z2= 97.0517	4.405	
208. VOLTS	LN/LN	2.477		Z0= 98.2123		
	LN/LN/GND	2.862	(	2.837 GND RETURN KA)		
B-B70-ATS-EQD	3 PHASE:	2.762	14.	Z1= 100.4808	4.151	3.495
	SLG DUTY:	2.703	11.	Z2= 100.4808	3.945	
208. VOLTS	LN/LN	2.392		Z0= 107.1427		
	LN/LN/GND	2.772	(	2.646 GND RETURN KA)		
B-B70-ATS-LSD	3 PHASE:	2.751	10.	Z1= 100.8996	3.971	3.391
	SLG DUTY:	2.683	8.	Z2= 100.8996	3.678	
208. VOLTS	LN/LN	2.382		Z0= 108.8542		
	LN/LN/GND	2.791	(	2.616 GND RETURN KA)		
B-B70-EM-TAP	3 PHASE:	2.858	18.	Z1= 97.1249	4.440	3.697
	SLG DUTY:	2.843	17.	Z2= 97.1249	4.383	
208. VOLTS	LN/LN	2.475		Z0= 98.6103		
	LN/LN/GND	2.861	(	2.829 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-EQ1	3 PHASE:	2.411	4.	Z1= 115.1511	2.862	2.642
	SLG DUTY:	2.176	3.	Z2= 115.1511	2.371	
208. VOLTS	LN/LN	2.088		Z0= 156.0416		
	LN/LN/GND	2.482	(	1.964 GND RETURN KA)		
B-B70-EQ2	3 PHASE:	2.249	3.	Z1= 123.4442	2.514	2.383
	SLG DUTY:	1.949	2.	Z2= 123.4442	2.034	
208. VOLTS	LN/LN	1.947		Z0= 185.9958		
	LN/LN/GND	2.307	(	1.698 GND RETURN KA)		
B-B70-EQ3	3 PHASE:	2.355	4.	Z1= 117.8452	2.733	2.548
	SLG DUTY:	2.097	2.	Z2= 117.8452	2.243	
208. VOLTS	LN/LN	2.040		Z0= 165.7541		
	LN/LN/GND	2.424	(	1.869 GND RETURN KA)		
B-B70-EQ4	3 PHASE:	2.197	3.	Z1= 126.3397	2.421	2.311
	SLG DUTY:	1.880	2.	Z2= 126.3397	1.946	
208. VOLTS	LN/LN	1.903		Z0= 196.4409		
	LN/LN/GND	2.249	(	1.621 GND RETURN KA)		
B-B70-EQ5	3 PHASE:	2.301	3.	Z1= 120.6112	2.617	2.462
	SLG DUTY:	2.022	2.	Z2= 120.6112	2.132	
208. VOLTS	LN/LN	1.993		Z0= 175.7543		
	LN/LN/GND	2.365	(	1.781 GND RETURN KA)		
B-B70-EQ6	3 PHASE:	2.147	3.	Z1= 129.2936	2.337	2.243
	SLG DUTY:	1.815	2.	Z2= 129.2936	1.866	
208. VOLTS	LN/LN	1.859		Z0= 207.0588		
	LN/LN/GND	2.192	(	1.549 GND RETURN KA)		
B-B70-EQD	3 PHASE:	2.734	12.	Z1= 101.5092	4.064	3.435
	SLG DUTY:	2.661	10.	Z2= 101.5092	3.812	
208. VOLTS	LN/LN	2.368		Z0= 110.0494		
	LN/LN/GND	2.747	(	2.590 GND RETURN KA)		
B-B70-EQD-M	3 PHASE:	2.736	13.	Z1= 101.4345	4.071	3.440
	SLG DUTY:	2.666	10.	Z2= 101.4345	3.828	
208. VOLTS	LN/LN	2.370		Z0= 109.6247		
	LN/LN/GND	2.749	(	2.598 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-GEN	3 PHASE:	2.883	20.	Z1= 96.2740	4.523	3.753
	SLG DUTY:	2.883	20.	Z2= 96.2740	4.523	
208. VOLTS	LN/LN	2.497		Z0= 96.2740		
	LN/LN/GND	2.883	(	2.883 GND RETURN KA)		
B-B70-LS1	3 PHASE:	2.247	2.	Z1= 123.5511	2.380	2.314
	SLG DUTY:	1.891	1.	Z2= 123.5511	1.916	
208. VOLTS	LN/LN	1.946		Z0= 202.3692		
	LN/LN/GND	2.318	(	1.599 GND RETURN KA)		
B-B70-LS2	3 PHASE:	2.081	2.	Z1= 133.4157	2.146	2.113
	SLG DUTY:	1.670	1.	Z2= 133.4157	1.679	
208. VOLTS	LN/LN	1.802		Z0= 242.5699		
	LN/LN/GND	2.121	(	1.366 GND RETURN KA)		
B-B70-LS3	3 PHASE:	2.299	3.	Z1= 120.7346	2.538	2.420
	SLG DUTY:	1.996	2.	Z2= 120.7346	2.064	
208. VOLTS	LN/LN	1.991		Z0= 182.2201		
	LN/LN/GND	2.373	(	1.737 GND RETURN KA)		
B-B70-LS4	3 PHASE:	2.121	2.	Z1= 130.8918	2.245	2.183
	SLG DUTY:	1.756	1.	Z2= 130.8918	1.781	
208. VOLTS	LN/LN	1.837		Z0= 220.9077		
	LN/LN/GND	2.167	(	1.473 GND RETURN KA)		
B-B70-LS5	3 PHASE:	2.238	3.	Z1= 124.0257	2.429	2.335
	SLG DUTY:	1.912	2.	Z2= 124.0257	1.960	
208. VOLTS	LN/LN	1.938		Z0= 194.8567		
	LN/LN/GND	2.303	(	1.641 GND RETURN KA)		
B-B70-LS6	3 PHASE:	2.064	2.	Z1= 134.4522	2.165	2.115
	SLG DUTY:	1.686	1.	Z2= 134.4522	1.704	
208. VOLTS	LN/LN	1.788		Z0= 234.2355		
	LN/LN/GND	2.102	(	1.399 GND RETURN KA)		
B-B70-LSD	3 PHASE:	2.723	10.	Z1= 101.9430	3.891	3.335
	SLG DUTY:	2.640	7.	Z2= 101.9430	3.564	
208. VOLTS	LN/LN	2.358		Z0= 111.8963		
	LN/LN/GND	2.763	(	2.559 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-LSD-M	3 PHASE:	2.725	10.	Z1= 101.8669	3.898	3.340
	SLG DUTY:	2.645	7.	Z2= 101.8669	3.578	
208. VOLTS	LN/LN	2.360		Z0= 111.4497		
	LN/LN/GND	2.765	(	2.567 GND RETURN KA)		
B-B78-78AE1	3 PHASE:	2.623	1.	Z1= 105.8061	2.630	2.627
	SLG DUTY:	1.730	1.	Z2= 105.8061	1.730	
208. VOLTS	LN/LN	2.272		Z0= 272.2447		
	LN/LN/GND	2.462	(	1.284 GND RETURN KA)		
B-B78-ATS-CRD	3 PHASE:	5.124	2.	Z1= 54.1746	5.319	5.222
	SLG DUTY:	3.806	1.	Z2= 54.1746	3.857	
208. VOLTS	LN/LN	4.437		Z0= 111.8259		
	LN/LN/GND	4.933	(	3.009 GND RETURN KA)		
B-B78-ATS-E1	3 PHASE:	5.713	4.	Z1= 48.5858	6.680	6.206
	SLG DUTY:	4.480	3.	Z2= 48.5858	4.957	
208. VOLTS	LN/LN	4.948		Z0= 89.0608		
	LN/LN/GND	5.446	(	3.678 GND RETURN KA)		
B-B78-ATS-LS1	3 PHASE:	5.264	2.	Z1= 52.7323	5.561	5.413
	SLG DUTY:	3.966	2.	Z2= 52.7323	4.058	
208. VOLTS	LN/LN	4.559		Z0= 105.6016		
	LN/LN/GND	5.064	(	3.166 GND RETURN KA)		
B-B78-ATSG957	83 PHASE:	2.639	1.	Z1= 105.1830	2.645	2.642
	SLG DUTY:	1.740	1.	Z2= 105.1830	1.741	
208. VOLTS	LN/LN	2.285		Z0= 270.6129		
	LN/LN/GND	2.477	(	1.292 GND RETURN KA)		
B-B78-CRD	3 PHASE:	2.961	1.	Z1= 93.7479	2.972	2.967
	SLG DUTY:	1.981	1.	Z2= 93.7479	1.983	
208. VOLTS	LN/LN	2.564		Z0= 235.1551		
	LN/LN/GND	2.789	(	1.481 GND RETURN KA)		
B-B78-E1	3 PHASE:	5.642	4.	Z1= 49.1986	6.574	6.117
	SLG DUTY:	4.412	3.	Z2= 49.1986	4.868	
208. VOLTS	LN/LN	4.886		Z0= 90.7052		
	LN/LN/GND	5.377	(	3.616 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-LSD	3 PHASE:	5.181	2.	Z1= 53.5705	5.457	5.320
	SLG DUTY:	3.889	2.	Z2= 53.5705	3.972	
208. VOLTS	LN/LN	4.487		Z0= 108.1426		
	LN/LN/GND	4.983	(	3.096 GND RETURN KA)		
B-B8 HYDRO ELV	3 PHASE:	2.404	3.	Z1= 50.0431	2.615	2.511
	SLG DUTY:	1.752	2.	Z2= 50.0431	1.786	
480. VOLTS	LN/LN	2.082		Z0= 108.5214		
	LN/LN/GND	2.351	(	1.362 GND RETURN KA)		
B-B8-480V ATS	3 PHASE:	2.812	11.	Z1= 42.7680	4.117	3.498
	SLG DUTY:	2.319	11.	Z2= 42.7680	3.387	
480. VOLTS	LN/LN	2.436		Z0= 70.1110		
	LN/LN/GND	2.598	(	1.972 GND RETURN KA)		
B-B8-480V PNL	3 PHASE:	2.809	11.	Z1= 42.8150	4.094	3.484
	SLG DUTY:	2.309	11.	Z2= 42.8150	3.347	
480. VOLTS	LN/LN	2.433		Z0= 70.6825		
	LN/LN/GND	2.597	(	1.959 GND RETURN KA)		
B-B8-CMOP	3 PHASE:	3.760	3.	Z1= 73.8236	4.113	3.939
	SLG DUTY:	3.891	2.	Z2= 73.8236	4.014	
208. VOLTS	LN/LN	3.256		Z0= 70.7522		
	LN/LN/GND	4.253	(	3.948 GND RETURN KA)		
B-B8-COMP	3 PHASE:	1.945	1.	Z1= 61.8306	1.966	1.956
	SLG DUTY:	1.286	1.	Z2= 61.8306	1.287	
480. VOLTS	LN/LN	1.685		Z0= 161.3106		
	LN/LN/GND	1.879	(	0.947 GND RETURN KA)		
B-B8-ELEV	3 PHASE:	3.979	4.	Z1= 69.7562	4.729	4.362
	SLG DUTY:	4.041	2.	Z2= 69.7562	4.349	
208. VOLTS	LN/LN	3.446		Z0= 69.5710		
	LN/LN/GND	4.394	(	4.045 GND RETURN KA)		
B-B8-FDR	3 PHASE:	4.160	4.	Z1= 66.7284	4.924	4.550
	SLG DUTY:	4.582	3.	Z2= 66.7284	5.028	
208. VOLTS	LN/LN	3.602		Z0= 50.1634		
	LN/LN/GND	4.781	(	5.048 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B8-FLEXPMACH	3 PHASE:	2.088	1.	Z1= 57.5944	2.107	2.098
	SLG DUTY:	1.500	1.	Z2= 57.5944	1.502	
480. VOLTS	LN/LN	1.809		Z0= 127.3122		
	LN/LN/GND	2.009	(1.161 GND RETURN KA)			
B-B8-GEN	3 PHASE:	2.832	14.	Z1= 42.4784	4.271	3.591
	SLG DUTY:	2.380	16.	Z2= 42.4784	3.652	
480. VOLTS	LN/LN	2.452		Z0= 66.7499		
	LN/LN/GND	2.603	(2.052 GND RETURN KA)			
B-B8-J-BOX	3 PHASE:	4.048	4.	Z1= 68.5702	4.799	4.432
	SLG DUTY:	4.241	3.	Z2= 68.5702	4.594	
208. VOLTS	LN/LN	3.506		Z0= 61.7924		
	LN/LN/GND	4.534	(4.395 GND RETURN KA)			
B-B8-TXMR PRI	3 PHASE:	2.803	10.	Z1= 42.9149	4.052	3.458
	SLG DUTY:	2.300	10.	Z2= 42.9149	3.294	
480. VOLTS	LN/LN	2.427		Z0= 71.0579		
	LN/LN/GND	2.595	(1.950 GND RETURN KA)			
B-B8-TXMR SEC	3 PHASE:	4.261	4.	Z1= 65.1369	5.048	4.663
	SLG DUTY:	4.912	3.	Z2= 65.1369	5.471	
208. VOLTS	LN/LN	3.690		Z0= 40.5339		
	LN/LN/GND	5.027	(5.754 GND RETURN KA)			
B-B80-ATS-EQ	3 PHASE:	1.737	0.	Z1= 159.7594	1.737	1.737
	SLG DUTY:	1.061	0.	Z2= 159.7594	1.061	
208. VOLTS	LN/LN	1.505		Z0= 467.0194		
	LN/LN/GND	1.595	(0.762 GND RETURN KA)			
B-B80-E1	3 PHASE:	1.663	0.	Z1= 166.9553	1.663	1.663
	SLG DUTY:	1.013	0.	Z2= 166.9553	1.013	
208. VOLTS	LN/LN	1.440		Z0= 489.5692		
	LN/LN/GND	1.525	(0.727 GND RETURN KA)			
B-B80-LB-E	3 PHASE:	1.453	0.	Z1= 190.9939	1.453	1.453
	SLG DUTY:	0.881	0.	Z2= 190.9939	0.881	
208. VOLTS	LN/LN	1.259		Z0= 564.7808		
	LN/LN/GND	1.330	(0.631 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B80-PB-2	3 PHASE:	1.530	0.	Z1= 181.3700	1.530	1.530
	SLG DUTY:	0.930	0.	Z2= 181.3700	0.930	
208. VOLTS	LN/LN	1.325		Z0= 534.6887		
	LN/LN/GND	1.402	(0.666 GND RETURN KA)			
B-B82-ATS-EMER	3 PHASE:	4.210	2.	Z1= 65.9329	4.276	4.243
	SLG DUTY:	2.955	1.	Z2= 65.9329	2.970	
208. VOLTS	LN/LN	3.646		Z0= 151.3098		
	LN/LN/GND	3.990	(2.266 GND RETURN KA)			
B-B82-EMER	3 PHASE:	4.093	1.	Z1= 67.8144	4.153	4.123
	SLG DUTY:	2.858	1.	Z2= 67.8144	2.871	
208. VOLTS	LN/LN	3.545		Z0= 157.1756		
	LN/LN/GND	3.875	(2.185 GND RETURN KA)			
B-B82-EMERG-M	3 PHASE:	4.099	1.	Z1= 67.7189	4.159	4.129
	SLG DUTY:	2.865	1.	Z2= 67.7189	2.878	
208. VOLTS	LN/LN	3.550		Z0= 156.6293		
	LN/LN/GND	3.882	(2.192 GND RETURN KA)			
B-B92 GEN	3 PHASE:	9.218	15.	Z1= 30.1111	14.071	11.784
	SLG DUTY:	8.310	17.	Z2= 30.1111	12.825	
208. VOLTS	LN/LN	7.983		Z0= 40.0500		
	LN/LN/GND	8.641	(7.560 GND RETURN KA)			
B-B92-ATS	3 PHASE:	7.517	2.	Z1= 36.9243	8.035	7.778
	SLG DUTY:	6.108	2.	Z2= 36.9243	6.260	
208. VOLTS	LN/LN	6.510		Z0= 63.4703		
	LN/LN/GND	7.419	(5.107 GND RETURN KA)			
B-B92-EMDP	3 PHASE:	9.154	14.	Z1= 30.3210	13.762	11.586
	SLG DUTY:	8.177	14.	Z2= 30.3210	12.296	
208. VOLTS	LN/LN	7.928		Z0= 41.2346		
	LN/LN/GND	8.600	(7.385 GND RETURN KA)			
B-B92-EMDP-M	3 PHASE:	9.156	14.	Z1= 30.3161	13.783	11.598
	SLG DUTY:	8.184	14.	Z2= 30.3161	12.349	
208. VOLTS	LN/LN	7.929		Z0= 41.1597		
	LN/LN/GND	8.596	(7.396 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B92-PNL-E1	3 PHASE:	6.888	2.	Z1= 40.2955	7.116	7.003
	SLG DUTY:	5.372	1.	Z2= 40.2955	5.419	
208. VOLTS	LN/LN	5.966		Z0= 75.8704		
	LN/LN/GND	6.776	(4.363 GND RETURN KA)			
B-B93-EMDP	3 PHASE:	9.627	12.	Z1= 28.8317	14.278	12.077
	SLG DUTY:	8.359	12.	Z2= 28.8317	12.360	
208. VOLTS	LN/LN	8.338		Z0= 41.9846		
	LN/LN/GND	8.986	(7.384 GND RETURN KA)			
B-B93-EMDP-M	3 PHASE:	9.629	12.	Z1= 28.8279	14.298	12.089
	SLG DUTY:	8.367	12.	Z2= 28.8279	12.412	
208. VOLTS	LN/LN	8.339		Z0= 41.9078		
	LN/LN/GND	8.981	(7.395 GND RETURN KA)			
B-B93-EMDP1	3 PHASE:	9.563	12.	Z1= 29.0252	14.099	11.950
	SLG DUTY:	8.288	11.	Z2= 29.0252	12.146	
208. VOLTS	LN/LN	8.282		Z0= 42.4564		
	LN/LN/GND	8.932	(7.310 GND RETURN KA)			
B-B93-GEN	3 PHASE:	9.723	15.	Z1= 28.5467	14.777	12.394
	SLG DUTY:	8.579	17.	Z2= 28.5467	13.209	
208. VOLTS	LN/LN	8.421		Z0= 40.0500		
	LN/LN/GND	9.046	(7.669 GND RETURN KA)			
B-B94-ATS	3 PHASE:	8.464	3.	Z1= 32.7927	9.175	8.823
	SLG DUTY:	6.733	2.	Z2= 32.7927	6.987	
208. VOLTS	LN/LN	7.330		Z0= 58.6572		
	LN/LN/GND	8.221	(5.565 GND RETURN KA)			
B-B94-E1	3 PHASE:	6.995	2.	Z1= 39.6797	7.118	7.057
	SLG DUTY:	5.160	1.	Z2= 39.6797	5.182	
208. VOLTS	LN/LN	6.058		Z0= 83.3027		
	LN/LN/GND	6.766	(4.057 GND RETURN KA)			
B-B94-EMDP	3 PHASE:	10.034	12.	Z1= 27.6634	14.855	12.573
	SLG DUTY:	8.559	12.	Z2= 27.6634	12.642	
208. VOLTS	LN/LN	8.690		Z0= 41.9846		
	LN/LN/GND	9.339	(7.461 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B94-EMDP-M	3 PHASE:	10.035	12.	Z1= 27.6603	14.876	12.584
	SLG DUTY:	8.567	12.	Z2= 27.6603	12.696	
208. VOLTS	LN/LN	8.691		Z0= 41.9078		
	LN/LN/GND	9.334	(7.472 GND RETURN KA)			
B-B94-GEN	3 PHASE:	10.123	15.	Z1= 27.4188	15.355	12.887
	SLG DUTY:	8.782	16.	Z2= 27.4188	13.509	
208. VOLTS	LN/LN	8.767		Z0= 40.0500		
	LN/LN/GND	9.391	(7.749 GND RETURN KA)			
B-B95-EMDP	3 PHASE:	9.054	13.	Z1= 30.6561	13.544	11.422
	SLG DUTY:	8.062	12.	Z2= 30.6561	11.982	
208. VOLTS	LN/LN	7.841		Z0= 41.9846		
	LN/LN/GND	8.570	(7.265 GND RETURN KA)			
B-B95-EMDP-M	3 PHASE:	9.056	13.	Z1= 30.6506	13.563	11.433
	SLG DUTY:	8.069	13.	Z2= 30.6506	12.031	
208. VOLTS	LN/LN	7.843		Z0= 41.9078		
	LN/LN/GND	8.566	(7.276 GND RETURN KA)			
B-B95-GEN	3 PHASE:	9.162	16.	Z1= 30.2956	14.027	11.736
	SLG DUTY:	8.277	17.	Z2= 30.2956	12.795	
208. VOLTS	LN/LN	7.935		Z0= 40.0500		
	LN/LN/GND	8.645	(7.545 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
bB-B7-MC1	3 PHASE:	3.250	1.	Z1= 85.4029	3.253	3.252
	SLG DUTY:	1.995	1.	Z2= 85.4029	1.995	
208. VOLTS	LN/LN	2.815		Z0= 248.0377		
	LN/LN/GND	3.000	(	1.434 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO	NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
B-B10	EMRG TAP	208.	3.351	2.44	2.408	1.95
B-B17	ANIMALRM	208.	1.749	0.60	1.085	0.48
B-B17	ATS	208.	2.265	0.71	1.437	0.56
B-B17	EMERG	208.	2.242	0.71	1.421	0.56
B-B17	NEB1	208.	1.674	0.58	1.036	0.47
B-B17	NEB2	208.	1.917	0.62	1.195	0.49
B-B18	1STFL	208.	2.362	0.92	1.535	0.74
B-B18	1STFL-M	208.	2.549	1.00	1.676	0.80
B-B18	2ND-FL-M	208.	2.549	1.00	1.676	0.80
B-B18	2NDFL	208.	2.197	0.86	1.414	0.69
B-B18	ATS-EMRG	208.	2.638	1.04	1.742	0.82
B-B18	EMERG	208.	2.536	1.00	1.665	0.79
B-B18	EMERG-M	208.	2.539	1.00	1.668	0.79
B-B18	TAP BOX	208.	2.580	1.02	1.699	0.81
B-B2	ATS-CRIT	208.	4.887	2.82	2.764	1.71
B-B2	ATS-LED3	208.	2.811	1.62	1.690	1.25
B-B2	ATS-LS	208.	4.246	2.61	2.465	1.68
B-B2	BATTERYCH	208.	2.553	0.83	1.429	0.68
B-B2	CRIT PNL	208.	4.874	2.83	2.749	1.70
B-B2	DENTAL LB	208.	3.939	1.55	2.193	1.14
B-B2	DENTSUCPM	208.	3.619	2.32	1.969	1.22
B-B2	ELEV	208.	3.908	2.37	2.237	1.53
B-B2	ELEV-P1	208.	4.111	2.58	2.224	1.45
B-B2	EMERG-M	208.	2.771	1.60	1.666	1.23
B-B2	EMERG-PNL	208.	2.768	1.60	1.663	1.23
B-B2	EPNL-B	208.	4.440	2.56	2.658	1.69
B-B2	EPNL-B-M	208.	4.441	2.56	2.660	1.69
B-B2	L12	208.	3.693	2.04	2.134	1.42
B-B2	L2A	208.	4.191	2.10	2.368	1.43
B-B2	L2E	208.	3.693	2.04	2.134	1.42
B-B2	L9E	208.	3.556	1.75	2.040	1.27
B-B2	LB1E	208.	3.556	1.75	2.040	1.27
B-B2	LB2E	208.	3.738	1.41	2.080	1.06
B-B2	MEDAIRCOM	208.	3.900	1.72	2.118	1.12
B-B2	NEWLAB	208.	2.743	1.57	1.647	1.22
B-B2	NEWLAB-M	208.	2.747	1.58	1.650	1.22
B-B2	PNL 1	208.	2.771	1.60	1.666	1.23

B-B2-PNL LS	208.	4.220	2.61	2.439	1.66
B-B2-PNL-2	208.	2.781	1.58	1.670	1.22
B-B2-PNL-3-M	208.	2.739	1.54	1.644	1.20
B-B2-PNL-L11	208.	4.301	2.29	2.394	1.46
B-B2-PNL-M1	208.	2.670	1.47	1.599	1.15
B-B2-POD2PP	208.	3.747	2.16	2.170	1.48
B-B22-ATS-EMER	480.	1.772	15.61	1.757	13.48

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO	NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
B-B22-EMERG		480.	1.750	14.08	1.724	11.61
B-B22-EMERG-M		480.	1.750	14.13	1.725	11.70
B-B22-GEN		480.	1.802	20.00	1.802	20.00
B-B22-L1		208.	1.941	2.65	2.265	2.22
B-B22-L1-M		208.	1.943	2.66	2.270	2.23
B-B22-L2		208.	1.941	2.65	2.265	2.22
B-B22-L2-M		208.	1.943	2.66	2.270	2.23
B-B22-L3		208.	1.944	2.67	2.268	2.23
B-B22-L3-M		208.	1.946	2.67	2.273	2.24
B-B22-P1		480.	1.735	12.42	1.702	9.79
B-B22-P2		480.	1.735	12.42	1.702	9.79
B-B22-T2-PRI		480.	1.743	12.68	1.714	10.06
B-B22-T2-SEC		208.	1.979	2.76	2.347	2.37
B-B22-T22-SEC		208.	1.976	2.75	2.344	2.36
B-B22-T3 PRI		480.	1.740	12.08	1.708	9.44
B-B22-T4-PRI		480.	1.740	12.08	1.708	9.44
B-B22-T4-SEC		208.	1.976	2.75	2.344	2.36
B-B3-1ST FL		208.	4.999	2.47	3.762	1.90
B-B3-ALDN KIT		208.	5.421	1.34	3.387	1.05
B-B3-ATS-COMP		208.	7.460	4.46	5.117	2.97
B-B3-ATSTEL RM		208.	5.766	4.12	4.543	3.22
B-B3-COMP		208.	5.796	1.81	3.714	1.38
B-B3-COMP AC		208.	2.783	0.47	1.629	0.39
B-B3-COMP MF		208.	6.718	3.30	4.370	2.16
B-B3-DBL GRILL		208.	4.628	2.18	3.419	1.68
B-B3-ELEV		208.	6.437	2.65	4.079	1.68
B-B3-EP1		208.	5.658	4.02	4.434	3.13
B-B3-EP1-M		208.	5.668	4.04	4.450	3.15
B-B3-EP2		208.	7.385	4.38	4.971	2.87
B-B3-EP2-M		208.	7.389	4.39	4.987	2.88
B-B3-HYDRO ELV		208.	5.609	2.22	3.399	1.35
B-B3-KP1		208.	4.817	2.69	3.623	2.09
B-B3-MECH HVAC		208.	6.165	2.09	3.991	1.57
B-B3-MECH RM		208.	6.595	3.13	4.376	2.22
B-B3-P7		208.	4.785	1.99	3.526	1.52
B-B3-STRT PNL		208.	6.558	2.49	4.296	1.82
B-B3-TELE PNL		208.	5.173	3.13	3.960	2.43

B-B3-TRAY LINE	208.	6.165	2.09	3.991	1.57
B-B4-4EQD	208.	6.547	3.50	4.109	2.39
B-B4-4EQD-M	208.	6.552	3.50	4.120	2.39
B-B4-ATS-EQ	208.	6.637	3.53	4.233	2.44

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B4-ATS-LS	208.	4.196	1.52	2.945	1.19
B-B4-ELEV#4	208.	5.106	2.33	2.981	1.45
B-B4-EQ1	208.	5.625	2.26	3.483	1.70
B-B4-EQ10	208.	4.815	1.72	2.952	1.36
B-B4-EQ11	208.	5.239	1.97	3.228	1.52
B-B4-EQ12	208.	4.411	1.53	2.693	1.23
B-B4-EQ15	208.	4.686	1.65	2.869	1.31
B-B4-EQ2	208.	6.158	2.84	3.842	2.04
B-B4-EQ3	208.	5.112	1.88	3.145	1.47
B-B4-EQ5	208.	5.175	1.92	3.186	1.49
B-B4-EQ6	208.	5.649	2.28	3.499	1.72
B-B4-EQ7	208.	4.722	1.67	2.892	1.33
B-B4-EQ9	208.	4.192	1.44	2.554	1.17
B-B4-HYDROELEV	208.	5.156	2.81	2.896	1.37
B-B4-LP15	208.	2.991	1.01	1.967	0.80
B-B4-LP15-M	208.	2.995	1.01	1.972	0.80
B-B4-LS1	208.	3.242	1.13	2.165	0.89
B-B4-LS1-M	208.	3.246	1.13	2.170	0.89
B-B4-LS10	208.	2.692	0.96	1.753	0.77
B-B4-LS10-M	208.	2.695	0.96	1.757	0.77
B-B4-LS11	208.	2.876	1.01	1.888	0.81
B-B4-LS11-M	208.	2.879	1.01	1.892	0.81
B-B4-LS12	208.	3.034	1.06	2.007	0.84
B-B4-LS12-M	208.	3.038	1.06	2.011	0.84
B-B4-LS13	208.	3.064	1.07	2.029	0.85
B-B4-LS13-M	208.	3.068	1.07	2.034	0.85
B-B4-LS14	208.	3.064	1.07	2.029	0.85
B-B4-LS14-M	208.	3.068	1.07	2.034	0.85
B-B4-LS2	208.	3.673	1.29	2.505	1.01
B-B4-LS2-M	208.	3.678	1.29	2.512	1.02
B-B4-LS3	208.	3.888	1.38	2.682	1.09
B-B4-LS3-M	208.	3.895	1.38	2.690	1.09
B-B4-LS4	208.	3.415	1.19	2.300	0.94
B-B4-LS4-M	208.	3.420	1.19	2.306	0.94
B-B4-LS5	208.	2.858	1.01	1.875	0.80
B-B4-LS5-M	208.	2.861	1.01	1.879	0.80
B-B4-LS6	208.	3.064	1.07	2.029	0.85

B-B4-LS6-M	208.	3.068	1.07	2.034	0.85
B-B4-LS7	208.	3.242	1.13	2.165	0.89
B-B4-LS7-M	208.	3.246	1.13	2.170	0.89
B-B4-LS8	208.	3.275	1.14	2.191	0.90

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B4-LS8-M	208.	3.280	1.14	2.196	0.90
B-B4-LS9	208.	3.275	1.14	2.191	0.90
B-B4-LS9-M	208.	3.280	1.14	2.196	0.90
B-B4-LSD	208.	4.133	1.50	2.890	1.18
B-B4-LSD-M	208.	4.141	1.50	2.899	1.18
B-B4-PP1	208.	5.895	2.74	3.680	2.00
B-B4-PP2	208.	2.991	1.01	1.967	0.80
B-B4-PP2-M	208.	2.995	1.01	1.972	0.80
B-B5-ATS-EQ	208.	4.008	2.99	2.072	1.83
B-B5-ATS-LS	208.	1.867	1.04	1.207	0.85
B-B5-EQ1	208.	3.503	2.05	1.820	1.46
B-B5-EQ2	208.	3.471	2.01	1.804	1.44
B-B5-EQ5	208.	3.503	2.05	1.820	1.46
B-B5-EQ6	208.	3.579	2.56	1.797	1.48
B-B5-EQD	208.	4.000	3.00	2.062	1.83
B-B5-HYDR ELEV	208.	3.800	2.77	1.935	1.64
B-B5-LS1	208.	1.777	1.00	1.143	0.82
B-B5-LS2	208.	1.624	0.93	1.035	0.77
B-B5-LS4	208.	1.568	0.91	0.997	0.75
B-B5-LSD	208.	1.855	1.03	1.198	0.85
B-B5-LSD-M	208.	1.856	1.03	1.199	0.85
B-B55-LS3	208.	1.711	0.97	1.096	0.80
B-B6-ATS-EQ	208.	4.318	3.15	2.499	1.98
B-B6-ATS-LS	208.	2.625	1.15	1.728	0.93
B-B6-EQ1	208.	4.021	2.54	2.298	1.70
B-B6-EQ2	208.	3.678	2.16	2.106	1.53
B-B6-EQ3	208.	3.944	2.53	2.259	1.70
B-B6-EQ4	208.	3.476	1.94	1.991	1.42
B-B6-EQ5	208.	3.720	2.21	2.131	1.56
B-B6-EQ8	208.	3.991	3.54	2.186	1.79
B-B6-EQD	208.	4.262	3.18	2.445	1.96
B-B6-EQD-M	208.	4.263	3.18	2.447	1.96
B-B6-EQMACH	208.	4.021	2.54	2.298	1.70
B-B6-LS1	208.	2.362	1.05	1.535	0.85
B-B6-LS2	208.	2.473	1.08	1.614	0.88
B-B6-LS3	208.	2.362	1.05	1.535	0.85
B-B6-LS4	208.	2.362	1.05	1.535	0.85

B-B6-LS5	208.	2.249	1.00	1.453	0.82
B-B6-LS6	208.	2.249	1.00	1.453	0.82
B-B6-LSD	208.	2.588	1.14	1.701	0.93
B-B6-LSD-M	208.	2.589	1.14	1.702	0.93

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E 3 PHASE	X/R	F A U L T LINE/GRND	D U T I E S (KA) X/R
B-B61-ATS-EQD	208.	3.632	2.76	2.174	1.89
B-B61-ATS-LSD	208.	2.154	1.07	1.398	0.88
B-B61-COMP RM	208.	3.414	2.53	2.033	1.77
B-B61-ELEV	208.	3.324	2.81	1.910	1.70
B-B61-EQ1	208.	3.157	2.06	1.871	1.52
B-B61-EQ2	208.	3.449	2.50	2.050	1.75
B-B61-EQ4	208.	3.148	1.97	1.861	1.46
B-B61-EQA	208.	3.557	2.73	2.118	1.86
B-B61-EQD	208.	3.586	2.77	2.135	1.88
B-B61-KITCHEN	208.	2.016	1.05	1.302	0.86
B-B61-LS1	208.	1.837	0.94	1.172	0.78
B-B61-LS2	208.	1.964	0.97	1.260	0.80
B-B61-LS3	208.	1.766	0.92	1.123	0.76
B-B61-LS4	208.	1.837	0.94	1.172	0.78
B-B61-LS5	208.	1.766	0.92	1.123	0.76
B-B61-LSD	208.	2.131	1.06	1.381	0.87
B-B61-LSD-M	208.	2.133	1.06	1.383	0.87
B-B62-ATS-EQD	208.	3.088	2.71	1.745	1.79
B-B62-ATS-LSD	208.	1.672	0.99	1.070	0.82
B-B62-ATTC PNL	208.	2.761	2.15	1.551	1.51
B-B62-ELEV-1	208.	2.761	2.15	1.551	1.51
B-B62-ELEV-2	208.	2.902	2.83	1.585	1.61
B-B62-EQ	208.	2.998	2.55	1.681	1.69
B-B62-EQD	208.	3.049	2.72	1.711	1.76
B-B62-LS1	208.	1.443	0.87	0.909	0.72
B-B62-LS2	208.	1.549	0.93	0.983	0.77
B-B62-LS3	208.	1.490	0.92	0.944	0.76
B-B62-LS4	208.	1.555	0.95	0.989	0.79
B-B62-LSD	208.	1.644	0.99	1.050	0.82
B-B62-LSD-M	208.	1.645	0.99	1.051	0.82
B-B62-PAD RM	208.	2.929	2.41	1.643	1.63
B-B7-ATS-EQ	208.	5.486	3.20	3.738	2.34
B-B7-ATS-LS	208.	4.007	1.42	2.759	1.13
B-B7-ELEV	208.	4.677	2.79	2.997	1.85
B-B7-EQ1	208.	4.481	2.08	2.942	1.60
B-B7-EQ2	208.	4.987	2.66	3.323	1.98
B-B7-EQ4	208.	4.623	2.12	3.039	1.62

B-B7-EQD	208.	5.268	3.14	3.540	2.27
B-B7-LS1	208.	3.177	1.11	2.103	0.89
B-B7-LS2	208.	3.549	1.20	2.383	0.95
B-B7-LS4	208.	3.104	1.08	2.049	0.87

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B7-LS5	208.	3.476	1.21	2.333	0.97
B-B7-LSD	208.	3.949	1.41	2.711	1.12
B-B7-LSD-M	208.	3.955	1.41	2.719	1.12
B-B7-MCC-1	208.	4.688	1.92	3.061	1.48
B-B70 GEN-M	208.	2.860	18.34	2.849	17.30
B-B70-ATS-EQD	208.	2.762	13.56	2.703	10.99
B-B70-ATS-LSD	208.	2.751	10.26	2.683	7.64
B-B70-EM-TAP	208.	2.858	18.12	2.843	16.79
B-B70-EQ1	208.	2.411	3.97	2.176	2.65
B-B70-EQ2	208.	2.249	3.02	1.949	2.02
B-B70-EQ3	208.	2.355	3.58	2.097	2.39
B-B70-EQ4	208.	2.197	2.81	1.880	1.88
B-B70-EQ5	208.	2.301	3.27	2.022	2.18
B-B70-EQ6	208.	2.147	2.64	1.815	1.77
B-B70-EQD	208.	2.734	12.47	2.661	9.78
B-B70-EQD-M	208.	2.736	12.56	2.666	9.93
B-B70-GEN	208.	2.883	20.00	2.883	20.00
B-B70-LS1	208.	2.247	2.25	1.891	1.46
B-B70-LS2	208.	2.081	1.82	1.670	1.19
B-B70-LS3	208.	2.299	2.84	1.996	1.87
B-B70-LS4	208.	2.121	2.24	1.756	1.48
B-B70-LS5	208.	2.238	2.60	1.912	1.71
B-B70-LS6	208.	2.064	2.10	1.686	1.39
B-B70-LSD	208.	2.723	9.64	2.640	7.07
B-B70-LSD-M	208.	2.725	9.70	2.645	7.14
B-B78-78AE1	208.	2.623	1.05	1.730	0.83
B-B78-ATS-CRD	208.	5.124	1.94	3.806	1.46
B-B78-ATS-E1	208.	5.713	3.71	4.480	2.87
B-B78-ATS-LS1	208.	5.264	2.21	3.966	1.67
B-B78-ATSG9578	208.	2.639	1.04	1.740	0.82
B-B78-CRD	208.	2.961	1.13	1.981	0.89
B-B78-E1	208.	5.642	3.65	4.412	2.83
B-B78-LSD	208.	5.181	2.16	3.889	1.64
B-B8 HYDRO ELV	480.	2.404	2.63	1.752	1.59
B-B8-480V ATS	480.	2.812	11.23	2.319	11.06
B-B8-480V PNL	480.	2.809	10.90	2.309	10.53
B-B8-CMOP	208.	3.760	2.71	3.891	1.83

B-B8-COMP	480.	1.945	1.39	1.286	0.83
B-B8-ELEV	208.	3.979	3.98	4.041	2.48
B-B8-FDR	208.	4.160	3.91	4.582	2.75
B-B8-FLEXPMACH	480.	2.088	1.33	1.500	0.99

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B8-GEN	480.	2.832	13.95	2.380	16.12
B-B8-J-BOX	208.	4.048	3.94	4.241	2.57
B-B8-TXMR PRI	480.	2.803	10.35	2.300	9.76
B-B8-TXMR SEC	208.	4.261	3.92	4.912	2.97
B-B80-ATS-EQ	208.	1.737	0.48	1.061	0.38
B-B80-E1	208.	1.663	0.47	1.013	0.38
B-B80-LB-E	208.	1.453	0.45	0.881	0.36
B-B80-PB-2	208.	1.530	0.46	0.930	0.37
B-B82-ATS-EMER	208.	4.210	1.52	2.955	1.19
B-B82-EMER	208.	4.093	1.49	2.858	1.17
B-B82-EMERG-M	208.	4.099	1.49	2.865	1.17
B-B92 GEN	208.	9.218	15.40	8.310	16.98
B-B92-ATS	208.	7.517	2.38	6.108	1.71
B-B92-EMDP	208.	9.154	13.60	8.177	13.63
B-B92-EMDP-M	208.	9.156	13.74	8.184	13.99
B-B92-PNL-E1	208.	6.888	1.85	5.372	1.33
B-B93-EMDP	208.	9.627	12.29	8.359	12.03
B-B93-EMDP-M	208.	9.629	12.41	8.367	12.31
B-B93-EMDP1	208.	9.563	11.79	8.288	11.31
B-B93-GEN	208.	9.723	14.84	8.579	16.63
B-B94-ATS	208.	8.464	2.58	6.733	1.93
B-B94-E1	208.	6.995	1.56	5.160	1.15
B-B94-EMDP	208.	10.034	12.14	8.559	11.94
B-B94-EMDP-M	208.	10.035	12.25	8.567	12.22
B-B94-GEN	208.	10.123	14.60	8.782	16.50
B-B95-EMDP	208.	9.054	13.09	8.062	12.48
B-B95-EMDP-M	208.	9.056	13.21	8.069	12.77
B-B95-GEN	208.	9.162	15.80	8.277	17.26
BUS-0612	208.	2.762	13.56	2.703	10.99
BUS-0613	208.	2.751	10.26	2.683	7.64
BUS-0676	208.	7.517	2.38	6.108	1.71
BUS-0677	208.	2.638	1.04	1.742	0.82
BUS-0678	208.	3.101	0.69	1.991	0.52
BUS-0680	208.	2.265	0.71	1.437	0.56
BUS-0685	208.	7.806	2.26	6.184	1.66
BUS-0688	208.	1.737	0.48	1.061	0.38
BUS-0689	208.	4.210	1.52	2.955	1.19

BUS-0691	208.	6.637	3.53	4.233	2.44
BUS-0692	208.	4.008	2.99	2.072	1.83
BUS-0694	208.	4.196	1.52	2.945	1.19
BUS-0695	208.	1.867	1.04	1.207	0.85

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO	NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
BUS-0700		208.	3.088	2.71	1.745	1.79
BUS-0701		208.	4.318	3.15	2.499	1.98
BUS-0702		208.	5.486	3.20	3.738	2.34
BUS-0703		208.	3.632	2.76	2.174	1.89
BUS-0704		208.	8.464	2.58	6.733	1.93
BUS-0705		208.	2.154	1.07	1.398	0.88
BUS-0706		208.	1.672	0.99	1.070	0.82
BUS-0707		208.	2.625	1.15	1.728	0.93
BUS-0708		208.	4.007	1.42	2.759	1.13
BUS-0712		208.	5.124	1.94	3.806	1.46
BUS-0713		208.	2.639	1.04	1.740	0.82
BUS-0714		208.	5.264	2.21	3.966	1.67
BUS-0715		208.	5.713	3.71	4.480	2.87
BUS-0718		208.	5.766	4.12	4.543	3.22
BUS-0719		208.	7.460	4.46	5.117	2.97
BUS-0722		208.	4.246	2.61	2.465	1.68
BUS-0723		208.	2.811	1.62	1.690	1.25
BUS-0725		480.	2.812	11.23	2.319	11.06
BUS-0727		480.	1.772	15.61	1.757	13.48
BUS-0736		208.	4.887	2.82	2.764	1.71
bB-B7-MC1		208.	3.250	0.89	1.995	0.72

311 FAULTED BUSES, 330 BRANCHES, 26 CONTRIBUTIONS
UNBALANCED FAULTS REQUESTED

*** SHORT CIRCUIT STUDY COMPLETE ***

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B10 EMRG TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ANIMALRM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2ND-FL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2NDFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-ATS-EMRG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-TAP BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-CRIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LED3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-BATTERYCH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-CRIT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTAL LB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTSUCPM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-ELEV-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EPNL-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EPNL-B-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L9E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB1E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MEDAIRCOM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL 1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-L11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-M1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-POD2PP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-ATS-EMER	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B22-EMERG	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-EMERG-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-GEN	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-L1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-P1	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-P2	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-T2-PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-T2-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-T22-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-T3 PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-T4-PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-T4-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-1ST FL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ALDN KIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ATS-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ATSTEL RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B3-COMP AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP MF	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-DBL GRILL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-HYDRO ELV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-KP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH HVAC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-P7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-STRT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TELE PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TRAY LINE	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-4EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-4EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ELEV#4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-EQ10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-HYDROELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS12-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LS13-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-PP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-HYDR ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B55-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQMACH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-COMP RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B61-KITCHEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATTC PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-PAD RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MCC-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70 GEN-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EM-TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-78AE1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATSG9578	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8 HYDRO ELV	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B8-480V ATS	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-480V PNL	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-CMOP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-COMP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FDR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FLEXPMACH	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-GEN	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-J-BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-TXMR PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-TXMR SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-LB-E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-PB-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-ATS-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92 GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B92-PNL-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-EMDP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B95-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B95-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B95-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
bB-B7-MC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

M O M E N T A R Y D U T Y S U M M A R Y R E P O R T

PRE FAULT VOLTAGE: 1.0000

MODEL TRANSFORMER TAPS: NO

BUS NO	RECORD NAME	VOLTAGE L-L	* 3 P H A S E * E/Z	X/R	* * * SLG * * * E/Z	X/R

0 FAULTED BUSES, 330 BRANCHES, 26 CONTRIBUTIONS

UNBALANCED FAULTS REQUESTED

*** SHORT CIRCUIT STUDY COMPLETE ***

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B10 EMRG TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ANIMALRM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2ND-FL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2NDFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-ATS-EMRG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-TAP BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-CRIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LED3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-BATTERYCH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-CRIT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTAL LB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTSUCPM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-ELEV-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EPNL-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EPNL-B-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L9E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB1E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MEDAIRCOM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL 1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-L11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-M1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-POD2PP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-ATS-EMER	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B22-EMERG	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-EMERG-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-GEN	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-L1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-P1	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-P2	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-T2-PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-T2-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-T22-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-T3 PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-T4-PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-T4-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-1ST FL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ALDN KIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ATS-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ATSTEL RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B3-COMP AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP MF	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-DBL GRILL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-HYDRO ELV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-KP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH HVAC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-P7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-STRT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TELE PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TRAY LINE	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-4EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-4EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ELEV#4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-EQ10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-HYDROELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS12-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LS13-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-PP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-HYDR ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B55-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQMACH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-COMP RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B61-KITCHEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATTC PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-PAD RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MCC-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70 GEN-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EM-TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-78AE1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATSG9578	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8 HYDRO ELV	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B8-480V ATS	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-480V PNL	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-CMOP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-COMP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FDR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FLEXPMACH	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-GEN	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-J-BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-TXMR PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-TXMR SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-LB-E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-PB-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-ATS-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92 GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B92-PNL-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-EMDP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B95-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B95-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B95-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
bB-B7-MC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-3 EMERGENCY GENERATORS ON LINE AND ALL MOTORS ON LINE

I N T E R R U P T I N G D U T Y S U M M A R Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

BUS NO	RECORD NAME	VOLTAGE L-L	NACD RATIO	* 3 P H A S E * E/Z KA	* 3 P H A S E * X/R	* * * S L G * * * E/Z KA	* * * S L G * * * X/R

0 FAULTED BUSES, 330 BRANCHES, 26 CONTRIBUTIONS
UNBALANCED FAULTS REQUESTED

*** SHORT CIRCUIT STUDY COMPLETE ***

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE
Dec 28, 2004 15:02:34

ALL INFORMATION PRESENTED IS FOR REVIEW, APPROVAL
INTERPRETATION AND APPLICATION BY A REGISTERED ENGINEER ONLY
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SKM POWER*TOOLS FOR WINDOWS
A_FAULT SHORT CIRCUIT ANALYSIS REPORT
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T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B1-ATS-EMERG	FAULT:	2.939 KA AT	-40.01 DEG (	1.06 MVA)	X/R:	0.84
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0313 + J	0.0263	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.939 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.939 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.939 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.939 KA				
	CONTRIBUTIONS: BUS-0678	2.939 KA	ANG:	-40.01		
B-B1-MDP	FAULT:	1.542 KA AT	-75.07 DEG (	0.56 MVA)	X/R:	3.75
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0201 + J	0.0752	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.542 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.900 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.610 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.542 KA				
	CONTRIBUTIONS: B-B1-MDP-M	1.542 KA	ANG:	-75.07		
B-B1-MDP-M	FAULT:	1.572 KA AT	-75.67 DEG (	0.57 MVA)	X/R:	3.92
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0189 + J	0.0740	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.572 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.958 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.659 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.572 KA				
	CONTRIBUTIONS: B-T-B1-SEC	1.572 KA	ANG:	-75.67		
B-B10 DISC	FAULT:	1.673 KA AT	-76.49 DEG (	0.60 MVA)	X/R:	4.16
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0168 + J	0.0698	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.673 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.114 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.792 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.673 KA				
	CONTRIBUTIONS: B-T-B10-SEC	1.673 KA	ANG:	-76.49		
B-B10 EMRG TAP	FAULT:	3.017 KA AT	-70.07 DEG (	1.09 MVA)	X/R:	2.76
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0136 + J	0.0374	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.017 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.424 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.017 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.017 KA				
	CONTRIBUTIONS: B-B95-EMDP	3.017 KA	ANG:	-70.07		
B-B10-MDP	FAULT:	1.638 KA AT	-75.67 DEG (	0.59 MVA)	X/R:	3.91
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0182 + J	0.0710	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.638 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.039 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.728 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.638 KA			
	CONTRIBUTIONS: B-B10 DISC	1.638 KA	ANG:	-75.67	
B-B12-MAP-M	FAULT: 1.523 KA AT -75.27 DEG (	0.55 MVA)	X/R:	3.80	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0200 + J	0.0762	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.523 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.883 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.596 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.523 KA			
	CONTRIBUTIONS: B-T-B12-SEC	1.523 KA	ANG:	-75.27	
B-B12-MDP	FAULT: 1.523 KA AT -75.26 DEG (	0.55 MVA)	X/R:	3.80	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0201 + J	0.0763	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.523 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.882 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.595 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.523 KA			
	CONTRIBUTIONS: B-B12-MAP-M	1.523 KA	ANG:	-75.26	
B-B13-APT-13	FAULT: 1.562 KA AT -76.02 DEG (	0.65 MVA)	X/R:	4.02	
	VOLTAGE: 240. EQUIV. IMPEDANCE=	0.0214 + J	0.0861	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.562 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.958 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.659 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.562 KA			
	CONTRIBUTIONS: B-B13-MDP	1.562 KA	ANG:	-76.02	
B-B13-APT-14	FAULT: 1.512 KA AT -78.04 DEG (	0.63 MVA)	X/R:	4.72	
	VOLTAGE: 240. EQUIV. IMPEDANCE=	0.0190 + J	0.0896	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.512 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.968 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.668 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.512 KA			
	CONTRIBUTIONS: B-B13-MDP	1.512 KA	ANG:	-78.04	
B-B13-APT-15	FAULT: 1.409 KA AT -77.10 DEG (	0.59 MVA)	X/R:	4.37	
	VOLTAGE: 240. EQUIV. IMPEDANCE=	0.0220 + J	0.0959	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.409 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.801 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.527 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.409 KA		
	CONTRIBUTIONS: B-B13-MDP	1.409 KA	ANG:	-77.10
B-B13-GARAGE	FAULT: 1.457 KA AT -73.44 DEG (0.61 MVA)		X/R:	3.36
	VOLTAGE: 240. EQUIV. IMPEDANCE= 0.0271 + J 0.0911 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.457 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.745 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.479 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.457 KA		
	CONTRIBUTIONS: B-B13-MDP	1.457 KA	ANG:	-73.44
B-B13-MDP	FAULT: 1.636 KA AT -79.78 DEG (0.68 MVA)		X/R:	5.55
	VOLTAGE: 240. EQUIV. IMPEDANCE= 0.0150 + J 0.0834 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.636 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.205 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.869 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.680 KA		
	CONTRIBUTIONS: B-B13-MDP-M	1.636 KA	ANG:	-79.78
B-B13-MDP-M	FAULT: 1.636 KA AT -79.79 DEG (0.68 MVA)		X/R:	5.55
	VOLTAGE: 240. EQUIV. IMPEDANCE= 0.0150 + J 0.0833 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.636 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.206 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.869 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.680 KA		
	CONTRIBUTIONS: B-B13-TXMR SEC	1.636 KA	ANG:	-79.79
B-B13-MGR H16	FAULT: 1.195 KA AT -65.09 DEG (0.50 MVA)		X/R:	2.15
	VOLTAGE: 240. EQUIV. IMPEDANCE= 0.0488 + J 0.1052 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.195 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.267 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.195 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.195 KA		
	CONTRIBUTIONS: B-B13-MDP	1.195 KA	ANG:	-65.09

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B13-TXMR SEC	FAULT:	1.702 KA AT	-80.91 DEG (	0.71 MVA)	X/R:	6.25
	VOLTAGE:	240.	EQUIV. IMPEDANCE=	0.0129 + J 0.0804		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.702 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.348 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.990 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.789 KA			
	CONTRIBUTIONS: B-T-13-PRI		1.702 KA		ANG:	-80.91
B-B13-UNKNOWN	FAULT:	1.562 KA AT	-76.02 DEG (	0.65 MVA)	X/R:	4.02
	VOLTAGE:	240.	EQUIV. IMPEDANCE=	0.0214 + J 0.0861		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.562 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.958 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.659 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.562 KA			
	CONTRIBUTIONS: B-B13-MDP		1.562 KA		ANG:	-76.02
B-B17-A/C	FAULT:	1.816 KA AT	-77.45 DEG (	0.65 MVA)	X/R:	4.49
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0144 + J 0.0645		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.816 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.337 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.981 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.816 KA			
	CONTRIBUTIONS: B-B17-DP		1.816 KA		ANG:	-77.45
B-B17-A/C-2	FAULT:	1.794 KA AT	-75.17 DEG (	0.65 MVA)	X/R:	3.78
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0171 + J 0.0647		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.794 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.214 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.876 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.794 KA			
	CONTRIBUTIONS: B-B17-DP		1.794 KA		ANG:	-75.17
B-B17-AC1	FAULT:	1.794 KA AT	-75.17 DEG (	0.65 MVA)	X/R:	3.78
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0171 + J 0.0647		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.794 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.214 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.876 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.794 KA			
	CONTRIBUTIONS: B-B17-DP		1.794 KA		ANG:	-75.17
B-B17-ACB	FAULT:	1.774 KA AT	-73.25 DEG (	0.64 MVA)	X/R:	3.32
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0195 + J 0.0648		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.774 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.118 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.795 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.774 KA			
	CONTRIBUTIONS: B-B17-DP	1.774 KA	ANG:	-73.25	
B-B17-ANIMALRM	FAULT: 1.704 KA AT -34.24 DEG (	0.61 MVA)	X/R:	0.68	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0583 + J	0.0397	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.704 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.704 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.704 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.704 KA			
	CONTRIBUTIONS: B-B17-EMERG	1.704 KA	ANG:	-34.24	
B-B17-ATS	FAULT: 2.177 KA AT -39.45 DEG (	0.78 MVA)	X/R:	0.82	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0426 + J	0.0350	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.177 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.177 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.177 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.177 KA			
	ATS-B17 BUS-0680	2.177 KA	ANG:	-39.45	
B-B17-DP	FAULT: 1.851 KA AT -78.36 DEG (	0.67 MVA)	X/R:	4.85	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0131 + J	0.0635	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.851 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.425 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.055 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.851 KA			
	CONTRIBUTIONS: B-B17-MAIN	1.851 KA	ANG:	-78.36	
B-B17-EMAIN	FAULT: 1.916 KA AT -79.43 DEG (	0.69 MVA)	X/R:	5.36	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0115 + J	0.0616	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    1.916 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.564 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.173 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   1.953 KA
                CONTRIBUTIONS:  B-B17-MAIN         1.916 KA      ANG:   -79.43

 B-B17-EMERG    FAULT:    2.156 KA AT  -39.29 DEG (   0.78 MVA)  X/R:     0.82
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0431 + J  0.0353  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.156 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.156 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.156 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.156 KA
                CONTRIBUTIONS:  B-B17-ATS          2.156 KA      ANG:   -39.29

 B-B17-MAIN     FAULT:    1.923 KA AT  -79.74 DEG (   0.69 MVA)  X/R:     5.53
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0111 + J  0.0615  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    1.923 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.590 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.195 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   1.973 KA
                CONTRIBUTIONS:  B-T-B17-SEC        1.923 KA      ANG:   -79.74

 B-B17-NEB1     FAULT:    1.634 KA AT  -33.48 DEG (   0.59 MVA)  X/R:     0.66
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0613 + J  0.0405  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    1.634 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   1.634 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   1.634 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   1.634 KA
                CONTRIBUTIONS:  B-B17-EMERG        1.634 KA      ANG:   -33.48

 B-B17-NEB2     FAULT:    1.861 KA AT  -35.17 DEG (   0.67 MVA)  X/R:     0.70
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0527 + J  0.0372  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    1.861 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   1.861 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   1.861 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   1.861 KA
                CONTRIBUTIONS:  B-B17-EMERG        1.861 KA      ANG:   -35.17
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B17-NP11 FAULT: 1.741 KA AT -70.26 DEG (0.63 MVA) X/R: 2.79
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0233 + J 0.0649 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.741 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.982 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.741 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.741 KA
CONTRIBUTIONS: B-B17-DP 1.741 KA ANG: -70.26

B-B17-NP12 FAULT: 1.813 KA AT -77.18 DEG (0.65 MVA) X/R: 4.39
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0147 + J 0.0646 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.813 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.321 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.967 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.813 KA
CONTRIBUTIONS: B-B17-DP 1.813 KA ANG: -77.18

B-B17-NP21 FAULT: 1.794 KA AT -75.17 DEG (0.65 MVA) X/R: 3.78
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0171 + J 0.0647 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.794 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.214 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.876 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.794 KA
CONTRIBUTIONS: B-B17-DP 1.794 KA ANG: -75.17

B-B17-NP22 FAULT: 1.794 KA AT -75.17 DEG (0.65 MVA) X/R: 3.78
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0171 + J 0.0647 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.794 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.214 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.876 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.794 KA
CONTRIBUTIONS: B-B17-DP 1.794 KA ANG: -75.17

B-B17-NPA1 FAULT: 1.794 KA AT -75.17 DEG (0.65 MVA) X/R: 3.78
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0171 + J 0.0647 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.794 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.214 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.876 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.794 KA
CONTRIBUTIONS: B-B17-DP 1.794 KA ANG: -75.17

B-B17-NPB1 FAULT: 1.810 KA AT -76.82 DEG (0.65 MVA) X/R: 4.27
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0151 + J 0.0646 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.810 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.301 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.950 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.810 KA			
	CONTRIBUTIONS: B-B17-DP	1.810 KA	ANG:	-76.82	
B-B17-NPB2	FAULT: 1.794 KA AT -75.17 DEG (	0.65 MVA)	X/R:	3.78	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0171 + J	0.0647	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.794 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.214 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.876 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.794 KA			
	CONTRIBUTIONS: B-B17-DP	1.794 KA	ANG:	-75.17	
B-B18-1STFL	FAULT: 2.246 KA AT -46.43 DEG (	0.81 MVA)	X/R:	1.05	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0369 + J	0.0387	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.246 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.246 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.246 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.246 KA			
	CONTRIBUTIONS: B-B18-1STFL-M	2.246 KA	ANG:	-46.43	
B-B18-1STFL-M	FAULT: 2.408 KA AT -48.87 DEG (	0.87 MVA)	X/R:	1.14	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0328 + J	0.0376	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.408 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.408 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.408 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.408 KA			
	CONTRIBUTIONS: B-B18-TAP BOX	2.408 KA	ANG:	-48.87	
B-B18-2ND-FL-M	FAULT: 2.408 KA AT -48.87 DEG (	0.87 MVA)	X/R:	1.14	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0328 + J	0.0376	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.408 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.408 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.408 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.408 KA			
	CONTRIBUTIONS: B-B18-TAP BOX	2.408 KA	ANG:	-48.87	
B-B18-2NDFL	FAULT: 2.102 KA AT -44.30 DEG (	0.76 MVA)	X/R:	0.98	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0409 + J	0.0399	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.102 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.102 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.102 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.102 KA			
	CONTRIBUTIONS: B-B18-2ND-FL-M	2.102 KA	ANG:	-44.30	
B-B18-AC1	FAULT: 1.815 KA AT -73.28 DEG (	0.65 MVA)	X/R:	3.33	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0190 + J	0.0634	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.815 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.168 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.838 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.815 KA			
	CONTRIBUTIONS: B-B18-NMDP	1.815 KA	ANG:	-73.28	
B-B18-AC2	FAULT: 1.861 KA AT -77.87 DEG (	0.67 MVA)	X/R:	4.65	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0136 + J	0.0631	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.861 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.414 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.046 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.861 KA			
	CONTRIBUTIONS: B-B18-NMDP	1.861 KA	ANG:	-77.87	
B-B18-ATS-EMRG	FAULT: 2.483 KA AT -49.85 DEG (	0.89 MVA)	X/R:	1.19	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0312 + J	0.0370	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.483 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.483 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.483 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.483 KA			
	ATS-B18-EMERG BUS-0677	2.483 KA	ANG:	-49.85	
B-B18-EMERG	FAULT: 2.397 KA AT -48.72 DEG (	0.86 MVA)	X/R:	1.14	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0331 + J	0.0377	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.397 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.397 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.397 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.397 KA			
	CONTRIBUTIONS: B-B18-EMERG-M	2.397 KA	ANG:	-48.72	
B-B18-EMERG-M	FAULT: 2.399 KA AT -48.74 DEG (	0.86 MVA)	X/R:	1.14	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0330 + J	0.0376	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	2.399 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.399 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.399 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.399 KA			
	CONTRIBUTIONS: B-B18-TAP BOX	2.399 KA	ANG:	-48.74	
B-B18-NCP	FAULT: 1.891 KA AT -78.53 DEG (	0.68 MVA)	X/R:	4.93	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0126 + J	0.0622	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.891 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.486 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.106 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.894 KA			
	CONTRIBUTIONS: B-B18-NMDP	1.891 KA	ANG:	-78.53	
B-B18-NMDP	FAULT: 1.914 KA AT -79.90 DEG (	0.69 MVA)	X/R:	5.61	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0110 + J	0.0618	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.914 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.586 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.191 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.970 KA			
	CONTRIBUTIONS: B-B18-NMDP-M	1.914 KA	ANG:	-79.90	
B-B18-NMDP-M	FAULT: 1.915 KA AT -79.91 DEG (	0.69 MVA)	X/R:	5.62	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0110 + J	0.0618	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.915 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.587 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.193 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.971 KA			
	CONTRIBUTIONS: B-T-B18-SEC	1.915 KA	ANG:	-79.91	
B-B18-NP11	FAULT: 1.815 KA AT -73.28 DEG (	0.65 MVA)	X/R:	3.33	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0190 + J	0.0634	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.815 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.168 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.838 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.815 KA			
	CONTRIBUTIONS: B-B18-NMDP	1.815 KA	ANG:	-73.28	
B-B18-NP12	FAULT: 1.815 KA AT -73.28 DEG (	0.65 MVA)	X/R:	3.33	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0190 + J	0.0634	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.815 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.168 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.838 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.815 KA			
	CONTRIBUTIONS: B-B18-NMDP	1.815 KA	ANG:	-73.28	
B-B18-NP21	FAULT: 1.836 KA AT -74.54 DEG (	0.66 MVA)	X/R:	3.62	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0174 + J	0.0630	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.836 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.241 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.899 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.836 KA			
	CONTRIBUTIONS: B-B18-NMDP	1.836 KA	ANG:	-74.54	
B-B18-NP22	FAULT: 1.844 KA AT -76.82 DEG (	0.66 MVA)	X/R:	4.27	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0148 + J	0.0634	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.844 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.346 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.988 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.844 KA			
	CONTRIBUTIONS: B-B18-NMDP	1.844 KA	ANG:	-76.82	
B-B18-NP23	FAULT: 1.865 KA AT -78.33 DEG (	0.67 MVA)	X/R:	4.84	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0130 + J	0.0631	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.865 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.442 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.069 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.865 KA			
	CONTRIBUTIONS: B-B18-NMDP	1.865 KA	ANG:	-78.33	
B-B18-STRT LHT	FAULT: 1.707 KA AT -65.79 DEG (	0.61 MVA)	X/R:	2.22	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0289 + J	0.0642	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.707 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.825 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.707 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.707 KA			
	CONTRIBUTIONS: B-B18-NMDP	1.707 KA	ANG:	-65.79	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B18-TAP BOX FAULT: 2.433 KA AT -49.26 DEG (0.88 MVA) X/R: 1.16
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0322 + J 0.0374 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.433 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.433 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.433 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.433 KA
CONTRIBUTIONS: B-B18-ATS-EMRG 2.433 KA ANG: -49.26

B-B19-200A PNL FAULT: 2.052 KA AT -81.17 DEG (0.74 MVA) X/R: 6.44
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0090 + J 0.0578 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.052 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.847 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.413 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.169 KA
CONTRIBUTIONS: B-B19-MDP2 2.052 KA ANG: -81.17

B-B19-B1 FAULT: 2.035 KA AT -79.92 DEG (0.73 MVA) X/R: 5.62
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0103 + J 0.0581 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.035 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.751 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.331 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.096 KA
CONTRIBUTIONS: B-B19-MDP1 2.035 KA ANG: -79.92

B-B19-L1 FAULT: 1.421 KA AT -54.72 DEG (0.51 MVA) X/R: 1.41
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0488 + J 0.0690 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.421 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.421 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.421 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.421 KA
CONTRIBUTIONS: B-B19-MDP1 1.421 KA ANG: -54.72

B-B19-L2 FAULT: 1.853 KA AT -72.69 DEG (0.67 MVA) X/R: 3.21
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0193 + J 0.0619 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.853 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.191 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.857 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.853 KA
CONTRIBUTIONS: B-B19-MDP1 1.853 KA ANG: -72.69

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B19-MDP1	FAULT:	2.074 KA AT	-81.65 DEG (	0.75 MVA)	X/R: 6.81
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0084 + J 0.0573	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.086 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.908 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.464 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.215 KA			
	CONTRIBUTIONS: B-B19-MDP1-M	2.074 KA	ANG: -81.65		
B-B19-MDP1-M	FAULT:	2.074 KA AT	-81.66 DEG (	0.75 MVA)	X/R: 6.82
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0084 + J 0.0573	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.087 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.909 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.465 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.216 KA			
	CONTRIBUTIONS: B-T-B19-SEC	2.074 KA	ANG: -81.66		
B-B19-MDP2	FAULT:	2.063 KA AT	-81.52 DEG (	0.74 MVA)	X/R: 6.71
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0086 + J 0.0576	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.070 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.885 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.445 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.198 KA			
	CONTRIBUTIONS: B-B19-MDP2-M	2.063 KA	ANG: -81.52		
B-B19-MDP2-M	FAULT:	2.067 KA AT	-81.57 DEG (	0.74 MVA)	X/R: 6.75
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0085 + J 0.0575	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.075 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.892 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.451 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.204 KA			
	CONTRIBUTIONS: B-T-B19-SEC	2.067 KA	ANG: -81.57		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B19-MDPA	FAULT:	1.907 KA AT	-79.62 DEG (	0.69 MVA)	X/R:	5.46
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0113 + J	0.0619	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.907 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.561 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.171 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.951 KA				
	CONTRIBUTIONS: B-B19-MDP1	1.907 KA	ANG:	-79.62		
B-B19-P1	FAULT:	1.907 KA AT	-79.62 DEG (	0.69 MVA)	X/R:	5.46
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0113 + J	0.0619	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.907 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.561 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.171 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.951 KA				
	CONTRIBUTIONS: B-B19-MDP1	1.907 KA	ANG:	-79.62		
B-B19-P2	FAULT:	1.889 KA AT	-76.11 DEG (	0.68 MVA)	X/R:	4.05
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0153 + J	0.0617	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.889 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.372 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.010 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.889 KA				
	CONTRIBUTIONS: B-B19-MDP1	1.889 KA	ANG:	-76.11		
B-B19-P4	FAULT:	2.040 KA AT	-80.60 DEG (	0.74 MVA)	X/R:	6.04
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0096 + J	0.0581	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.040 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.797 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.370 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.131 KA				
	CONTRIBUTIONS: B-B19-MDP1	2.040 KA	ANG:	-80.60		
B-B19-P6	FAULT:	1.463 KA AT	-59.51 DEG (	0.53 MVA)	X/R:	1.70
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0416 + J	0.0707	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.463 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.463 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.463 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.463 KA				
	CONTRIBUTIONS: B-B19-MDPA	1.463 KA	ANG:	-59.51		
B-B19-PS	FAULT:	1.732 KA AT	-65.62 DEG (	0.62 MVA)	X/R:	2.21
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0286 + J	0.0631	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.732 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.848 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.732 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.732 KA			
	CONTRIBUTIONS: B-B19-MDP1	1.732 KA	ANG:	-65.62	
B-B2-ATS-CRIT	FAULT: 2.966 KA AT -66.54 DEG (	1.07 MVA)	X/R:	2.30	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0161 + J	0.0371	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.966 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.203 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.966 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.966 KA			
	ATS-B2-CRIT BUS-0736	2.966 KA	ANG:	-66.54	
B-B2-ATS-LED3	FAULT: 2.141 KA AT -59.41 DEG (	0.77 MVA)	X/R:	1.69	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0286 + J	0.0483	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.141 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.141 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.141 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.141 KA			
	ATS-B2-LED3 BUS-0723	2.141 KA	ANG:	-59.41	
B-B2-ATS-LS	FAULT: 2.757 KA AT -65.91 DEG (	0.99 MVA)	X/R:	2.24	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0178 + J	0.0398	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.757 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.953 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.757 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.757 KA			
	ATS-B2-LS BUS-0722	2.757 KA	ANG:	-65.91	
B-B2-BATTERYCH	FAULT: 1.949 KA AT -44.85 DEG (	0.70 MVA)	X/R:	0.99	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0437 + J	0.0434	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.949 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.949 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.949 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.949 KA			
	CONTRIBUTIONS: B-B2-PNL LS	1.949 KA	ANG:	-44.85	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B2-CATSCAN	FAULT:	0.943 KA AT -80.72 DEG (0.78 MVA)	X/R:	5.75	
	VOLTAGE:	480. EQUIV. IMPEDANCE= 0.0474 + J 0.2899			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	0.943 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.281 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.085 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	0.976 KA			
	CONTRIBUTIONS: B-B2-MDP	0.943 KA	ANG:	-80.72	
B-B2-CRIT PNL	FAULT:	2.952 KA AT -66.36 DEG (1.06 MVA)	X/R:	2.28	
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0163 + J 0.0373			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.952 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.180 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.952 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.952 KA			
	CONTRIBUTIONS: B-B2-ATS-CRIT	2.952 KA	ANG:	-66.36	
B-B2-DENTAL LB	FAULT:	2.582 KA AT -58.37 DEG (0.93 MVA)	X/R:	1.62	
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0244 + J 0.0396			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.582 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.582 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.582 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.582 KA			
	CONTRIBUTIONS: B-B2-CRIT PNL	2.582 KA	ANG:	-58.37	
B-B2-DENTSUCPM	FAULT:	2.335 KA AT -56.63 DEG (0.84 MVA)	X/R:	1.52	
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0283 + J 0.0429			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.335 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.335 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.335 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.335 KA			
	CONTRIBUTIONS: B-B2-PNL LS	2.335 KA	ANG:	-56.63	
B-B2-ELEV	FAULT:	2.563 KA AT -63.72 DEG (0.92 MVA)	X/R:	2.03	
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0207 + J 0.0420			OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.563 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.671 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.563 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.563 KA			
	CONTRIBUTIONS: B-B2-PNL LS	2.563 KA	ANG:	-63.72	
B-B2-ELEV-P1	FAULT: 2.504 KA AT -61.73 DEG (	0.90 MVA)	X/R:	1.86	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0227 + J	0.0422	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.504 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.550 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.504 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.504 KA			
	CONTRIBUTIONS: B-B2-CRIT PNL	2.504 KA	ANG:	-61.73	
B-B2-EMERG-M	FAULT: 2.118 KA AT -59.10 DEG (	0.76 MVA)	X/R:	1.67	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0291 + J	0.0487	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.118 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.118 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.118 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.118 KA			
	CONTRIBUTIONS: B-B2-ATS-LED3	2.118 KA	ANG:	-59.10	
B-B2-EMERG-PNL	FAULT: 2.116 KA AT -59.08 DEG (	0.76 MVA)	X/R:	1.67	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0292 + J	0.0487	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.116 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.116 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.116 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.116 KA			
	CONTRIBUTIONS: B-B2-EMERG-M	2.116 KA	ANG:	-59.08	
B-B2-EPNL-B	FAULT: 2.965 KA AT -66.53 DEG (	1.07 MVA)	X/R:	2.30	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0161 + J	0.0371	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.965 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.201 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.965 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.965 KA			
	CONTRIBUTIONS: B-B2-EPNL-B-M	2.965 KA	ANG:	-66.53	
B-B2-EPNL-B-M	FAULT: 2.966 KA AT -66.54 DEG (	1.07 MVA)	X/R:	2.30	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0161 + J	0.0371	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	2.966 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.203 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.966 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.966 KA			
	CONTRIBUTIONS: B-B92-EMDP	2.966 KA	ANG:	-66.54	
B-B2-L12	FAULT: 2.499 KA AT -62.48 DEG (	0.90 MVA)	X/R:	1.92	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0222 + J	0.0426	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.499 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.567 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.499 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.499 KA			
	CONTRIBUTIONS: B-B2-PNL LS	2.499 KA	ANG:	-62.48	
B-B2-L2A	FAULT: 2.683 KA AT -62.97 DEG (	0.97 MVA)	X/R:	1.96	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0203 + J	0.0399	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.683 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.772 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.683 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.683 KA			
	CONTRIBUTIONS: B-B2-CRIT PNL	2.683 KA	ANG:	-62.97	
B-B2-L2E	FAULT: 2.499 KA AT -62.48 DEG (	0.90 MVA)	X/R:	1.92	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0222 + J	0.0426	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.499 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.567 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.499 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.499 KA			
	CONTRIBUTIONS: B-B2-PNL LS	2.499 KA	ANG:	-62.48	
B-B2-L4	FAULT: 1.962 KA AT -78.12 DEG (	0.71 MVA)	X/R:	4.47	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0126 + J	0.0599	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.962 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.523 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.138 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.962 KA			
	CONTRIBUTIONS: B-B2-MDPB	1.962 KA	ANG:	-78.12	
B-B2-L6	FAULT: 1.962 KA AT -78.12 DEG (	0.71 MVA)	X/R:	4.47	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0126 + J	0.0599	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.962 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.523 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.138 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.962 KA
	CONTRIBUTIONS: B-B2-MDPB	1.962 KA ANG: -78.12
B-B2-L7	FAULT: 1.962 KA AT -78.12 DEG (0.71 MVA)	X/R: 4.47
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0126 + J 0.0599	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.962 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.523 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.138 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.962 KA
	CONTRIBUTIONS: B-B2-MDPB	1.962 KA ANG: -78.12
B-B2-L8	FAULT: 1.962 KA AT -78.12 DEG (0.71 MVA)	X/R: 4.47
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0126 + J 0.0599	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.962 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.523 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.138 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.962 KA
	CONTRIBUTIONS: B-B2-MDPB	1.962 KA ANG: -78.12
B-B2-L9E	FAULT: 2.437 KA AT -60.08 DEG (0.88 MVA)	X/R: 1.74
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0246 + J 0.0427	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.437 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.439 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.437 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.437 KA
	CONTRIBUTIONS: B-B2-PNL LS	2.437 KA ANG: -60.08
B-B2-LB1E	FAULT: 2.437 KA AT -60.08 DEG (0.88 MVA)	X/R: 1.74
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0246 + J 0.0427	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.437 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.439 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.437 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.437 KA
	CONTRIBUTIONS: B-B2-PNL LS	2.437 KA ANG: -60.08
B-B2-LB2	FAULT: 1.962 KA AT -78.12 DEG (0.71 MVA)	X/R: 4.47
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0126 + J 0.0599	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.962 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.523 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.138 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.962 KA
	CONTRIBUTIONS: B-B2-MDPB	1.962 KA ANG: -78.12

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B2-LB2E	FAULT:	2.497 KA AT -56.69 DEG (	0.90 MVA)	X/R:	1.52
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0264 + J 0.0402		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.497 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.497 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.497 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.497 KA			
	CONTRIBUTIONS: B-B2-CRIT PNL	2.497 KA		ANG:	-56.69
B-B2-LED-3	FAULT:	1.451 KA AT -71.46 DEG (	0.52 MVA)	X/R:	2.90
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0263 + J 0.0785		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.451 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.670 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.451 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.451 KA			
	CONTRIBUTIONS: B-T-B2-LED-SEC	1.451 KA		ANG:	-71.46
B-B2-MDP	FAULT:	0.962 KA AT -82.59 DEG (	0.80 MVA)	X/R:	7.13
	VOLTAGE:	480. EQUIV. IMPEDANCE=	0.0372 + J 0.2856		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	0.976 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.360 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.152 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.036 KA			
	CONTRIBUTIONS: B-B2-MDP-M	0.962 KA		ANG:	-82.59
B-B2-MDP-M	FAULT:	0.962 KA AT -82.59 DEG (	0.80 MVA)	X/R:	7.13
	VOLTAGE:	480. EQUIV. IMPEDANCE=	0.0371 + J 0.2856		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	0.976 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.360 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.153 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.036 KA			
	CONTRIBUTIONS: B-T-B2-SEC4	0.962 KA		ANG:	-82.59
B-B2-MDPA	FAULT:	2.202 KA AT -83.81 DEG (	0.79 MVA)	X/R:	5.55
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0059 + J 0.0542		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.202 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.967 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.515 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.261 KA		
	CBL-0061 B-B2-MDPB	0.244 KA	ANG:	-36.05
	CBL-0057 B-B2-MDPA-M	2.046 KA	ANG:	-88.87
B-B2-MDPA-M	FAULT: 2.204 KA AT -83.87 DEG (0.79 MVA)	X/R:		5.55
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0058 + J 0.0542	OHMS		
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.204 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.971 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.518 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.264 KA		
	CONTRIBUTIONS: B-T-B2-SEC2	2.057 KA	ANG:	-88.99
	CBL-0057 B-B2-MDPA	0.240 KA	ANG:	-34.08
B-B2-MDPB	FAULT: 2.073 KA AT -81.48 DEG (0.75 MVA)	X/R:		6.16
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0086 + J 0.0573	OHMS		
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.073 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.852 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.417 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.173 KA		
	CONTRIBUTIONS: B-B2-MDPA	0.890 KA	ANG:	-83.62
	CBL-0086 B-B2-MDPB-M	1.184 KA	ANG:	-79.88
B-B2-MDPB-M	FAULT: 2.073 KA AT -81.49 DEG (0.75 MVA)	X/R:		6.17
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0086 + J 0.0573	OHMS		
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.073 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.854 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.419 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.174 KA		
	CONTRIBUTIONS: B-T-B2-SEC3	1.192 KA	ANG:	-80.04
	CBL-0086 B-B2-MDPB	0.882 KA	ANG:	-83.45

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B2-MEDAIRCOM FAULT: 2.497 KA AT -56.69 DEG (0.90 MVA) X/R: 1.52
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0264 + J 0.0402 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.497 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.497 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.497 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.497 KA
CONTRIBUTIONS: B-B2-CRIT PNL 2.497 KA ANG: -56.69

B-B2-NEWLAB FAULT: 2.102 KA AT -58.78 DEG (0.76 MVA) X/R: 1.65
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0296 + J 0.0489 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.102 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.102 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.102 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.102 KA
CONTRIBUTIONS: B-B2-NEWLAB-M 2.102 KA ANG: -58.78

B-B2-NEWLAB-M FAULT: 2.104 KA AT -58.80 DEG (0.76 MVA) X/R: 1.65
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0296 + J 0.0488 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.104 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.104 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.104 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.104 KA
CONTRIBUTIONS: B-B2-ATS-LED3 2.104 KA ANG: -58.80

B-B2-PNL 1 FAULT: 2.118 KA AT -59.10 DEG (0.76 MVA) X/R: 1.67
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0291 + J 0.0487 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.118 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.118 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.118 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.118 KA
CONTRIBUTIONS: B-B2-ATS-LED3 2.118 KA ANG: -59.10

B-B2-PNL LS FAULT: 2.732 KA AT -65.57 DEG (0.98 MVA) X/R: 2.20
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0182 + J 0.0400 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.732 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.913 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.732 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.732 KA
CONTRIBUTIONS: B-B2-ATS-LS 2.732 KA ANG: -65.57

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B2-PNL LS (CONTINUED)

B-B2-PNL-2 FAULT: 2.124 KA AT -58.91 DEG (0.77 MVA) X/R: 1.66
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0292 + J 0.0484 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.124 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.124 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.124 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.124 KA
CONTRIBUTIONS: B-B2-ATS-LED3 2.124 KA ANG: -58.91

B-B2-PNL-3-M FAULT: 2.100 KA AT -58.39 DEG (0.76 MVA) X/R: 1.63
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0300 + J 0.0487 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.100 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.100 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.100 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.100 KA
CONTRIBUTIONS: B-B2-ATS-LED3 2.100 KA ANG: -58.39

B-B2-PNL-D2 FAULT: 2.060 KA AT -82.03 DEG (0.74 MVA) X/R: 4.77
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0081 + J 0.0577 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.060 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.688 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.278 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.060 KA
CONTRIBUTIONS: B-B2-MDPA 2.060 KA ANG: -82.03

B-B2-PNL-L11 FAULT: 2.683 KA AT -62.97 DEG (0.97 MVA) X/R: 1.96
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0203 + J 0.0399 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.683 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.772 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.683 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.683 KA
CONTRIBUTIONS: B-B2-CRIT PNL 2.683 KA ANG: -62.97

B-B2-PNL-M1 FAULT: 2.061 KA AT -57.42 DEG (0.74 MVA) X/R: 1.56
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0314 + J 0.0491 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.061 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.061 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.061 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.061 KA
CONTRIBUTIONS: B-B2-PNL-3-M 2.061 KA ANG: -57.42

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-PNL-P	FAULT:	0.936 KA AT	-81.87 DEG (	0.78 MVA)	X/R:	6.54
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0419 + J	0.2931	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		0.936 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.303 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.104 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		0.992 KA			
	CONTRIBUTIONS:	B-B2-MDP	0.936 KA	ANG:	-81.87	
B-B2-POD2PP	FAULT:	2.524 KA AT	-63.30 DEG (	0.91 MVA)	X/R:	1.99
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0214 + J	0.0425	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.524 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.617 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.524 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.524 KA			
	CONTRIBUTIONS:	B-B2-PNL LS	2.524 KA	ANG:	-63.30	
B-B2-TEL COMM	FAULT:	1.962 KA AT	-78.12 DEG (	0.71 MVA)	X/R:	4.47
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0126 + J	0.0599	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.962 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.523 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.138 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.962 KA			
	CONTRIBUTIONS:	B-B2-MDPB	1.962 KA	ANG:	-78.12	
B-B2-UNIT-1	FAULT:	0.928 KA AT	-81.15 DEG (	0.77 MVA)	X/R:	6.03
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0459 + J	0.2952	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		0.928 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.271 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.077 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		0.969 KA			
	CONTRIBUTIONS:	B-B2-PNL-P	0.928 KA	ANG:	-81.15	
B-B2-UNIT-2	FAULT:	0.932 KA AT	-81.51 DEG (	0.77 MVA)	X/R:	6.27
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0439 + J	0.2941	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		0.932 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.287 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.091 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		0.980 KA			
	CONTRIBUTIONS:	B-B2-PNL-P	0.932 KA	ANG:	-81.51	
B-B2-XRAY	FAULT:	1.314 KA AT	-42.34 DEG (	0.47 MVA)	X/R:	0.89
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0676 + J	0.0616	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	1.314 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.314 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.314 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.314 KA			
	CONTRIBUTIONS: B-B2-MDPB	1.314 KA	ANG:	-42.34	
B-B2-XRAY-124	FAULT: 0.905 KA AT -79.28 DEG (	0.75 MVA)	X/R:	5.00	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0570 + J	0.3010	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	0.905 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.193 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.011 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	0.909 KA			
	CONTRIBUTIONS: B-B2-MDP	0.905 KA	ANG:	-79.28	
B-B2-XRAY124	FAULT: 1.925 KA AT -74.59 DEG (	0.69 MVA)	X/R:	3.45	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0166 + J	0.0602	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.925 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.321 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.967 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.925 KA			
	CONTRIBUTIONS: B-B2-MDPB	1.925 KA	ANG:	-74.59	
B-B21-P1	FAULT: 1.479 KA AT -61.44 DEG (	0.53 MVA)	X/R:	1.84	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0388 + J	0.0713	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.479 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.501 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.479 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.479 KA			
	CONTRIBUTIONS: B-B21-P2	1.479 KA	ANG:	-61.44	
B-B21-P2	FAULT: 1.706 KA AT -71.22 DEG (	0.61 MVA)	X/R:	2.94	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0227 + J	0.0667	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.706 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.971 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.706 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.706 KA			
	CONTRIBUTIONS: B-B19-MDP2	1.706 KA	ANG:	-71.22	
B-B22-ATS-EMER	FAULT: 1.772 KA AT -86.33 DEG (	1.47 MVA)	X/R:	15.61	
	VOLTAGE: 480. EQUIV. IMPEDANCE=	0.0100 + J	0.1561	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.987 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.770 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.347 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.110 KA		
	ATS-B22-EMERG BUS-0727	1.772 KA	ANG:	-86.33
B-B22-EMERG	FAULT: 1.750 KA AT -85.94 DEG (1.45 MVA)		X/R:	14.08
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0112 + J 0.1580 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.943 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.708 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.295 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.063 KA		
	CONTRIBUTIONS: B-B22-EMERG-M	1.750 KA	ANG:	-85.94
B-B22-EMERG-M	FAULT: 1.750 KA AT -85.95 DEG (1.46 MVA)		X/R:	14.13
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0112 + J 0.1579 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.945 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.710 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.297 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.065 KA		
	CONTRIBUTIONS: B-B22-ATS-EMER	1.750 KA	ANG:	-85.95
B-B22-GEN	FAULT: 1.802 KA AT -87.14 DEG (1.50 MVA)		X/R:	20.00
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0077 + J 0.1536 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.062 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.874 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.435 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.189 KA		
	CONTRIBUTIONS: G-B22-GEN	1.802 KA	ANG:	-87.14
B-B22-L1	FAULT: 1.941 KA AT -69.36 DEG (0.70 MVA)		X/R:	2.65
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0218 + J 0.0579 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.941 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.181 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.941 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.941 KA		
	CONTRIBUTIONS: B-B22-L1-M	1.941 KA	ANG:	-69.36

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B22-L1-M	FAULT:	1.943 KA AT	-69.39 DEG (	0.70 MVA)	X/R: 2.66
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0218 + J 0.0579	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.943 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.183 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.943 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.943 KA		
	CONTRIBUTIONS: B-B22-T4-SEC		1.943 KA	ANG:	-69.39
B-B22-L2	FAULT:	1.941 KA AT	-69.36 DEG (	0.70 MVA)	X/R: 2.65
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0218 + J 0.0579	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.941 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.181 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.941 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.941 KA		
	CONTRIBUTIONS: B-B22-L2-M		1.941 KA	ANG:	-69.36
B-B22-L2-M	FAULT:	1.943 KA AT	-69.39 DEG (	0.70 MVA)	X/R: 2.66
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0218 + J 0.0579	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.943 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.183 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.943 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.943 KA		
	CONTRIBUTIONS: B-B22-T22-SEC		1.943 KA	ANG:	-69.39
B-B22-L3	FAULT:	1.944 KA AT	-69.45 DEG (	0.70 MVA)	X/R: 2.67
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0217 + J 0.0578	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.944 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.186 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.944 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.944 KA		
	CONTRIBUTIONS: B-B22-L3-M		1.944 KA	ANG:	-69.45
B-B22-L3-M	FAULT:	1.946 KA AT	-69.48 DEG (	0.70 MVA)	X/R: 2.67
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0216 + J 0.0578	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.946 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.189 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.946 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.946 KA		
	CONTRIBUTIONS: B-B22-T2-SEC		1.946 KA	ANG:	-69.48

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B22-MDP FAULT: 0.878 KA AT -80.90 DEG (0.73 MVA) X/R: 6.24
VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0499 + J 0.3115 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 0.878 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.212 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.027 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 0.923 KA
CONTRIBUTIONS: B-B22-MDP-M 0.878 KA ANG: -80.90

B-B22-MDP-M FAULT: 0.878 KA AT -80.90 DEG (0.73 MVA) X/R: 6.24
VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0499 + J 0.3115 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 0.878 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.212 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.027 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 0.923 KA
CONTRIBUTIONS: B-T-B22-SEC 0.878 KA ANG: -80.90

B-B22-N1 FAULT: 1.584 KA AT -75.55 DEG (0.57 MVA) X/R: 3.88
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0189 + J 0.0734 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.584 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.968 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.668 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.584 KA
CONTRIBUTIONS: B-B22-N1-M 1.584 KA ANG: -75.55

B-B22-N1-M FAULT: 1.585 KA AT -75.57 DEG (0.57 MVA) X/R: 3.89
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0189 + J 0.0734 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.585 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.970 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.669 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.585 KA
CONTRIBUTIONS: B-B22-T1-SEC 1.585 KA ANG: -75.57

B-B22-P1 FAULT: 1.735 KA AT -85.40 DEG (1.44 MVA) X/R: 12.42
VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0128 + J 0.1592 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.902 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.650 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.246 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.019 KA
CONTRIBUTIONS: B-B22-EMERG 1.735 KA ANG: -85.40

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B22-P2	FAULT:	1.735 KA AT	-85.40 DEG (	1.44 MVA)	X/R: 12.42
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0128 + J 0.1592	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.902 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.650 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA			2.246 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA			2.019 KA	
	CONTRIBUTIONS:	B-B22-EMERG	1.735 KA	ANG:	-85.40
B-B22-T1-PRI	FAULT:	0.877 KA AT	-80.80 DEG (	0.73 MVA)	X/R: 6.17
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0506 + J 0.3120	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			0.877 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA			1.207 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA			1.023 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA			0.919 KA	
	CONTRIBUTIONS:	B-B22-MDP	0.877 KA	ANG:	-80.80
B-B22-T1-SEC	FAULT:	1.613 KA AT	-75.89 DEG (	0.58 MVA)	X/R: 3.98
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0182 + J 0.0722	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.613 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.016 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA			1.709 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA			1.613 KA	
	CONTRIBUTIONS:	B-B22-T1-PRI	1.613 KA	ANG:	-75.89
B-B22-T2-PRI	FAULT:	1.743 KA AT	-85.49 DEG (	1.45 MVA)	X/R: 12.68
	VOLTAGE:	480.	EQUIV. IMPEDANCE=	0.0125 + J 0.1585	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.915 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.669 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA			2.262 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA			2.033 KA	
	CONTRIBUTIONS:	B-B22-EMERG	1.743 KA	ANG:	-85.49
B-B22-T2-SEC	FAULT:	1.979 KA AT	-70.08 DEG (	0.71 MVA)	X/R: 2.76
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0207 + J 0.0571	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.979 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.246 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA			1.979 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA			1.979 KA	
	CONTRIBUTIONS:	B-B22-T2-PRI	1.979 KA	ANG:	-70.08

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B22-T22-SEC FAULT: 1.976 KA AT -69.99 DEG (0.71 MVA) X/R: 2.75
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0208 + J 0.0571 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.976 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.240 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.976 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.976 KA
CONTRIBUTIONS: B-B22-T3 PRI 1.976 KA ANG: -69.99

B-B22-T3 PRI FAULT: 1.740 KA AT -85.27 DEG (1.45 MVA) X/R: 12.08
VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0131 + J 0.1588 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.901 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.649 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.245 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.018 KA
CONTRIBUTIONS: B-B22-EMERG 1.740 KA ANG: -85.27

B-B22-T4-PRI FAULT: 1.740 KA AT -85.27 DEG (1.45 MVA) X/R: 12.08
VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0131 + J 0.1588 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.901 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.649 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.245 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.018 KA
CONTRIBUTIONS: B-B22-EMERG 1.740 KA ANG: -85.27

B-B22-T4-SEC FAULT: 1.976 KA AT -69.99 DEG (0.71 MVA) X/R: 2.75
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0208 + J 0.0571 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.976 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.240 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.976 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.976 KA
CONTRIBUTIONS: B-B22-T4-PRI 1.976 KA ANG: -69.99

B-B27-SWGR FAULT: 0.034 KA AT -82.52 DEG (0.82 MVA) X/R: 7.62
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.1418 + J229.5945 OHMS
CBL-0004 BUS-0017 0.034 KA ANG: -82.52

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B27-SWGR-M1 FAULT: 0.034 KA AT -82.52 DEG (0.82 MVA) X/R: 7.62
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.1419 + J229.5947 OHMS
CONTRIBUTIONS: B-SWGR27 TAP 0.034 KA ANG: -82.52

B-B3-1ST FL FAULT: 4.286 KA AT -71.31 DEG (1.54 MVA) X/R: 2.96
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0090 + J 0.0265 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.286 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.959 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 4.286 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.286 KA
CONTRIBUTIONS: B-B3-EP1 4.286 KA ANG: -71.31

B-B3-ALDN KIT FAULT: 3.854 KA AT -60.24 DEG (1.39 MVA) X/R: 1.75
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0155 + J 0.0271 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.854 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.864 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.854 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.854 KA
CONTRIBUTIONS: B-B3-EP2 3.854 KA ANG: -60.24

B-B3-ATS-COMP FAULT: 4.763 KA AT -77.44 DEG (1.72 MVA) X/R: 4.49
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0055 + J 0.0246 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.763 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.129 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.194 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.763 KA
ATS-B3-COMP BUS-0719 4.763 KA ANG: -77.44

B-B3-ATSTEL RM FAULT: 4.793 KA AT -78.66 DEG (1.73 MVA) X/R: 4.99
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0049 + J 0.0246 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 4.793 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 6.316 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 5.352 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 4.811 KA
ATS-B3-TEL RM BUS-0718 4.793 KA ANG: -78.66

B-B3-COMP FAULT: 3.998 KA AT -65.96 DEG (1.44 MVA) X/R: 2.24
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0122 + J 0.0274 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.998 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.284 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.998 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.998 KA			
	CONTRIBUTIONS: B-B3-EP2	3.998 KA	ANG:	-65.96	
B-B3-COMP AC	FAULT: 2.417 KA AT -33.91 DEG (	0.87 MVA)	X/R:	0.67	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0412 + J	0.0277	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.417 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.417 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.417 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.417 KA			
	CONTRIBUTIONS: B-B3-EP2	2.417 KA	ANG:	-33.91	
B-B3-COMP MF	FAULT: 4.296 KA AT -72.84 DEG (	1.55 MVA)	X/R:	3.24	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0082 + J	0.0267	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.296 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.093 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.316 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.296 KA			
	CONTRIBUTIONS: B-B3-EP2	4.296 KA	ANG:	-72.84	
B-B3-DBL GRILL	FAULT: 4.023 KA AT -68.90 DEG (	1.45 MVA)	X/R:	2.59	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0107 + J	0.0279	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.023 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.488 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.023 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.023 KA			
	CONTRIBUTIONS: B-B3-EP1	4.023 KA	ANG:	-68.90	
B-B3-ELEV	FAULT: 4.156 KA AT -68.40 DEG (	1.50 MVA)	X/R:	2.53	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0106 + J	0.0269	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.156 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.604 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.156 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.156 KA			
	CONTRIBUTIONS: B-B3-EP2	4.156 KA	ANG:	-68.40	
B-B3-EP1	FAULT: 4.720 KA AT -78.35 DEG (	1.70 MVA)	X/R:	4.85	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0051 + J	0.0249	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.720 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.182 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.239 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.720 KA			
	CONTRIBUTIONS: B-B3-EP1-M	4.720 KA	ANG:	-78.35	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B3-EP1 (CONTINUED)

B-B3-EP1-M	FAULT:	4.726 KA AT -78.40 DEG (	1.70 MVA)	X/R:	4.87
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0051 + J 0.0249		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.726 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		6.197 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		5.252 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.726 KA		
	CONTRIBUTIONS: B-B3-ATSTEL RM		4.726 KA	ANG:	-78.40
B-B3-EP2	FAULT:	4.651 KA AT -76.94 DEG (	1.68 MVA)	X/R:	4.31
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0058 + J 0.0252		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.651 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		5.928 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		5.024 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.651 KA		
	CONTRIBUTIONS: B-B3-EP2-M		4.651 KA	ANG:	-76.94
B-B3-EP2-M	FAULT:	4.657 KA AT -76.99 DEG (	1.68 MVA)	X/R:	4.33
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0058 + J 0.0251		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		4.657 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		5.942 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		5.036 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		4.657 KA		
	CONTRIBUTIONS: B-B3-ATS-COMP		4.657 KA	ANG:	-76.99
B-B3-FRZN FOOD	FAULT:	1.923 KA AT -72.07 DEG (	0.69 MVA)	X/R:	3.09
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0192 + J 0.0594		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.923 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.252 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.923 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.923 KA			
	CONTRIBUTIONS: B-B3-MDP	1.923 KA	ANG:	-72.07	
B-B3-HYDRO ELV	FAULT: 3.695 KA AT -62.92 DEG (	1.33 MVA)	X/R:	1.96	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0148 + J	0.0289	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.695 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.815 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.695 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.695 KA			
	CONTRIBUTIONS: B-B3-EP2	3.695 KA	ANG:	-62.92	
B-B3-KP1	FAULT: 4.144 KA AT -72.62 DEG (	1.49 MVA)	X/R:	3.19	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0087 + J	0.0277	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.144 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.896 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.149 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.144 KA			
	CONTRIBUTIONS: B-B3-EP1	4.144 KA	ANG:	-72.62	
B-B3-MDP	FAULT: 2.045 KA AT -81.16 DEG (	0.74 MVA)	X/R:	6.43	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0090 + J	0.0580	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.045 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.837 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.404 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.161 KA			
	CONTRIBUTIONS: B-B3-MDP-M	2.045 KA	ANG:	-81.16	
B-B3-MDP-M	FAULT: 2.045 KA AT -81.18 DEG (	0.74 MVA)	X/R:	6.44	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0090 + J	0.0580	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.045 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.838 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.405 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.162 KA			
	CONTRIBUTIONS: B-T-B3-SEC	2.045 KA	ANG:	-81.18	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B3-MECH HVAC	FAULT:	4.156 KA AT	-68.40 DEG (	1.50 MVA)	X/R:	2.53
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0106 + J 0.0269		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			4.156 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			4.604 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			4.156 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			4.156 KA		
	CONTRIBUTIONS:	B-B3-EP2		4.156 KA	ANG:	-68.40
B-B3-MECH RM	FAULT:	4.327 KA AT	-73.77 DEG (	1.56 MVA)	X/R:	3.44
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0078 + J 0.0266		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			4.327 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			5.212 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			4.417 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			4.327 KA		
	CONTRIBUTIONS:	B-B3-EP2		4.327 KA	ANG:	-73.77
B-B3-P3	FAULT:	1.958 KA AT	-78.49 DEG (	0.71 MVA)	X/R:	4.91
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0122 + J 0.0601		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.958 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.571 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			2.179 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			1.959 KA		
	CONTRIBUTIONS:	B-B3-MDP		1.958 KA	ANG:	-78.49
B-B3-P7	FAULT:	4.151 KA AT	-67.23 DEG (	1.50 MVA)	X/R:	2.38
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0112 + J 0.0267		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			4.151 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			4.524 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			4.151 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			4.151 KA		
	CONTRIBUTIONS:	B-B3-EP1		4.151 KA	ANG:	-67.23
B-B3-STRT LTS	FAULT:	1.923 KA AT	-72.07 DEG (	0.69 MVA)	X/R:	3.09
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0192 + J 0.0594		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.923 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.252 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			1.923 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			1.923 KA		
	CONTRIBUTIONS:	B-B3-MDP		1.923 KA	ANG:	-72.07
B-B3-STRT PNL	FAULT:	4.319 KA AT	-71.04 DEG (	1.56 MVA)	X/R:	2.91
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0090 + J 0.0263		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	4.319 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.976 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.319 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.319 KA			
	CONTRIBUTIONS: B-B3-EP2	4.319 KA	ANG:	-71.04	
B-B3-TELE PNL	FAULT: 4.393 KA AT -75.04 DEG (	1.58 MVA)	X/R:	3.74	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0071 + J	0.0264	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.393 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.409 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.584 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.393 KA			
	CONTRIBUTIONS: B-B3-EP1	4.393 KA	ANG:	-75.04	
B-B3-TRAY LINE	FAULT: 4.156 KA AT -68.40 DEG (	1.50 MVA)	X/R:	2.53	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0106 + J	0.0269	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.156 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.604 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.156 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.156 KA			
	CONTRIBUTIONS: B-B3-EP2	4.156 KA	ANG:	-68.40	
B-B33-MDP	FAULT: 1.598 KA AT -74.65 DEG (	0.58 MVA)	X/R:	3.64	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0199 + J	0.0725	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.598 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.953 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.656 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.598 KA			
	CONTRIBUTIONS: B-B33-MDP-M	1.598 KA	ANG:	-74.65	
B-B33-MDP-M	FAULT: 1.598 KA AT -74.66 DEG (	0.58 MVA)	X/R:	3.65	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0199 + J	0.0725	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.598 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.955 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.657 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.598 KA			
	CONTRIBUTIONS: B-T-B33-SEC	1.598 KA	ANG:	-74.66	
B-B4-4EQD	FAULT: 4.022 KA AT -74.26 DEG (	1.45 MVA)	X/R:	3.55	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0081 + J	0.0287	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	4.022 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.885 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.140 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.022 KA		
	CONTRIBUTIONS: B-B4-4EQD-M	4.022 KA	ANG:	-74.26
B-B4-4EQD-M	FAULT: 4.026 KA AT -74.30 DEG (1.45 MVA)		X/R:	3.56
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0081 + J 0.0287 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.026 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.894 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.147 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.026 KA		
	CONTRIBUTIONS: B-B4-ATS-EQ	4.026 KA	ANG:	-74.30
B-B4-ATS-EQ	FAULT: 4.121 KA AT -74.70 DEG (1.48 MVA)		X/R:	3.66
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0077 + J 0.0281 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.121 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.044 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.275 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.121 KA		
	ATS-B4-EQ BUS-0691	4.121 KA	ANG:	-74.70
B-B4-ATS-LS	FAULT: 3.663 KA AT -61.75 DEG (1.32 MVA)		X/R:	1.86
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0155 + J 0.0289 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.663 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.731 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.663 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.663 KA		
	ATS-B4-LS BUS-0694	3.663 KA	ANG:	-61.75
B-B4-BUS	FAULT: 2.124 KA AT -81.92 DEG (0.77 MVA)		X/R:	7.04
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0080 + J 0.0560 OHMS			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.149 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.995 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.538 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.282 KA			
	CONTRIBUTIONS: B-T-B4-SEC	2.124 KA	ANG:	-81.92	
B-B4-ELEV#4	FAULT: 3.264 KA AT -63.78 DEG (	1.18 MVA)	X/R:	2.03	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0163 + J	0.0330	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.264 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.403 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.264 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.264 KA			
	CONTRIBUTIONS: B-B4-4EQD	3.264 KA	ANG:	-63.78	
B-B4-EQ1	FAULT: 3.666 KA AT -69.13 DEG (	1.32 MVA)	X/R:	2.62	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0117 + J	0.0306	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.666 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.104 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.666 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.666 KA			
	CONTRIBUTIONS: B-B4-4EQD	3.666 KA	ANG:	-69.13	
B-B4-EQ10	FAULT: 3.322 KA AT -64.53 DEG (	1.20 MVA)	X/R:	2.10	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0155 + J	0.0326	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.322 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.496 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.322 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.322 KA			
	CONTRIBUTIONS: B-B4-EQ5	3.322 KA	ANG:	-64.53	
B-B4-EQ11	FAULT: 3.507 KA AT -66.96 DEG (	1.26 MVA)	X/R:	2.35	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0134 + J	0.0315	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.507 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.808 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.507 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.507 KA			
	CONTRIBUTIONS: B-B4-EQ6	3.507 KA	ANG:	-66.96	
B-B4-EQ12	FAULT: 3.136 KA AT -62.15 DEG (	1.13 MVA)	X/R:	1.89	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0179 + J	0.0339	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.136 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.209 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.136 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.136 KA			
	CONTRIBUTIONS: B-B4-EQ7	3.136 KA	ANG:	-62.15	
B-B4-EQ15	FAULT: 3.264 KA AT -63.78 DEG (	1.18 MVA)	X/R:	2.03	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0163 + J	0.0330	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.264 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.403 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.264 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.264 KA			
	CONTRIBUTIONS: B-B4-4EQD	3.264 KA	ANG:	-63.78	
B-B4-EQ2	FAULT: 3.875 KA AT -72.10 DEG (	1.40 MVA)	X/R:	3.10	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0095 + J	0.0295	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.875 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.540 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.875 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.875 KA			
	CONTRIBUTIONS: B-B4-4EQD	3.875 KA	ANG:	-72.10	
B-B4-EQ3	FAULT: 3.453 KA AT -66.24 DEG (	1.24 MVA)	X/R:	2.27	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0140 + J	0.0318	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.453 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.713 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.453 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.453 KA			
	CONTRIBUTIONS: B-B4-4EQD	3.453 KA	ANG:	-66.24	
B-B4-EQ5	FAULT: 3.480 KA AT -66.60 DEG (	1.25 MVA)	X/R:	2.31	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0137 + J	0.0317	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.480 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.760 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.480 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.480 KA			
	CONTRIBUTIONS: B-B4-EQ1	3.480 KA	ANG:	-66.60	
B-B4-EQ6	FAULT: 3.676 KA AT -69.27 DEG (	1.32 MVA)	X/R:	2.64	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0116 + J	0.0306	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	3.676 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.123 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.676 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.676 KA			
	CONTRIBUTIONS: B-B4-EQ2	3.676 KA	ANG:	-69.27	
B-B4-EQ7	FAULT: 3.280 KA AT -63.99 DEG (	1.18 MVA)	X/R:	2.05	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0161 + J	0.0329	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.280 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.429 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.280 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.280 KA			
	CONTRIBUTIONS: B-B4-EQ3	3.280 KA	ANG:	-63.99	
B-B4-EQ9	FAULT: 3.030 KA AT -60.83 DEG (	1.09 MVA)	X/R:	1.79	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0193 + J	0.0346	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.030 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.056 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.030 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.030 KA			
	CONTRIBUTIONS: B-B4-4EQD	3.030 KA	ANG:	-60.83	
B-B4-HYDROELEV	FAULT: 3.176 KA AT -60.98 DEG (	1.14 MVA)	X/R:	1.80	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0183 + J	0.0331	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.176 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.209 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.176 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.176 KA			
	CONTRIBUTIONS: B-B4-4EQD	3.176 KA	ANG:	-60.98	
B-B4-JBOX	FAULT: 2.121 KA AT -81.79 DEG (	0.76 MVA)	X/R:	6.93	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0081 + J	0.0561	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.140 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.982 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.527 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.272 KA			
	CONTRIBUTIONS: B-B4-BUS	2.121 KA	ANG:	-81.79	
B-B4-LP1	FAULT: 1.990 KA AT -78.52 DEG (	0.72 MVA)	X/R:	4.92	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0120 + J	0.0591	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.990 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.616 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.217 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.993 KA			
	CONTRIBUTIONS: B-B4-LP1-M	1.990 KA	ANG:	-78.52	
B-B4-LP1-M	FAULT: 1.992 KA AT -78.55 DEG (	0.72 MVA)	X/R:	4.94	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0120 + J	0.0591	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.992 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.619 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.220 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.995 KA			
	CONTRIBUTIONS: B-B4-LP2-M	1.992 KA	ANG:	-78.55	
B-B4-LP10	FAULT: 1.931 KA AT -77.06 DEG (	0.70 MVA)	X/R:	4.35	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0139 + J	0.0606	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.931 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.467 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.090 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.931 KA			
	CONTRIBUTIONS: B-B4-LP10-M	1.931 KA	ANG:	-77.06	
B-B4-LP10-M	FAULT: 1.932 KA AT -77.09 DEG (	0.70 MVA)	X/R:	4.36	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0139 + J	0.0606	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.932 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.470 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.093 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.932 KA			
	CONTRIBUTIONS: B-B4-LP5-M	1.932 KA	ANG:	-77.09	
B-B4-LP11	FAULT: 1.980 KA AT -78.27 DEG (	0.71 MVA)	X/R:	4.82	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0123 + J	0.0594	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.980 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.589 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.195 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.980 KA			
	CONTRIBUTIONS: B-B4-LP11-M	1.980 KA	ANG:	-78.27	
B-B4-LP11-M	FAULT: 1.982 KA AT -78.30 DEG (	0.71 MVA)	X/R:	4.83	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0123 + J	0.0593	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.982 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.593 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.197 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.982 KA			
	CONTRIBUTIONS: B-B4-LP6-M	1.982 KA	ANG:	-78.30	
B-B4-LP12	FAULT: 2.001 KA AT -78.77 DEG (	0.72 MVA)	X/R:	5.04	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0117 + J	0.0589	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.001 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.642 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.239 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.013 KA			
	CONTRIBUTIONS: B-B4-LP12-M	2.001 KA	ANG:	-78.77	
B-B4-LP12-M	FAULT: 2.002 KA AT -78.81 DEG (	0.72 MVA)	X/R:	5.05	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0116 + J	0.0588	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.002 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.646 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.242 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.015 KA			
	CONTRIBUTIONS: B-B4-MDP	2.002 KA	ANG:	-78.81	
B-B4-LP13	FAULT: 1.931 KA AT -77.06 DEG (	0.70 MVA)	X/R:	4.35	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0139 + J	0.0606	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.931 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.467 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.090 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.931 KA			
	CONTRIBUTIONS: B-B4-LP13-M	1.931 KA	ANG:	-77.06	
B-B4-LP13-M	FAULT: 1.932 KA AT -77.09 DEG (	0.70 MVA)	X/R:	4.36	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0139 + J	0.0606	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.932 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.470 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.093 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.932 KA			
	CONTRIBUTIONS: B-B4-LP8-M	1.932 KA	ANG:	-77.09	
B-B4-LP14	FAULT: 1.892 KA AT -76.13 DEG (	0.68 MVA)	X/R:	4.05	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0152 + J	0.0616	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.892 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.376 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.014 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.892 KA			
	CONTRIBUTIONS: B-B4-LP14-M	1.892 KA	ANG:	-76.13	
B-B4-LP14-M	FAULT: 1.894 KA AT -76.16 DEG (	0.68 MVA)	X/R:	4.06	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0152 + J	0.0616	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.894 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.379 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.016 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.894 KA			
	CONTRIBUTIONS: B-B4-LP9-M	1.894 KA	ANG:	-76.16	
B-B4-LP15	FAULT: 2.755 KA AT -50.16 DEG (	0.99 MVA)	X/R:	1.20	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0279 + J	0.0335	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.755 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.755 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.755 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.755 KA			
	CONTRIBUTIONS: B-B4-LP15-M	2.755 KA	ANG:	-50.16	
B-B4-LP15-M	FAULT: 2.758 KA AT -50.17 DEG (	0.99 MVA)	X/R:	1.20	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0279 + J	0.0334	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.758 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.758 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.758 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.758 KA			
	CONTRIBUTIONS: B-B4-LSD	2.758 KA	ANG:	-50.17	
B-B4-LP2	FAULT: 2.063 KA AT -80.34 DEG (	0.74 MVA)	X/R:	5.87	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0098 + J	0.0574	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.063 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.813 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.384 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.143 KA			
	CONTRIBUTIONS: B-B4-LP2-M	2.063 KA	ANG:	-80.34	
B-B4-LP2-M	FAULT: 2.064 KA AT -80.38 DEG (	0.74 MVA)	X/R:	5.90	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0097 + J	0.0574	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.064 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.817 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.387 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.146 KA			
	CONTRIBUTIONS: B-B4-MDP	2.064 KA	ANG:	-80.38	
B-B4-LP3	FAULT: 2.063 KA AT -80.34 DEG (	0.74 MVA)	X/R:	5.87	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0098 + J	0.0574	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.063 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.813 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.384 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.143 KA			
	CONTRIBUTIONS: B-B4-LP3-M	2.063 KA	ANG:	-80.34	
B-B4-LP3-M	FAULT: 2.064 KA AT -80.38 DEG (	0.74 MVA)	X/R:	5.90	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0097 + J	0.0574	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.064 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.817 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.387 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.146 KA			
	CONTRIBUTIONS: B-B4-MDP	2.064 KA	ANG:	-80.38	
B-B4-LP4	FAULT: 1.980 KA AT -78.27 DEG (	0.71 MVA)	X/R:	4.82	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0123 + J	0.0594	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.980 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.589 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.195 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.980 KA			
	CONTRIBUTIONS: B-B4-LP4-M	1.980 KA	ANG:	-78.27	
B-B4-LP4-M	FAULT: 1.982 KA AT -78.30 DEG (	0.71 MVA)	X/R:	4.83	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0123 + J	0.0593	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.982 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.593 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.197 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.982 KA			
	CONTRIBUTIONS: B-B4-LP3-M	1.982 KA	ANG:	-78.30	
B-B4-LP5	FAULT: 1.970 KA AT -78.02 DEG (	0.71 MVA)	X/R:	4.71	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0126 + J	0.0596	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.970 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.564 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.173 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.970 KA			
	CONTRIBUTIONS: B-B4-LP5-M	1.970 KA	ANG:	-78.02	
B-B4-LP5-M	FAULT: 1.972 KA AT -78.06 DEG (	0.71 MVA)	X/R:	4.73	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0126 + J	0.0596	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.972 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.567 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.176 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.972 KA			
	CONTRIBUTIONS: B-B4-MDP	1.972 KA	ANG:	-78.06	
B-B4-LP6	FAULT: 2.021 KA AT -79.28 DEG (	0.73 MVA)	X/R:	5.28	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0110 + J	0.0584	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.021 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.697 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.285 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.054 KA			
	CONTRIBUTIONS: B-B4-LP6-M	2.021 KA	ANG:	-79.28	
B-B4-LP6-M	FAULT: 2.022 KA AT -79.32 DEG (	0.73 MVA)	X/R:	5.30	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0110 + J	0.0583	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.022 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.700 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.289 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.057 KA			
	CONTRIBUTIONS: B-B4-MDP	2.022 KA	ANG:	-79.32	
B-B4-LP7	FAULT: 2.021 KA AT -79.28 DEG (	0.73 MVA)	X/R:	5.28	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0110 + J	0.0584	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.021 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.697 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.285 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.054 KA			
	CONTRIBUTIONS: B-B4-LP7-M	2.021 KA	ANG:	-79.28	
B-B4-LP7-M	FAULT: 2.022 KA AT -79.32 DEG (	0.73 MVA)	X/R:	5.30	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0110 + J	0.0583	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.022 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.700 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.289 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.057 KA			
	CONTRIBUTIONS: B-B4-MDP	2.022 KA	ANG:	-79.32	
B-B4-LP8	FAULT: 1.970 KA AT -78.02 DEG (	0.71 MVA)	X/R:	4.71	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0126 + J	0.0596	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.970 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.564 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.173 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.970 KA			
	CONTRIBUTIONS: B-B4-LP8-M	1.970 KA	ANG:	-78.02	
B-B4-LP8-M	FAULT: 1.972 KA AT -78.06 DEG (	0.71 MVA)	X/R:	4.73	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0126 + J	0.0596	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.972 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.567 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.176 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.972 KA			
	CONTRIBUTIONS: B-B4-MDP	1.972 KA	ANG:	-78.06	
B-B4-LP9	FAULT: 1.931 KA AT -77.06 DEG (	0.70 MVA)	X/R:	4.35	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0139 + J	0.0606	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.931 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.467 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.090 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.931 KA			
	CONTRIBUTIONS: B-B4-LP9-M	1.931 KA	ANG:	-77.06	
B-B4-LP9-M	FAULT: 1.932 KA AT -77.09 DEG (	0.70 MVA)	X/R:	4.36	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0139 + J	0.0606	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.932 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.470 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.093 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.932 KA			
	CONTRIBUTIONS: B-B4-MDP	1.932 KA	ANG:	-77.09	
B-B4-LS1	FAULT: 2.950 KA AT -53.45 DEG (	1.06 MVA)	X/R:	1.35	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0242 + J	0.0327	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 2.950 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.950 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.950 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.950 KA
CONTRIBUTIONS: B-B4-LS1-M 2.950 KA ANG: -53.45

B-B4-LS1-M FAULT: 2.953 KA AT -53.47 DEG (1.06 MVA) X/R: 1.35
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0242 + J 0.0327 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.953 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.953 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.953 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.953 KA
CONTRIBUTIONS: B-B4-LS2-M 2.953 KA ANG: -53.47

B-B4-LS10 FAULT: 2.504 KA AT -48.46 DEG (0.90 MVA) X/R: 1.13
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0318 + J 0.0359 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.504 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.504 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.504 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.504 KA
CONTRIBUTIONS: B-B4-LS10-M 2.504 KA ANG: -48.46

B-B4-LS10-M FAULT: 2.507 KA AT -48.47 DEG (0.90 MVA) X/R: 1.13
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0318 + J 0.0359 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.507 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.507 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.507 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.507 KA
CONTRIBUTIONS: B-B4-LS5-M 2.507 KA ANG: -48.47

B-B4-LS11 FAULT: 2.656 KA AT -50.13 DEG (0.96 MVA) X/R: 1.20
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0290 + J 0.0347 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.656 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.656 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.656 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.656 KA
CONTRIBUTIONS: B-B4-LS11-M 2.656 KA ANG: -50.13

B-B4-LS11-M FAULT: 2.659 KA AT -50.15 DEG (0.96 MVA) X/R: 1.20
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0289 + J 0.0347 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.659 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.659 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.659 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.659 KA
	CONTRIBUTIONS: B-B4-LS6-M	2.659 KA ANG: -50.15
B-B4-LS12	FAULT: 2.785 KA AT -51.57 DEG (1.00 MVA)	X/R: 1.26
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0268 + J 0.0338	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.785 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.785 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.785 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.785 KA
	CONTRIBUTIONS: B-B4-LS12-M	2.785 KA ANG: -51.57
B-B4-LS12-M	FAULT: 2.788 KA AT -51.59 DEG (1.00 MVA)	X/R: 1.26
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0268 + J 0.0338	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.788 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.788 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.788 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.788 KA
	CONTRIBUTIONS: B-B4-LS7-M	2.788 KA ANG: -51.59
B-B4-LS13	FAULT: 2.808 KA AT -51.84 DEG (1.01 MVA)	X/R: 1.27
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0264 + J 0.0336	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.808 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.808 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.808 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.808 KA
	CONTRIBUTIONS: B-B4-LS13-M	2.808 KA ANG: -51.84
B-B4-LS13-M	FAULT: 2.812 KA AT -51.86 DEG (1.01 MVA)	X/R: 1.27
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0264 + J 0.0336	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.812 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.812 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.812 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.812 KA
	CONTRIBUTIONS: B-B4-LS8-M	2.812 KA ANG: -51.86
B-B4-LS14	FAULT: 2.808 KA AT -51.84 DEG (1.01 MVA)	X/R: 1.27
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0264 + J 0.0336	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.808 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.808 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.808 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.808 KA
	CONTRIBUTIONS: B-B4-LS14-M	2.808 KA ANG: -51.84
B-B4-LS14-M	FAULT: 2.812 KA AT -51.86 DEG (1.01 MVA)	X/R: 1.27
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0264 + J 0.0336	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.812 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.812 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.812 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.812 KA
	CONTRIBUTIONS: B-B4-LS9-M	2.812 KA ANG: -51.86
B-B4-LS2	FAULT: 3.280 KA AT -57.32 DEG (1.18 MVA)	X/R: 1.56
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0198 + J 0.0308	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.280 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.280 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.280 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.280 KA
	CONTRIBUTIONS: B-B4-LS2-M	3.280 KA ANG: -57.32
B-B4-LS2-M	FAULT: 3.285 KA AT -57.35 DEG (1.18 MVA)	X/R: 1.56
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0197 + J 0.0308	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.285 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.285 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.285 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.285 KA
	CONTRIBUTIONS: B-B4-LSD	3.285 KA ANG: -57.35
B-B4-LS3	FAULT: 3.440 KA AT -59.26 DEG (1.24 MVA)	X/R: 1.68
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0178 + J 0.0300	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.440 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.440 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.440 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.440 KA
	CONTRIBUTIONS: B-B4-LS3-M	3.440 KA ANG: -59.26
B-B4-LS3-M	FAULT: 3.445 KA AT -59.29 DEG (1.24 MVA)	X/R: 1.68
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0178 + J 0.0300	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    3.445 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.445 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   3.445 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.445 KA
                CONTRIBUTIONS:  B-B4-LSD           3.445 KA      ANG:   -59.29

 B-B4-LS4       FAULT:    3.085 KA AT  -55.01 DEG (   1.11 MVA)  X/R:     1.43
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0223 + J  0.0319  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    3.085 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.085 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   3.085 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.085 KA
                CONTRIBUTIONS:  B-B4-LS4-M         3.085 KA      ANG:   -55.01

 B-B4-LS4-M     FAULT:    3.089 KA AT  -55.03 DEG (   1.11 MVA)  X/R:     1.43
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0223 + J  0.0319  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    3.089 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.089 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   3.089 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.089 KA
                CONTRIBUTIONS:  B-B4-LS3-M         3.089 KA      ANG:   -55.03

 B-B4-LS5       FAULT:    2.642 KA AT  -49.97 DEG (   0.95 MVA)  X/R:     1.19
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0292 + J  0.0348  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.642 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.642 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.642 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.642 KA
                CONTRIBUTIONS:  B-B4-LS5-M         2.642 KA      ANG:   -49.97

 B-B4-LS5-M     FAULT:    2.645 KA AT  -49.99 DEG (   0.95 MVA)  X/R:     1.19
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0292 + J  0.0348  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.645 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.645 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.645 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.645 KA
                CONTRIBUTIONS:  B-B4-LSD           2.645 KA      ANG:   -49.99

 B-B4-LS6       FAULT:    2.808 KA AT  -51.84 DEG (   1.01 MVA)  X/R:     1.27
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0264 + J  0.0336  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.808 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.808 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.808 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.808 KA			
	CONTRIBUTIONS: B-B4-LS6-M	2.808 KA	ANG:	-51.84	
B-B4-LS6-M	FAULT: 2.812 KA AT -51.86 DEG (1.01 MVA)	X/R:	1.27		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0264 + J 0.0336	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.812 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.812 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.812 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.812 KA			
	CONTRIBUTIONS: B-B4-LSD	2.812 KA	ANG:	-51.86	
B-B4-LS7	FAULT: 2.950 KA AT -53.45 DEG (1.06 MVA)	X/R:	1.35		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0242 + J 0.0327	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.950 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.950 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.950 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.950 KA			
	CONTRIBUTIONS: B-B4-LS7-M	2.950 KA	ANG:	-53.45	
B-B4-LS7-M	FAULT: 2.953 KA AT -53.47 DEG (1.06 MVA)	X/R:	1.35		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0242 + J 0.0327	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.953 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.953 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.953 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.953 KA			
	CONTRIBUTIONS: B-B4-LSD	2.953 KA	ANG:	-53.47	
B-B4-LS8	FAULT: 2.976 KA AT -53.75 DEG (1.07 MVA)	X/R:	1.36		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0239 + J 0.0325	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.976 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.976 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.976 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.976 KA			
	CONTRIBUTIONS: B-B4-LS8-M	2.976 KA	ANG:	-53.75	
B-B4-LS8-M	FAULT: 2.980 KA AT -53.77 DEG (1.07 MVA)	X/R:	1.36		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0238 + J 0.0325	OHMS			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.980 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.980 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.980 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.980 KA		
	CONTRIBUTIONS: B-B4-LSD	2.980 KA	ANG:	-53.77
B-B4-LS9	FAULT: 2.976 KA AT -53.75 DEG (1.07 MVA)		X/R:	1.36
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0239 + J 0.0325			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.976 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.976 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.976 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.976 KA		
	CONTRIBUTIONS: B-B4-LS9-M	2.976 KA	ANG:	-53.75
B-B4-LS9-M	FAULT: 2.980 KA AT -53.77 DEG (1.07 MVA)		X/R:	1.36
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0238 + J 0.0325			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.980 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.980 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.980 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.980 KA		
	CONTRIBUTIONS: B-B4-LSD	2.980 KA	ANG:	-53.77
B-B4-LSD	FAULT: 3.616 KA AT -61.42 DEG (1.30 MVA)		X/R:	1.84
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0159 + J 0.0292			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.616 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.671 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.616 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.616 KA		
	CONTRIBUTIONS: B-B4-LSD-M	3.616 KA	ANG:	-61.42
B-B4-LSD-M	FAULT: 3.622 KA AT -61.46 DEG (1.30 MVA)		X/R:	1.84
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0158 + J 0.0291			OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.622 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.678 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.622 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.622 KA			
	CONTRIBUTIONS: B-B4-ATS-LS	3.622 KA	ANG:	-61.46	
B-B4-MDP	FAULT: 2.118 KA AT -81.76 DEG (	0.76 MVA)	X/R:	6.91	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0081 + J	0.0561	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.136 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.977 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.523 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.268 KA			
	CONTRIBUTIONS: B-B4-MDP-M	2.118 KA	ANG:	-81.76	
B-B4-MDP-M	FAULT: 2.118 KA AT -81.77 DEG (	0.76 MVA)	X/R:	6.91	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0081 + J	0.0561	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.136 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.977 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.523 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.268 KA			
	CONTRIBUTIONS: B-B4-JBOX	2.118 KA	ANG:	-81.77	
B-B4-PP1	FAULT: 3.770 KA AT -71.67 DEG (	1.36 MVA)	X/R:	3.02	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0100 + J	0.0302	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.770 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.387 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.770 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.770 KA			
	CONTRIBUTIONS: B-B4-4EQD	3.770 KA	ANG:	-71.67	
B-B4-PP2	FAULT: 2.755 KA AT -50.16 DEG (	0.99 MVA)	X/R:	1.20	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0279 + J	0.0335	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.755 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.755 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.755 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.755 KA		
	CONTRIBUTIONS: B-B4-PP2-M	2.755 KA	ANG:	-50.16
B-B4-PP2-M	FAULT: 2.758 KA AT -50.17 DEG (0.99 MVA)		X/R:	1.20
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0279 + J 0.0334			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.758 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.758 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.758 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.758 KA		
	CONTRIBUTIONS: B-B4-LSD	2.758 KA	ANG:	-50.17
B-B5-ATS-EQ	FAULT: 2.251 KA AT -66.92 DEG (0.81 MVA)		X/R:	2.35
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0209 + J 0.0491			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.251 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.443 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.251 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.251 KA		
	ATS-B5-EQ BUS-0692	2.251 KA	ANG:	-66.92
B-B5-ATS-LS	FAULT: 1.772 KA AT -49.14 DEG (0.64 MVA)		X/R:	1.16
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0443 + J 0.0512			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.772 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.772 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.772 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.772 KA		
	ATS-B5-LS BUS-0695	1.772 KA	ANG:	-49.14
B-B5-EQ1	FAULT: 2.072 KA AT -62.86 DEG (0.75 MVA)		X/R:	1.95
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0264 + J 0.0516			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.072 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.137 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.072 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.072 KA		
	CONTRIBUTIONS: B-B5-EQD	2.072 KA	ANG:	-62.86
B-B5-EQ2	FAULT: 2.061 KA AT -62.60 DEG (0.74 MVA)		X/R:	1.93
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0268 + J 0.0517			OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	2.061 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.119 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.061 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.061 KA			
	CONTRIBUTIONS: B-B5-EQD	2.061 KA	ANG:	-62.60	
B-B5-EQ5	FAULT: 2.072 KA AT -62.86 DEG (	0.75 MVA)	X/R:	1.95	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0264 + J	0.0516	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.072 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.137 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.072 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.072 KA			
	CONTRIBUTIONS: B-B5-EQD	2.072 KA	ANG:	-62.86	
B-B5-EQ6	FAULT: 2.023 KA AT -61.74 DEG (	0.73 MVA)	X/R:	1.86	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0281 + J	0.0523	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.023 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.061 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.023 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.023 KA			
	CONTRIBUTIONS: B-B5-EQD	2.023 KA	ANG:	-61.74	
B-B5-EQD	FAULT: 2.240 KA AT -66.87 DEG (	0.81 MVA)	X/R:	2.34	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0211 + J	0.0493	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.240 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.429 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.240 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.240 KA			
	CONTRIBUTIONS: B-B5-ATS-EQ	2.240 KA	ANG:	-66.87	
B-B5-HYDR ELEV	FAULT: 2.138 KA AT -64.41 DEG (	0.77 MVA)	X/R:	2.09	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0243 + J	0.0507	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.138 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.246 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.138 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.138 KA			
	CONTRIBUTIONS: B-B5-EQD	2.138 KA	ANG:	-64.41	
B-B5-LP1	FAULT: 2.008 KA AT -79.03 DEG (	0.72 MVA)	X/R:	5.16	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0114 + J	0.0587	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.008 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.666 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.259 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.031 KA			
	CONTRIBUTIONS: B-B5-LP1-M	2.008 KA	ANG:	-79.03	
B-B5-LP1-M	FAULT: 2.009 KA AT -79.05 DEG (	0.72 MVA)	X/R:	5.17	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0114 + J	0.0587	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.009 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.668 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.261 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.033 KA			
	CONTRIBUTIONS: B-B5-MDP	2.009 KA	ANG:	-79.05	
B-B5-LP2	FAULT: 1.966 KA AT -77.98 DEG (	0.71 MVA)	X/R:	4.70	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0127 + J	0.0598	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.966 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.556 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.166 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.966 KA			
	CONTRIBUTIONS: B-B5-LP2-M	1.966 KA	ANG:	-77.98	
B-B5-LP2-M	FAULT: 1.967 KA AT -78.00 DEG (	0.71 MVA)	X/R:	4.70	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0127 + J	0.0597	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.967 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.558 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.168 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.967 KA			
	CONTRIBUTIONS: B-B5-MDP	1.967 KA	ANG:	-78.00	
B-B5-LP3	FAULT: 1.968 KA AT -78.03 DEG (	0.71 MVA)	X/R:	4.72	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0127 + J	0.0597	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.968 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.561 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.170 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.968 KA			
	CONTRIBUTIONS: B-B5-LP3-M	1.968 KA	ANG:	-78.03	
B-B5-LP3-M	FAULT: 1.969 KA AT -78.05 DEG (	0.71 MVA)	X/R:	4.72	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0126 + J	0.0597	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.969 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.563 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.172 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.969 KA			
	CONTRIBUTIONS: B-B5-LP1-M	1.969 KA	ANG:	-78.05	
B-B5-LP4	FAULT: 1.926 KA AT -77.02 DEG (	0.69 MVA)	X/R:	4.34	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0140 + J	0.0608	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.926 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.459 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.084 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.926 KA			
	CONTRIBUTIONS: B-B5-LP4-M	1.926 KA	ANG:	-77.02	
B-B5-LP4-M	FAULT: 1.927 KA AT -77.04 DEG (	0.69 MVA)	X/R:	4.35	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0140 + J	0.0607	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.927 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.461 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.086 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.927 KA			
	CONTRIBUTIONS: B-B5-LP2-M	1.927 KA	ANG:	-77.04	
B-B5-LP5	FAULT: 1.998 KA AT -77.12 DEG (	0.72 MVA)	X/R:	4.37	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0134 + J	0.0586	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.998 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.555 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.166 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.998 KA			
	CONTRIBUTIONS: B-B5-LP5-M	1.998 KA	ANG:	-77.12	
B-B5-LP5-M	FAULT: 1.999 KA AT -77.14 DEG (	0.72 MVA)	X/R:	4.38	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0134 + J	0.0586	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.999 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.558 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.168 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.999 KA			
	CONTRIBUTIONS: B-B5-MDP	1.999 KA	ANG:	-77.14	
B-B5-LS1	FAULT: 1.693 KA AT -47.99 DEG (	0.61 MVA)	X/R:	1.11	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0475 + J	0.0527	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	1.693 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.693 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.693 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.693 KA
	CONTRIBUTIONS: B-B5-LSD	1.693 KA ANG: -47.99
B-B5-LS2	FAULT: 1.556 KA AT -45.84 DEG (0.56 MVA)	X/R: 1.03
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0538 + J 0.0554	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.556 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.556 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.556 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.556 KA
	CONTRIBUTIONS: B-B5-LSD	1.556 KA ANG: -45.84
B-B5-LS4	FAULT: 1.506 KA AT -45.06 DEG (0.54 MVA)	X/R: 1.00
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0563 + J 0.0564	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.506 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.506 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.506 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.506 KA
	CONTRIBUTIONS: B-B5-LS2	1.506 KA ANG: -45.06
B-B5-LSD	FAULT: 1.761 KA AT -49.08 DEG (0.63 MVA)	X/R: 1.15
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0447 + J 0.0515	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.761 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.761 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.761 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.761 KA
	CONTRIBUTIONS: B-B5-LSD-M	1.761 KA ANG: -49.08
B-B5-LSD-M	FAULT: 1.762 KA AT -49.08 DEG (0.63 MVA)	X/R: 1.15
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0446 + J 0.0515	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.762 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.762 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.762 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.762 KA
	CONTRIBUTIONS: B-B5-ATS-LS	1.762 KA ANG: -49.08
B-B5-MDP	FAULT: 2.074 KA AT -80.69 DEG (0.75 MVA)	X/R: 6.10
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0094 + J 0.0571	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.074 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.849 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.414 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.170 KA			
	CONTRIBUTIONS: B-B5-MDP-M	2.074 KA	ANG:	-80.69	
B-B5-MDP-M	FAULT: 2.074 KA AT -80.70 DEG (	0.75 MVA)	X/R:	6.11	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0094 + J	0.0571	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.074 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.850 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.415 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.171 KA			
	CONTRIBUTIONS: B-T-B5-SEC	2.074 KA	ANG:	-80.70	
B-B5-NEXTEL	FAULT: 1.984 KA AT -78.00 DEG (	0.71 MVA)	X/R:	4.70	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0126 + J	0.0592	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.984 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.580 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.187 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.984 KA			
	CONTRIBUTIONS: B-B5-MDP	1.984 KA	ANG:	-78.00	
B-B5-PNL-H	FAULT: 2.020 KA AT -79.34 DEG (	0.73 MVA)	X/R:	5.31	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0110 + J	0.0584	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.020 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.699 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.287 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.056 KA			
	CONTRIBUTIONS: B-B5-PNL-H-M	2.020 KA	ANG:	-79.34	
B-B5-PNL-H-M	FAULT: 2.021 KA AT -79.36 DEG (	0.73 MVA)	X/R:	5.32	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0110 + J	0.0584	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    2.021 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.702 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.290 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.058 KA
                CONTRIBUTIONS:  B-B5-MDP           2.021 KA      ANG:   -79.36

 B-B5-STRT LGHT FAULT:    1.961 KA AT  -73.50 DEG (   0.71 MVA)  X/R:     3.38
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0174 + J  0.0587  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    1.961 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.351 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   1.992 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   1.961 KA
                CONTRIBUTIONS:  B-B5-MDP           1.961 KA      ANG:   -73.50

 B-B5-TEMP TRAI FAULT:    1.962 KA AT  -77.36 DEG (   0.71 MVA)  X/R:     4.46
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0134 + J  0.0597  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    1.962 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.521 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.136 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   1.962 KA
                CONTRIBUTIONS:  B-B5-MDP           1.962 KA      ANG:   -77.36

 B-B55-LS3      FAULT:    1.634 KA AT  -47.07 DEG (   0.59 MVA)  X/R:     1.07
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0500 + J  0.0538  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    1.634 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   1.634 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   1.634 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   1.634 KA
                CONTRIBUTIONS:  B-B5-LS1           1.634 KA      ANG:   -47.07

 B-B6-ATS-EQ    FAULT:    2.738 KA AT  -68.92 DEG (   0.99 MVA)  X/R:     2.59
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0158 + J  0.0409  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.738 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.056 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.738 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.738 KA
                ATS-B6-EQ       BUS-0701           2.738 KA      ANG:   -68.92

 B-B6-ATS-LS    FAULT:    2.406 KA AT  -53.24 DEG (   0.87 MVA)  X/R:     1.34
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0299 + J  0.0400  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.406 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.406 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.406 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.406 KA		
	ATS-B6-LS BUS-0707	2.406 KA	ANG:	-53.24
B-B6-EQ1	FAULT: 2.585 KA AT -66.24 DEG (0.93 MVA)		X/R:	2.27
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0187 + J 0.0425 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.585 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.780 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.585 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.585 KA		
	CONTRIBUTIONS: B-B6-EQD	2.585 KA	ANG:	-66.24
B-B6-EQ2	FAULT: 2.439 KA AT -64.21 DEG (0.88 MVA)		X/R:	2.07
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0214 + J 0.0443 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.439 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.557 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.439 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.439 KA		
	CONTRIBUTIONS: B-B6-EQD	2.439 KA	ANG:	-64.21
B-B6-EQ3	FAULT: 2.553 KA AT -66.22 DEG (0.92 MVA)		X/R:	2.27
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0190 + J 0.0430 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.553 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.745 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.553 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.553 KA		
	CONTRIBUTIONS: B-B6-EQD	2.553 KA	ANG:	-66.22
B-B6-EQ4	FAULT: 2.350 KA AT -62.67 DEG (0.85 MVA)		X/R:	1.93
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0235 + J 0.0454 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.350 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.419 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.350 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.350 KA		
	CONTRIBUTIONS: B-B6-EQ2	2.350 KA	ANG:	-62.67
B-B6-EQ5	FAULT: 2.458 KA AT -64.53 DEG (0.89 MVA)		X/R:	2.10
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0210 + J 0.0441 OHMS			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.458 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.586 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.458 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.458 KA			
	CONTRIBUTIONS: B-B6-EQ3	2.458 KA	ANG:	-64.53	
B-B6-EQ8	FAULT: 2.430 KA AT -65.43 DEG (0.88 MVA)	X/R:	2.19		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0205 + J 0.0449	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.430 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.586 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.430 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.430 KA			
	CONTRIBUTIONS: B-B6-EQD	2.430 KA	ANG:	-65.43	
B-B6-EQD	FAULT: 2.684 KA AT -68.61 DEG (0.97 MVA)	X/R:	2.55		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0163 + J 0.0417	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.684 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.982 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.684 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.684 KA			
	CONTRIBUTIONS: B-B6-EQD-M	2.684 KA	ANG:	-68.61	
B-B6-EQD-M	FAULT: 2.684 KA AT -68.62 DEG (0.97 MVA)	X/R:	2.55		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0163 + J 0.0417	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.684 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.983 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.684 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.684 KA			
	CONTRIBUTIONS: B-B6-ATS-EQ	2.684 KA	ANG:	-68.62	
B-B6-EQMACH	FAULT: 2.585 KA AT -66.24 DEG (0.93 MVA)	X/R:	2.27		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0187 + J 0.0425	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.585 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.780 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.585 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.585 KA			
	CONTRIBUTIONS: B-B6-EQD	2.585 KA	ANG:	-66.24	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-LP1	FAULT:	1.971 KA AT	-76.17 DEG (	0.71 MVA)	X/R: 4.06
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0146 + J 0.0592	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.971 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.476 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.099 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.971 KA			
	CONTRIBUTIONS: B-B6-LP1-M	1.971 KA	ANG: -76.17		
B-B6-LP1-M	FAULT:	1.971 KA AT	-76.18 DEG (	0.71 MVA)	X/R: 4.07
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0146 + J 0.0592	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.971 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.477 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.099 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.971 KA			
	CONTRIBUTIONS: B-B6-MDP	1.971 KA	ANG: -76.18		
B-B6-LP2	FAULT:	1.995 KA AT	-77.12 DEG (	0.72 MVA)	X/R: 4.37
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0134 + J 0.0587	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.995 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.552 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.162 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.995 KA			
	CONTRIBUTIONS: B-B6-LP2-M	1.995 KA	ANG: -77.12		
B-B6-LP2-M	FAULT:	1.995 KA AT	-77.14 DEG (	0.72 MVA)	X/R: 4.38
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0134 + J 0.0587	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.995 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.553 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.163 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.995 KA			
	CONTRIBUTIONS: B-B6-MDP	1.995 KA	ANG: -77.14		
B-B6-LP3	FAULT:	1.997 KA AT	-78.79 DEG (	0.72 MVA)	X/R: 5.05
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0117 + J 0.0590	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.997 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.639 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.236 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.010 KA			
	CONTRIBUTIONS: B-B6-LP3-M	1.997 KA	ANG: -78.79		
B-B6-LP3-M	FAULT:	1.998 KA AT	-78.80 DEG (	0.72 MVA)	X/R: 5.05
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0117 + J 0.0590	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.998 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.640 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.237 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.011 KA			
	CONTRIBUTIONS: B-B6-MDP	1.998 KA	ANG:	-78.80	
B-B6-LP4	FAULT: 2.003 KA AT -78.94 DEG (	0.72 MVA)	X/R:	5.12	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0115 + J	0.0588	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.003 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.655 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.250 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.023 KA			
	CONTRIBUTIONS: B-B6-LP4-M	2.003 KA	ANG:	-78.94	
B-B6-LP4-M	FAULT: 2.004 KA AT -78.96 DEG (	0.72 MVA)	X/R:	5.12	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0115 + J	0.0588	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.004 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.656 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.251 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.023 KA			
	CONTRIBUTIONS: B-B6-MDP	2.004 KA	ANG:	-78.96	
B-B6-LP5	FAULT: 1.957 KA AT -77.80 DEG (	0.71 MVA)	X/R:	4.62	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0130 + J	0.0600	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.957 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.536 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.149 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.957 KA			
	CONTRIBUTIONS: B-B6-LP5-M	1.957 KA	ANG:	-77.80	
B-B6-LP5-M	FAULT: 1.957 KA AT -77.81 DEG (	0.71 MVA)	X/R:	4.63	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0130 + J	0.0600	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.957 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.537 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.150 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.957 KA			
	CONTRIBUTIONS: B-B6-LP3-M	1.957 KA	ANG:	-77.81	
B-B6-LP6	FAULT: 1.963 KA AT -77.95 DEG (	0.71 MVA)	X/R:	4.68	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0128 + J	0.0598	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 1.963 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.551 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.162 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.963 KA
CONTRIBUTIONS: B-B6-LP6-M 1.963 KA ANG: -77.95

B-B6-LP6-M FAULT: 1.963 KA AT -77.96 DEG (0.71 MVA) X/R: 4.69
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0128 + J 0.0598 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.963 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.552 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.163 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.963 KA
CONTRIBUTIONS: B-B6-LP4-M 1.963 KA ANG: -77.96

B-B6-LP7 FAULT: 2.051 KA AT -79.44 DEG (0.74 MVA) X/R: 5.36
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0107 + J 0.0576 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.051 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.746 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.327 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.092 KA
CONTRIBUTIONS: B-B6-LP7-M 2.051 KA ANG: -79.44

B-B6-LP7-M FAULT: 2.052 KA AT -79.45 DEG (0.74 MVA) X/R: 5.37
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0107 + J 0.0575 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.052 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.747 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.328 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.093 KA
CONTRIBUTIONS: B-B6-MDP 2.052 KA ANG: -79.45

B-B6-LS1 FAULT: 2.191 KA AT -50.48 DEG (0.79 MVA) X/R: 1.21
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0349 + J 0.0423 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.191 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.191 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.191 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.191 KA
CONTRIBUTIONS: B-B6-LSD 2.191 KA ANG: -50.48

B-B6-LS2 FAULT: 2.283 KA AT -51.38 DEG (0.82 MVA) X/R: 1.25
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0328 + J 0.0411 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.283 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.283 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.283 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.283 KA		
	CONTRIBUTIONS: B-B6-LSD	2.283 KA	ANG:	-51.38
B-B6-LS3	FAULT: 2.191 KA AT -50.48 DEG (0.79 MVA)		X/R:	1.21
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0349 + J 0.0423			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.191 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.191 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.191 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.191 KA		
	CONTRIBUTIONS: B-B6-LSD	2.191 KA	ANG:	-50.48
B-B6-LS4	FAULT: 2.191 KA AT -50.48 DEG (0.79 MVA)		X/R:	1.21
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0349 + J 0.0423			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.191 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.191 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.191 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.191 KA		
	CBL-0258 B-B6-LSD	2.191 KA	ANG:	-50.48
B-B6-LS5	FAULT: 2.096 KA AT -49.19 DEG (0.76 MVA)		X/R:	1.16
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0374 + J 0.0434			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.096 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.096 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.096 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.096 KA		
	CONTRIBUTIONS: B-B6-LS3	2.096 KA	ANG:	-49.19
B-B6-LS6	FAULT: 2.096 KA AT -49.19 DEG (0.76 MVA)		X/R:	1.16
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0374 + J 0.0434			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.096 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.096 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.096 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.096 KA		
	CONTRIBUTIONS: B-B6-LS4	2.096 KA	ANG:	-49.19
B-B6-LSD	FAULT: 2.376 KA AT -53.03 DEG (0.86 MVA)		X/R:	1.33
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0304 + J 0.0404			OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.376 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.376 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.376 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.376 KA		
	CONTRIBUTIONS: B-B6-LSD-M	2.376 KA	ANG:	-53.03
B-B6-LSD-M	FAULT: 2.376 KA AT -53.04 DEG (0.86 MVA)		X/R:	1.33
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0304 + J 0.0404			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.376 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.376 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.376 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.376 KA		
	CONTRIBUTIONS: B-B6-ATS-LS	2.376 KA	ANG:	-53.04
B-B6-MACH SHOP	FAULT: 1.978 KA AT -77.81 DEG (0.71 MVA)		X/R:	4.63
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0128 + J 0.0593			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.978 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.564 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.173 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.978 KA		
	CONTRIBUTIONS: B-B6-MDP	1.978 KA	ANG:	-77.81
B-B6-MDP	FAULT: 2.092 KA AT -81.19 DEG (0.75 MVA)		X/R:	6.45
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0088 + J 0.0567			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.092 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.904 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.461 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.212 KA		
	CONTRIBUTIONS: B-B6-MDP-M	2.092 KA	ANG:	-81.19

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-MDP-M	FAULT:	2.092 KA AT	-81.20 DEG (	0.75 MVA)	X/R:	6.46
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0088 + J	0.0567	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			2.092 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.905 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			2.462 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			2.213 KA		
	CONTRIBUTIONS:	B-T-B6-SEC		2.092 KA	ANG:	-81.20
B-B6-P6-CS	FAULT:	2.023 KA AT	-79.12 DEG (	0.73 MVA)	X/R:	5.20
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0112 + J	0.0583	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			2.023 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.690 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			2.280 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			2.049 KA		
	CONTRIBUTIONS:	B-B6-MDP		2.023 KA	ANG:	-79.12
B-B60-MDP	FAULT:	1.761 KA AT	-78.97 DEG (	0.63 MVA)	X/R:	5.13
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0130 + J	0.0669	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.761 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.335 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			1.979 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			1.779 KA		
	CONTRIBUTIONS:	B-B60-MDP-M		1.761 KA	ANG:	-78.97
B-B60-MDP-M	FAULT:	1.762 KA AT	-78.99 DEG (	0.63 MVA)	X/R:	5.14
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0130 + J	0.0669	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.762 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.337 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			1.981 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			1.780 KA		
	CONTRIBUTIONS:	B-T-B60-SEC		1.762 KA	ANG:	-78.99
B-B61 STRT LGH	FAULT:	1.832 KA AT	-72.63 DEG (	0.66 MVA)	X/R:	3.20
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0196 + J	0.0626	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.832 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.165 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			1.835 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			1.832 KA		
	CONTRIBUTIONS:	B-B61-MDP		1.832 KA	ANG:	-72.63
B-B61-ATS-EQD	FAULT:	2.506 KA AT	-67.96 DEG (	0.90 MVA)	X/R:	2.47
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0180 + J	0.0444	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    2.506 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.759 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.506 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.506 KA
                ATS-B61-EQD     BUS-0703          2.506 KA      ANG:   -67.96

 B-B61-ATS-LSD  FAULT:    2.010 KA AT  -50.66 DEG (   0.72 MVA)  X/R:     1.22
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0379 + J  0.0462  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.010 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.010 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.010 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.010 KA
                ATS-B61-LSD     BUS-0705          2.010 KA      ANG:   -50.66

 B-B61-COMP RM  FAULT:    2.382 KA AT  -66.69 DEG (   0.86 MVA)  X/R:     2.32
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0200 + J  0.0463  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.382 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.577 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.382 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.382 KA
                CONTRIBUTIONS:  B-B61-EQA          2.382 KA      ANG:   -66.69

 B-B61-DP       FAULT:    1.906 KA AT  -80.11 DEG (   0.69 MVA)  X/R:     5.74
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0108 + J  0.0621  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    1.906 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.587 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.192 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   1.971 KA
                CONTRIBUTIONS:  B-B61-MDP          1.906 KA      ANG:   -80.11

 B-B61-ELEV     FAULT:    2.235 KA AT  -64.77 DEG (   0.81 MVA)  X/R:     2.12
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0229 + J  0.0486  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.235 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   2.360 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.235 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.235 KA
                CONTRIBUTIONS:  B-B61-EQD          2.235 KA      ANG:   -64.77

 B-B61-EQ1      FAULT:    2.255 KA AT  -63.79 DEG (   0.81 MVA)  X/R:     2.03
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0235 + J  0.0478  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.255 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.352 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.255 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.255 KA			
	CONTRIBUTIONS: B-B61-EQD	2.255 KA	ANG:	-63.79	
B-B61-EQ2	FAULT: 2.399 KA AT -66.52 DEG (	0.86 MVA)	X/R:	2.30	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0199 + J	0.0459	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.399 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.589 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.399 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.399 KA			
	CONTRIBUTIONS: B-B61-EQD	2.399 KA	ANG:	-66.52	
B-B61-EQ4	FAULT: 2.251 KA AT -63.05 DEG (	0.81 MVA)	X/R:	1.97	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0242 + J	0.0475	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.251 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.328 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.251 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.251 KA			
	CONTRIBUTIONS: B-B61-EQD	2.251 KA	ANG:	-63.05	
B-B61-EQA	FAULT: 2.450 KA AT -67.60 DEG (	0.88 MVA)	X/R:	2.43	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0187 + J	0.0453	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.450 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.684 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.450 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.450 KA			
	CONTRIBUTIONS: B-B61-EQD	2.450 KA	ANG:	-67.60	
B-B61-EQD	FAULT: 2.464 KA AT -67.79 DEG (	0.89 MVA)	X/R:	2.45	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0184 + J	0.0451	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.464 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.707 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.464 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.464 KA			
	CONTRIBUTIONS: B-B61-ATS-EQD	2.464 KA	ANG:	-67.79	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B61-KITCHEN	FAULT:	1.891 KA AT -49.88 DEG (	0.68 MVA)	X/R:	1.19
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0409 + J 0.0486	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.891 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.891 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.891 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.891 KA			
	CONTRIBUTIONS: B-B61-LSD	1.891 KA	ANG:	-49.88	
B-B61-LP1	FAULT:	1.587 KA AT -66.31 DEG (	0.57 MVA)	X/R:	2.28
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0304 + J 0.0693	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.587 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.708 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.587 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.587 KA			
	CONTRIBUTIONS: B-B61-MDP	1.587 KA	ANG:	-66.31	
B-B61-LP2	FAULT:	1.587 KA AT -66.31 DEG (	0.57 MVA)	X/R:	2.28
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0304 + J 0.0693	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.587 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.708 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.587 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.587 KA			
	CONTRIBUTIONS: B-B61-MDP	1.587 KA	ANG:	-66.31	
B-B61-LP3	FAULT:	1.792 KA AT -76.45 DEG (	0.65 MVA)	X/R:	4.15
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0157 + J 0.0651	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.792 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.264 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.919 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.792 KA			
	CONTRIBUTIONS: B-B61-MDP	1.792 KA	ANG:	-76.45	
B-B61-LP4	FAULT:	1.848 KA AT -78.24 DEG (	0.67 MVA)	X/R:	4.80
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0132 + J 0.0636	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.848 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.415 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.046 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.848 KA			
	CONTRIBUTIONS: B-B61-MDP	1.848 KA	ANG:	-78.24	
B-B61-LP5	FAULT:	1.788 KA AT -70.18 DEG (	0.64 MVA)	X/R:	2.77
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0228 + J 0.0632	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 1.788 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.033 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.788 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.788 KA
CONTRIBUTIONS: B-B61-MDP 1.788 KA ANG: -70.18

B-B61-LS1 FAULT: 1.738 KA AT -46.78 DEG (0.63 MVA) X/R: 1.06
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0473 + J 0.0504 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.738 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.738 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.738 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.738 KA
CONTRIBUTIONS: B-B61-LSD 1.738 KA ANG: -46.78

B-B61-LS2 FAULT: 1.850 KA AT -47.80 DEG (0.67 MVA) X/R: 1.10
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0436 + J 0.0481 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.850 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.850 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.850 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.850 KA
CONTRIBUTIONS: B-B61-LSD 1.850 KA ANG: -47.80

B-B61-LS3 FAULT: 1.676 KA AT -45.88 DEG (0.60 MVA) X/R: 1.03
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0499 + J 0.0514 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.676 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.676 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.676 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.676 KA
CONTRIBUTIONS: B-B61-LSD 1.676 KA ANG: -45.88

B-B61-LS4 FAULT: 1.738 KA AT -46.78 DEG (0.63 MVA) X/R: 1.06
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0473 + J 0.0504 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.738 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.738 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.738 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.738 KA
CONTRIBUTIONS: B-B61-LSD 1.738 KA ANG: -46.78

B-B61-LS5 FAULT: 1.676 KA AT -45.88 DEG (0.60 MVA) X/R: 1.03
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0499 + J 0.0514 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.676 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.676 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.676 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.676 KA
CONTRIBUTIONS: B-B61-LSD 1.676 KA ANG: -45.88

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B61-LSD	FAULT:	1.990 KA AT -50.52 DEG (	0.72 MVA)	X/R:	1.21
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0384 + J 0.0466		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.990 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.990 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.990 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.990 KA		
	CONTRIBUTIONS: B-B61-LSD-M		1.990 KA	ANG:	-50.52
B-B61-LSD-M	FAULT:	1.992 KA AT -50.54 DEG (	0.72 MVA)	X/R:	1.21
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0383 + J 0.0465		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.992 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.992 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.992 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.992 KA		
	CONTRIBUTIONS: B-B61-ATS-LSD		1.992 KA	ANG:	-50.54
B-B61-MCC	FAULT:	1.832 KA AT -72.63 DEG (	0.66 MVA)	X/R:	3.20
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0196 + J 0.0626		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.832 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.165 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.835 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.832 KA		
	CONTRIBUTIONS: B-B61-MDP		1.832 KA	ANG:	-72.63
B-B61-MDP	FAULT:	1.953 KA AT -80.70 DEG (	0.70 MVA)	X/R:	6.11
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0099 + J 0.0607		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.953 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.684 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.274 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.045 KA		
	CONTRIBUTIONS: B-B61-MDP-M		1.953 KA	ANG:	-80.70

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B61-MDP (CONTINUED)

B-B61-MDP-M	FAULT:	1.954 KA AT	-80.71 DEG (	0.70 MVA)	X/R:	6.12
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0099 + J	0.0607	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.954 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.685 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.276 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.046 KA			
	CONTRIBUTIONS: B-T-B61-SEC		1.954 KA		ANG:	-80.71
B-B62-A	FAULT:	2.013 KA AT	-78.70 DEG (	0.73 MVA)	X/R:	5.01
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0117 + J	0.0585	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.013 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.656 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.251 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.023 KA			
	CONTRIBUTIONS: B-B62-MDP		2.013 KA		ANG:	-78.70
B-B62-ATS-EQD	FAULT:	2.043 KA AT	-66.06 DEG (	0.74 MVA)	X/R:	2.25
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0239 + J	0.0537	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.043 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.192 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.043 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.043 KA			
	ATS-B62-EQD BUS-0700		2.043 KA		ANG:	-66.06
B-B62-ATS-LSD	FAULT:	1.588 KA AT	-47.93 DEG (	0.57 MVA)	X/R:	1.11
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0507 + J	0.0561	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.588 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.588 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.588 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.588 KA			
	ATS-B62-LSD BUS-0706		1.588 KA		ANG:	-47.93
B-B62-ATTC PNL	FAULT:	1.875 KA AT	-62.66 DEG (	0.68 MVA)	X/R:	1.93
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0294 + J	0.0569	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.875 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.930 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.875 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.875 KA
	CONTRIBUTIONS: B-B62-EQD	1.875 KA ANG: -62.66
B-B62-B	FAULT: 2.025 KA AT -79.04 DEG (0.73 MVA)	X/R: 5.16
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0113 + J 0.0582	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.025 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.688 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.278 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.048 KA
	CONTRIBUTIONS: B-B62-MDP	2.025 KA ANG: -79.04
B-B62-BL	FAULT: 1.968 KA AT -75.13 DEG (0.71 MVA)	X/R: 3.77
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0157 + J 0.0590	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.968 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.427 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.057 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.968 KA
	CONTRIBUTIONS: B-B62-MDP	1.968 KA ANG: -75.13
B-B62-BP	FAULT: 2.011 KA AT -77.48 DEG (0.72 MVA)	X/R: 4.50
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0129 + J 0.0583	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.011 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.590 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.195 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.011 KA
	CONTRIBUTIONS: B-B62-MDP	2.011 KA ANG: -77.48
B-B62-ELEV-1	FAULT: 1.875 KA AT -62.66 DEG (0.68 MVA)	X/R: 1.93
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0294 + J 0.0569	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.875 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.930 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.875 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.875 KA
	CONTRIBUTIONS: B-B62-EQD	1.875 KA ANG: -62.66
B-B62-ELEV-2	FAULT: 1.875 KA AT -62.66 DEG (0.68 MVA)	X/R: 1.93
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0294 + J 0.0569	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.875 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.930 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.875 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.875 KA
	CONTRIBUTIONS: B-B62-EQD	1.875 KA ANG: -62.66

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B62-EQ	FAULT:	1.983 KA AT -64.76 DEG (	0.71 MVA)	X/R:	2.12
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0258 + J 0.0548		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.983 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.093 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.983 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.983 KA			
	CONTRIBUTIONS: B-B62-EQD	1.983 KA		ANG:	-64.76
B-B62-EQD	FAULT:	2.006 KA AT -65.51 DEG (	0.72 MVA)	X/R:	2.20
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0248 + J 0.0545		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.006 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.137 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.006 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.006 KA			
	CONTRIBUTIONS: B-B62-ATS-EQD	2.006 KA		ANG:	-65.51
B-B62-KP	FAULT:	2.006 KA AT -77.91 DEG (	0.72 MVA)	X/R:	4.67
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0125 + J 0.0585		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.006 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.604 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.207 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.006 KA			
	CONTRIBUTIONS: B-B62-MDP	2.006 KA		ANG:	-77.91
B-B62-LP1	FAULT:	2.019 KA AT -77.81 DEG (	0.73 MVA)	X/R:	4.63
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0126 + J 0.0581		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.019 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.617 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.218 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.019 KA			
	CONTRIBUTIONS: B-B62-MDP	2.019 KA		ANG:	-77.81
B-B62-LP2	FAULT:	2.006 KA AT -77.91 DEG (	0.72 MVA)	X/R:	4.67
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0125 + J 0.0585		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.006 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.604 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.207 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.006 KA			
	CONTRIBUTIONS: B-B62-MDP	2.006 KA		ANG:	-77.91

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B62-LP3	FAULT:	2.012 KA AT -79.11 DEG (	0.73 MVA)	X/R:	5.20
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0113 + J 0.0586		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.012 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.676 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.267 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.038 KA			
	CONTRIBUTIONS: B-B62-MDP	2.012 KA		ANG:	-79.11
B-B62-LP4	FAULT:	2.021 KA AT -79.31 DEG (	0.73 MVA)	X/R:	5.30
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0110 + J 0.0584		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.021 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.698 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.286 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.055 KA			
	CONTRIBUTIONS: B-B62-MDP	2.021 KA		ANG:	-79.31
B-B62-LS1	FAULT:	1.384 KA AT -43.83 DEG (	0.50 MVA)	X/R:	0.96
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0626 + J 0.0601		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.384 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.384 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.384 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.384 KA			
	CONTRIBUTIONS: B-B62-LSD	1.384 KA		ANG:	-43.83
B-B62-LS2	FAULT:	1.479 KA AT -45.90 DEG (	0.53 MVA)	X/R:	1.03
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0565 + J 0.0583		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.479 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.479 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.479 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.479 KA			
	CONTRIBUTIONS: B-B62-LSD	1.479 KA		ANG:	-45.90
B-B62-LS3	FAULT:	1.425 KA AT -45.46 DEG (	0.51 MVA)	X/R:	1.02
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0591 + J 0.0600		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.425 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.425 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.425 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.425 KA			
	CONTRIBUTIONS: B-B62-LSD	1.425 KA		ANG:	-45.46
B-B62-LS4	FAULT:	1.484 KA AT -46.44 DEG (	0.53 MVA)	X/R:	1.05
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0558 + J 0.0586		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.484 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.484 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.484 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.484 KA	
	CONTRIBUTIONS: B-B62-LSD	1.484 KA	ANG: -46.44
B-B62-LSD	FAULT: 1.562 KA AT -47.76 DEG (0.56 MVA)	X/R:	1.10
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0517 + J 0.0569		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.562 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.562 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.562 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.562 KA	
	CONTRIBUTIONS: B-B62-LSD-M	1.562 KA	ANG: -47.76
B-B62-LSD-M	FAULT: 1.563 KA AT -47.77 DEG (0.56 MVA)	X/R:	1.10
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0516 + J 0.0569		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.563 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.563 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.563 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.563 KA	
	CONTRIBUTIONS: B-B62-ATS-LSD	1.563 KA	ANG: -47.77
B-B62-MDP	FAULT: 2.105 KA AT -81.47 DEG (0.76 MVA)	X/R:	6.67
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0085 + J 0.0564		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.110 KA	
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.940 KA	
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.492 KA	
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.240 KA	
	CONTRIBUTIONS: B-B62-MDP-M	2.105 KA	ANG: -81.47

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B62-MDP (CONTINUED)

B-B62-MDP-M	FAULT:	2.106 KA AT -81.48 DEG (	0.76 MVA)	X/R:	6.67
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0085 + J 0.0564		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.110 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.941 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.493 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.241 KA			
	CONTRIBUTIONS: B-T-B62-SEC	2.106 KA		ANG:	-81.48
B-B62-OT	FAULT:	1.999 KA AT -76.46 DEG (	0.72 MVA)	X/R:	4.15
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0141 + J 0.0584		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.999 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.525 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.140 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.999 KA			
	CONTRIBUTIONS: B-B62-MDP	1.999 KA		ANG:	-76.46
B-B62-PAD RM	FAULT:	1.952 KA AT -64.11 DEG (	0.70 MVA)	X/R:	2.06
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0269 + J 0.0553		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.952 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.044 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.952 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.952 KA			
	CONTRIBUTIONS: B-B62-EQD	1.952 KA		ANG:	-64.11
B-B62-STRT LGT	FAULT:	1.992 KA AT -74.13 DEG (	0.72 MVA)	X/R:	3.52
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0165 + J 0.0580		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.992 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.414 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.046 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.992 KA			
	CONTRIBUTIONS: B-B62-MDP	1.992 KA		ANG:	-74.13
B-B7-ATS-EQ	FAULT:	3.943 KA AT -73.95 DEG (	1.42 MVA)	X/R:	3.48
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0084 + J 0.0293		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.943 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.763 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.036 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.943 KA			
	ATS-B7-EQ BUS-0702	3.943 KA		ANG:	-73.95

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-ATS-LS	FAULT:	3.475 KA AT	-60.39 DEG (	1.25 MVA)	X/R: 1.76
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0171 + J 0.0300	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		3.475 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.489 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.475 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.475 KA		
	ATS-B7-LS BUS-0708		3.475 KA	ANG:	-60.39
B-B7-ELEV	FAULT:	3.336 KA AT	-68.61 DEG (	1.20 MVA)	X/R: 2.55
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0131 + J 0.0335	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		3.336 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.707 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.336 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.336 KA		
	CONTRIBUTIONS: B-B7-EQD		3.336 KA	ANG:	-68.61
B-B7-EQ1	FAULT:	3.374 KA AT	-67.28 DEG (	1.22 MVA)	X/R: 2.39
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0137 + J 0.0328	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		3.374 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.679 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.374 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.374 KA		
	CONTRIBUTIONS: B-B7-EQD		3.374 KA	ANG:	-67.28
B-B7-EQ2	FAULT:	3.638 KA AT	-71.11 DEG (	1.31 MVA)	X/R: 2.92
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0107 + J 0.0312	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		3.638 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.195 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.638 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.638 KA		
	CONTRIBUTIONS: B-B7-EQD		3.638 KA	ANG:	-71.11
B-B7-EQ4	FAULT:	3.452 KA AT	-67.61 DEG (	1.24 MVA)	X/R: 2.43
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0133 + J 0.0322	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		3.452 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.781 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.452 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.452 KA		
	CONTRIBUTIONS: B-B7-EQD		3.452 KA	ANG:	-67.61
B-B7-EQD	FAULT:	3.778 KA AT	-73.26 DEG (	1.36 MVA)	X/R: 3.32
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0092 + J 0.0304	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	3.778 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.511 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.823 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.778 KA		
	CONTRIBUTIONS: B-B7-ATS-EQ	3.778 KA	ANG:	-73.26
B-B7-LP2	FAULT: 1.855 KA AT -78.21 DEG (0.67 MVA)		X/R:	4.79
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0132 + J 0.0634			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.855 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.423 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.053 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.855 KA		
	CONTRIBUTIONS: B-B7-LP2-M	1.855 KA	ANG:	-78.21
B-B7-LP2-M	FAULT: 1.856 KA AT -78.24 DEG (0.67 MVA)		X/R:	4.80
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0132 + J 0.0633			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.856 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.426 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.056 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.856 KA		
	CONTRIBUTIONS: B-B7-MDP	1.856 KA	ANG:	-78.24
B-B7-LP3	FAULT: 1.768 KA AT -75.73 DEG (0.64 MVA)		X/R:	3.93
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0167 + J 0.0658			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.768 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.204 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.868 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.768 KA		
	CONTRIBUTIONS: B-B7-LP3-M	1.768 KA	ANG:	-75.73
B-B7-LP3-M	FAULT: 1.769 KA AT -75.76 DEG (0.64 MVA)		X/R:	3.94
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0167 + J 0.0658			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.769 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.207 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.870 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.769 KA		
	CONTRIBUTIONS: B-B7-MDP	1.769 KA	ANG:	-75.76

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-LP4	FAULT:	1.855 KA AT -78.21 DEG (	0.67 MVA)	X/R:	4.79
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0132 + J 0.0634	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.855 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.423 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.053 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.855 KA			
	CONTRIBUTIONS: B-B7-LP4-M	1.855 KA	ANG:	-78.21	
B-B7-LP4-M	FAULT:	1.856 KA AT -78.24 DEG (	0.67 MVA)	X/R:	4.80
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0132 + J 0.0633	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.856 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.426 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.056 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.856 KA			
	CONTRIBUTIONS: B-B7-MDP	1.856 KA	ANG:	-78.24	
B-B7-LP5	FAULT:	1.768 KA AT -75.73 DEG (	0.64 MVA)	X/R:	3.93
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0167 + J 0.0658	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.768 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.204 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.868 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.768 KA			
	CONTRIBUTIONS: B-B7-LP5-M	1.768 KA	ANG:	-75.73	
B-B7-LP5-M	FAULT:	1.769 KA AT -75.76 DEG (	0.64 MVA)	X/R:	3.94
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0167 + J 0.0658	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.769 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.207 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.870 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.769 KA			
	CONTRIBUTIONS: B-B7-MDP	1.769 KA	ANG:	-75.76	
B-B7-LP6	FAULT:	1.735 KA AT -74.91 DEG (	0.63 MVA)	X/R:	3.71
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0180 + J 0.0668	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.735 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.132 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.807 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.735 KA			
	CONTRIBUTIONS: B-B7-LP6-M	1.735 KA	ANG:	-74.91	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-LP6-M	FAULT:	1.736 KA AT -74.94 DEG (	0.63 MVA)	X/R:	3.72
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0180 + J 0.0668		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.736 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.134 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.809 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.736 KA		
	CONTRIBUTIONS: B-B7-LP3-M		1.736 KA	ANG:	-74.94
B-B7-LP7	FAULT:	1.821 KA AT -77.45 DEG (	0.66 MVA)	X/R:	4.49
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0143 + J 0.0644		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.821 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.344 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.986 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.821 KA		
	CONTRIBUTIONS: B-B7-LP7-M		1.821 KA	ANG:	-77.45
B-B7-LP7-M	FAULT:	1.822 KA AT -77.48 DEG (	0.66 MVA)	X/R:	4.50
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0143 + J 0.0643		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.822 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.346 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.989 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.822 KA		
	CONTRIBUTIONS: B-B7-LP4-M		1.822 KA	ANG:	-77.48
B-B7-LP8	FAULT:	1.735 KA AT -74.91 DEG (	0.63 MVA)	X/R:	3.71
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0180 + J 0.0668		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.735 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.132 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.807 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.735 KA		
	CONTRIBUTIONS: B-B7-LP8-M		1.735 KA	ANG:	-74.91
B-B7-LP8-M	FAULT:	1.736 KA AT -74.94 DEG (	0.63 MVA)	X/R:	3.72
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0180 + J 0.0668		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.736 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.134 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.809 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.736 KA		
	CONTRIBUTIONS: B-B7-LP5-M		1.736 KA	ANG:	-74.94

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-LS1	FAULT:	2.865 KA AT	-53.20 DEG (	1.03 MVA)	X/R:	1.34
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0251 + J 0.0336		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.865 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.865 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.865 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.865 KA				
	CONTRIBUTIONS: B-B7-LSD	2.865 KA	ANG:	-53.20		
B-B7-LS2	FAULT:	3.150 KA AT	-55.71 DEG (	1.13 MVA)	X/R:	1.47
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0215 + J 0.0315		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.150 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.150 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.150 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.150 KA				
	CONTRIBUTIONS: B-B7-LSD	3.150 KA	ANG:	-55.71		
B-B7-LS4	FAULT:	2.808 KA AT	-52.54 DEG (	1.01 MVA)	X/R:	1.31
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0260 + J 0.0339		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.808 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.808 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.808 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.808 KA				
	CONTRIBUTIONS: B-B7-LSD	2.808 KA	ANG:	-52.54		
B-B7-LS5	FAULT:	3.091 KA AT	-55.89 DEG (	1.11 MVA)	X/R:	1.48
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0218 + J 0.0322		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.091 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.091 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.091 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.091 KA				
	CONTRIBUTIONS: B-B7-LSD	3.091 KA	ANG:	-55.89		
B-B7-LSD	FAULT:	3.433 KA AT	-60.11 DEG (	1.24 MVA)	X/R:	1.74
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0174 + J 0.0303		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.433 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.437 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.433 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.433 KA				
	CONTRIBUTIONS: B-B7-LSD-M	3.433 KA	ANG:	-60.11		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-LSD-M	FAULT:	3.438 KA AT -60.14 DEG (	1.24 MVA)	X/R:	1.74
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0174 + J 0.0303	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.438 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.443 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.438 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.438 KA			
	CONTRIBUTIONS: B-B7-ATS-LS	3.438 KA	ANG:	-60.14	
B-B7-MCC-1	FAULT:	3.496 KA AT -66.00 DEG (	1.26 MVA)	X/R:	2.25
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0140 + J 0.0314	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.496 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.748 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.496 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.496 KA			
	CONTRIBUTIONS: B-B7-EQD	3.496 KA	ANG:	-66.00	
B-B7-MCC-2	FAULT:	1.872 KA AT -75.85 DEG (	0.67 MVA)	X/R:	3.97
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0157 + J 0.0622	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.872 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.338 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.982 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.872 KA			
	CONTRIBUTIONS: B-B7-MDP	1.872 KA	ANG:	-75.85	
B-B7-MDP	FAULT:	1.930 KA AT -79.94 DEG (	0.70 MVA)	X/R:	5.64
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0109 + J 0.0613	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.930 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.610 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.212 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.988 KA			
	CONTRIBUTIONS: B-B7-MDP-M	1.930 KA	ANG:	-79.94	
B-B7-MDP-M	FAULT:	1.930 KA AT -79.95 DEG (	0.70 MVA)	X/R:	5.64
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0109 + J 0.0613	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.930 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.611 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.213 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.989 KA			
	CONTRIBUTIONS: B-T-B7-SEC	1.930 KA	ANG:	-79.95	
B-B7-SRTLGHT-M	FAULT: 1.808 KA AT -72.02 DEG (	0.65 MVA)	X/R:	3.08	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0205 + J	0.0632	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.808 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.116 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.808 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.808 KA			
	CONTRIBUTIONS: B-B7-MDP	1.808 KA	ANG:	-72.02	
B-B7-STRT LGHT	FAULT: 1.807 KA AT -71.99 DEG (	0.65 MVA)	X/R:	3.08	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0205 + J	0.0632	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.807 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.114 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.807 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.807 KA			
	CONTRIBUTIONS: B-B7-SRTLGHT-M	1.807 KA	ANG:	-71.99	
B-B70 -BLDG-71	FAULT: 0.918 KA AT -35.57 DEG (	0.33 MVA)	X/R:	0.72	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.1064 + J	0.0761	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	0.918 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	0.918 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	0.918 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	0.918 KA			
	CONTRIBUTIONS: B-B70-MDP	0.918 KA	ANG:	-35.57	
B-B70 GEN-M	FAULT: 2.860 KA AT -86.88 DEG (	1.03 MVA)	X/R:	18.34	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0023 + J	0.0419	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.251 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.531 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.840 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.452 KA			
	CONTRIBUTIONS: B-B70-GEN	2.860 KA	ANG:	-86.88	
B-B70-A	FAULT: 2.378 KA AT -77.27 DEG (	0.86 MVA)	X/R:	4.43	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0111 + J	0.0492	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.378 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.051 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.585 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.378 KA			
	CONTRIBUTIONS: B-B70-MDP	2.378 KA	ANG:	-77.27	
B-B70-ATS-EQD	FAULT: 2.762 KA AT -85.78 DEG (	1.00 MVA)	X/R:	13.56	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0032 + J	0.0434	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.056 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.259 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.610 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.245 KA			
	ATS-B70-EQD BUS-0612	2.762 KA	ANG:	-85.78	
B-B70-ATS-LSD	FAULT: 2.751 KA AT -84.43 DEG (	0.99 MVA)	X/R:	10.26	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0042 + J	0.0434	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.947 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.107 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.480 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.129 KA			
	ATS-B70-LSD BUS-0613	2.751 KA	ANG:	-84.43	
B-B70-ATTIC	FAULT: 2.321 KA AT -75.39 DEG (	0.84 MVA)	X/R:	3.84	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0130 + J	0.0501	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.321 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.876 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.437 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.321 KA			
	CONTRIBUTIONS: B-B70-MDP	2.321 KA	ANG:	-75.39	
B-B70-B	FAULT: 2.378 KA AT -77.27 DEG (	0.86 MVA)	X/R:	4.43	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0111 + J	0.0492	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.378 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.051 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.585 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.378 KA			
	CONTRIBUTIONS: B-B70-MDP	2.378 KA	ANG:	-77.27	
B-B70-CHLLR	FAULT: 2.067 KA AT -77.14 DEG (	0.74 MVA)	X/R:	4.38	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0129 + J	0.0566	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.067 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.645 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.242 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.067 KA		
	CONTRIBUTIONS: B-B70-MDP	2.067 KA	ANG:	-77.14
B-B70-EM-TAP	FAULT: 2.858 KA AT -86.84 DEG (1.03 MVA)		X/R:	18.12
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0023 + J 0.0420 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.246 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.523 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.834 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.446 KA		
	CBL-0544 B-B70 GEN-M	2.858 KA	ANG:	-86.84
B-B70-EQ1	FAULT: 2.411 KA AT -75.85 DEG (0.87 MVA)		X/R:	3.97
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0122 + J 0.0483 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.411 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.011 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.552 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.411 KA		
	CONTRIBUTIONS: B-B70-EQD	2.411 KA	ANG:	-75.85
B-B70-EQ2	FAULT: 2.249 KA AT -71.70 DEG (0.81 MVA)		X/R:	3.02
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0168 + J 0.0507 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.249 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.617 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.249 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.249 KA		
	CONTRIBUTIONS: B-B70-EQD	2.249 KA	ANG:	-71.70
B-B70-EQ3	FAULT: 2.355 KA AT -74.40 DEG (0.85 MVA)		X/R:	3.58
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0137 + J 0.0491 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.355 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.868 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.430 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.355 KA		
	CONTRIBUTIONS: B-B70-EQ1	2.355 KA	ANG:	-74.40

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B70-EQ4	FAULT:	2.197 KA AT -70.44 DEG (	0.79 MVA)	X/R:	2.81
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0183 + J 0.0515		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.197 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.508 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.197 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.197 KA			
	CONTRIBUTIONS: B-B70-EQ2	2.197 KA		ANG:	-70.44
B-B70-EQ5	FAULT:	2.301 KA AT -73.02 DEG (	0.83 MVA)	X/R:	3.27
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0152 + J 0.0499		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.301 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.737 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.319 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.301 KA			
	CONTRIBUTIONS: B-B70-EQ3	2.301 KA		ANG:	-73.02
B-B70-EQ6	FAULT:	2.147 KA AT -69.24 DEG (	0.77 MVA)	X/R:	2.64
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0198 + J 0.0523		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.147 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.407 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.147 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.147 KA			
	CONTRIBUTIONS: B-B70-EQ4	2.147 KA		ANG:	-69.24
B-B70-EQD	FAULT:	2.734 KA AT -85.41 DEG (	0.99 MVA)	X/R:	12.47
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0035 + J 0.0438		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.998 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.179 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.541 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.183 KA			
	CONTRIBUTIONS: B-B70-EQD-M	2.734 KA		ANG:	-85.41
B-B70-EQD-M	FAULT:	2.736 KA AT -85.45 DEG (	0.99 MVA)	X/R:	12.56
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0035 + J 0.0437		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.003 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.185 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.547 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.188 KA			
	CONTRIBUTIONS: B-B70-ATS-EQD	2.736 KA		ANG:	-85.45

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B70-FIRE PMP FAULT: 2.071 KA AT -54.53 DEG (0.75 MVA) X/R: 1.40
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0336 + J 0.0472 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.071 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.071 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.071 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.071 KA
CONTRIBUTIONS: B-B70-FPMP M 2.071 KA ANG: -54.53

B-B70-FP-TAP FAULT: 2.740 KA AT -85.27 DEG (0.99 MVA) X/R: 12.08
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0036 + J 0.0437 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.994 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.172 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.536 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.178 KA
CBL-0507 B-B70-FPMP M 2.740 KA ANG: -85.27

B-B70-FPMP M FAULT: 2.778 KA AT -85.95 DEG (1.00 MVA) X/R: 14.14
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0030 + J 0.0431 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.086 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.301 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.645 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.277 KA
CBL-0548 B-B70-EM-TAP 2.778 KA ANG: -85.95

B-B70-GEN FAULT: 2.883 KA AT -87.14 DEG (1.04 MVA) X/R: 20.00
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0021 + J 0.0416 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 3.299 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 4.598 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 3.896 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 3.503 KA
CONTRIBUTIONS: B70-GEN 2.883 KA ANG: -87.14

B-B70-K FAULT: 2.320 KA AT -71.29 DEG (0.84 MVA) X/R: 2.95
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0166 + J 0.0490 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.320 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.683 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.320 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.320 KA
CONTRIBUTIONS: B-B70-MDP 2.320 KA ANG: -71.29

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-LP-4	FAULT:	2.109 KA AT -74.09 DEG (	0.76 MVA)	X/R:	3.51
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0156 + J 0.0548	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.109 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.554 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.164 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.109 KA			
	CONTRIBUTIONS: B-B70-MDP	2.109 KA	ANG:	-74.09	
B-B70-LP1	FAULT:	2.227 KA AT -72.46 DEG (	0.80 MVA)	X/R:	3.16
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0162 + J 0.0514	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.227 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.625 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.227 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.227 KA			
	CONTRIBUTIONS: B-B70-MDP	2.227 KA	ANG:	-72.46	
B-B70-LP3	FAULT:	2.222 KA AT -76.38 DEG (	0.80 MVA)	X/R:	4.13
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0127 + J 0.0525	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.222 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.803 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.375 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.222 KA			
	CONTRIBUTIONS: B-B70-MDP	2.222 KA	ANG:	-76.38	
B-B70-LS1	FAULT:	2.247 KA AT -66.03 DEG (	0.81 MVA)	X/R:	2.25
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0217 + J 0.0488	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.247 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.409 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.247 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.247 KA			
	CONTRIBUTIONS: B-B70-LSD	2.247 KA	ANG:	-66.03	
B-B70-LS2	FAULT:	2.081 KA AT -61.23 DEG (	0.75 MVA)	X/R:	1.82
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0278 + J 0.0506	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.081 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.108 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.081 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.081 KA			
	CONTRIBUTIONS: B-B70-LSD	2.081 KA	ANG:	-61.23	
B-B70-LS3	FAULT:	2.299 KA AT -70.60 DEG (	0.83 MVA)	X/R:	2.84
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0173 + J 0.0493	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	2.299 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.631 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.299 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.299 KA		
	CONTRIBUTIONS: B-B70-LSD	2.299 KA	ANG:	-70.60
B-B70-LS4	FAULT: 2.121 KA AT -65.92 DEG (0.76 MVA)		X/R:	2.24
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0231 + J 0.0517 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.121 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.271 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.121 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.121 KA		
	CONTRIBUTIONS: B-B70-LSD	2.121 KA	ANG:	-65.92
B-B70-LS5	FAULT: 2.238 KA AT -68.96 DEG (0.81 MVA)		X/R:	2.60
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0193 + J 0.0501 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.238 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.499 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.238 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.238 KA		
	CONTRIBUTIONS: B-B70-LS3	2.238 KA	ANG:	-68.96
B-B70-LS6	FAULT: 2.064 KA AT -64.52 DEG (0.74 MVA)		X/R:	2.10
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0250 + J 0.0525 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.064 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.172 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.064 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.064 KA		
	CONTRIBUTIONS: B-B70-LS4	2.064 KA	ANG:	-64.52
B-B70-LSD	FAULT: 2.723 KA AT -84.08 DEG (0.98 MVA)		X/R:	9.64
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0045 + J 0.0439 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.893 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.031 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.417 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.071 KA		
	CBL-0541 B-B70-LSD-M	2.723 KA	ANG:	-84.08

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-LSD-M	FAULT:	2.725 KA AT -84.11 DEG (	0.98 MVA)	X/R:	9.70
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0045 + J 0.0438		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.897 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.038 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.422 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.076 KA		
	CONTRIBUTIONS: B-B70-ATS-LSD		2.725 KA	ANG:	-84.11
B-B70-MDP	FAULT:	2.548 KA AT -83.46 DEG (	0.92 MVA)	X/R:	8.72
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0054 + J 0.0468		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.669 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.719 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.152 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.834 KA		
	CONTRIBUTIONS: B-B70-MDP-M		2.548 KA	ANG:	-83.46
B-B70-MDP-M	FAULT:	2.549 KA AT -83.48 DEG (	0.92 MVA)	X/R:	8.75
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0054 + J 0.0468		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.671 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.722 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.154 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.836 KA		
	CONTRIBUTIONS: B-T-B70-SEC		2.549 KA	ANG:	-83.48
B-B70-PP2	FAULT:	2.329 KA AT -78.63 DEG (	0.84 MVA)	X/R:	4.97
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0102 + J 0.0505		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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	LOW VOLTAGE POWER CIRCUIT BREAKER	2.329 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.067 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.599 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.337 KA			
	CONTRIBUTIONS: B-B70-MDP	2.329 KA	ANG:	-78.63	
B-B70-PP220	FAULT: 2.164 KA AT -73.86 DEG (0.78 MVA)		X/R:	3.45	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0154 + J 0.0533				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.164 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.610 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.212 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.164 KA			
	CONTRIBUTIONS: B-B70-MDP	2.164 KA	ANG:	-73.86	
B-B70-STRTLGHT	FAULT: 2.356 KA AT -72.89 DEG (0.85 MVA)		X/R:	3.25	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0150 + J 0.0487				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.356 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.796 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.369 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.356 KA			
	CONTRIBUTIONS: B-B70-MDP	2.356 KA	ANG:	-72.89	
B-B78-1P	FAULT: 1.754 KA AT -70.05 DEG (0.63 MVA)		X/R:	2.75	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0234 + J 0.0644				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.754 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.990 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.754 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.754 KA			
	CONTRIBUTIONS: B-B78-MDP	1.754 KA	ANG:	-70.05	
B-B78-78AE1	FAULT: 2.462 KA AT -49.92 DEG (0.89 MVA)		X/R:	1.19	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0314 + J 0.0373				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.462 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.462 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.462 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.462 KA			
	CONTRIBUTIONS: B-B78-ATSG9578	2.462 KA	ANG:	-49.92	
B-B78-A/C	FAULT: 1.594 KA AT -61.52 DEG (0.57 MVA)		X/R:	1.84	
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0359 + J 0.0662				OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.594 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.620 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.594 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.594 KA			
	CONTRIBUTIONS: B-B78-MDP	1.594 KA	ANG:	-61.52	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B78-ATS TAP	FAULT:	2.054 KA AT	-80.12 DEG (	0.74 MVA)	X/R:	5.74
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0100 + J	0.0576	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			2.054 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.788 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			2.362 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			2.124 KA		
	CONTRIBUTIONS:	B-B78-MDP		2.054 KA	ANG:	-80.12
B-B78-ATS-CRD	FAULT:	4.406 KA AT	-66.95 DEG (	1.59 MVA)	X/R:	2.35
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0107 + J	0.0251	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			4.406 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			4.784 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			4.406 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			4.406 KA		
	ATS-B78-CRD	BUS-0712		4.406 KA	ANG:	-66.95
B-B78-ATS-E1	FAULT:	4.763 KA AT	-77.44 DEG (	1.72 MVA)	X/R:	4.49
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0055 + J	0.0246	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			4.763 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			6.129 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			5.194 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			4.763 KA		
	CONTRIBUTIONS:	BUS-0715		4.763 KA	ANG:	-77.44
B-B78-ATS-LS1	FAULT:	4.492 KA AT	-69.52 DEG (	1.62 MVA)	X/R:	2.68
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0094 + J	0.0250	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			4.492 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			5.057 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			4.492 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			4.492 KA		
	ATS-B78-LS1	BUS-0714		4.492 KA	ANG:	-69.52
B-B78-ATSG9578	FAULT:	2.476 KA AT	-49.87 DEG (	0.89 MVA)	X/R:	1.19
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0313 + J	0.0371	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER			2.476 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.476 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			2.476 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			2.476 KA		
	ATS-B78-G95-78	BUS-0713		2.476 KA	ANG:	-49.87

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B78-BARBER	FAULT:	1.614 KA AT -52.18 DEG (	0.58 MVA)	X/R:	1.29
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0456 + J 0.0588	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.614 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.614 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.614 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.614 KA			
	CONTRIBUTIONS: B-B78-MDP	1.614 KA	ANG:	-52.18	
B-B78-CONRM-AC	FAULT:	1.342 KA AT -47.99 DEG (	0.48 MVA)	X/R:	1.11
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0599 + J 0.0665	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.342 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.342 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.342 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.342 KA			
	CONTRIBUTIONS: B-B78-MDP	1.342 KA	ANG:	-47.99	
B-B78-CRD	FAULT:	2.749 KA AT -52.37 DEG (	0.99 MVA)	X/R:	1.30
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0267 + J 0.0346	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.749 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.749 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.749 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.749 KA			
	CONTRIBUTIONS: B-B78-ATS-CRD	2.749 KA	ANG:	-52.37	
B-B78-E1	FAULT:	4.714 KA AT -77.23 DEG (	1.70 MVA)	X/R:	4.41
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0056 + J 0.0248	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.714 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.042 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.121 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.714 KA			
	CONTRIBUTIONS: B-B78-ATS-E1	4.714 KA	ANG:	-77.23	
B-B78-ELEV-1	FAULT:	2.037 KA AT -78.10 DEG (	0.73 MVA)	X/R:	4.74
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0122 + J 0.0577	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.037 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.655 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.250 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.037 KA			
	CONTRIBUTIONS: B-B78-MDP	2.037 KA	ANG:	-78.10	
B-B78-ELEV-2	FAULT:	2.037 KA AT -78.10 DEG (	0.73 MVA)	X/R:	4.74
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0122 + J 0.0577	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 2.037 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.655 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.250 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.037 KA
CONTRIBUTIONS: B-B78-MDP 2.037 KA ANG: -78.10

B-B78-FLPNL FAULT: 1.707 KA AT -67.00 DEG (0.62 MVA) X/R: 2.36
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0275 + J 0.0648 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.707 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.855 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.707 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.707 KA
CONTRIBUTIONS: B-B78-MDP 1.707 KA ANG: -67.00

B-B78-KK FAULT: 1.836 KA AT -70.85 DEG (0.66 MVA) X/R: 2.88
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0214 + J 0.0618 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.836 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.110 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.836 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.836 KA
CONTRIBUTIONS: B-B78-MDP 1.836 KA ANG: -70.85

B-B78-L10 FAULT: 1.756 KA AT -74.70 DEG (0.63 MVA) X/R: 3.66
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0180 + J 0.0660 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.756 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.149 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.822 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.756 KA
CONTRIBUTIONS: B-B78-MDP 1.756 KA ANG: -74.70

B-B78-LP-1 FAULT: 1.774 KA AT -71.78 DEG (0.64 MVA) X/R: 3.04
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0212 + J 0.0643 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.774 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.068 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.774 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.774 KA
CONTRIBUTIONS: B-B78-MDP 1.774 KA ANG: -71.78

B-B78-LP-13 FAULT: 1.722 KA AT -74.10 DEG (0.62 MVA) X/R: 3.51
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0191 + J 0.0671 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.722 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.086 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.767 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.722 KA			
	CONTRIBUTIONS: B-B78-L10	1.722 KA	ANG:	-74.10	
B-B78-LP-14	FAULT: 1.689 KA AT -73.52 DEG (	0.61 MVA)	X/R:	3.38	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0202 + J	0.0682	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.689 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.025 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.716 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.689 KA			
	CONTRIBUTIONS: B-B78-LP-13	1.689 KA	ANG:	-73.52	
B-B78-LP-15	FAULT: 1.657 KA AT -72.96 DEG (	0.60 MVA)	X/R:	3.26	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0212 + J	0.0693	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.657 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.968 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.668 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.657 KA			
	CONTRIBUTIONS: B-B78-LP-14	1.657 KA	ANG:	-72.96	
B-B78-LP-2	FAULT: 1.961 KA AT -76.54 DEG (	0.71 MVA)	X/R:	4.18	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0143 + J	0.0596	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.961 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.481 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.102 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.961 KA			
	CONTRIBUTIONS: B-B78-MDP	1.961 KA	ANG:	-76.54	
B-B78-LP-4	FAULT: 1.555 KA AT -63.95 DEG (	0.56 MVA)	X/R:	2.05	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0339 + J	0.0694	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.555 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.625 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.555 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.555 KA			
	CONTRIBUTIONS: B-B78-LP-1	1.555 KA	ANG:	-63.95	
B-B78-LP-8	FAULT: 1.978 KA AT -78.52 DEG (	0.71 MVA)	X/R:	4.92	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0121 + J	0.0595	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.978 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.599 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.203 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.980 KA			
	CONTRIBUTIONS: B-B78-MDP	1.978 KA	ANG:	-78.52	
B-B78-LP10	FAULT: 1.707 KA AT -73.62 DEG (	0.62 MVA)	X/R:	3.40	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0198 + J	0.0675	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.707 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.051 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.738 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.707 KA			
	CONTRIBUTIONS: B-B78-LP7	1.707 KA	ANG:	-73.62	
B-B78-LP13	FAULT: 1.666 KA AT -73.09 DEG (	0.60 MVA)	X/R:	3.29	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0210 + J	0.0690	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.666 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.984 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.681 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.666 KA			
	CONTRIBUTIONS: B-B78-LP10	1.666 KA	ANG:	-73.09	
B-B78-LP3	FAULT: 1.961 KA AT -76.54 DEG (	0.71 MVA)	X/R:	4.18	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0143 + J	0.0596	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.961 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.481 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.102 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.961 KA			
	CONTRIBUTIONS: B-B78-MDP	1.961 KA	ANG:	-76.54	
B-B78-LP6	FAULT: 1.903 KA AT -75.39 DEG (	0.69 MVA)	X/R:	3.84	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0159 + J	0.0610	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.903 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.358 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.999 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.903 KA			
	CONTRIBUTIONS: B-B78-LP3	1.903 KA	ANG:	-75.39	
B-B78-LP7	FAULT: 1.750 KA AT -74.18 DEG (	0.63 MVA)	X/R:	3.53	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0187 + J	0.0660	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.750 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.123 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.799 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.750 KA		
	CONTRIBUTIONS: B-B78-MDP	1.750 KA	ANG:	-74.18
B-B78-LSD	FAULT: 4.434 KA AT -69.07 DEG (1.60 MVA)		X/R:	2.62
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0097 + J 0.0253			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	4.434 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.960 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	4.434 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	4.434 KA		
	CONTRIBUTIONS: B-B78-ATS-LS1	4.434 KA	ANG:	-69.07
B-B78-MDP	FAULT: 2.171 KA AT -82.35 DEG (0.78 MVA)		X/R:	7.45
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0074 + J 0.0548			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.218 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.091 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.619 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.355 KA		
	CONTRIBUTIONS: B-B78-MDP-M	2.171 KA	ANG:	-82.35

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B78-MDP (CONTINUED)

B-B78-MDP-M	FAULT:	2.171 KA AT	-82.36 DEG (	0.78 MVA)	X/R:	7.45
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0074 + J	0.0548	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.218 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.091 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.620 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.355 KA			
	CONTRIBUTIONS:	B-T-B78-SEC	2.171 KA	ANG:	-82.36	
B-B78-MEC-1 AC	FAULT:	1.785 KA AT	-76.08 DEG (	0.64 MVA)	X/R:	4.04
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0162 + J	0.0653	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.785 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.240 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.898 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.785 KA			
	CONTRIBUTIONS:	B-B78-MDP	1.785 KA	ANG:	-76.08	
B-B78-MEC2-A/C	FAULT:	2.047 KA AT	-79.35 DEG (	0.74 MVA)	X/R:	5.32
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0108 + J	0.0577	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.047 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.735 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.318 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.084 KA			
	CONTRIBUTIONS:	B-B78-MDP	2.047 KA	ANG:	-79.35	
B-B78-PHARM AC	FAULT:	1.614 KA AT	-52.18 DEG (	0.58 MVA)	X/R:	1.29
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0456 + J	0.0588	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.614 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.614 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.614 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.614 KA			
	CONTRIBUTIONS:	B-B78-MDP	1.614 KA	ANG:	-52.18	
B-B78-PHV	FAULT:	1.482 KA AT	-54.22 DEG (	0.53 MVA)	X/R:	1.39
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0474 + J	0.0657	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.482 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.482 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.482 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.482 KA			
	CONTRIBUTIONS:	B-B78-MDP	1.482 KA	ANG:	-54.22	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B78-PK	FAULT:	1.740 KA AT	-70.94 DEG (	0.63 MVA)	X/R:	2.89
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0225 + J	0.0652	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.740 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.001 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.740 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.740 KA			
	CONTRIBUTIONS: B-B78-MDP		1.740 KA		ANG:	-70.94
B-B78-PNL-330A	FAULT:	1.932 KA AT	-76.68 DEG (	0.70 MVA)	X/R:	4.22
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0143 + J	0.0605	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.932 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.451 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.077 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.932 KA			
	CONTRIBUTIONS: B-B78-MDP		1.932 KA		ANG:	-76.68
B-B78-PULM 78B	FAULT:	2.054 KA AT	-80.12 DEG (	0.74 MVA)	X/R:	5.74
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0100 + J	0.0576	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.054 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.788 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.362 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.124 KA			
	CONTRIBUTIONS: B-B78-MDP		2.054 KA		ANG:	-80.12
B-B78-QP	FAULT:	2.008 KA AT	-75.46 DEG (	0.72 MVA)	X/R:	3.86
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0150 + J	0.0579	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.008 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.491 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.111 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.008 KA			
	CONTRIBUTIONS: B-B78-MDP		2.008 KA		ANG:	-75.46
B-B78A-PNL-2	FAULT:	2.037 KA AT	-78.10 DEG (	0.73 MVA)	X/R:	4.74
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0122 + J	0.0577	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.037 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.655 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.250 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.037 KA			
	CONTRIBUTIONS: B-B78-MDP		2.037 KA		ANG:	-78.10
B-B8 2ND FLR	FAULT:	1.957 KA AT	-80.15 DEG (	0.71 MVA)	X/R:	5.76
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0105 + J	0.0605	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.957 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.658 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.253 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.025 KA			
	CONTRIBUTIONS: B-B8-MDP-8	1.957 KA	ANG:	-80.15	
B-B8 HYDRO ELV	FAULT: 1.868 KA AT -65.98 DEG (1.55 MVA)	X/R:	2.34		
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0604 + J 0.1355	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.868 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.024 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.868 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.868 KA			
	CONTRIBUTIONS: B-B8-480V PNL	1.868 KA	ANG:	-65.98	
B-B8-208V-MAIN	FAULT: 2.051 KA AT -81.26 DEG (0.74 MVA)	X/R:	6.51		
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0089 + J 0.0579	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.051 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.852 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.417 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.173 KA			
	CONTRIBUTIONS: B-T-B8-SEC	2.051 KA	ANG:	-81.26	
B-B8-480V ATS	FAULT: 2.193 KA AT -84.55 DEG (1.82 MVA)	X/R:	13.46		
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0120 + J 0.1258	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.425 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.379 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.864 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.575 KA			
	CONTRIBUTIONS: B-B8-480V PNL	0.431 KA	ANG:	-77.08	
	ATS-B8-480V BUS-0725	1.767 KA	ANG:	-86.36	
B-B8-480V PNL	FAULT: 2.188 KA AT -84.44 DEG (1.82 MVA)	X/R:	13.03		
	VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0123 + J 0.1261	OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.411 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.360 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.848 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.560 KA			
	CONTRIBUTIONS: B-B8-480V ATS	1.761 KA	ANG:	-86.24	
	CBL-0337 B-B8-TXMR PRI	0.432 KA	ANG:	-77.11	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B8-ATS	FAULT:	1.996 KA AT -80.27 DEG (	0.72 MVA)	X/R:	5.83
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0102 + J 0.0593	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.996 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.718 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.303 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.070 KA			
	CONTRIBUTIONS: BUS-0376	1.996 KA	ANG:	-80.27	
B-B8-BS	FAULT:	1.578 KA AT -60.64 DEG (	0.57 MVA)	X/R:	1.78
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0373 + J 0.0663	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.578 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.589 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.578 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.578 KA			
	CONTRIBUTIONS: B-B8-MDP-8	1.578 KA	ANG:	-60.64	
B-B8-CMOP	FAULT:	3.390 KA AT -71.60 DEG (	1.22 MVA)	X/R:	3.07
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0112 + J 0.0336	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.390 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.963 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.390 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.390 KA			
	CONTRIBUTIONS: B-B8-TXMR SEC	3.390 KA	ANG:	-71.60	
B-B8-COMP	FAULT:	1.593 KA AT -50.95 DEG (	1.32 MVA)	X/R:	1.26
	VOLTAGE:	480. EQUIV. IMPEDANCE=	0.1096 + J 0.1351	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.593 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.593 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.593 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.593 KA			
	CONTRIBUTIONS: B-B8-480V PNL	1.593 KA	ANG:	-50.95	
B-B8-ELEV	FAULT:	3.589 KA AT -76.17 DEG (	1.29 MVA)	X/R:	4.49
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0080 + J 0.0325	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	3.589 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	4.618 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	3.913 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	3.589 KA			
	CONTRIBUTIONS: M-B8-ELEV	1.200 KA	ANG:	-81.63	
	CBL-0658 B-B8-J-BOX	2.397 KA	ANG:	-73.44	
B-B8-FDR	FAULT:	3.707 KA AT -76.68 DEG (	1.34 MVA)	X/R:	4.45
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0075 + J 0.0315	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                LOW VOLTAGE POWER CIRCUIT BREAKER    3.707 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   4.761 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   4.035 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.707 KA
                CONTRIBUTIONS:  B-B8-TXMR SEC      2.543 KA      ANG:   -74.79
                CBL-0340        B-B8-J-BOX         1.169 KA      ANG:   -80.79

 B-B8-FLEXPMACH FAULT:    1.784 KA AT  -58.49 DEG (   1.48 MVA)  X/R:     1.68
                VOLTAGE:    480.   EQUIV. IMPEDANCE=  0.0812 + J  0.1325  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    1.784 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   1.784 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   1.784 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   1.784 KA
                CONTRIBUTIONS:  B-B8-480V PNL      1.784 KA      ANG:   -58.49

 B-B8-GE BKR    FAULT:    0.893 KA AT  -81.23 DEG (   0.74 MVA)  X/R:     6.48
                VOLTAGE:    480.   EQUIV. IMPEDANCE=  0.0473 + J  0.3068  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    0.893 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   1.240 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   1.051 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   0.945 KA
                CONTRIBUTIONS:  B-T-B8-2-SEC       0.893 KA      ANG:   -81.23

 B-B8-GEN       FAULT:    2.226 KA AT  -85.18 DEG (   1.85 MVA)  X/R:    16.92
                VOLTAGE:    480.   EQUIV. IMPEDANCE=  0.0105 + J  0.1241  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    2.513 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   3.503 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   2.969 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   2.669 KA
                CONTRIBUTIONS:  G-B8 GEN           1.802 KA      ANG:   -87.14
                CBL-0648        BUS-0725           0.429 KA      ANG:   -76.95

 B-B8-J-BOX     FAULT:    3.634 KA AT  -76.35 DEG (   1.31 MVA)  X/R:     4.45
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0078 + J  0.0321  OHMS
                LOW VOLTAGE POWER CIRCUIT BREAKER    3.634 KA
                MOLDED CASE CIRCUIT BREAKER < 10KA   4.668 KA
                MOLDED CASE CIRCUIT BREAKER < 20KA   3.956 KA
                MOLDED CASE CIRCUIT BREAKER > 20KA   3.634 KA
                CONTRIBUTIONS:  B-B8-FDR           2.453 KA      ANG:   -73.96
                CBL-0658        B-B8-ELEV          1.188 KA      ANG:   -81.29

 B-B8-L8B       FAULT:    1.792 KA AT  -68.86 DEG (   0.65 MVA)  X/R:     2.59
                VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0242 + J  0.0625  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.792 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.998 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.792 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.792 KA			
	CONTRIBUTIONS: B-B8-MDP-8	1.792 KA	ANG:	-68.86	
B-B8-LB1	FAULT: 1.796 KA AT -74.97 DEG (	0.65 MVA)	X/R:	3.72	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0173 + J	0.0646	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.796 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.208 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.871 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.796 KA			
	CONTRIBUTIONS: B-B8-MDP-8	1.796 KA	ANG:	-74.97	
B-B8-LB2	FAULT: 1.770 KA AT -74.35 DEG (	0.64 MVA)	X/R:	3.57	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0183 + J	0.0653	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.770 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.153 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.825 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.770 KA			
	CONTRIBUTIONS: B-B8-LB1	1.770 KA	ANG:	-74.35	
B-B8-MAIN BUS	FAULT: 2.046 KA AT -81.21 DEG (	0.74 MVA)	X/R:	6.47	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0090 + J	0.0580	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.046 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.841 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.408 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.164 KA			
	CONTRIBUTIONS: B-B8-208V-MAIN	2.046 KA	ANG:	-81.21	
B-B8-MDP-8	FAULT: 2.042 KA AT -81.18 DEG (	0.74 MVA)	X/R:	6.44	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0090 + J	0.0581	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.042 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.833 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.401 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.158 KA			
	CONTRIBUTIONS: B-B8-MAIN BUS	2.042 KA	ANG:	-81.18	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B8-PNL-PK	FAULT:	1.985 KA AT -79.41 DEG (0.72 MVA)	X/R:	5.35	
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0111 + J 0.0595		OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.985 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.655 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.250 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.023 KA			
	CONTRIBUTIONS: B-B8-MDP-8	1.985 KA	ANG:	-79.41	
B-B8-PP1	FAULT:	2.030 KA AT -80.79 DEG (0.73 MVA)	X/R:	6.17	
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0095 + J 0.0584		OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.030 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.794 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.368 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.128 KA			
	CONTRIBUTIONS: B-B8-PP1-M	2.030 KA	ANG:	-80.79	
B-B8-PP1-M	FAULT:	2.030 KA AT -80.81 DEG (0.73 MVA)	X/R:	6.18	
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0094 + J 0.0584		OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.030 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.796 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.369 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.130 KA			
	CONTRIBUTIONS: B-B8-MAIN BUS	2.030 KA	ANG:	-80.81	
B-B8-SYLV	FAULT:	2.009 KA AT -80.68 DEG (0.72 MVA)	X/R:	6.09	
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0097 + J 0.0590		OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.009 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.758 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.338 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.102 KA			
	CONTRIBUTIONS: B-B8-MAIN BUS	2.009 KA	ANG:	-80.68	
B-B8-TXMR PRI	FAULT:	2.185 KA AT -84.29 DEG (1.82 MVA)	X/R:	12.42	
	VOLTAGE:	480. EQUIV. IMPEDANCE= 0.0126 + J 0.1262		OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.395 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	3.338 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.829 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.543 KA			
	CONTRIBUTIONS: B-B8-480V PNL	1.757 KA	ANG:	-86.04	
	XF2-0032 B-B8-TXMR SEC	0.432 KA	ANG:	-77.15	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B8-TXMR SEC	FAULT:	3.773 KA AT -77.01 DEG (1.36 MVA)		X/R:	4.49
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0072 + J 0.0310		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		3.773 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		4.854 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		4.114 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		3.773 KA		
	CONTRIBUTIONS:	B-B8-TXMR PRI	2.622 KA	ANG:	-75.53
	CBL-0339	B-B8-FDR	1.153 KA	ANG:	-80.39
B-B80-ATS-EQ	FAULT:	1.691 KA AT -29.70 DEG (0.61 MVA)		X/R:	0.57
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0617 + J 0.0352		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.691 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.691 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.691 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.691 KA		
	ATS-B80-EQ	BUS-0688	1.691 KA	ANG:	-29.70
B-B80-E1	FAULT:	1.621 KA AT -29.12 DEG (0.58 MVA)		X/R:	0.56
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0647 + J 0.0360		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.621 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.621 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.621 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.621 KA		
	CONTRIBUTIONS:	B-B80-ATS-EQ	1.621 KA	ANG:	-29.12
B-B80-L1-1	FAULT:	1.512 KA AT -56.08 DEG (0.54 MVA)		X/R:	1.49
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0443 + J 0.0659		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.512 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.512 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.512 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.512 KA		
	CONTRIBUTIONS:	B-B80-MDP	1.512 KA	ANG:	-56.08
B-B80-L1-3	FAULT:	1.595 KA AT -58.32 DEG (0.57 MVA)		X/R:	1.62
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0395 + J 0.0641		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.595 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.595 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.595 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.595 KA		
	CONTRIBUTIONS:	B-B80-MDP	1.595 KA	ANG:	-58.32

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B80-LB-1	FAULT:	1.829 KA AT -75.65 DEG (	0.66 MVA)	X/R:	3.91
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0163 + J 0.0636		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.829 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.277 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.929 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.829 KA			
	CONTRIBUTIONS: B-B80-MDP	1.829 KA		ANG:	-75.65
B-B80-LB-E	FAULT:	1.424 KA AT -27.52 DEG (	0.51 MVA)	X/R:	0.52
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0748 + J 0.0390		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.424 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.424 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.424 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.424 KA			
	CONTRIBUTIONS: B-B80-E1	1.424 KA		ANG:	-27.52
B-B80-MDP	FAULT:	1.923 KA AT -79.71 DEG (	0.69 MVA)	X/R:	5.51
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0112 + J 0.0614		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.923 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.588 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.193 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.972 KA			
	CONTRIBUTIONS: B-B80-MDP-M	1.923 KA		ANG:	-79.71
B-B80-MDP-M	FAULT:	1.941 KA AT -80.05 DEG (	0.70 MVA)	X/R:	5.70
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0107 + J 0.0610		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.941 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.630 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.229 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.004 KA			
	CONTRIBUTIONS: B-T-B80-SEC	1.941 KA		ANG:	-80.05
B-B80-P1	FAULT:	1.841 KA AT -76.13 DEG (	0.66 MVA)	X/R:	4.05
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0156 + J 0.0633		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.841 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.312 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.959 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.841 KA			
	CONTRIBUTIONS: B-B80-MDP	1.841 KA	ANG:	-76.13	
B-B80-P5	FAULT: 1.171 KA AT -43.06 DEG (	0.42 MVA)	X/R:	0.93	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0749 + J	0.0700	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.171 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.171 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.171 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.171 KA			
	CONTRIBUTIONS: B-B80-MDP	1.171 KA	ANG:	-43.06	
B-B80-PB-1	FAULT: 1.543 KA AT -55.93 DEG (	0.56 MVA)	X/R:	1.48	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0436 + J	0.0645	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.543 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.543 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.543 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.543 KA			
	CONTRIBUTIONS: B-B80-MDP	1.543 KA	ANG:	-55.93	
B-B80-PB-2	FAULT: 1.497 KA AT -28.11 DEG (	0.54 MVA)	X/R:	0.53	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0708 + J	0.0378	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.497 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.497 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.497 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.497 KA			
	CONTRIBUTIONS: B-B80-E1	1.497 KA	ANG:	-28.11	
B-B81-MDP	FAULT: 1.526 KA AT -74.80 DEG (	0.55 MVA)	X/R:	3.68	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0206 + J	0.0759	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.526 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.871 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.586 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.526 KA			
	CONTRIBUTIONS: B-B81-MDP-M	1.526 KA	ANG:	-74.80	
B-B81-MDP-M	FAULT: 1.527 KA AT -74.82 DEG (	0.55 MVA)	X/R:	3.69	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0206 + J	0.0759	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.527 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.872 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.587 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.527 KA			
	CONTRIBUTIONS: B-T-B81-SEC	1.527 KA	ANG:	-74.82	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B82-ATS-EMER	FAULT:	3.673 KA	AT -61.76 DEG (	1.32 MVA)	X/R:	1.86
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0155 + J 0.0288	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER			3.673 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			3.742 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			3.673 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			3.673 KA		
	CONTRIBUTIONS:	BUS-0689		3.673 KA	ANG:	-61.76
B-B82-EMER	FAULT:	3.587 KA	AT -61.18 DEG (	1.29 MVA)	X/R:	1.82
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0161 + J 0.0293	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER			3.587 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			3.632 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			3.587 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			3.587 KA		
	CONTRIBUTIONS:	B-B82-EMERG-M		3.587 KA	ANG:	-61.18
B-B82-EMERG-M	FAULT:	3.591 KA	AT -61.19 DEG (	1.29 MVA)	X/R:	1.82
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0161 + J 0.0293	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER			3.591 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			3.637 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			3.591 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			3.591 KA		
	CONTRIBUTIONS:	B-B82-ATS-EMER		3.591 KA	ANG:	-61.19
B-B82-MDP	FAULT:	1.757 KA	AT -78.81 DEG (	0.63 MVA)	X/R:	5.05
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0133 + J 0.0671	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.757 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.322 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			1.968 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			1.769 KA		
	CONTRIBUTIONS:	B-B82-MDP-M		1.757 KA	ANG:	-78.81
B-B82-MDP-M	FAULT:	1.757 KA	AT -78.82 DEG (	0.63 MVA)	X/R:	5.06
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0132 + J 0.0670	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER			1.757 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA			2.323 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA			1.969 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA			1.770 KA		
	CONTRIBUTIONS:	B-T-B82-SEC		1.757 KA	ANG:	-78.82

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B9-*PNLXX	FAULT:	1.887 KA AT -73.98 DEG (	0.68 MVA)	X/R:	3.48
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0176 + J 0.0612		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.887 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.281 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.933 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.887 KA			
	CONTRIBUTIONS: B-B9-MDP	1.887 KA		ANG:	-73.98
B-B9-*PNLYY	FAULT:	1.868 KA AT -72.22 DEG (	0.67 MVA)	X/R:	3.12
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0196 + J 0.0612		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.868 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.192 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.868 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.868 KA			
	CONTRIBUTIONS: B-B9-MDP	1.868 KA		ANG:	-72.22
B-B9-*PNLZZ	FAULT:	1.938 KA AT -79.52 DEG (	0.70 MVA)	X/R:	5.40
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0113 + J 0.0609		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.938 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.598 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.202 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.979 KA			
	CONTRIBUTIONS: B-B9-MDP	1.938 KA		ANG:	-79.52
B-B9-ATS BKR	FAULT:	1.985 KA AT -80.43 DEG (	0.72 MVA)	X/R:	5.93
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0101 + J 0.0596		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.985 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.712 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.299 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.066 KA			
	CONTRIBUTIONS: B-B9-MDP	1.985 KA		ANG:	-80.43
B-B9-EM	FAULT:	1.978 KA AT -80.25 DEG (	0.71 MVA)	X/R:	5.82
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0103 + J 0.0598		OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.978 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.692 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.281 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.051 KA			
	CONTRIBUTIONS: B-B9-ATS BKR	1.978 KA		ANG:	-80.25
B-B9-L91A	FAULT:	1.535 KA AT -65.35 DEG (	0.55 MVA)	X/R:	2.18
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0326 + J 0.0711		OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.535 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.632 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.535 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.535 KA
	CONTRIBUTIONS: B-B9-L91A-M	1.535 KA ANG: -65.35
B-B9-L91A-M	FAULT: 1.536 KA AT -65.37 DEG (0.55 MVA)	X/R: 2.18
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0326 + J 0.0710	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.536 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.634 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.536 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.536 KA
	CONTRIBUTIONS: B-B9-MDP	1.536 KA ANG: -65.37
B-B9-L92	FAULT: 1.731 KA AT -65.61 DEG (0.62 MVA)	X/R: 2.21
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0286 + J 0.0632	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.731 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.847 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.731 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.731 KA
	CONTRIBUTIONS: B-B9-MDP	1.731 KA ANG: -65.61
B-B9-L9A	FAULT: 1.817 KA AT -72.58 DEG (0.65 MVA)	X/R: 3.19
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0198 + J 0.0631	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.817 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.145 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.818 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.817 KA
	CONTRIBUTIONS: B-B9-MDP	1.817 KA ANG: -72.58
B-B9-L9B	FAULT: 1.950 KA AT -78.12 DEG (0.70 MVA)	X/R: 4.75
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0127 + J 0.0603	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.950 KA
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.543 KA
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.155 KA
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.950 KA
	CONTRIBUTIONS: B-B9-MDP	1.950 KA ANG: -78.12
B-B9-LPN	FAULT: 1.382 KA AT -56.74 DEG (0.50 MVA)	X/R: 1.52
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0477 + J 0.0727	OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.382 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.382 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.382 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.382 KA			
	CONTRIBUTIONS: B-B9-TAP	1.382 KA	ANG:	-56.74	
B-B9-LPS	FAULT: 1.774 KA AT -69.43 DEG (	0.64 MVA)	X/R:	2.66	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0238 + J	0.0634	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.774 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.995 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.774 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.774 KA			
	CONTRIBUTIONS: B-B9-TAP	1.774 KA	ANG:	-69.43	
B-B9-MAIN	FAULT: 2.024 KA AT -80.95 DEG (	0.73 MVA)	X/R:	6.28	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0093 + J	0.0586	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.024 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.795 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.369 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.130 KA			
	CONTRIBUTIONS: B-T-B9-SEC	2.024 KA	ANG:	-80.95	
B-B9-MDP	FAULT: 2.007 KA AT -80.74 DEG (	0.72 MVA)	X/R:	6.13	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0096 + J	0.0591	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.007 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.760 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.339 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.102 KA			
	CONTRIBUTIONS: B-B9-MAIN	2.007 KA	ANG:	-80.74	
B-B9-STRT LGHT	FAULT: 1.820 KA AT -67.81 DEG (	0.66 MVA)	X/R:	2.45	
	VOLTAGE: 208. EQUIV. IMPEDANCE=	0.0249 + J	0.0611	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER	1.820 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	1.999 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	1.820 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.820 KA		
	CONTRIBUTIONS: B-B9-MDP	1.820 KA	ANG:	-67.81
B-B9-TAP	FAULT: 1.969 KA AT -78.98 DEG (0.71 MVA)		X/R:	5.13
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0117 + J 0.0599 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.969 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.611 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.213 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	1.989 KA		
	CONTRIBUTIONS: B-B9-MDP	1.969 KA	ANG:	-78.98
B-B92 GEN	FAULT: 6.931 KA AT -87.14 DEG (2.50 MVA)		X/R:	20.00
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0009 + J 0.0173 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.930 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.366 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.420 KA		
	CONTRIBUTIONS: GEN-B92	6.931 KA	ANG:	-87.14
B-B92-ATS	FAULT: 6.035 KA AT -72.32 DEG (2.17 MVA)		X/R:	3.14
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0060 + J 0.0190 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.035 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.095 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.035 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.035 KA		
	ATS-B92 BUS-0676	6.035 KA	ANG:	-72.32
B-B92-EMDP	FAULT: 6.852 KA AT -86.75 DEG (2.47 MVA)		X/R:	17.60
	VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0010 + J 0.0175 OHMS			
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.764 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.170 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.243 KA		
	CONTRIBUTIONS: B-B92-EMDP-M	6.852 KA	ANG:	-86.75

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B92-EMDP-M	FAULT:	6.855 KA AT	-86.78 DEG (	2.47 MVA)	X/R:	17.80
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0010 + J	0.0175	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.774 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.181 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.253 KA				
	CONTRIBUTIONS: B-B92 GEN	6.855 KA	ANG:	-86.78		
B-B92-PNL-E1	FAULT:	5.680 KA AT	-67.58 DEG (	2.05 MVA)	X/R:	2.42
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0081 + J	0.0195	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.680 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	6.220 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.680 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.680 KA				
	CONTRIBUTIONS: B-B92-ATS	5.680 KA	ANG:	-67.58		
B-B93-ATS-EMER	FAULT:	5.992 KA AT	-72.21 DEG (	2.16 MVA)	X/R:	3.12
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0061 + J	0.0191	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.992 KA				
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.032 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.992 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.992 KA				
	CONTRIBUTIONS: BUS-0685	5.992 KA	ANG:	-72.21		
B-B93-EMDP	FAULT:	6.802 KA AT	-86.52 DEG (	2.45 MVA)	X/R:	16.43
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0011 + J	0.0176	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.663 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.051 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.136 KA				
	CONTRIBUTIONS: B-B93-EMDP-M	6.802 KA	ANG:	-86.52		
B-B93-EMDP-M	FAULT:	6.805 KA AT	-86.55 DEG (	2.45 MVA)	X/R:	16.60
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0011 + J	0.0176	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.672 KA				
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.062 KA				
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.146 KA				
	CONTRIBUTIONS: B-B93-GEN	6.805 KA	ANG:	-86.55		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B93-EMDP1	FAULT:	6.771 KA AT -86.37 DEG (	2.44 MVA)	X/R:	15.78
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0011 + J 0.0177	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.601 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	8.978 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.071 KA			
	CONTRIBUTIONS: B-B93-EMDP	6.771 KA	ANG:	-86.37	
B-B93-GEN	FAULT:	6.931 KA AT -87.14 DEG (	2.50 MVA)	X/R:	20.00
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0009 + J 0.0173	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.930 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.366 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.420 KA			
	CONTRIBUTIONS: GEN-B93	6.931 KA	ANG:	-87.14	
B-B94-ATS	FAULT:	6.166 KA AT -74.78 DEG (	2.22 MVA)	X/R:	3.68
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0051 + J 0.0188	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	6.166 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	7.558 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	6.405 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	6.166 KA			
	CONTRIBUTIONS: BUS-0704	6.166 KA	ANG:	-74.78	
B-B94-E1	FAULT:	5.469 KA AT -65.37 DEG (	1.97 MVA)	X/R:	2.18
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0092 + J 0.0200	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	5.469 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	5.816 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	5.469 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	5.469 KA			
	CONTRIBUTIONS: B-B94-ATS	5.469 KA	ANG:	-65.37	
B-B94-EMDP	FAULT:	6.802 KA AT -86.52 DEG (	2.45 MVA)	X/R:	16.43
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0011 + J 0.0176	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER	7.663 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	9.051 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	8.136 KA			
	CONTRIBUTIONS: B-B94-EMDP-M	6.802 KA	ANG:	-86.52	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-B94-EMDP (CONTINUED)

B-B94-EMDP-M	FAULT:	6.805 KA AT	-86.55 DEG (	2.45 MVA)	X/R: 16.60
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0011 + J	0.0176 OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.672 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		9.062 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.146 KA		
	CONTRIBUTIONS:	B-B94-GEN	6.805 KA	ANG:	-86.55
B-B94-GEN	FAULT:	6.931 KA AT	-87.14 DEG (	2.50 MVA)	X/R: 20.00
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0009 + J	0.0173 OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.930 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		9.366 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.420 KA		
	CONTRIBUTIONS:	B94-GEN	6.931 KA	ANG:	-87.14
B-B95-EMDP	FAULT:	6.802 KA AT	-86.52 DEG (	2.45 MVA)	X/R: 16.43
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0011 + J	0.0176 OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.663 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		9.051 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.136 KA		
	CONTRIBUTIONS:	B-B95-EMDP-M	6.802 KA	ANG:	-86.52
B-B95-EMDP-M	FAULT:	6.805 KA AT	-86.55 DEG (	2.45 MVA)	X/R: 16.60
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0011 + J	0.0176 OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.672 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		9.062 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.146 KA		
	CONTRIBUTIONS:	B-B95-GEN	6.805 KA	ANG:	-86.55

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B95-GEN	FAULT:	6.931 KA AT -87.14 DEG (	2.50 MVA)	X/R:	20.00
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0009 + J 0.0173	OHMS	
	LOW VOLTAGE POWER CIRCUIT BREAKER		7.930 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		9.366 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		8.420 KA		
	CONTRIBUTIONS:	B-95 GEN	6.931 KA	ANG:	-87.14
B-SW-MV-1	FAULT:	0.034 KA AT -82.40 DEG (	0.82 MVA)	X/R:	7.50
	VOLTAGE:	13800. EQUIV. IMPEDANCE=	30.6380 + J229.7620	OHMS	
	CONTRIBUTIONS:	B-T-B5-PRI	0.034 KA	ANG:	-82.40
B-SW-MV-2	FAULT:	0.034 KA AT -82.44 DEG (	0.82 MVA)	X/R:	7.54
	VOLTAGE:	13800. EQUIV. IMPEDANCE=	30.4740 + J229.7066	OHMS	
	CONTRIBUTIONS:	B-T-B80-PRI	0.034 KA	ANG:	-82.44
B-SWGR27 TAP	FAULT:	0.034 KA AT -82.52 DEG (	0.82 MVA)	X/R:	7.62
	VOLTAGE:	13800. EQUIV. IMPEDANCE=	30.1418 + J229.5946	OHMS	
	CBL-0003	B-B27-SWGR	0.034 KA	ANG:	-82.52
B-T-13-PRI	FAULT:	0.034 KA AT -82.43 DEG (	0.82 MVA)	X/R:	7.53
	VOLTAGE:	13800. EQUIV. IMPEDANCE=	30.5098 + J229.7188	OHMS	
	CONTRIBUTIONS:	B-T-B9-PRI	0.034 KA	ANG:	-82.43
B-T-B1-PRI	FAULT:	0.034 KA AT -82.56 DEG (	0.82 MVA)	X/R:	7.66
	VOLTAGE:	13800. EQUIV. IMPEDANCE=	29.9858 + J229.5419	OHMS	
	CONTRIBUTIONS:	B-T-B70-PRI	0.034 KA	ANG:	-82.56
B-T-B1-SEC	FAULT:	1.598 KA AT -76.30 DEG (	0.58 MVA)	X/R:	4.10
	VOLTAGE:	208. EQUIV. IMPEDANCE=	0.0178 + J 0.0730	OHMS	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 1.598 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.012 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.706 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.598 KA
CONTRIBUTIONS: B-T-B1-PRI 1.598 KA ANG: -76.30

B-T-B10-PRI FAULT: 0.034 KA AT -82.45 DEG (0.82 MVA) X/R: 7.55
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.4258 + J229.6904 OHMS
CONTRIBUTIONS: B-T-B78-PRI 0.034 KA ANG: -82.45

B-T-B10-SEC FAULT: 1.701 KA AT -77.17 DEG (0.61 MVA) X/R: 4.39
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0157 + J 0.0688 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.701 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.178 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.846 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.701 KA
CONTRIBUTIONS: B-T-B10-PRI 1.701 KA ANG: -77.17

B-T-B12-PRI FAULT: 0.034 KA AT -82.42 DEG (0.82 MVA) X/R: 7.52
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.5578 + J229.7350 OHMS
CONTRIBUTIONS: B-T-13-PRI 0.034 KA ANG: -82.42

B-T-B12-SEC FAULT: 1.574 KA AT -76.01 DEG (0.57 MVA) X/R: 4.01
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0184 + J 0.0740 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.574 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.972 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.671 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.574 KA
CONTRIBUTIONS: B-T-B12-PRI 1.574 KA ANG: -76.01

B-T-B17-PRI FAULT: 0.034 KA AT -82.50 DEG (0.82 MVA) X/R: 7.59
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.2378 + J229.6269 OHMS
CBL-0013 B-T-B60-PRI 0.034 KA ANG: -82.50

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-T-B17-SEC FAULT: 1.958 KA AT -80.43 DEG (0.71 MVA) X/R: 5.93
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0102 + J 0.0605 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.958 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.676 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.267 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.038 KA
CONTRIBUTIONS: B-T-B17-PRI 1.958 KA ANG: -80.43

B-T-B18-PRI FAULT: 0.034 KA AT -82.49 DEG (0.82 MVA) X/R: 7.59
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.2538 + J229.6323 OHMS
CONTRIBUTIONS: B-T-B17-PRI 0.034 KA ANG: -82.49

B-T-B18-SEC FAULT: 1.944 KA AT -80.34 DEG (0.70 MVA) X/R: 5.88
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0104 + J 0.0609 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.944 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.651 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.246 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.019 KA
CONTRIBUTIONS: B-T-B18-PRI 1.944 KA ANG: -80.34

B-T-B19-PRI FAULT: 0.034 KA AT -82.48 DEG (0.82 MVA) X/R: 7.58
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3018 + J229.6485 OHMS
CBL-0023 B-T-B22-PRI 0.034 KA ANG: -82.48

B-T-B19-SEC FAULT: 2.099 KA AT -81.96 DEG (0.76 MVA) X/R: 7.08
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0080 + J 0.0567 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.125 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.962 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.510 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.256 KA
CONTRIBUTIONS: B-T-B19-PRI 2.099 KA ANG: -81.96

B-T-B2-LED-PRI FAULT: 0.939 KA AT -79.59 DEG (0.78 MVA) X/R: 5.14
VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0533 + J 0.2903 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

	LOW VOLTAGE POWER CIRCUIT BREAKER		0.939 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.245 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.056 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		0.949 KA		
	CONTRIBUTIONS:	B-B2-MDP	0.939 KA	ANG:	-79.59
B-T-B2-LED-SEC	FAULT:	1.462 KA AT -71.71 DEG (0.53 MVA)		X/R:	2.94
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0258 + J 0.0780			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		1.462 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		1.689 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		1.462 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		1.462 KA		
	CONTRIBUTIONS:	B-T-B2-LED-PRI	1.462 KA	ANG:	-71.71
B-T-B2-PRI	FAULT:	0.034 KA AT -82.55 DEG (0.82 MVA)		X/R:	7.65
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 30.0178 + J229.5527			OHMS
	CBL-0017	B-T-B1-PRI	0.034 KA	ANG:	-82.55
	3WINDING	B-T-B2-PRI	0.000 KA	ANG:	119.96
B-T-B2-SEC2	FAULT:	2.206 KA AT -83.93 DEG (0.79 MVA)		X/R:	5.56
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0058 + J 0.0541			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.206 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.975 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.522 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.267 KA		
	CONTRIBUTIONS:	B-T-B2-PRI THREE WINDING TRANSFORMER			
		B-T-B2-SEC4	2.068 KA	ANG:	-89.11
	CBL-0085	B-B2-MDPA-M	0.237 KA	ANG:	-32.06
B-T-B2-SEC3	FAULT:	2.082 KA AT -81.58 DEG (0.75 MVA)		X/R:	6.40
	VOLTAGE:	208. EQUIV. IMPEDANCE= 0.0084 + J 0.0571			OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.082 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.886 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.446 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.198 KA		
	CONTRIBUTIONS:	B-T-B2-PRI	1.314 KA	ANG:	-81.52
	CBL-0087	B-B2-MDPB-M	0.768 KA	ANG:	-81.68

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-T-B2-SEC4 FAULT: 0.963 KA AT -82.61 DEG (0.80 MVA) X/R: 7.16
VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0370 + J 0.2855 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 0.977 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.361 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.154 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.037 KA
CONTRIBUTIONS: B-T-B2-PRI 0.375 KA ANG: -77.38
B-T-B2-SEC4 3WINDING 0.590 KA ANG: -85.94

B-T-B22-PRI FAULT: 0.034 KA AT -82.50 DEG (0.82 MVA) X/R: 7.59
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.2378 + J229.6269 OHMS
CBL-0024 B-T-B33-PRI 0.034 KA ANG: -82.50

B-T-B22-SEC FAULT: 0.900 KA AT -81.50 DEG (0.75 MVA) X/R: 6.69
VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0455 + J 0.3045 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 0.903 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.258 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.066 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 0.958 KA
CONTRIBUTIONS: B-T-B22-PRI 0.900 KA ANG: -81.50

B-T-B3-PRI FAULT: 0.034 KA AT -82.47 DEG (0.82 MVA) X/R: 7.57
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3458 + J229.6634 OHMS
CBL-0033 BUS-0065 0.034 KA ANG: -82.47

B-T-B3-SEC FAULT: 2.066 KA AT -81.43 DEG (0.74 MVA) X/R: 6.64
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0087 + J 0.0575 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.068 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.882 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.443 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.196 KA
CONTRIBUTIONS: B-T-B3-PRI 2.066 KA ANG: -81.43

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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 B-T-B30-PRI     FAULT:    0.034 KA AT  -82.55 DEG (   0.82 MVA)  X/R:     7.64
                 VOLTAGE:  13800.   EQUIV. IMPEDANCE= 30.0298 + J229.5567  OHMS
                 CBL-0014        B-T-B70-PRI        0.034 KA      ANG:   -82.55

 B-T-B30-SEC     FAULT:    1.598 KA AT  -76.29 DEG (   0.58 MVA)  X/R:     4.10
                 VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0178 + J  0.0730  OHMS
                 LOW VOLTAGE POWER CIRCUIT BREAKER    1.598 KA
                 MOLDED CASE CIRCUIT BREAKER < 10KA   2.012 KA
                 MOLDED CASE CIRCUIT BREAKER < 20KA   1.705 KA
                 MOLDED CASE CIRCUIT BREAKER > 20KA   1.598 KA
                 CONTRIBUTIONS:  B-T-B30-PRI        1.598 KA      ANG:   -76.29

 B-T-B33-PRI     FAULT:    0.034 KA AT  -82.51 DEG (   0.82 MVA)  X/R:     7.61
                 VOLTAGE:  13800.   EQUIV. IMPEDANCE= 30.1898 + J229.6107  OHMS
                 CONTRIBUTIONS:  B-B27-SWGR         0.034 KA      ANG:   -82.51

 B-T-B33-SEC     FAULT:    1.710 KA AT  -77.28 DEG (   0.62 MVA)  X/R:     4.43
                 VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0155 + J  0.0685  OHMS
                 LOW VOLTAGE POWER CIRCUIT BREAKER    1.710 KA
                 MOLDED CASE CIRCUIT BREAKER < 10KA   2.194 KA
                 MOLDED CASE CIRCUIT BREAKER < 20KA   1.860 KA
                 MOLDED CASE CIRCUIT BREAKER > 20KA   1.710 KA
                 CONTRIBUTIONS:  B-T-B33-PRI        1.710 KA      ANG:   -77.28

 B-T-B4-PRI      FAULT:    0.034 KA AT  -82.45 DEG (   0.82 MVA)  X/R:     7.55
                 VOLTAGE:  13800.   EQUIV. IMPEDANCE= 30.4260 + J229.6904  OHMS
                 CBL-0022        B-T-B82-PRI        0.034 KA      ANG:   -82.45

 B-T-B4-SEC      FAULT:    2.133 KA AT  -82.03 DEG (   0.77 MVA)  X/R:     7.14
                 VOLTAGE:    208.   EQUIV. IMPEDANCE=  0.0078 + J  0.0557  OHMS
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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LOW VOLTAGE POWER CIRCUIT BREAKER 2.164 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 3.016 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.556 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.298 KA
CONTRIBUTIONS: B-T-B4-PRI 2.133 KA ANG: -82.03

B-T-B5-PRI FAULT: 0.034 KA AT -82.41 DEG (0.82 MVA) X/R: 7.50
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.6220 + J229.7566 OHMS
CONTRIBUTIONS: B-T-B6-PRI 0.034 KA ANG: -82.41

B-T-B5-SEC FAULT: 2.125 KA AT -81.66 DEG (0.77 MVA) X/R: 6.82
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0082 + J 0.0559 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.139 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.981 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.526 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.271 KA
CONTRIBUTIONS: B-T-B5-PRI 2.125 KA ANG: -81.66

B-T-B6-PRI FAULT: 0.034 KA AT -82.42 DEG (0.82 MVA) X/R: 7.51
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.5740 + J229.7404 OHMS
CONTRIBUTIONS: B-T-B7-PRI 0.034 KA ANG: -82.42

B-T-B6-SEC FAULT: 2.125 KA AT -81.67 DEG (0.77 MVA) X/R: 6.83
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0082 + J 0.0559 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.139 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.981 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.526 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.271 KA
CONTRIBUTIONS: B-T-B6-PRI 2.125 KA ANG: -81.67

B-T-B60-PRI FAULT: 0.034 KA AT -82.51 DEG (0.82 MVA) X/R: 7.61
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.1898 + J229.6107 OHMS
CBL-0015 B-T-B30-PRI 0.034 KA ANG: -82.51

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-T-B60-SEC FAULT: 1.796 KA AT -79.41 DEG (0.65 MVA) X/R: 5.35
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0123 + J 0.0657 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.796 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.402 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.036 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.830 KA
CONTRIBUTIONS: B-T-B60-PRI 1.796 KA ANG: -79.41

B-T-B61-PRI FAULT: 0.034 KA AT -82.45 DEG (0.82 MVA) X/R: 7.55
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.4338 + J229.6931 OHMS
CONTRIBUTIONS: B-T-B62-PRI 0.034 KA ANG: -82.45

B-T-B61-SEC FAULT: 1.982 KA AT -81.01 DEG (0.71 MVA) X/R: 6.32
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0095 + J 0.0598 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.982 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.741 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.323 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.088 KA
CONTRIBUTIONS: B-T-B61-PRI 1.982 KA ANG: -81.01

B-T-B62-PRI FAULT: 0.034 KA AT -82.46 DEG (0.82 MVA) X/R: 7.56
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3858 + J229.6769 OHMS
CONTRIBUTIONS: B-T-B8-PRI 0.034 KA ANG: -82.46

B-T-B62-SEC FAULT: 2.124 KA AT -81.70 DEG (0.77 MVA) X/R: 6.86
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0082 + J 0.0559 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.139 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.982 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.527 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.272 KA
CONTRIBUTIONS: B-T-B62-PRI 2.124 KA ANG: -81.70

B-T-B7-PRI FAULT: 0.034 KA AT -82.43 DEG (0.82 MVA) X/R: 7.53
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.5100 + J229.7188 OHMS
CONTRIBUTIONS: B-T-B61-PRI 0.034 KA ANG: -82.43

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-T-B7-PRI (CONTINUED)

B-T-B7-SEC	FAULT:	2.076 KA AT	-81.45 DEG (	0.75 MVA)	X/R: 6.65
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0086 + J 0.0572	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.079 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		2.898 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.456 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.208 KA		
	CONTRIBUTIONS:	B-T-B7-PRI	2.076 KA	ANG:	-81.45
B-T-B70-PRI	FAULT:	0.034 KA AT	-82.57 DEG (	0.82 MVA)	X/R: 7.67
	VOLTAGE:	13800.	EQUIV. IMPEDANCE=	29.9178 + J229.5189	OHMS
	T-B70	B-T-B70-SEC	0.034 KA	ANG:	-82.57
B-T-B70-SEC	FAULT:	2.638 KA AT	-84.31 DEG (	0.95 MVA)	X/R: 10.03
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0045 + J 0.0453	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.817 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.926 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		3.327 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.991 KA		
	CBL-0506	B-B70-FP-TAP	2.638 KA	ANG:	-84.31
B-T-B78-PRI	FAULT:	0.034 KA AT	-82.47 DEG (	0.82 MVA)	X/R: 7.56
	VOLTAGE:	13800.	EQUIV. IMPEDANCE=	30.3778 + J229.6742	OHMS
	CBL-0032	B-T-B3-PRI	0.034 KA	ANG:	-82.47
B-T-B78-SEC	FAULT:	2.171 KA AT	-82.37 DEG (	0.78 MVA)	X/R: 7.47
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0073 + J 0.0548	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER		2.219 KA		
	MOLDED CASE CIRCUIT BREAKER < 10KA		3.093 KA		
	MOLDED CASE CIRCUIT BREAKER < 20KA		2.621 KA		
	MOLDED CASE CIRCUIT BREAKER > 20KA		2.356 KA		
	CONTRIBUTIONS:	B-T-B78-PRI	2.171 KA	ANG:	-82.37

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-T-B8-2-SEC FAULT: 0.900 KA AT -81.48 DEG (0.75 MVA) X/R: 6.67
VOLTAGE: 480. EQUIV. IMPEDANCE= 0.0456 + J 0.3046 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 0.902 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.257 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.065 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 0.958 KA
CONTRIBUTIONS: B-T-B8-PRI 0.900 KA ANG: -81.48

B-T-B8-PRI FAULT: 0.034 KA AT -82.47 DEG (0.82 MVA) X/R: 7.56
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3618 + J229.6688 OHMS
CONTRIBUTIONS: B-B27-SWGR 0.034 KA ANG: -82.47

B-T-B8-SEC FAULT: 2.077 KA AT -81.48 DEG (0.75 MVA) X/R: 6.67
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0086 + J 0.0572 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.081 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.901 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.458 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.210 KA
CONTRIBUTIONS: B-T-B8-PRI 2.077 KA ANG: -81.48

B-T-B80-PRI FAULT: 0.034 KA AT -82.45 DEG (0.82 MVA) X/R: 7.54
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.4500 + J229.6985 OHMS
CBL-0020 B-T-B4-PRI 0.034 KA ANG: -82.45

B-T-B80-SEC FAULT: 1.959 KA AT -80.40 DEG (0.71 MVA) X/R: 5.91
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0102 + J 0.0605 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.959 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.674 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.266 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.037 KA
CONTRIBUTIONS: B-T-B80-PRI 1.959 KA ANG: -80.40

B-T-B81-PRI FAULT: 0.034 KA AT -82.42 DEG (0.82 MVA) X/R: 7.51
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.5738 + J229.7404 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-T-B81-PRI (CONTINUED)
CONTRIBUTIONS: B-T-B12-PRI 0.034 KA ANG: -82.42

B-T-B81-SEC FAULT: 1.576 KA AT -76.03 DEG (0.57 MVA) X/R: 4.02
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0184 + J 0.0739 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.576 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 1.976 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 1.674 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.576 KA
CONTRIBUTIONS: B-T-B81-PRI 1.576 KA ANG: -76.03

B-T-B82-PRI FAULT: 0.034 KA AT -82.47 DEG (0.82 MVA) X/R: 7.56
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3780 + J229.6743 OHMS
CBL-0021 B-T-B19-PRI 0.034 KA ANG: -82.47

B-T-B82-SEC FAULT: 1.793 KA AT -79.37 DEG (0.65 MVA) X/R: 5.33
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0124 + J 0.0658 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 1.793 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.397 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.031 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 1.826 KA
CONTRIBUTIONS: B-T-B82-PRI 1.793 KA ANG: -79.37

B-T-B9-PRI FAULT: 0.034 KA AT -82.44 DEG (0.82 MVA) X/R: 7.54
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.4778 + J229.7080 OHMS
CONTRIBUTIONS: B-T-B10-PRI 0.034 KA ANG: -82.44

B-T-B9-SEC FAULT: 2.059 KA AT -81.37 DEG (0.74 MVA) X/R: 6.59
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0087 + J 0.0577 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.059 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.870 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.432 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.186 KA
CONTRIBUTIONS: B-T-B9-PRI 2.059 KA ANG: -81.37

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B0B70-LP2 FAULT: 2.118 KA AT -69.25 DEG (0.76 MVA) X/R: 2.64
VOLTAGE: 208. EQUIV. IMPEDANCE= 0.0201 + J 0.0530 OHMS
LOW VOLTAGE POWER CIRCUIT BREAKER 2.118 KA
MOLDED CASE CIRCUIT BREAKER < 10KA 2.375 KA
MOLDED CASE CIRCUIT BREAKER < 20KA 2.118 KA
MOLDED CASE CIRCUIT BREAKER > 20KA 2.118 KA
CONTRIBUTIONS: B-B70-MDP 2.118 KA ANG: -69.25

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS-0739	FAULT:	1.984 KA AT	-80.41 DEG (	0.71 MVA)	X/R: 5.92
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0101 + J 0.0597	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	1.984 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.709 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.296 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.064 KA			
	CONTRIBUTIONS: B-B9-ATS BKR	1.984 KA	ANG:	-80.41	
bB-B7-MC1	FAULT:	2.703 KA AT	-48.30 DEG (	0.97 MVA)	X/R: 1.12
	VOLTAGE:	208.	EQUIV. IMPEDANCE=	0.0296 + J 0.0332	OHMS
	LOW VOLTAGE POWER CIRCUIT BREAKER	2.703 KA			
	MOLDED CASE CIRCUIT BREAKER < 10KA	2.703 KA			
	MOLDED CASE CIRCUIT BREAKER < 20KA	2.703 KA			
	MOLDED CASE CIRCUIT BREAKER > 20KA	2.703 KA			
	CONTRIBUTIONS: B-B7-EQD	2.703 KA	ANG:	-48.30	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B1-ATS-EMERG	3 PHASE:	2.939		1. Z1= 94.4435	2.941	2.940
	SLG DUTY:	1.958		1. Z2= 94.4435	1.958	
208. VOLTS	LN/LN	2.545		Z0= 241.5417		
	LN/LN/GND	2.821		(1.451 GND RETURN KA)		
B-B1-MDP	3 PHASE:	1.542		4. Z1= 180.0038	1.808	1.678
	SLG DUTY:	1.998		3. Z2= 180.0038	2.272	
208. VOLTS	LN/LN	1.335		Z0= 58.3865		
	LN/LN/GND	2.043		(2.829 GND RETURN KA)		
B-B1-MDP-M	3 PHASE:	1.572		4. Z1= 176.5701	1.861	1.720
	SLG DUTY:	2.079		4. Z2= 176.5701	2.410	
208. VOLTS	LN/LN	1.361		Z0= 48.2430		
	LN/LN/GND	2.117		(3.063 GND RETURN KA)		
B-B10 DISC	3 PHASE:	1.673		4. Z1= 165.9554	2.008	1.845
	SLG DUTY:	2.196		4. Z2= 165.9554	2.571	
208. VOLTS	LN/LN	1.448		Z0= 48.2430		
	LN/LN/GND	2.234		(3.189 GND RETURN KA)		
B-B10 EMRG TAP	3 PHASE:	3.017		3. Z1= 92.0158	3.311	3.166
	SLG DUTY:	2.292		2. Z2= 92.0158	2.402	
208. VOLTS	LN/LN	2.612		Z0= 181.1375		
	LN/LN/GND	2.905		(1.839 GND RETURN KA)		
B-B10-MDP	3 PHASE:	1.638		4. Z1= 169.4993	1.939	1.791
	SLG DUTY:	2.103		3. Z2= 169.4993	2.396	
208. VOLTS	LN/LN	1.418		Z0= 59.2262		
	LN/LN/GND	2.156		(2.923 GND RETURN KA)		
B-B12-MAP-M	3 PHASE:	1.523		4. Z1= 182.2179	1.792	1.660
	SLG DUTY:	1.985		3. Z2= 182.2179	2.283	
208. VOLTS	LN/LN	1.319		Z0= 56.0423		
	LN/LN/GND	2.008		(2.842 GND RETURN KA)		
B-B12-MDP	3 PHASE:	1.523		4. Z1= 182.3023	1.790	1.659
	SLG DUTY:	1.982		3. Z2= 182.3023	2.277	
208. VOLTS	LN/LN	1.319		Z0= 56.5516		
	LN/LN/GND	2.005		(2.832 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B13-APT-13	3 PHASE:	1.562	4.	Z1= 153.9611	1.861	1.715
	SLG DUTY:	0.000	1.	Z2= 153.9611	0.000	
240. VOLTS	LN/LN	1.353		Z0= INFINITE		
	LN/LN/GND	1.353	(0.000	GND RETURN KA)		
B-B13-APT-14	3 PHASE:	1.512	5.	Z1= 159.0900	1.869	1.696
	SLG DUTY:	0.000	1.	Z2= 159.0900	0.000	
240. VOLTS	LN/LN	1.310		Z0= INFINITE		
	LN/LN/GND	1.310	(0.000	GND RETURN KA)		
B-B13-APT-15	3 PHASE:	1.409	4.	Z1= 170.7289	1.711	1.564
	SLG DUTY:	0.000	1.	Z2= 170.7289	0.000	
240. VOLTS	LN/LN	1.220		Z0= INFINITE		
	LN/LN/GND	1.220	(0.000	GND RETURN KA)		
B-B13-GARAGE	3 PHASE:	1.457	3.	Z1= 165.0749	1.667	1.564
	SLG DUTY:	0.000	1.	Z2= 165.0749	0.000	
240. VOLTS	LN/LN	1.262		Z0= INFINITE		
	LN/LN/GND	1.262	(0.000	GND RETURN KA)		
B-B13-MDP	3 PHASE:	1.636	6.	Z1= 147.0455	2.098	1.875
	SLG DUTY:	0.000	1.	Z2= 147.0455	0.000	
240. VOLTS	LN/LN	1.417		Z0= INFINITE		
	LN/LN/GND	1.417	(0.000	GND RETURN KA)		
B-B13-MDP-M	3 PHASE:	1.636	6.	Z1= 147.0298	2.099	1.875
	SLG DUTY:	0.000	1.	Z2= 147.0298	0.000	
240. VOLTS	LN/LN	1.417		Z0= INFINITE		
	LN/LN/GND	1.417	(0.000	GND RETURN KA)		
B-B13-MGR H16	3 PHASE:	1.195	2.	Z1= 201.2823	1.258	1.227
	SLG DUTY:	0.000	1.	Z2= 201.2823	0.000	
240. VOLTS	LN/LN	1.035		Z0= INFINITE		
	LN/LN/GND	1.035	(0.000	GND RETURN KA)		
B-B13-TXMR SEC	3 PHASE:	1.702	6.	Z1= 141.3760	2.239	1.980
	SLG DUTY:	0.000	1.	Z2= 141.3760	0.000	
240. VOLTS	LN/LN	1.474		Z0= INFINITE		
	LN/LN/GND	1.474	(0.000	GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B13-UNKNOWN	3 PHASE:	1.562	4.	Z1= 153.9611	1.861	1.715
	SLG DUTY:	0.000	1.	Z2= 153.9611	0.000	
240. VOLTS	LN/LN	1.353		Z0= INFINITE		
	LN/LN/GND	1.353	(	0.000 GND RETURN KA)		
B-B17-A/C	3 PHASE:	1.816	4.	Z1= 152.8381	2.220	2.023
	SLG DUTY:	2.340	3.	Z2= 152.8381	2.666	
208. VOLTS	LN/LN	1.573		Z0= 55.9484		
	LN/LN/GND	2.483	(	3.243 GND RETURN KA)		
B-B17-A/C-2	3 PHASE:	1.794	4.	Z1= 154.7434	2.107	1.953
	SLG DUTY:	2.260	3.	Z2= 154.7434	2.439	
208. VOLTS	LN/LN	1.553		Z0= 71.4008		
	LN/LN/GND	2.457	(	2.959 GND RETURN KA)		
B-B17-AC1	3 PHASE:	1.794	4.	Z1= 154.7434	2.107	1.953
	SLG DUTY:	2.260	3.	Z2= 154.7434	2.439	
208. VOLTS	LN/LN	1.553		Z0= 71.4008		
	LN/LN/GND	2.457	(	2.959 GND RETURN KA)		
B-B17-ACB	3 PHASE:	1.774	3.	Z1= 156.4496	2.024	1.901
	SLG DUTY:	2.188	2.	Z2= 156.4496	2.293	
208. VOLTS	LN/LN	1.536		Z0= 86.1222		
	LN/LN/GND	2.410	(	2.720 GND RETURN KA)		
B-B17-ANIMALRM	3 PHASE:	1.704	1.	Z1= 162.8823	1.704	1.704
	SLG DUTY:	1.077	1.	Z2= 162.8823	1.077	
208. VOLTS	LN/LN	1.476		Z0= 452.1606		
	LN/LN/GND	1.595	(	0.783 GND RETURN KA)		
B-B17-ATS	3 PHASE:	2.177	1.	Z1= 127.4948	2.178	2.178
	SLG DUTY:	1.418	1.	Z2= 127.4948	1.418	
208. VOLTS	LN/LN	1.885		Z0= 336.9455		
	LN/LN/GND	2.061	(	1.044 GND RETURN KA)		
B-B17-DP	3 PHASE:	1.851	5.	Z1= 149.9716	2.303	2.083
	SLG DUTY:	2.436	4.	Z2= 149.9716	2.857	
208. VOLTS	LN/LN	1.603		Z0= 45.6758		
	LN/LN/GND	2.574	(	3.531 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B17-EMAIN	3 PHASE:	1.916	5.	Z1= 144.8795	2.438	2.185
	SLG DUTY:	2.619	4.	Z2= 144.8795	3.202	
208. VOLTS	LN/LN	1.659		Z0= 30.0465		
	LN/LN/GND	2.782	(	4.122 GND RETURN KA)		
B-B17-EMERG	3 PHASE:	2.156	1.	Z1= 128.7264	2.157	2.157
	SLG DUTY:	1.403	1.	Z2= 128.7264	1.403	
208. VOLTS	LN/LN	1.867		Z0= 340.8474		
	LN/LN/GND	2.041	(	1.032 GND RETURN KA)		
B-B17-MAIN	3 PHASE:	1.923	6.	Z1= 144.3508	2.464	2.202
	SLG DUTY:	2.641	5.	Z2= 144.3508	3.275	
208. VOLTS	LN/LN	1.665		Z0= 27.8498		
	LN/LN/GND	2.791	(	4.203 GND RETURN KA)		
B-B17-NEB1	3 PHASE:	1.634	1.	Z1= 169.8283	1.635	1.634
	SLG DUTY:	1.028	0.	Z2= 169.8283	1.028	
208. VOLTS	LN/LN	1.415		Z0= 474.5273		
	LN/LN/GND	1.527	(	0.746 GND RETURN KA)		
B-B17-NEB2	3 PHASE:	1.861	1.	Z1= 149.1141	1.862	1.862
	SLG DUTY:	1.184	1.	Z2= 149.1141	1.184	
208. VOLTS	LN/LN	1.612		Z0= 409.5619		
	LN/LN/GND	1.748	(	0.863 GND RETURN KA)		
B-B17-NP11	3 PHASE:	1.741	3.	Z1= 159.4186	1.915	1.829
	SLG DUTY:	2.066	2.	Z2= 159.4186	2.111	
208. VOLTS	LN/LN	1.508		Z0= 110.9723		
	LN/LN/GND	2.308	(	2.373 GND RETURN KA)		
B-B17-NP12	3 PHASE:	1.813	4.	Z1= 153.1049	2.204	2.014
	SLG DUTY:	2.330	3.	Z2= 153.1049	2.634	
208. VOLTS	LN/LN	1.570		Z0= 57.7398		
	LN/LN/GND	2.480	(	3.207 GND RETURN KA)		
B-B17-NP21	3 PHASE:	1.794	4.	Z1= 154.7434	2.107	1.953
	SLG DUTY:	2.260	3.	Z2= 154.7434	2.439	
208. VOLTS	LN/LN	1.553		Z0= 71.4008		
	LN/LN/GND	2.457	(	2.959 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B17-NP22	3 PHASE:	1.794	4.	Z1= 154.7434	2.107	1.953
	SLG DUTY:	2.260	3.	Z2= 154.7434	2.439	
208. VOLTS	LN/LN	1.553		Z0= 71.4008		
	LN/LN/GND	2.457	(	2.959 GND RETURN KA)		
B-B17-NPA1	3 PHASE:	1.794	4.	Z1= 154.7434	2.107	1.953
	SLG DUTY:	2.260	3.	Z2= 154.7434	2.439	
208. VOLTS	LN/LN	1.553		Z0= 71.4008		
	LN/LN/GND	2.457	(	2.959 GND RETURN KA)		
B-B17-NPB1	3 PHASE:	1.810	4.	Z1= 153.3915	2.186	2.002
	SLG DUTY:	2.318	3.	Z2= 153.3915	2.595	
208. VOLTS	LN/LN	1.567		Z0= 60.0186		
	LN/LN/GND	2.479	(	3.163 GND RETURN KA)		
B-B17-NPB2	3 PHASE:	1.794	4.	Z1= 154.7434	2.107	1.953
	SLG DUTY:	2.260	3.	Z2= 154.7434	2.439	
208. VOLTS	LN/LN	1.553		Z0= 71.4008		
	LN/LN/GND	2.457	(	2.959 GND RETURN KA)		
B-B18-1STFL	3 PHASE:	2.246	1.	Z1= 123.5806	2.252	2.249
	SLG DUTY:	1.507	1.	Z2= 123.5806	1.508	
208. VOLTS	LN/LN	1.945		Z0= 309.9273		
	LN/LN/GND	2.138	(	1.125 GND RETURN KA)		
B-B18-1STFL-M	3 PHASE:	2.408	1.	Z1= 115.2892	2.418	2.413
	SLG DUTY:	1.641	1.	Z2= 115.2892	1.642	
208. VOLTS	LN/LN	2.085		Z0= 281.5273		
	LN/LN/GND	2.302	(	1.234 GND RETURN KA)		
B-B18-2ND-FL-M	3 PHASE:	2.408	1.	Z1= 115.2892	2.418	2.413
	SLG DUTY:	1.641	1.	Z2= 115.2892	1.642	
208. VOLTS	LN/LN	2.085		Z0= 281.5273		
	LN/LN/GND	2.302	(	1.234 GND RETURN KA)		
B-B18-2NDFL	3 PHASE:	2.102	1.	Z1= 132.0672	2.105	2.103
	SLG DUTY:	1.392	1.	Z2= 132.0672	1.393	
208. VOLTS	LN/LN	1.820		Z0= 338.6339		
	LN/LN/GND	1.993	(	1.033 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B18-AC1	3 PHASE:	1.815	3.	Z1= 152.8978	2.072	1.946
	SLG DUTY:	2.300	2.	Z2= 152.8978	2.408	
208. VOLTS	LN/LN	1.572		Z0= 77.0460		
	LN/LN/GND	2.564	(	2.968 GND RETURN KA)		
B-B18-AC2	3 PHASE:	1.861	5.	Z1= 149.1885	2.293	2.083
	SLG DUTY:	2.476	3.	Z2= 149.1885	2.858	
208. VOLTS	LN/LN	1.611		Z0= 43.4067		
	LN/LN/GND	2.662	(	3.652 GND RETURN KA)		
B-B18-ATS-EMRG	3 PHASE:	2.483	1.	Z1= 111.7696	2.496	2.490
	SLG DUTY:	1.704	1.	Z2= 111.7696	1.705	
208. VOLTS	LN/LN	2.151		Z0= 269.7430		
	LN/LN/GND	2.378	(	1.285 GND RETURN KA)		
B-B18-EMERG	3 PHASE:	2.397	1.	Z1= 115.8194	2.406	2.401
	SLG DUTY:	1.630	1.	Z2= 115.8194	1.631	
208. VOLTS	LN/LN	2.076		Z0= 283.6462		
	LN/LN/GND	2.290	(	1.225 GND RETURN KA)		
B-B18-EMERG-M	3 PHASE:	2.399	1.	Z1= 115.6985	2.409	2.404
	SLG DUTY:	1.634	1.	Z2= 115.6985	1.634	
208. VOLTS	LN/LN	2.078		Z0= 282.9385		
	LN/LN/GND	2.293	(	1.228 GND RETURN KA)		
B-B18-NCP	3 PHASE:	1.891	5.	Z1= 146.7911	2.361	2.133
	SLG DUTY:	2.564	4.	Z2= 146.7911	3.027	
208. VOLTS	LN/LN	1.638		Z0= 35.2018		
	LN/LN/GND	2.761	(	3.945 GND RETURN KA)		
B-B18-NMDP	3 PHASE:	1.914	6.	Z1= 145.0294	2.460	2.196
	SLG DUTY:	2.637	5.	Z2= 145.0294	3.302	
208. VOLTS	LN/LN	1.657		Z0= 26.5158		
	LN/LN/GND	2.776	(	4.232 GND RETURN KA)		
B-B18-NMDP-M	3 PHASE:	1.915	6.	Z1= 144.9825	2.462	2.197
	SLG DUTY:	2.640	5.	Z2= 144.9825	3.310	
208. VOLTS	LN/LN	1.658		Z0= 26.2088		
	LN/LN/GND	2.779	(	4.244 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B18-NP11	3 PHASE:	1.815	3.	Z1= 152.8978	2.072	1.946
	SLG DUTY:	2.300	2.	Z2= 152.8978	2.408	
208. VOLTS	LN/LN	1.572		Z0= 77.0460		
	LN/LN/GND	2.564	(	2.968 GND RETURN KA)		
B-B18-NP12	3 PHASE:	1.815	3.	Z1= 152.8978	2.072	1.946
	SLG DUTY:	2.300	2.	Z2= 152.8978	2.408	
208. VOLTS	LN/LN	1.572		Z0= 77.0460		
	LN/LN/GND	2.564	(	2.968 GND RETURN KA)		
B-B18-NP21	3 PHASE:	1.836	4.	Z1= 151.1679	2.135	1.989
	SLG DUTY:	2.372	2.	Z2= 151.1679	2.527	
208. VOLTS	LN/LN	1.590		Z0= 65.8014		
	LN/LN/GND	2.635	(	3.200 GND RETURN KA)		
B-B18-NP22	3 PHASE:	1.844	4.	Z1= 150.4901	2.228	2.041
	SLG DUTY:	2.423	3.	Z2= 150.4901	2.710	
208. VOLTS	LN/LN	1.597		Z0= 51.3539		
	LN/LN/GND	2.633	(	3.456 GND RETURN KA)		
B-B18-NP23	3 PHASE:	1.865	5.	Z1= 148.8532	2.319	2.098
	SLG DUTY:	2.491	4.	Z2= 148.8532	2.922	
208. VOLTS	LN/LN	1.615		Z0= 40.6764		
	LN/LN/GND	2.659	(	3.716 GND RETURN KA)		
B-B18-STRT LHT	3 PHASE:	1.707	2.	Z1= 162.6302	1.805	1.756
	SLG DUTY:	1.925	1.	Z2= 162.6302	1.936	
208. VOLTS	LN/LN	1.478		Z0= 146.1110		
	LN/LN/GND	2.194	(	2.009 GND RETURN KA)		
B-B18-TAP BOX	3 PHASE:	2.433	1.	Z1= 114.0650	2.444	2.439
	SLG DUTY:	1.662	1.	Z2= 114.0650	1.664	
208. VOLTS	LN/LN	2.107		Z0= 277.2996		
	LN/LN/GND	2.328	(	1.252 GND RETURN KA)		
B-B19-200A PNL	3 PHASE:	2.052	6.	Z1= 135.2720	2.717	2.397
	SLG DUTY:	2.930	6.	Z2= 135.2720	3.755	
208. VOLTS	LN/LN	1.777		Z0= 15.2742		
	LN/LN/GND	3.234	(	5.108 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B19-B1	3 PHASE:	2.035	6.	Z1= 136.3954	2.618	2.336
	SLG DUTY:	2.869	4.	Z2= 136.3954	3.460	
208. VOLTS	LN/LN	1.762		Z0= 23.4523		
	LN/LN/GND	3.232	(	4.802 GND RETURN KA)		
B-B19-L1	3 PHASE:	1.421	1.	Z1= 195.3347	1.438	1.429
	SLG DUTY:	1.268	1.	Z2= 195.3347	1.268	
208. VOLTS	LN/LN	1.231		Z0= 308.6572		
	LN/LN/GND	1.576	(	1.073 GND RETURN KA)		
B-B19-L2	3 PHASE:	1.853	3.	Z1= 149.8149	2.098	1.977
	SLG DUTY:	2.280	2.	Z2= 149.8149	2.356	
208. VOLTS	LN/LN	1.605		Z0= 91.3018		
	LN/LN/GND	2.555	(	2.760 GND RETURN KA)		
B-B19-MDP1	3 PHASE:	2.074	7.	Z1= 133.8363	2.779	2.440
	SLG DUTY:	3.000	6.	Z2= 133.8363	3.949	
208. VOLTS	LN/LN	1.796		Z0= 10.5058		
	LN/LN/GND	3.316	(	5.414 GND RETURN KA)		
B-B19-MDP1-M	3 PHASE:	2.074	7.	Z1= 133.8207	2.780	2.441
	SLG DUTY:	3.001	6.	Z2= 133.8207	3.954	
208. VOLTS	LN/LN	1.796		Z0= 10.3783		
	LN/LN/GND	3.317	(	5.421 GND RETURN KA)		
B-B19-MDP2	3 PHASE:	2.063	7.	Z1= 134.5390	2.756	2.423
	SLG DUTY:	2.966	6.	Z2= 134.5390	3.877	
208. VOLTS	LN/LN	1.787		Z0= 12.4433		
	LN/LN/GND	3.264	(	5.268 GND RETURN KA)		
B-B19-MDP2-M	3 PHASE:	2.067	7.	Z1= 134.3060	2.763	2.429
	SLG DUTY:	2.977	6.	Z2= 134.3060	3.902	
208. VOLTS	LN/LN	1.790		Z0= 11.7722		
	LN/LN/GND	3.281	(	5.317 GND RETURN KA)		
B-B19-MDPA	3 PHASE:	1.907	5.	Z1= 145.5716	2.436	2.180
	SLG DUTY:	2.511	4.	Z2= 145.5716	3.003	
208. VOLTS	LN/LN	1.651		Z0= 44.4287		
	LN/LN/GND	2.657	(	3.639 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B19-P1	3 PHASE:	1.907	5.	Z1= 145.5716	2.436	2.180
	SLG DUTY:	2.511	4.	Z2= 145.5716	3.003	
208. VOLTS	LN/LN	1.651		Z0= 44.4287		
	LN/LN/GND	2.657	(3.639	GND RETURN KA)		
B-B19-P2	3 PHASE:	1.889	4.	Z1= 146.9066	2.254	2.076
	SLG DUTY:	2.426	3.	Z2= 146.9066	2.624	
208. VOLTS	LN/LN	1.636		Z0= 64.6580		
	LN/LN/GND	2.680	(3.250	GND RETURN KA)		
B-B19-P4	3 PHASE:	2.040	6.	Z1= 136.0450	2.665	2.364
	SLG DUTY:	2.891	5.	Z2= 136.0450	3.596	
208. VOLTS	LN/LN	1.767		Z0= 19.3902		
	LN/LN/GND	3.216	(4.924	GND RETURN KA)		
B-B19-P6	3 PHASE:	1.463	2.	Z1= 189.7113	1.499	1.481
	SLG DUTY:	1.381	1.	Z2= 189.7113	1.383	
208. VOLTS	LN/LN	1.267		Z0= 261.4752		
	LN/LN/GND	1.661	(1.227	GND RETURN KA)		
B-B19-PS	3 PHASE:	1.732	2.	Z1= 160.2221	1.830	1.782
	SLG DUTY:	1.897	1.	Z2= 160.2221	1.906	
208. VOLTS	LN/LN	1.500		Z0= 157.8952		
	LN/LN/GND	2.179	(1.908	GND RETURN KA)		
B-B2-ATS-CRIT	3 PHASE:	2.966	2.	Z1= 93.5709	3.155	3.061
	SLG DUTY:	2.221	2.	Z2= 93.5709	2.279	
208. VOLTS	LN/LN	2.569		Z0= 190.2009		
	LN/LN/GND	2.864	(1.764	GND RETURN KA)		
B-B2-ATS-LED3	3 PHASE:	2.141	2.	Z1= 129.6609	2.192	2.167
	SLG DUTY:	1.505	1.	Z2= 129.6609	1.518	
208. VOLTS	LN/LN	1.854		Z0= 297.2950		
	LN/LN/GND	2.039	(1.154	GND RETURN KA)		
B-B2-ATS-LS	3 PHASE:	2.757	2.	Z1= 100.6674	2.919	2.839
	SLG DUTY:	2.039	2.	Z2= 100.6674	2.089	
208. VOLTS	LN/LN	2.388		Z0= 209.5293		
	LN/LN/GND	2.651	(1.608	GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-BATTERYCH	3 PHASE:	1.949		1. Z1= 142.3953	1.953	1.951
	SLG DUTY:	1.288		1. Z2= 142.3953	1.288	
208. VOLTS	LN/LN	1.688		Z0= 366.4432		
	LN/LN/GND	1.844	(	0.955 GND RETURN KA)		
B-B2-CATSCAN	3 PHASE:	0.943		6. Z1= 127.5052	1.219	1.086
	SLG DUTY:	1.357		4. Z2= 127.5052	1.645	
480. VOLTS	LN/LN	0.817		Z0= 16.8946		
	LN/LN/GND	1.562	(	2.391 GND RETURN KA)		
B-B2-CRIT PNL	3 PHASE:	2.952		2. Z1= 94.0316	3.135	3.044
	SLG DUTY:	2.207		2. Z2= 94.0316	2.263	
208. VOLTS	LN/LN	2.556		Z0= 191.6680		
	LN/LN/GND	2.849	(	1.752 GND RETURN KA)		
B-B2-DENTAL LB	3 PHASE:	2.582		2. Z1= 107.5191	2.635	2.608
	SLG DUTY:	1.842		1. Z2= 107.5191	1.852	
208. VOLTS	LN/LN	2.236		Z0= 240.7445		
	LN/LN/GND	2.481	(	1.420 GND RETURN KA)		
B-B2-DENTSUCPM	3 PHASE:	2.335		2. Z1= 118.8496	2.372	2.354
	SLG DUTY:	1.638		1. Z2= 118.8496	1.645	
208. VOLTS	LN/LN	2.023		Z0= 274.4922		
	LN/LN/GND	2.233	(	1.252 GND RETURN KA)		
B-B2-ELEV	3 PHASE:	2.563		2. Z1= 108.2836	2.676	2.620
	SLG DUTY:	1.864		2. Z2= 108.2836	1.896	
208. VOLTS	LN/LN	2.220		Z0= 232.8902		
	LN/LN/GND	2.458	(	1.456 GND RETURN KA)		
B-B2-ELEV-P1	3 PHASE:	2.504		2. Z1= 110.8490	2.588	2.546
	SLG DUTY:	1.804		1. Z2= 110.8490	1.825	
208. VOLTS	LN/LN	2.169		Z0= 243.0813		
	LN/LN/GND	2.401	(	1.400 GND RETURN KA)		
B-B2-EMERG-M	3 PHASE:	2.118		2. Z1= 131.0484	2.167	2.143
	SLG DUTY:	1.486		1. Z2= 131.0484	1.498	
208. VOLTS	LN/LN	1.834		Z0= 301.6183		
	LN/LN/GND	2.016	(	1.138 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-EMERG-PNL3	3 PHASE:	2.116	2.	Z1= 131.1629	2.165	2.141
	SLG DUTY:	1.484	1.	Z2= 131.1629	1.495	
208. VOLTS	LN/LN	1.833		Z0= 302.3105		
	LN/LN/GND	2.015	(	1.136 GND RETURN KA)		
B-B2-EPNL-B	3 PHASE:	2.965	2.	Z1= 93.6131	3.153	3.060
	SLG DUTY:	2.219	2.	Z2= 93.6131	2.277	
208. VOLTS	LN/LN	2.568		Z0= 190.4635		
	LN/LN/GND	2.862	(	1.762 GND RETURN KA)		
B-B2-EPNL-B-M	3 PHASE:	2.966	2.	Z1= 93.5708	3.155	3.061
	SLG DUTY:	2.221	2.	Z2= 93.5708	2.279	
208. VOLTS	LN/LN	2.569		Z0= 190.2009		
	LN/LN/GND	2.864	(	1.764 GND RETURN KA)		
B-B2-L12	3 PHASE:	2.499	2.	Z1= 111.0670	2.592	2.546
	SLG DUTY:	1.804	1.	Z2= 111.0670	1.829	
208. VOLTS	LN/LN	2.164		Z0= 242.3787		
	LN/LN/GND	2.395	(	1.403 GND RETURN KA)		
B-B2-L2A	3 PHASE:	2.683	2.	Z1= 103.4383	2.790	2.737
	SLG DUTY:	1.957	1.	Z2= 103.4383	1.985	
208. VOLTS	LN/LN	2.324		Z0= 221.5230		
	LN/LN/GND	2.581	(	1.530 GND RETURN KA)		
B-B2-L2E	3 PHASE:	2.499	2.	Z1= 111.0670	2.592	2.546
	SLG DUTY:	1.804	1.	Z2= 111.0670	1.829	
208. VOLTS	LN/LN	2.164		Z0= 242.3787		
	LN/LN/GND	2.395	(	1.403 GND RETURN KA)		
B-B2-L4	3 PHASE:	1.962	4.	Z1= 141.4816	2.396	2.184
	SLG DUTY:	2.612	3.	Z2= 141.4816	2.932	
208. VOLTS	LN/LN	1.699		Z0= 45.4418		
	LN/LN/GND	2.877	(	3.811 GND RETURN KA)		
B-B2-L6	3 PHASE:	1.962	4.	Z1= 141.4816	2.396	2.184
	SLG DUTY:	2.612	3.	Z2= 141.4816	2.932	
208. VOLTS	LN/LN	1.699		Z0= 45.4418		
	LN/LN/GND	2.877	(	3.811 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-L7	3 PHASE:	1.962	4.	Z1= 141.4816	2.396	2.184
	SLG DUTY:	2.612	3.	Z2= 141.4816	2.932	
208. VOLTS	LN/LN	1.699		Z0= 45.4418		
	LN/LN/GND	2.877	(	3.811 GND RETURN KA)		
B-B2-L8	3 PHASE:	1.962	4.	Z1= 141.4816	2.396	2.184
	SLG DUTY:	2.612	3.	Z2= 141.4816	2.932	
208. VOLTS	LN/LN	1.699		Z0= 45.4418		
	LN/LN/GND	2.877	(	3.811 GND RETURN KA)		
B-B2-L9E	3 PHASE:	2.437	2.	Z1= 113.9183	2.501	2.469
	SLG DUTY:	1.739	1.	Z2= 113.9183	1.754	
208. VOLTS	LN/LN	2.110		Z0= 254.3954		
	LN/LN/GND	2.334	(	1.343 GND RETURN KA)		
B-B2-LB1E	3 PHASE:	2.437	2.	Z1= 113.9183	2.501	2.469
	SLG DUTY:	1.739	1.	Z2= 113.9183	1.754	
208. VOLTS	LN/LN	2.110		Z0= 254.3954		
	LN/LN/GND	2.334	(	1.343 GND RETURN KA)		
B-B2-LB2	3 PHASE:	1.962	4.	Z1= 141.4816	2.396	2.184
	SLG DUTY:	2.612	3.	Z2= 141.4816	2.932	
208. VOLTS	LN/LN	1.699		Z0= 45.4418		
	LN/LN/GND	2.877	(	3.811 GND RETURN KA)		
B-B2-LB2E	3 PHASE:	2.497	2.	Z1= 111.1670	2.537	2.517
	SLG DUTY:	1.763	1.	Z2= 111.1670	1.770	
208. VOLTS	LN/LN	2.162		Z0= 253.7739		
	LN/LN/GND	2.395	(	1.352 GND RETURN KA)		
B-B2-LED-3	3 PHASE:	1.451	3.	Z1= 191.3035	1.609	1.531
	SLG DUTY:	1.850	3.	Z2= 191.3035	1.999	
208. VOLTS	LN/LN	1.257		Z0= 69.9354		
	LN/LN/GND	1.894	(	2.541 GND RETURN KA)		
B-B2-MDP	3 PHASE:	0.962	7.	Z1= 125.0044	1.301	1.139
	SLG DUTY:	1.422	7.	Z2= 125.0044	1.910	
480. VOLTS	LN/LN	0.833		Z0= 3.7262		
	LN/LN/GND	1.600	(	2.725 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-MDP-M	3 PHASE:	0.962	7.	Z1= 125.0016	1.301	1.139
	SLG DUTY:	1.422	7.	Z2= 125.0016	1.911	
480. VOLTS	LN/LN	0.833		Z0= 3.7089		
	LN/LN/GND	1.600	(	2.725 GND RETURN KA)		
B-B2-MDPA	3 PHASE:	2.202	6.	Z1= 126.0784	2.823	2.523
	SLG DUTY:	3.237	5.	Z2= 126.0784	4.002	
208. VOLTS	LN/LN	1.907		Z0= 5.6401		
	LN/LN/GND	3.542	(	6.107 GND RETURN KA)		
B-B2-MDPA-M	3 PHASE:	2.204	6.	Z1= 125.9401	2.827	2.526
	SLG DUTY:	3.245	5.	Z2= 125.9401	4.016	
208. VOLTS	LN/LN	1.909		Z0= 5.4793		
	LN/LN/GND	3.550	(	6.147 GND RETURN KA)		
B-B2-MDPB	3 PHASE:	2.073	6.	Z1= 133.9276	2.719	2.407
	SLG DUTY:	2.958	6.	Z2= 133.9276	3.788	
208. VOLTS	LN/LN	1.795		Z0= 14.4915		
	LN/LN/GND	3.228	(	5.155 GND RETURN KA)		
B-B2-MDPB-M	3 PHASE:	2.073	6.	Z1= 133.8969	2.721	2.409
	SLG DUTY:	2.961	6.	Z2= 133.8969	3.799	
208. VOLTS	LN/LN	1.795		Z0= 14.1559		
	LN/LN/GND	3.233	(	5.175 GND RETURN KA)		
B-B2-MEDAIRCOM	3 PHASE:	2.497	2.	Z1= 111.1670	2.537	2.517
	SLG DUTY:	1.763	1.	Z2= 111.1670	1.770	
208. VOLTS	LN/LN	2.162		Z0= 253.7739		
	LN/LN/GND	2.395	(	1.352 GND RETURN KA)		
B-B2-NEWLAB	3 PHASE:	2.102	2.	Z1= 132.0435	2.148	2.125
	SLG DUTY:	1.471	1.	Z2= 132.0435	1.482	
208. VOLTS	LN/LN	1.820		Z0= 305.3065		
	LN/LN/GND	2.001	(	1.125 GND RETURN KA)		
B-B2-NEWLAB-M	3 PHASE:	2.104	2.	Z1= 131.9287	2.150	2.127
	SLG DUTY:	1.474	1.	Z2= 131.9287	1.485	
208. VOLTS	LN/LN	1.822		Z0= 304.6134		
	LN/LN/GND	2.003	(	1.128 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-PNL 1	3 PHASE:	2.118	2.	Z1= 131.0484	2.167	2.143
	SLG DUTY:	1.486	1.	Z2= 131.0484	1.498	
208. VOLTS	LN/LN	1.834		Z0= 301.6183		
	LN/LN/GND	2.016	(	1.138 GND RETURN KA)		
B-B2-PNL LS	3 PHASE:	2.732	2.	Z1= 101.5965	2.885	2.809
	SLG DUTY:	2.016	2.	Z2= 101.5965	2.062	
208. VOLTS	LN/LN	2.366		Z0= 212.4718		
	LN/LN/GND	2.626	(	1.588 GND RETURN KA)		
B-B2-PNL-2	3 PHASE:	2.124	2.	Z1= 130.6725	2.172	2.148
	SLG DUTY:	1.490	1.	Z2= 130.6725	1.501	
208. VOLTS	LN/LN	1.840		Z0= 301.0384		
	LN/LN/GND	2.023	(	1.141 GND RETURN KA)		
B-B2-PNL-3-M	3 PHASE:	2.100	2.	Z1= 132.1596	2.144	2.122
	SLG DUTY:	1.469	1.	Z2= 132.1596	1.479	
208. VOLTS	LN/LN	1.819		Z0= 306.1087		
	LN/LN/GND	1.999	(	1.123 GND RETURN KA)		
B-B2-PNL-D2	3 PHASE:	2.060	5.	Z1= 134.7242	2.553	2.314
	SLG DUTY:	2.808	4.	Z2= 134.7242	3.249	
208. VOLTS	LN/LN	1.784		Z0= 28.9328		
	LN/LN/GND	2.978	(	4.388 GND RETURN KA)		
B-B2-PNL-L11	3 PHASE:	2.683	2.	Z1= 103.4383	2.790	2.737
	SLG DUTY:	1.957	1.	Z2= 103.4383	1.985	
208. VOLTS	LN/LN	2.324		Z0= 221.5230		
	LN/LN/GND	2.581	(	1.530 GND RETURN KA)		
B-B2-PNL-M1	3 PHASE:	2.061	2.	Z1= 134.6980	2.098	2.079
	SLG DUTY:	1.434	1.	Z2= 134.6980	1.442	
208. VOLTS	LN/LN	1.785		Z0= 315.0300		
	LN/LN/GND	1.960	(	1.093 GND RETURN KA)		
B-B2-PNL-P	3 PHASE:	0.936	7.	Z1= 128.4870	1.244	1.096
	SLG DUTY:	1.339	6.	Z2= 128.4870	1.723	
480. VOLTS	LN/LN	0.811		Z0= 13.6468		
	LN/LN/GND	1.472	(	2.345 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B2-POD2PP	3 PHASE:	2.524	2.	Z1= 109.9716	2.629	2.577
	SLG DUTY:	1.830	2.	Z2= 109.9716	1.859	
208. VOLTS	LN/LN	2.186		Z0= 238.0335		
	LN/LN/GND	2.419	(	1.426 GND RETURN KA)		
B-B2-TEL COMM	3 PHASE:	1.962	4.	Z1= 141.4816	2.396	2.184
	SLG DUTY:	2.612	3.	Z2= 141.4816	2.932	
208. VOLTS	LN/LN	1.699		Z0= 45.4418		
	LN/LN/GND	2.877	(	3.811 GND RETURN KA)		
B-B2-UNIT-1	3 PHASE:	0.928	6.	Z1= 129.6635	1.211	1.075
	SLG DUTY:	1.311	5.	Z2= 129.6635	1.626	
480. VOLTS	LN/LN	0.803		Z0= 18.8508		
	LN/LN/GND	1.452	(	2.222 GND RETURN KA)		
B-B2-UNIT-2	3 PHASE:	0.932	6.	Z1= 129.0727	1.227	1.085
	SLG DUTY:	1.325	5.	Z2= 129.0727	1.672	
480. VOLTS	LN/LN	0.807		Z0= 16.1776		
	LN/LN/GND	1.463	(	2.283 GND RETURN KA)		
B-B2-XRAY	3 PHASE:	1.314	1.	Z1= 211.3172	1.315	1.314
	SLG DUTY:	1.022	0.	Z2= 211.3172	1.022	
208. VOLTS	LN/LN	1.138		Z0= 438.1618		
	LN/LN/GND	1.381	(	0.792 GND RETURN KA)		
B-B2-XRAY-124	3 PHASE:	0.905	5.	Z1= 132.9683	1.133	1.022
	SLG DUTY:	1.236	3.	Z2= 132.9683	1.422	
480. VOLTS	LN/LN	0.783		Z0= 34.3708		
	LN/LN/GND	1.379	(	1.910 GND RETURN KA)		
B-B2-XRAY124	3 PHASE:	1.925	3.	Z1= 144.2234	2.215	2.072
	SLG DUTY:	2.462	2.	Z2= 144.2234	2.581	
208. VOLTS	LN/LN	1.667		Z0= 71.2506		
	LN/LN/GND	2.762	(	3.212 GND RETURN KA)		
B-B21-P1	3 PHASE:	1.479	2.	Z1= 187.7222	1.526	1.503
	SLG DUTY:	1.428	1.	Z2= 187.7222	1.431	
208. VOLTS	LN/LN	1.281		Z0= 243.3374		
	LN/LN/GND	1.694	(	1.297 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B21-P2	3 PHASE:	1.706	3.	Z1= 162.7278	1.896	1.802
	SLG DUTY:	1.947	2.	Z2= 162.7278	1.998	
208. VOLTS	LN/LN	1.477		Z0= 125.4073		
	LN/LN/GND	2.164	(2.145 GND RETURN KA)			
B-B22-ATS-EMER	3 PHASE:	1.772	16.	Z1= 67.8755	2.709	2.268
	SLG DUTY:	1.757	13.	Z2= 67.8755	2.639	
480. VOLTS	LN/LN	1.535		Z0= 69.6060		
	LN/LN/GND	1.780	(1.743 GND RETURN KA)			
B-B22-EMERG	3 PHASE:	1.750	14.	Z1= 68.7323	2.642	2.221
	SLG DUTY:	1.724	12.	Z2= 68.7323	2.537	
480. VOLTS	LN/LN	1.516		Z0= 71.8398		
	LN/LN/GND	1.759	(1.699 GND RETURN KA)			
B-B22-EMERG-M	3 PHASE:	1.750	14.	Z1= 68.7170	2.644	2.222
	SLG DUTY:	1.725	12.	Z2= 68.7170	2.541	
480. VOLTS	LN/LN	1.516		Z0= 71.7528		
	LN/LN/GND	1.759	(1.701 GND RETURN KA)			
B-B22-GEN	3 PHASE:	1.802	20.	Z1= 66.7500	2.827	2.346
	SLG DUTY:	1.802	20.	Z2= 66.7500	2.827	
480. VOLTS	LN/LN	1.561		Z0= 66.7500		
	LN/LN/GND	1.802	(1.802 GND RETURN KA)			
B-B22-L1	3 PHASE:	1.941	3.	Z1= 142.9745	2.116	2.030
	SLG DUTY:	2.265	2.	Z2= 142.9745	2.396	
208. VOLTS	LN/LN	1.681		Z0= 84.1608		
	LN/LN/GND	2.307	(2.700 GND RETURN KA)			
B-B22-L1-M	3 PHASE:	1.943	3.	Z1= 142.8700	2.118	2.031
	SLG DUTY:	2.270	2.	Z2= 142.8700	2.402	
208. VOLTS	LN/LN	1.683		Z0= 83.4928		
	LN/LN/GND	2.311	(2.712 GND RETURN KA)			
B-B22-L2	3 PHASE:	1.941	3.	Z1= 142.9745	2.116	2.030
	SLG DUTY:	2.265	2.	Z2= 142.9745	2.396	
208. VOLTS	LN/LN	1.681		Z0= 84.1608		
	LN/LN/GND	2.307	(2.700 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B22-L2-M	3 PHASE:	1.943	3.	Z1= 142.8700	2.118	2.031
	SLG DUTY:	2.270	2.	Z2= 142.8700	2.402	
208. VOLTS	LN/LN	1.683		Z0= 83.4928		
	LN/LN/GND	2.311	(	2.712 GND RETURN KA)		
B-B22-L3	3 PHASE:	1.944	3.	Z1= 142.7671	2.121	2.033
	SLG DUTY:	2.268	2.	Z2= 142.7671	2.400	
208. VOLTS	LN/LN	1.684		Z0= 84.1608		
	LN/LN/GND	2.311	(	2.702 GND RETURN KA)		
B-B22-L3-M	3 PHASE:	1.946	3.	Z1= 142.6627	2.123	2.035
	SLG DUTY:	2.273	2.	Z2= 142.6627	2.406	
208. VOLTS	LN/LN	1.685		Z0= 83.4928		
	LN/LN/GND	2.314	(	2.715 GND RETURN KA)		
B-B22-MDP	3 PHASE:	0.878	6.	Z1= 136.9362	1.156	1.022
	SLG DUTY:	1.221	5.	Z2= 136.9362	1.558	
480. VOLTS	LN/LN	0.761		Z0= 22.6208		
	LN/LN/GND	1.302	(	1.999 GND RETURN KA)		
B-B22-MDP-M	3 PHASE:	0.878	6.	Z1= 136.9296	1.156	1.022
	SLG DUTY:	1.221	5.	Z2= 136.9296	1.558	
480. VOLTS	LN/LN	0.761		Z0= 22.5750		
	LN/LN/GND	1.302	(	2.000 GND RETURN KA)		
B-B22-N1	3 PHASE:	1.584	4.	Z1= 175.2463	1.872	1.731
	SLG DUTY:	2.046	3.	Z2= 175.2463	2.315	
208. VOLTS	LN/LN	1.372		Z0= 59.6906		
	LN/LN/GND	2.122	(	2.870 GND RETURN KA)		
B-B22-N1-M	3 PHASE:	1.585	4.	Z1= 175.1622	1.873	1.732
	SLG DUTY:	2.049	3.	Z2= 175.1622	2.320	
208. VOLTS	LN/LN	1.372		Z0= 59.1568		
	LN/LN/GND	2.125	(	2.880 GND RETURN KA)		
B-B22-P1	3 PHASE:	1.735	12.	Z1= 69.3225	2.577	2.179
	SLG DUTY:	1.702	10.	Z2= 69.3225	2.439	
480. VOLTS	LN/LN	1.503		Z0= 73.4376		
	LN/LN/GND	1.749	(	1.670 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B22-P2	3 PHASE:	1.735	12.	Z1= 69.3225	2.577	2.179
	SLG DUTY:	1.702	10.	Z2= 69.3225	2.439	
480. VOLTS	LN/LN	1.503		Z0= 73.4376		
	LN/LN/GND	1.749	(	1.670 GND RETURN KA)		
B-B22-T1-PRI	3 PHASE:	0.877	6.	Z1= 137.1933	1.151	1.019
	SLG DUTY:	1.216	5.	Z2= 137.1933	1.544	
480. VOLTS	LN/LN	0.759		Z0= 23.4982		
	LN/LN/GND	1.298	(	1.980 GND RETURN KA)		
B-B22-T1-SEC	3 PHASE:	1.613	4.	Z1= 172.1337	1.916	1.768
	SLG DUTY:	2.123	3.	Z2= 172.1337	2.426	
208. VOLTS	LN/LN	1.396		Z0= 50.6666		
	LN/LN/GND	2.210	(	3.088 GND RETURN KA)		
B-B22-T2-PRI	3 PHASE:	1.743	13.	Z1= 69.0075	2.596	2.193
	SLG DUTY:	1.714	10.	Z2= 69.0075	2.466	
480. VOLTS	LN/LN	1.509		Z0= 72.6325		
	LN/LN/GND	1.758	(	1.685 GND RETURN KA)		
B-B22-T2-SEC	3 PHASE:	1.979	3.	Z1= 140.2787	2.172	2.077
	SLG DUTY:	2.347	2.	Z2= 140.2787	2.507	
208. VOLTS	LN/LN	1.714		Z0= 75.9999		
	LN/LN/GND	2.370	(	2.870 GND RETURN KA)		
B-B22-T22-SEC	3 PHASE:	1.976	3.	Z1= 140.4837	2.167	2.073
	SLG DUTY:	2.344	2.	Z2= 140.4837	2.503	
208. VOLTS	LN/LN	1.711		Z0= 75.9999		
	LN/LN/GND	2.367	(	2.868 GND RETURN KA)		
B-B22-T3 PRI	3 PHASE:	1.740	12.	Z1= 69.1467	2.574	2.179
	SLG DUTY:	1.708	9.	Z2= 69.1467	2.433	
480. VOLTS	LN/LN	1.506		Z0= 73.0431		
	LN/LN/GND	1.757	(	1.677 GND RETURN KA)		
B-B22-T4-PRI	3 PHASE:	1.740	12.	Z1= 69.1467	2.574	2.179
	SLG DUTY:	1.708	9.	Z2= 69.1467	2.433	
480. VOLTS	LN/LN	1.506		Z0= 73.0431		
	LN/LN/GND	1.757	(	1.677 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B22-T4-SEC	3 PHASE:	1.976	3.	Z1= 140.4837	2.167	2.073
	SLG DUTY:	2.344	2.	Z2= 140.4837	2.503	
208. VOLTS	LN/LN	1.711		Z0= 75.9999		
	LN/LN/GND	2.367	(	2.868 GND RETURN KA)		
B-B27-SWGR	3 PHASE:	0.034	8.	Z1= 121.5945	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.5945	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.2567		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-B27-SWGR-M1	3 PHASE:	0.034	8.	Z1= 121.5946	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.5946	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.2571		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-B3-1ST FL	3 PHASE:	4.286	3.	Z1= 64.7595	4.771	4.532
	SLG DUTY:	3.488	2.	Z2= 64.7595	3.658	
208. VOLTS	LN/LN	3.712		Z0= 111.2143		
	LN/LN/GND	4.249	(	2.916 GND RETURN KA)		
B-B3-ALDN KIT	3 PHASE:	3.854	2.	Z1= 72.0203	3.959	3.907
	SLG DUTY:	2.923	1.	Z2= 72.0203	2.941	
208. VOLTS	LN/LN	3.338		Z0= 144.7234		
	LN/LN/GND	3.810	(	2.324 GND RETURN KA)		
B-B3-ATS-COMP	3 PHASE:	4.763	4.	Z1= 58.2810	5.820	5.305
	SLG DUTY:	4.068	3.	Z2= 58.2810	4.605	
208. VOLTS	LN/LN	4.125		Z0= 89.0608		
	LN/LN/GND	4.717	(	3.535 GND RETURN KA)		
B-B3-ATSTEL RM	3 PHASE:	4.793	5.	Z1= 57.9136	6.000	5.414
	SLG DUTY:	4.115	4.	Z2= 57.9136	4.774	
208. VOLTS	LN/LN	4.151		Z0= 87.2881		
	LN/LN/GND	4.731	(	3.592 GND RETURN KA)		
B-B3-COMP	3 PHASE:	3.998	2.	Z1= 69.4313	4.233	4.116
	SLG DUTY:	3.135	2.	Z2= 69.4313	3.195	
208. VOLTS	LN/LN	3.462		Z0= 129.6565		
	LN/LN/GND	3.958	(	2.552 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B3-COMP AC	3 PHASE:	2.417		1. Z1= 114.8392	2.417	2.417
	SLG DUTY:	1.549		0. Z2= 114.8392	1.549	
208. VOLTS	LN/LN	2.093		Z0= 312.5574		
	LN/LN/GND	2.288	(	1.131 GND RETURN KA)		
B-B3-COMP MF	3 PHASE:	4.296		3. Z1= 64.6176	4.874	4.589
	SLG DUTY:	3.517		2. Z2= 64.6176	3.741	
208. VOLTS	LN/LN	3.720		Z0= 109.2175		
	LN/LN/GND	4.248	(	2.957 GND RETURN KA)		
B-B3-DBL GRILL	3 PHASE:	4.023		3. Z1= 69.0030	4.364	4.195
	SLG DUTY:	3.198		2. Z2= 69.0030	3.303	
208. VOLTS	LN/LN	3.484		Z0= 124.7217		
	LN/LN/GND	3.973	(	2.631 GND RETURN KA)		
B-B3-ELEV	3 PHASE:	4.156		3. Z1= 66.7822	4.489	4.324
	SLG DUTY:	3.320		2. Z2= 66.7822	3.417	
208. VOLTS	LN/LN	3.600		Z0= 119.7497		
	LN/LN/GND	4.123	(	2.737 GND RETURN KA)		
B-B3-EP1	3 PHASE:	4.720		5. Z1= 58.8122	5.872	5.312
	SLG DUTY:	4.026		3. Z2= 58.8122	4.642	
208. VOLTS	LN/LN	4.087		Z0= 89.9770		
	LN/LN/GND	4.654	(	3.498 GND RETURN KA)		
B-B3-EP1-M	3 PHASE:	4.726		5. Z1= 58.7305	5.886	5.323
	SLG DUTY:	4.039		4. Z2= 58.7305	4.664	
208. VOLTS	LN/LN	4.093		Z0= 89.4833		
	LN/LN/GND	4.661	(	3.513 GND RETURN KA)		
B-B3-EP2	3 PHASE:	4.651		4. Z1= 59.6848	5.630	5.153
	SLG DUTY:	3.936		3. Z2= 59.6848	4.417	
208. VOLTS	LN/LN	4.028		Z0= 93.1853		
	LN/LN/GND	4.598	(	3.396 GND RETURN KA)		
B-B3-EP2-M	3 PHASE:	4.657		4. Z1= 59.6019	5.643	5.162
	SLG DUTY:	3.949		3. Z2= 59.6019	4.436	
208. VOLTS	LN/LN	4.033		Z0= 92.6814		
	LN/LN/GND	4.605	(	3.411 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B3-FRZN FOOD	3 PHASE:	1.923	3.	Z1= 144.3128	2.161	2.044
	SLG DUTY:	2.449	2.	Z2= 144.3128	2.515	
208. VOLTS	LN/LN	1.666		Z0= 82.7220		
	LN/LN/GND	2.786	(	3.068 GND RETURN KA)		
B-B3-HYDRO ELV	3 PHASE:	3.695	2.	Z1= 75.1140	3.841	3.769
	SLG DUTY:	2.818	1.	Z2= 75.1140	2.850	
208. VOLTS	LN/LN	3.200		Z0= 148.5743		
	LN/LN/GND	3.636	(	2.253 GND RETURN KA)		
B-B3-KP1	3 PHASE:	4.144	3.	Z1= 66.9779	4.688	4.421
	SLG DUTY:	3.363	2.	Z2= 66.9779	3.573	
208. VOLTS	LN/LN	3.589		Z0= 115.3513		
	LN/LN/GND	4.083	(	2.811 GND RETURN KA)		
B-B3-MDP	3 PHASE:	2.045	6.	Z1= 135.7485	2.707	2.388
	SLG DUTY:	2.922	6.	Z2= 135.7485	3.800	
208. VOLTS	LN/LN	1.771		Z0= 13.9493		
	LN/LN/GND	3.179	(	5.117 GND RETURN KA)		
B-B3-MDP-M	3 PHASE:	2.045	6.	Z1= 135.7284	2.709	2.389
	SLG DUTY:	2.924	6.	Z2= 135.7284	3.806	
208. VOLTS	LN/LN	1.771		Z0= 13.7941		
	LN/LN/GND	3.180	(	5.125 GND RETURN KA)		
B-B3-MECH HVAC	3 PHASE:	4.156	3.	Z1= 66.7822	4.489	4.324
	SLG DUTY:	3.320	2.	Z2= 66.7822	3.417	
208. VOLTS	LN/LN	3.600		Z0= 119.7497		
	LN/LN/GND	4.123	(	2.737 GND RETURN KA)		
B-B3-MECH RM	3 PHASE:	4.327	3.	Z1= 64.1428	4.974	4.657
	SLG DUTY:	3.561	2.	Z2= 64.1428	3.826	
208. VOLTS	LN/LN	3.748		Z0= 107.0856		
	LN/LN/GND	4.275	(	3.006 GND RETURN KA)		
B-B3-P3	3 PHASE:	1.958	5.	Z1= 141.7877	2.442	2.207
	SLG DUTY:	2.649	4.	Z2= 141.7877	3.062	
208. VOLTS	LN/LN	1.695		Z0= 38.1868		
	LN/LN/GND	2.914	(	4.022 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B3-P7	3 PHASE:	4.151	2.	Z1= 66.8687	4.438	4.296
	SLG DUTY:	3.298	2.	Z2= 66.8687	3.376	
208. VOLTS	LN/LN	3.595		Z0= 121.4757		
	LN/LN/GND	4.121	(	2.708 GND RETURN KA)		
B-B3-STRT LTS	3 PHASE:	1.923	3.	Z1= 144.3128	2.161	2.044
	SLG DUTY:	2.449	2.	Z2= 144.3128	2.515	
208. VOLTS	LN/LN	1.666		Z0= 82.7220		
	LN/LN/GND	2.786	(	3.068 GND RETURN KA)		
B-B3-STRT PNL	3 PHASE:	4.319	3.	Z1= 64.2638	4.792	4.559
	SLG DUTY:	3.517	2.	Z2= 64.2638	3.679	
208. VOLTS	LN/LN	3.741		Z0= 110.2807		
	LN/LN/GND	4.288	(	2.941 GND RETURN KA)		
B-B3-TELE PNL	3 PHASE:	4.393	4.	Z1= 63.1889	5.148	4.778
	SLG DUTY:	3.643	3.	Z2= 63.1889	3.977	
208. VOLTS	LN/LN	3.804		Z0= 103.5117		
	LN/LN/GND	4.334	(	3.094 GND RETURN KA)		
B-B3-TRAY LINE	3 PHASE:	4.156	3.	Z1= 66.7822	4.489	4.324
	SLG DUTY:	3.320	2.	Z2= 66.7822	3.417	
208. VOLTS	LN/LN	3.600		Z0= 119.7497		
	LN/LN/GND	4.123	(	2.737 GND RETURN KA)		
B-B33-MDP	3 PHASE:	1.598	4.	Z1= 173.7469	1.861	1.732
	SLG DUTY:	1.987	3.	Z2= 173.7469	2.201	
208. VOLTS	LN/LN	1.384		Z0= 75.8117		
	LN/LN/GND	2.056	(	2.604 GND RETURN KA)		
B-B33-MDP-M	3 PHASE:	1.598	4.	Z1= 173.6620	1.862	1.733
	SLG DUTY:	1.990	3.	Z2= 173.6620	2.206	
208. VOLTS	LN/LN	1.384		Z0= 75.2745		
	LN/LN/GND	2.059	(	2.613 GND RETURN KA)		
B-B4-4EQD	3 PHASE:	4.022	4.	Z1= 69.0217	4.656	4.345
	SLG DUTY:	3.260	3.	Z2= 69.0217	3.533	
208. VOLTS	LN/LN	3.483		Z0= 118.7629		
	LN/LN/GND	3.937	(	2.727 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-4EQD-M	3 PHASE:	4.026	4.	Z1= 68.9365	4.665	4.352
	SLG DUTY:	3.268	3.	Z2= 68.9365	3.545	
208. VOLTS	LN/LN	3.487		Z0= 118.2480		
	LN/LN/GND	3.942	(	2.736 GND RETURN KA)		
B-B4-ATS-EQ	3 PHASE:	4.121	4.	Z1= 67.3511	4.804	4.469
	SLG DUTY:	3.367	3.	Z2= 67.3511	3.668	
208. VOLTS	LN/LN	3.569		Z0= 113.9102		
	LN/LN/GND	4.041	(	2.832 GND RETURN KA)		
B-B4-ATS-LS	3 PHASE:	3.663	2.	Z1= 75.7862	3.786	3.724
	SLG DUTY:	2.777	1.	Z2= 75.7862	2.801	
208. VOLTS	LN/LN	3.172		Z0= 151.8736		
	LN/LN/GND	3.603	(	2.211 GND RETURN KA)		
B-B4-BUS	3 PHASE:	2.124	7.	Z1= 130.6938	2.865	2.509
	SLG DUTY:	3.098	7.	Z2= 130.6938	4.136	
208. VOLTS	LN/LN	1.839		Z0= 7.6192		
	LN/LN/GND	3.443	(	5.724 GND RETURN KA)		
B-B4-ELEV#4	3 PHASE:	3.264	2.	Z1= 85.0443	3.408	3.337
	SLG DUTY:	2.450	1.	Z2= 85.0443	2.486	
208. VOLTS	LN/LN	2.827		Z0= 172.8071		
	LN/LN/GND	3.178	(	1.944 GND RETURN KA)		
B-B4-EQ1	3 PHASE:	3.666	3.	Z1= 75.7135	3.986	3.828
	SLG DUTY:	2.866	2.	Z2= 75.7135	2.970	
208. VOLTS	LN/LN	3.175		Z0= 141.3668		
	LN/LN/GND	3.587	(	2.335 GND RETURN KA)		
B-B4-EQ10	3 PHASE:	3.322	2.	Z1= 83.5486	3.485	3.404
	SLG DUTY:	2.508	2.	Z2= 83.5486	2.550	
208. VOLTS	LN/LN	2.877		Z0= 167.7930		
	LN/LN/GND	3.238	(	1.998 GND RETURN KA)		
B-B4-EQ11	3 PHASE:	3.507	2.	Z1= 79.1550	3.741	3.625
	SLG DUTY:	2.697	2.	Z2= 79.1550	2.765	
208. VOLTS	LN/LN	3.037		Z0= 153.0022		
	LN/LN/GND	3.426	(	2.174 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-EQ12	3 PHASE:	3.136	2.	Z1= 88.5151	3.247	3.192
	SLG DUTY:	2.325	1.	Z2= 88.5151	2.350	
208. VOLTS	LN/LN	2.716		Z0= 184.3984		
	LN/LN/GND	3.047	(	1.831 GND RETURN KA)		
B-B4-EQ15	3 PHASE:	3.264	2.	Z1= 85.0443	3.408	3.337
	SLG DUTY:	2.450	1.	Z2= 85.0443	2.486	
208. VOLTS	LN/LN	2.827		Z0= 172.8071		
	LN/LN/GND	3.178	(	1.944 GND RETURN KA)		
B-B4-EQ2	3 PHASE:	3.875	3.	Z1= 71.6283	4.355	4.118
	SLG DUTY:	3.095	2.	Z2= 71.6283	3.278	
208. VOLTS	LN/LN	3.356		Z0= 127.5434		
	LN/LN/GND	3.795	(	2.560 GND RETURN KA)		
B-B4-EQ3	3 PHASE:	3.453	2.	Z1= 80.3952	3.663	3.559
	SLG DUTY:	2.641	2.	Z2= 80.3952	2.700	
208. VOLTS	LN/LN	2.990		Z0= 157.1859		
	LN/LN/GND	3.371	(	2.121 GND RETURN KA)		
B-B4-EQ5	3 PHASE:	3.480	2.	Z1= 79.7735	3.702	3.592
	SLG DUTY:	2.669	2.	Z2= 79.7735	2.732	
208. VOLTS	LN/LN	3.013		Z0= 155.0895		
	LN/LN/GND	3.398	(	2.147 GND RETURN KA)		
B-B4-EQ6	3 PHASE:	3.676	3.	Z1= 75.5146	4.002	3.841
	SLG DUTY:	2.876	2.	Z2= 75.5146	2.983	
208. VOLTS	LN/LN	3.183		Z0= 140.6936		
	LN/LN/GND	3.597	(	2.345 GND RETURN KA)		
B-B4-EQ7	3 PHASE:	3.280	2.	Z1= 84.6155	3.430	3.356
	SLG DUTY:	2.466	2.	Z2= 84.6155	2.504	
208. VOLTS	LN/LN	2.841		Z0= 171.3707		
	LN/LN/GND	3.195	(	1.959 GND RETURN KA)		
B-B4-EQ9	3 PHASE:	3.030	2.	Z1= 91.6064	3.120	3.075
	SLG DUTY:	2.224	1.	Z2= 91.6064	2.243	
208. VOLTS	LN/LN	2.624		Z0= 194.6691		
	LN/LN/GND	2.938	(	1.741 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-HYDROELEV	3 PHASE:	3.176	2.	Z1= 87.3885	3.272	3.224
	SLG DUTY:	2.347	1.	Z2= 87.3885	2.367	
208. VOLTS	LN/LN	2.751		Z0= 183.4161		
	LN/LN/GND	3.090	(	1.844 GND RETURN KA)		
B-B4-JBOX	3 PHASE:	2.121	7.	Z1= 130.8972	2.851	2.500
	SLG DUTY:	3.081	6.	Z2= 130.8972	4.066	
208. VOLTS	LN/LN	1.836		Z0= 9.2180		
	LN/LN/GND	3.433	(	5.625 GND RETURN KA)		
B-B4-LP1	3 PHASE:	1.990	5.	Z1= 139.4572	2.485	2.245
	SLG DUTY:	2.669	3.	Z2= 139.4572	3.051	
208. VOLTS	LN/LN	1.724		Z0= 42.3352		
	LN/LN/GND	2.947	(	3.953 GND RETURN KA)		
B-B4-LP1-M	3 PHASE:	1.992	5.	Z1= 139.3645	2.488	2.247
	SLG DUTY:	2.675	3.	Z2= 139.3645	3.063	
208. VOLTS	LN/LN	1.725		Z0= 41.6284		
	LN/LN/GND	2.955	(	3.979 GND RETURN KA)		
B-B4-LP10	3 PHASE:	1.931	4.	Z1= 143.7645	2.343	2.142
	SLG DUTY:	2.495	3.	Z2= 143.7645	2.748	
208. VOLTS	LN/LN	1.672		Z0= 58.6304		
	LN/LN/GND	2.741	(	3.409 GND RETURN KA)		
B-B4-LP10-M	3 PHASE:	1.932	4.	Z1= 143.6698	2.345	2.144
	SLG DUTY:	2.501	3.	Z2= 143.6698	2.757	
208. VOLTS	LN/LN	1.673		Z0= 57.9228		
	LN/LN/GND	2.748	(	3.428 GND RETURN KA)		
B-B4-LP11	3 PHASE:	1.980	5.	Z1= 140.1686	2.459	2.227
	SLG DUTY:	2.639	3.	Z2= 140.1686	2.995	
208. VOLTS	LN/LN	1.715		Z0= 45.0478		
	LN/LN/GND	2.911	(	3.853 GND RETURN KA)		
B-B4-LP11-M	3 PHASE:	1.982	5.	Z1= 140.0756	2.463	2.229
	SLG DUTY:	2.645	3.	Z2= 140.0756	3.006	
208. VOLTS	LN/LN	1.716		Z0= 44.3408		
	LN/LN/GND	2.919	(	3.877 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LP12	3 PHASE:	2.001	5.	Z1= 138.7484	2.510	2.263
	SLG DUTY:	2.700	3.	Z2= 138.7484	3.110	
208. VOLTS	LN/LN	1.733		Z0= 39.6245		
	LN/LN/GND	2.984	(	4.058 GND RETURN KA)		
B-B4-LP12-M	3 PHASE:	2.002	5.	Z1= 138.6561	2.514	2.265
	SLG DUTY:	2.706	3.	Z2= 138.6561	3.123	
208. VOLTS	LN/LN	1.734		Z0= 38.9180		
	LN/LN/GND	2.992	(	4.085 GND RETURN KA)		
B-B4-LP13	3 PHASE:	1.931	4.	Z1= 143.7645	2.343	2.142
	SLG DUTY:	2.495	3.	Z2= 143.7645	2.748	
208. VOLTS	LN/LN	1.672		Z0= 58.6304		
	LN/LN/GND	2.741	(	3.409 GND RETURN KA)		
B-B4-LP13-M	3 PHASE:	1.932	4.	Z1= 143.6698	2.345	2.144
	SLG DUTY:	2.501	3.	Z2= 143.6698	2.757	
208. VOLTS	LN/LN	1.673		Z0= 57.9228		
	LN/LN/GND	2.748	(	3.428 GND RETURN KA)		
B-B4-LP14	3 PHASE:	1.892	4.	Z1= 146.6854	2.258	2.079
	SLG DUTY:	2.388	3.	Z2= 146.6854	2.583	
208. VOLTS	LN/LN	1.639		Z0= 69.5107		
	LN/LN/GND	2.619	(	3.114 GND RETURN KA)		
B-B4-LP14-M	3 PHASE:	1.894	4.	Z1= 146.5894	2.261	2.081
	SLG DUTY:	2.394	3.	Z2= 146.5894	2.591	
208. VOLTS	LN/LN	1.640		Z0= 68.8030		
	LN/LN/GND	2.625	(	3.131 GND RETURN KA)		
B-B4-LP15	3 PHASE:	2.755	1.	Z1= 100.7540	2.769	2.762
	SLG DUTY:	1.907	1.	Z2= 100.7540	1.909	
208. VOLTS	LN/LN	2.386		Z0= 239.6704		
	LN/LN/GND	2.652	(	1.444 GND RETURN KA)		
B-B4-LP15-M	3 PHASE:	2.758	1.	Z1= 100.6337	2.773	2.766
	SLG DUTY:	1.911	1.	Z2= 100.6337	1.913	
208. VOLTS	LN/LN	2.389		Z0= 238.9627		
	LN/LN/GND	2.656	(	1.448 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LP2	3 PHASE:	2.063	6.	Z1= 134.5544	2.679	2.382
	SLG DUTY:	2.892	4.	Z2= 134.5544	3.535	
208. VOLTS	LN/LN	1.787		Z0= 23.4387		
	LN/LN/GND	3.218	(4.790	GND RETURN KA)		
B-B4-LP2-M	3 PHASE:	2.064	6.	Z1= 134.4643	2.683	2.384
	SLG DUTY:	2.900	5.	Z2= 134.4643	3.553	
208. VOLTS	LN/LN	1.788		Z0= 22.7376		
	LN/LN/GND	3.227	(4.825	GND RETURN KA)		
B-B4-LP3	3 PHASE:	2.063	6.	Z1= 134.5544	2.679	2.382
	SLG DUTY:	2.892	4.	Z2= 134.5544	3.535	
208. VOLTS	LN/LN	1.787		Z0= 23.4387		
	LN/LN/GND	3.218	(4.790	GND RETURN KA)		
B-B4-LP3-M	3 PHASE:	2.064	6.	Z1= 134.4643	2.683	2.384
	SLG DUTY:	2.900	5.	Z2= 134.4643	3.553	
208. VOLTS	LN/LN	1.788		Z0= 22.7376		
	LN/LN/GND	3.227	(4.825	GND RETURN KA)		
B-B4-LP4	3 PHASE:	1.980	5.	Z1= 140.1686	2.459	2.227
	SLG DUTY:	2.639	3.	Z2= 140.1686	2.995	
208. VOLTS	LN/LN	1.715		Z0= 45.0478		
	LN/LN/GND	2.911	(3.853	GND RETURN KA)		
B-B4-LP4-M	3 PHASE:	1.982	5.	Z1= 140.0756	2.463	2.229
	SLG DUTY:	2.645	3.	Z2= 140.0756	3.006	
208. VOLTS	LN/LN	1.716		Z0= 44.3408		
	LN/LN/GND	2.919	(3.877	GND RETURN KA)		
B-B4-LP5	3 PHASE:	1.970	5.	Z1= 140.8827	2.435	2.209
	SLG DUTY:	2.609	3.	Z2= 140.8827	2.941	
208. VOLTS	LN/LN	1.706		Z0= 47.7620		
	LN/LN/GND	2.875	(3.756	GND RETURN KA)		
B-B4-LP5-M	3 PHASE:	1.972	5.	Z1= 140.7893	2.438	2.211
	SLG DUTY:	2.616	3.	Z2= 140.7893	2.952	
208. VOLTS	LN/LN	1.707		Z0= 47.0548		
	LN/LN/GND	2.883	(3.780	GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LP6	3 PHASE:	2.021	5.	Z1= 137.3391	2.564	2.301
	SLG DUTY:	2.762	4.	Z2= 137.3391	3.237	
208. VOLTS	LN/LN	1.750		Z0= 34.2108		
	LN/LN/GND	3.060	(4.282 GND RETURN KA)			
B-B4-LP6-M	3 PHASE:	2.022	5.	Z1= 137.2475	2.567	2.303
	SLG DUTY:	2.769	4.	Z2= 137.2475	3.251	
208. VOLTS	LN/LN	1.751		Z0= 33.5052		
	LN/LN/GND	3.069	(4.311 GND RETURN KA)			
B-B4-LP7	3 PHASE:	2.021	5.	Z1= 137.3391	2.564	2.301
	SLG DUTY:	2.762	4.	Z2= 137.3391	3.237	
208. VOLTS	LN/LN	1.750		Z0= 34.2108		
	LN/LN/GND	3.060	(4.282 GND RETURN KA)			
B-B4-LP7-M	3 PHASE:	2.022	5.	Z1= 137.2475	2.567	2.303
	SLG DUTY:	2.769	4.	Z2= 137.2475	3.251	
208. VOLTS	LN/LN	1.751		Z0= 33.5052		
	LN/LN/GND	3.069	(4.311 GND RETURN KA)			
B-B4-LP8	3 PHASE:	1.970	5.	Z1= 140.8827	2.435	2.209
	SLG DUTY:	2.609	3.	Z2= 140.8827	2.941	
208. VOLTS	LN/LN	1.706		Z0= 47.7620		
	LN/LN/GND	2.875	(3.756 GND RETURN KA)			
B-B4-LP8-M	3 PHASE:	1.972	5.	Z1= 140.7893	2.438	2.211
	SLG DUTY:	2.616	3.	Z2= 140.7893	2.952	
208. VOLTS	LN/LN	1.707		Z0= 47.0548		
	LN/LN/GND	2.883	(3.780 GND RETURN KA)			
B-B4-LP9	3 PHASE:	1.931	4.	Z1= 143.7645	2.343	2.142
	SLG DUTY:	2.495	3.	Z2= 143.7645	2.748	
208. VOLTS	LN/LN	1.672		Z0= 58.6304		
	LN/LN/GND	2.741	(3.409 GND RETURN KA)			
B-B4-LP9-M	3 PHASE:	1.932	4.	Z1= 143.6698	2.345	2.144
	SLG DUTY:	2.501	3.	Z2= 143.6698	2.757	
208. VOLTS	LN/LN	1.673		Z0= 57.9228		
	LN/LN/GND	2.748	(3.428 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LS1	3 PHASE:	2.950		1. Z1= 94.1019	2.978	2.964
	SLG DUTY:	2.087		1. Z2= 94.1019	2.090	
208. VOLTS	LN/LN	2.555		Z0= 215.2211		
	LN/LN/GND	2.854		(1.598 GND RETURN KA)		
B-B4-LS1-M	3 PHASE:	2.953		1. Z1= 93.9834	2.981	2.967
	SLG DUTY:	2.092		1. Z2= 93.9834	2.095	
208. VOLTS	LN/LN	2.558		Z0= 214.5138		
	LN/LN/GND	2.858		(1.602 GND RETURN KA)		
B-B4-LS10	3 PHASE:	2.504		1. Z1= 110.8331	2.514	2.509
	SLG DUTY:	1.707		1. Z2= 110.8331	1.708	
208. VOLTS	LN/LN	2.169		Z0= 270.8251		
	LN/LN/GND	2.397		(1.283 GND RETURN KA)		
B-B4-LS10-M	3 PHASE:	2.507		1. Z1= 110.7121	2.517	2.512
	SLG DUTY:	1.710		1. Z2= 110.7121	1.711	
208. VOLTS	LN/LN	2.171		Z0= 270.1177		
	LN/LN/GND	2.400		(1.286 GND RETURN KA)		
B-B4-LS11	3 PHASE:	2.656		1. Z1= 104.5060	2.670	2.663
	SLG DUTY:	1.832		1. Z2= 104.5060	1.834	
208. VOLTS	LN/LN	2.300		Z0= 249.9684		
	LN/LN/GND	2.552		(1.386 GND RETURN KA)		
B-B4-LS11-M	3 PHASE:	2.659		1. Z1= 104.3857	2.673	2.666
	SLG DUTY:	1.836		1. Z2= 104.3857	1.838	
208. VOLTS	LN/LN	2.303		Z0= 249.2607		
	LN/LN/GND	2.555		(1.389 GND RETURN KA)		
B-B4-LS12	3 PHASE:	2.785		1. Z1= 99.6847	2.803	2.794
	SLG DUTY:	1.942		1. Z2= 99.6847	1.944	
208. VOLTS	LN/LN	2.411		Z0= 233.9440		
	LN/LN/GND	2.683		(1.476 GND RETURN KA)		
B-B4-LS12-M	3 PHASE:	2.788		1. Z1= 99.5652	2.807	2.797
	SLG DUTY:	1.946		1. Z2= 99.5652	1.948	
208. VOLTS	LN/LN	2.414		Z0= 233.2363		
	LN/LN/GND	2.687		(1.480 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LS13	3 PHASE:	2.808	1.	Z1= 98.8408	2.828	2.818
	SLG DUTY:	1.962	1.	Z2= 98.8408	1.965	
208. VOLTS	LN/LN	2.432		Z0= 231.1259		
	LN/LN/GND	2.708	(	1.493 GND RETURN KA)		
B-B4-LS13-M	3 PHASE:	2.812	1.	Z1= 98.7214	2.832	2.822
	SLG DUTY:	1.967	1.	Z2= 98.7214	1.969	
208. VOLTS	LN/LN	2.435		Z0= 230.4182		
	LN/LN/GND	2.712	(	1.497 GND RETURN KA)		
B-B4-LS14	3 PHASE:	2.808	1.	Z1= 98.8408	2.828	2.818
	SLG DUTY:	1.962	1.	Z2= 98.8408	1.965	
208. VOLTS	LN/LN	2.432		Z0= 231.1259		
	LN/LN/GND	2.708	(	1.493 GND RETURN KA)		
B-B4-LS14-M	3 PHASE:	2.812	1.	Z1= 98.7214	2.832	2.822
	SLG DUTY:	1.967	1.	Z2= 98.7214	1.969	
208. VOLTS	LN/LN	2.435		Z0= 230.4182		
	LN/LN/GND	2.712	(	1.497 GND RETURN KA)		
B-B4-LS2	3 PHASE:	3.280	2.	Z1= 84.6189	3.338	3.309
	SLG DUTY:	2.392	1.	Z2= 84.6189	2.401	
208. VOLTS	LN/LN	2.841		Z0= 182.9164		
	LN/LN/GND	3.199	(	1.862 GND RETURN KA)		
B-B4-LS2-M	3 PHASE:	3.285	2.	Z1= 84.5031	3.343	3.314
	SLG DUTY:	2.399	1.	Z2= 84.5031	2.407	
208. VOLTS	LN/LN	2.845		Z0= 182.2120		
	LN/LN/GND	3.204	(	1.868 GND RETURN KA)		
B-B4-LS3	3 PHASE:	3.440	2.	Z1= 80.6929	3.521	3.480
	SLG DUTY:	2.548	1.	Z2= 80.6929	2.561	
208. VOLTS	LN/LN	2.979		Z0= 169.3194		
	LN/LN/GND	3.366	(	2.000 GND RETURN KA)		
B-B4-LS3-M	3 PHASE:	3.445	2.	Z1= 80.5786	3.526	3.486
	SLG DUTY:	2.555	1.	Z2= 80.5786	2.569	
208. VOLTS	LN/LN	2.983		Z0= 168.6176		
	LN/LN/GND	3.372	(	2.008 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LS4	3 PHASE:	3.085		1. Z1= 89.9883	3.122	3.103
	SLG DUTY:	2.209		1. Z2= 89.9883	2.214	
208. VOLTS	LN/LN	2.671		Z0= 201.2929		
	LN/LN/GND	2.994	(	1.702 GND RETURN KA)		
B-B4-LS4-M	3 PHASE:	3.089		1. Z1= 89.8708	3.126	3.108
	SLG DUTY:	2.214		1. Z2= 89.8708	2.219	
208. VOLTS	LN/LN	2.675		Z0= 200.5864		
	LN/LN/GND	2.999	(	1.707 GND RETURN KA)		
B-B4-LS5	3 PHASE:	2.642		1. Z1= 105.0773	2.655	2.648
	SLG DUTY:	1.820		1. Z2= 105.0773	1.822	
208. VOLTS	LN/LN	2.288		Z0= 251.8593		
	LN/LN/GND	2.537	(	1.376 GND RETURN KA)		
B-B4-LS5-M	3 PHASE:	2.645		1. Z1= 104.9570	2.658	2.651
	SLG DUTY:	1.824		1. Z2= 104.9570	1.825	
208. VOLTS	LN/LN	2.290		Z0= 251.1516		
	LN/LN/GND	2.540	(	1.379 GND RETURN KA)		
B-B4-LS6	3 PHASE:	2.808		1. Z1= 98.8408	2.828	2.818
	SLG DUTY:	1.962		1. Z2= 98.8408	1.965	
208. VOLTS	LN/LN	2.432		Z0= 231.1259		
	LN/LN/GND	2.708	(	1.493 GND RETURN KA)		
B-B4-LS6-M	3 PHASE:	2.812		1. Z1= 98.7214	2.832	2.822
	SLG DUTY:	1.967		1. Z2= 98.7214	1.969	
208. VOLTS	LN/LN	2.435		Z0= 230.4182		
	LN/LN/GND	2.712	(	1.497 GND RETURN KA)		
B-B4-LS7	3 PHASE:	2.950		1. Z1= 94.1019	2.978	2.964
	SLG DUTY:	2.087		1. Z2= 94.1019	2.090	
208. VOLTS	LN/LN	2.555		Z0= 215.2211		
	LN/LN/GND	2.854	(	1.598 GND RETURN KA)		
B-B4-LS7-M	3 PHASE:	2.953		1. Z1= 93.9834	2.981	2.967
	SLG DUTY:	2.092		1. Z2= 93.9834	2.095	
208. VOLTS	LN/LN	2.558		Z0= 214.5138		
	LN/LN/GND	2.858	(	1.602 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-LS8	3 PHASE:	2.976	1.	Z1= 93.2738	3.005	2.991
	SLG DUTY:	2.110	1.	Z2= 93.2738	2.114	
208. VOLTS	LN/LN	2.577		Z0= 212.4268		
	LN/LN/GND	2.881	(	1.618 GND RETURN KA)		
B-B4-LS8-M	3 PHASE:	2.980	1.	Z1= 93.1555	3.009	2.995
	SLG DUTY:	2.115	1.	Z2= 93.1555	2.119	
208. VOLTS	LN/LN	2.580		Z0= 211.7197		
	LN/LN/GND	2.885	(	1.622 GND RETURN KA)		
B-B4-LS9	3 PHASE:	2.976	1.	Z1= 93.2738	3.005	2.991
	SLG DUTY:	2.110	1.	Z2= 93.2738	2.114	
208. VOLTS	LN/LN	2.577		Z0= 212.4268		
	LN/LN/GND	2.881	(	1.618 GND RETURN KA)		
B-B4-LS9-M	3 PHASE:	2.980	1.	Z1= 93.1555	3.009	2.995
	SLG DUTY:	2.115	1.	Z2= 93.1555	2.119	
208. VOLTS	LN/LN	2.580		Z0= 211.7197		
	LN/LN/GND	2.885	(	1.622 GND RETURN KA)		
B-B4-LSD	3 PHASE:	3.616	2.	Z1= 76.7558	3.732	3.675
	SLG DUTY:	2.729	1.	Z2= 76.7558	2.751	
208. VOLTS	LN/LN	3.132		Z0= 155.2297		
	LN/LN/GND	3.553	(	2.166 GND RETURN KA)		
B-B4-LSD-M	3 PHASE:	3.622	2.	Z1= 76.6432	3.739	3.680
	SLG DUTY:	2.737	1.	Z2= 76.6432	2.760	
208. VOLTS	LN/LN	3.136		Z0= 154.5319		
	LN/LN/GND	3.560	(	2.175 GND RETURN KA)		
B-B4-MDP	3 PHASE:	2.118	7.	Z1= 131.0527	2.846	2.496
	SLG DUTY:	3.072	6.	Z2= 131.0527	4.046	
208. VOLTS	LN/LN	1.834		Z0= 9.7247		
	LN/LN/GND	3.421	(	5.586 GND RETURN KA)		
B-B4-MDP-M	3 PHASE:	2.118	7.	Z1= 131.0425	2.846	2.497
	SLG DUTY:	3.073	6.	Z2= 131.0425	4.049	
208. VOLTS	LN/LN	1.834		Z0= 9.6403		
	LN/LN/GND	3.421	(	5.591 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B4-PP1	3 PHASE:	3.770	3.	Z1= 73.6181	4.214	3.996
	SLG DUTY:	2.990	2.	Z2= 73.6181	3.157	
208. VOLTS	LN/LN	3.265		Z0= 133.0263		
	LN/LN/GND	3.686	(	2.462 GND RETURN KA)		
B-B4-PP2	3 PHASE:	2.755	1.	Z1= 100.7540	2.769	2.762
	SLG DUTY:	1.907	1.	Z2= 100.7540	1.909	
208. VOLTS	LN/LN	2.386		Z0= 239.6704		
	LN/LN/GND	2.652	(	1.444 GND RETURN KA)		
B-B4-PP2-M	3 PHASE:	2.758	1.	Z1= 100.6337	2.773	2.766
	SLG DUTY:	1.911	1.	Z2= 100.6337	1.913	
208. VOLTS	LN/LN	2.389		Z0= 238.9627		
	LN/LN/GND	2.656	(	1.448 GND RETURN KA)		
B-B5-ATS-EQ	3 PHASE:	2.251	2.	Z1= 123.3087	2.401	2.326
	SLG DUTY:	1.632	2.	Z2= 123.3087	1.684	
208. VOLTS	LN/LN	1.949		Z0= 265.8304		
	LN/LN/GND	2.141	(	1.275 GND RETURN KA)		
B-B5-ATS-LS	3 PHASE:	1.772	1.	Z1= 156.6059	1.780	1.776
	SLG DUTY:	1.183	1.	Z2= 156.6059	1.185	
208. VOLTS	LN/LN	1.535		Z0= 394.8720		
	LN/LN/GND	1.675	(	0.883 GND RETURN KA)		
B-B5-EQ1	3 PHASE:	2.072	2.	Z1= 133.9675	2.153	2.113
	SLG DUTY:	1.471	2.	Z2= 133.9675	1.494	
208. VOLTS	LN/LN	1.794		Z0= 301.1345		
	LN/LN/GND	1.969	(	1.134 GND RETURN KA)		
B-B5-EQ2	3 PHASE:	2.061	2.	Z1= 134.7071	2.138	2.100
	SLG DUTY:	1.461	2.	Z2= 134.7071	1.483	
208. VOLTS	LN/LN	1.784		Z0= 303.6070		
	LN/LN/GND	1.958	(	1.126 GND RETURN KA)		
B-B5-EQ5	3 PHASE:	2.072	2.	Z1= 133.9675	2.153	2.113
	SLG DUTY:	1.471	2.	Z2= 133.9675	1.494	
208. VOLTS	LN/LN	1.794		Z0= 301.1345		
	LN/LN/GND	1.969	(	1.134 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B5-EQ6	3 PHASE:	2.023	2.	Z1= 137.1923	2.091	2.057
	SLG DUTY:	1.428	1.	Z2= 137.1923	1.447	
208. VOLTS	LN/LN	1.752		Z0= 311.9077		
	LN/LN/GND	1.922	(	1.098 GND RETURN KA)		
B-B5-EQD	3 PHASE:	2.240	2.	Z1= 123.9374	2.388	2.314
	SLG DUTY:	1.623	2.	Z2= 123.9374	1.674	
208. VOLTS	LN/LN	1.940		Z0= 267.5275		
	LN/LN/GND	2.130	(	1.267 GND RETURN KA)		
B-B5-HYDR ELEV	3 PHASE:	2.138	2.	Z1= 129.8323	2.241	2.190
	SLG DUTY:	1.530	2.	Z2= 129.8323	1.562	
208. VOLTS	LN/LN	1.852		Z0= 287.2925		
	LN/LN/GND	2.033	(	1.186 GND RETURN KA)		
B-B5-LP1	3 PHASE:	2.008	5.	Z1= 138.2351	2.533	2.279
	SLG DUTY:	2.708	4.	Z2= 138.2351	3.174	
208. VOLTS	LN/LN	1.739		Z0= 37.0469		
	LN/LN/GND	2.950	(	4.094 GND RETURN KA)		
B-B5-LP1-M	3 PHASE:	2.009	5.	Z1= 138.1541	2.536	2.281
	SLG DUTY:	2.713	4.	Z2= 138.1541	3.184	
208. VOLTS	LN/LN	1.740		Z0= 36.5005		
	LN/LN/GND	2.958	(	4.116 GND RETURN KA)		
B-B5-LP2	3 PHASE:	1.966	5.	Z1= 141.2183	2.427	2.203
	SLG DUTY:	2.584	3.	Z2= 141.2183	2.930	
208. VOLTS	LN/LN	1.702		Z0= 48.2834		
	LN/LN/GND	2.812	(	3.685 GND RETURN KA)		
B-B5-LP2-M	3 PHASE:	1.967	5.	Z1= 141.1363	2.430	2.205
	SLG DUTY:	2.589	3.	Z2= 141.1363	2.939	
208. VOLTS	LN/LN	1.703		Z0= 47.7373		
	LN/LN/GND	2.819	(	3.704 GND RETURN KA)		
B-B5-LP3	3 PHASE:	1.968	5.	Z1= 141.0752	2.432	2.206
	SLG DUTY:	2.589	3.	Z2= 141.0752	2.941	
208. VOLTS	LN/LN	1.704		Z0= 47.7460		
	LN/LN/GND	2.818	(	3.703 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B5-LP3-M	3 PHASE:	1.969	5.	Z1= 140.9932	2.434	2.208
	SLG DUTY:	2.595	3.	Z2= 140.9932	2.949	
208. VOLTS	LN/LN	1.705		Z0= 47.1999		
	LN/LN/GND	2.825	(	3.722 GND RETURN KA)		
B-B5-LP4	3 PHASE:	1.926	4.	Z1= 144.1019	2.335	2.136
	SLG DUTY:	2.472	3.	Z2= 144.1019	2.737	
208. VOLTS	LN/LN	1.668		Z0= 59.0619		
	LN/LN/GND	2.689	(	3.355 GND RETURN KA)		
B-B5-LP4-M	3 PHASE:	1.927	4.	Z1= 144.0190	2.338	2.138
	SLG DUTY:	2.477	3.	Z2= 144.0190	2.744	
208. VOLTS	LN/LN	1.669		Z0= 58.5166		
	LN/LN/GND	2.695	(	3.370 GND RETURN KA)		
B-B5-LP5	3 PHASE:	1.998	4.	Z1= 138.9363	2.427	2.218
	SLG DUTY:	2.657	3.	Z2= 138.9363	2.938	
208. VOLTS	LN/LN	1.730		Z0= 48.3444		
	LN/LN/GND	2.961	(	3.827 GND RETURN KA)		
B-B5-LP5-M	3 PHASE:	1.999	4.	Z1= 138.8535	2.429	2.220
	SLG DUTY:	2.662	3.	Z2= 138.8535	2.947	
208. VOLTS	LN/LN	1.731		Z0= 47.8096		
	LN/LN/GND	2.969	(	3.847 GND RETURN KA)		
B-B5-LS1	3 PHASE:	1.693	1.	Z1= 163.9891	1.699	1.696
	SLG DUTY:	1.122	1.	Z2= 163.9891	1.123	
208. VOLTS	LN/LN	1.466		Z0= 418.7309		
	LN/LN/GND	1.596	(	0.834 GND RETURN KA)		
B-B5-LS2	3 PHASE:	1.556	1.	Z1= 178.3612	1.560	1.558
	SLG DUTY:	1.019	1.	Z2= 178.3612	1.020	
208. VOLTS	LN/LN	1.348		Z0= 464.9379		
	LN/LN/GND	1.463	(	0.754 GND RETURN KA)		
B-B5-LS4	3 PHASE:	1.506	1.	Z1= 184.2913	1.509	1.508
	SLG DUTY:	0.982	1.	Z2= 184.2913	0.983	
208. VOLTS	LN/LN	1.304		Z0= 483.9041		
	LN/LN/GND	1.414	(	0.725 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B5-LSD	3 PHASE:	1.761	1.	Z1= 157.6209	1.769	1.765
	SLG DUTY:	1.175	1.	Z2= 157.6209	1.176	
208. VOLTS	LN/LN	1.525		Z0= 398.1311		
	LN/LN/GND	1.664	(	0.876 GND RETURN KA)		
B-B5-LSD-M	3 PHASE:	1.762	1.	Z1= 157.5243	1.770	1.766
	SLG DUTY:	1.176	1.	Z2= 157.5243	1.177	
208. VOLTS	LN/LN	1.526		Z0= 397.5885		
	LN/LN/GND	1.665	(	0.877 GND RETURN KA)		
B-B5-MDP	3 PHASE:	2.074	6.	Z1= 133.8415	2.715	2.406
	SLG DUTY:	2.911	5.	Z2= 133.8415	3.662	
208. VOLTS	LN/LN	1.796		Z0= 20.3563		
	LN/LN/GND	3.169	(	4.860 GND RETURN KA)		
B-B5-MDP-M	3 PHASE:	2.074	6.	Z1= 133.8212	2.716	2.407
	SLG DUTY:	2.912	5.	Z2= 133.8212	3.667	
208. VOLTS	LN/LN	1.796		Z0= 20.1770		
	LN/LN/GND	3.170	(	4.868 GND RETURN KA)		
B-B5-NEXTEL	3 PHASE:	1.984	5.	Z1= 139.9350	2.450	2.223
	SLG DUTY:	2.633	3.	Z2= 139.9350	2.986	
208. VOLTS	LN/LN	1.718		Z0= 45.2757		
	LN/LN/GND	2.886	(	3.823 GND RETURN KA)		
B-B5-PNL-H	3 PHASE:	2.020	5.	Z1= 137.3916	2.566	2.302
	SLG DUTY:	2.745	4.	Z2= 137.3916	3.254	
208. VOLTS	LN/LN	1.750		Z0= 33.8630		
	LN/LN/GND	2.991	(	4.224 GND RETURN KA)		
B-B5-PNL-H-M	3 PHASE:	2.021	5.	Z1= 137.3108	2.569	2.304
	SLG DUTY:	2.750	4.	Z2= 137.3108	3.265	
208. VOLTS	LN/LN	1.751		Z0= 33.3170		
	LN/LN/GND	2.999	(	4.247 GND RETURN KA)		
B-B5-STRT LGHT	3 PHASE:	1.961	3.	Z1= 141.5586	2.245	2.105
	SLG DUTY:	2.500	2.	Z2= 141.5586	2.601	
208. VOLTS	LN/LN	1.698		Z0= 74.7704		
	LN/LN/GND	2.822	(	3.203 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B5-TEMP TRAI	3 PHASE:	1.962	4.	Z1= 141.5039	2.394	2.183
	SLG DUTY:	2.568	3.	Z2= 141.5039	2.863	
208. VOLTS	LN/LN	1.699		Z0= 51.7139		
	LN/LN/GND	2.814	(	3.613 GND RETURN KA)		
B-B55-LS3	3 PHASE:	1.634	1.	Z1= 169.8261	1.639	1.637
	SLG DUTY:	1.078	1.	Z2= 169.8261	1.078	
208. VOLTS	LN/LN	1.415		Z0= 437.5415		
	LN/LN/GND	1.539	(	0.800 GND RETURN KA)		
B-B6-ATS-EQ	3 PHASE:	2.738	3.	Z1= 101.3680	2.971	2.856
	SLG DUTY:	2.045	2.	Z2= 101.3680	2.129	
208. VOLTS	LN/LN	2.371		Z0= 206.5031		
	LN/LN/GND	2.625	(	1.624 GND RETURN KA)		
B-B6-ATS-LS	3 PHASE:	2.406	1.	Z1= 115.3677	2.428	2.417
	SLG DUTY:	1.669	1.	Z2= 115.3677	1.673	
208. VOLTS	LN/LN	2.084		Z0= 272.2817		
	LN/LN/GND	2.303	(	1.268 GND RETURN KA)		
B-B6-EQ1	3 PHASE:	2.585	2.	Z1= 107.3801	2.743	2.664
	SLG DUTY:	1.899	2.	Z2= 107.3801	1.949	
208. VOLTS	LN/LN	2.239		Z0= 226.1540		
	LN/LN/GND	2.476	(	1.493 GND RETURN KA)		
B-B6-EQ2	3 PHASE:	2.439	2.	Z1= 113.7951	2.554	2.497
	SLG DUTY:	1.768	2.	Z2= 113.7951	1.801	
208. VOLTS	LN/LN	2.112		Z0= 246.2024		
	LN/LN/GND	2.333	(	1.378 GND RETURN KA)		
B-B6-EQ3	3 PHASE:	2.553	2.	Z1= 108.7377	2.708	2.631
	SLG DUTY:	1.872	2.	Z2= 108.7377	1.922	
208. VOLTS	LN/LN	2.211		Z0= 229.6767		
	LN/LN/GND	2.444	(	1.471 GND RETURN KA)		
B-B6-EQ4	3 PHASE:	2.350	2.	Z1= 118.1078	2.440	2.395
	SLG DUTY:	1.687	1.	Z2= 118.1078	1.712	
208. VOLTS	LN/LN	2.035		Z0= 260.2609		
	LN/LN/GND	2.245	(	1.309 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-EQ5	3 PHASE:	2.458	2.	Z1= 112.9428	2.578	2.518
	SLG DUTY:	1.784	2.	Z2= 112.9428	1.820	
208. VOLTS	LN/LN	2.128		Z0= 243.4202		
	LN/LN/GND	2.351	(	1.393 GND RETURN KA)		
B-B6-EQ8	3 PHASE:	2.430	2.	Z1= 114.2205	2.564	2.497
	SLG DUTY:	1.768	2.	Z2= 114.2205	1.810	
208. VOLTS	LN/LN	2.105		Z0= 245.1396		
	LN/LN/GND	2.322	(	1.382 GND RETURN KA)		
B-B6-EQD	3 PHASE:	2.684	3.	Z1= 103.4247	2.904	2.795
	SLG DUTY:	1.996	2.	Z2= 103.4247	2.075	
208. VOLTS	LN/LN	2.324		Z0= 212.2941		
	LN/LN/GND	2.571	(	1.582 GND RETURN KA)		
B-B6-EQD-M	3 PHASE:	2.684	3.	Z1= 103.3985	2.905	2.796
	SLG DUTY:	1.997	2.	Z2= 103.3985	2.076	
208. VOLTS	LN/LN	2.325		Z0= 212.1201		
	LN/LN/GND	2.571	(	1.583 GND RETURN KA)		
B-B6-EQMACH	3 PHASE:	2.585	2.	Z1= 107.3801	2.743	2.664
	SLG DUTY:	1.899	2.	Z2= 107.3801	1.949	
208. VOLTS	LN/LN	2.239		Z0= 226.1540		
	LN/LN/GND	2.476	(	1.493 GND RETURN KA)		
B-B6-LP1	3 PHASE:	1.971	4.	Z1= 140.8568	2.353	2.166
	SLG DUTY:	2.573	3.	Z2= 140.8568	2.788	
208. VOLTS	LN/LN	1.707		Z0= 57.2193		
	LN/LN/GND	2.866	(	3.550 GND RETURN KA)		
B-B6-LP1-M	3 PHASE:	1.971	4.	Z1= 140.8341	2.354	2.167
	SLG DUTY:	2.575	3.	Z2= 140.8341	2.791	
208. VOLTS	LN/LN	1.707		Z0= 57.0094		
	LN/LN/GND	2.868	(	3.556 GND RETURN KA)		
B-B6-LP2	3 PHASE:	1.995	4.	Z1= 139.1487	2.423	2.214
	SLG DUTY:	2.650	3.	Z2= 139.1487	2.932	
208. VOLTS	LN/LN	1.728		Z0= 48.5825		
	LN/LN/GND	2.952	(	3.813 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-LP2-M	3 PHASE:	1.995	4.	Z1= 139.1266	2.424	2.215
	SLG DUTY:	2.652	3.	Z2= 139.1266	2.935	
208. VOLTS	LN/LN	1.728		Z0= 48.3735		
	LN/LN/GND	2.954	(	3.819 GND RETURN KA)		
B-B6-LP3	3 PHASE:	1.997	5.	Z1= 138.9766	2.507	2.260
	SLG DUTY:	2.678	4.	Z2= 138.9766	3.114	
208. VOLTS	LN/LN	1.730		Z0= 39.5350		
	LN/LN/GND	2.918	(	3.996 GND RETURN KA)		
B-B6-LP3-M	3 PHASE:	1.998	5.	Z1= 138.9552	2.508	2.261
	SLG DUTY:	2.680	4.	Z2= 138.9552	3.118	
208. VOLTS	LN/LN	1.730		Z0= 39.3369		
	LN/LN/GND	2.919	(	4.003 GND RETURN KA)		
B-B6-LP4	3 PHASE:	2.003	5.	Z1= 138.5527	2.523	2.271
	SLG DUTY:	2.696	4.	Z2= 138.5527	3.151	
208. VOLTS	LN/LN	1.735		Z0= 37.9355		
	LN/LN/GND	2.938	(	4.058 GND RETURN KA)		
B-B6-LP4-M	3 PHASE:	2.004	5.	Z1= 138.5315	2.524	2.272
	SLG DUTY:	2.698	4.	Z2= 138.5315	3.155	
208. VOLTS	LN/LN	1.735		Z0= 37.7381		
	LN/LN/GND	2.939	(	4.064 GND RETURN KA)		
B-B6-LP5	3 PHASE:	1.957	5.	Z1= 141.8267	2.408	2.189
	SLG DUTY:	2.561	3.	Z2= 141.8267	2.891	
208. VOLTS	LN/LN	1.695		Z0= 50.2584		
	LN/LN/GND	2.788	(	3.620 GND RETURN KA)		
B-B6-LP5-M	3 PHASE:	1.957	5.	Z1= 141.8048	2.409	2.189
	SLG DUTY:	2.563	3.	Z2= 141.8048	2.894	
208. VOLTS	LN/LN	1.695		Z0= 50.0571		
	LN/LN/GND	2.789	(	3.625 GND RETURN KA)		
B-B6-LP6	3 PHASE:	1.963	5.	Z1= 141.3965	2.422	2.199
	SLG DUTY:	2.579	3.	Z2= 141.3965	2.922	
208. VOLTS	LN/LN	1.700		Z0= 48.6446		
	LN/LN/GND	2.807	(	3.673 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-LP6-M	3 PHASE:	1.963	5.	Z1= 141.3747	2.423	2.200
	SLG DUTY:	2.580	3.	Z2= 141.3747	2.925	
208. VOLTS	LN/LN	1.700		Z0= 48.4438		
	LN/LN/GND	2.808	(	3.678 GND RETURN KA)		
B-B6-LP7	3 PHASE:	2.051	5.	Z1= 135.3197	2.611	2.340
	SLG DUTY:	2.834	4.	Z2= 135.3197	3.370	
208. VOLTS	LN/LN	1.776		Z0= 28.9006		
	LN/LN/GND	3.138	(	4.524 GND RETURN KA)		
B-B6-LP7-M	3 PHASE:	2.052	5.	Z1= 135.2987	2.612	2.341
	SLG DUTY:	2.836	4.	Z2= 135.2987	3.375	
208. VOLTS	LN/LN	1.777		Z0= 28.6998		
	LN/LN/GND	3.139	(	4.532 GND RETURN KA)		
B-B6-LS1	3 PHASE:	2.191	1.	Z1= 126.6880	2.203	2.197
	SLG DUTY:	1.491	1.	Z2= 126.6880	1.493	
208. VOLTS	LN/LN	1.897		Z0= 309.3174		
	LN/LN/GND	2.087	(	1.122 GND RETURN KA)		
B-B6-LS2	3 PHASE:	2.283	1.	Z1= 121.5609	2.298	2.291
	SLG DUTY:	1.565	1.	Z2= 121.5609	1.567	
208. VOLTS	LN/LN	1.977		Z0= 293.2536		
	LN/LN/GND	2.180	(	1.182 GND RETURN KA)		
B-B6-LS3	3 PHASE:	2.191	1.	Z1= 126.6880	2.203	2.197
	SLG DUTY:	1.491	1.	Z2= 126.6880	1.493	
208. VOLTS	LN/LN	1.897		Z0= 309.3174		
	LN/LN/GND	2.087	(	1.122 GND RETURN KA)		
B-B6-LS4	3 PHASE:	2.191	1.	Z1= 126.6880	2.203	2.197
	SLG DUTY:	1.491	1.	Z2= 126.6880	1.493	
208. VOLTS	LN/LN	1.897		Z0= 309.3174		
	LN/LN/GND	2.087	(	1.122 GND RETURN KA)		
B-B6-LS5	3 PHASE:	2.096	1.	Z1= 132.4125	2.105	2.101
	SLG DUTY:	1.415	1.	Z2= 132.4125	1.416	
208. VOLTS	LN/LN	1.815		Z0= 328.0604		
	LN/LN/GND	1.993	(	1.061 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B6-LS6	3 PHASE:	2.096	1.	Z1= 132.4125	2.105	2.101
	SLG DUTY:	1.415	1.	Z2= 132.4125	1.416	
208. VOLTS	LN/LN	1.815		Z0= 328.0604		
	LN/LN/GND	1.993	(	1.061 GND RETURN KA)		
B-B6-LSD	3 PHASE:	2.376	1.	Z1= 116.8448	2.396	2.386
	SLG DUTY:	1.645	1.	Z2= 116.8448	1.648	
208. VOLTS	LN/LN	2.057		Z0= 276.8147		
	LN/LN/GND	2.273	(	1.248 GND RETURN KA)		
B-B6-LSD-M	3 PHASE:	2.376	1.	Z1= 116.8129	2.397	2.387
	SLG DUTY:	1.646	1.	Z2= 116.8129	1.649	
208. VOLTS	LN/LN	2.058		Z0= 276.6110		
	LN/LN/GND	2.273	(	1.249 GND RETURN KA)		
B-B6-MACH SHOP	3 PHASE:	1.978	5.	Z1= 140.3032	2.435	2.213
	SLG DUTY:	2.617	3.	Z2= 140.3032	2.952	
208. VOLTS	LN/LN	1.713		Z0= 47.0005		
	LN/LN/GND	2.871	(	3.769 GND RETURN KA)		
B-B6-MDP	3 PHASE:	2.092	6.	Z1= 132.7067	2.771	2.444
	SLG DUTY:	2.967	6.	Z2= 132.7067	3.830	
208. VOLTS	LN/LN	1.811		Z0= 16.1561		
	LN/LN/GND	3.221	(	5.093 GND RETURN KA)		
B-B6-MDP-M	3 PHASE:	2.092	6.	Z1= 132.6866	2.772	2.445
	SLG DUTY:	2.968	6.	Z2= 132.6866	3.837	
208. VOLTS	LN/LN	1.812		Z0= 15.9922		
	LN/LN/GND	3.222	(	5.101 GND RETURN KA)		
B-B6-P6-CS	3 PHASE:	2.023	5.	Z1= 137.2079	2.557	2.298
	SLG DUTY:	2.752	4.	Z2= 137.2079	3.236	
208. VOLTS	LN/LN	1.752		Z0= 34.2222		
	LN/LN/GND	3.019	(	4.240 GND RETURN KA)		
B-B60-MDP	3 PHASE:	1.761	5.	Z1= 157.6059	2.219	1.997
	SLG DUTY:	2.381	5.	Z2= 157.6059	2.924	
208. VOLTS	LN/LN	1.525		Z0= 35.2752		
	LN/LN/GND	2.464	(	3.669 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B60-MDP-M	3 PHASE:	1.762	5.	Z1= 157.5247	2.221	1.999
	SLG DUTY:	2.385	5.	Z2= 157.5247	2.933	
208. VOLTS	LN/LN	1.526		Z0= 34.7742		
	LN/LN/GND	2.469	(	3.685 GND RETURN KA)		
B-B61 STRT LGH	3 PHASE:	1.832	3.	Z1= 151.5110	2.073	1.954
	SLG DUTY:	2.318	2.	Z2= 151.5110	2.399	
208. VOLTS	LN/LN	1.587		Z0= 82.8157		
	LN/LN/GND	2.611	(	2.930 GND RETURN KA)		
B-B61-ATS-EQD	3 PHASE:	2.506	2.	Z1= 110.7542	2.696	2.602
	SLG DUTY:	1.845	2.	Z2= 110.7542	1.912	
208. VOLTS	LN/LN	2.170		Z0= 231.9102		
	LN/LN/GND	2.394	(	1.453 GND RETURN KA)		
B-B61-ATS-LSD	3 PHASE:	2.010	1.	Z1= 138.0785	2.022	2.016
	SLG DUTY:	1.361	1.	Z2= 138.0785	1.363	
208. VOLTS	LN/LN	1.741		Z0= 340.0240		
	LN/LN/GND	1.909	(	1.022 GND RETURN KA)		
B-B61-COMP RM	3 PHASE:	2.382	2.	Z1= 116.5508	2.535	2.459
	SLG DUTY:	1.736	2.	Z2= 116.5508	1.788	
208. VOLTS	LN/LN	2.062		Z0= 248.8702		
	LN/LN/GND	2.271	(	1.360 GND RETURN KA)		
B-B61-DP	3 PHASE:	1.906	6.	Z1= 145.6164	2.463	2.194
	SLG DUTY:	2.612	5.	Z2= 145.6164	3.252	
208. VOLTS	LN/LN	1.651		Z0= 29.0444		
	LN/LN/GND	2.766	(	4.135 GND RETURN KA)		
B-B61-ELEV	3 PHASE:	2.235	2.	Z1= 124.1662	2.348	2.292
	SLG DUTY:	1.609	2.	Z2= 124.1662	1.644	
208. VOLTS	LN/LN	1.936		Z0= 271.9415		
	LN/LN/GND	2.129	(	1.250 GND RETURN KA)		
B-B61-EQ1	3 PHASE:	2.255	2.	Z1= 123.0929	2.355	2.305
	SLG DUTY:	1.619	2.	Z2= 123.0929	1.648	
208. VOLTS	LN/LN	1.953		Z0= 270.9899		
	LN/LN/GND	2.149	(	1.256 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B61-EQ2	3 PHASE:	2.399	2.	Z1= 115.7110	2.551	2.475
	SLG DUTY:	1.749	2.	Z2= 115.7110	1.800	
208. VOLTS	LN/LN	2.077		Z0= 247.0009		
	LN/LN/GND	2.289	(	1.370 GND RETURN KA)		
B-B61-EQ4	3 PHASE:	2.251	2.	Z1= 123.2898	2.342	2.297
	SLG DUTY:	1.612	2.	Z2= 123.2898	1.638	
208. VOLTS	LN/LN	1.950		Z0= 272.9412		
	LN/LN/GND	2.147	(	1.249 GND RETURN KA)		
B-B61-EQA	3 PHASE:	2.450	2.	Z1= 113.2844	2.628	2.540
	SLG DUTY:	1.797	2.	Z2= 113.2844	1.859	
208. VOLTS	LN/LN	2.122		Z0= 238.9658		
	LN/LN/GND	2.338	(	1.413 GND RETURN KA)		
B-B61-EQD	3 PHASE:	2.464	2.	Z1= 112.6348	2.647	2.557
	SLG DUTY:	1.810	2.	Z2= 112.6348	1.874	
208. VOLTS	LN/LN	2.134		Z0= 236.9955		
	LN/LN/GND	2.352	(	1.424 GND RETURN KA)		
B-B61-KITCHEN	3 PHASE:	1.891	1.	Z1= 146.7952	1.900	1.896
	SLG DUTY:	1.270	1.	Z2= 146.7952	1.272	
208. VOLTS	LN/LN	1.638		Z0= 366.2431		
	LN/LN/GND	1.791	(	0.951 GND RETURN KA)		
B-B61-LP1	3 PHASE:	1.587	2.	Z1= 174.9396	1.684	1.636
	SLG DUTY:	1.706	1.	Z2= 174.9396	1.720	
208. VOLTS	LN/LN	1.374		Z0= 170.4409		
	LN/LN/GND	1.943	(	1.723 GND RETURN KA)		
B-B61-LP2	3 PHASE:	1.587	2.	Z1= 174.9396	1.684	1.636
	SLG DUTY:	1.706	1.	Z2= 174.9396	1.720	
208. VOLTS	LN/LN	1.374		Z0= 170.4409		
	LN/LN/GND	1.943	(	1.723 GND RETURN KA)		
B-B61-LP3	3 PHASE:	1.792	4.	Z1= 154.8701	2.151	1.976
	SLG DUTY:	2.281	3.	Z2= 154.8701	2.514	
208. VOLTS	LN/LN	1.552		Z0= 65.6233		
	LN/LN/GND	2.465	(	3.056 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B61-LP4	3 PHASE:	1.848	5.	Z1= 150.2405	2.293	2.077
	SLG DUTY:	2.439	4.	Z2= 150.2405	2.820	
208. VOLTS	LN/LN	1.600		Z0= 46.8136		
	LN/LN/GND	2.617	(	3.537 GND RETURN KA)		
B-B61-LP5	3 PHASE:	1.788	3.	Z1= 155.2620	1.965	1.877
	SLG DUTY:	2.168	2.	Z2= 155.2620	2.207	
208. VOLTS	LN/LN	1.548		Z0= 106.1237		
	LN/LN/GND	2.446	(	2.522 GND RETURN KA)		
B-B61-LS1	3 PHASE:	1.738	1.	Z1= 159.7286	1.743	1.740
	SLG DUTY:	1.148	1.	Z2= 159.7286	1.149	
208. VOLTS	LN/LN	1.505		Z0= 410.2233		
	LN/LN/GND	1.640	(	0.853 GND RETURN KA)		
B-B61-LS2	3 PHASE:	1.850	1.	Z1= 150.0782	1.856	1.853
	SLG DUTY:	1.231	1.	Z2= 150.0782	1.232	
208. VOLTS	LN/LN	1.602		Z0= 380.6564		
	LN/LN/GND	1.749	(	0.917 GND RETURN KA)		
B-B61-LS3	3 PHASE:	1.676	1.	Z1= 165.6203	1.680	1.678
	SLG DUTY:	1.102	1.	Z2= 165.6203	1.102	
208. VOLTS	LN/LN	1.451		Z0= 429.1670		
	LN/LN/GND	1.579	(	0.816 GND RETURN KA)		
B-B61-LS4	3 PHASE:	1.738	1.	Z1= 159.7286	1.743	1.740
	SLG DUTY:	1.148	1.	Z2= 159.7286	1.149	
208. VOLTS	LN/LN	1.505		Z0= 410.2233		
	LN/LN/GND	1.640	(	0.853 GND RETURN KA)		
B-B61-LS5	3 PHASE:	1.676	1.	Z1= 165.6203	1.680	1.678
	SLG DUTY:	1.102	1.	Z2= 165.6203	1.102	
208. VOLTS	LN/LN	1.451		Z0= 429.1670		
	LN/LN/GND	1.579	(	0.816 GND RETURN KA)		
B-B61-LSD	3 PHASE:	1.990	1.	Z1= 139.4772	2.001	1.996
	SLG DUTY:	1.345	1.	Z2= 139.4772	1.347	
208. VOLTS	LN/LN	1.723		Z0= 344.5295		
	LN/LN/GND	1.889	(	1.009 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B61-LSD-M	3 PHASE:	1.992		1. Z1= 139.3572	2.003	1.997
	SLG DUTY:	1.347		1. Z2= 139.3572	1.349	
208. VOLTS	LN/LN	1.725		Z0= 343.8225		
	LN/LN/GND	1.890	(	1.011 GND RETURN KA)		
B-B61-MCC	3 PHASE:	1.832		3. Z1= 151.5110	2.073	1.954
	SLG DUTY:	2.318		2. Z2= 151.5110	2.399	
208. VOLTS	LN/LN	1.587		Z0= 82.8157		
	LN/LN/GND	2.611	(	2.930 GND RETURN KA)		
B-B61-MDP	3 PHASE:	1.953		6. Z1= 142.0905	2.558	2.267
	SLG DUTY:	2.751		6. Z2= 142.0905	3.529	
208. VOLTS	LN/LN	1.692		Z0= 19.0505		
	LN/LN/GND	2.946	(	4.646 GND RETURN KA)		
B-B61-MDP-M	3 PHASE:	1.954		6. Z1= 142.0553	2.560	2.268
	SLG DUTY:	2.754		6. Z2= 142.0553	3.536	
208. VOLTS	LN/LN	1.692		Z0= 18.8147		
	LN/LN/GND	2.948	(	4.658 GND RETURN KA)		
B-B62-A	3 PHASE:	2.013		5. Z1= 137.8576	2.523	2.276
	SLG DUTY:	2.723		4. Z2= 137.8576	3.153	
208. VOLTS	LN/LN	1.744		Z0= 37.5862		
	LN/LN/GND	2.996	(	4.124 GND RETURN KA)		
B-B62-ATS-EQD	3 PHASE:	2.043		2. Z1= 135.8969	2.164	2.104
	SLG DUTY:	1.463		2. Z2= 135.8969	1.505	
208. VOLTS	LN/LN	1.769		Z0= 299.7854		
	LN/LN/GND	1.936	(	1.135 GND RETURN KA)		
B-B62-ATS-LSD	3 PHASE:	1.588		1. Z1= 174.8009	1.593	1.591
	SLG DUTY:	1.049		1. Z2= 174.8009	1.050	
208. VOLTS	LN/LN	1.375		Z0= 448.6792		
	LN/LN/GND	1.495	(	0.779 GND RETURN KA)		
B-B62-ATTC PNL	3 PHASE:	1.875		2. Z1= 148.0045	1.947	1.911
	SLG DUTY:	1.319		2. Z2= 148.0045	1.340	
208. VOLTS	LN/LN	1.624		Z0= 338.1915		
	LN/LN/GND	1.776	(	1.013 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B62-B	3 PHASE:	2.025	5.	Z1= 137.0894	2.555	2.298
	SLG DUTY:	2.757	4.	Z2= 137.0894	3.229	
208. VOLTS	LN/LN	1.753		Z0= 34.3950		
	LN/LN/GND	3.034	(	4.251 GND RETURN KA)		
B-B62-BL	3 PHASE:	1.968	4.	Z1= 141.0426	2.309	2.142
	SLG DUTY:	2.550	2.	Z2= 141.0426	2.711	
208. VOLTS	LN/LN	1.704		Z0= 63.7981		
	LN/LN/GND	2.862	(	3.423 GND RETURN KA)		
B-B62-BP	3 PHASE:	2.011	5.	Z1= 138.0378	2.459	2.241
	SLG DUTY:	2.700	3.	Z2= 138.0378	3.011	
208. VOLTS	LN/LN	1.741		Z0= 44.4713		
	LN/LN/GND	3.018	(	3.975 GND RETURN KA)		
B-B62-ELEV-1	3 PHASE:	1.875	2.	Z1= 148.0045	1.947	1.911
	SLG DUTY:	1.319	2.	Z2= 148.0045	1.340	
208. VOLTS	LN/LN	1.624		Z0= 338.1915		
	LN/LN/GND	1.776	(	1.013 GND RETURN KA)		
B-B62-ELEV-2	3 PHASE:	1.875	2.	Z1= 148.0045	1.947	1.911
	SLG DUTY:	1.319	2.	Z2= 148.0045	1.340	
208. VOLTS	LN/LN	1.624		Z0= 338.1915		
	LN/LN/GND	1.776	(	1.013 GND RETURN KA)		
B-B62-EQ	3 PHASE:	1.983	2.	Z1= 139.9737	2.083	2.033
	SLG DUTY:	1.411	2.	Z2= 139.9737	1.443	
208. VOLTS	LN/LN	1.717		Z0= 312.8859		
	LN/LN/GND	1.879	(	1.090 GND RETURN KA)		
B-B62-EQD	3 PHASE:	2.006	2.	Z1= 138.3785	2.117	2.062
	SLG DUTY:	1.432	2.	Z2= 138.3785	1.469	
208. VOLTS	LN/LN	1.737		Z0= 307.2575		
	LN/LN/GND	1.901	(	1.109 GND RETURN KA)		
B-B62-KP	3 PHASE:	2.006	5.	Z1= 138.3872	2.473	2.246
	SLG DUTY:	2.692	3.	Z2= 138.3872	3.040	
208. VOLTS	LN/LN	1.737		Z0= 42.7671		
	LN/LN/GND	2.987	(	3.983 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B62-LP1	3 PHASE:	2.019	5.	Z1= 137.4821	2.485	2.258
	SLG DUTY:	2.727	3.	Z2= 137.4821	3.068	
208. VOLTS	LN/LN	1.748		Z0= 41.6049		
	LN/LN/GND	3.048	(	4.075 GND RETURN KA)		
B-B62-LP2	3 PHASE:	2.006	5.	Z1= 138.3872	2.473	2.246
	SLG DUTY:	2.692	3.	Z2= 138.3872	3.040	
208. VOLTS	LN/LN	1.737		Z0= 42.7671		
	LN/LN/GND	2.987	(	3.983 GND RETURN KA)		
B-B62-LP3	3 PHASE:	2.012	5.	Z1= 137.9292	2.543	2.286
	SLG DUTY:	2.724	4.	Z2= 137.9292	3.200	
208. VOLTS	LN/LN	1.743		Z0= 35.8049		
	LN/LN/GND	2.975	(	4.152 GND RETURN KA)		
B-B62-LP4	3 PHASE:	2.021	5.	Z1= 137.3670	2.565	2.301
	SLG DUTY:	2.749	4.	Z2= 137.3670	3.254	
208. VOLTS	LN/LN	1.750		Z0= 33.6765		
	LN/LN/GND	3.003	(	4.241 GND RETURN KA)		
B-B62-LS1	3 PHASE:	1.384	1.	Z1= 200.5152	1.386	1.385
	SLG DUTY:	0.896	1.	Z2= 200.5152	0.896	
208. VOLTS	LN/LN	1.199		Z0= 533.5969		
	LN/LN/GND	1.297	(	0.659 GND RETURN KA)		
B-B62-LS2	3 PHASE:	1.479	1.	Z1= 187.7234	1.482	1.480
	SLG DUTY:	0.966	1.	Z2= 187.7234	0.967	
208. VOLTS	LN/LN	1.281		Z0= 491.1309		
	LN/LN/GND	1.388	(	0.714 GND RETURN KA)		
B-B62-LS3	3 PHASE:	1.425	1.	Z1= 194.7411	1.428	1.427
	SLG DUTY:	0.928	1.	Z2= 194.7411	0.929	
208. VOLTS	LN/LN	1.234		Z0= 512.1948		
	LN/LN/GND	1.337	(	0.685 GND RETURN KA)		
B-B62-LS4	3 PHASE:	1.484	1.	Z1= 187.0599	1.488	1.486
	SLG DUTY:	0.972	1.	Z2= 187.0599	0.972	
208. VOLTS	LN/LN	1.285		Z0= 487.6313		
	LN/LN/GND	1.394	(	0.719 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B62-LSD	3 PHASE:	1.562		1. Z1= 177.6888	1.567	1.565
	SLG DUTY:	1.030		1. Z2= 177.6888	1.031	
208. VOLTS	LN/LN	1.353		Z0= 457.5438		
	LN/LN/GND	1.470	(	0.764 GND RETURN KA)		
B-B62-LSD-M	3 PHASE:	1.563		1. Z1= 177.5675	1.568	1.566
	SLG DUTY:	1.031		1. Z2= 177.5675	1.032	
208. VOLTS	LN/LN	1.354		Z0= 456.8362		
	LN/LN/GND	1.471	(	0.765 GND RETURN KA)		
B-B62-MDP	3 PHASE:	2.105		7. Z1= 131.8477	2.808	2.470
	SLG DUTY:	3.011		6. Z2= 131.8477	3.945	
208. VOLTS	LN/LN	1.823		Z0= 13.3660		
	LN/LN/GND	3.275	(	5.278 GND RETURN KA)		
B-B62-MDP-M	3 PHASE:	2.106		7. Z1= 131.8320	2.809	2.471
	SLG DUTY:	3.012		6. Z2= 131.8320	3.950	
208. VOLTS	LN/LN	1.823		Z0= 13.2456		
	LN/LN/GND	3.276	(	5.285 GND RETURN KA)		
B-B62-OT	3 PHASE:	1.999		4. Z1= 138.8577	2.399	2.204
	SLG DUTY:	2.653		3. Z2= 138.8577	2.887	
208. VOLTS	LN/LN	1.731		Z0= 51.8965		
	LN/LN/GND	2.980	(	3.770 GND RETURN KA)		
B-B62-PAD RM	3 PHASE:	1.952		2. Z1= 142.2008	2.042	1.997
	SLG DUTY:	1.384		2. Z2= 142.2008	1.413	
208. VOLTS	LN/LN	1.690		Z0= 319.9864		
	LN/LN/GND	1.850	(	1.067 GND RETURN KA)		
B-B62-STRT LGT	3 PHASE:	1.992		4. Z1= 139.3528	2.302	2.150
	SLG DUTY:	2.591		2. Z2= 139.3528	2.711	
208. VOLTS	LN/LN	1.725		Z0= 67.3327		
	LN/LN/GND	2.942	(	3.438 GND RETURN KA)		
B-B7-ATS-EQ	3 PHASE:	3.943		3. Z1= 70.4028	4.543	4.249
	SLG DUTY:	3.182		3. Z2= 70.4028	3.439	
208. VOLTS	LN/LN	3.414		Z0= 122.2580		
	LN/LN/GND	3.855	(	2.654 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B7-ATS-LS	3 PHASE:	3.475	2.	Z1= 79.8771	3.571	3.523
	SLG DUTY:	2.596	1.	Z2= 79.8771	2.614	
208. VOLTS	LN/LN	3.009		Z0= 164.6249		
	LN/LN/GND	3.405	(	2.050 GND RETURN KA)		
B-B7-ELEV	3 PHASE:	3.336	3.	Z1= 83.2012	3.610	3.474
	SLG DUTY:	2.562	2.	Z2= 83.2012	2.653	
208. VOLTS	LN/LN	2.889		Z0= 160.7531		
	LN/LN/GND	3.241	(	2.067 GND RETURN KA)		
B-B7-EQ1	3 PHASE:	3.374	2.	Z1= 82.2779	3.608	3.492
	SLG DUTY:	2.583	2.	Z2= 82.2779	2.655	
208. VOLTS	LN/LN	2.922		Z0= 160.2297		
	LN/LN/GND	3.285	(	2.078 GND RETURN KA)		
B-B7-EQ2	3 PHASE:	3.638	3.	Z1= 76.3076	4.039	3.841
	SLG DUTY:	2.862	2.	Z2= 76.3076	3.011	
208. VOLTS	LN/LN	3.150		Z0= 140.1566		
	LN/LN/GND	3.548	(	2.345 GND RETURN KA)		
B-B7-EQ4	3 PHASE:	3.452	2.	Z1= 80.4087	3.702	3.578
	SLG DUTY:	2.657	2.	Z2= 80.4087	2.733	
208. VOLTS	LN/LN	2.990		Z0= 155.0234		
	LN/LN/GND	3.367	(	2.143 GND RETURN KA)		
B-B7-EQD	3 PHASE:	3.778	3.	Z1= 73.4657	4.311	4.049
	SLG DUTY:	3.016	2.	Z2= 73.4657	3.237	
208. VOLTS	LN/LN	3.272		Z0= 130.6278		
	LN/LN/GND	3.684	(	2.497 GND RETURN KA)		
B-B7-LP2	3 PHASE:	1.855	5.	Z1= 149.6514	2.301	2.084
	SLG DUTY:	2.344	3.	Z2= 149.6514	2.693	
208. VOLTS	LN/LN	1.606		Z0= 61.4657		
	LN/LN/GND	2.469	(	3.139 GND RETURN KA)		
B-B7-LP2-M	3 PHASE:	1.856	5.	Z1= 149.5582	2.304	2.086
	SLG DUTY:	2.349	3.	Z2= 149.5582	2.703	
208. VOLTS	LN/LN	1.607		Z0= 60.7897		
	LN/LN/GND	2.473	(	3.155 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B7-LP3	3 PHASE:	1.768	4.	Z1= 156.9826	2.096	1.936
	SLG DUTY:	2.121	3.	Z2= 156.9826	2.302	
208. VOLTS	LN/LN	1.531		Z0= 88.9797		
	LN/LN/GND	2.271	(	2.583 GND RETURN KA)		
B-B7-LP3-M	3 PHASE:	1.769	4.	Z1= 156.8861	2.098	1.937
	SLG DUTY:	2.126	3.	Z2= 156.8861	2.308	
208. VOLTS	LN/LN	1.532		Z0= 88.2823		
	LN/LN/GND	2.274	(	2.594 GND RETURN KA)		
B-B7-LP4	3 PHASE:	1.855	5.	Z1= 149.6514	2.301	2.084
	SLG DUTY:	2.344	3.	Z2= 149.6514	2.693	
208. VOLTS	LN/LN	1.606		Z0= 61.4657		
	LN/LN/GND	2.469	(	3.139 GND RETURN KA)		
B-B7-LP4-M	3 PHASE:	1.856	5.	Z1= 149.5582	2.304	2.086
	SLG DUTY:	2.349	3.	Z2= 149.5582	2.703	
208. VOLTS	LN/LN	1.607		Z0= 60.7897		
	LN/LN/GND	2.473	(	3.155 GND RETURN KA)		
B-B7-LP5	3 PHASE:	1.768	4.	Z1= 156.9826	2.096	1.936
	SLG DUTY:	2.121	3.	Z2= 156.9826	2.302	
208. VOLTS	LN/LN	1.531		Z0= 88.9797		
	LN/LN/GND	2.271	(	2.583 GND RETURN KA)		
B-B7-LP5-M	3 PHASE:	1.769	4.	Z1= 156.8861	2.098	1.937
	SLG DUTY:	2.126	3.	Z2= 156.8861	2.308	
208. VOLTS	LN/LN	1.532		Z0= 88.2823		
	LN/LN/GND	2.274	(	2.594 GND RETURN KA)		
B-B7-LP6	3 PHASE:	1.735	4.	Z1= 159.9549	2.029	1.885
	SLG DUTY:	2.042	2.	Z2= 159.9549	2.187	
208. VOLTS	LN/LN	1.503		Z0= 99.6399		
	LN/LN/GND	2.196	(	2.411 GND RETURN KA)		
B-B7-LP6-M	3 PHASE:	1.736	4.	Z1= 159.8573	2.031	1.887
	SLG DUTY:	2.046	2.	Z2= 159.8573	2.193	
208. VOLTS	LN/LN	1.504		Z0= 98.9398		
	LN/LN/GND	2.200	(	2.421 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B7-LP7	3 PHASE:	1.821	4.	Z1= 152.4263	2.226	2.029
	SLG DUTY:	2.257	3.	Z2= 152.4263	2.541	
208. VOLTS	LN/LN	1.577		Z0= 70.9354		
	LN/LN/GND	2.387	(	2.917 GND RETURN KA)		
B-B7-LP7-M	3 PHASE:	1.822	5.	Z1= 152.3321	2.228	2.031
	SLG DUTY:	2.262	3.	Z2= 152.3321	2.549	
208. VOLTS	LN/LN	1.578		Z0= 70.2516		
	LN/LN/GND	2.391	(	2.931 GND RETURN KA)		
B-B7-LP8	3 PHASE:	1.735	4.	Z1= 159.9549	2.029	1.885
	SLG DUTY:	2.042	2.	Z2= 159.9549	2.187	
208. VOLTS	LN/LN	1.503		Z0= 99.6399		
	LN/LN/GND	2.196	(	2.411 GND RETURN KA)		
B-B7-LP8-M	3 PHASE:	1.736	4.	Z1= 159.8573	2.031	1.887
	SLG DUTY:	2.046	2.	Z2= 159.8573	2.193	
208. VOLTS	LN/LN	1.504		Z0= 98.9398		
	LN/LN/GND	2.200	(	2.421 GND RETURN KA)		
B-B7-LS1	3 PHASE:	2.865	1.	Z1= 96.8999	2.890	2.877
	SLG DUTY:	2.020	1.	Z2= 96.8999	2.023	
208. VOLTS	LN/LN	2.481		Z0= 222.8793		
	LN/LN/GND	2.767	(	1.544 GND RETURN KA)		
B-B7-LS2	3 PHASE:	3.150	1.	Z1= 88.1137	3.193	3.172
	SLG DUTY:	2.271	1.	Z2= 88.1137	2.277	
208. VOLTS	LN/LN	2.728		Z0= 194.6721		
	LN/LN/GND	3.063	(	1.756 GND RETURN KA)		
B-B7-LS4	3 PHASE:	2.808	1.	Z1= 98.8467	2.831	2.819
	SLG DUTY:	1.970	1.	Z2= 98.8467	1.973	
208. VOLTS	LN/LN	2.432		Z0= 229.4125		
	LN/LN/GND	2.709	(	1.502 GND RETURN KA)		
B-B7-LS5	3 PHASE:	3.091	1.	Z1= 89.7922	3.135	3.113
	SLG DUTY:	2.225	1.	Z2= 89.7922	2.231	
208. VOLTS	LN/LN	2.677		Z0= 198.8136		
	LN/LN/GND	3.002	(	1.720 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B7-LSD	3 PHASE:	3.433	2.	Z1= 80.8563	3.524	3.479
	SLG DUTY:	2.554	1.	Z2= 80.8563	2.571	
208. VOLTS	LN/LN	2.973		Z0= 167.9939		
	LN/LN/GND	3.359	(	2.012 GND RETURN KA)		
B-B7-LSD-M	3 PHASE:	3.438	2.	Z1= 80.7427	3.530	3.484
	SLG DUTY:	2.562	1.	Z2= 80.7427	2.578	
208. VOLTS	LN/LN	2.977		Z0= 167.2940		
	LN/LN/GND	3.365	(	2.019 GND RETURN KA)		
B-B7-MCC-1	3 PHASE:	3.496	2.	Z1= 79.4060	3.703	3.600
	SLG DUTY:	2.679	2.	Z2= 79.4060	2.736	
208. VOLTS	LN/LN	3.027		Z0= 154.7277		
	LN/LN/GND	3.418	(	2.153 GND RETURN KA)		
B-B7-MCC-2	3 PHASE:	1.872	4.	Z1= 148.3039	2.223	2.051
	SLG DUTY:	2.359	3.	Z2= 148.3039	2.554	
208. VOLTS	LN/LN	1.621		Z0= 69.4604		
	LN/LN/GND	2.574	(	3.079 GND RETURN KA)		
B-B7-MDP	3 PHASE:	1.930	6.	Z1= 143.8249	2.484	2.216
	SLG DUTY:	2.547	4.	Z2= 143.8249	3.113	
208. VOLTS	LN/LN	1.671		Z0= 41.4612		
	LN/LN/GND	2.656	(	3.725 GND RETURN KA)		
B-B7-MDP-M	3 PHASE:	1.930	6.	Z1= 143.7892	2.485	2.217
	SLG DUTY:	2.549	5.	Z2= 143.7892	3.118	
208. VOLTS	LN/LN	1.672		Z0= 41.2106		
	LN/LN/GND	2.658	(	3.733 GND RETURN KA)		
B-B7-SRTLGHT-M	3 PHASE:	1.808	3.	Z1= 153.4922	2.030	1.921
	SLG DUTY:	2.156	2.	Z2= 153.4922	2.224	
208. VOLTS	LN/LN	1.566		Z0= 102.2199		
	LN/LN/GND	2.397	(	2.513 GND RETURN KA)		
B-B7-STRT LGHT	3 PHASE:	1.807	3.	Z1= 153.5935	2.028	1.919
	SLG DUTY:	2.151	2.	Z2= 153.5935	2.218	
208. VOLTS	LN/LN	1.565		Z0= 102.9221		
	LN/LN/GND	2.391	(	2.501 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70 -BLDG-713	3 PHASE:	0.918	1.	Z1= 302.2596	0.918	0.918
	SLG DUTY:	0.618	0.	Z2= 302.2596	0.618	
208. VOLTS	LN/LN	0.795		Z0= 767.2272		
	LN/LN/GND	0.894	(0.458	GND RETURN KA)		
B-B70 GEN-M	3 PHASE:	2.860	18.	Z1= 97.0517	4.449	3.702
	SLG DUTY:	3.808	14.	Z2= 97.0517	5.750	
208. VOLTS	LN/LN	2.477		Z0= 26.4690		
	LN/LN/GND	4.015	(5.657	GND RETURN KA)		
B-B70-A	3 PHASE:	2.378	4.	Z1= 116.7030	2.897	2.644
	SLG DUTY:	2.989	3.	Z2= 116.7030	3.229	
208. VOLTS	LN/LN	2.060		Z0= 59.9388		
	LN/LN/GND	3.315	(3.820	GND RETURN KA)		
B-B70-ATS-EQD	3 PHASE:	2.762	14.	Z1= 100.4808	4.151	3.495
	SLG DUTY:	3.556	9.	Z2= 100.4808	5.004	
208. VOLTS	LN/LN	2.392		Z0= 36.2150		
	LN/LN/GND	3.742	(4.935	GND RETURN KA)		
B-B70-ATS-LSD	3 PHASE:	2.751	10.	Z1= 100.8996	3.971	3.391
	SLG DUTY:	3.512	6.	Z2= 100.8996	4.582	
208. VOLTS	LN/LN	2.382		Z0= 40.9289		
	LN/LN/GND	3.769	(4.751	GND RETURN KA)		
B-B70-ATTIC	3 PHASE:	2.321	4.	Z1= 119.5715	2.736	2.533
	SLG DUTY:	2.820	2.	Z2= 119.5715	2.964	
208. VOLTS	LN/LN	2.010		Z0= 74.3476		
	LN/LN/GND	3.139	(3.375	GND RETURN KA)		
B-B70-B	3 PHASE:	2.378	4.	Z1= 116.7030	2.897	2.644
	SLG DUTY:	2.989	3.	Z2= 116.7030	3.229	
208. VOLTS	LN/LN	2.060		Z0= 59.9388		
	LN/LN/GND	3.315	(3.820	GND RETURN KA)		
B-B70-CHLLR	3 PHASE:	2.067	4.	Z1= 134.2814	2.512	2.295
	SLG DUTY:	2.330	3.	Z2= 134.2814	2.548	
208. VOLTS	LN/LN	1.790		Z0= 97.5115		
	LN/LN/GND	2.500	(2.605	GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-EM-TAP	3 PHASE:	2.858	18.	Z1= 97.1249	4.440	3.697
	SLG DUTY:	3.810	14.	Z2= 97.1249	5.738	
208. VOLTS	LN/LN	2.475		Z0= 26.1709		
	LN/LN/GND	4.019	(5.676 GND RETURN KA)			
B-B70-EQ1	3 PHASE:	2.411	4.	Z1= 115.1511	2.862	2.642
	SLG DUTY:	2.637	2.	Z2= 115.1511	2.768	
208. VOLTS	LN/LN	2.088		Z0= 102.8119		
	LN/LN/GND	2.961	(2.750 GND RETURN KA)			
B-B70-EQ2	3 PHASE:	2.249	3.	Z1= 123.4442	2.514	2.383
	SLG DUTY:	2.287	2.	Z2= 123.4442	2.334	
208. VOLTS	LN/LN	1.947		Z0= 138.1949		
	LN/LN/GND	2.641	(2.193 GND RETURN KA)			
B-B70-EQ3	3 PHASE:	2.355	4.	Z1= 117.8452	2.733	2.548
	SLG DUTY:	2.512	2.	Z2= 117.8452	2.604	
208. VOLTS	LN/LN	2.040		Z0= 114.5560		
	LN/LN/GND	2.847	(2.538 GND RETURN KA)			
B-B70-EQ4	3 PHASE:	2.197	3.	Z1= 126.3397	2.421	2.311
	SLG DUTY:	2.185	2.	Z2= 126.3397	2.221	
208. VOLTS	LN/LN	1.903		Z0= 150.0660		
	LN/LN/GND	2.548	(2.051 GND RETURN KA)			
B-B70-EQ5	3 PHASE:	2.301	3.	Z1= 120.6112	2.617	2.462
	SLG DUTY:	2.395	2.	Z2= 120.6112	2.461	
208. VOLTS	LN/LN	1.993		Z0= 126.3550		
	LN/LN/GND	2.741	(2.354 GND RETURN KA)			
B-B70-EQ6	3 PHASE:	2.147	3.	Z1= 129.2936	2.337	2.243
	SLG DUTY:	2.091	1.	Z2= 129.2936	2.118	
208. VOLTS	LN/LN	1.859		Z0= 161.9614		
	LN/LN/GND	2.461	(1.925 GND RETURN KA)			
B-B70-EQD	3 PHASE:	2.734	12.	Z1= 101.5092	4.064	3.435
	SLG DUTY:	3.481	8.	Z2= 101.5092	4.791	
208. VOLTS	LN/LN	2.368		Z0= 39.7127		
	LN/LN/GND	3.666	(4.726 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-EQD-M	3 PHASE:	2.736	13.	Z1= 101.4345	4.071	3.440
	SLG DUTY:	3.490	8.	Z2= 101.4345	4.817	
208. VOLTS	LN/LN	2.370		Z0= 39.1877		
	LN/LN/GND	3.674	(4.754 GND RETURN KA)			
B-B70-FIRE PMP	3 PHASE:	2.071	1.	Z1= 134.0430	2.094	2.082
	SLG DUTY:	1.781	1.	Z2= 134.0430	1.782	
208. VOLTS	LN/LN	1.793		Z0= 236.3825		
	LN/LN/GND	2.285	(1.445 GND RETURN KA)			
B-B70-FP-TAP	3 PHASE:	2.740	12.	Z1= 101.3089	4.053	3.432
	SLG DUTY:	3.794	10.	Z2= 101.3089	5.415	
208. VOLTS	LN/LN	2.373		Z0= 17.8031		
	LN/LN/GND	4.047	(6.151 GND RETURN KA)			
B-B70-FPMP M	3 PHASE:	2.778	14.	Z1= 99.9192	4.197	3.527
	SLG DUTY:	3.795	11.	Z2= 99.9192	5.506	
208. VOLTS	LN/LN	2.406		Z0= 21.1355		
	LN/LN/GND	4.047	(5.958 GND RETURN KA)			
B-B70-GEN	3 PHASE:	2.883	20.	Z1= 96.2740	4.523	3.753
	SLG DUTY:	3.814	16.	Z2= 96.2740	5.844	
208. VOLTS	LN/LN	2.497		Z0= 27.7138		
	LN/LN/GND	4.010	(5.592 GND RETURN KA)			
B-B70-K	3 PHASE:	2.320	3.	Z1= 119.6507	2.581	2.452
	SLG DUTY:	2.715	2.	Z2= 119.6507	2.760	
208. VOLTS	LN/LN	2.009		Z0= 95.8248		
	LN/LN/GND	3.081	(2.969 GND RETURN KA)			
B-B70-LP-4	3 PHASE:	2.109	4.	Z1= 131.6368	2.435	2.275
	SLG DUTY:	2.363	2.	Z2= 131.6368	2.468	
208. VOLTS	LN/LN	1.826		Z0= 104.6508		
	LN/LN/GND	2.611	(2.570 GND RETURN KA)			
B-B70-LP1	3 PHASE:	2.227	3.	Z1= 124.6195	2.515	2.373
	SLG DUTY:	2.560	2.	Z2= 124.6195	2.625	
208. VOLTS	LN/LN	1.929		Z0= 98.5706		
	LN/LN/GND	2.875	(2.801 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-LP3	3 PHASE:	2.222	4.	Z1= 124.9404	2.663	2.447
	SLG DUTY:	2.626	2.	Z2= 124.9404	2.813	
208. VOLTS	LN/LN	1.924		Z0= 80.2640		
	LN/LN/GND	2.869	(	3.081 GND RETURN KA)		
B-B70-LS1	3 PHASE:	2.247	2.	Z1= 123.5511	2.380	2.314
	SLG DUTY:	2.168	1.	Z2= 123.5511	2.177	
208. VOLTS	LN/LN	1.946		Z0= 165.5213		
	LN/LN/GND	2.597	(	1.941 GND RETURN KA)		
B-B70-LS2	3 PHASE:	2.081	2.	Z1= 133.4157	2.146	2.113
	SLG DUTY:	1.861	1.	Z2= 133.4157	1.864	
208. VOLTS	LN/LN	1.802		Z0= 210.2846		
	LN/LN/GND	2.312	(	1.575 GND RETURN KA)		
B-B70-LS3	3 PHASE:	2.299	3.	Z1= 120.7346	2.538	2.420
	SLG DUTY:	2.342	1.	Z2= 120.7346	2.376	
208. VOLTS	LN/LN	1.991		Z0= 137.7434		
	LN/LN/GND	2.722	(	2.228 GND RETURN KA)		
B-B70-LS4	3 PHASE:	2.121	2.	Z1= 130.8918	2.245	2.183
	SLG DUTY:	1.996	1.	Z2= 130.8918	2.006	
208. VOLTS	LN/LN	1.837		Z0= 181.4064		
	LN/LN/GND	2.402	(	1.770 GND RETURN KA)		
B-B70-LS5	3 PHASE:	2.238	3.	Z1= 124.0257	2.429	2.335
	SLG DUTY:	2.216	1.	Z2= 124.0257	2.239	
208. VOLTS	LN/LN	1.938		Z0= 152.2648		
	LN/LN/GND	2.607	(	2.053 GND RETURN KA)		
B-B70-LS6	3 PHASE:	2.064	2.	Z1= 134.4522	2.165	2.115
	SLG DUTY:	1.899	1.	Z2= 134.4522	1.906	
208. VOLTS	LN/LN	1.788		Z0= 196.0120		
	LN/LN/GND	2.310	(	1.654 GND RETURN KA)		
B-B70-LSD	3 PHASE:	2.723	10.	Z1= 101.9430	3.891	3.335
	SLG DUTY:	3.436	6.	Z2= 101.9430	4.408	
208. VOLTS	LN/LN	2.358		Z0= 44.5081		
	LN/LN/GND	3.686	(	4.549 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B70-LSD-M	3 PHASE:	2.725	10.	Z1= 101.8669	3.898	3.340
	SLG DUTY:	3.444	6.	Z2= 101.8669	4.429	
208. VOLTS	LN/LN	2.360		Z0= 43.9670		
	LN/LN/GND	3.695	(4.576	GND RETURN KA)		
B-B70-MDP	3 PHASE:	2.548	9.	Z1= 108.9255	3.579	3.087
	SLG DUTY:	3.523	7.	Z2= 108.9255	4.732	
208. VOLTS	LN/LN	2.207		Z0= 19.7508		
	LN/LN/GND	3.763	(5.685	GND RETURN KA)		
B-B70-MDP-M	3 PHASE:	2.549	9.	Z1= 108.8919	3.582	3.089
	SLG DUTY:	3.526	7.	Z2= 108.8919	4.745	
208. VOLTS	LN/LN	2.208		Z0= 19.5060		
	LN/LN/GND	3.767	(5.702	GND RETURN KA)		
B-B70-PP2	3 PHASE:	2.329	5.	Z1= 119.1727	2.914	2.630
	SLG DUTY:	2.899	3.	Z2= 119.1727	3.235	
208. VOLTS	LN/LN	2.017		Z0= 58.6943		
	LN/LN/GND	3.147	(3.716	GND RETURN KA)		
B-B70-PP220	3 PHASE:	2.164	3.	Z1= 128.2701	2.490	2.330
	SLG DUTY:	2.465	2.	Z2= 128.2701	2.562	
208. VOLTS	LN/LN	1.874		Z0= 98.7884		
	LN/LN/GND	2.735	(2.715	GND RETURN KA)		
B-B70-STRTLGHT	3 PHASE:	2.356	3.	Z1= 117.8147	2.675	2.518
	SLG DUTY:	2.834	2.	Z2= 117.8147	2.904	
208. VOLTS	LN/LN	2.040		Z0= 84.1835		
	LN/LN/GND	3.204	(3.242	GND RETURN KA)		
B-B78-1P	3 PHASE:	1.754	3.	Z1= 158.2376	1.925	1.841
	SLG DUTY:	1.981	2.	Z2= 158.2376	2.017	
208. VOLTS	LN/LN	1.519		Z0= 130.9230		
	LN/LN/GND	2.224	(2.128	GND RETURN KA)		
B-B78-78AE1	3 PHASE:	2.462	1.	Z1= 112.7368	2.475	2.468
	SLG DUTY:	1.688	1.	Z2= 112.7368	1.690	
208. VOLTS	LN/LN	2.132		Z0= 272.2447		
	LN/LN/GND	2.357	(1.274	GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-A/C	3 PHASE:	1.594		2. Z1= 174.1327	1.646	1.620
	SLG DUTY:	1.572		1. Z2= 174.1327	1.575	
208. VOLTS	LN/LN	1.380		Z0= 219.9489		
	LN/LN/GND	1.861	(	1.439 GND RETURN KA)		
B-B78-ATS TAP	3 PHASE:	2.054		6. Z1= 135.1589	2.654	2.364
	SLG DUTY:	2.843		4. Z2= 135.1589	3.431	
208. VOLTS	LN/LN	1.779		Z0= 27.9504		
	LN/LN/GND	3.144	(	4.561 GND RETURN KA)		
B-B78-ATS-CRD	3 PHASE:	4.406		2. Z1= 62.9925	4.701	4.555
	SLG DUTY:	3.545		2. Z2= 62.9925	3.620	
208. VOLTS	LN/LN	3.816		Z0= 111.8259		
	LN/LN/GND	4.408	(	2.930 GND RETURN KA)		
B-B78-ATS-E1	3 PHASE:	4.763		4. Z1= 58.2810	5.820	5.305
	SLG DUTY:	4.068		3. Z2= 58.2810	4.605	
208. VOLTS	LN/LN	4.125		Z0= 89.0608		
	LN/LN/GND	4.717	(	3.535 GND RETURN KA)		
B-B78-ATS-LS1	3 PHASE:	4.492		3. Z1= 61.7964	4.903	4.700
	SLG DUTY:	3.672		2. Z2= 61.7964	3.797	
208. VOLTS	LN/LN	3.890		Z0= 105.6016		
	LN/LN/GND	4.492	(	3.073 GND RETURN KA)		
B-B78-ATSG95783	PHASE:	2.476		1. Z1= 112.1060	2.488	2.482
	SLG DUTY:	1.698		1. Z2= 112.1060	1.700	
208. VOLTS	LN/LN	2.144		Z0= 270.6129		
	LN/LN/GND	2.371	(	1.281 GND RETURN KA)		
B-B78-BARBER	3 PHASE:	1.614		1. Z1= 171.9380	1.627	1.621
	SLG DUTY:	1.452		1. Z2= 171.9380	1.452	
208. VOLTS	LN/LN	1.398		Z0= 280.9860		
	LN/LN/GND	1.822	(	1.205 GND RETURN KA)		
B-B78-CONRM-AC	3 PHASE:	1.342		1. Z1= 206.7948	1.347	1.345
	SLG DUTY:	1.095		1. Z2= 206.7948	1.095	
208. VOLTS	LN/LN	1.162		Z0= 389.9942		
	LN/LN/GND	1.433	(	0.875 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-CRD	3 PHASE:	2.749		1. Z1= 100.9810	2.770	2.760
	SLG DUTY:	1.924		1. Z2= 100.9810	1.927	
208. VOLTS	LN/LN	2.380		Z0= 235.1552		
	LN/LN/GND	2.649	(	1.466 GND RETURN KA)		
B-B78-E1	3 PHASE:	4.714		4. Z1= 58.8810	5.738	5.239
	SLG DUTY:	4.013		3. Z2= 58.8810	4.526	
208. VOLTS	LN/LN	4.083		Z0= 90.7052		
	LN/LN/GND	4.666	(	3.478 GND RETURN KA)		
B-B78-ELEV-1	3 PHASE:	2.037		5. Z1= 136.2595	2.521	2.286
	SLG DUTY:	2.771		3. Z2= 136.2595	3.114	
208. VOLTS	LN/LN	1.764		Z0= 40.9862		
	LN/LN/GND	3.134	(	4.184 GND RETURN KA)		
B-B78-ELEV-2	3 PHASE:	2.037		5. Z1= 136.2595	2.521	2.286
	SLG DUTY:	2.771		3. Z2= 136.2595	3.114	
208. VOLTS	LN/LN	1.764		Z0= 40.9862		
	LN/LN/GND	3.134	(	4.184 GND RETURN KA)		
B-B78-FLPNL	3 PHASE:	1.707		2. Z1= 162.5902	1.822	1.765
	SLG DUTY:	1.842		1. Z2= 162.5902	1.857	
208. VOLTS	LN/LN	1.478		Z0= 159.3458		
	LN/LN/GND	2.104	(	1.857 GND RETURN KA)		
B-B78-KK	3 PHASE:	1.836		3. Z1= 151.1440	2.033	1.936
	SLG DUTY:	2.158		2. Z2= 151.1440	2.202	
208. VOLTS	LN/LN	1.590		Z0= 112.2184		
	LN/LN/GND	2.426	(	2.423 GND RETURN KA)		
B-B78-L10	3 PHASE:	1.756		4. Z1= 158.0499	2.047	1.905
	SLG DUTY:	2.055		2. Z2= 158.0499	2.183	
208. VOLTS	LN/LN	1.521		Z0= 103.1479		
	LN/LN/GND	2.230	(	2.392 GND RETURN KA)		
B-B78-LP-1	3 PHASE:	1.774		3. Z1= 156.4656	1.986	1.881
	SLG DUTY:	2.049		2. Z2= 156.4656	2.107	
208. VOLTS	LN/LN	1.536		Z0= 116.5422		
	LN/LN/GND	2.278	(	2.287 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-LP-13	3 PHASE:	1.722	4.	Z1= 161.1916	1.989	1.858
	SLG DUTY:	1.979	2.	Z2= 161.1916	2.087	
208. VOLTS	LN/LN	1.491		Z0= 113.1774		
	LN/LN/GND	2.152	(	2.245 GND RETURN KA)		
B-B78-LP-14	3 PHASE:	1.689	3.	Z1= 164.3506	1.934	1.814
	SLG DUTY:	1.907	2.	Z2= 164.3506	2.000	
208. VOLTS	LN/LN	1.463		Z0= 123.2071		
	LN/LN/GND	2.081	(	2.114 GND RETURN KA)		
B-B78-LP-15	3 PHASE:	1.657	3.	Z1= 167.5259	1.883	1.772
	SLG DUTY:	1.840	2.	Z2= 167.5259	1.921	
208. VOLTS	LN/LN	1.435		Z0= 133.2368		
	LN/LN/GND	2.014	(	1.997 GND RETURN KA)		
B-B78-LP-2	3 PHASE:	1.961	4.	Z1= 141.5652	2.356	2.163
	SLG DUTY:	2.546	3.	Z2= 141.5652	2.764	
208. VOLTS	LN/LN	1.698		Z0= 59.5411		
	LN/LN/GND	2.831	(	3.473 GND RETURN KA)		
B-B78-LP-4	3 PHASE:	1.555	2.	Z1= 178.5118	1.625	1.590
	SLG DUTY:	1.550	1.	Z2= 178.5118	1.556	
208. VOLTS	LN/LN	1.347		Z0= 212.6663		
	LN/LN/GND	1.810	(	1.452 GND RETURN KA)		
B-B78-LP-8	3 PHASE:	1.978	5.	Z1= 140.3098	2.469	2.231
	SLG DUTY:	2.619	3.	Z2= 140.3098	2.989	
208. VOLTS	LN/LN	1.713		Z0= 46.2644		
	LN/LN/GND	2.867	(	3.783 GND RETURN KA)		
B-B78-LP10	3 PHASE:	1.707	3.	Z1= 162.5906	1.958	1.835
	SLG DUTY:	1.944	2.	Z2= 162.5906	2.040	
208. VOLTS	LN/LN	1.478		Z0= 118.7635		
	LN/LN/GND	2.121	(	2.175 GND RETURN KA)		
B-B78-LP13	3 PHASE:	1.666	3.	Z1= 166.6035	1.897	1.783
	SLG DUTY:	1.859	2.	Z2= 166.6035	1.942	
208. VOLTS	LN/LN	1.443		Z0= 130.4678		
	LN/LN/GND	2.033	(	2.029 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-LP3	3 PHASE:	1.961	4.	Z1= 141.5652	2.356	2.163
	SLG DUTY:	2.546	3.	Z2= 141.5652	2.764	
208. VOLTS	LN/LN	1.698		Z0= 59.5411		
	LN/LN/GND	2.831	(	3.473 GND RETURN KA)		
B-B78-LP6	3 PHASE:	1.903	4.	Z1= 145.8238	2.243	2.077
	SLG DUTY:	2.388	2.	Z2= 145.8238	2.546	
208. VOLTS	LN/LN	1.648		Z0= 74.2251		
	LN/LN/GND	2.639	(	3.055 GND RETURN KA)		
B-B78-LP7	3 PHASE:	1.750	4.	Z1= 158.5926	2.024	1.890
	SLG DUTY:	2.036	2.	Z2= 158.5926	2.148	
208. VOLTS	LN/LN	1.516		Z0= 107.0731		
	LN/LN/GND	2.218	(	2.344 GND RETURN KA)		
B-B78-LSD	3 PHASE:	4.434	3.	Z1= 62.5952	4.819	4.629
	SLG DUTY:	3.607	2.	Z2= 62.5952	3.721	
208. VOLTS	LN/LN	3.840		Z0= 108.1426		
	LN/LN/GND	4.430	(	3.008 GND RETURN KA)		
B-B78-MDP	3 PHASE:	2.171	7.	Z1= 127.8611	2.961	2.582
	SLG DUTY:	3.217	7.	Z2= 127.8611	4.368	
208. VOLTS	LN/LN	1.880		Z0= 3.2259		
	LN/LN/GND	3.649	(	6.209 GND RETURN KA)		
B-B78-MDP-M	3 PHASE:	2.171	7.	Z1= 127.8557	2.961	2.583
	SLG DUTY:	3.218	7.	Z2= 127.8557	4.370	
208. VOLTS	LN/LN	1.880		Z0= 3.1873		
	LN/LN/GND	3.649	(	6.212 GND RETURN KA)		
B-B78-MEC-1 AC	3 PHASE:	1.785	4.	Z1= 155.4892	2.128	1.961
	SLG DUTY:	2.133	3.	Z2= 155.4892	2.315	
208. VOLTS	LN/LN	1.546		Z0= 90.5195		
	LN/LN/GND	2.290	(	2.576 GND RETURN KA)		
B-B78-MEC2-A/C	3 PHASE:	2.047	5.	Z1= 135.5948	2.600	2.332
	SLG DUTY:	2.816	4.	Z2= 135.5948	3.296	
208. VOLTS	LN/LN	1.773		Z0= 32.7030		
	LN/LN/GND	3.147	(	4.420 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B78-PHARM AC	3 PHASE:	1.614	1.	Z1= 171.9380	1.627	1.621
	SLG DUTY:	1.452	1.	Z2= 171.9380	1.452	
208. VOLTS	LN/LN	1.398		Z0= 280.9860		
	LN/LN/GND	1.822	(	1.205 GND RETURN KA)		
B-B78-PHV	3 PHASE:	1.482	1.	Z1= 187.2500	1.498	1.490
	SLG DUTY:	1.320	1.	Z2= 187.2500	1.321	
208. VOLTS	LN/LN	1.284		Z0= 299.7025		
	LN/LN/GND	1.648	(	1.111 GND RETURN KA)		
B-B78-PK	3 PHASE:	1.740	3.	Z1= 159.5602	1.928	1.835
	SLG DUTY:	1.968	2.	Z2= 159.5602	2.015	
208. VOLTS	LN/LN	1.507		Z0= 127.9443		
	LN/LN/GND	2.196	(	2.137 GND RETURN KA)		
B-B78-PNL-330A	3 PHASE:	1.932	4.	Z1= 143.6603	2.328	2.135
	SLG DUTY:	2.477	3.	Z2= 143.6603	2.701	
208. VOLTS	LN/LN	1.673		Z0= 62.6965		
	LN/LN/GND	2.727	(	3.320 GND RETURN KA)		
B-B78-PULM 78B	3 PHASE:	2.054	6.	Z1= 135.1589	2.654	2.364
	SLG DUTY:	2.843	4.	Z2= 135.1589	3.431	
208. VOLTS	LN/LN	1.779		Z0= 27.9504		
	LN/LN/GND	3.144	(	4.561 GND RETURN KA)		
B-B78-QP	3 PHASE:	2.008	4.	Z1= 138.2055	2.370	2.193
	SLG DUTY:	2.649	2.	Z2= 138.2055	2.812	
208. VOLTS	LN/LN	1.739		Z0= 60.4661		
	LN/LN/GND	3.014	(	3.634 GND RETURN KA)		
B-B78A-PNL-2	3 PHASE:	2.037	5.	Z1= 136.2595	2.521	2.286
	SLG DUTY:	2.771	3.	Z2= 136.2595	3.114	
208. VOLTS	LN/LN	1.764		Z0= 40.9862		
	LN/LN/GND	3.134	(	4.184 GND RETURN KA)		
B-B8 2ND FLR	3 PHASE:	1.957	6.	Z1= 141.8290	2.531	2.254
	SLG DUTY:	2.620	5.	Z2= 141.8290	3.229	
208. VOLTS	LN/LN	1.695		Z0= 36.1469		
	LN/LN/GND	2.750	(	3.945 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B8 HYDRO ELV	3 PHASE:	1.868	2.	Z1= 64.4038	1.990	1.930
	SLG DUTY:	1.539	2.	Z2= 64.4038	1.570	
480. VOLTS	LN/LN	1.617		Z0= 108.5214		
	LN/LN/GND	1.882	(	1.293 GND RETURN KA)		
B-B8-208V-MAIN	3 PHASE:	2.051	7.	Z1= 135.3077	2.723	2.400
	SLG DUTY:	2.892	6.	Z2= 135.3077	3.767	
208. VOLTS	LN/LN	1.777		Z0= 17.7107		
	LN/LN/GND	3.093	(	4.898 GND RETURN KA)		
B-B8-480V ATS	3 PHASE:	2.193	13.	Z1= 54.8368	3.293	2.774
	SLG DUTY:	2.007	12.	Z2= 54.8368	2.977	
480. VOLTS	LN/LN	1.900		Z0= 70.1111		
	LN/LN/GND	2.111	(	1.850 GND RETURN KA)		
B-B8-480V PNL	3 PHASE:	2.188	13.	Z1= 54.9684	3.271	2.759
	SLG DUTY:	1.998	12.	Z2= 54.9684	2.943	
480. VOLTS	LN/LN	1.895		Z0= 70.6826		
	LN/LN/GND	2.107	(	1.838 GND RETURN KA)		
B-B8-ATS	3 PHASE:	1.996	6.	Z1= 139.0806	2.588	2.302
	SLG DUTY:	2.727	5.	Z2= 139.0806	3.377	
208. VOLTS	LN/LN	1.728		Z0= 29.3190		
	LN/LN/GND	2.906	(	4.283 GND RETURN KA)		
B-B8-BS	3 PHASE:	1.578	2.	Z1= 175.8707	1.624	1.601
	SLG DUTY:	1.555	1.	Z2= 175.8707	1.557	
208. VOLTS	LN/LN	1.367		Z0= 223.0648		
	LN/LN/GND	1.843	(	1.421 GND RETURN KA)		
B-B8-CMOP	3 PHASE:	3.390	3.	Z1= 81.8750	3.803	3.600
	SLG DUTY:	3.641	2.	Z2= 81.8750	3.797	
208. VOLTS	LN/LN	2.936		Z0= 70.7522		
	LN/LN/GND	3.963	(	3.832 GND RETURN KA)		
B-B8-COMP	3 PHASE:	1.593	1.	Z1= 75.5011	1.604	1.598
	SLG DUTY:	1.175	1.	Z2= 75.5011	1.176	
480. VOLTS	LN/LN	1.380		Z0= 161.3106		
	LN/LN/GND	1.577	(	0.916 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B8-ELEV	3 PHASE:	3.589	4.	Z1= 77.3403	4.385	3.997
	SLG DUTY:	3.782	3.	Z2= 77.3403	4.136	
208. VOLTS	LN/LN	3.108		Z0= 69.5710		
	LN/LN/GND	4.089	(	3.923 GND RETURN KA)		
B-B8-FDR	3 PHASE:	3.707	4.	Z1= 74.8749	4.521	4.125
	SLG DUTY:	4.221	3.	Z2= 74.8749	4.726	
208. VOLTS	LN/LN	3.210		Z0= 50.1634		
	LN/LN/GND	4.412	(	4.836 GND RETURN KA)		
B-B8-FLEXPMACH	3 PHASE:	1.784	2.	Z1= 67.4335	1.826	1.805
	SLG DUTY:	1.400	1.	Z2= 67.4335	1.406	
480. VOLTS	LN/LN	1.545		Z0= 127.3122		
	LN/LN/GND	1.792	(	1.133 GND RETURN KA)		
B-B8-GE BKR	3 PHASE:	0.893	6.	Z1= 134.7290	1.184	1.044
	SLG DUTY:	1.265	6.	Z2= 134.7290	1.644	
480. VOLTS	LN/LN	0.773		Z0= 16.3741		
	LN/LN/GND	1.362	(	2.166 GND RETURN KA)		
B-B8-GEN	3 PHASE:	2.226	17.	Z1= 54.0464	3.433	2.865
	SLG DUTY:	2.064	18.	Z2= 54.0464	3.205	
480. VOLTS	LN/LN	1.927		Z0= 66.7500		
	LN/LN/GND	2.133	(	1.924 GND RETURN KA)		
B-B8-J-BOX	3 PHASE:	3.634	4.	Z1= 76.3761	4.433	4.044
	SLG DUTY:	3.946	3.	Z2= 76.3761	4.350	
208. VOLTS	LN/LN	3.147		Z0= 61.7924		
	LN/LN/GND	4.207	(	4.245 GND RETURN KA)		
B-B8-L8B	3 PHASE:	1.792	3.	Z1= 154.9221	1.943	1.868
	SLG DUTY:	2.063	1.	Z2= 154.9221	2.090	
208. VOLTS	LN/LN	1.552		Z0= 125.4476		
	LN/LN/GND	2.330	(	2.241 GND RETURN KA)		
B-B8-LB1	3 PHASE:	1.796	4.	Z1= 154.5766	2.102	1.952
	SLG DUTY:	2.173	2.	Z2= 154.5766	2.323	
208. VOLTS	LN/LN	1.555		Z0= 87.3937		
	LN/LN/GND	2.356	(	2.659 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B8-LB2	3 PHASE:	1.770	4.	Z1= 156.8254	2.052	1.914
	SLG DUTY:	2.109	2.	Z2= 156.8254	2.236	
208. VOLTS	LN/LN	1.533		Z0= 95.5092		
	LN/LN/GND	2.291	(	2.517 GND RETURN KA)		
B-B8-MAIN BUS	3 PHASE:	2.046	6.	Z1= 135.6902	2.712	2.391
	SLG DUTY:	2.875	6.	Z2= 135.6902	3.734	
208. VOLTS	LN/LN	1.772		Z0= 18.7383		
	LN/LN/GND	3.068	(	4.832 GND RETURN KA)		
B-B8-MDP-8	3 PHASE:	2.042	6.	Z1= 135.9634	2.704	2.385
	SLG DUTY:	2.863	6.	Z2= 135.9634	3.711	
208. VOLTS	LN/LN	1.768		Z0= 19.4733		
	LN/LN/GND	3.050	(	4.785 GND RETURN KA)		
B-B8-PNL-PK	3 PHASE:	1.985	5.	Z1= 139.8537	2.525	2.263
	SLG DUTY:	2.690	4.	Z2= 139.8537	3.210	
208. VOLTS	LN/LN	1.719		Z0= 34.2900		
	LN/LN/GND	2.908	(	4.127 GND RETURN KA)		
B-B8-PP1	3 PHASE:	2.030	6.	Z1= 136.7608	2.663	2.358
	SLG DUTY:	2.825	5.	Z2= 136.7608	3.585	
208. VOLTS	LN/LN	1.758		Z0= 22.4816		
	LN/LN/GND	3.024	(	4.634 GND RETURN KA)		
B-B8-PP1-M	3 PHASE:	2.030	6.	Z1= 136.7145	2.665	2.359
	SLG DUTY:	2.828	5.	Z2= 136.7145	3.594	
208. VOLTS	LN/LN	1.758		Z0= 22.1635		
	LN/LN/GND	3.028	(	4.649 GND RETURN KA)		
B-B8-SYLV	3 PHASE:	2.009	6.	Z1= 138.1861	2.629	2.330
	SLG DUTY:	2.766	5.	Z2= 138.1861	3.493	
208. VOLTS	LN/LN	1.740		Z0= 26.0049		
	LN/LN/GND	2.935	(	4.426 GND RETURN KA)		
B-B8-TXMR PRI	3 PHASE:	2.185	12.	Z1= 55.0445	3.246	2.744
	SLG DUTY:	1.992	11.	Z2= 55.0445	2.903	
480. VOLTS	LN/LN	1.892		Z0= 71.0579		
	LN/LN/GND	2.108	(	1.830 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B8-TXMR SEC	3 PHASE:	3.773	4.	Z1= 73.5747	4.610	4.202
	SLG DUTY:	4.480	3.	Z2= 73.5747	5.106	
208. VOLTS	LN/LN	3.267		Z0= 40.5339		
	LN/LN/GND	4.614	(	5.463 GND RETURN KA)		
B-B80-ATS-EQ	3 PHASE:	1.691	1.	Z1= 164.1009	1.692	1.691
	SLG DUTY:	1.053	0.	Z2= 164.1009	1.053	
208. VOLTS	LN/LN	1.465		Z0= 467.0194		
	LN/LN/GND	1.577	(	0.760 GND RETURN KA)		
B-B80-E1	3 PHASE:	1.621	1.	Z1= 171.1979	1.621	1.621
	SLG DUTY:	1.006	0.	Z2= 171.1979	1.006	
208. VOLTS	LN/LN	1.404		Z0= 489.5692		
	LN/LN/GND	1.510	(	0.726 GND RETURN KA)		
B-B80-L1-1	3 PHASE:	1.512	1.	Z1= 183.5380	1.534	1.523
	SLG DUTY:	1.435	1.	Z2= 183.5380	1.435	
208. VOLTS	LN/LN	1.310		Z0= 259.4004		
	LN/LN/GND	1.739	(	1.259 GND RETURN KA)		
B-B80-L1-3	3 PHASE:	1.595	2.	Z1= 174.0471	1.628	1.611
	SLG DUTY:	1.588	1.	Z2= 174.0471	1.589	
208. VOLTS	LN/LN	1.381		Z0= 223.3901		
	LN/LN/GND	1.890	(	1.441 GND RETURN KA)		
B-B80-LB-1	3 PHASE:	1.829	4.	Z1= 151.7498	2.165	2.001
	SLG DUTY:	2.353	3.	Z2= 151.7498	2.560	
208. VOLTS	LN/LN	1.584		Z0= 62.4317		
	LN/LN/GND	2.570	(	3.196 GND RETURN KA)		
B-B80-LB-E	3 PHASE:	1.424	1.	Z1= 194.9582	1.424	1.424
	SLG DUTY:	0.876	0.	Z2= 194.9582	0.876	
208. VOLTS	LN/LN	1.233		Z0= 564.7808		
	LN/LN/GND	1.320	(	0.630 GND RETURN KA)		
B-B80-MDP	3 PHASE:	1.923	6.	Z1= 144.3421	2.462	2.201
	SLG DUTY:	2.641	5.	Z2= 144.3421	3.273	
208. VOLTS	LN/LN	1.665		Z0= 27.8498		
	LN/LN/GND	2.791	(	4.203 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B80-MDP-M	3 PHASE:	1.941	6.	Z1= 143.0319	2.504	2.232
	SLG DUTY:	2.693	5.	Z2= 143.0319	3.393	
208. VOLTS	LN/LN	1.681		Z0= 23.8434		
	LN/LN/GND	2.845	(	4.391 GND RETURN KA)		
B-B80-P1	3 PHASE:	1.841	4.	Z1= 150.7840	2.197	2.023
	SLG DUTY:	2.388	3.	Z2= 150.7840	2.626	
208. VOLTS	LN/LN	1.594		Z0= 57.7823		
	LN/LN/GND	2.604	(	3.307 GND RETURN KA)		
B-B80-P5	3 PHASE:	1.171	1.	Z1= 236.9791	1.173	1.172
	SLG DUTY:	0.911	0.	Z2= 236.9791	0.911	
208. VOLTS	LN/LN	1.014		Z0= 483.0396		
	LN/LN/GND	1.222	(	0.712 GND RETURN KA)		
B-B80-PB-1	3 PHASE:	1.543	1.	Z1= 179.8676	1.565	1.554
	SLG DUTY:	1.475	1.	Z2= 179.8676	1.475	
208. VOLTS	LN/LN	1.336		Z0= 252.8602		
	LN/LN/GND	1.786	(	1.295 GND RETURN KA)		
B-B80-PB-2	3 PHASE:	1.497	1.	Z1= 185.4371	1.497	1.497
	SLG DUTY:	0.924	0.	Z2= 185.4371	0.924	
208. VOLTS	LN/LN	1.296		Z0= 534.6887		
	LN/LN/GND	1.390	(	0.665 GND RETURN KA)		
B-B81-MDP	3 PHASE:	1.526	4.	Z1= 181.9066	1.781	1.656
	SLG DUTY:	1.985	3.	Z2= 181.9066	2.249	
208. VOLTS	LN/LN	1.321		Z0= 57.5109		
	LN/LN/GND	2.032	(	2.828 GND RETURN KA)		
B-B81-MDP-M	3 PHASE:	1.527	4.	Z1= 181.8219	1.783	1.657
	SLG DUTY:	1.988	3.	Z2= 181.8219	2.254	
208. VOLTS	LN/LN	1.322		Z0= 56.9875		
	LN/LN/GND	2.035	(	2.838 GND RETURN KA)		
B-B82-ATS-EMER	3 PHASE:	3.673	2.	Z1= 75.5745	3.796	3.735
	SLG DUTY:	2.786	1.	Z2= 75.5745	2.810	
208. VOLTS	LN/LN	3.181		Z0= 151.3098		
	LN/LN/GND	3.614	(	2.218 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B82-EMER	3 PHASE:	3.587	2.	Z1= 77.3836	3.698	3.643
	SLG DUTY:	2.701	1.	Z2= 77.3836	2.722	
208. VOLTS	LN/LN	3.106		Z0= 157.1756		
	LN/LN/GND	3.522	(	2.141 GND RETURN KA)		
B-B82-EMERG-M	3 PHASE:	3.591	2.	Z1= 77.2902	3.703	3.647
	SLG DUTY:	2.707	1.	Z2= 77.2902	2.728	
208. VOLTS	LN/LN	3.110		Z0= 156.6293		
	LN/LN/GND	3.528	(	2.148 GND RETURN KA)		
B-B82-MDP	3 PHASE:	1.757	5.	Z1= 158.0042	2.206	1.988
	SLG DUTY:	2.373	4.	Z2= 158.0042	2.898	
208. VOLTS	LN/LN	1.521		Z0= 35.8554		
	LN/LN/GND	2.462	(	3.648 GND RETURN KA)		
B-B82-MDP-M	3 PHASE:	1.757	5.	Z1= 157.9566	2.207	1.989
	SLG DUTY:	2.375	4.	Z2= 157.9566	2.903	
208. VOLTS	LN/LN	1.522		Z0= 35.5476		
	LN/LN/GND	2.464	(	3.658 GND RETURN KA)		
B-B9-*PNLXX	3 PHASE:	1.887	3.	Z1= 147.0735	2.176	2.034
	SLG DUTY:	2.425	2.	Z2= 147.0735	2.599	
208. VOLTS	LN/LN	1.634		Z0= 60.9330		
	LN/LN/GND	2.648	(	3.287 GND RETURN KA)		
B-B9-*PNLYY	3 PHASE:	1.868	3.	Z1= 148.6149	2.102	1.987
	SLG DUTY:	2.366	2.	Z2= 148.6149	2.483	
208. VOLTS	LN/LN	1.617		Z0= 69.4610		
	LN/LN/GND	2.599	(	3.101 GND RETURN KA)		
B-B9-*PNLZZ	3 PHASE:	1.938	5.	Z1= 143.2474	2.470	2.213
	SLG DUTY:	2.579	4.	Z2= 143.2474	3.139	
208. VOLTS	LN/LN	1.678		Z0= 38.3544		
	LN/LN/GND	2.696	(	3.837 GND RETURN KA)		
B-B9-ATS BKR	3 PHASE:	1.985	6.	Z1= 139.8051	2.584	2.295
	SLG DUTY:	2.724	5.	Z2= 139.8051	3.409	
208. VOLTS	LN/LN	1.719		Z0= 27.6139		
	LN/LN/GND	2.893	(	4.324 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B9-EM	3 PHASE:	1.978	6.	Z1= 140.3419	2.563	2.281
	SLG DUTY:	2.702	5.	Z2= 140.3419	3.353	
208. VOLTS	LN/LN	1.713		Z0= 29.4037		
	LN/LN/GND	2.871	(	4.245 GND RETURN KA)		
B-B9-L91A	3 PHASE:	1.535	2.	Z1= 180.7710	1.619	1.578
	SLG DUTY:	1.566	1.	Z2= 180.7710	1.577	
208. VOLTS	LN/LN	1.330		Z0= 199.4456		
	LN/LN/GND	1.802	(	1.510 GND RETURN KA)		
B-B9-L91A-M	3 PHASE:	1.536	2.	Z1= 180.6622	1.620	1.579
	SLG DUTY:	1.568	1.	Z2= 180.6622	1.579	
208. VOLTS	LN/LN	1.331		Z0= 198.7444		
	LN/LN/GND	1.804	(	1.514 GND RETURN KA)		
B-B9-L92	3 PHASE:	1.731	2.	Z1= 160.3333	1.829	1.780
	SLG DUTY:	2.010	1.	Z2= 160.3333	2.035	
208. VOLTS	LN/LN	1.499		Z0= 114.9092		
	LN/LN/GND	2.223	(	2.273 GND RETURN KA)		
B-B9-L9A	3 PHASE:	1.817	3.	Z1= 152.7771	2.054	1.937
	SLG DUTY:	2.239	2.	Z2= 152.7771	2.364	
208. VOLTS	LN/LN	1.573		Z0= 78.0844		
	LN/LN/GND	2.417	(	2.829 GND RETURN KA)		
B-B9-L9B	3 PHASE:	1.950	5.	Z1= 142.3298	2.415	2.189
	SLG DUTY:	2.614	4.	Z2= 142.3298	3.041	
208. VOLTS	LN/LN	1.689		Z0= 38.7126		
	LN/LN/GND	2.812	(	3.915 GND RETURN KA)		
B-B9-LPN	3 PHASE:	1.382	2.	Z1= 200.8968	1.404	1.393
	SLG DUTY:	1.252	1.	Z2= 200.8968	1.252	
208. VOLTS	LN/LN	1.197		Z0= 299.9341		
	LN/LN/GND	1.530	(	1.083 GND RETURN KA)		
B-B9-LPS	3 PHASE:	1.774	3.	Z1= 156.4421	1.935	1.855
	SLG DUTY:	2.064	2.	Z2= 156.4421	2.099	
208. VOLTS	LN/LN	1.537		Z0= 118.4834		
	LN/LN/GND	2.314	(	2.296 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B9-MAIN	3 PHASE:	2.024	6.	Z1= 137.1313	2.666	2.357
	SLG DUTY:	2.838	6.	Z2= 137.1313	3.646	
208. VOLTS	LN/LN	1.753		Z0= 19.8607		
	LN/LN/GND	3.037	(	4.742 GND RETURN KA)		
B-B9-MDP	3 PHASE:	2.007	6.	Z1= 138.3028	2.631	2.330
	SLG DUTY:	2.787	5.	Z2= 138.3028	3.542	
208. VOLTS	LN/LN	1.738		Z0= 23.1865		
	LN/LN/GND	2.970	(	4.551 GND RETURN KA)		
B-B9-STRT LGHT	3 PHASE:	1.820	2.	Z1= 152.5514	1.955	1.888
	SLG DUTY:	2.112	1.	Z2= 152.5514	2.131	
208. VOLTS	LN/LN	1.576		Z0= 126.2842		
	LN/LN/GND	2.401	(	2.279 GND RETURN KA)		
B-B9-TAP	3 PHASE:	1.969	5.	Z1= 140.9550	2.482	2.233
	SLG DUTY:	2.671	4.	Z2= 140.9550	3.186	
208. VOLTS	LN/LN	1.705		Z0= 33.3317		
	LN/LN/GND	2.868	(	4.117 GND RETURN KA)		
B-B92 GEN	3 PHASE:	6.931	20.	Z1= 40.0500	10.872	9.023
	SLG DUTY:	6.931	20.	Z2= 40.0500	10.872	
208. VOLTS	LN/LN	6.002		Z0= 40.0500		
	LN/LN/GND	6.931	(	6.931 GND RETURN KA)		
B-B92-ATS	3 PHASE:	6.035	3.	Z1= 45.9961	6.800	6.423
	SLG DUTY:	5.446	2.	Z2= 45.9961	5.685	
208. VOLTS	LN/LN	5.226		Z0= 63.4703		
	LN/LN/GND	6.333	(	4.880 GND RETURN KA)		
B-B92-EMDP	3 PHASE:	6.852	18.	Z1= 40.5081	10.615	8.846
	SLG DUTY:	6.812	16.	Z2= 40.5081	10.447	
208. VOLTS	LN/LN	5.934		Z0= 41.2346		
	LN/LN/GND	6.864	(	6.772 GND RETURN KA)		
B-B92-EMDP-M	3 PHASE:	6.855	18.	Z1= 40.4946	10.630	8.855
	SLG DUTY:	6.817	16.	Z2= 40.4946	10.486	
208. VOLTS	LN/LN	5.936		Z0= 41.1597		
	LN/LN/GND	6.862	(	6.780 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B92-PNL-E1	3 PHASE:	5.680	2.	Z1= 48.8696	6.090	5.887
	SLG DUTY:	4.898	2.	Z2= 48.8696	4.984	
208. VOLTS	LN/LN	4.919		Z0= 75.8704		
	LN/LN/GND	5.915	(	4.216 GND RETURN KA)		
B-B93-ATS-EMER	3 PHASE:	5.992	3.	Z1= 46.3249	6.743	6.373
	SLG DUTY:	5.391	2.	Z2= 46.3249	5.624	
208. VOLTS	LN/LN	5.189		Z0= 64.3789		
	LN/LN/GND	6.279	(	4.819 GND RETURN KA)		
B-B93-EMDP	3 PHASE:	6.802	16.	Z1= 40.8054	10.460	8.738
	SLG DUTY:	6.738	14.	Z2= 40.8054	10.206	
208. VOLTS	LN/LN	5.891		Z0= 41.9846		
	LN/LN/GND	6.818	(	6.674 GND RETURN KA)		
B-B93-EMDP-M	3 PHASE:	6.805	17.	Z1= 40.7919	10.475	8.748
	SLG DUTY:	6.743	15.	Z2= 40.7919	10.244	
208. VOLTS	LN/LN	5.893		Z0= 41.9078		
	LN/LN/GND	6.817	(	6.683 GND RETURN KA)		
B-B93-EMDP1	3 PHASE:	6.771	16.	Z1= 40.9916	10.365	8.673
	SLG DUTY:	6.692	14.	Z2= 40.9916	10.062	
208. VOLTS	LN/LN	5.864		Z0= 42.4564		
	LN/LN/GND	6.790	(	6.615 GND RETURN KA)		
B-B93-GEN	3 PHASE:	6.931	20.	Z1= 40.0500	10.872	9.023
	SLG DUTY:	6.931	20.	Z2= 40.0500	10.872	
208. VOLTS	LN/LN	6.002		Z0= 40.0500		
	LN/LN/GND	6.931	(	6.931 GND RETURN KA)		
B-B94-ATS	3 PHASE:	6.166	4.	Z1= 45.0132	7.196	6.692
	SLG DUTY:	5.675	2.	Z2= 45.0132	6.071	
208. VOLTS	LN/LN	5.340		Z0= 58.6572		
	LN/LN/GND	6.469	(	5.187 GND RETURN KA)		
B-B94-E1	3 PHASE:	5.469	2.	Z1= 50.7573	5.767	5.619
	SLG DUTY:	4.605	1.	Z2= 50.7573	4.657	
208. VOLTS	LN/LN	4.736		Z0= 83.3027		
	LN/LN/GND	5.660	(	3.891 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-B94-EMDP	3 PHASE:	6.802	16.	Z1= 40.8054	10.460	8.738
	SLG DUTY:	6.738	14.	Z2= 40.8054	10.206	
208. VOLTS	LN/LN	5.891		Z0= 41.9846		
	LN/LN/GND	6.818	(6.674 GND RETURN KA)			
B-B94-EMDP-M	3 PHASE:	6.805	17.	Z1= 40.7919	10.475	8.748
	SLG DUTY:	6.743	15.	Z2= 40.7919	10.244	
208. VOLTS	LN/LN	5.893		Z0= 41.9078		
	LN/LN/GND	6.817	(6.683 GND RETURN KA)			
B-B94-GEN	3 PHASE:	6.931	20.	Z1= 40.0500	10.872	9.023
	SLG DUTY:	6.931	20.	Z2= 40.0500	10.872	
208. VOLTS	LN/LN	6.002		Z0= 40.0500		
	LN/LN/GND	6.931	(6.931 GND RETURN KA)			
B-B95-EMDP	3 PHASE:	6.802	16.	Z1= 40.8054	10.460	8.738
	SLG DUTY:	6.738	14.	Z2= 40.8054	10.206	
208. VOLTS	LN/LN	5.891		Z0= 41.9846		
	LN/LN/GND	6.818	(6.674 GND RETURN KA)			
B-B95-EMDP-M	3 PHASE:	6.805	17.	Z1= 40.7919	10.475	8.748
	SLG DUTY:	6.743	15.	Z2= 40.7919	10.244	
208. VOLTS	LN/LN	5.893		Z0= 41.9078		
	LN/LN/GND	6.817	(6.683 GND RETURN KA)			
B-B95-GEN	3 PHASE:	6.931	20.	Z1= 40.0500	10.872	9.023
	SLG DUTY:	6.931	20.	Z2= 40.0500	10.872	
208. VOLTS	LN/LN	6.002		Z0= 40.0500		
	LN/LN/GND	6.931	(6.931 GND RETURN KA)			
B-SW-MV-1	3 PHASE:	0.034	7.	Z1= 121.7159	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.7159	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.6101		
	LN/LN/GND	0.053	(0.086 GND RETURN KA)			
B-SW-MV-2	3 PHASE:	0.034	8.	Z1= 121.6757	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6757	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.4924		
	LN/LN/GND	0.053	(0.086 GND RETURN KA)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-SWGR27 TAP	3 PHASE:	0.034	8.	Z1= 121.5946	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.5946	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.2569		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-13-PRI	3 PHASE:	0.034	8.	Z1= 121.6845	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6845	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 11.9998		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B1-PRI	3 PHASE:	0.034	8.	Z1= 121.5565	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.5565	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.3670		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B1-SEC	3 PHASE:	1.598	4.	Z1= 173.7320	1.912	1.759
	SLG DUTY:	2.150	4.	Z2= 173.7320	2.551	
208. VOLTS	LN/LN	1.384		Z0= 39.9994		
	LN/LN/GND	2.175	(	3.284 GND RETURN KA)		
B-T-B10-PRI	3 PHASE:	0.034	8.	Z1= 121.6639	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6639	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.0581		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B10-SEC	3 PHASE:	1.701	4.	Z1= 163.1459	2.069	1.890
	SLG DUTY:	2.274	4.	Z2= 163.1459	2.735	
208. VOLTS	LN/LN	1.473		Z0= 39.9994		
	LN/LN/GND	2.296	(	3.428 GND RETURN KA)		
B-T-B12-PRI	3 PHASE:	0.034	8.	Z1= 121.6963	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6963	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.0331		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B12-SEC	3 PHASE:	1.574	4.	Z1= 176.3622	1.874	1.728
	SLG DUTY:	2.121	4.	Z2= 176.3622	2.507	
208. VOLTS	LN/LN	1.363		Z0= 39.9994		
	LN/LN/GND	2.146	(	3.250 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B17-PRI	3 PHASE:	0.034	8.	Z1= 121.6180	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6180	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.6446		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B17-SEC	3 PHASE:	1.958	6.	Z1= 141.7365	2.549	2.264
	SLG DUTY:	2.746	6.	Z2= 141.7365	3.527	
208. VOLTS	LN/LN	1.696		Z0= 19.9997		
	LN/LN/GND	2.900	(	4.591 GND RETURN KA)		
B-T-B18-PRI	3 PHASE:	0.034	8.	Z1= 121.6219	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6219	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.6561		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B18-SEC	3 PHASE:	1.944	6.	Z1= 142.7829	2.525	2.244
	SLG DUTY:	2.727	6.	Z2= 142.7829	3.496	
208. VOLTS	LN/LN	1.684		Z0= 19.9997		
	LN/LN/GND	2.881	(	4.565 GND RETURN KA)		
B-T-B19-PRI	3 PHASE:	0.034	8.	Z1= 121.6336	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6336	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.3698		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B19-SEC	3 PHASE:	2.099	7.	Z1= 132.2701	2.833	2.481
	SLG DUTY:	3.079	7.	Z2= 132.2701	4.134	
208. VOLTS	LN/LN	1.817		Z0= 5.9999		
	LN/LN/GND	3.437	(	5.779 GND RETURN KA)		
B-T-B2-LED-PRI	3 PHASE:	0.939	5.	Z1= 128.0985	1.184	1.065
	SLG DUTY:	1.338	4.	Z2= 128.0985	1.549	
480. VOLTS	LN/LN	0.813		Z0= 24.4151		
	LN/LN/GND	1.560	(	2.270 GND RETURN KA)		
B-T-B2-LED-SEC	3 PHASE:	1.462	3.	Z1= 189.8149	1.626	1.545
	SLG DUTY:	1.880	3.	Z2= 189.8149	2.042	
208. VOLTS	LN/LN	1.266		Z0= 65.3330		
	LN/LN/GND	1.921	(	2.622 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B2-PRI	3 PHASE:	0.034	8.	Z1= 121.5643	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.5643	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.3443		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B2-SEC2	3 PHASE:	2.206	6.	Z1= 125.8008	2.831	2.529
	SLG DUTY:	3.254	5.	Z2= 125.8008	4.031	
208. VOLTS	LN/LN	1.911		Z0= 5.3695		
	LN/LN/GND	3.558	(	6.187 GND RETURN KA)		
B-T-B2-SEC3	3 PHASE:	2.082	6.	Z1= 133.3178	2.754	2.430
	SLG DUTY:	3.024	6.	Z2= 133.3178	3.966	
208. VOLTS	LN/LN	1.803		Z0= 8.8923		
	LN/LN/GND	3.332	(	5.522 GND RETURN KA)		
B-T-B2-SEC4	3 PHASE:	0.963	7.	Z1= 124.9406	1.303	1.140
	SLG DUTY:	1.424	7.	Z2= 124.9406	1.916	
480. VOLTS	LN/LN	0.834		Z0= 3.5471		
	LN/LN/GND	1.601	(	2.733 GND RETURN KA)		
B-T-B22-PRI	3 PHASE:	0.034	8.	Z1= 121.6180	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6180	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.3245		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B22-SEC	3 PHASE:	0.900	7.	Z1= 133.6386	1.202	1.057
	SLG DUTY:	1.287	6.	Z2= 133.6386	1.698	
480. VOLTS	LN/LN	0.779		Z0= 13.3331		
	LN/LN/GND	1.389	(	2.256 GND RETURN KA)		
B-T-B3-PRI	3 PHASE:	0.034	8.	Z1= 121.6444	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6444	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.1137		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B3-SEC	3 PHASE:	2.066	7.	Z1= 134.3664	2.753	2.422
	SLG DUTY:	2.989	6.	Z2= 134.3664	3.949	
208. VOLTS	LN/LN	1.789		Z0= 9.9999		
	LN/LN/GND	3.273	(	5.403 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B30-PRI	3 PHASE:	0.034	8.	Z1= 121.5672	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.5672	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.4952		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B30-SEC	3 PHASE:	1.598	4.	Z1= 173.7451	1.912	1.758
	SLG DUTY:	2.150	4.	Z2= 173.7451	2.551	
208. VOLTS	LN/LN	1.384		Z0= 39.9994		
	LN/LN/GND	2.175	(	3.284 GND RETURN KA)		
B-T-B33-PRI	3 PHASE:	0.034	8.	Z1= 121.6063	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6063	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.2906		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B33-SEC	3 PHASE:	1.710	4.	Z1= 162.3050	2.084	1.902
	SLG DUTY:	2.285	4.	Z2= 162.3050	2.752	
208. VOLTS	LN/LN	1.481		Z0= 39.9994		
	LN/LN/GND	2.307	(	3.440 GND RETURN KA)		
B-T-B4-PRI	3 PHASE:	0.034	8.	Z1= 121.6640	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6640	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.4581		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B4-SEC	3 PHASE:	2.133	7.	Z1= 130.1130	2.886	2.525
	SLG DUTY:	3.129	7.	Z2= 130.1130	4.208	
208. VOLTS	LN/LN	1.848		Z0= 5.9999		
	LN/LN/GND	3.491	(	5.867 GND RETURN KA)		
B-T-B5-PRI	3 PHASE:	0.034	8.	Z1= 121.7120	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.7120	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.5986		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B5-SEC	3 PHASE:	2.125	7.	Z1= 130.5950	2.849	2.501
	SLG DUTY:	3.072	7.	Z2= 130.5950	4.080	
208. VOLTS	LN/LN	1.841		Z0= 9.9999		
	LN/LN/GND	3.361	(	5.539 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B6-PRI	3 PHASE:	0.034	8.	Z1= 121.7002	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.7002	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.5641		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B6-SEC	3 PHASE:	2.125	7.	Z1= 130.6158	2.849	2.501
	SLG DUTY:	3.072	7.	Z2= 130.6158	4.081	
208. VOLTS	LN/LN	1.840		Z0= 9.9999		
	LN/LN/GND	3.361	(	5.539 GND RETURN KA)		
B-T-B60-PRI	3 PHASE:	0.034	8.	Z1= 121.6062	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6062	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.6100		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B60-SEC	3 PHASE:	1.796	5.	Z1= 154.5613	2.284	2.048
	SLG DUTY:	2.482	5.	Z2= 154.5613	3.115	
208. VOLTS	LN/LN	1.555		Z0= 26.6663		
	LN/LN/GND	2.581	(	4.013 GND RETURN KA)		
B-T-B61-PRI	3 PHASE:	0.034	8.	Z1= 121.6659	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6659	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.4637		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B61-SEC	3 PHASE:	1.982	6.	Z1= 140.0411	2.615	2.310
	SLG DUTY:	2.840	6.	Z2= 140.0411	3.708	
208. VOLTS	LN/LN	1.717		Z0= 13.3331		
	LN/LN/GND	3.071	(	5.004 GND RETURN KA)		
B-T-B62-PRI	3 PHASE:	0.034	8.	Z1= 121.6541	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6541	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.4295		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B62-SEC	3 PHASE:	2.124	7.	Z1= 130.6671	2.850	2.501
	SLG DUTY:	3.071	7.	Z2= 130.6671	4.082	
208. VOLTS	LN/LN	1.840		Z0= 9.9999		
	LN/LN/GND	3.360	(	5.537 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B7-PRI	3 PHASE:	0.034	8.	Z1= 121.6845	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6845	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.5182		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B7-SEC	3 PHASE:	2.076	7.	Z1= 133.7075	2.768	2.435
	SLG DUTY:	2.968	6.	Z2= 133.7075	3.912	
208. VOLTS	LN/LN	1.798		Z0= 13.3331		
	LN/LN/GND	3.204	(	5.203 GND RETURN KA)		
B-T-B70-PRI	3 PHASE:	0.034	8.	Z1= 121.5399	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.5399	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.4153		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B70-SEC	3 PHASE:	2.638	10.	Z1= 105.2281	3.794	3.244
	SLG DUTY:	3.794	9.	Z2= 105.2281	5.381	
208. VOLTS	LN/LN	2.284		Z0= 9.2338		
	LN/LN/GND	4.135	(	6.751 GND RETURN KA)		
B-T-B78-PRI	3 PHASE:	0.034	8.	Z1= 121.6522	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6522	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.0914		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B78-SEC	3 PHASE:	2.171	7.	Z1= 127.8289	2.963	2.584
	SLG DUTY:	3.220	7.	Z2= 127.8289	4.380	
208. VOLTS	LN/LN	1.881		Z0= 3.0000		
	LN/LN/GND	3.651	(	6.227 GND RETURN KA)		
B-T-B8-2-SEC	3 PHASE:	0.900	7.	Z1= 133.6700	1.201	1.056
	SLG DUTY:	1.287	6.	Z2= 133.6700	1.697	
480. VOLTS	LN/LN	0.779		Z0= 13.3331		
	LN/LN/GND	1.389	(	2.255 GND RETURN KA)		
B-T-B8-PRI	3 PHASE:	0.034	8.	Z1= 121.6483	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6483	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.4124		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B8-SEC	3 PHASE:	2.077	7.	Z1= 133.6700	2.771	2.437
	SLG DUTY:	2.969	6.	Z2= 133.6700	3.916	
208. VOLTS	LN/LN	1.798		Z0= 13.3331		
	LN/LN/GND	3.205	(	5.204 GND RETURN KA)		
B-T-B80-PRI	3 PHASE:	0.034	8.	Z1= 121.6698	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6698	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.4753		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B80-SEC	3 PHASE:	1.959	6.	Z1= 141.7268	2.547	2.263
	SLG DUTY:	2.746	6.	Z2= 141.7268	3.524	
208. VOLTS	LN/LN	1.696		Z0= 19.9997		
	LN/LN/GND	2.900	(	4.592 GND RETURN KA)		
B-T-B81-PRI	3 PHASE:	0.034	8.	Z1= 121.7002	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.7002	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.0442		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B81-SEC	3 PHASE:	1.576	4.	Z1= 176.1080	1.878	1.730
	SLG DUTY:	2.124	4.	Z2= 176.1080	2.510	
208. VOLTS	LN/LN	1.365		Z0= 39.9994		
	LN/LN/GND	2.149	(	3.254 GND RETURN KA)		
B-T-B82-PRI	3 PHASE:	0.034	8.	Z1= 121.6522	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6522	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.4239		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		
B-T-B82-SEC	3 PHASE:	1.793	5.	Z1= 154.7870	2.279	2.044
	SLG DUTY:	2.478	5.	Z2= 154.7870	3.108	
208. VOLTS	LN/LN	1.553		Z0= 26.6663		
	LN/LN/GND	2.578	(	4.008 GND RETURN KA)		
B-T-B9-PRI	3 PHASE:	0.034	8.	Z1= 121.6767	0.034	0.041
	SLG DUTY:	0.049	7.	Z2= 121.6767	0.049	
13800. VOLTS	LN/LN	0.030		Z0= 12.0220		
	LN/LN/GND	0.053	(	0.086 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
B-T-B9-SEC	3 PHASE:	2.059	7.	Z1= 134.7937	2.740	2.413
	SLG DUTY:	2.945	6.	Z2= 134.7937	3.876	
208. VOLTS	LN/LN	1.783		Z0= 13.3331		
	LN/LN/GND	3.181	(	5.168 GND RETURN KA)		
B0B70-LP2	3 PHASE:	2.118	3.	Z1= 131.0701	2.305	2.213
	SLG DUTY:	2.287	1.	Z2= 131.0701	2.315	
208. VOLTS	LN/LN	1.834		Z0= 127.7994		
	LN/LN/GND	2.610	(	2.309 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
BUS-0739	3 PHASE:	1.984	6.	Z1= 139.8849	2.581	2.293
	SLG DUTY:	2.719	5.	Z2= 139.8849	3.396	
208. VOLTS	LN/LN	1.718		Z0= 28.1364		
	LN/LN/GND	2.887	(	4.302 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D F A U L T R E P O R T
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT DUTIES	KA (RMS)	X/R	EQUIVALENT (PU) FAULT IMPEDANCE	ASYM. KA AT 0.5 CYCLES * MAX. RMS	AVG. RMS *
bB-B7-MC1	3 PHASE:	2.703	1.	Z1= 102.7027	2.713	2.708
	SLG DUTY:	1.856	1.	Z2= 102.7027	1.857	
208. VOLTS	LN/LN	2.341		Z0= 248.0377		
	LN/LN/GND	2.598	(	1.399 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B1-ATS-EMERG	208.	2.939	0.84	1.958	0.58
B-B1-MDP	208.	1.542	3.75	1.998	3.27
B-B1-MDP-M	208.	1.572	3.92	2.079	3.57
B-B10 DISC	208.	1.673	4.16	2.196	3.73
B-B10 EMRG TAP	208.	3.017	2.76	2.292	2.08
B-B10-MDP	208.	1.638	3.91	2.103	3.31
B-B12-MAP-M	208.	1.523	3.80	1.985	3.44
B-B12-MDP	208.	1.523	3.80	1.982	3.43
B-B13-APT-13	240.	1.562	4.02	0.000	1.00
B-B13-APT-14	240.	1.512	4.72	0.000	1.00
B-B13-APT-15	240.	1.409	4.37	0.000	1.00
B-B13-GARAGE	240.	1.457	3.36	0.000	1.00
B-B13-MDP	240.	1.636	5.55	0.000	1.00
B-B13-MDP-M	240.	1.636	5.55	0.000	1.00
B-B13-MGR H16	240.	1.195	2.15	0.000	1.00
B-B13-TXMR SEC	240.	1.702	6.25	0.000	1.00
B-B13-UNKNOWN	240.	1.562	4.02	0.000	1.00
B-B17-A/C	208.	1.816	4.49	2.340	3.30
B-B17-A/C-2	208.	1.794	3.78	2.260	2.52
B-B17-AC1	208.	1.794	3.78	2.260	2.52
B-B17-ACB	208.	1.774	3.32	2.188	2.09
B-B17-ANIMALRM	208.	1.704	0.68	1.077	0.51
B-B17-ATS	208.	2.177	0.82	1.418	0.60
B-B17-DP	208.	1.851	4.85	2.436	3.76
B-B17-EMAIN	208.	1.916	5.36	2.619	4.49
B-B17-EMERG	208.	2.156	0.82	1.403	0.60
B-B17-MAIN	208.	1.923	5.53	2.641	4.79
B-B17-NEB1	208.	1.634	0.66	1.028	0.50
B-B17-NEB2	208.	1.861	0.70	1.184	0.52
B-B17-NP11	208.	1.741	2.79	2.066	1.64
B-B17-NP12	208.	1.813	4.39	2.330	3.18
B-B17-NP21	208.	1.794	3.78	2.260	2.52
B-B17-NP22	208.	1.794	3.78	2.260	2.52
B-B17-NPA1	208.	1.794	3.78	2.260	2.52
B-B17-NPB1	208.	1.810	4.27	2.318	3.04
B-B17-NPB2	208.	1.794	3.78	2.260	2.52
B-B18-1STFL	208.	2.246	1.05	1.507	0.78

B-B18-1STFL-M	208.	2.408	1.14	1.641	0.85
B-B18-2ND-FL-M	208.	2.408	1.14	1.641	0.85
B-B18-2NDFL	208.	2.102	0.98	1.392	0.73
B-B18-AC1	208.	1.815	3.33	2.300	2.07
B-B18-AC2	208.	1.861	4.65	2.476	3.50
B-B18-ATS-EMRG	208.	2.483	1.19	1.704	0.88
B-B18-EMERG	208.	2.397	1.14	1.630	0.85

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E 3 PHASE	F A U L T X/R	D U T I E S (KA) LINE/GRND	X/R
B-B18-EMERG-M	208.	2.399	1.14	1.634	0.85
B-B18-NCP	208.	1.891	4.93	2.564	3.87
B-B18-NMDP	208.	1.914	5.61	2.637	4.99
B-B18-NMDP-M	208.	1.915	5.62	2.640	5.02
B-B18-NP11	208.	1.815	3.33	2.300	2.07
B-B18-NP12	208.	1.815	3.33	2.300	2.07
B-B18-NP21	208.	1.836	3.62	2.372	2.33
B-B18-NP22	208.	1.844	4.27	2.423	3.03
B-B18-NP23	208.	1.865	4.84	2.491	3.76
B-B18-STRT LHT	208.	1.707	2.22	1.925	1.22
B-B18-TAP BOX	208.	2.433	1.16	1.662	0.86
B-B19-200A PNL	208.	2.052	6.44	2.930	5.54
B-B19-B1	208.	2.035	5.62	2.869	4.24
B-B19-L1	208.	1.421	1.41	1.268	0.75
B-B19-L2	208.	1.853	3.21	2.280	1.85
B-B19-MDP1	208.	2.074	6.81	3.000	6.26
B-B19-MDP1-M	208.	2.074	6.82	3.001	6.29
B-B19-MDP2	208.	2.063	6.71	2.966	6.06
B-B19-MDP2-M	208.	2.067	6.75	2.977	6.13
B-B19-MDPA	208.	1.907	5.46	2.511	4.09
B-B19-P1	208.	1.907	5.46	2.511	4.09
B-B19-P2	208.	1.889	4.05	2.426	2.55
B-B19-P4	208.	2.040	6.04	2.891	4.85
B-B19-P6	208.	1.463	1.70	1.381	0.94
B-B19-PS	208.	1.732	2.21	1.897	1.18
B-B2-ATS-CRIT	208.	2.966	2.30	2.221	1.73
B-B2-ATS-LED3	208.	2.141	1.69	1.505	1.31
B-B2-ATS-LS	208.	2.757	2.24	2.039	1.69
B-B2-BATTERYCH	208.	1.949	0.99	1.288	0.76
B-B2-CATSCAN	480.	0.943	5.75	1.357	4.34
B-B2-CRIT PNL	208.	2.952	2.28	2.207	1.72
B-B2-DENTAL LB	208.	2.582	1.62	1.842	1.22
B-B2-DENTSUCPM	208.	2.335	1.52	1.638	1.16
B-B2-ELEV	208.	2.563	2.03	1.864	1.54
B-B2-ELEV-P1	208.	2.504	1.86	1.804	1.42
B-B2-EMERG-M	208.	2.118	1.67	1.486	1.29
B-B2-EMERG-PNL	208.	2.116	1.67	1.484	1.29

B-B2-EPNL-B	208.	2.965	2.30	2.219	1.73
B-B2-EPNL-B-M	208.	2.966	2.30	2.221	1.73
B-B2-L12	208.	2.499	1.92	1.804	1.46
B-B2-L2A	208.	2.683	1.96	1.957	1.48

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B2-L2E	208.	2.499	1.92	1.804	1.46
B-B2-L4	208.	1.962	4.47	2.612	3.08
B-B2-L6	208.	1.962	4.47	2.612	3.08
B-B2-L7	208.	1.962	4.47	2.612	3.08
B-B2-L8	208.	1.962	4.47	2.612	3.08
B-B2-L9E	208.	2.437	1.74	1.739	1.32
B-B2-LB1E	208.	2.437	1.74	1.739	1.32
B-B2-LB2	208.	1.962	4.47	2.612	3.08
B-B2-LB2E	208.	2.497	1.52	1.763	1.15
B-B2-LED-3	208.	1.451	2.90	1.850	2.53
B-B2-MDP	480.	0.962	7.13	1.422	6.89
B-B2-MDP-M	480.	0.962	7.13	1.422	6.90
B-B2-MDPA	208.	2.202	5.55	3.237	4.72
B-B2-MDPA-M	208.	2.204	5.55	3.245	4.74
B-B2-MDPB	208.	2.073	6.16	2.958	5.52
B-B2-MDPB-M	208.	2.073	6.17	2.961	5.56
B-B2-MEDAIRCOM	208.	2.497	1.52	1.763	1.15
B-B2-NEWLAB	208.	2.102	1.65	1.471	1.28
B-B2-NEWLAB-M	208.	2.104	1.65	1.474	1.28
B-B2-PNL 1	208.	2.118	1.67	1.486	1.29
B-B2-PNL LS	208.	2.732	2.20	2.016	1.67
B-B2-PNL-2	208.	2.124	1.66	1.490	1.28
B-B2-PNL-3-M	208.	2.100	1.63	1.469	1.26
B-B2-PNL-D2	208.	2.060	4.77	2.808	3.54
B-B2-PNL-L11	208.	2.683	1.96	1.957	1.48
B-B2-PNL-M1	208.	2.061	1.56	1.434	1.21
B-B2-PNL-P	480.	0.936	6.54	1.339	5.64
B-B2-POD2PP	208.	2.524	1.99	1.830	1.52
B-B2-TEL COMM	208.	1.962	4.47	2.612	3.08
B-B2-UNIT-1	480.	0.928	6.03	1.311	4.78
B-B2-UNIT-2	480.	0.932	6.27	1.325	5.17
B-B2-XRAY	208.	1.314	0.89	1.022	0.42
B-B2-XRAY-124	480.	0.905	5.00	1.236	3.44
B-B2-XRAY124	208.	1.925	3.45	2.462	2.09
B-B21-P1	208.	1.479	1.84	1.428	1.03
B-B21-P2	208.	1.706	2.94	1.947	1.74
B-B22-ATS-EMER	480.	1.772	15.61	1.757	13.48

B-B22-EMERG	480.	1.750	14.08	1.724	11.61
B-B22-EMERG-M	480.	1.750	14.13	1.725	11.70
B-B22-GEN	480.	1.802	20.00	1.802	20.00
B-B22-L1	208.	1.941	2.65	2.265	2.22

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B22-L1-M	208.	1.943	2.66	2.270	2.23
B-B22-L2	208.	1.941	2.65	2.265	2.22
B-B22-L2-M	208.	1.943	2.66	2.270	2.23
B-B22-L3	208.	1.944	2.67	2.268	2.23
B-B22-L3-M	208.	1.946	2.67	2.273	2.24
B-B22-MDP	480.	0.878	6.24	1.221	5.42
B-B22-MDP-M	480.	0.878	6.24	1.221	5.42
B-B22-N1	208.	1.584	3.88	2.046	3.20
B-B22-N1-M	208.	1.585	3.89	2.049	3.21
B-B22-P1	480.	1.735	12.42	1.702	9.79
B-B22-P2	480.	1.735	12.42	1.702	9.79
B-B22-T1-PRI	480.	0.877	6.17	1.216	5.30
B-B22-T1-SEC	208.	1.613	3.98	2.123	3.35
B-B22-T2-PRI	480.	1.743	12.68	1.714	10.06
B-B22-T2-SEC	208.	1.979	2.76	2.347	2.37
B-B22-T22-SEC	208.	1.976	2.75	2.344	2.36
B-B22-T3 PRI	480.	1.740	12.08	1.708	9.44
B-B22-T4-PRI	480.	1.740	12.08	1.708	9.44
B-B22-T4-SEC	208.	1.976	2.75	2.344	2.36
B-B27-SWGR	13800.	0.034	7.62	0.049	7.07
B-B27-SWGR-M1	13800.	0.034	7.62	0.049	7.07
B-B3-1ST FL	208.	4.286	2.96	3.488	2.10
B-B3-ALDN KIT	208.	3.854	1.75	2.923	1.23
B-B3-ATS-COMP	208.	4.763	4.49	4.068	3.20
B-B3-ATSTEL RM	208.	4.793	4.99	4.115	3.58
B-B3-COMP	208.	3.998	2.24	3.135	1.59
B-B3-COMP AC	208.	2.417	0.67	1.549	0.47
B-B3-COMP MF	208.	4.296	3.24	3.517	2.31
B-B3-DBL GRILL	208.	4.023	2.59	3.198	1.85
B-B3-ELEV	208.	4.156	2.53	3.320	1.79
B-B3-EP1	208.	4.720	4.85	4.026	3.48
B-B3-EP1-M	208.	4.726	4.87	4.039	3.51
B-B3-EP2	208.	4.651	4.31	3.936	3.08
B-B3-EP2-M	208.	4.657	4.33	3.949	3.09
B-B3-FRZN FOOD	208.	1.923	3.09	2.449	1.75
B-B3-HYDRO ELV	208.	3.695	1.96	2.818	1.40
B-B3-KP1	208.	4.144	3.19	3.363	2.29

B-B3-MDP	208.	2.045	6.43	2.922	5.91
B-B3-MDP-M	208.	2.045	6.44	2.924	5.94
B-B3-MECH HVAC	208.	4.156	2.53	3.320	1.79
B-B3-MECH RM	208.	4.327	3.44	3.561	2.45

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B3-P3	208.	1.958	4.91	2.649	3.52
B-B3-P7	208.	4.151	2.38	3.298	1.68
B-B3-STRT LTS	208.	1.923	3.09	2.449	1.75
B-B3-STRT PNL	208.	4.319	2.91	3.517	2.06
B-B3-TELE PNL	208.	4.393	3.74	3.643	2.68
B-B3-TRAY LINE	208.	4.156	2.53	3.320	1.79
B-B33-MDP	208.	1.598	3.64	1.987	2.89
B-B33-MDP-M	208.	1.598	3.65	1.990	2.89
B-B4-4EQD	208.	4.022	3.55	3.260	2.58
B-B4-4EQD-M	208.	4.026	3.56	3.268	2.59
B-B4-ATS-EQ	208.	4.121	3.66	3.367	2.65
B-B4-ATS-LS	208.	3.663	1.86	2.777	1.33
B-B4-BUS	208.	2.124	7.04	3.098	6.69
B-B4-ELEV#4	208.	3.264	2.03	2.450	1.49
B-B4-EQ1	208.	3.666	2.62	2.866	1.91
B-B4-EQ10	208.	3.322	2.10	2.508	1.54
B-B4-EQ11	208.	3.507	2.35	2.697	1.72
B-B4-EQ12	208.	3.136	1.89	2.325	1.39
B-B4-EQ15	208.	3.264	2.03	2.450	1.49
B-B4-EQ2	208.	3.875	3.10	3.095	2.25
B-B4-EQ3	208.	3.453	2.27	2.641	1.66
B-B4-EQ5	208.	3.480	2.31	2.669	1.69
B-B4-EQ6	208.	3.676	2.64	2.876	1.92
B-B4-EQ7	208.	3.280	2.05	2.466	1.50
B-B4-EQ9	208.	3.030	1.79	2.224	1.32
B-B4-HYDROELEV	208.	3.176	1.80	2.347	1.32
B-B4-JBOX	208.	2.121	6.93	3.081	6.34
B-B4-LP1	208.	1.990	4.92	2.669	3.35
B-B4-LP1-M	208.	1.992	4.94	2.675	3.37
B-B4-LP10	208.	1.931	4.35	2.495	2.80
B-B4-LP10-M	208.	1.932	4.36	2.501	2.82
B-B4-LP11	208.	1.980	4.82	2.639	3.24
B-B4-LP11-M	208.	1.982	4.83	2.645	3.26
B-B4-LP12	208.	2.001	5.04	2.700	3.47
B-B4-LP12-M	208.	2.002	5.05	2.706	3.50
B-B4-LP13	208.	1.931	4.35	2.495	2.80
B-B4-LP13-M	208.	1.932	4.36	2.501	2.82

B-B4-LP14	208.	1.892	4.05	2.388	2.55
B-B4-LP14-M	208.	1.894	4.06	2.394	2.56
B-B4-LP15	208.	2.755	1.20	1.907	0.87
B-B4-LP15-M	208.	2.758	1.20	1.911	0.87

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B4-LP2	208.	2.063	5.87	2.892	4.49
B-B4-LP2-M	208.	2.064	5.90	2.900	4.54
B-B4-LP3	208.	2.063	5.87	2.892	4.49
B-B4-LP3-M	208.	2.064	5.90	2.900	4.54
B-B4-LP4	208.	1.980	4.82	2.639	3.24
B-B4-LP4-M	208.	1.982	4.83	2.645	3.26
B-B4-LP5	208.	1.970	4.71	2.609	3.14
B-B4-LP5-M	208.	1.972	4.73	2.616	3.16
B-B4-LP6	208.	2.021	5.28	2.762	3.74
B-B4-LP6-M	208.	2.022	5.30	2.769	3.78
B-B4-LP7	208.	2.021	5.28	2.762	3.74
B-B4-LP7-M	208.	2.022	5.30	2.769	3.78
B-B4-LP8	208.	1.970	4.71	2.609	3.14
B-B4-LP8-M	208.	1.972	4.73	2.616	3.16
B-B4-LP9	208.	1.931	4.35	2.495	2.80
B-B4-LP9-M	208.	1.932	4.36	2.501	2.82
B-B4-LS1	208.	2.950	1.35	2.087	0.98
B-B4-LS1-M	208.	2.953	1.35	2.092	0.98
B-B4-LS10	208.	2.504	1.13	1.707	0.83
B-B4-LS10-M	208.	2.507	1.13	1.710	0.83
B-B4-LS11	208.	2.656	1.20	1.832	0.88
B-B4-LS11-M	208.	2.659	1.20	1.836	0.88
B-B4-LS12	208.	2.785	1.26	1.942	0.92
B-B4-LS12-M	208.	2.788	1.26	1.946	0.92
B-B4-LS13	208.	2.808	1.27	1.962	0.93
B-B4-LS13-M	208.	2.812	1.27	1.967	0.93
B-B4-LS14	208.	2.808	1.27	1.962	0.93
B-B4-LS14-M	208.	2.812	1.27	1.967	0.93
B-B4-LS2	208.	3.280	1.56	2.392	1.12
B-B4-LS2-M	208.	3.285	1.56	2.399	1.12
B-B4-LS3	208.	3.440	1.68	2.548	1.20
B-B4-LS3-M	208.	3.445	1.68	2.555	1.21
B-B4-LS4	208.	3.085	1.43	2.209	1.03
B-B4-LS4-M	208.	3.089	1.43	2.214	1.03
B-B4-LS5	208.	2.642	1.19	1.820	0.87
B-B4-LS5-M	208.	2.645	1.19	1.824	0.87
B-B4-LS6	208.	2.808	1.27	1.962	0.93

B-B4-LS6-M	208.	2.812	1.27	1.967	0.93
B-B4-LS7	208.	2.950	1.35	2.087	0.98
B-B4-LS7-M	208.	2.953	1.35	2.092	0.98
B-B4-LS8	208.	2.976	1.36	2.110	0.99

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
B-B4-LS8-M	208.	2.980	1.36	2.115	0.99
B-B4-LS9	208.	2.976	1.36	2.110	0.99
B-B4-LS9-M	208.	2.980	1.36	2.115	0.99
B-B4-LSD	208.	3.616	1.84	2.729	1.31
B-B4-LSD-M	208.	3.622	1.84	2.737	1.31
B-B4-MDP	208.	2.118	6.91	3.072	6.27
B-B4-MDP-M	208.	2.118	6.91	3.073	6.28
B-B4-PP1	208.	3.770	3.02	2.990	2.20
B-B4-PP2	208.	2.755	1.20	1.907	0.87
B-B4-PP2-M	208.	2.758	1.20	1.911	0.87
B-B5-ATS-EQ	208.	2.251	2.35	1.632	1.83
B-B5-ATS-LS	208.	1.772	1.16	1.183	0.90
B-B5-EQ1	208.	2.072	1.95	1.471	1.52
B-B5-EQ2	208.	2.061	1.93	1.461	1.51
B-B5-EQ5	208.	2.072	1.95	1.471	1.52
B-B5-EQ6	208.	2.023	1.86	1.428	1.46
B-B5-EQD	208.	2.240	2.34	1.623	1.83
B-B5-HYDR ELEV	208.	2.138	2.09	1.530	1.63
B-B5-LP1	208.	2.008	5.16	2.708	3.75
B-B5-LP1-M	208.	2.009	5.17	2.713	3.77
B-B5-LP2	208.	1.966	4.70	2.584	3.23
B-B5-LP2-M	208.	1.967	4.70	2.589	3.24
B-B5-LP3	208.	1.968	4.72	2.589	3.25
B-B5-LP3-M	208.	1.969	4.72	2.595	3.27
B-B5-LP4	208.	1.926	4.34	2.472	2.88
B-B5-LP4-M	208.	1.927	4.35	2.477	2.89
B-B5-LP5	208.	1.998	4.37	2.657	2.87
B-B5-LP5-M	208.	1.999	4.38	2.662	2.88
B-B5-LS1	208.	1.693	1.11	1.122	0.86
B-B5-LS2	208.	1.556	1.03	1.019	0.81
B-B5-LS4	208.	1.506	1.00	0.982	0.79
B-B5-LSD	208.	1.761	1.15	1.175	0.90
B-B5-LSD-M	208.	1.762	1.15	1.176	0.90
B-B5-MDP	208.	2.074	6.10	2.911	5.09
B-B5-MDP-M	208.	2.074	6.11	2.912	5.12
B-B5-NEXTEL	208.	1.984	4.70	2.633	3.23
B-B5-PNL-H	208.	2.020	5.31	2.745	3.94

B-B5-PNL-H-M	208.	2.021	5.32	2.750	3.96
B-B5-STRT LGHT	208.	1.961	3.38	2.500	1.97
B-B5-TEMP TRAI	208.	1.962	4.46	2.568	2.98
B-B55-LS3	208.	1.634	1.07	1.078	0.84

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B6-ATS-EQ	208.	2.738	2.59	2.045	1.98
B-B6-ATS-LS	208.	2.406	1.34	1.669	1.01
B-B6-EQ1	208.	2.585	2.27	1.899	1.74
B-B6-EQ2	208.	2.439	2.07	1.768	1.59
B-B6-EQ3	208.	2.553	2.27	1.872	1.74
B-B6-EQ4	208.	2.350	1.93	1.687	1.49
B-B6-EQ5	208.	2.458	2.10	1.784	1.61
B-B6-EQ8	208.	2.430	2.19	1.768	1.68
B-B6-EQD	208.	2.684	2.55	1.996	1.95
B-B6-EQD-M	208.	2.684	2.55	1.997	1.95
B-B6-EQMACH	208.	2.585	2.27	1.899	1.74
B-B6-LP1	208.	1.971	4.06	2.573	2.57
B-B6-LP1-M	208.	1.971	4.07	2.575	2.58
B-B6-LP2	208.	1.995	4.37	2.650	2.87
B-B6-LP2-M	208.	1.995	4.38	2.652	2.87
B-B6-LP3	208.	1.997	5.05	2.678	3.62
B-B6-LP3-M	208.	1.998	5.05	2.680	3.63
B-B6-LP4	208.	2.003	5.12	2.696	3.70
B-B6-LP4-M	208.	2.004	5.12	2.698	3.71
B-B6-LP5	208.	1.957	4.62	2.561	3.16
B-B6-LP5-M	208.	1.957	4.63	2.563	3.17
B-B6-LP6	208.	1.963	4.68	2.579	3.22
B-B6-LP6-M	208.	1.963	4.69	2.580	3.23
B-B6-LP7	208.	2.051	5.36	2.834	3.99
B-B6-LP7-M	208.	2.052	5.37	2.836	4.00
B-B6-LS1	208.	2.191	1.21	1.491	0.92
B-B6-LS2	208.	2.283	1.25	1.565	0.95
B-B6-LS3	208.	2.191	1.21	1.491	0.92
B-B6-LS4	208.	2.191	1.21	1.491	0.92
B-B6-LS5	208.	2.096	1.16	1.415	0.88
B-B6-LS6	208.	2.096	1.16	1.415	0.88
B-B6-LSD	208.	2.376	1.33	1.645	1.00
B-B6-LSD-M	208.	2.376	1.33	1.646	1.00
B-B6-MACH SHOP	208.	1.978	4.63	2.617	3.15
B-B6-MDP	208.	2.092	6.45	2.967	5.72
B-B6-MDP-M	208.	2.092	6.46	2.968	5.75
B-B6-P6-CS	208.	2.023	5.20	2.752	3.80

B-B60-MDP	208.	1.761	5.13	2.381	4.59
B-B60-MDP-M	208.	1.762	5.14	2.385	4.61
B-B61 STRT LGH	208.	1.832	3.20	2.318	1.89
B-B61-ATS-EQD	208.	2.506	2.47	1.845	1.91

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B61-ATS-LSD	208.	2.010	1.22	1.361	0.94
B-B61-COMP RM	208.	2.382	2.32	1.736	1.80
B-B61-DP	208.	1.906	5.74	2.612	4.87
B-B61-ELEV	208.	2.235	2.12	1.609	1.65
B-B61-EQ1	208.	2.255	2.03	1.619	1.58
B-B61-EQ2	208.	2.399	2.30	1.749	1.78
B-B61-EQ4	208.	2.251	1.97	1.612	1.52
B-B61-EQA	208.	2.450	2.43	1.797	1.88
B-B61-EQD	208.	2.464	2.45	1.810	1.89
B-B61-KITCHEN	208.	1.891	1.19	1.270	0.92
B-B61-LP1	208.	1.587	2.28	1.706	1.30
B-B61-LP2	208.	1.587	2.28	1.706	1.30
B-B61-LP3	208.	1.792	4.15	2.281	2.81
B-B61-LP4	208.	1.848	4.80	2.439	3.53
B-B61-LP5	208.	1.788	2.77	2.168	1.57
B-B61-LS1	208.	1.738	1.06	1.148	0.82
B-B61-LS2	208.	1.850	1.10	1.231	0.85
B-B61-LS3	208.	1.676	1.03	1.102	0.80
B-B61-LS4	208.	1.738	1.06	1.148	0.82
B-B61-LS5	208.	1.676	1.03	1.102	0.80
B-B61-LSD	208.	1.990	1.21	1.345	0.93
B-B61-LSD-M	208.	1.992	1.21	1.347	0.93
B-B61-MCC	208.	1.832	3.20	2.318	1.89
B-B61-MDP	208.	1.953	6.11	2.751	5.55
B-B61-MDP-M	208.	1.954	6.12	2.754	5.58
B-B62-A	208.	2.013	5.01	2.723	3.55
B-B62-ATS-EQD	208.	2.043	2.25	1.463	1.77
B-B62-ATS-LSD	208.	1.588	1.11	1.049	0.87
B-B62-ATTC PNL	208.	1.875	1.93	1.319	1.53
B-B62-B	208.	2.025	5.16	2.757	3.73
B-B62-BL	208.	1.968	3.77	2.550	2.30
B-B62-BP	208.	2.011	4.50	2.700	2.99
B-B62-ELEV-1	208.	1.875	1.93	1.319	1.53
B-B62-ELEV-2	208.	1.875	1.93	1.319	1.53
B-B62-EQ	208.	1.983	2.12	1.411	1.67
B-B62-EQD	208.	2.006	2.20	1.432	1.73
B-B62-KP	208.	2.006	4.67	2.692	3.17

B-B62-LP1	208.	2.019	4.63	2.727	3.12
B-B62-LP2	208.	2.006	4.67	2.692	3.17
B-B62-LP3	208.	2.012	5.20	2.724	3.78
B-B62-LP4	208.	2.021	5.30	2.749	3.91

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B62-LS1	208.	1.384	0.96	0.896	0.76
B-B62-LS2	208.	1.479	1.03	0.966	0.81
B-B62-LS3	208.	1.425	1.02	0.928	0.80
B-B62-LS4	208.	1.484	1.05	0.972	0.83
B-B62-LSD	208.	1.562	1.10	1.030	0.87
B-B62-LSD-M	208.	1.563	1.10	1.031	0.87
B-B62-MDP	208.	2.105	6.67	3.011	6.12
B-B62-MDP-M	208.	2.106	6.67	3.012	6.15
B-B62-OT	208.	1.999	4.15	2.653	2.64
B-B62-PAD RM	208.	1.952	2.06	1.384	1.62
B-B62-STRT LGT	208.	1.992	3.52	2.591	2.06
B-B7-ATS-EQ	208.	3.943	3.48	3.182	2.54
B-B7-ATS-LS	208.	3.475	1.76	2.596	1.26
B-B7-ELEV	208.	3.336	2.55	2.562	1.89
B-B7-EQ1	208.	3.374	2.39	2.583	1.76
B-B7-EQ2	208.	3.638	2.92	2.862	2.14
B-B7-EQ4	208.	3.452	2.43	2.657	1.78
B-B7-EQD	208.	3.778	3.32	3.016	2.44
B-B7-LP2	208.	1.855	4.79	2.344	3.43
B-B7-LP2-M	208.	1.856	4.80	2.349	3.45
B-B7-LP3	208.	1.768	3.93	2.121	2.59
B-B7-LP3-M	208.	1.769	3.94	2.126	2.60
B-B7-LP4	208.	1.855	4.79	2.344	3.43
B-B7-LP4-M	208.	1.856	4.80	2.349	3.45
B-B7-LP5	208.	1.768	3.93	2.121	2.59
B-B7-LP5-M	208.	1.769	3.94	2.126	2.60
B-B7-LP6	208.	1.735	3.71	2.042	2.41
B-B7-LP6-M	208.	1.736	3.72	2.046	2.42
B-B7-LP7	208.	1.821	4.49	2.257	3.12
B-B7-LP7-M	208.	1.822	4.50	2.262	3.14
B-B7-LP8	208.	1.735	3.71	2.042	2.41
B-B7-LP8-M	208.	1.736	3.72	2.046	2.42
B-B7-LS1	208.	2.865	1.34	2.020	0.98
B-B7-LS2	208.	3.150	1.47	2.271	1.06
B-B7-LS4	208.	2.808	1.31	1.970	0.95
B-B7-LS5	208.	3.091	1.48	2.225	1.07
B-B7-LSD	208.	3.433	1.74	2.554	1.25

B-B7-LSD-M	208.	3.438	1.74	2.562	1.25
B-B7-MCC-1	208.	3.496	2.25	2.679	1.64
B-B7-MCC-2	208.	1.872	3.97	2.359	2.56
B-B7-MDP	208.	1.930	5.64	2.547	4.49

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E 3 PHASE	X/R	F A U L T LINE/GRND	D U T I E S (KA) X/R
B-B7-MDP-M	208.	1.930	5.64	2.549	4.51
B-B7-SRTLGHT-M	208.	1.808	3.08	2.156	1.82
B-B7-STRT LGHT	208.	1.807	3.08	2.151	1.82
B-B70 -BLDG-71	208.	0.918	0.72	0.618	0.43
B-B70 GEN-M	208.	2.860	18.34	3.808	14.09
B-B70-A	208.	2.378	4.43	2.989	2.53
B-B70-ATS-EQD	208.	2.762	13.56	3.556	8.81
B-B70-ATS-LSD	208.	2.751	10.26	3.512	6.01
B-B70-ATTIC	208.	2.321	3.84	2.820	2.13
B-B70-B	208.	2.378	4.43	2.989	2.53
B-B70-CHLLR	208.	2.067	4.38	2.330	2.71
B-B70-EM-TAP	208.	2.858	18.12	3.810	13.79
B-B70-EQ1	208.	2.411	3.97	2.637	2.11
B-B70-EQ2	208.	2.249	3.02	2.287	1.63
B-B70-EQ3	208.	2.355	3.58	2.512	1.91
B-B70-EQ4	208.	2.197	2.81	2.185	1.53
B-B70-EQ5	208.	2.301	3.27	2.395	1.76
B-B70-EQ6	208.	2.147	2.64	2.091	1.44
B-B70-EQD	208.	2.734	12.47	3.481	7.81
B-B70-EQD-M	208.	2.736	12.56	3.490	7.93
B-B70-FIRE PMP	208.	2.071	1.40	1.781	0.68
B-B70-FP-TAP	208.	2.740	12.08	3.794	9.56
B-B70-FPMP M	208.	2.778	14.14	3.795	10.59
B-B70-GEN	208.	2.883	20.00	3.814	15.93
B-B70-K	208.	2.320	2.95	2.715	1.53
B-B70-LP-4	208.	2.109	3.51	2.363	2.03
B-B70-LP1	208.	2.227	3.16	2.560	1.72
B-B70-LP3	208.	2.222	4.13	2.626	2.41
B-B70-LS1	208.	2.247	2.25	2.168	1.16
B-B70-LS2	208.	2.081	1.82	1.861	0.96
B-B70-LS3	208.	2.299	2.84	2.342	1.50
B-B70-LS4	208.	2.121	2.24	1.996	1.20
B-B70-LS5	208.	2.238	2.60	2.216	1.38
B-B70-LS6	208.	2.064	2.10	1.899	1.14
B-B70-LSD	208.	2.723	9.64	3.436	5.56
B-B70-LSD-M	208.	2.725	9.70	3.444	5.62
B-B70-MDP	208.	2.548	8.72	3.523	6.90

B-B70-MDP-M	208.	2.549	8.75	3.526	6.96
B-B70-PP2	208.	2.329	4.97	2.899	2.99
B-B70-PP220	208.	2.164	3.45	2.465	1.96
B-B70-STRTLGHT	208.	2.356	3.25	2.834	1.71

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E 3 PHASE	X/R	F A U L T LINE/GRND	D U T I E S (KA) X/R
B-B78-1P	208.	1.754	2.75	1.981	1.57
B-B78-78AE1	208.	2.462	1.19	1.688	0.88
B-B78-A/C	208.	1.594	1.84	1.572	1.00
B-B78-ATS TAP	208.	2.054	5.74	2.843	4.25
B-B78-ATS-CRD	208.	4.406	2.35	3.545	1.63
B-B78-ATS-E1	208.	4.763	4.49	4.068	3.20
B-B78-ATS-LS1	208.	4.492	2.68	3.672	1.87
B-B78-ATSG9578	208.	2.476	1.19	1.698	0.88
B-B78-BARBER	208.	1.614	1.29	1.452	0.61
B-B78-CONRM-AC	208.	1.342	1.11	1.095	0.57
B-B78-CRD	208.	2.749	1.30	1.924	0.95
B-B78-E1	208.	4.714	4.41	4.013	3.15
B-B78-ELEV-1	208.	2.037	4.74	2.771	3.09
B-B78-ELEV-2	208.	2.037	4.74	2.771	3.09
B-B78-FLPNL	208.	1.707	2.36	1.842	1.31
B-B78-KK	208.	1.836	2.88	2.158	1.62
B-B78-L10	208.	1.756	3.66	2.055	2.29
B-B78-LP-1	208.	1.774	3.04	2.049	1.77
B-B78-LP-13	208.	1.722	3.51	1.979	2.18
B-B78-LP-14	208.	1.689	3.38	1.907	2.10
B-B78-LP-15	208.	1.657	3.26	1.840	2.02
B-B78-LP-2	208.	1.961	4.18	2.546	2.60
B-B78-LP-4	208.	1.555	2.05	1.550	1.16
B-B78-LP-8	208.	1.978	4.92	2.619	3.33
B-B78-LP10	208.	1.707	3.40	1.944	2.11
B-B78-LP13	208.	1.666	3.29	1.859	2.04
B-B78-LP3	208.	1.961	4.18	2.546	2.60
B-B78-LP6	208.	1.903	3.84	2.388	2.34
B-B78-LP7	208.	1.750	3.53	2.036	2.18
B-B78-LSD	208.	4.434	2.62	3.607	1.83
B-B78-MDP	208.	2.171	7.45	3.217	7.28
B-B78-MDP-M	208.	2.171	7.45	3.218	7.29
B-B78-MEC-1 AC	208.	1.785	4.04	2.133	2.60
B-B78-MEC2-A/C	208.	2.047	5.32	2.816	3.72
B-B78-PHARM AC	208.	1.614	1.29	1.452	0.61
B-B78-PHV	208.	1.482	1.39	1.320	0.72
B-B78-PK	208.	1.740	2.89	1.968	1.69

B-B78-PNL-330A	208.	1.932	4.22	2.477	2.66
B-B78-PULM 78B	208.	2.054	5.74	2.843	4.25
B-B78-QP	208.	2.008	3.86	2.649	2.28
B-B78A-PNL-2	208.	2.037	4.74	2.771	3.09

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B8 2ND FLR	208.	1.957	5.76	2.620	4.66
B-B8 HYDRO ELV	480.	1.868	2.34	1.539	1.61
B-B8-208V-MAIN	208.	2.051	6.51	2.892	5.95
B-B8-480V ATS	480.	2.193	13.46	2.007	12.30
B-B8-480V PNL	480.	2.188	13.03	1.998	11.71
B-B8-ATS	208.	1.996	5.83	2.727	4.76
B-B8-BS	208.	1.578	1.78	1.555	0.96
B-B8-CMOP	208.	3.390	3.07	3.641	2.01
B-B8-COMP	480.	1.593	1.26	1.175	0.85
B-B8-ELEV	208.	3.589	4.49	3.782	2.70
B-B8-FDR	208.	3.707	4.45	4.221	3.04
B-B8-FLEXPMACH	480.	1.784	1.68	1.400	1.13
B-B8-GE BKR	480.	0.893	6.48	1.265	5.91
B-B8-GEN	480.	2.226	16.92	2.064	17.98
B-B8-J-BOX	208.	3.634	4.45	3.946	2.82
B-B8-L8B	208.	1.792	2.59	2.063	1.45
B-B8-LB1	208.	1.796	3.72	2.173	2.38
B-B8-LB2	208.	1.770	3.57	2.109	2.26
B-B8-MAIN BUS	208.	2.046	6.47	2.875	5.88
B-B8-MDP-8	208.	2.042	6.44	2.863	5.82
B-B8-PNL-PK	208.	1.985	5.35	2.690	4.05
B-B8-PP1	208.	2.030	6.17	2.825	5.30
B-B8-PP1-M	208.	2.030	6.18	2.828	5.33
B-B8-SYLV	208.	2.009	6.09	2.766	5.18
B-B8-TXMR PRI	480.	2.185	12.42	1.992	10.89
B-B8-TXMR SEC	208.	3.773	4.49	4.480	3.31
B-B80-ATS-EQ	208.	1.691	0.57	1.053	0.42
B-B80-E1	208.	1.621	0.56	1.006	0.41
B-B80-L1-1	208.	1.512	1.49	1.435	0.77
B-B80-L1-3	208.	1.595	1.62	1.588	0.83
B-B80-LB-1	208.	1.829	3.91	2.353	2.63
B-B80-LB-E	208.	1.424	0.52	0.876	0.39
B-B80-MDP	208.	1.923	5.51	2.641	4.77
B-B80-MDP-M	208.	1.941	5.70	2.693	5.13
B-B80-P1	208.	1.841	4.05	2.388	2.78
B-B80-P5	208.	1.171	0.93	0.911	0.48
B-B80-PB-1	208.	1.543	1.48	1.475	0.75

B-B80-PB-2	208.	1.497	0.53	0.924	0.40
B-B81-MDP	208.	1.526	3.68	1.985	3.22
B-B81-MDP-M	208.	1.527	3.69	1.988	3.23
B-B82-ATS-EMER	208.	3.673	1.86	2.786	1.33

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-B82-EMER	208.	3.587	1.82	2.701	1.30
B-B82-EMERG-M	208.	3.591	1.82	2.707	1.30
B-B82-MDP	208.	1.757	5.05	2.373	4.48
B-B82-MDP-M	208.	1.757	5.06	2.375	4.49
B-B9-*PNLXX	208.	1.887	3.48	2.425	2.42
B-B9-*PNLYY	208.	1.868	3.12	2.366	2.11
B-B9-*PNLZZ	208.	1.938	5.40	2.579	4.41
B-B9-ATS BKR	208.	1.985	5.93	2.724	4.97
B-B9-EM	208.	1.978	5.82	2.702	4.80
B-B9-L91A	208.	1.535	2.18	1.566	1.27
B-B9-L91A-M	208.	1.536	2.18	1.568	1.27
B-B9-L92	208.	1.731	2.21	2.010	1.44
B-B9-L9A	208.	1.817	3.19	2.239	2.20
B-B9-L9B	208.	1.950	4.75	2.614	3.63
B-B9-LPN	208.	1.382	1.52	1.252	0.86
B-B9-LPS	208.	1.774	2.66	2.064	1.55
B-B9-MAIN	208.	2.024	6.28	2.838	5.59
B-B9-MDP	208.	2.007	6.13	2.787	5.32
B-B9-STRT LGHT	208.	1.820	2.45	2.112	1.33
B-B9-TAP	208.	1.969	5.13	2.671	4.04
B-B92 GEN	208.	6.931	20.00	6.931	20.00
B-B92-ATS	208.	6.035	3.14	5.446	2.02
B-B92-EMDP	208.	6.852	17.60	6.812	16.05
B-B92-EMDP-M	208.	6.855	17.80	6.817	16.48
B-B92-PNL-E1	208.	5.680	2.42	4.898	1.56
B-B93-ATS-EMER	208.	5.992	3.12	5.391	2.02
B-B93-EMDP	208.	6.802	16.43	6.738	14.44
B-B93-EMDP-M	208.	6.805	16.60	6.743	14.79
B-B93-EMDP1	208.	6.771	15.78	6.692	13.61
B-B93-GEN	208.	6.931	20.00	6.931	20.00
B-B94-ATS	208.	6.166	3.68	5.675	2.39
B-B94-E1	208.	5.469	2.18	4.605	1.41
B-B94-EMDP	208.	6.802	16.43	6.738	14.44
B-B94-EMDP-M	208.	6.805	16.60	6.743	14.79
B-B94-GEN	208.	6.931	20.00	6.931	20.00
B-B95-EMDP	208.	6.802	16.43	6.738	14.44
B-B95-EMDP-M	208.	6.805	16.60	6.743	14.79

B-B95-GEN	208.	6.931	20.00	6.931	20.00
B-SW-MV-1	13800.	0.034	7.50	0.049	6.90
B-SW-MV-2	13800.	0.034	7.54	0.049	6.95
B-SWGR27 TAP	13800.	0.034	7.62	0.049	7.07

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO	NAME	VOLTAGE L-L	A V A I L A B L E F A U L T 3 PHASE	X/R	D U T I E S (KA) LINE/GRND	X/R
B-T-13-PRI		13800.	0.034	7.53	0.049	7.05
B-T-B1-PRI		13800.	0.034	7.66	0.049	7.07
B-T-B1-SEC		208.	1.598	4.10	2.150	3.96
B-T-B10-PRI		13800.	0.034	7.55	0.049	7.05
B-T-B10-SEC		208.	1.701	4.39	2.274	4.18
B-T-B12-PRI		13800.	0.034	7.52	0.049	7.03
B-T-B12-SEC		208.	1.574	4.01	2.121	3.88
B-T-B17-PRI		13800.	0.034	7.59	0.049	6.97
B-T-B17-SEC		208.	1.958	5.93	2.746	5.59
B-T-B18-PRI		13800.	0.034	7.59	0.049	6.96
B-T-B18-SEC		208.	1.944	5.88	2.727	5.54
B-T-B19-PRI		13800.	0.034	7.58	0.049	7.01
B-T-B19-SEC		208.	2.099	7.08	3.079	6.88
B-T-B2-LED-PRI		480.	0.939	5.14	1.338	3.55
B-T-B2-LED-SEC		208.	1.462	2.94	1.880	2.61
B-T-B2-PRI		13800.	0.034	7.65	0.049	7.07
B-T-B2-SEC2		208.	2.206	5.56	3.254	4.77
B-T-B2-SEC3		208.	2.082	6.40	3.024	6.15
B-T-B2-SEC4		480.	0.963	7.16	1.424	6.95
B-T-B22-PRI		13800.	0.034	7.59	0.049	7.03
B-T-B22-SEC		480.	0.900	6.69	1.287	6.34
B-T-B3-PRI		13800.	0.034	7.57	0.049	7.06
B-T-B3-SEC		208.	2.066	6.64	2.989	6.37
B-T-B30-PRI		13800.	0.034	7.64	0.049	7.04
B-T-B30-SEC		208.	1.598	4.10	2.150	3.95
B-T-B33-PRI		13800.	0.034	7.61	0.049	7.05
B-T-B33-SEC		208.	1.710	4.43	2.285	4.22
B-T-B4-PRI		13800.	0.034	7.55	0.049	6.97
B-T-B4-SEC		208.	2.133	7.14	3.129	6.94
B-T-B5-PRI		13800.	0.034	7.50	0.049	6.90
B-T-B5-SEC		208.	2.125	6.82	3.072	6.53
B-T-B6-PRI		13800.	0.034	7.51	0.049	6.92
B-T-B6-SEC		208.	2.125	6.83	3.072	6.53
B-T-B60-PRI		13800.	0.034	7.61	0.049	6.98
B-T-B60-SEC		208.	1.796	5.35	2.482	5.05
B-T-B61-PRI		13800.	0.034	7.55	0.049	6.97
B-T-B61-SEC		208.	1.982	6.32	2.840	6.03

B-T-B62-PRI	13800.	0.034	7.56	0.049	6.98
B-T-B62-SEC	208.	2.124	6.86	3.071	6.56
B-T-B7-PRI	13800.	0.034	7.53	0.049	6.94
B-T-B7-SEC	208.	2.076	6.65	2.968	6.30

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
B-T-B70-PRI	13800.	0.034	7.67	0.049	7.08
B-T-B70-SEC	208.	2.638	10.03	3.794	9.22
B-T-B78-PRI	13800.	0.034	7.56	0.049	7.06
B-T-B78-SEC	208.	2.171	7.47	3.220	7.35
B-T-B8-2-SEC	480.	0.900	6.67	1.287	6.32
B-T-B8-PRI	13800.	0.034	7.56	0.049	6.99
B-T-B8-SEC	208.	2.077	6.67	2.969	6.32
B-T-B80-PRI	13800.	0.034	7.54	0.049	6.96
B-T-B80-SEC	208.	1.959	5.91	2.746	5.57
B-T-B81-PRI	13800.	0.034	7.51	0.049	7.03
B-T-B81-SEC	208.	1.576	4.02	2.124	3.89
B-T-B82-PRI	13800.	0.034	7.56	0.049	6.98
B-T-B82-SEC	208.	1.793	5.33	2.478	5.03
B-T-B9-PRI	13800.	0.034	7.54	0.049	7.05
B-T-B9-SEC	208.	2.059	6.59	2.945	6.25
B0B70-LP2	208.	2.118	2.64	2.287	1.42
BUS-0017	13800.	0.034	7.64	0.049	7.07
BUS-0019	13800.	0.034	7.64	0.049	7.07
BUS-0063	13800.	0.034	7.57	0.049	7.06
BUS-0065	13800.	0.034	7.57	0.049	7.06
BUS-0076	208.	1.436	2.81	1.812	2.39
BUS-0091	208.	1.787	2.06	1.964	1.12
BUS-0097*	208.	2.053	5.77	2.897	4.82
BUS-0106*	208.	2.061	5.92	2.922	5.08
BUS-0131	208.	1.986	6.01	2.746	5.11
BUS-0140	208.	1.993	6.00	2.766	5.09
BUS-0172*	208.	2.086	6.26	2.967	5.09
BUS-0227	208.	2.102	6.72	3.022	5.89
BUS-0258*	208.	2.003	5.60	2.705	4.34
BUS-0269	208.	2.011	5.19	2.719	3.80
BUS-0290	208.	2.028	5.43	2.772	4.10
BUS-0302	208.	2.003	5.75	2.707	4.57
BUS-0327	208.	1.891	5.38	2.445	4.15
BUS-0344	208.	1.875	4.91	2.397	3.56
BUS-0360	208.	1.697	2.82	1.908	1.68
BUS-0375	208.	1.998	5.88	2.733	4.82
BUS-0376	208.	1.996	5.83	2.727	4.76

BUS-0380	480.	0.892	6.45	1.261	5.84
BUS-0452	208.	1.841	3.94	2.400	2.66
BUS-0481	480.	0.871	6.11	1.201	5.19
BUS-0518	208.	1.907	5.37	2.610	4.27

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
BUS-0520	208.	1.906	5.74	2.612	4.87
BUS-0546	208.	2.062	5.89	2.877	4.74
BUS-0554	208.	2.062	5.89	2.877	4.74
BUS-0581	208.	2.489	7.39	3.349	5.19
BUS-0582	208.	2.506	8.06	3.401	6.00
BUS-0612	208.	2.762	13.56	3.556	8.81
BUS-0613	208.	2.751	10.26	3.512	6.01
BUS-0618	208.	2.031	5.36	2.772	3.79
BUS-0620	208.	2.003	5.16	2.692	3.57
BUS-0652	208.	1.718	2.62	1.897	1.49
BUS-0664	208.	1.803	3.32	2.253	2.07
BUS-0676	208.	6.035	3.14	5.446	2.02
BUS-0677	208.	2.483	1.19	1.704	0.88
BUS-0678	208.	2.939	0.84	1.958	0.58
BUS-0680	208.	2.177	0.82	1.418	0.60
BUS-0685	208.	5.992	3.12	5.391	2.02
BUS-0688	208.	1.691	0.57	1.053	0.42
BUS-0689	208.	3.673	1.86	2.786	1.33
BUS-0691	208.	4.121	3.66	3.367	2.65
BUS-0692	208.	2.251	2.35	1.632	1.83
BUS-0694	208.	3.663	1.86	2.777	1.33
BUS-0695	208.	1.772	1.16	1.183	0.90
BUS-0700	208.	2.043	2.25	1.463	1.77
BUS-0701	208.	2.738	2.59	2.045	1.98
BUS-0702	208.	3.943	3.48	3.182	2.54
BUS-0703	208.	2.506	2.47	1.845	1.91
BUS-0704	208.	6.166	3.68	5.675	2.39
BUS-0705	208.	2.010	1.22	1.361	0.94
BUS-0706	208.	1.588	1.11	1.049	0.87
BUS-0707	208.	2.406	1.34	1.669	1.01
BUS-0708	208.	3.475	1.76	2.596	1.26
BUS-0712	208.	4.406	2.35	3.545	1.63
BUS-0713	208.	2.476	1.19	1.698	0.88
BUS-0714	208.	4.492	2.68	3.672	1.87
BUS-0715	208.	4.763	4.49	4.068	3.20
BUS-0718	208.	4.793	4.99	4.115	3.58
BUS-0719	208.	4.763	4.49	4.068	3.20

BUS-0722	208.	2.757	2.24	2.039	1.69
BUS-0723	208.	2.141	1.69	1.505	1.31
BUS-0725	480.	2.193	13.46	2.007	12.30
BUS-0727	480.	1.772	15.61	1.757	13.48

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

F A U L T S T U D Y S U M M A R Y
(FOR APPLICATION OF LOW VOLTAGE BREAKERS)
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO	NAME	VOLTAGE L-L	A V A I L A B L E F A U L T D U T I E S (KA) 3 PHASE	X/R	LINE/GRND	X/R
BUS-0730		208.	1.813	4.17	2.197	2.70
BUS-0736		208.	2.966	2.30	2.221	1.73
BUS-0739		208.	1.984	5.92	2.719	4.94
BUS-0740		208.	1.888	4.78	2.532	3.63
BUS-0744		208.	1.726	4.68	2.285	3.84
bB-B7-MC1		208.	2.703	1.12	1.856	0.82

706 FAULTED BUSES, 710 BRANCHES, 8 CONTRIBUTIONS
UNBALANCED FAULTS REQUESTED

*** SHORT CIRCUIT STUDY COMPLETE ***

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B1-ATS-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B1-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B1-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B10 DISC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B10 EMRG TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B10-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B12-MAP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B12-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-13	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-14	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-15	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-GARAGE	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MDP	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MDP-M	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MGR H16	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-TXMR SEC	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-UNKNOWN	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B17-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-A/C-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-AC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ACB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ANIMALRM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B17-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-DP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-EMAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP21	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP22	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPA1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2ND-FL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2NDFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-AC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-AC2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-ATS-EMRG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B18-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NCP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP21	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP22	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP23	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-STRT LHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-TAP BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-200A PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-B1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-L1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-L2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDPA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B19-P4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-PS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-CRIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LED3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-BATTERYCH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-CATSCAN	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-CRIT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTAL LB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTSUCPM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ELEV-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EPNL-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EPNL-B-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-L7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L9E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB1E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LED-3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-MDP-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPA-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPB-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MEDAIRCOM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL 1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-D2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-L11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-PNL-M1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-P	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-POD2PP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-TEL COMM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-UNIT-1	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-UNIT-2	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY-124	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY124	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B21-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B21-P2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-ATS-EMER	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-EMERG	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-EMERG-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-GEN	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-L1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-MDP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B22-MDP-M VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-N1 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-N1-M VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-P1 VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-P2 VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T1-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T1-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-T2-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T2-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-T22-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-T3 PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T4-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T4-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B27-SWGR E/Z: 0.034 KA AT -82.52 DEG (0.82 MVA) X/R: 7.62
SYM*1.6: 0.055 KA MOMENTARY BASED ON X/R: 0.047 KA
SYM*2.7: 0.093 KA CREST BASED ON X/R: 0.081 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.1418 + J229.5945 OHMS
CONTRIBUTIONS: B-SWGR27 TAP 0.000 KA ANG: -113.79
CBL-0004 BUS-0017 0.034 KA ANG: -82.52

B-B27-SWGR-M1 E/Z: 0.034 KA AT -82.52 DEG (0.82 MVA) X/R: 7.62
SYM*1.6: 0.055 KA MOMENTARY BASED ON X/R: 0.047 KA
SYM*2.7: 0.093 KA CREST BASED ON X/R: 0.081 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.1419 + J229.5947 OHMS
CONTRIBUTIONS: B-SWGR27 TAP 0.034 KA ANG: -82.52

B-B3-1ST FL VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B3-ALDN KIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ATS-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ATSTEL RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP MF	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-DBL GRILL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-FRZN FOOD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-HYDRO ELV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-KP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH HVAC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-P3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-P7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-STRT LTS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B3-STRT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TELE PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TRAY LINE	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B33-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B33-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-4EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-4EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-BUS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ELEV#4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-HYDROELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-JBOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP10-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP11-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP12-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP13-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP14-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP9-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS12-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS13-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-PP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-HYDR ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B5-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-NEXTEL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-PNL-H	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-PNL-H-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-TEMP TRAI	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B55-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQMACH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MACH SHOP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-P6-CS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B60-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B60-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61 STRT LGH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-COMP RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-DP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-KITCHEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B61-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MCC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATTC PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-BL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-BP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-KP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B62-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-OT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-PAD RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-STRT LGT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MCC-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MCC-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-SRTLGHT-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70 -BLDG-71	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70 GEN-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATTIC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-CHLLR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EM-TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FIRE PMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-FP-TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FPMP M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-K	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP-4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-PP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-PP220	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-STRTLGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-1P	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-78AE1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B78-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATSG9578	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-BARBER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-CONRM-AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ELEV-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ELEV-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-FLPNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-KK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-L10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B78-LP10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MEC-1 AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MEC2-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PHARM AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PHV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PNL-330A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PULM 78B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-QP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78A-PNL-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8 2ND FLR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8 HYDRO ELV	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-208V-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-480V ATS	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-480V PNL	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B8-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-BS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-CMOP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-COMP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FDR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FLEXPMACH	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-GE BKR	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-GEN	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-J-BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-L8B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-LB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-LB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-MAIN BUS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-MDP-8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PNL-PK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-SYLV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-TXMR PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-TXMR SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B80-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-L1-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-L1-3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-LB-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-LB-E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-P5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-PB-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-PB-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B81-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B81-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-ATS-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLXX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLYY	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLZZ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-ATS BKR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B9-EM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L91A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L91A-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L92	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L9A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L9B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-LPN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-LPS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92 GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-PNL-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-ATS-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-EMDP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B94-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B94-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B94-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B94-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B94-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B95-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B95-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-B95-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-SW-MV-1	E/Z:	0.034 KA AT	-82.40 DEG (0.82 MVA)	X/R:	7.50
	SYM*1.6:	0.055 KA	MOMENTARY BASED ON X/R:		0.047 KA
	SYM*2.7:	0.093 KA	CREST BASED ON X/R:		0.081 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE= 30.6380 + J229.7620		OHMS
	CONTRIBUTIONS:	B-T-B5-PRI	0.034 KA	ANG:	-82.40
B-SW-MV-2	E/Z:	0.034 KA AT	-82.44 DEG (0.82 MVA)	X/R:	7.54
	SYM*1.6:	0.055 KA	MOMENTARY BASED ON X/R:		0.047 KA
	SYM*2.7:	0.093 KA	CREST BASED ON X/R:		0.081 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE= 30.4740 + J229.7066		OHMS
	CONTRIBUTIONS:	B-T-B80-PRI	0.034 KA	ANG:	-82.44
B-SWGR27 TAP	E/Z:	0.034 KA AT	-82.52 DEG (0.82 MVA)	X/R:	7.62
	SYM*1.6:	0.055 KA	MOMENTARY BASED ON X/R:		0.047 KA
	SYM*2.7:	0.093 KA	CREST BASED ON X/R:		0.081 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE= 30.1418 + J229.5946		OHMS
	CONTRIBUTIONS:	B-B27-SWGR-M1	0.000 KA	ANG:	-155.42
	CBL-0003	B-B27-SWGR	0.034 KA	ANG:	-82.52
B-T-13-PRI	E/Z:	0.034 KA AT	-82.43 DEG (0.82 MVA)	X/R:	7.53
	SYM*1.6:	0.055 KA	MOMENTARY BASED ON X/R:		0.047 KA
	SYM*2.7:	0.093 KA	CREST BASED ON X/R:		0.081 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE= 30.5098 + J229.7188		OHMS
	CONTRIBUTIONS:	B-T-B9-PRI	0.034 KA	ANG:	-82.43

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-T-B1-PRI	E/Z:	0.034 KA AT -82.56 DEG (0.82 MVA)		X/R:	7.66
	SYM*1.6:	0.055 KA	MOMENTARY BASED ON X/R:		0.047 KA
	SYM*2.7:	0.093 KA	CREST BASED ON X/R:		0.081 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 29.9858 + J229.5419 OHMS			
	CONTRIBUTIONS:	B-T-B70-PRI	0.034 KA	ANG:	-82.56
B-T-B1-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)			
B-T-B10-PRI	E/Z:	0.034 KA AT -82.45 DEG (0.82 MVA)		X/R:	7.55
	SYM*1.6:	0.055 KA	MOMENTARY BASED ON X/R:		0.047 KA
	SYM*2.7:	0.093 KA	CREST BASED ON X/R:		0.081 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 30.4258 + J229.6904 OHMS			
	CONTRIBUTIONS:	B-T-B78-PRI	0.034 KA	ANG:	-82.45
B-T-B10-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)			
B-T-B12-PRI	E/Z:	0.034 KA AT -82.42 DEG (0.82 MVA)		X/R:	7.52
	SYM*1.6:	0.055 KA	MOMENTARY BASED ON X/R:		0.047 KA
	SYM*2.7:	0.093 KA	CREST BASED ON X/R:		0.081 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 30.5578 + J229.7350 OHMS			
	CONTRIBUTIONS:	B-T-13-PRI	0.034 KA	ANG:	-82.42
B-T-B12-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)			
B-T-B17-PRI	E/Z:	0.034 KA AT -82.50 DEG (0.82 MVA)		X/R:	7.59
	SYM*1.6:	0.055 KA	MOMENTARY BASED ON X/R:		0.047 KA
	SYM*2.7:	0.093 KA	CREST BASED ON X/R:		0.081 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 30.2378 + J229.6269 OHMS			
	CONTRIBUTIONS:	B-T-B17-SEC	0.000 KA	ANG:	29.30
	CBL-0013	B-T-B60-PRI	0.034 KA	ANG:	-82.50
B-T-B17-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)			
B-T-B18-PRI	E/Z:	0.034 KA AT -82.49 DEG (0.82 MVA)		X/R:	7.59
	SYM*1.6:	0.055 KA	MOMENTARY BASED ON X/R:		0.047 KA
	SYM*2.7:	0.093 KA	CREST BASED ON X/R:		0.081 KA
	VOLTAGE:	13800. EQUIV. IMPEDANCE= 30.2538 + J229.6323 OHMS			
	CONTRIBUTIONS:	B-T-B17-PRI	0.034 KA	ANG:	-82.49
B-T-B18-SEC	VOLTAGE:	208. (SEE LOW VOLTAGE REPORT)			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-T-B19-PRI	E/Z:	0.034 KA AT	-82.48 DEG (	0.82 MVA)	X/R: 7.58
	SYM*1.6:	0.055 KA	MOMENTARY BASED ON X/R:		0.047 KA
	SYM*2.7:	0.093 KA	CREST BASED ON X/R:		0.081 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE=	30.3018 + J229.6485	OHMS
	CONTRIBUTIONS:	B-T-B82-PRI	0.000 KA	ANG:	-87.51
	CBL-0023	B-T-B22-PRI	0.034 KA	ANG:	-82.48
B-T-B19-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-T-B2-LED-PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)		
B-T-B2-LED-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-T-B2-PRI	E/Z:	0.034 KA AT	-82.55 DEG (	0.82 MVA)	X/R: 7.65
	SYM*1.6:	0.055 KA	MOMENTARY BASED ON X/R:		0.047 KA
	SYM*2.7:	0.093 KA	CREST BASED ON X/R:		0.081 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE=	30.0178 + J229.5527	OHMS
	CONTRIBUTIONS:	BUS-0019	0.000 KA	ANG:	-158.98
	CBL-0017	B-T-B1-PRI	0.034 KA	ANG:	-82.55
	3WINDING	B-T-B2-PRI	0.000 KA	ANG:	119.96
B-T-B2-SEC2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-T-B2-SEC3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)		
B-T-B2-SEC4	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)		
B-T-B22-PRI	E/Z:	0.034 KA AT	-82.50 DEG (	0.82 MVA)	X/R: 7.59
	SYM*1.6:	0.055 KA	MOMENTARY BASED ON X/R:		0.047 KA
	SYM*2.7:	0.093 KA	CREST BASED ON X/R:		0.081 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE=	30.2378 + J229.6269	OHMS
	CONTRIBUTIONS:	B-T-B19-PRI	0.000 KA	ANG:	-85.73
	CBL-0024	B-T-B33-PRI	0.034 KA	ANG:	-82.50
B-T-B22-SEC	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)		
B-T-B3-PRI	E/Z:	0.034 KA AT	-82.47 DEG (	0.82 MVA)	X/R: 7.57
	SYM*1.6:	0.055 KA	MOMENTARY BASED ON X/R:		0.047 KA
	SYM*2.7:	0.093 KA	CREST BASED ON X/R:		0.081 KA
	VOLTAGE:	13800.	EQUIV. IMPEDANCE=	30.3458 + J229.6634	OHMS
	CONTRIBUTIONS:	B-T-B78-PRI	0.000 KA	ANG:	33.88

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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                CONTRIBUTIONS TO  B-T-B3-PRI     (CONTINUED)
                CBL-0033        BUS-0065          0.034 KA      ANG:   -82.47

 B-T-B3-SEC     VOLTAGE:    208.  ( SEE LOW VOLTAGE REPORT )

 B-T-B30-PRI    E/Z:      0.034 KA AT  -82.55 DEG (   0.82 MVA)  X/R:     7.64
                SYM*1.6:    0.055 KA       MOMENTARY BASED ON X/R:    0.047 KA
                SYM*2.7:    0.093 KA           CREST BASED ON X/R:    0.081 KA
                VOLTAGE:  13800.   EQUIV. IMPEDANCE= 30.0298 + J229.5567  OHMS
                CONTRIBUTIONS:  B-T-B60-PRI        0.000 KA      ANG:    -6.91
                CBL-0014        B-T-B70-PRI        0.034 KA      ANG:   -82.55

 B-T-B30-SEC    VOLTAGE:    208.  ( SEE LOW VOLTAGE REPORT )

 B-T-B33-PRI    E/Z:      0.034 KA AT  -82.51 DEG (   0.82 MVA)  X/R:     7.61
                SYM*1.6:    0.055 KA       MOMENTARY BASED ON X/R:    0.047 KA
                SYM*2.7:    0.093 KA           CREST BASED ON X/R:    0.081 KA
                VOLTAGE:  13800.   EQUIV. IMPEDANCE= 30.1898 + J229.6107  OHMS
                CONTRIBUTIONS:  B-B27-SWGR         0.034 KA      ANG:   -82.51

 B-T-B33-SEC    VOLTAGE:    208.  ( SEE LOW VOLTAGE REPORT )

 B-T-B4-PRI     E/Z:      0.034 KA AT  -82.45 DEG (   0.82 MVA)  X/R:     7.55
                SYM*1.6:    0.055 KA       MOMENTARY BASED ON X/R:    0.047 KA
                SYM*2.7:    0.093 KA           CREST BASED ON X/R:    0.081 KA
                VOLTAGE:  13800.   EQUIV. IMPEDANCE= 30.4260 + J229.6904  OHMS
                CONTRIBUTIONS:  B-T-B80-PRI        0.000 KA      ANG:     2.93
                CBL-0022        B-T-B82-PRI        0.034 KA      ANG:   -82.45

 B-T-B4-SEC     VOLTAGE:    208.  ( SEE LOW VOLTAGE REPORT )

 B-T-B5-PRI     E/Z:      0.034 KA AT  -82.41 DEG (   0.82 MVA)  X/R:     7.50
                SYM*1.6:    0.055 KA       MOMENTARY BASED ON X/R:    0.047 KA
                SYM*2.7:    0.093 KA           CREST BASED ON X/R:    0.081 KA
                VOLTAGE:  13800.   EQUIV. IMPEDANCE= 30.6220 + J229.7566  OHMS
                CONTRIBUTIONS:  B-T-B6-PRI         0.034 KA      ANG:   -82.41
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SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-T-B5-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B6-PRI E/Z: 0.034 KA AT -82.42 DEG (0.82 MVA) X/R: 7.51
SYM*1.6: 0.055 KA MOMENTARY BASED ON X/R: 0.047 KA
SYM*2.7: 0.093 KA CREST BASED ON X/R: 0.081 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.5740 + J229.7404 OHMS
CONTRIBUTIONS: B-T-B7-PRI 0.034 KA ANG: -82.42

B-T-B6-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B60-PRI E/Z: 0.034 KA AT -82.51 DEG (0.82 MVA) X/R: 7.61
SYM*1.6: 0.055 KA MOMENTARY BASED ON X/R: 0.047 KA
SYM*2.7: 0.093 KA CREST BASED ON X/R: 0.081 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.1898 + J229.6107 OHMS
CONTRIBUTIONS: B-T-B17-PRI 0.000 KA ANG: -9.37
CBL-0015 B-T-B30-PRI 0.034 KA ANG: -82.51

B-T-B60-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B61-PRI E/Z: 0.034 KA AT -82.45 DEG (0.82 MVA) X/R: 7.55
SYM*1.6: 0.055 KA MOMENTARY BASED ON X/R: 0.047 KA
SYM*2.7: 0.093 KA CREST BASED ON X/R: 0.081 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.4338 + J229.6931 OHMS
CONTRIBUTIONS: B-T-B62-PRI 0.034 KA ANG: -82.45

B-T-B61-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B62-PRI E/Z: 0.034 KA AT -82.46 DEG (0.82 MVA) X/R: 7.56
SYM*1.6: 0.055 KA MOMENTARY BASED ON X/R: 0.047 KA
SYM*2.7: 0.093 KA CREST BASED ON X/R: 0.081 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3858 + J229.6769 OHMS
CONTRIBUTIONS: B-T-B8-PRI 0.034 KA ANG: -82.46

B-T-B62-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B7-PRI E/Z: 0.034 KA AT -82.43 DEG (0.82 MVA) X/R: 7.53
SYM*1.6: 0.055 KA MOMENTARY BASED ON X/R: 0.047 KA
SYM*2.7: 0.093 KA CREST BASED ON X/R: 0.081 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.5100 + J229.7188 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-T-B7-PRI (CONTINUED)
CONTRIBUTIONS: B-T-B61-PRI 0.034 KA ANG: -82.43

B-T-B7-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B70-PRI E/Z: 0.034 KA AT -82.57 DEG (0.82 MVA) X/R: 7.67
SYM*1.6: 0.055 KA MOMENTARY BASED ON X/R: 0.047 KA
SYM*2.7: 0.093 KA CREST BASED ON X/R: 0.081 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 29.9178 + J229.5189 OHMS
CONTRIBUTIONS: B-T-B30-PRI 0.000 KA ANG: -10.03
T-B70 B-T-B70-SEC 0.034 KA ANG: -82.57

B-T-B70-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B78-PRI E/Z: 0.034 KA AT -82.47 DEG (0.82 MVA) X/R: 7.56
SYM*1.6: 0.055 KA MOMENTARY BASED ON X/R: 0.047 KA
SYM*2.7: 0.093 KA CREST BASED ON X/R: 0.081 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3778 + J229.6742 OHMS
CONTRIBUTIONS: B-T-B78-SEC 0.000 KA ANG: 115.87
CBL-0032 B-T-B3-PRI 0.034 KA ANG: -82.47

B-T-B78-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B8-2-SEC VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-T-B8-PRI E/Z: 0.034 KA AT -82.47 DEG (0.82 MVA) X/R: 7.56
SYM*1.6: 0.055 KA MOMENTARY BASED ON X/R: 0.047 KA
SYM*2.7: 0.093 KA CREST BASED ON X/R: 0.081 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3618 + J229.6688 OHMS
CONTRIBUTIONS: B-B27-SWGR 0.034 KA ANG: -82.47

B-T-B8-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B80-PRI E/Z: 0.034 KA AT -82.45 DEG (0.82 MVA) X/R: 7.54
SYM*1.6: 0.055 KA MOMENTARY BASED ON X/R: 0.047 KA
SYM*2.7: 0.093 KA CREST BASED ON X/R: 0.081 KA
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.4500 + J229.6985 OHMS
CONTRIBUTIONS: B-T-B80-SEC 0.000 KA ANG: -163.06
CBL-0020 B-T-B4-PRI 0.034 KA ANG: -82.45

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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CONTRIBUTIONS TO B-T-B80-PRI (CONTINUED)

B-T-B80-SEC	VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)	
B-T-B81-PRI	E/Z: 0.034 KA AT -82.42 DEG (0.82 MVA) X/R:	7.51
	SYM*1.6: 0.055 KA MOMENTARY BASED ON X/R:	0.047 KA
	SYM*2.7: 0.093 KA CREST BASED ON X/R:	0.081 KA
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.5738 + J229.7404 OHMS	
	CONTRIBUTIONS: B-T-B12-PRI 0.034 KA ANG:	-82.42
B-T-B81-SEC	VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)	
B-T-B82-PRI	E/Z: 0.034 KA AT -82.47 DEG (0.82 MVA) X/R:	7.56
	SYM*1.6: 0.055 KA MOMENTARY BASED ON X/R:	0.047 KA
	SYM*2.7: 0.093 KA CREST BASED ON X/R:	0.081 KA
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3780 + J229.6743 OHMS	
	CONTRIBUTIONS: B-T-B4-PRI 0.000 KA ANG:	-80.26
	CBL-0021 B-T-B19-PRI 0.034 KA ANG:	-82.47
B-T-B82-SEC	VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)	
B-T-B9-PRI	E/Z: 0.034 KA AT -82.44 DEG (0.82 MVA) X/R:	7.54
	SYM*1.6: 0.055 KA MOMENTARY BASED ON X/R:	0.047 KA
	SYM*2.7: 0.093 KA CREST BASED ON X/R:	0.081 KA
	VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.4778 + J229.7080 OHMS	
	CONTRIBUTIONS: B-T-B10-PRI 0.034 KA ANG:	-82.44
B-T-B9-SEC	VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)	
B0B70-LP2	VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)	

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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BUS-0739 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

bB-B7-MC1 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D M O M E N T A R Y D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000

MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT TYPE	E/Z KA	X/R	EQUIVALENT IMPEDANCE (PU)	MOMENTARY FAULT DUTIES E/Z * 1.6	@ 0.5 CYCLE
	3 PHASE:	0.03	7.6	Z1= 121.5945	0.06	0.05
B-B27-SWGR	SLG DUTY:	0.05	7.1	Z2= 121.5945	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.2567		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.6	Z1= 121.5946	0.06	0.05
B-B27-SWGR-M1	SLG DUTY:	0.05	7.1	Z2= 121.5946	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.2571		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.5	Z1= 121.7159	0.05	0.05
B-SW-MV-1	SLG DUTY:	0.05	6.9	Z2= 121.7159	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.6101		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.5	Z1= 121.6757	0.06	0.05
B-SW-MV-2	SLG DUTY:	0.05	7.0	Z2= 121.6757	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.4924		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.6	Z1= 121.5946	0.06	0.05
B-SWGR27 TAP	SLG DUTY:	0.05	7.1	Z2= 121.5946	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.2569		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.5	Z1= 121.6845	0.06	0.05
B-T-13-PRI	SLG DUTY:	0.05	7.0	Z2= 121.6845	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 11.9998		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.7	Z1= 121.5565	0.06	0.05
B-T-B1-PRI	SLG DUTY:	0.05	7.1	Z2= 121.5565	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.3670		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.5	Z1= 121.6639	0.06	0.05
B-T-B10-PRI	SLG DUTY:	0.05	7.1	Z2= 121.6639	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.0581		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT TYPE	E/Z KA	X/R	EQUIVALENT IMPEDANCE (PU)	MOMENTARY FAULT DUTIES E/Z * 1.6	@ 0.5 CYCLE
	3 PHASE:	0.03	7.5	Z1= 121.6963	0.06	0.05
B-T-B12-PRI	SLG DUTY:	0.05	7.0	Z2= 121.6963	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.0331		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.6	Z1= 121.6180	0.06	0.05
B-T-B17-PRI	SLG DUTY:	0.05	7.0	Z2= 121.6180	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.6446		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.6	Z1= 121.6219	0.06	0.05
B-T-B18-PRI	SLG DUTY:	0.05	7.0	Z2= 121.6219	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.6561		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.6	Z1= 121.6336	0.06	0.05
B-T-B19-PRI	SLG DUTY:	0.05	7.0	Z2= 121.6336	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.3698		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.6	Z1= 121.5643	0.06	0.05
B-T-B2-PRI	SLG DUTY:	0.05	7.1	Z2= 121.5643	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.3443		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.6	Z1= 121.6180	0.06	0.05
B-T-B22-PRI	SLG DUTY:	0.05	7.0	Z2= 121.6180	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.3245		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.6	Z1= 121.6444	0.06	0.05
B-T-B3-PRI	SLG DUTY:	0.05	7.1	Z2= 121.6444	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.1137		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.6	Z1= 121.5672	0.06	0.05
B-T-B30-PRI	SLG DUTY:	0.05	7.0	Z2= 121.5672	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.4952		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT TYPE	E/Z KA	X/R	EQUIVALENT IMPEDANCE (PU)	MOMENTARY FAULT DUTIES E/Z * 1.6	@ 0.5 CYCLE
	3 PHASE:	0.03	7.6	Z1= 121.6063	0.06	0.05
B-T-B33-PRI	SLG DUTY:	0.05	7.0	Z2= 121.6063	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.2906		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.5	Z1= 121.6640	0.06	0.05
B-T-B4-PRI	SLG DUTY:	0.05	7.0	Z2= 121.6640	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.4581		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.5	Z1= 121.7120	0.05	0.05
B-T-B5-PRI	SLG DUTY:	0.05	6.9	Z2= 121.7120	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.5986		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.5	Z1= 121.7002	0.06	0.05
B-T-B6-PRI	SLG DUTY:	0.05	6.9	Z2= 121.7002	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.5641		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.6	Z1= 121.6062	0.06	0.05
B-T-B60-PRI	SLG DUTY:	0.05	7.0	Z2= 121.6062	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.6100		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.5	Z1= 121.6659	0.06	0.05
B-T-B61-PRI	SLG DUTY:	0.05	7.0	Z2= 121.6659	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.4637		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.6	Z1= 121.6541	0.06	0.05
B-T-B62-PRI	SLG DUTY:	0.05	7.0	Z2= 121.6541	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.4295		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.5	Z1= 121.6845	0.06	0.05
B-T-B7-PRI	SLG DUTY:	0.05	6.9	Z2= 121.6845	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.5182		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D M O M E N T A R Y D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

LOCATION VOLTAGE	FAULT TYPE	E/Z KA	X/R	EQUIVALENT IMPEDANCE (PU)	MOMENTARY FAULT DUTIES E/Z * 1.6	@ 0.5 CYCLE
	3 PHASE:	0.03	7.7	Z1= 121.5399	0.06	0.05
B-T-B70-PRI	SLG DUTY:	0.05	7.1	Z2= 121.5399	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.4153		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.6	Z1= 121.6522	0.06	0.05
B-T-B78-PRI	SLG DUTY:	0.05	7.1	Z2= 121.6522	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.0914		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.6	Z1= 121.6483	0.06	0.05
B-T-B8-PRI	SLG DUTY:	0.05	7.0	Z2= 121.6483	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.4124		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.5	Z1= 121.6698	0.06	0.05
B-T-B80-PRI	SLG DUTY:	0.05	7.0	Z2= 121.6698	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.4753		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.5	Z1= 121.7002	0.06	0.05
B-T-B81-PRI	SLG DUTY:	0.05	7.0	Z2= 121.7002	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.0442		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.6	Z1= 121.6522	0.06	0.05
B-T-B82-PRI	SLG DUTY:	0.05	7.0	Z2= 121.6522	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.4239		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		
	3 PHASE:	0.03	7.5	Z1= 121.6767	0.06	0.05
B-T-B9-PRI	SLG DUTY:	0.05	7.1	Z2= 121.6767	0.08	0.07
13800. VOLTS	LN/LN	0.03		Z0= 12.0220		
	LN/LN/GND	0.05	(	0.09 GND RETURN KA)		

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

M O M E N T A R Y D U T Y S U M M A R Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

BUS RECORD NO	NAME	VOLTAGE L-L	* 3 P H A S E * E/Z	X/R	* * * SLG * * * E/Z	X/R
B-B27-SWGR		13800.	0.047	7.62	0.066	7.07
B-B27-SWGR-M1		13800.	0.047	7.62	0.066	7.07
B-SW-MV-1		13800.	0.047	7.50	0.066	6.90
B-SW-MV-2		13800.	0.047	7.54	0.066	6.95
B-SWGR27 TAP		13800.	0.047	7.62	0.066	7.07
B-T-13-PRI		13800.	0.047	7.53	0.066	7.05
B-T-B1-PRI		13800.	0.047	7.66	0.066	7.07
B-T-B10-PRI		13800.	0.047	7.55	0.066	7.05
B-T-B12-PRI		13800.	0.047	7.52	0.066	7.03
B-T-B17-PRI		13800.	0.047	7.59	0.066	6.97
B-T-B18-PRI		13800.	0.047	7.59	0.066	6.96
B-T-B19-PRI		13800.	0.047	7.58	0.066	7.01
B-T-B2-PRI		13800.	0.047	7.65	0.066	7.07
B-T-B22-PRI		13800.	0.047	7.59	0.066	7.03
B-T-B3-PRI		13800.	0.047	7.57	0.066	7.06
B-T-B30-PRI		13800.	0.047	7.64	0.066	7.04
B-T-B33-PRI		13800.	0.047	7.61	0.066	7.05
B-T-B4-PRI		13800.	0.047	7.55	0.066	6.97
B-T-B5-PRI		13800.	0.047	7.50	0.066	6.90
B-T-B6-PRI		13800.	0.047	7.51	0.066	6.92
B-T-B60-PRI		13800.	0.047	7.61	0.066	6.98
B-T-B61-PRI		13800.	0.047	7.55	0.066	6.97
B-T-B62-PRI		13800.	0.047	7.56	0.066	6.98
B-T-B7-PRI		13800.	0.047	7.53	0.066	6.94
B-T-B70-PRI		13800.	0.047	7.67	0.066	7.08
B-T-B78-PRI		13800.	0.047	7.56	0.066	7.06
B-T-B8-PRI		13800.	0.047	7.56	0.066	6.99
B-T-B80-PRI		13800.	0.047	7.54	0.066	6.96
B-T-B81-PRI		13800.	0.047	7.51	0.066	7.03
B-T-B82-PRI		13800.	0.047	7.56	0.066	6.98
B-T-B9-PRI		13800.	0.047	7.54	0.066	7.05
BUS-0017		13800.	0.047	7.64	0.066	7.07
BUS-0019		13800.	0.047	7.64	0.066	7.07
BUS-0063		13800.	0.047	7.57	0.066	7.06
BUS-0065		13800.	0.047	7.57	0.066	7.06

35 FAULTED BUSES, 710 BRANCHES, 8 CONTRIBUTIONS

UNBALANCED FAULTS REQUESTED

*** SHORT CIRCUIT STUDY COMPLETE ***

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B1-ATS-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B1-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B1-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B10 DISC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B10 EMRG TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B10-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B12-MAP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B12-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-13	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-14	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-APT-15	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-GARAGE	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MDP	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MDP-M	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-MGR H16	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-TXMR SEC	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B13-UNKNOWN	VOLTAGE:	240.	(SEE LOW VOLTAGE REPORT)
B-B17-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-A/C-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-AC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ACB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-ANIMALRM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B17-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-DP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-EMAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NEB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP21	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NP22	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPA1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B17-NPB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-1STFL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2ND-FL-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-2NDFL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-AC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-AC2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-ATS-EMRG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-EMERG	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B18-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NCP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP21	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP22	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-NP23	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-STRT LHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B18-TAP BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-200A PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-B1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-L1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-L2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-MDPA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B19-P4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-P6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B19-PS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-CRIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LED3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-BATTERYCH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-CATSCAN	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-CRIT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTAL LB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-DENTSUCPM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-ELEV-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EMERG-PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EPNL-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-EPNL-B-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-L7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-L9E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB1E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LB2E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-LED-3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-MDP-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPA-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MDPB-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-MEDAIRCOM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-NEWLAB-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL 1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-D2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-L11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B2-PNL-M1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-PNL-P	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-POD2PP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-TEL COMM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-UNIT-1	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-UNIT-2	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY-124	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B2-XRAY124	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B21-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B21-P2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-ATS-EMER	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-EMERG	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-EMERG-M	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-GEN	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B22-L1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-L3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B22-MDP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

==========

B-B22-MDP-M VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-N1 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-N1-M VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-P1 VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-P2 VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T1-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T1-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-T2-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T2-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-T22-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B22-T3 PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T4-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-B22-T4-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-B27-SWGR E/Z: 0.034 KA AT -82.52 DEG (0.82 MVA) X/R: 7.62
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.1418 + J229.5945 OHMS
CONTRIBUTIONS: BUS-0017 0.034 KA ANG: -82.52

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.122	1.025	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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B-B27-SWGR-M1 E/Z: 0.034 KA AT -82.52 DEG (0.82 MVA) X/R: 7.62
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.1419 + J229.5947 OHMS
CONTRIBUTIONS: B-SWGR27 TAP 0.034 KA ANG: -82.52

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.122	1.025	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

B-B3-1ST FL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ALDN KIT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ATS-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ATSTEL RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-COMP MF	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-DBL GRILL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-EP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-FRZN FOOD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B3-HYDRO ELV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-KP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH HVAC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-MECH RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-P3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-P7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-STRT LTS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-STRT PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TELE PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B3-TRAY LINE	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B33-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B33-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-4EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-4EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-BUS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-ELEV#4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-EQ11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-EQ9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-HYDROELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-JBOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP10-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP11-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP12-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP13-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LP14-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP15-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LP9-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LS10-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS11-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS12	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS12-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS13-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS14-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B4-LS8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LS9-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B4-PP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-HYDR ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B5-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-NEXTEL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-PNL-H	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-PNL-H-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B5-TEMP TRAI	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B55-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQ8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-EQMACH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B6-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MACH SHOP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B6-P6-CS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B60-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B60-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61 STRT LGH	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-COMP RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-DP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B61-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQA	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-KITCHEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MCC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B61-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B62-ATTC PNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-BL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-BP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-ELEV-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-KP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-OT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B62-PAD RM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B62-STRT LGT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ATS-LS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP2-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP3-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP4-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP5-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP6-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP7-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LP8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B7-LP8-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MCC-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MCC-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-SRTLGHT-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B7-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70 -BLDG-71	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70 GEN-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATS-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-ATTIC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-CHLLR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EM-TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-EQ1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQ6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-EQD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FIRE PMP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FP-TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-FPMP M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-K	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP-4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LS6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B70-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-LSD-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-PP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-PP220	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B70-STRTLGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-1P	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-78AE1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATS-LS1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ATSG9578	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-BARBER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-CONRM-AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-CRD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ELEV-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-ELEV-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-FLPNL	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B78-KK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-L10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-14	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-15	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-4	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP-8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP10	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP13	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP6	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LP7	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-LSD	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MEC-1 AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-MEC2-A/C	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PHARM AC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PHV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B78-PNL-330A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-PULM 78B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78-QP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B78A-PNL-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8 2ND FLR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8 HYDRO ELV	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-208V-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-480V ATS	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-480V PNL	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-BS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-CMOP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-COMP	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-ELEV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FDR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-FLEXPMACH	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-GE BKR	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-GEN	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-J-BOX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-L8B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-LB1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-LB2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B8-MAIN BUS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-MDP-8	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PNL-PK	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-PP1-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-SYLV	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B8-TXMR PRI	VOLTAGE:	480.	(SEE LOW VOLTAGE REPORT)
B-B8-TXMR SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-ATS-EQ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-L1-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-L1-3	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-LB-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-LB-E	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-P1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-P5	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-PB-1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B80-PB-2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B81-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B81-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-B82-ATS-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-EMERG-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B82-MDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLXX	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLYY	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-*PNLZZ	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-ATS BKR	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-EM	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L91A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L91A-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L92	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L9A	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-L9B	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-LPN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-LPS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-MAIN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-MDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-STRT LGHT	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B9-TAP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92 GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-B92-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B92-PNL-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-ATS-EMER	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-EMDP1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B93-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-ATS	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-E1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B94-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B95-EMDP	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B95-EMDP-M	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B-B95-GEN	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

B-SW-MV-1 E/Z: 0.034 KA AT -82.40 DEG (0.82 MVA) X/R: 7.50
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.6380 + J229.7620 OHMS
CONTRIBUTIONS: B-T-B5-PRI 0.034 KA ANG: -82.40

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.117	1.023	1.000	1.000
	DUTY (KA) :	0.038	0.035	0.034	0.034

B-SW-MV-2 E/Z: 0.034 KA AT -82.44 DEG (0.82 MVA) X/R: 7.54
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.4740 + J229.7066 OHMS
CONTRIBUTIONS: B-T-B80-PRI 0.034 KA ANG: -82.44

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.119	1.024	1.000	1.000
DUTY (KA) :	0.038	0.035	0.034	0.034

B-SWGR27 TAP E/Z: 0.034 KA AT -82.52 DEG (0.82 MVA) X/R: 7.62
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.1418 + J229.5946 OHMS
CONTRIBUTIONS: B-B27-SWGR 0.034 KA ANG: -82.52

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.122	1.025	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-13-PRI E/Z: 0.034 KA AT -82.43 DEG (0.82 MVA) X/R: 7.53
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.5098 + J229.7188 OHMS
CONTRIBUTIONS: B-T-B9-PRI 0.034 KA ANG: -82.43

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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	GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE	
B70-GEN		0.034	0.22	L	
	TOTAL REMOTE: 0.000 KA	NACD RATIO: 0.0000			
		SYM2	SYM3	SYM5	SYM8
	MULT. FACT:	1.000	1.000	1.000	1.000
	DUTY (KA) :	0.034	0.034	0.034	0.034
		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.118	1.024	1.000	1.000
	DUTY (KA) :	0.038	0.035	0.034	0.034

B-T-B1-PRI E/Z: 0.034 KA AT -82.56 DEG (0.82 MVA) X/R: 7.66
VOLTAGE: 13800. EQUIV. IMPEDANCE= 29.9858 + J229.5419 OHMS
CONTRIBUTIONS: B-T-B70-PRI 0.034 KA ANG: -82.56

	GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE	
B70-GEN		0.034	0.22	L	
	TOTAL REMOTE: 0.000 KA	NACD RATIO: 0.0000			
		SYM2	SYM3	SYM5	SYM8
	MULT. FACT:	1.000	1.000	1.000	1.000
	DUTY (KA) :	0.034	0.034	0.034	0.034
		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.124	1.026	1.000	1.000
	DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-B1-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B10-PRI E/Z: 0.034 KA AT -82.45 DEG (0.82 MVA) X/R: 7.55
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.4258 + J229.6904 OHMS
CONTRIBUTIONS: B-T-B78-PRI 0.034 KA ANG: -82.45

	GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE	
B70-GEN		0.034	0.22	L	
	TOTAL REMOTE: 0.000 KA	NACD RATIO: 0.0000			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.119	1.024	1.000	1.000
DUTY (KA) :	0.038	0.035	0.034	0.034

B-T-B10-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B12-PRI E/Z: 0.034 KA AT -82.42 DEG (0.82 MVA) X/R: 7.52
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.5578 + J229.7350 OHMS
CONTRIBUTIONS: B-T-13-PRI 0.034 KA ANG: -82.42

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.118	1.024	1.000	1.000
DUTY (KA) :	0.038	0.035	0.034	0.034

B-T-B12-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B17-PRI E/Z: 0.034 KA AT -82.50 DEG (0.82 MVA) X/R: 7.59
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.2378 + J229.6269 OHMS
CONTRIBUTIONS: B-T-B60-PRI 0.034 KA ANG: -82.50

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

==========

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.121	1.025	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-B17-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B18-PRI E/Z: 0.034 KA AT -82.49 DEG (0.82 MVA) X/R: 7.59
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.2538 + J229.6323 OHMS
CONTRIBUTIONS: B-T-B17-PRI 0.034 KA ANG: -82.49

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.121	1.025	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-B18-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B19-PRI E/Z: 0.034 KA AT -82.48 DEG (0.82 MVA) X/R: 7.58
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3018 + J229.6485 OHMS
CONTRIBUTIONS: B-T-B22-PRI 0.034 KA ANG: -82.48

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.121	1.025	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-T-B19-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B2-LED-PRI VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-T-B2-LED-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B2-PRI E/Z: 0.034 KA AT -82.55 DEG (0.82 MVA) X/R: 7.65
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.0178 + J229.5527 OHMS
CONTRIBUTIONS: B-T-B1-PRI 0.034 KA ANG: -82.55
3WINDING B-T-B2-PRI 0.000 KA ANG: 119.96

GENERATOR NAME	AT BUS	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN		0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.124	1.025	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-B2-SEC2 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B2-SEC3 VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B2-SEC4 VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-T-B22-PRI E/Z: 0.034 KA AT -82.50 DEG (0.82 MVA) X/R: 7.59
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.2378 + J229.6269 OHMS
CONTRIBUTIONS: B-T-B33-PRI 0.034 KA ANG: -82.50

GENERATOR NAME	AT BUS	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN		0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

==========

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.121	1.025	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-B22-SEC VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-T-B3-PRI E/Z: 0.034 KA AT -82.47 DEG (0.82 MVA) X/R: 7.57
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3458 + J229.6634 OHMS
CONTRIBUTIONS: BUS-0065 0.034 KA ANG: -82.47

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.120	1.024	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-B3-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B30-PRI E/Z: 0.034 KA AT -82.55 DEG (0.82 MVA) X/R: 7.64
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.0298 + J229.5567 OHMS
CONTRIBUTIONS: B-T-B70-PRI 0.034 KA ANG: -82.55

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

==========

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.124	1.025	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-B30-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B33-PRI E/Z: 0.034 KA AT -82.51 DEG (0.82 MVA) X/R: 7.61
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.1898 + J229.6107 OHMS
CONTRIBUTIONS: B-B27-SWGR 0.034 KA ANG: -82.51

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.122	1.025	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-B33-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B4-PRI E/Z: 0.034 KA AT -82.45 DEG (0.82 MVA) X/R: 7.55
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.4260 + J229.6904 OHMS
CONTRIBUTIONS: B-T-B82-PRI 0.034 KA ANG: -82.45

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.119	1.024	1.000	1.000
DUTY (KA) :	0.038	0.035	0.034	0.034

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

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B-T-B4-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B5-PRI E/Z: 0.034 KA AT -82.41 DEG (0.82 MVA) X/R: 7.50
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.6220 + J229.7566 OHMS
CONTRIBUTIONS: B-T-B6-PRI 0.034 KA ANG: -82.41

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.117	1.024	1.000	1.000
DUTY (KA) :	0.038	0.035	0.034	0.034

B-T-B5-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B6-PRI E/Z: 0.034 KA AT -82.42 DEG (0.82 MVA) X/R: 7.51
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.5740 + J229.7404 OHMS
CONTRIBUTIONS: B-T-B7-PRI 0.034 KA ANG: -82.42

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.118	1.024	1.000	1.000
DUTY (KA) :	0.038	0.035	0.034	0.034

B-T-B6-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B60-PRI E/Z: 0.034 KA AT -82.51 DEG (0.82 MVA) X/R: 7.61
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.1898 + J229.6107 OHMS

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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CONTRIBUTIONS TO B-T-B60-PRI (CONTINUED)
CONTRIBUTIONS: B-T-B30-PRI 0.034 KA ANG: -82.51

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.122	1.025	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-B60-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B61-PRI E/Z: 0.034 KA AT -82.45 DEG (0.82 MVA) X/R: 7.55
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.4338 + J229.6931 OHMS
CONTRIBUTIONS: B-T-B62-PRI 0.034 KA ANG: -82.45

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.119	1.024	1.000	1.000
DUTY (KA) :	0.038	0.035	0.034	0.034

B-T-B61-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B62-PRI E/Z: 0.034 KA AT -82.46 DEG (0.82 MVA) X/R: 7.56
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3858 + J229.6769 OHMS
CONTRIBUTIONS: B-T-B8-PRI 0.034 KA ANG: -82.46

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

==========

	GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE	
B70-GEN		0.034	0.22	L	
	TOTAL REMOTE: 0.000 KA	NACD RATIO: 0.0000			
		SYM2	SYM3	SYM5	SYM8
	MULT. FACT:	1.000	1.000	1.000	1.000
	DUTY (KA) :	0.034	0.034	0.034	0.034
		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.120	1.024	1.000	1.000
	DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-B62-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B7-PRI E/Z: 0.034 KA AT -82.43 DEG (0.82 MVA) X/R: 7.53
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.5100 + J229.7188 OHMS
CONTRIBUTIONS: B-T-B61-PRI 0.034 KA ANG: -82.43

	GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE	
B70-GEN		0.034	0.22	L	
	TOTAL REMOTE: 0.000 KA	NACD RATIO: 0.0000			
		SYM2	SYM3	SYM5	SYM8
	MULT. FACT:	1.000	1.000	1.000	1.000
	DUTY (KA) :	0.034	0.034	0.034	0.034
		TOT2	TOT3	TOT5	TOT8
	MULT. FACT:	1.118	1.024	1.000	1.000
	DUTY (KA) :	0.038	0.035	0.034	0.034

B-T-B7-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B70-PRI E/Z: 0.034 KA AT -82.57 DEG (0.82 MVA) X/R: 7.67
VOLTAGE: 13800. EQUIV. IMPEDANCE= 29.9178 + J229.5189 OHMS
CONTRIBUTIONS: B-T-B70-SEC 0.034 KA ANG: -82.57

	GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE	
B70-GEN		0.034	0.22	L	
	TOTAL REMOTE: 0.000 KA	NACD RATIO: 0.0000			

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.125	1.026	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-B70-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B78-PRI E/Z: 0.034 KA AT -82.47 DEG (0.82 MVA) X/R: 7.56
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3778 + J229.6742 OHMS
CONTRIBUTIONS: B-T-B3-PRI 0.034 KA ANG: -82.47

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.120	1.024	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-B78-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B8-2-SEC VOLTAGE: 480. (SEE LOW VOLTAGE REPORT)

B-T-B8-PRI E/Z: 0.034 KA AT -82.47 DEG (0.82 MVA) X/R: 7.56
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3618 + J229.6688 OHMS
CONTRIBUTIONS: B-B27-SWGR 0.034 KA ANG: -82.47

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.120	1.024	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-B8-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B80-PRI E/Z: 0.034 KA AT -82.45 DEG (0.82 MVA) X/R: 7.54
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.4500 + J229.6985 OHMS
CONTRIBUTIONS: B-T-B4-PRI 0.034 KA ANG: -82.45

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.119	1.024	1.000	1.000
DUTY (KA) :	0.038	0.035	0.034	0.034

B-T-B80-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B81-PRI E/Z: 0.034 KA AT -82.42 DEG (0.82 MVA) X/R: 7.51
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.5738 + J229.7404 OHMS
CONTRIBUTIONS: B-T-B12-PRI 0.034 KA ANG: -82.42

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

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	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.118	1.024	1.000	1.000
DUTY (KA) :	0.038	0.035	0.034	0.034

B-T-B81-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B82-PRI E/Z: 0.034 KA AT -82.47 DEG (0.82 MVA) X/R: 7.56
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.3780 + J229.6743 OHMS
CONTRIBUTIONS: B-T-B19-PRI 0.034 KA ANG: -82.47

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.120	1.024	1.000	1.000
DUTY (KA) :	0.039	0.035	0.034	0.034

B-T-B82-SEC VOLTAGE: 208. (SEE LOW VOLTAGE REPORT)

B-T-B9-PRI E/Z: 0.034 KA AT -82.44 DEG (0.82 MVA) X/R: 7.54
VOLTAGE: 13800. EQUIV. IMPEDANCE= 30.4778 + J229.7080 OHMS
CONTRIBUTIONS: B-T-B10-PRI 0.034 KA ANG: -82.44

GENERATOR NAME -- AT BUS --	KA	VOLTS PU	LOCAL/REMOTE
B70-GEN	0.034	0.22	L

TOTAL REMOTE: 0.000 KA NACD RATIO: 0.0000

	SYM2	SYM3	SYM5	SYM8
MULT. FACT:	1.000	1.000	1.000	1.000
DUTY (KA) :	0.034	0.034	0.034	0.034

	TOT2	TOT3	TOT5	TOT8
MULT. FACT:	1.119	1.024	1.000	1.000
DUTY (KA) :	0.038	0.035	0.034	0.034

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

T H R E E P H A S E I N T E R R U P U T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO

B-T-B9-SEC	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
B0B70-LP2	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
BUS-0739	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)
bB-B7-MC1	VOLTAGE:	208.	(SEE LOW VOLTAGE REPORT)

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-B27-SWGR	3 PHASE:	0.03	7.6	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.1	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.59454		TOT3:	1.03	1.02	0.04	0.05
	Z2(PU):	121.59454		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.25672		TOT8:	1.00	1.00	0.03	0.05
B-B27-SWGR-M1	3 PHASE:	0.03	7.6	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.1	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.59460		TOT3:	1.03	1.02	0.04	0.05
	Z2(PU):	121.59460		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.25708		TOT8:	1.00	1.00	0.03	0.05
B-SW-MV-1	3 PHASE:	0.03	7.5	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	6.9	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.12	1.09	0.04	0.05
	Z1(PU):	121.71588		TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.71588		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.61008		TOT8:	1.00	1.00	0.03	0.05
B-SW-MV-2	3 PHASE:	0.03	7.5	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.67571		TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.67571		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.49242		TOT8:	1.00	1.00	0.03	0.05

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R	ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-SWGR27 TAP	3 PHASE:	0.03	7.6	SYM2: 1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.1	SYM3: 1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5: 1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8: 1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2: 1.12	1.10	0.04	0.05
	Z1(PU):	121.59457		TOT3: 1.03	1.02	0.04	0.05
	Z2(PU):	121.59457		TOT5: 1.00	1.00	0.03	0.05
	Z0(PU):	12.25690		TOT8: 1.00	1.00	0.03	0.05
B-T-13-PRI	3 PHASE:	0.03	7.5	SYM2: 1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0	SYM3: 1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5: 1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8: 1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2: 1.12	1.10	0.04	0.05
	Z1(PU):	121.68450		TOT3: 1.02	1.02	0.04	0.05
	Z2(PU):	121.68450		TOT5: 1.00	1.00	0.03	0.05
	Z0(PU):	11.99983		TOT8: 1.00	1.00	0.03	0.05
B-T-B1-PRI	3 PHASE:	0.03	7.7	SYM2: 1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.1	SYM3: 1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5: 1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8: 1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2: 1.12	1.10	0.04	0.05
	Z1(PU):	121.55647		TOT3: 1.03	1.02	0.04	0.05
	Z2(PU):	121.55647		TOT5: 1.00	1.00	0.03	0.05
	Z0(PU):	12.36699		TOT8: 1.00	1.00	0.03	0.05
B-T-B10-PRI	3 PHASE:	0.03	7.5	SYM2: 1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.1	SYM3: 1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5: 1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8: 1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2: 1.12	1.10	0.04	0.05
	Z1(PU):	121.66394		TOT3: 1.02	1.02	0.04	0.05
	Z2(PU):	121.66394		TOT5: 1.00	1.00	0.03	0.05
	Z0(PU):	12.05806		TOT8: 1.00	1.00	0.03	0.05

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R	ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B12-PRI	3 PHASE:	0.03	7.5 SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0 SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03	SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05	SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09	TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.69626	TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.69626	TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.03307	TOT8:	1.00	1.00	0.03	0.05
B-T-B17-PRI	3 PHASE:	0.03	7.6 SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0 SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03	SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05	SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09	TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.61796	TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.61796	TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.64457	TOT8:	1.00	1.00	0.03	0.05
B-T-B18-PRI	3 PHASE:	0.03	7.6 SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0 SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03	SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05	SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09	TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.62187	TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.62187	TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.65611	TOT8:	1.00	1.00	0.03	0.05
B-T-B19-PRI	3 PHASE:	0.03	7.6 SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0 SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03	SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05	SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09	TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.63361	TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.63361	TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.36982	TOT8:	1.00	1.00	0.03	0.05

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R	ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B2-PRI	3 PHASE:	0.03	7.6 SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.1 SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03	SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05	SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09	TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.56428	TOT3:	1.03	1.02	0.04	0.05
	Z2(PU):	121.56428	TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.34431	TOT8:	1.00	1.00	0.03	0.05
B-T-B22-PRI	3 PHASE:	0.03	7.6 SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0 SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03	SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05	SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09	TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.61797	TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.61797	TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.32448	TOT8:	1.00	1.00	0.03	0.05
B-T-B3-PRI	3 PHASE:	0.03	7.6 SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.1 SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03	SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05	SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09	TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.64437	TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.64437	TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.11374	TOT8:	1.00	1.00	0.03	0.05
B-T-B30-PRI	3 PHASE:	0.03	7.6 SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0 SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03	SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05	SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09	TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.56721	TOT3:	1.03	1.02	0.04	0.05
	Z2(PU):	121.56721	TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.49518	TOT8:	1.00	1.00	0.03	0.05

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B33-PRI	3 PHASE:	0.03	7.6	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.60625		TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.60625		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.29056		TOT8:	1.00	1.00	0.03	0.05
B-T-B4-PRI	3 PHASE:	0.03	7.5	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.66396		TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.66396		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.45815		TOT8:	1.00	1.00	0.03	0.05
B-T-B5-PRI	3 PHASE:	0.03	7.5	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	6.9	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.71196		TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.71196		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.59856		TOT8:	1.00	1.00	0.03	0.05
B-T-B6-PRI	3 PHASE:	0.03	7.5	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	6.9	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.70021		TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.70021		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.56407		TOT8:	1.00	1.00	0.03	0.05

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R	ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B60-PRI	3 PHASE:	0.03	7.6 SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0 SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03	SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05	SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09	TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.60624	TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.60624	TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.60998	TOT8:	1.00	1.00	0.03	0.05
B-T-B61-PRI	3 PHASE:	0.03	7.5 SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0 SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03	SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05	SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09	TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.66589	TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.66589	TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.46374	TOT8:	1.00	1.00	0.03	0.05
B-T-B62-PRI	3 PHASE:	0.03	7.6 SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0 SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03	SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05	SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09	TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.65414	TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.65414	TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.42952	TOT8:	1.00	1.00	0.03	0.05
B-T-B7-PRI	3 PHASE:	0.03	7.5 SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	6.9 SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03	SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05	SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09	TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.68453	TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.68453	TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.51818	TOT8:	1.00	1.00	0.03	0.05

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B70-PRI	3 PHASE:	0.03	7.7	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.1	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.13	1.10	0.04	0.05
	Z1(PU):	121.53991		TOT3:	1.03	1.02	0.04	0.05
	Z2(PU):	121.53991		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.41530		TOT8:	1.00	1.00	0.03	0.05
B-T-B78-PRI	3 PHASE:	0.03	7.6	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.1	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.65221		TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.65221		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.09144		TOT8:	1.00	1.00	0.03	0.05
B-T-B8-PRI	3 PHASE:	0.03	7.6	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.64828		TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.64828		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.41244		TOT8:	1.00	1.00	0.03	0.05
B-T-B80-PRI	3 PHASE:	0.03	7.5	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.66985		TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.66985		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.47528		TOT8:	1.00	1.00	0.03	0.05

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

U N B A L A N C E D I N T E R R U P T I N G D U T Y R E P O R T

PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

LOCATION	FAULT TYPE	E/Z KA	X/R		ANSI AC/DC DECREMENT FACT. 3 PHASE	SLG	INTERRUPTING DUTIES (KA) 3 PHASE	SLG
B-T-B81-PRI	3 PHASE:	0.03	7.5	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.70017		TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.70017		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.04417		TOT8:	1.00	1.00	0.03	0.05
B-T-B82-PRI	3 PHASE:	0.03	7.6	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.0	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.65224		TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.65224		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.42394		TOT8:	1.00	1.00	0.03	0.05
B-T-B9-PRI	3 PHASE:	0.03	7.5	SYM2:	1.00	1.00	0.03	0.05
VOLTS: 13800.0	SLG:	0.05	7.1	SYM3:	1.00	1.00	0.03	0.05
NACD: 0.000	LN/LN:	0.03		SYM5:	1.00	1.00	0.03	0.05
	LN/LN/GND:	0.05		SYM8:	1.00	1.00	0.03	0.05
	GND RETURN:	0.09		TOT2:	1.12	1.10	0.04	0.05
	Z1(PU):	121.67667		TOT3:	1.02	1.02	0.04	0.05
	Z2(PU):	121.67667		TOT5:	1.00	1.00	0.03	0.05
	Z0(PU):	12.02198		TOT8:	1.00	1.00	0.03	0.05

SHORT CIRCUIT STUDY FOR THE BEDFORD VAMC

STUDY CASE-4 EMERGENCY GENERATORS ON LINE AND ALL MOTORS OFF LINE

I N T E R R U P T I N G D U T Y S U M M A R Y R E P O R T
PRE FAULT VOLTAGE: 1.0000
MODEL TRANSFORMER TAPS: NO
NACD OPTION: INTERPOLATED

BUS RECORD NO	NAME	VOLTAGE L-L	NACD RATIO	* 3 P H A S E * E/Z KA	X/R	* * * S L G * * * E/Z KA	X/R
B-B27-SWGR		13800.	0.000	0.034	7.62	0.049	7.07
B-B27-SWGR-M1		13800.	0.000	0.034	7.62	0.049	7.07
B-SW-MV-1		13800.	0.000	0.034	7.50	0.049	6.90
B-SW-MV-2		13800.	0.000	0.034	7.54	0.049	6.95
B-SWGR27 TAP		13800.	0.000	0.034	7.62	0.049	7.07
B-T-13-PRI		13800.	0.000	0.034	7.53	0.049	7.05
B-T-B1-PRI		13800.	0.000	0.034	7.66	0.049	7.07
B-T-B10-PRI		13800.	0.000	0.034	7.55	0.049	7.05
B-T-B12-PRI		13800.	0.000	0.034	7.52	0.049	7.03
B-T-B17-PRI		13800.	0.000	0.034	7.59	0.049	6.97
B-T-B18-PRI		13800.	0.000	0.034	7.59	0.049	6.96
B-T-B19-PRI		13800.	0.000	0.034	7.58	0.049	7.01
B-T-B2-PRI		13800.	0.000	0.034	7.65	0.049	7.07
B-T-B22-PRI		13800.	0.000	0.034	7.59	0.049	7.03
B-T-B3-PRI		13800.	0.000	0.034	7.57	0.049	7.06
B-T-B30-PRI		13800.	0.000	0.034	7.64	0.049	7.04
B-T-B33-PRI		13800.	0.000	0.034	7.61	0.049	7.05
B-T-B4-PRI		13800.	0.000	0.034	7.55	0.049	6.97
B-T-B5-PRI		13800.	0.000	0.034	7.50	0.049	6.90
B-T-B6-PRI		13800.	0.000	0.034	7.51	0.049	6.92
B-T-B60-PRI		13800.	0.000	0.034	7.61	0.049	6.98
B-T-B61-PRI		13800.	0.000	0.034	7.55	0.049	6.97
B-T-B62-PRI		13800.	0.000	0.034	7.56	0.049	6.98
B-T-B7-PRI		13800.	0.000	0.034	7.53	0.049	6.94
B-T-B70-PRI		13800.	0.000	0.034	7.67	0.049	7.08
B-T-B78-PRI		13800.	0.000	0.034	7.56	0.049	7.06
B-T-B8-PRI		13800.	0.000	0.034	7.56	0.049	6.99
B-T-B80-PRI		13800.	0.000	0.034	7.54	0.049	6.96
B-T-B81-PRI		13800.	0.000	0.034	7.51	0.049	7.03
B-T-B82-PRI		13800.	0.000	0.034	7.56	0.049	6.98
B-T-B9-PRI		13800.	0.000	0.034	7.54	0.049	7.05
BUS-0017		13800.	0.000	0.034	7.64	0.049	7.07
BUS-0019		13800.	0.000	0.034	7.64	0.049	7.07
BUS-0063		13800.	0.000	0.034	7.57	0.049	7.06
BUS-0065		13800.	0.000	0.034	7.57	0.049	7.06

```
  35 FAULTED BUSES,  710 BRANCHES,    8 CONTRIBUTIONS
UNBALANCED FAULTS REQUESTED

*** SHORT CIRCUIT STUDY COMPLETE ***
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3.0 PROTECTIVE DEVICE COORDINATION STUDY

The protective device coordination study determines overcurrent protective relay and circuit breaker settings in order to provide an optimal compromise between sensitivity and selectivity.

The coordination plots were done using CAPTOR, a computer software package by SKM Systems Analysis. Protective device coordination was performed in accordance with IEEE Standard 242 (Buff Book). Minimum guidelines for equipment protection, as outlined in the National Electrical Code (NEC) and applicable standards of the American National Standards Institute (ANSI), were followed.

3.1 Coordination Objectives

Determine overcurrent protective relay and circuit breaker settings by plotting coordination curves on a log-log scale as operating time versus current magnitude. The plots in Section 3.4 illustrate protective device trip characteristics and selectivity among devices.

3.2 Coordination Results

On the plots, each device curve is tagged with an arrow and label referencing its location on the plot's individual representative one line diagram. This label also references the device to its specific manufacturer information including ratings and settings as indicated in the text box on each plot. The device time-current characteristics are truncated at maximum through-fault current for a downstream fault.

Efforts were made to provide the best coordination possible with the protective devices studied under this contract. As shown in Section 3.4, areas where breaker trip curves overlap indicate areas of possible non-selective breaker operation. Where possible, efforts were made to reduce non-selective breaker operation while maintaining adequate system protection. In some cases, because of device limitations, little can be done to improve selective coordination. Such device limitations include the fixed operating characteristic of a fuse, the built-in instantaneous or instantaneous “over-ride” elements of molded case circuit breakers, and the limited instantaneous trip range of trip-units with an instantaneous trip function.

Adequate coordination is achieved using the recommended devices and settings & ratings for the protective devices, listed in Section 3.5. The recommended adjustments would maximize coordination in an attempt to allow the various downstream devices to isolate faults without operation of the upstream devices. Although instantaneous trip devices provide the

highest degree of protection, when applied in series they compromise selectivity at high-magnitude fault currents.

3.3 Coordination Recommendations

All of the adjustable low voltage electronic trip and thermal magnetic circuit breakers should be tested and adjusted according to the recommended settings given in Table 3.1.

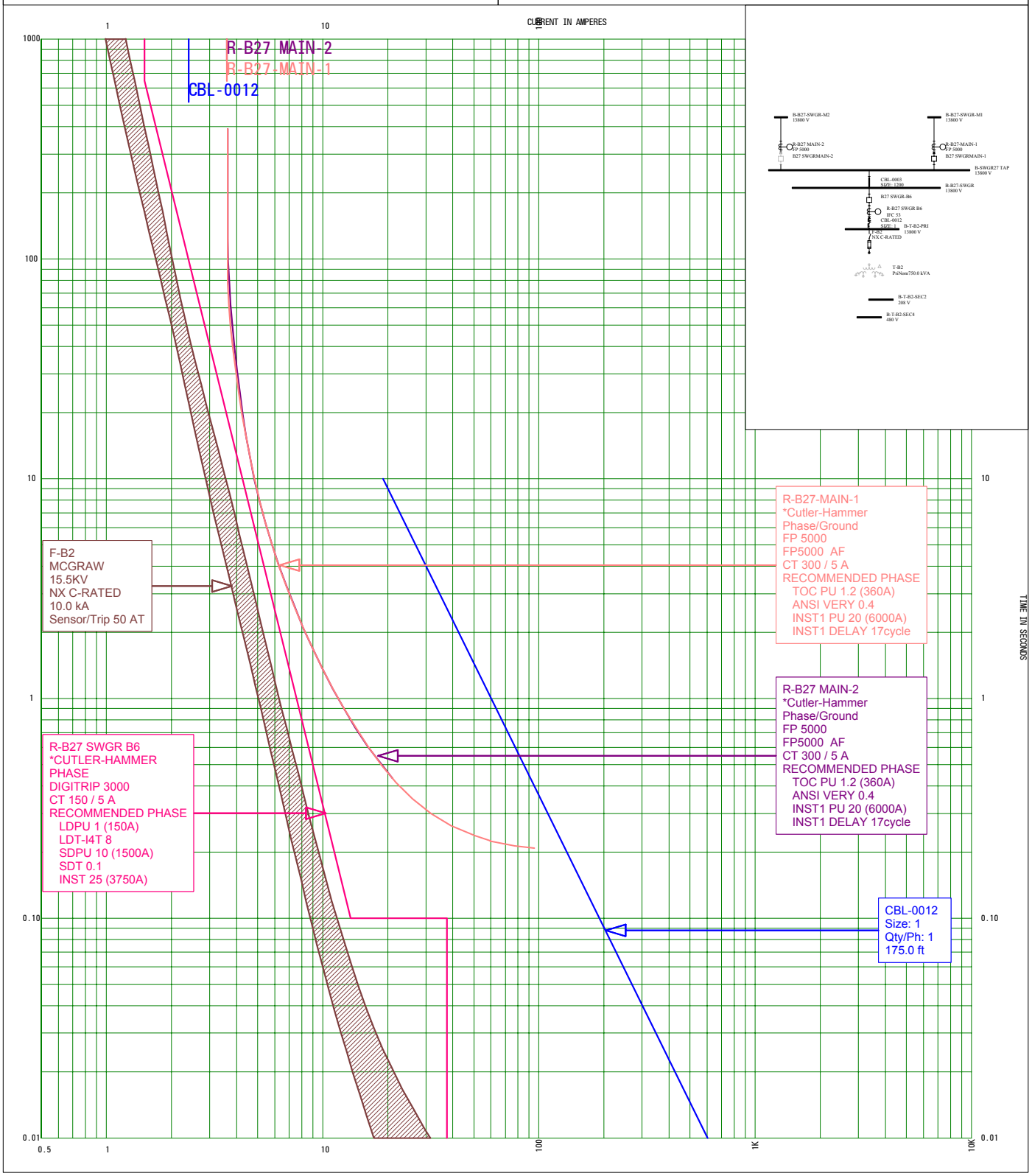
3.4 Time-Current Characteristic Plots

See the following pages for the plotted coordination curves, which graphically indicate the degree of selectivity obtained.

Note: All coordination curves show the recommended settings for the protective devices. In the case where new devices were recommended, the new devices will be shown on the curves and in the settings table. Refer to Table 3.1 for recommended and existing settings for all protective devices.

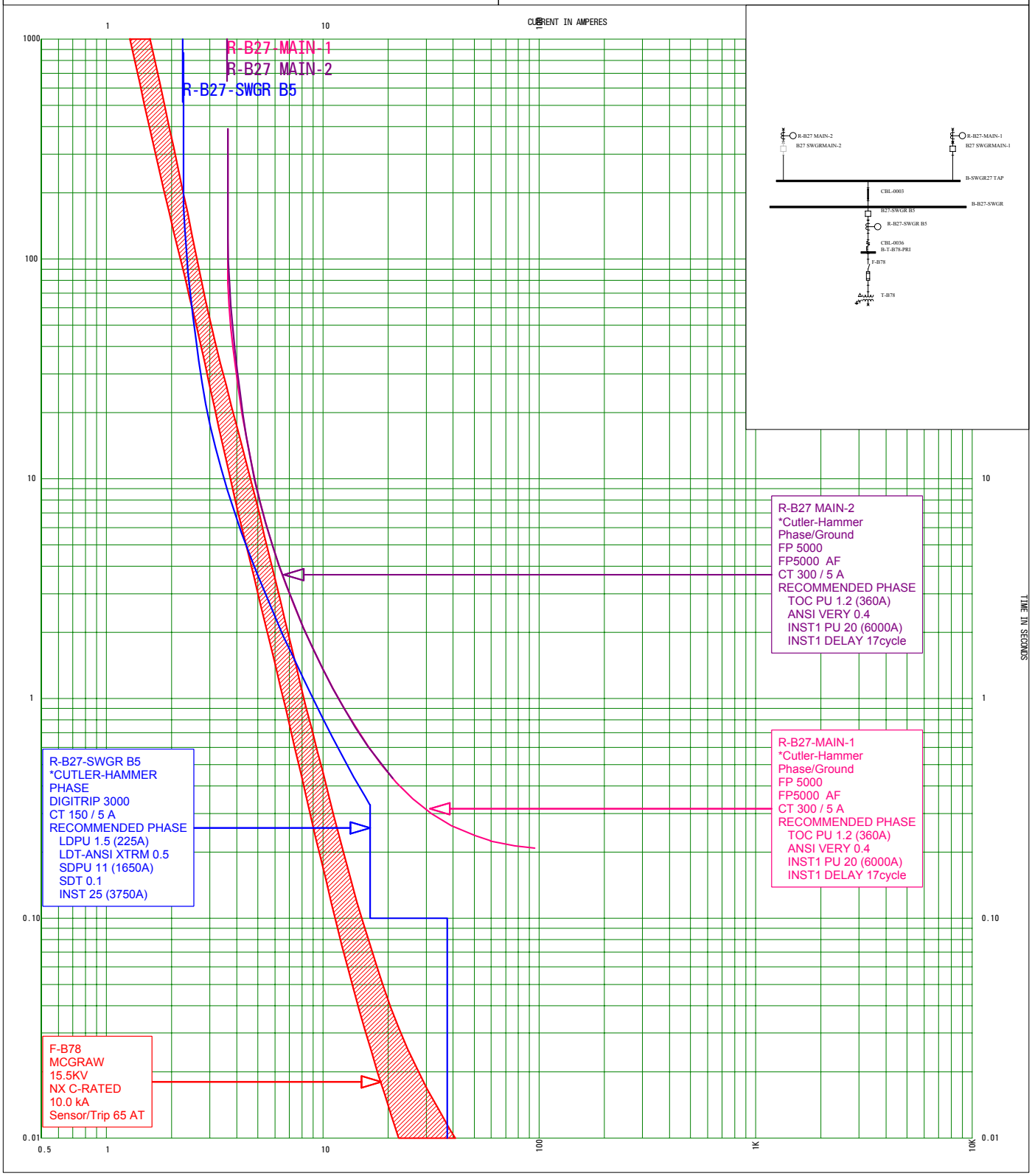
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: 15kV SWGR B6&7
Ref. Voltage: 13800V
Current Scale: X 10^2
ISSUED 4/30/2004



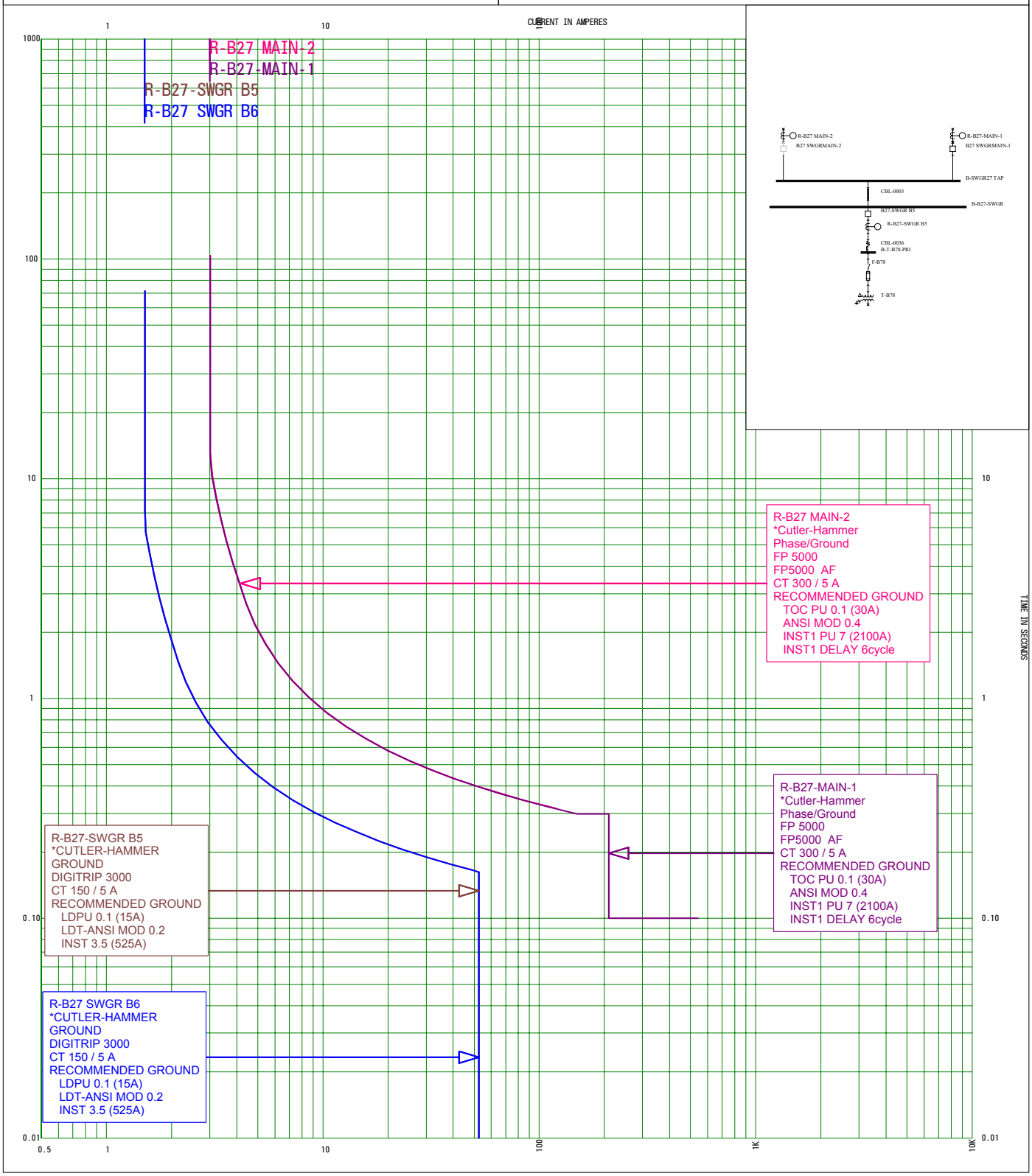
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: 15kV SWGR B5&8
Ref. Voltage: 13800V
Current Scale: X 10^2
ISSUED 4/30/2004



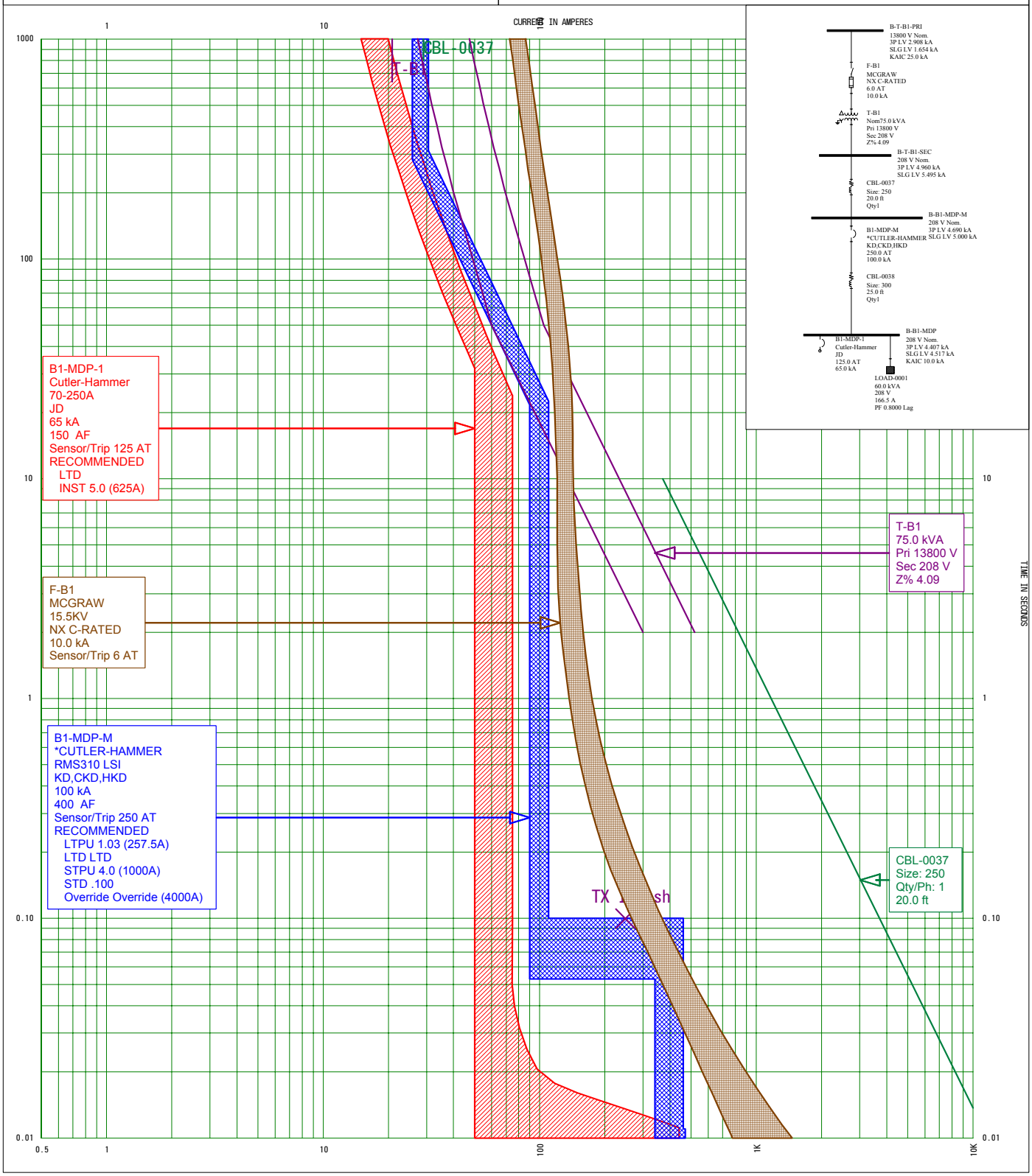
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: 15kV SWGR GROUND
Ref. Voltage: 13800V
Current Scale: X 10^1
ISSUED 4/30/2004

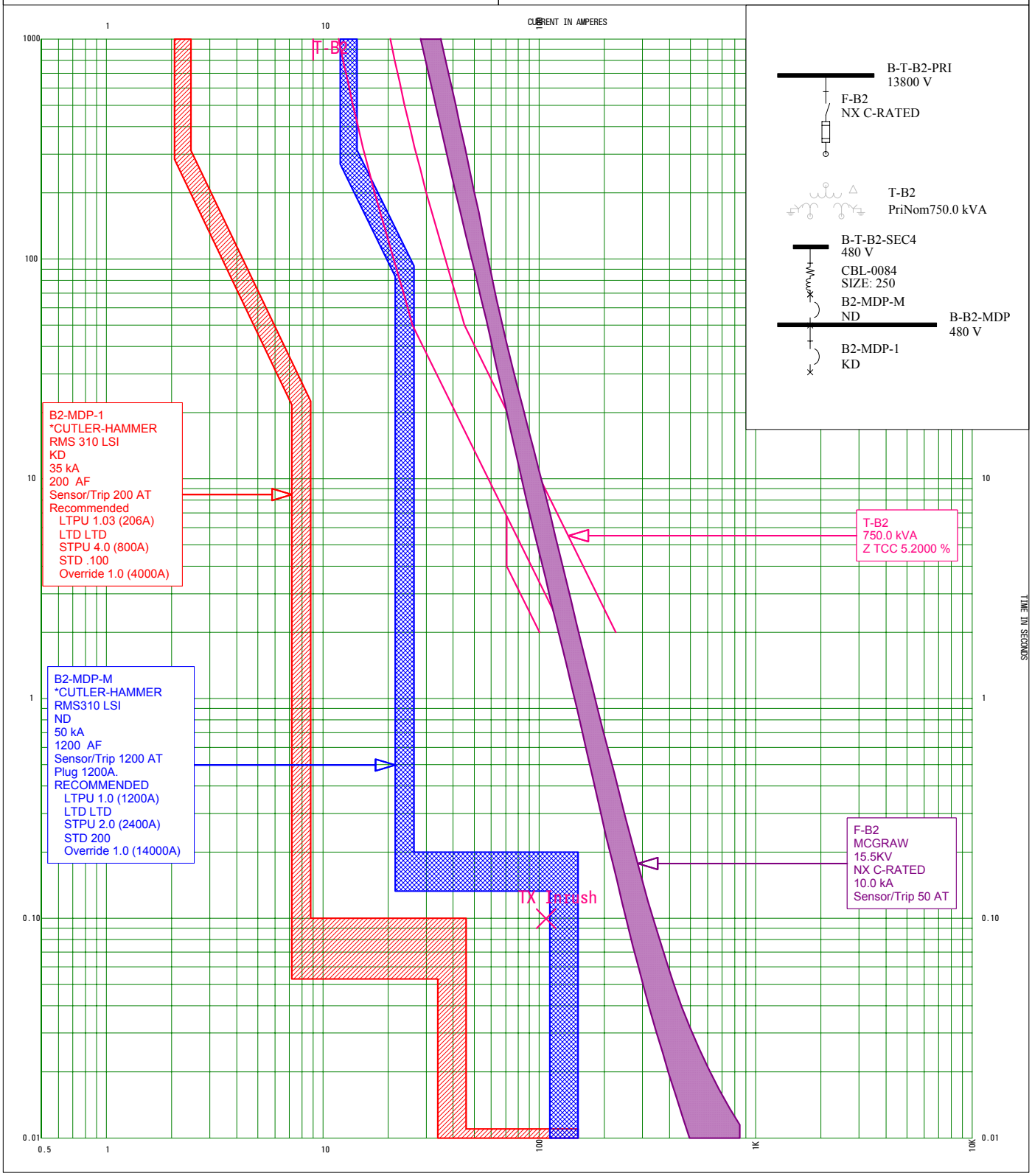


Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-1 MDP
Ref. Voltage: 208V
Current Scale: X 10^1
ISSUED 4/30/2004

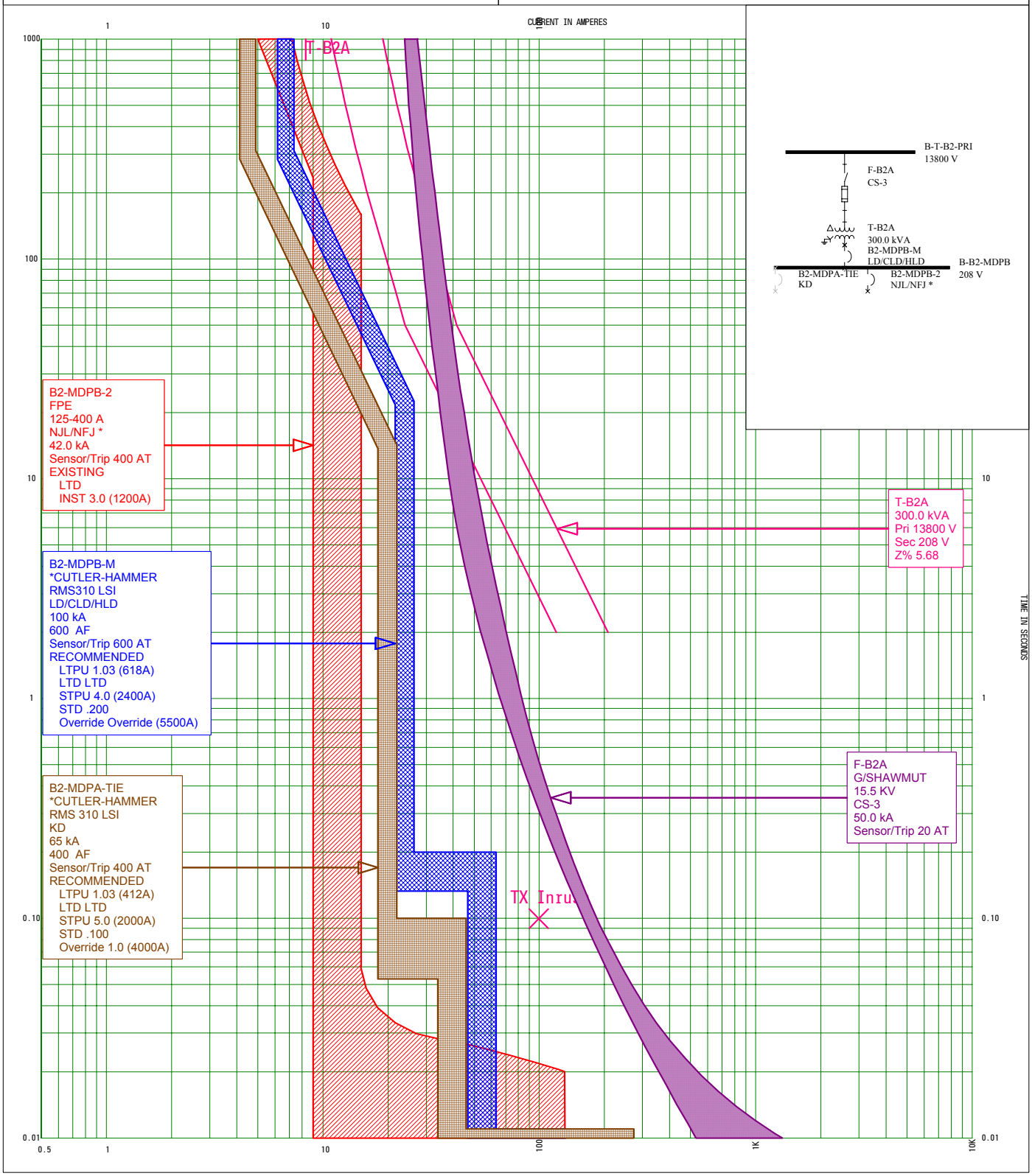


Project Name: BEDFORD VAMC GO# EBS002683 Eaton Electrical Services and Systems	Plot name: BLDG-2 MDP Ref. Voltage: 480V Current Scale: X 10^2 ISSUED 4/30/2004



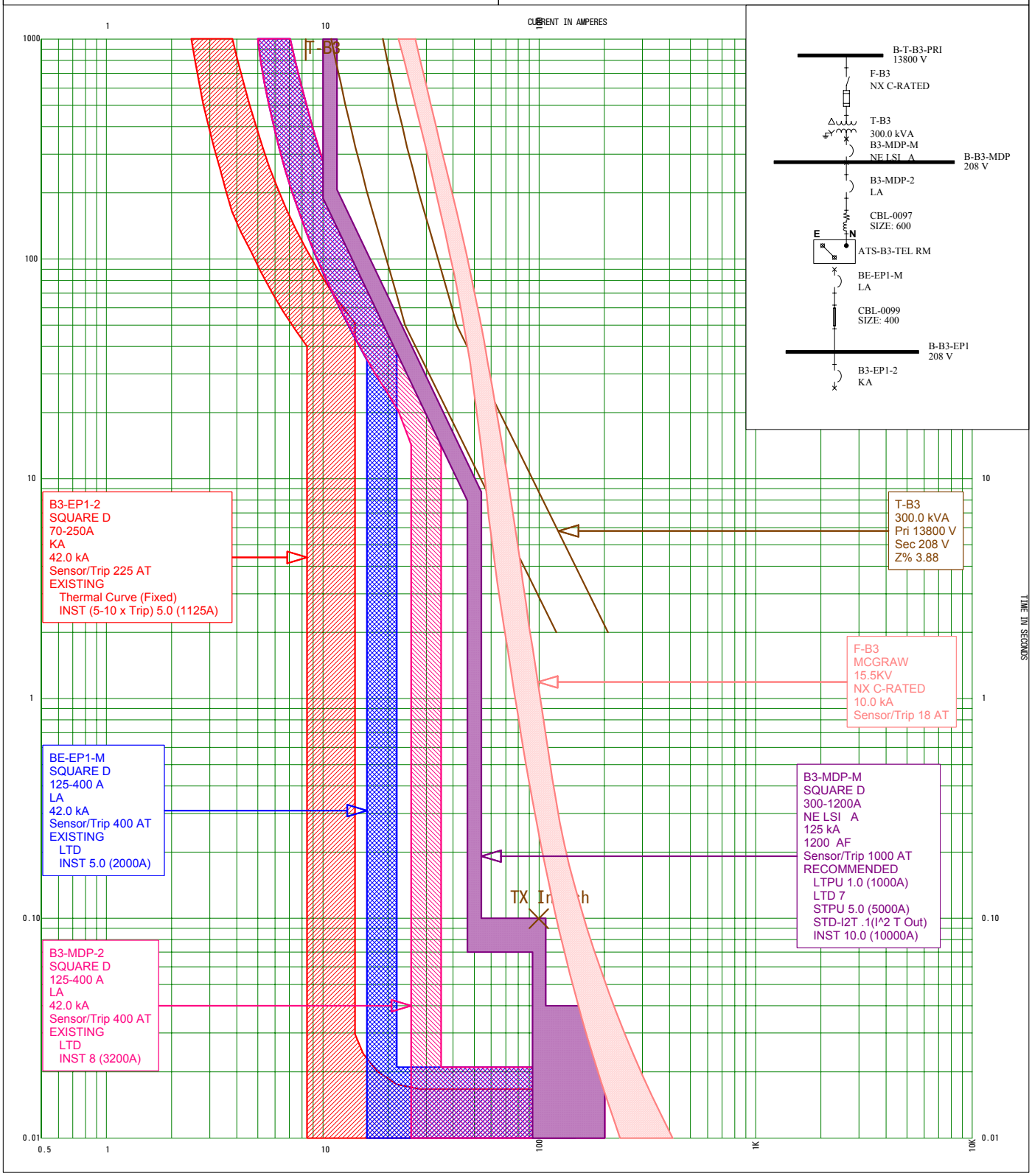
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-2 MDPB
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



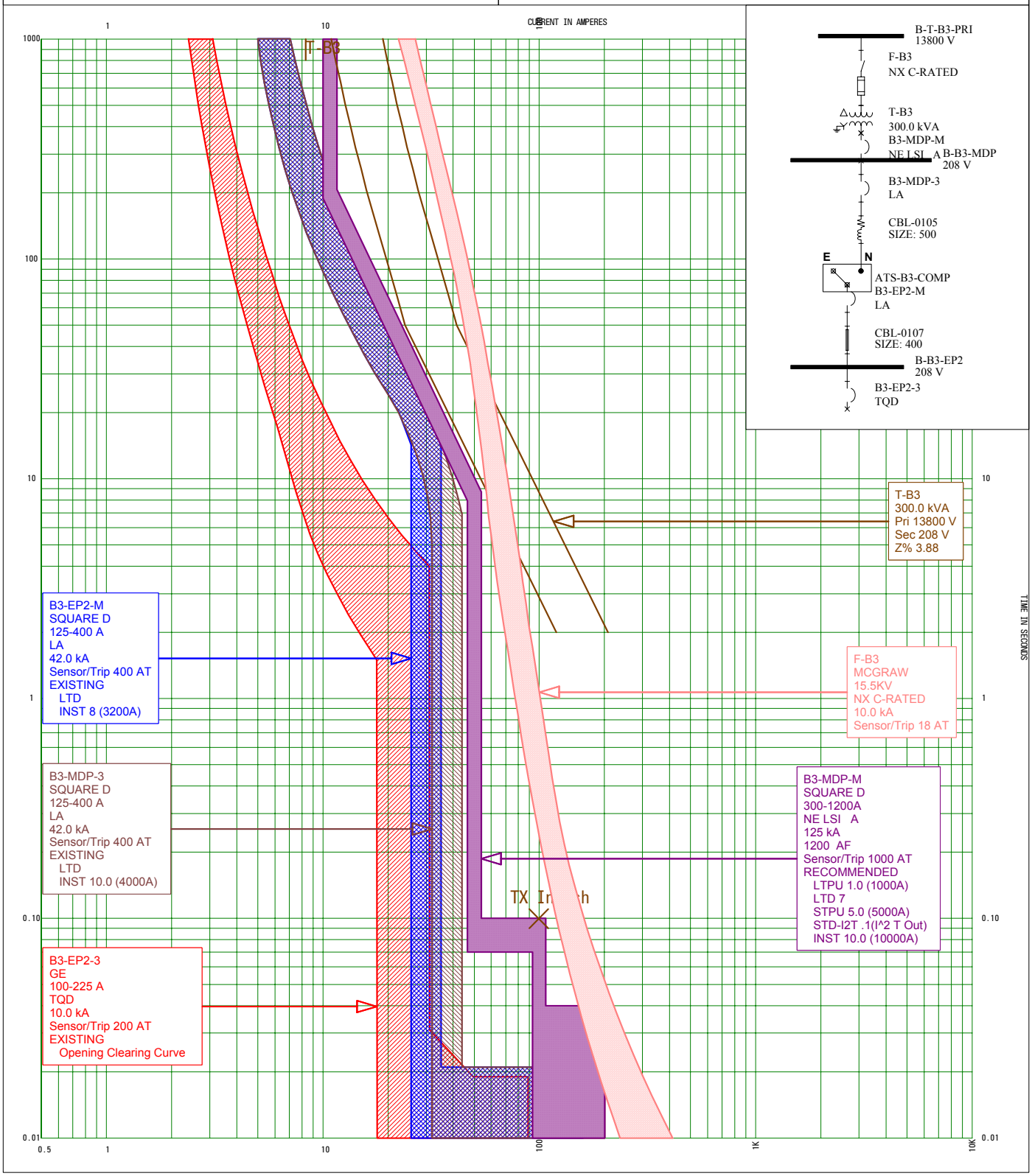
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-3 MDP-EP1
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



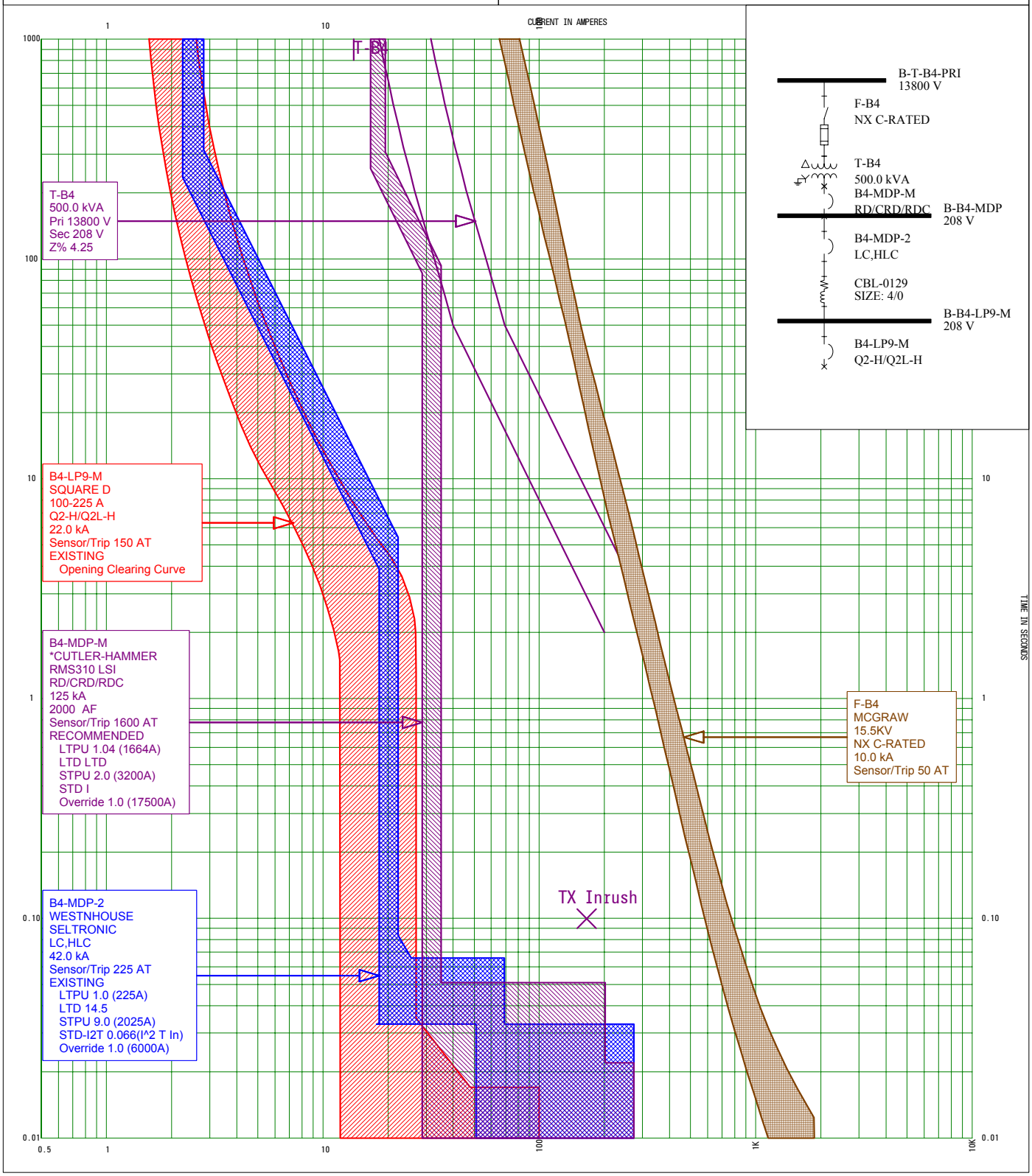
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-3 MDP-EP2
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



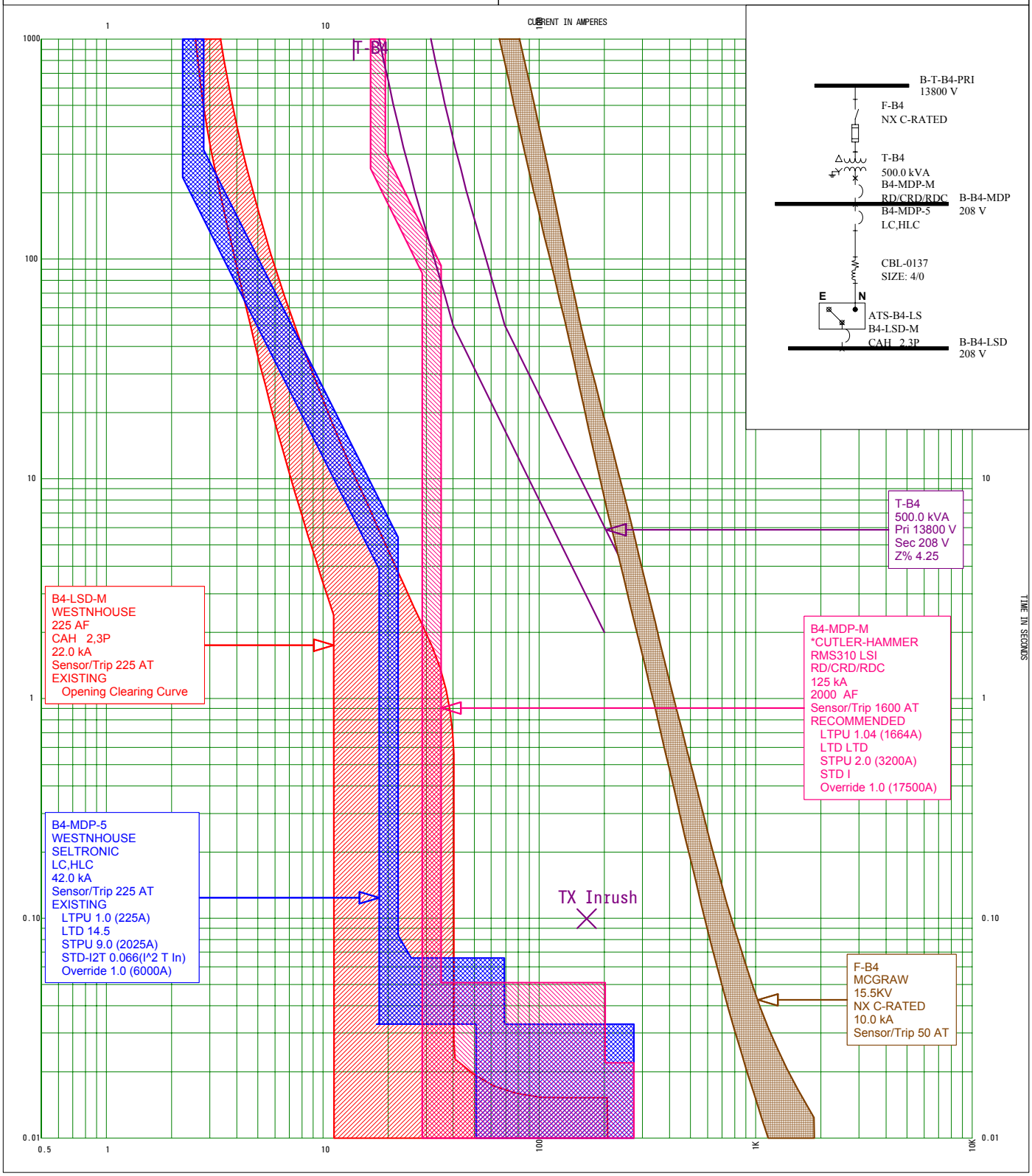
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-4 MDP
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



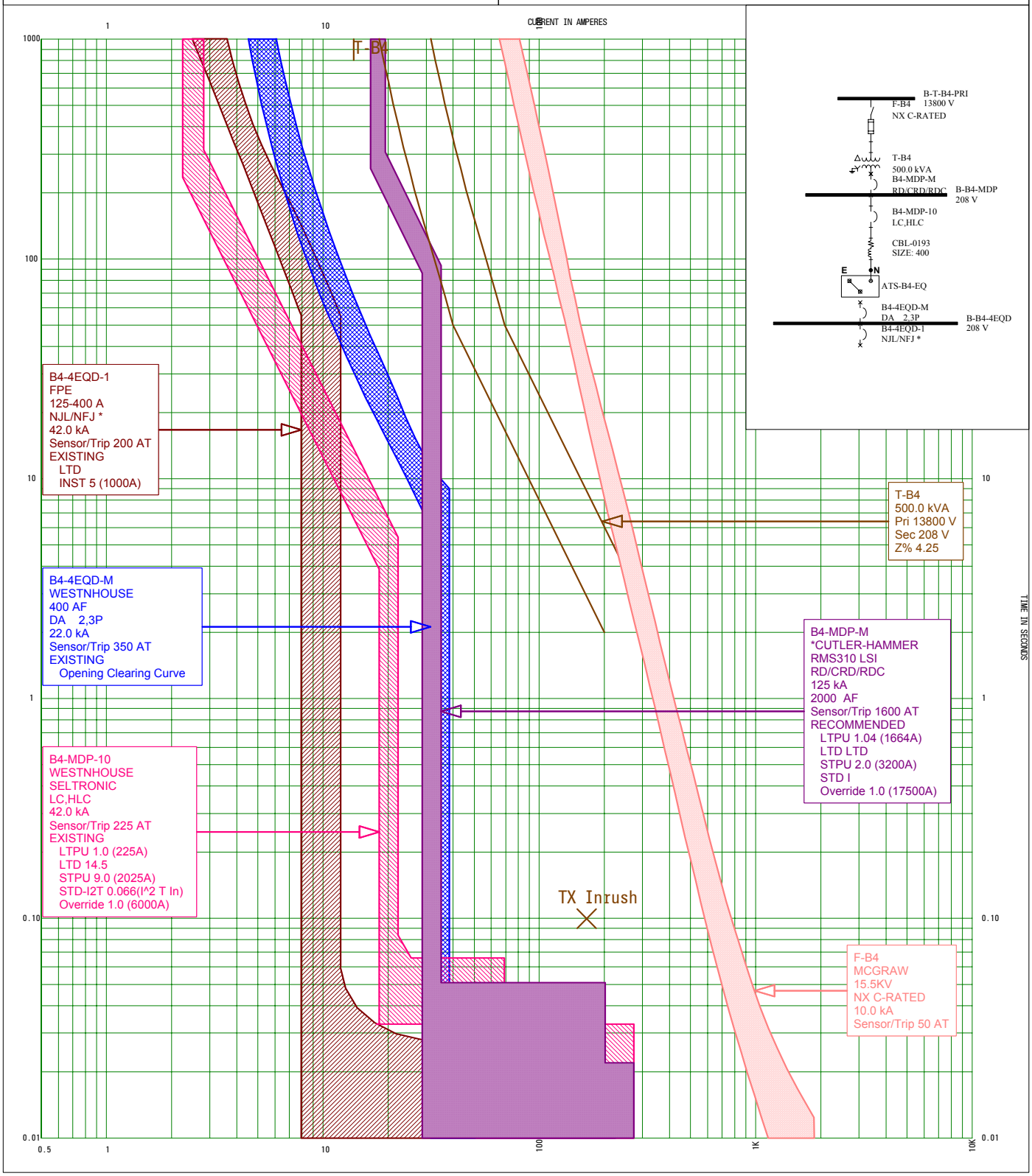
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-4 MDP-LS
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



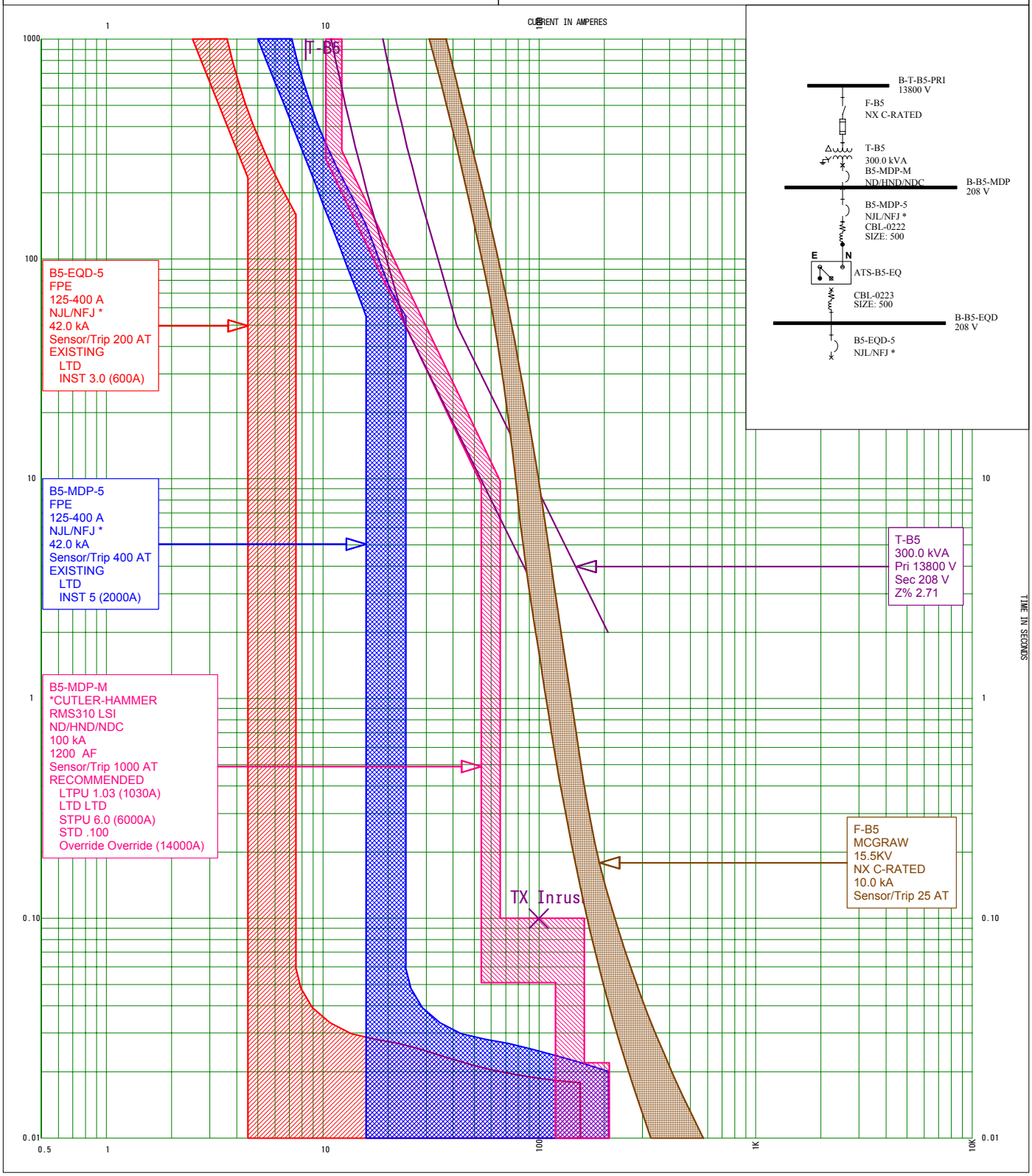
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-4 MDP-EQ
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



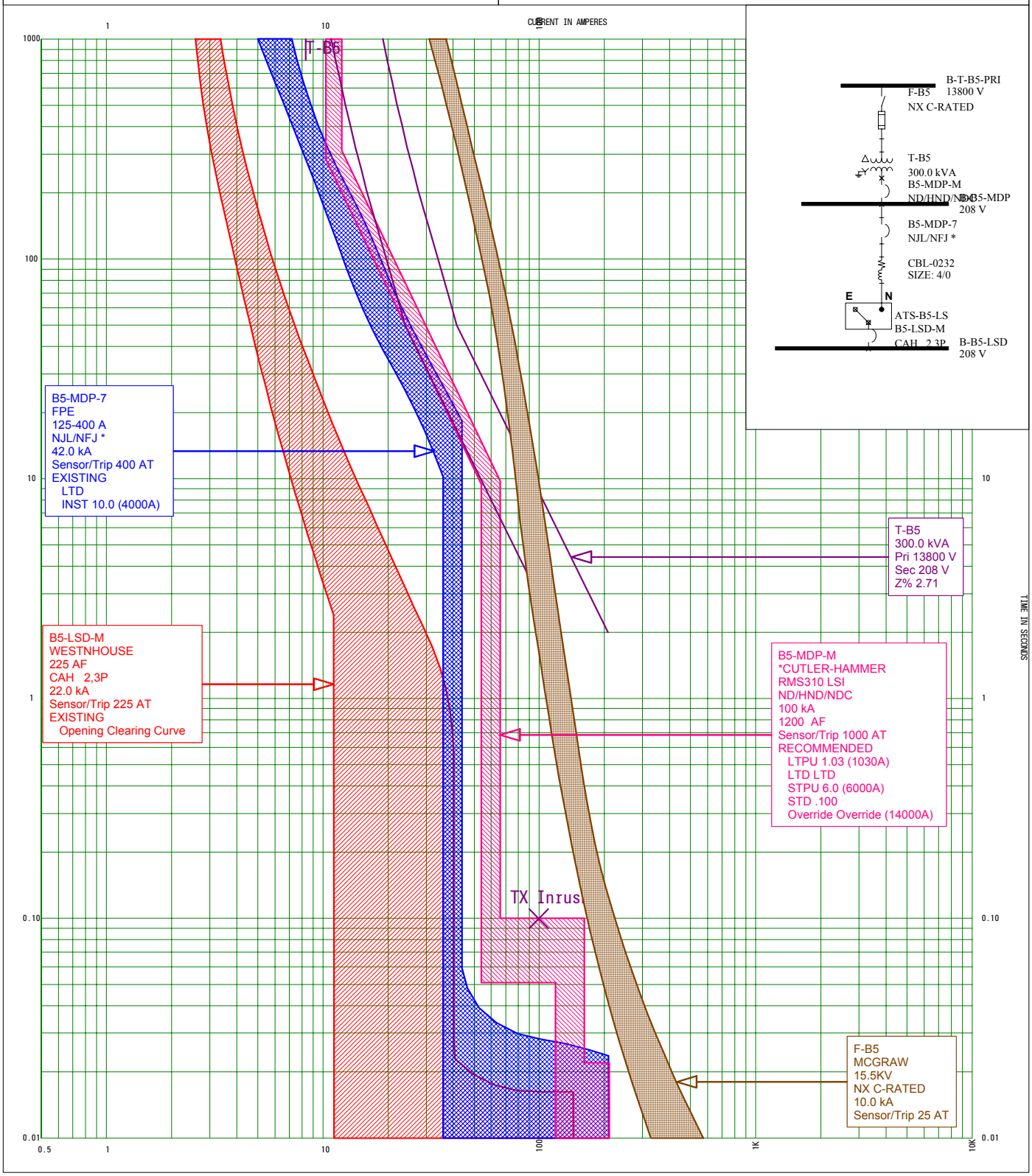
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-5 MDP
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



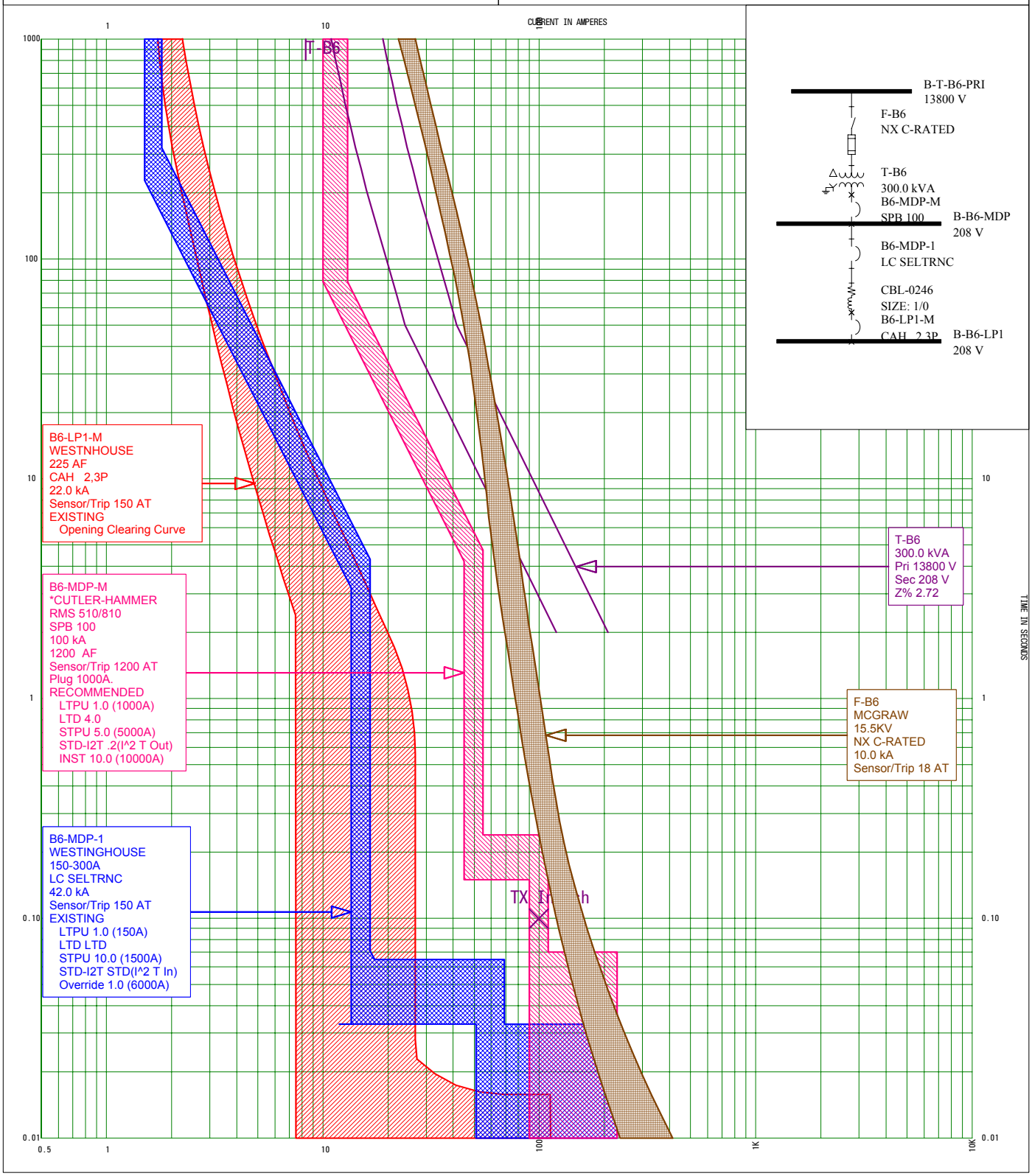
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-5 LS
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



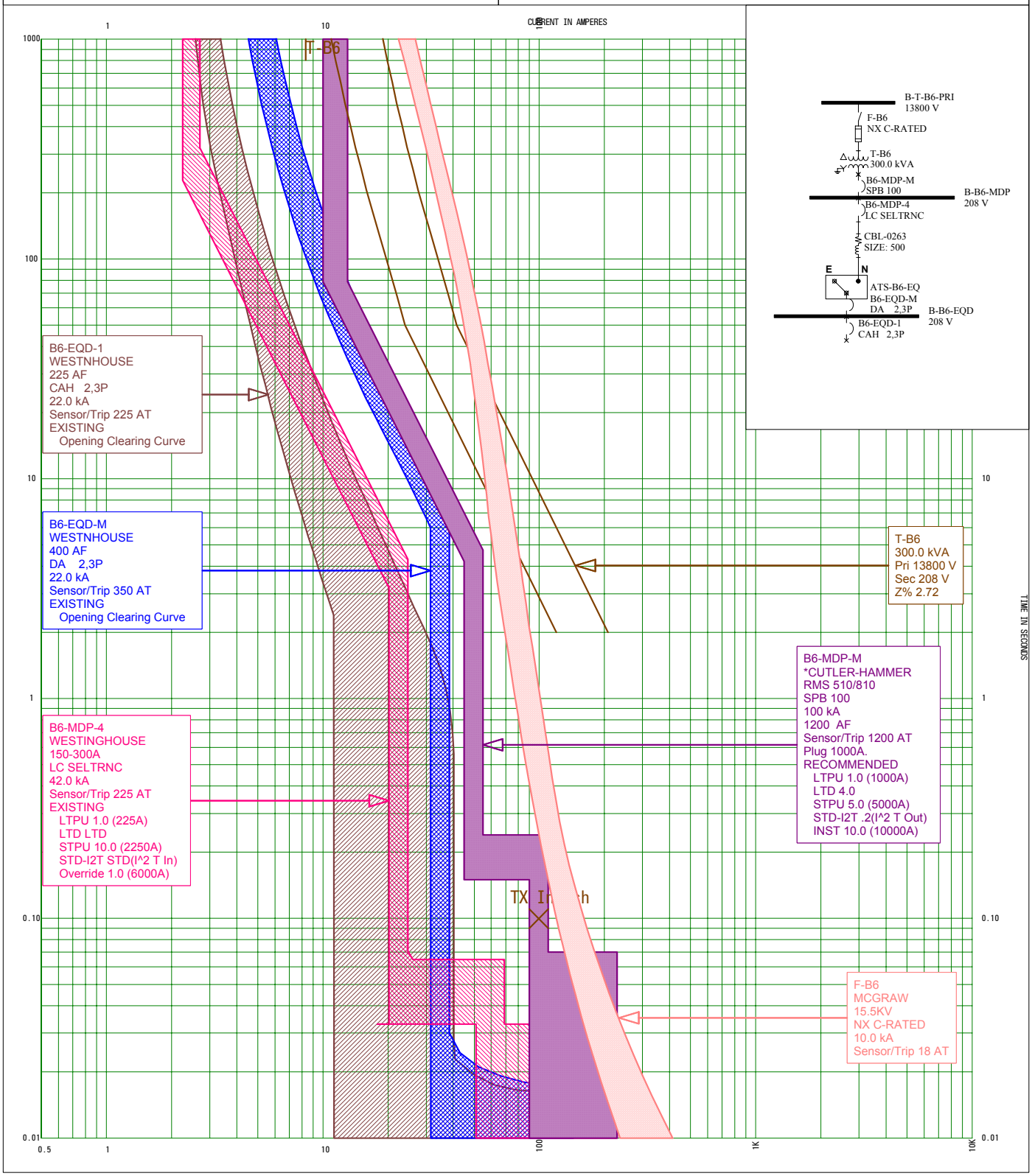
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-6 MDP-150A
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



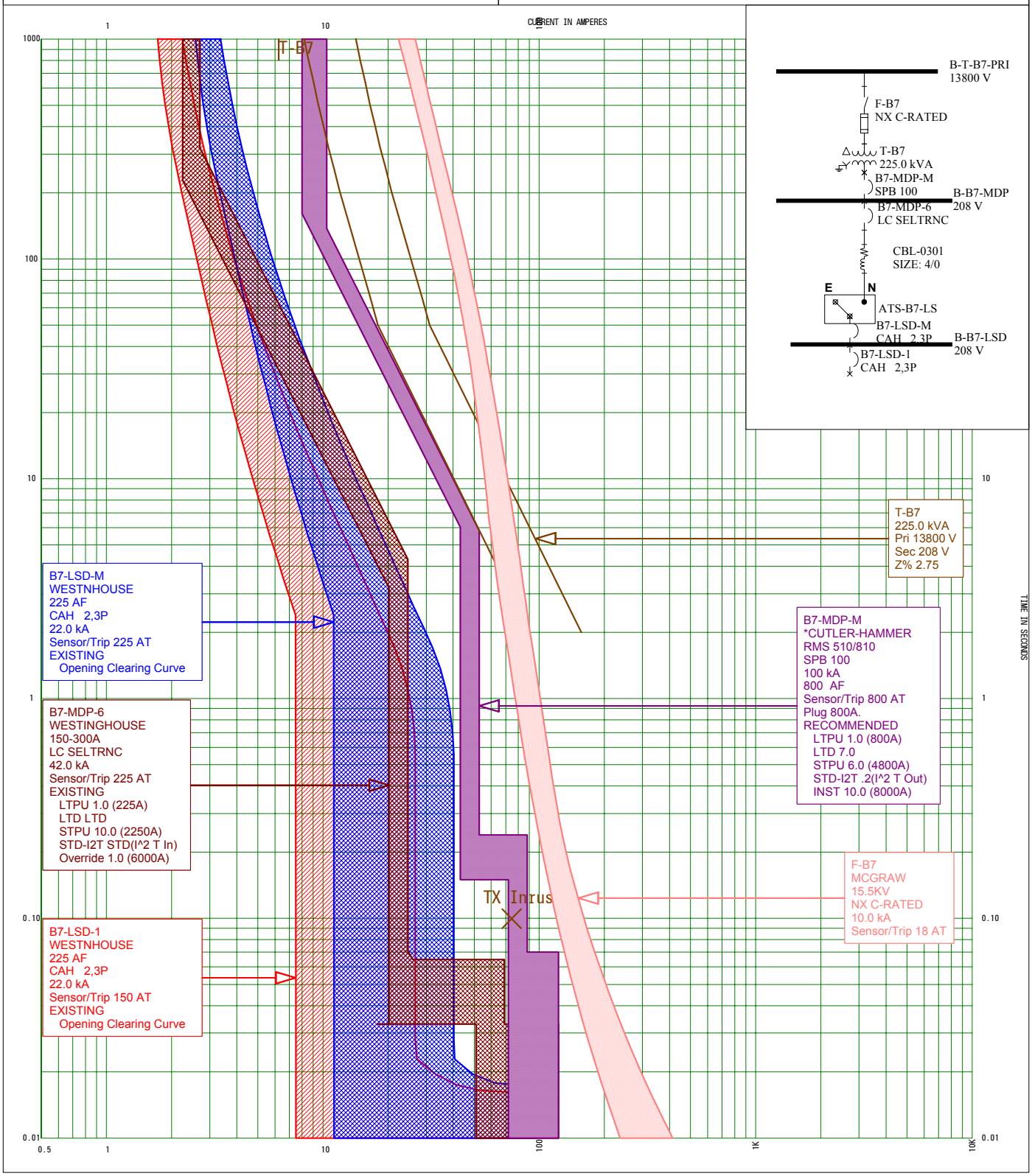
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-6 MDP 225A
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



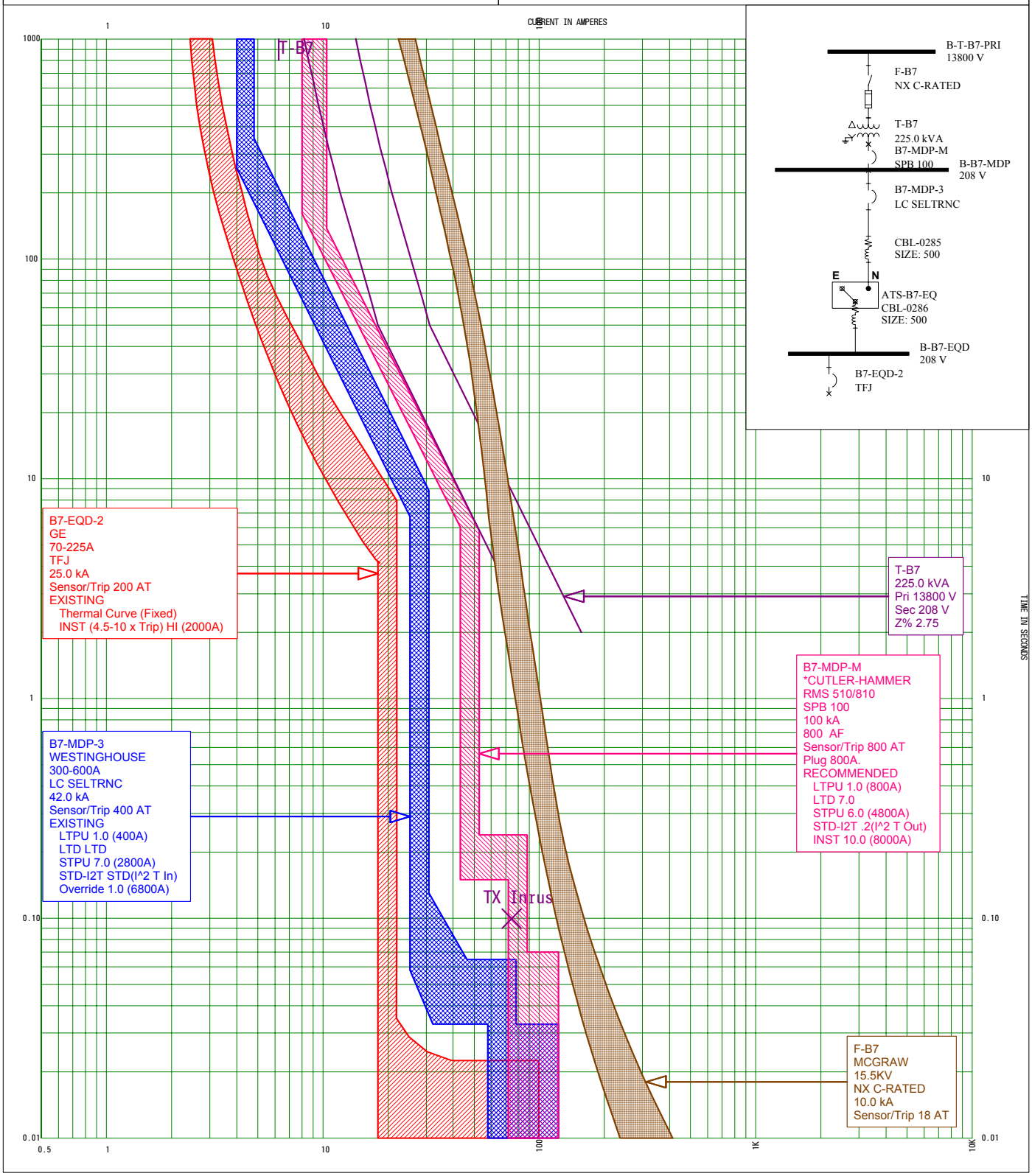
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-7 MDP-225A
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



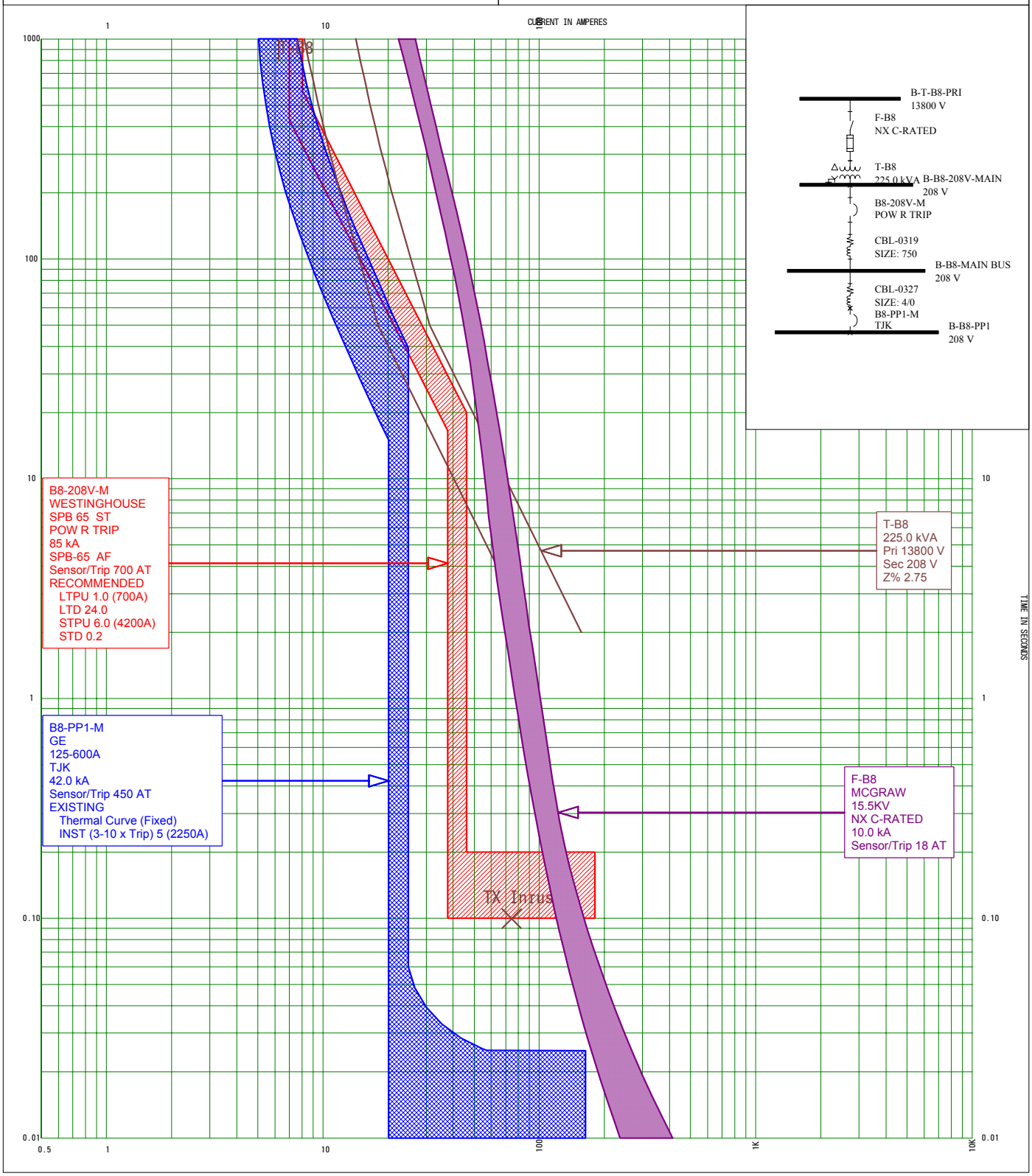
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-7 MDP-400A
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



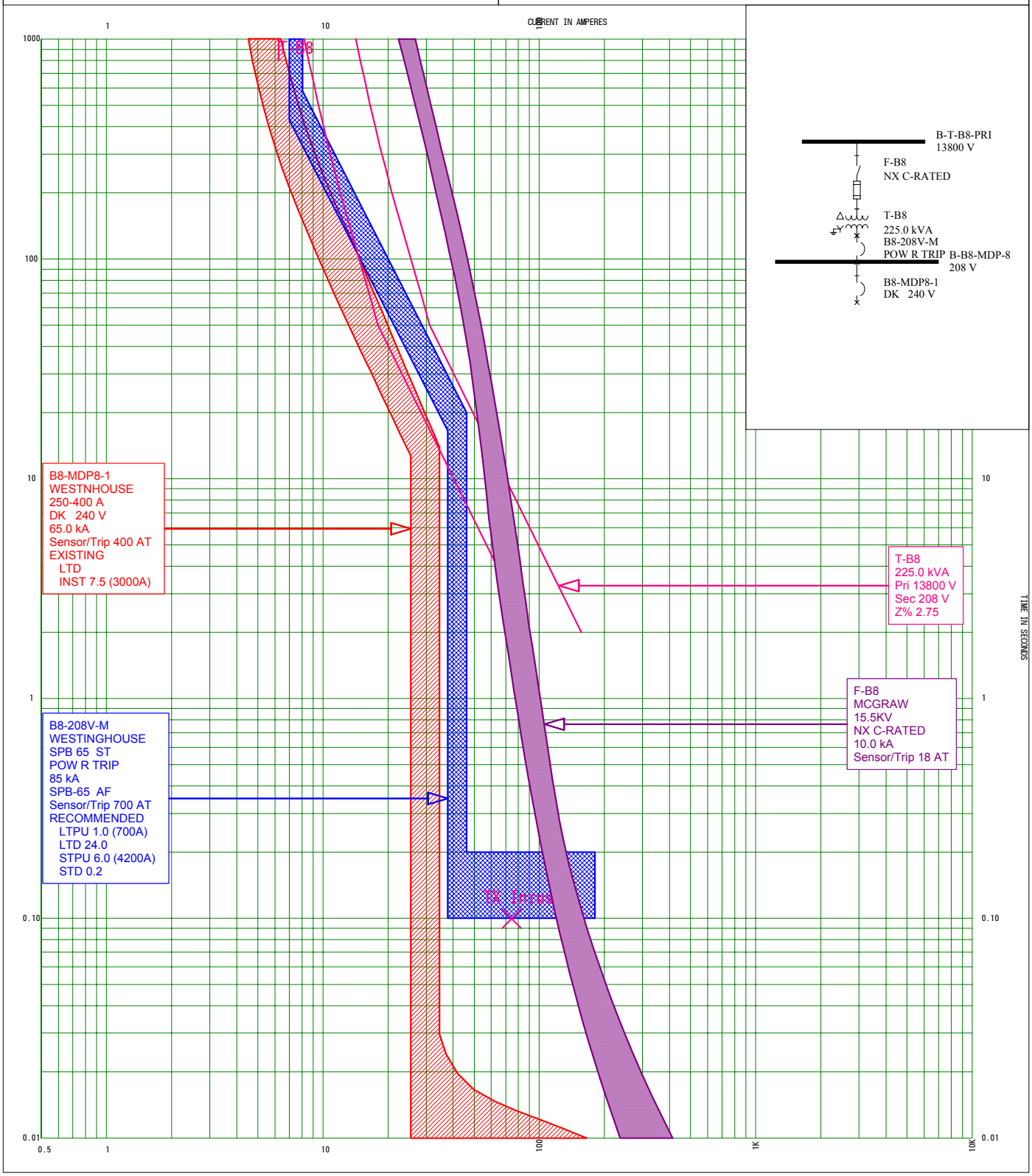
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-8 PP1
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



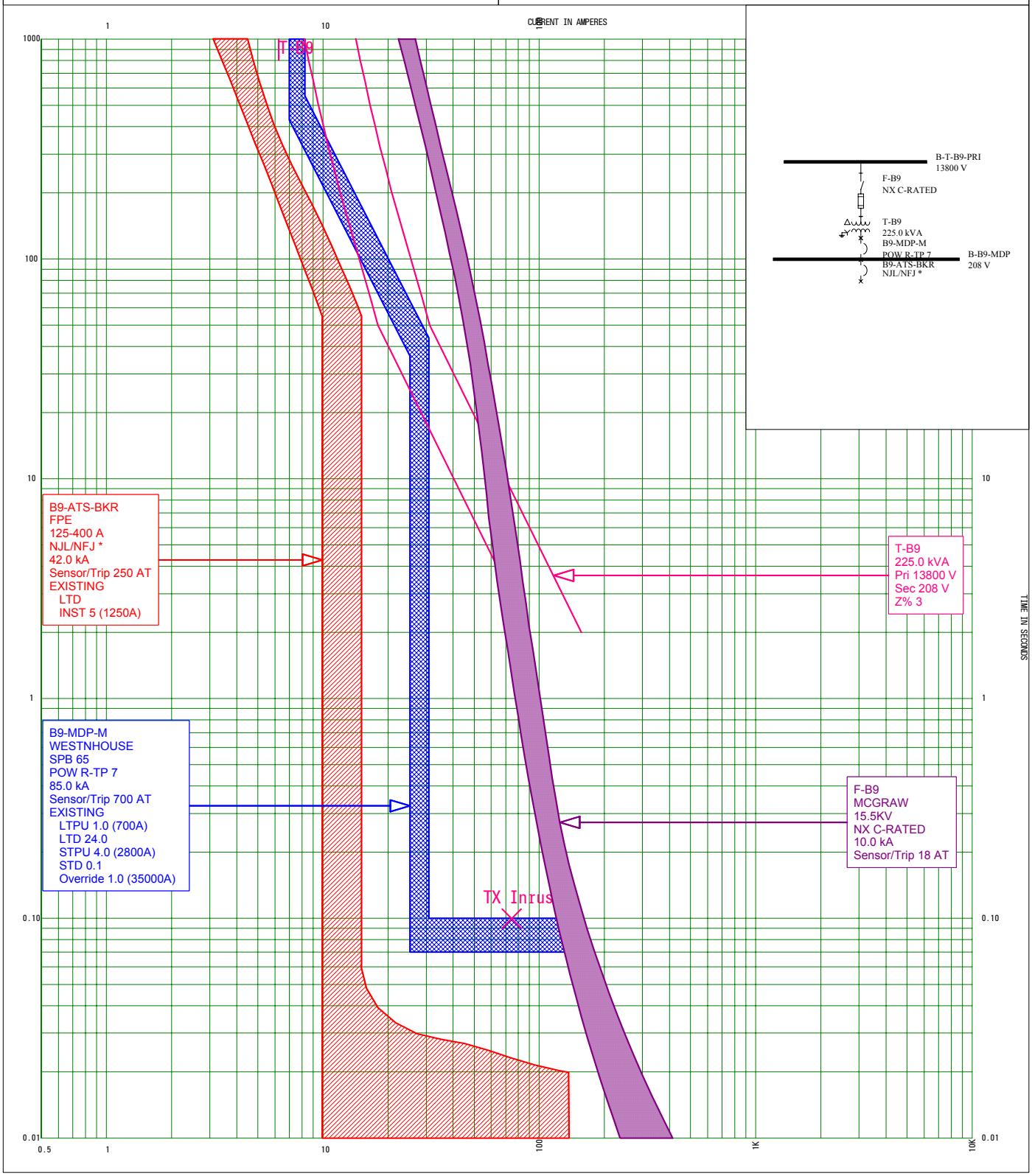
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-8 MDP
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



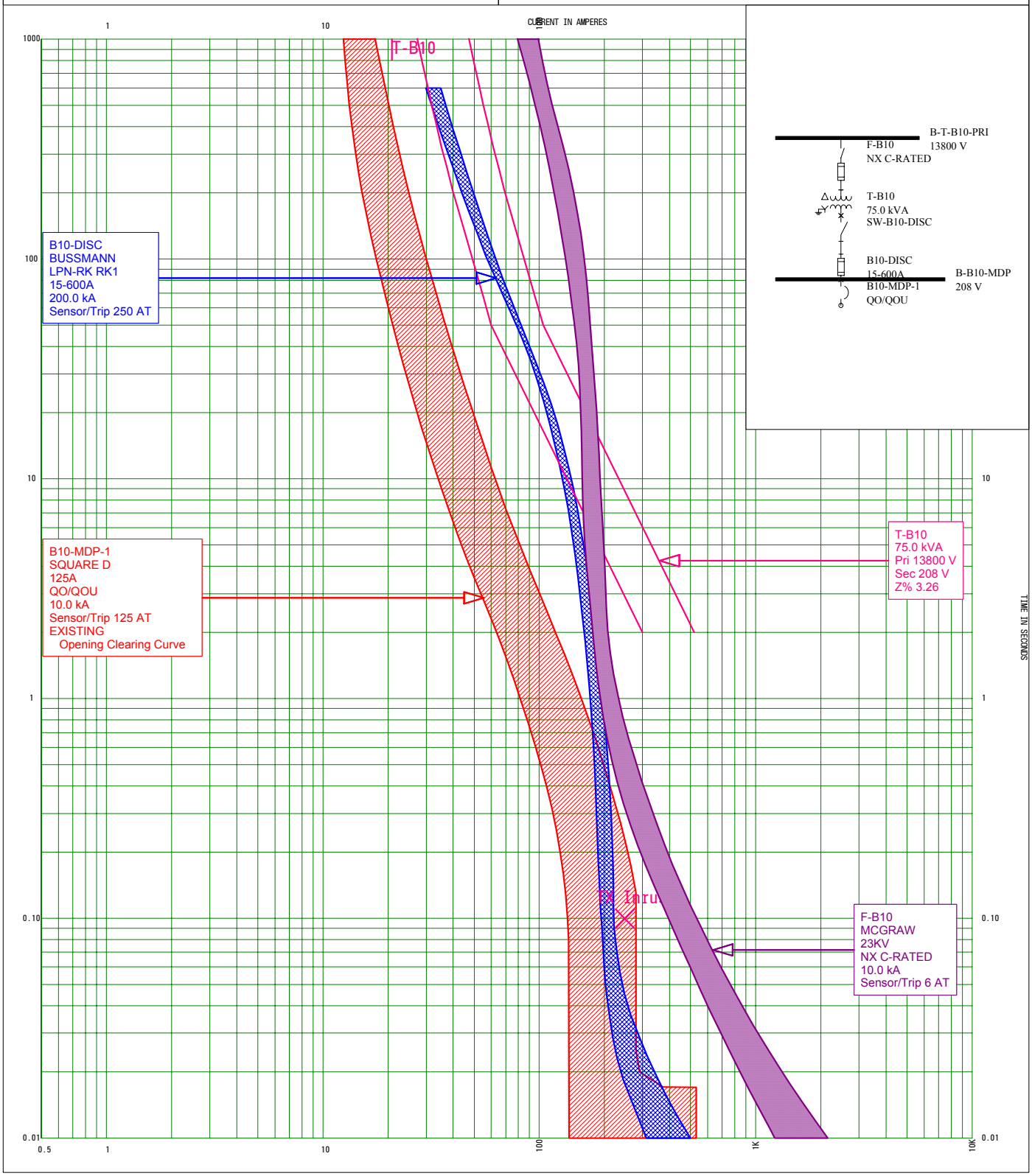
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-9 MDP
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



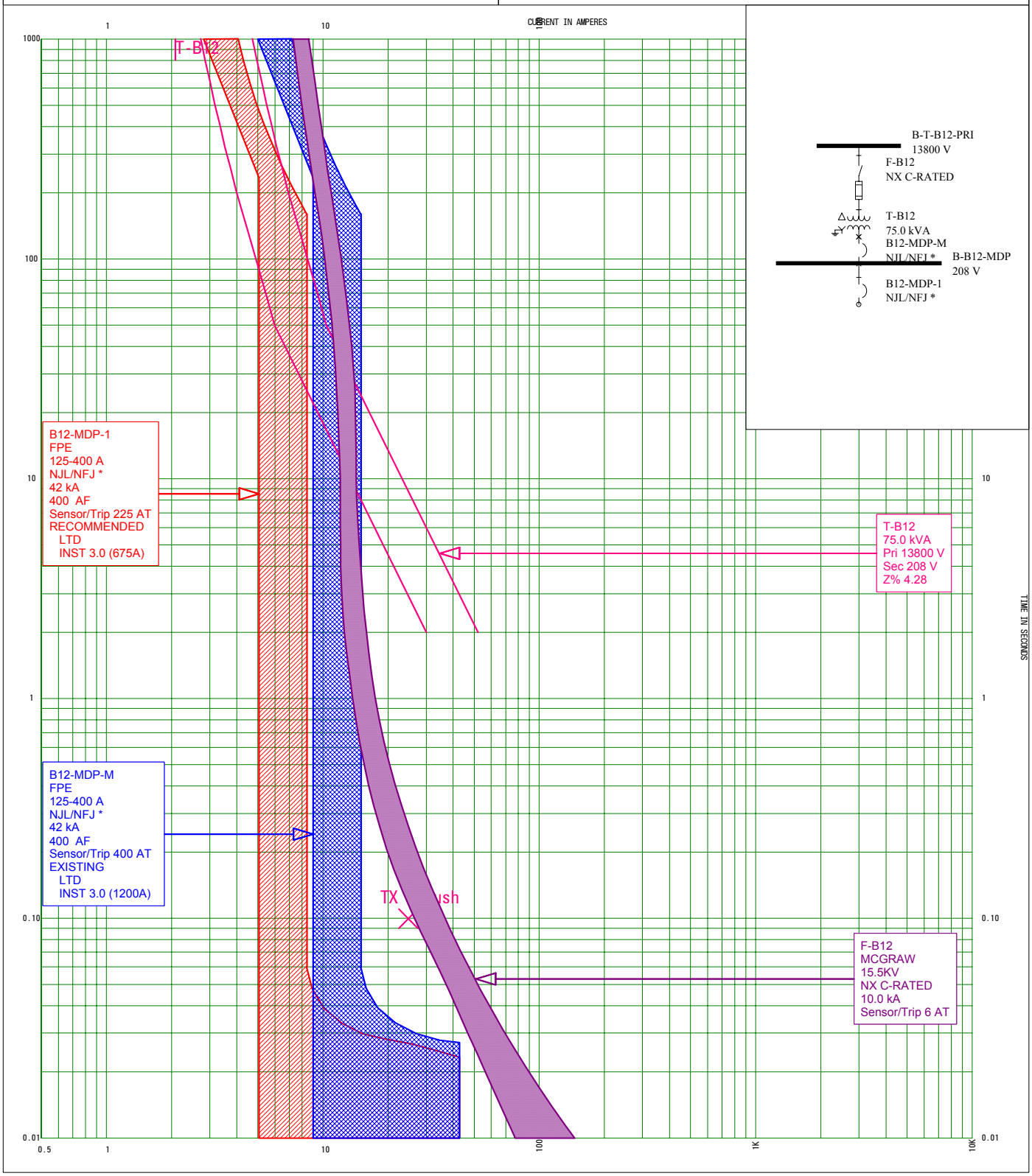
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-10 MDP
Ref. Voltage: 208V
Current Scale: X 10^1
ISSUED 4/30/2004



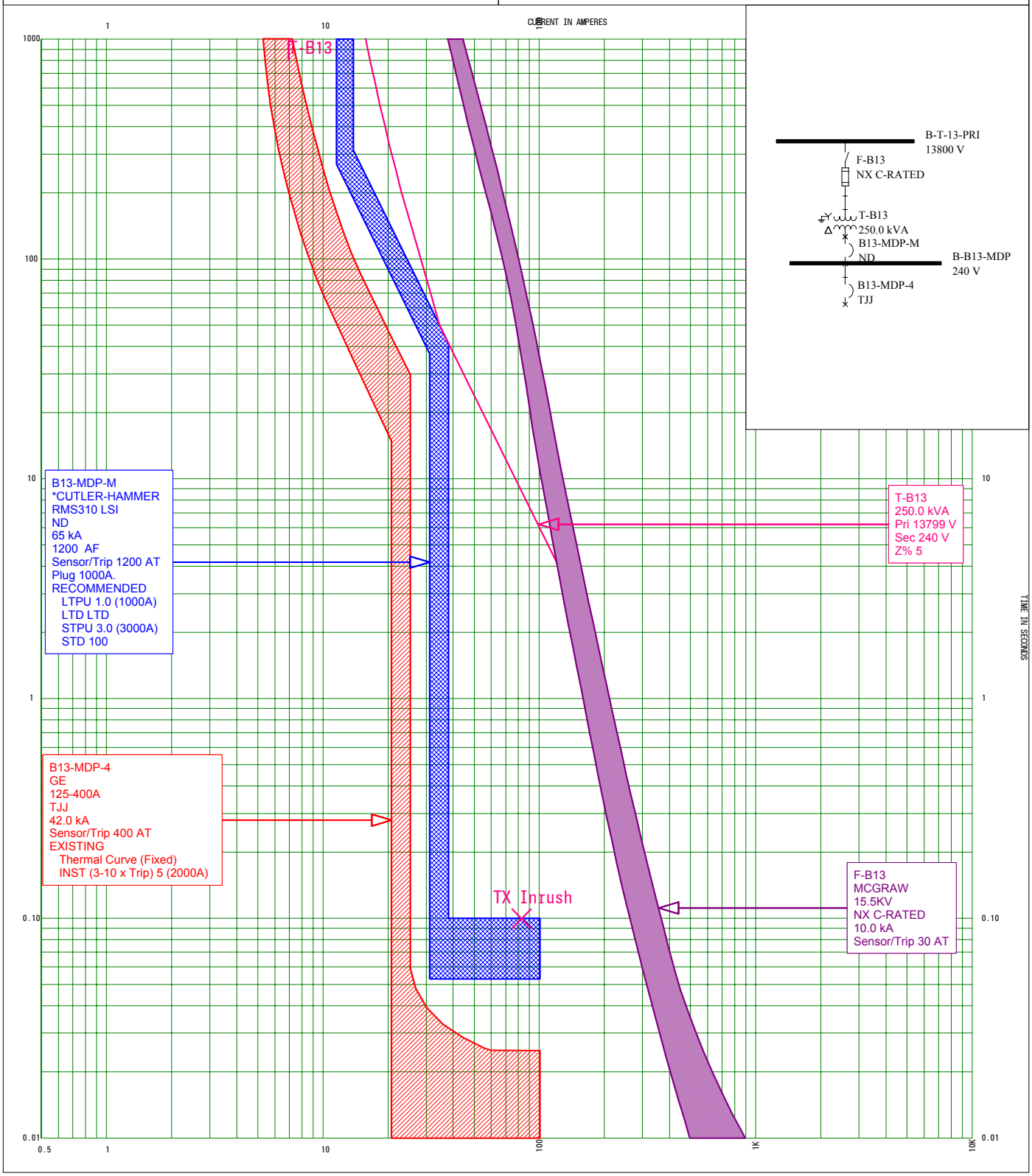
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-12 MDP
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



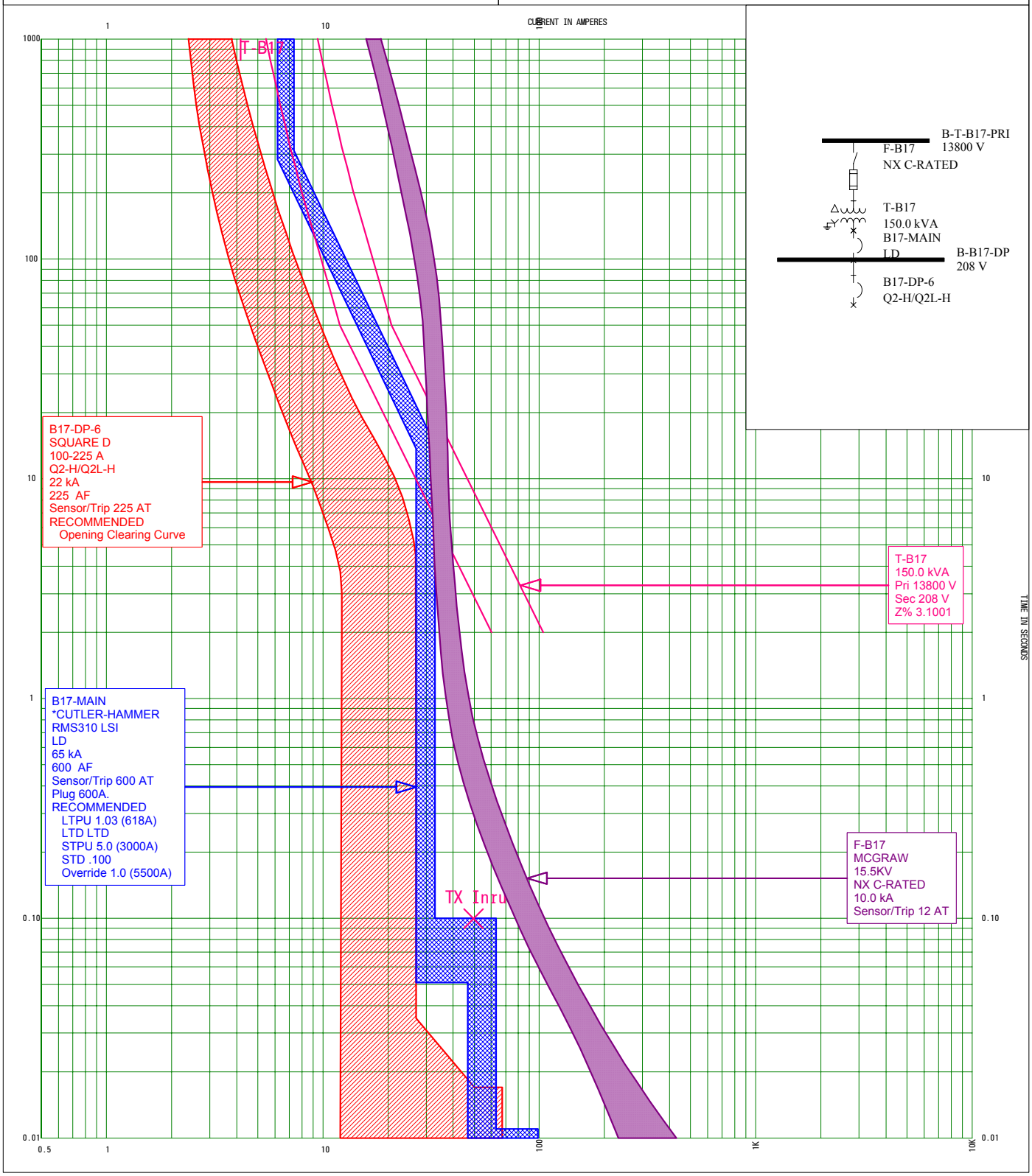
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-13 MDP
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



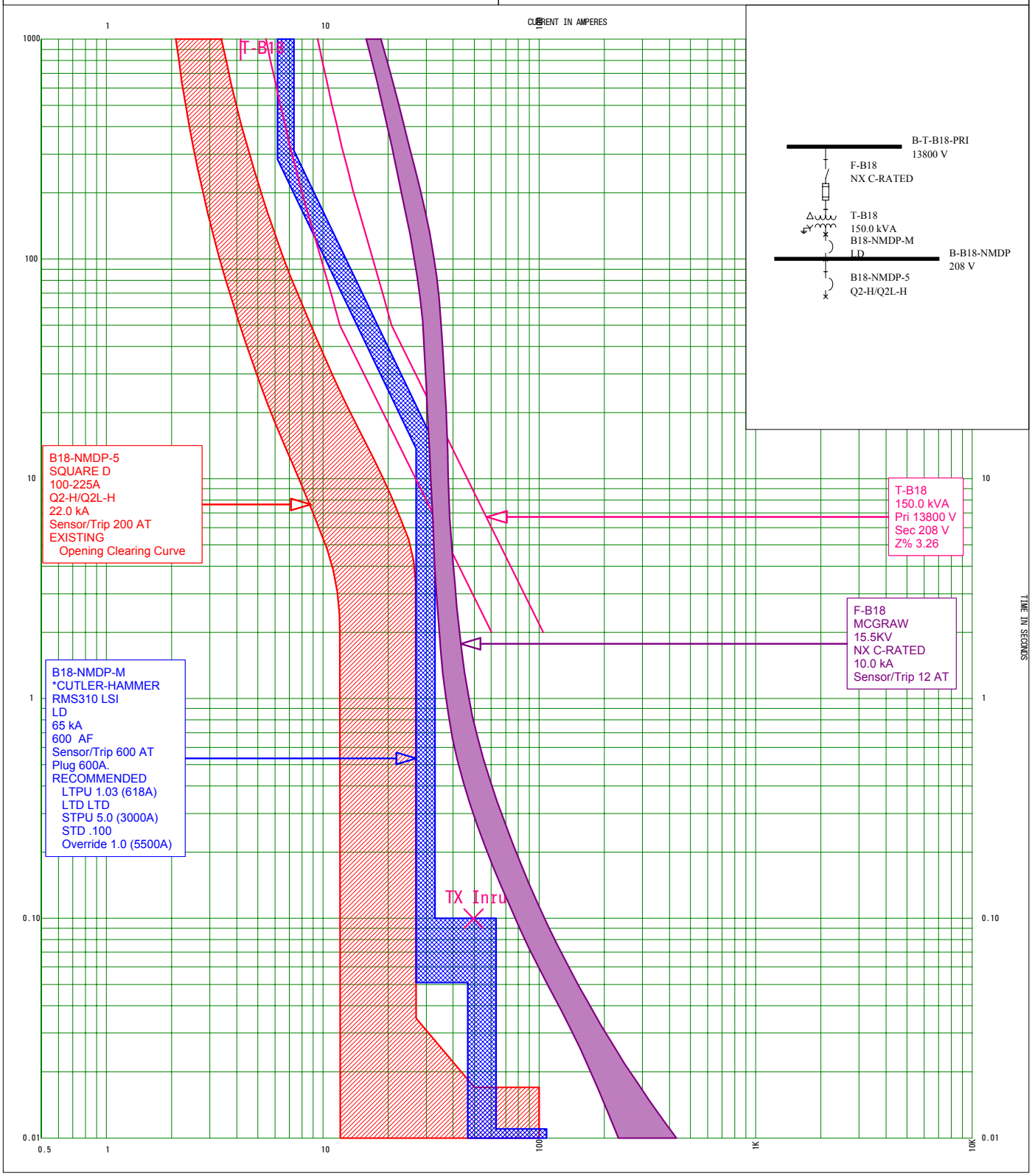
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-17 DP
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



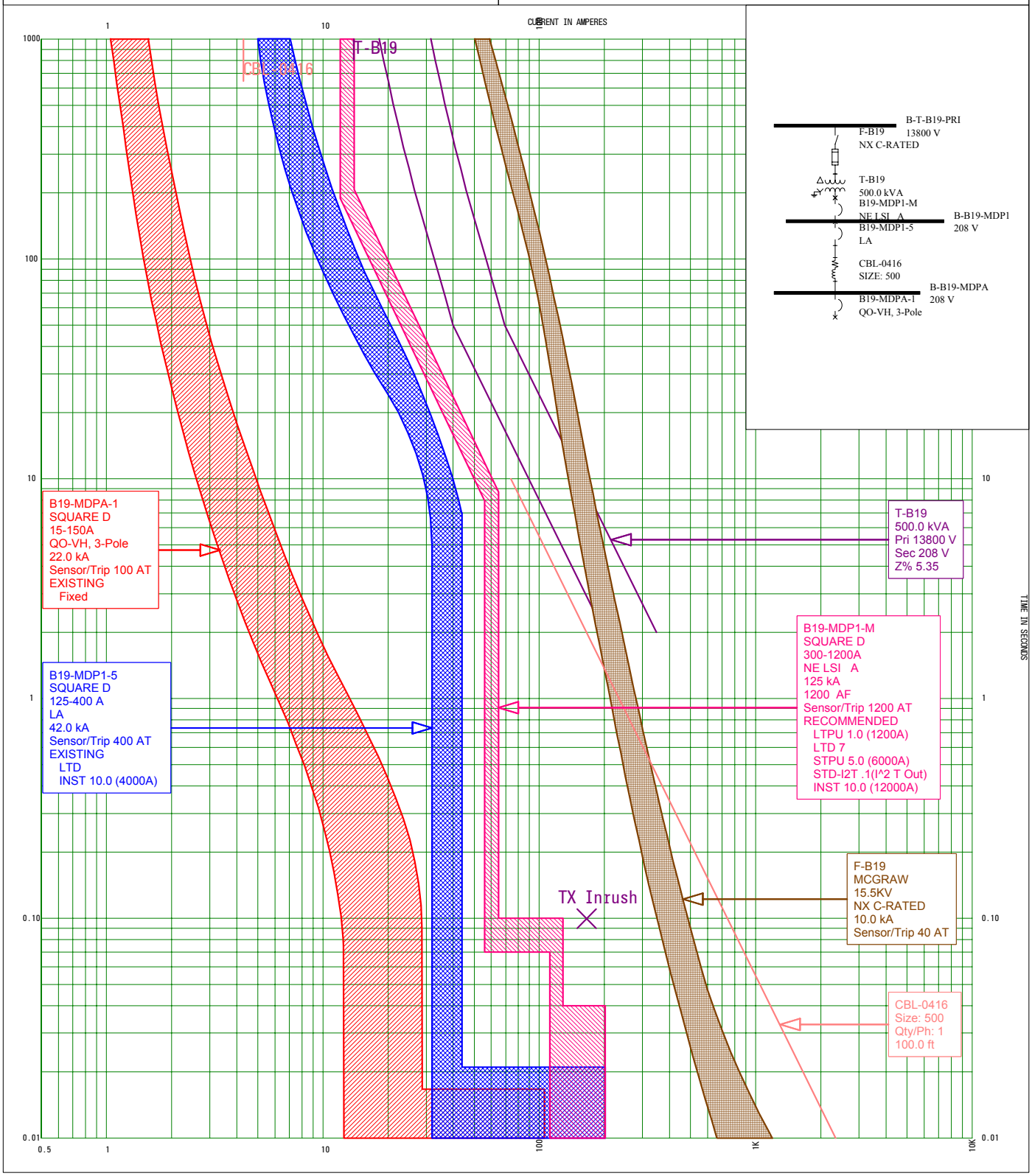
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-18 MDP
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



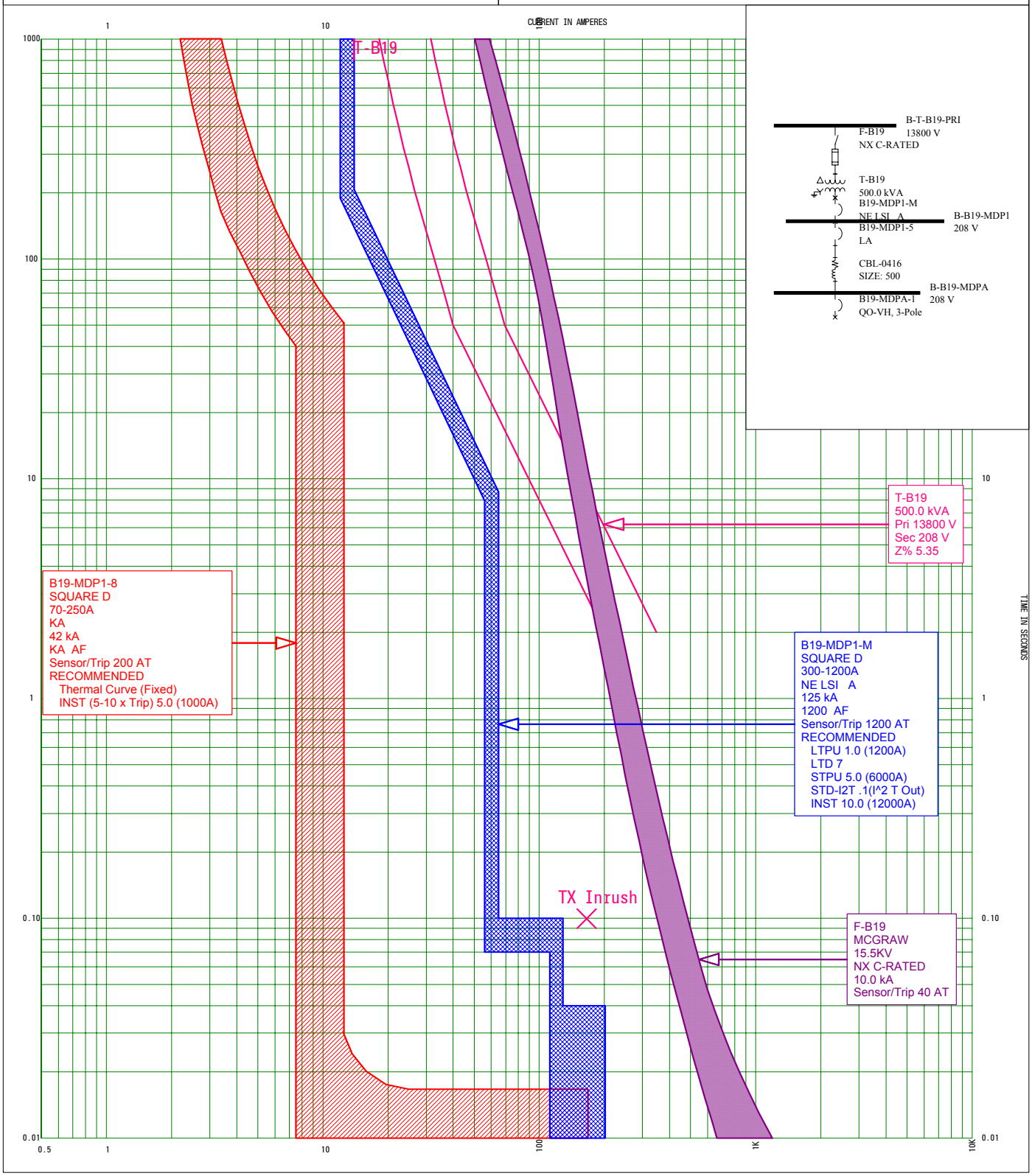
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-19 MDP1
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



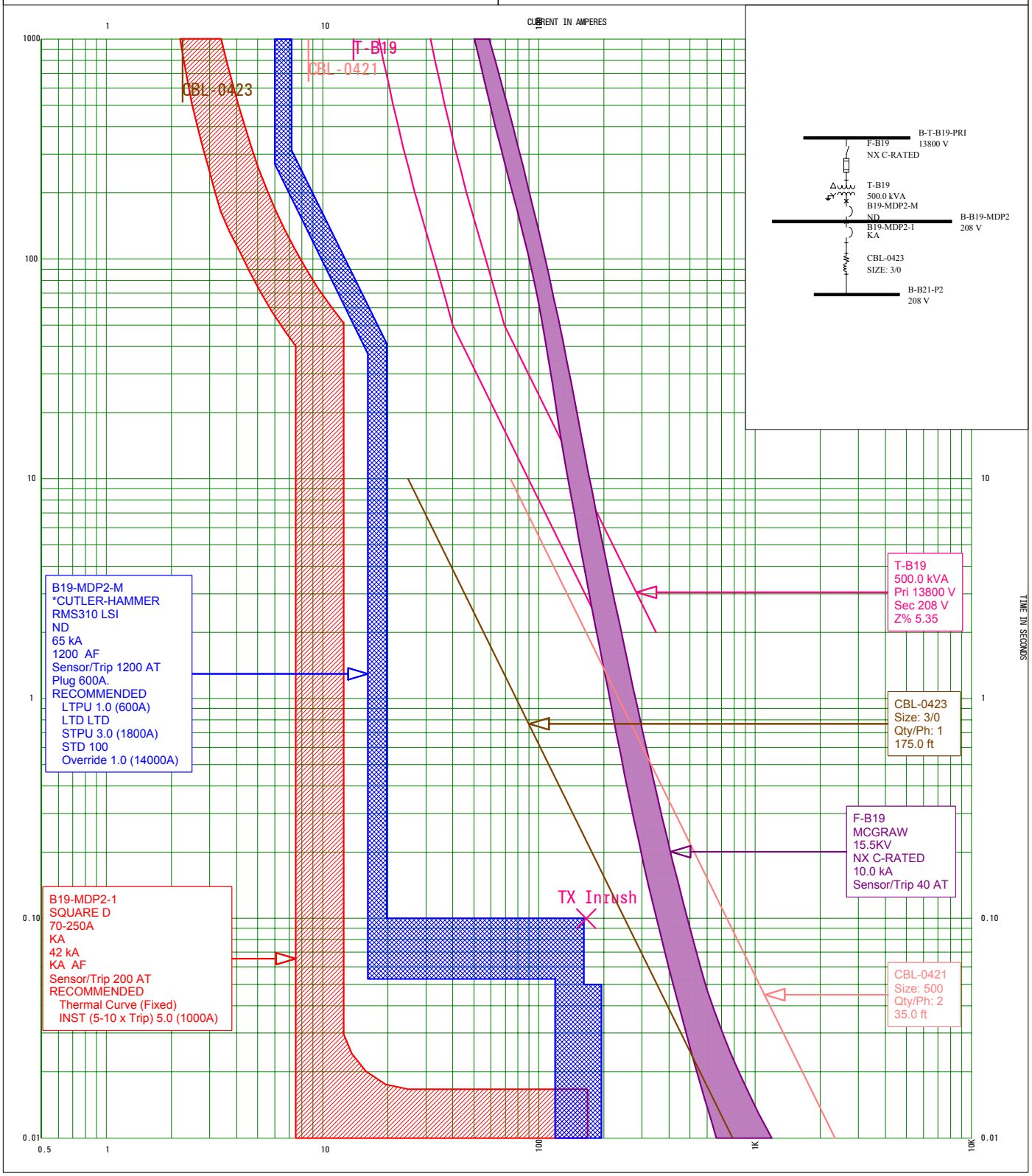
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-19 MDP1 200A
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



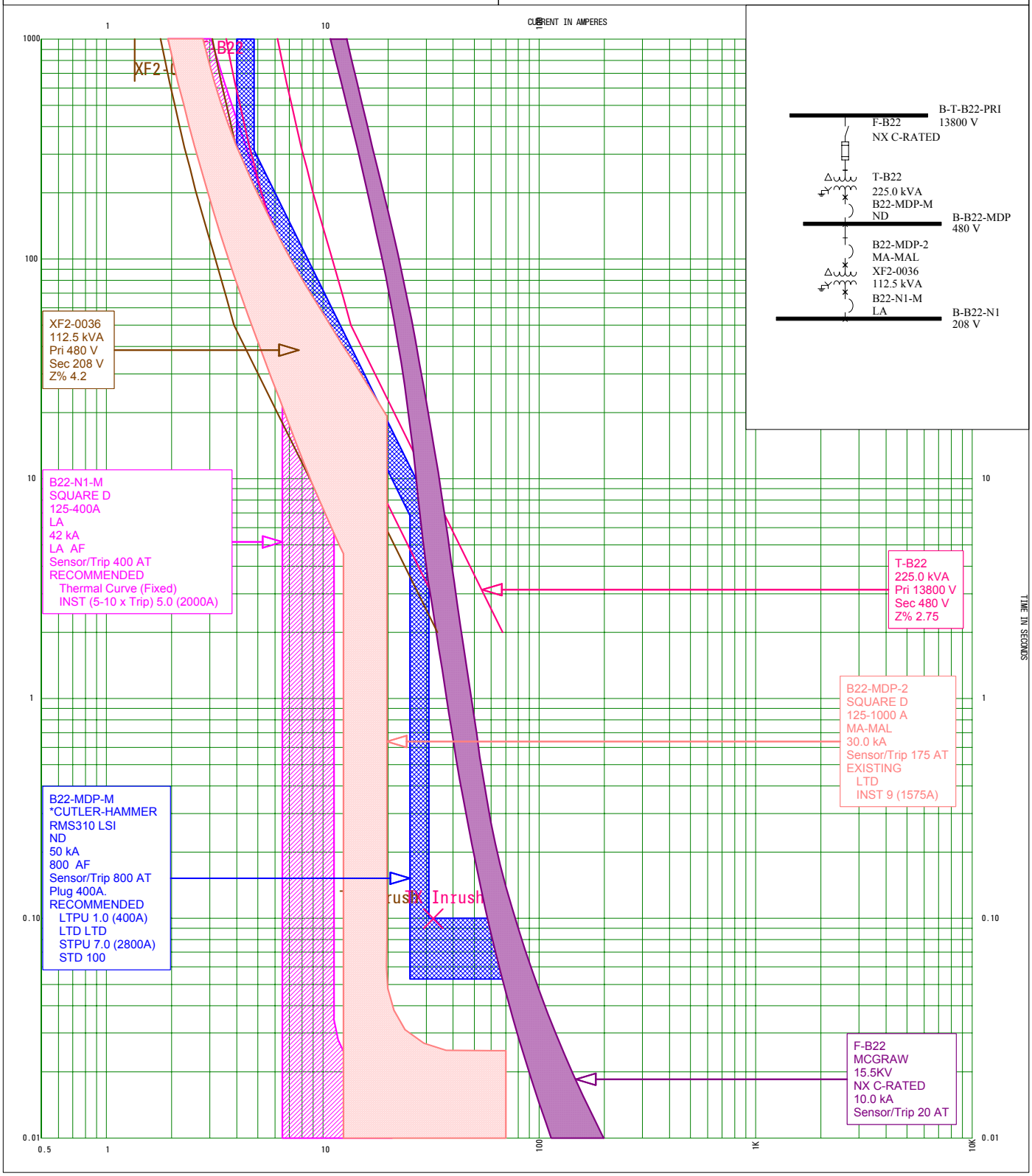
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-19 MDP2
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



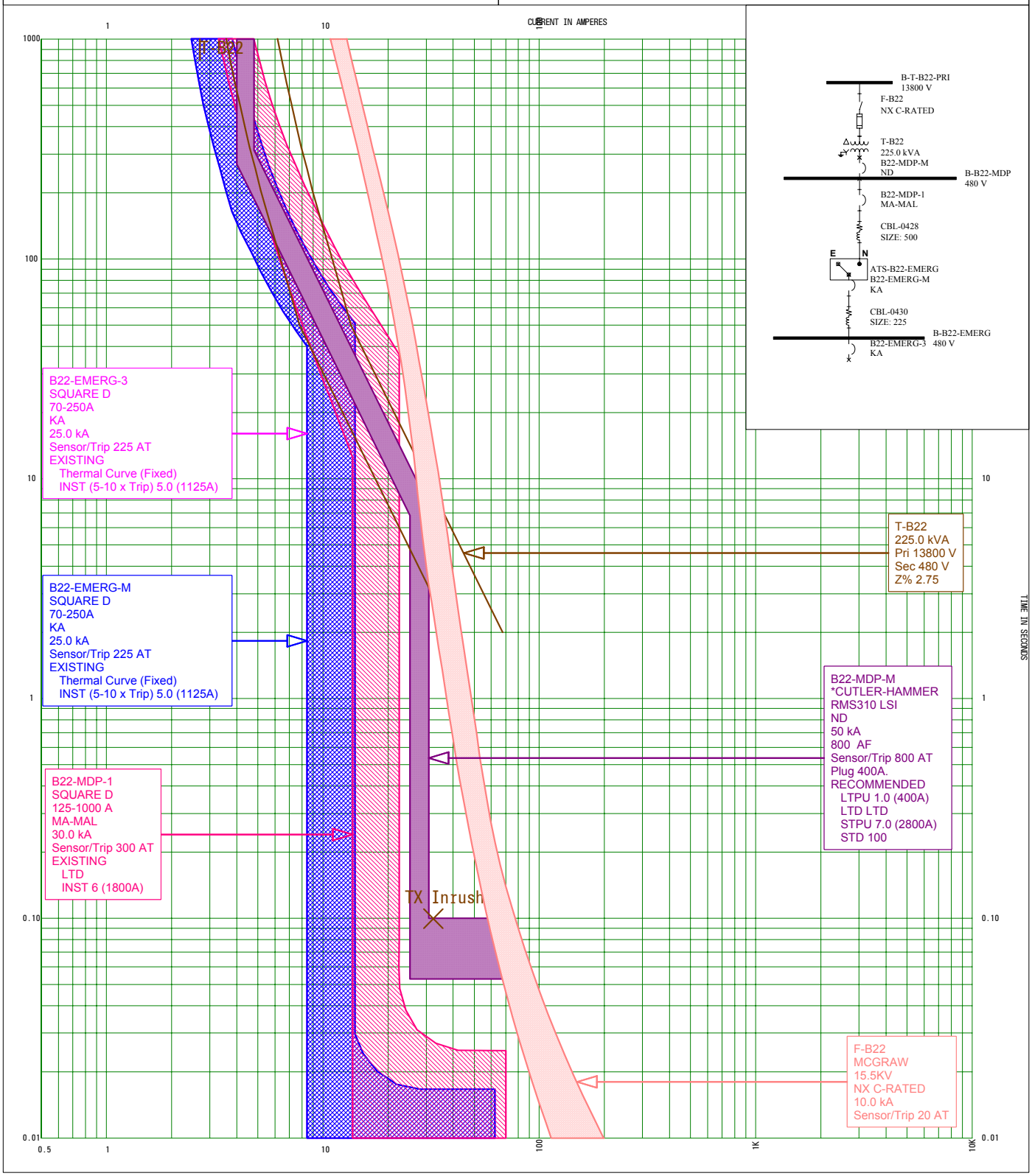
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-22 MDP 175A
Ref. Voltage: 480V
Current Scale: X 10^2
ISSUED 4/30/2004



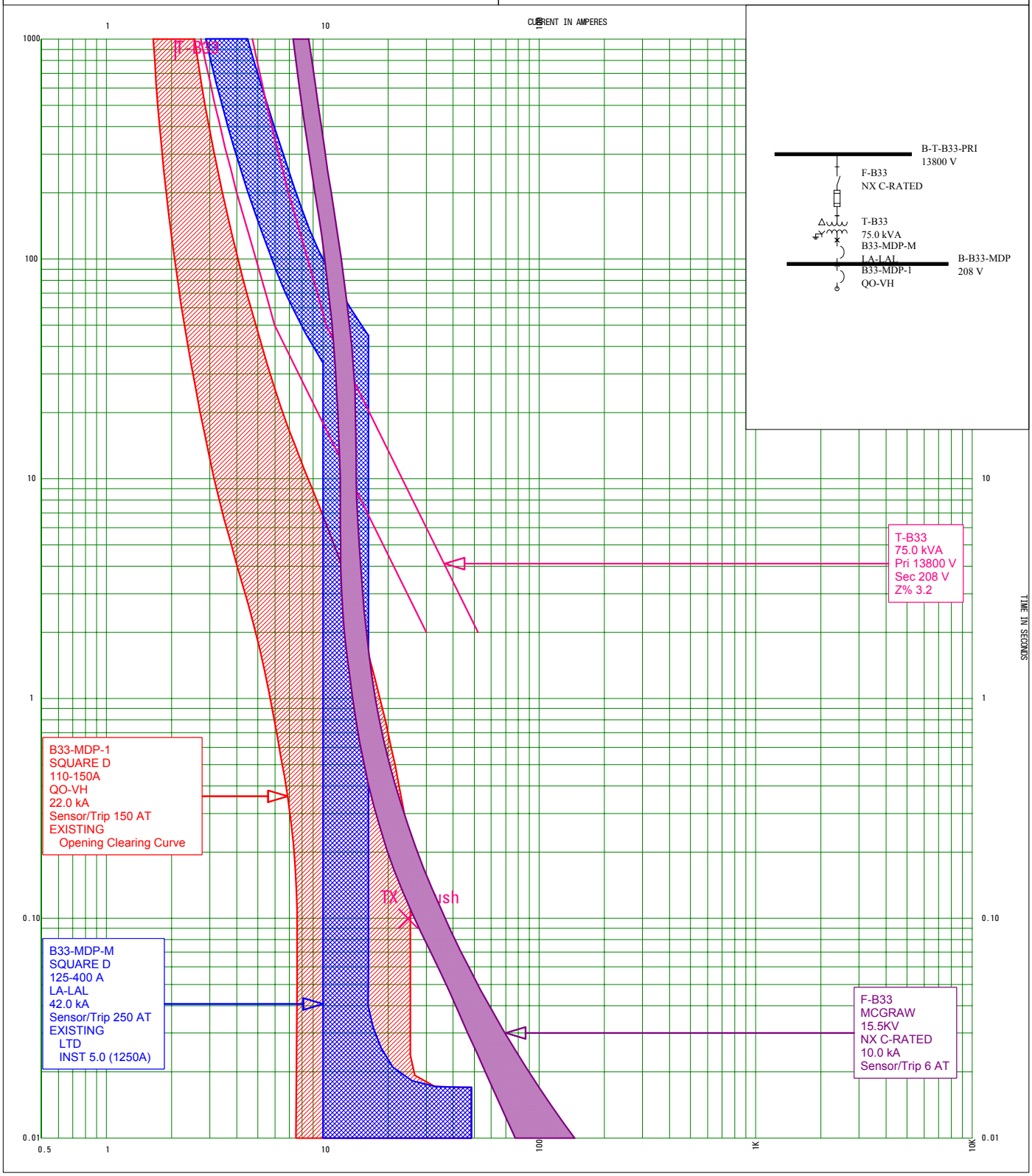
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-22 MDP 300A
Ref. Voltage: 480V
Current Scale: X 10^2
ISSUED 4/30/2004



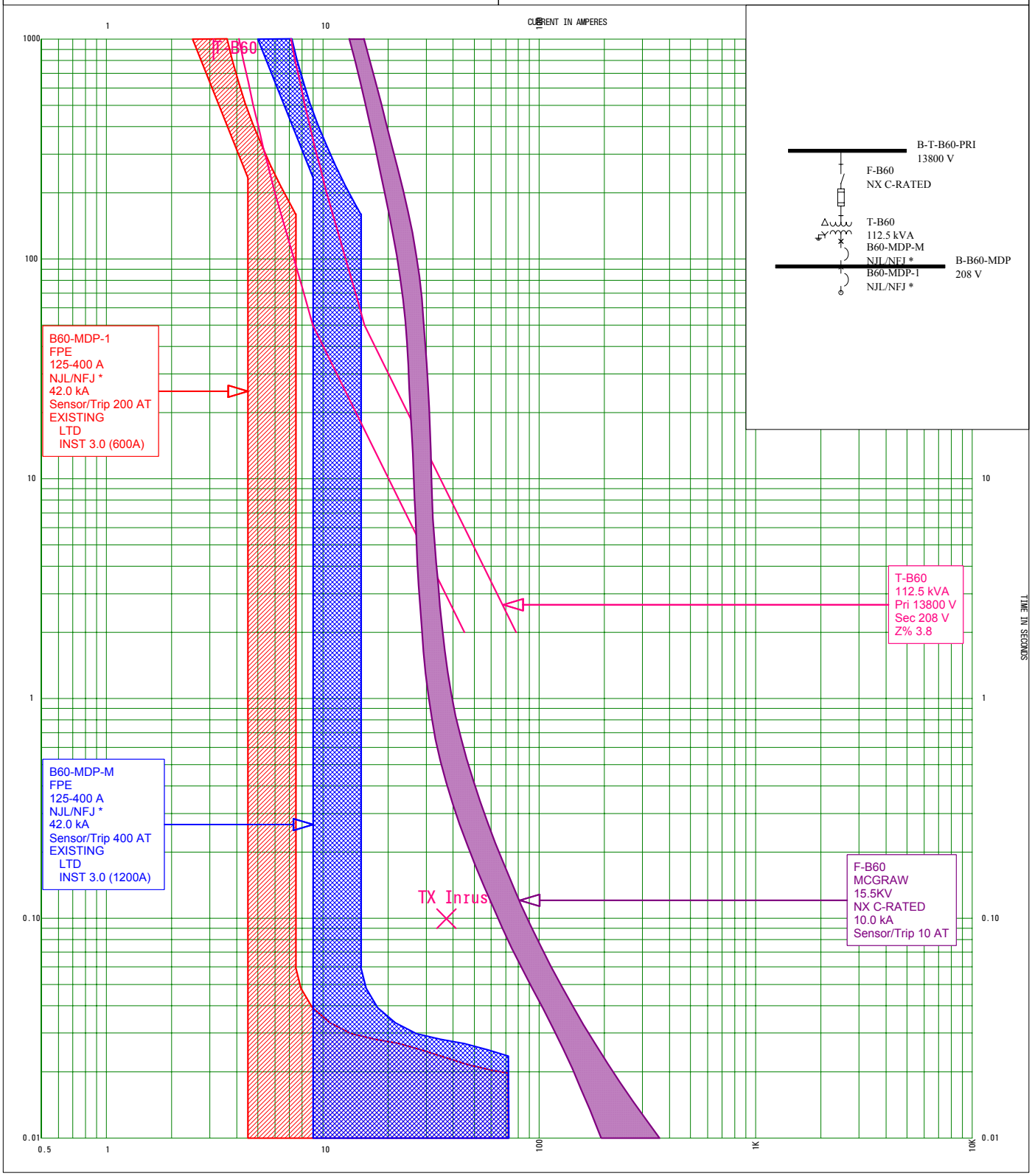
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-33 MDP
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



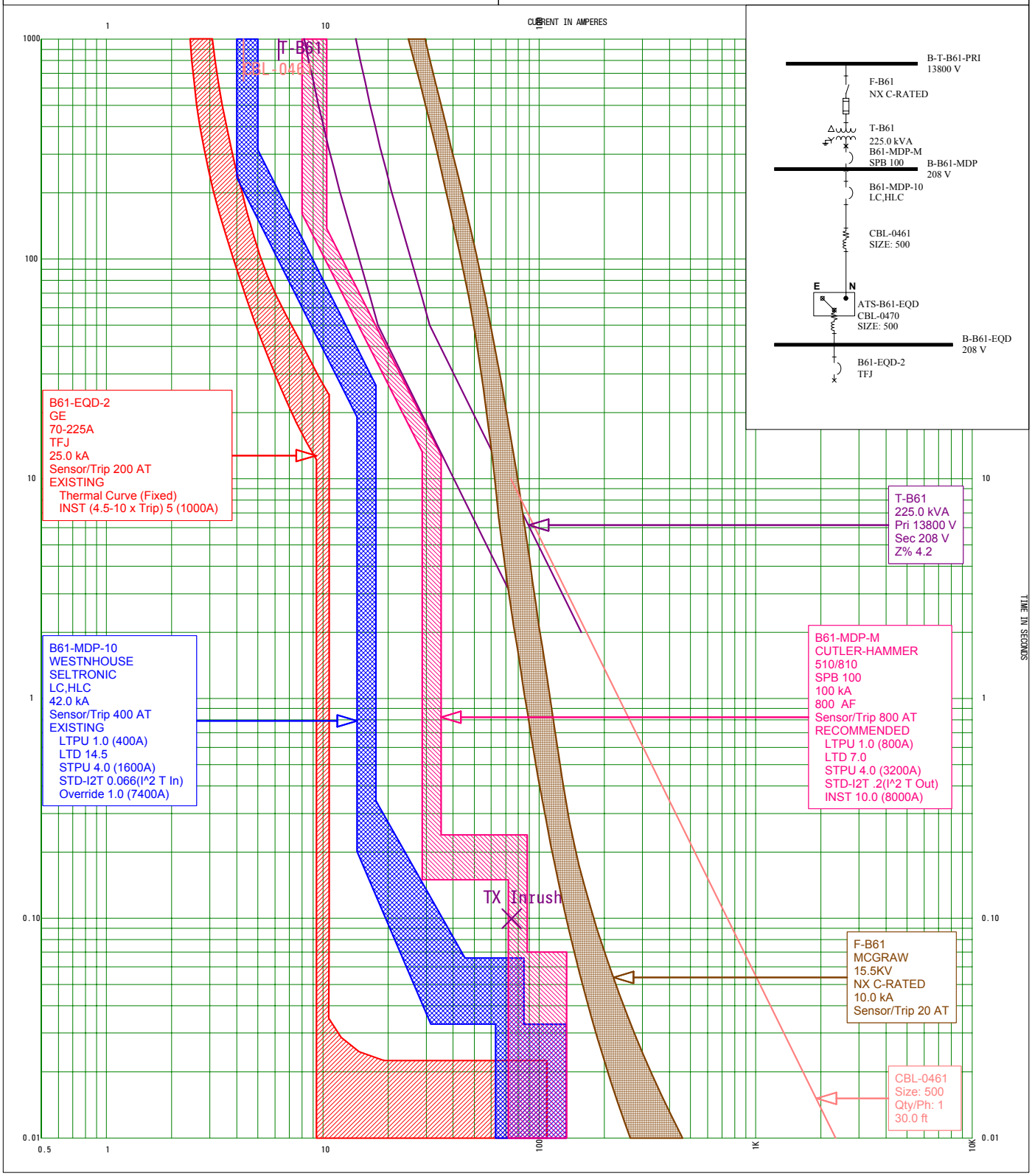
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-60 MDP
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



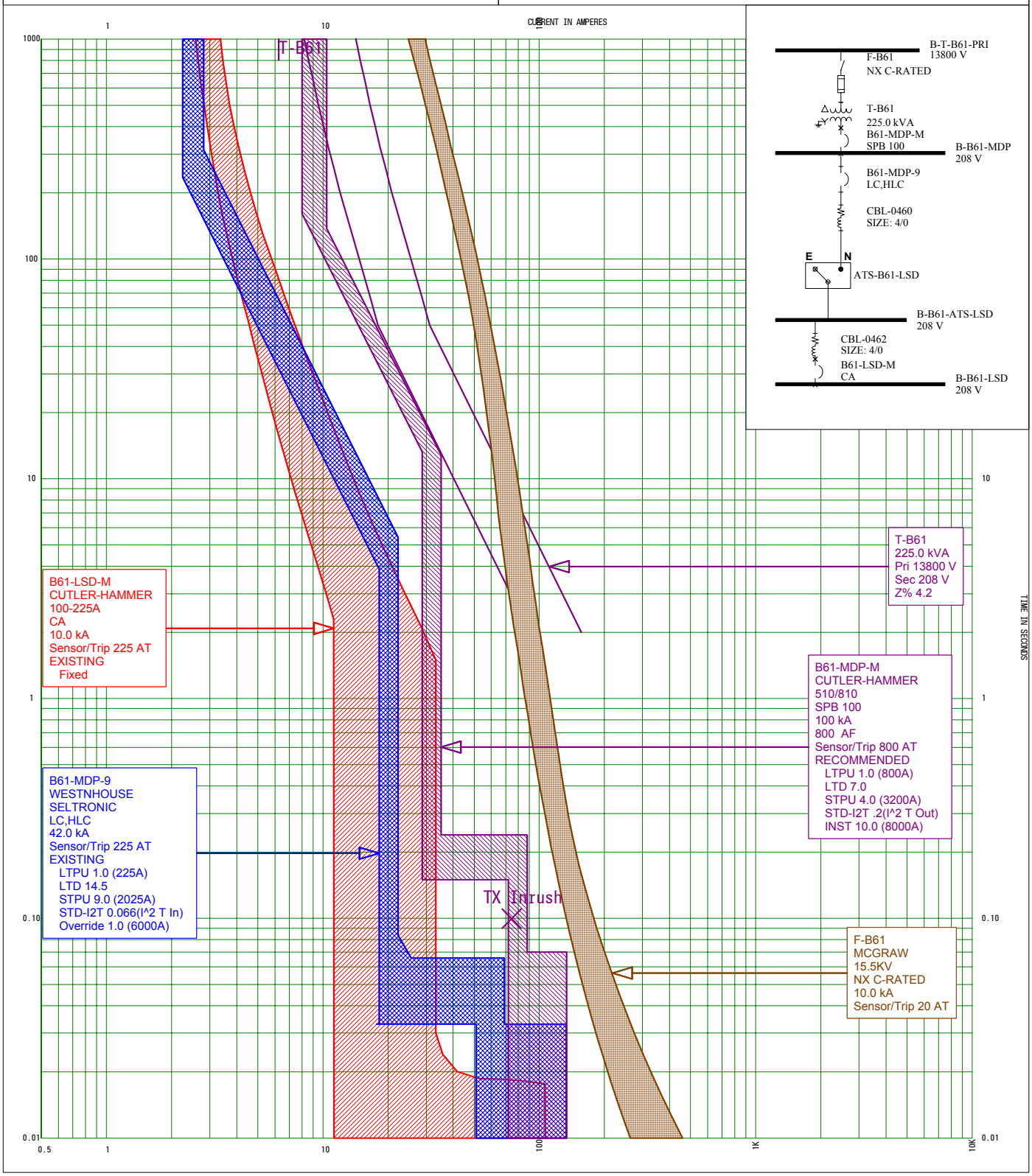
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-61 EQD
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



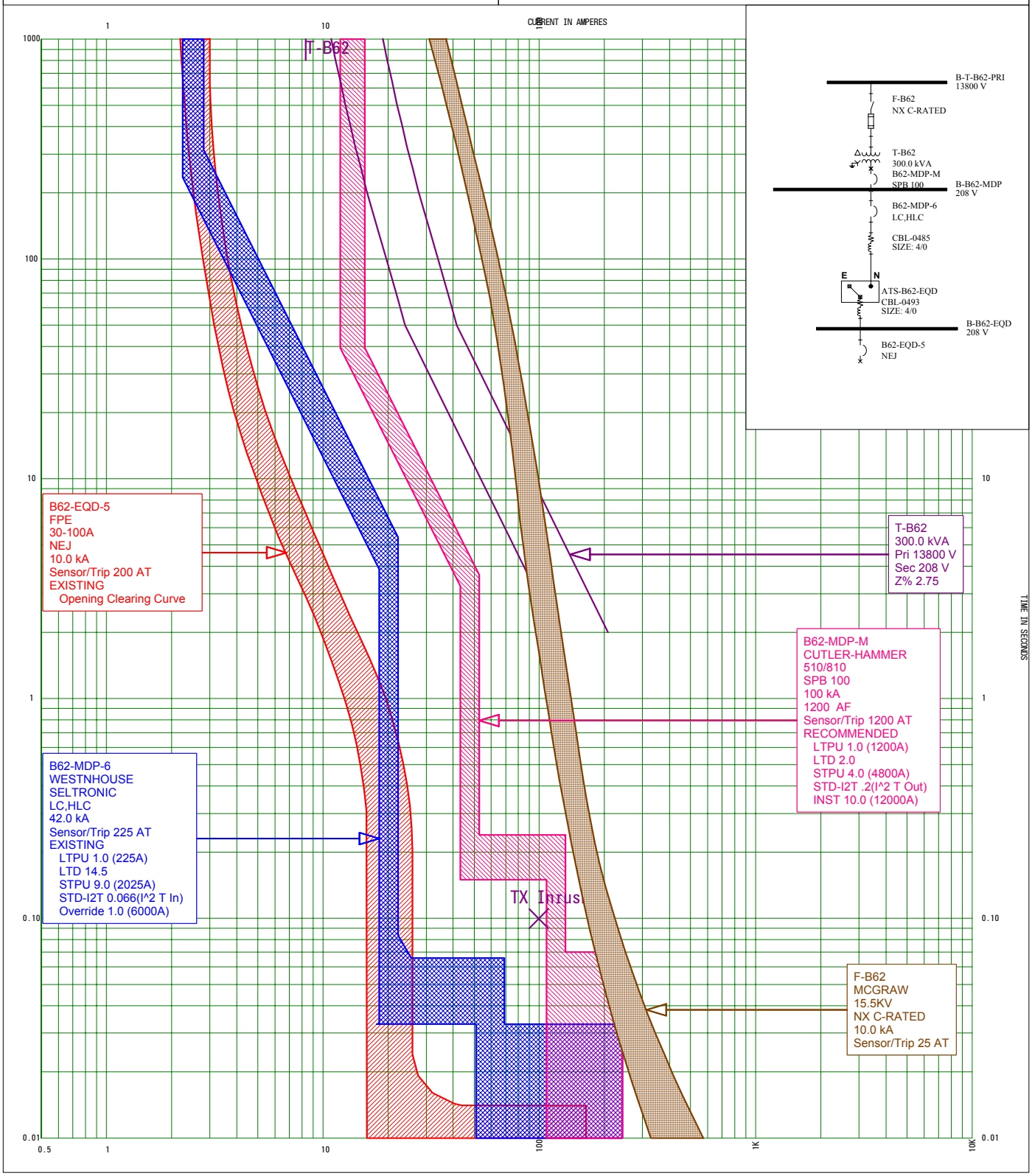
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-61 MDP-LSD
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



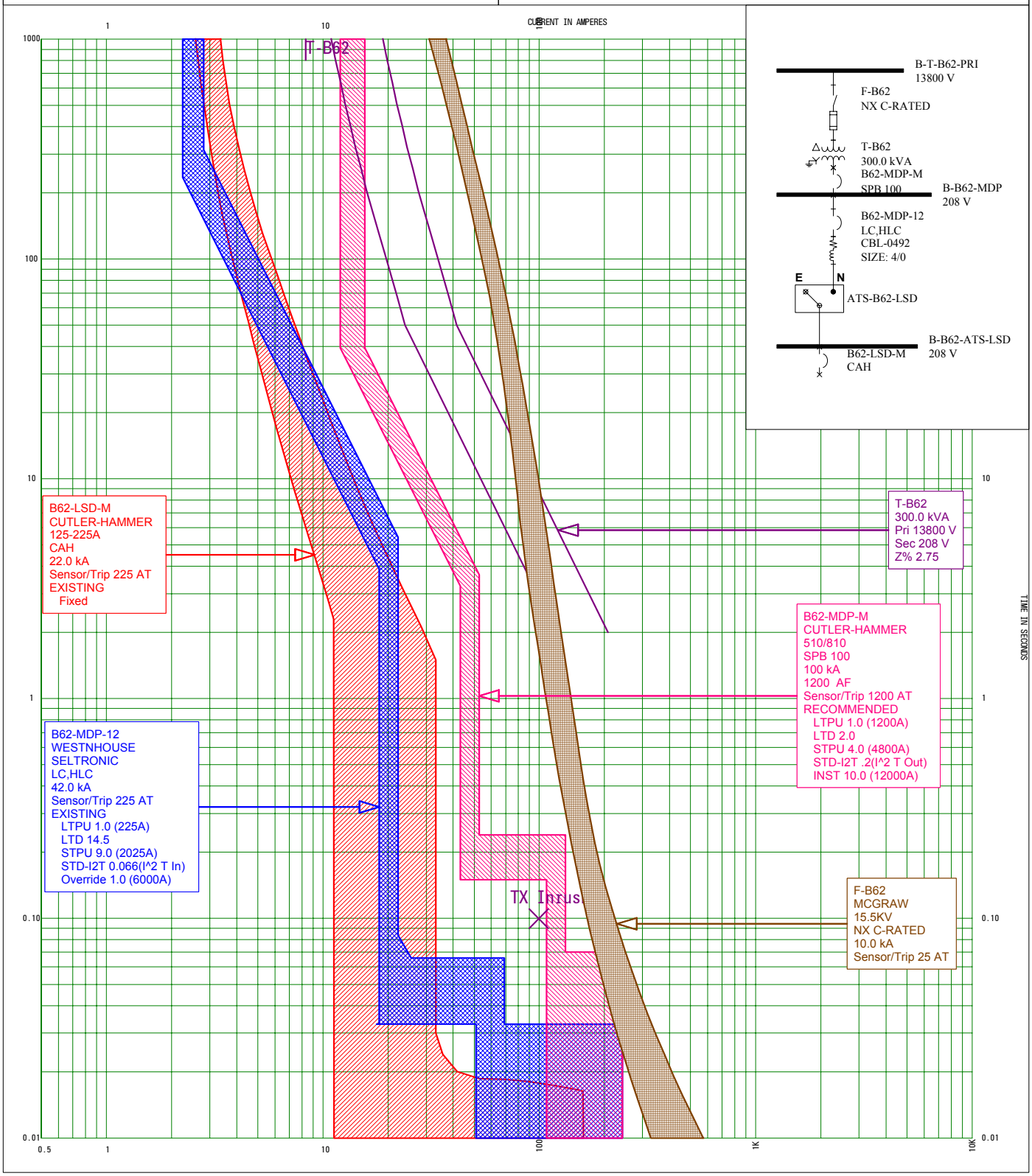
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-62 MDP-EQD
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



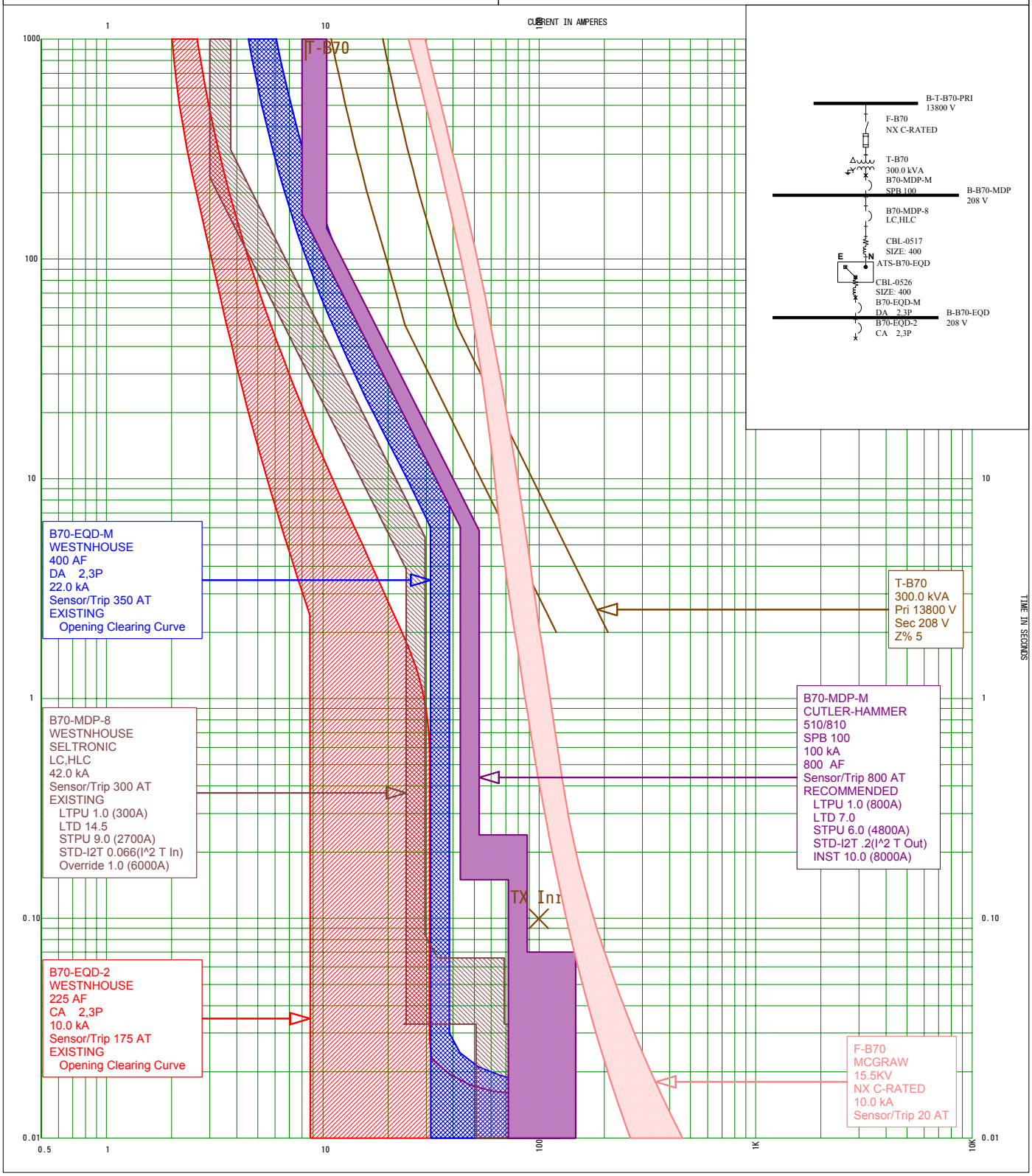
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-62 MDP-LSD
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



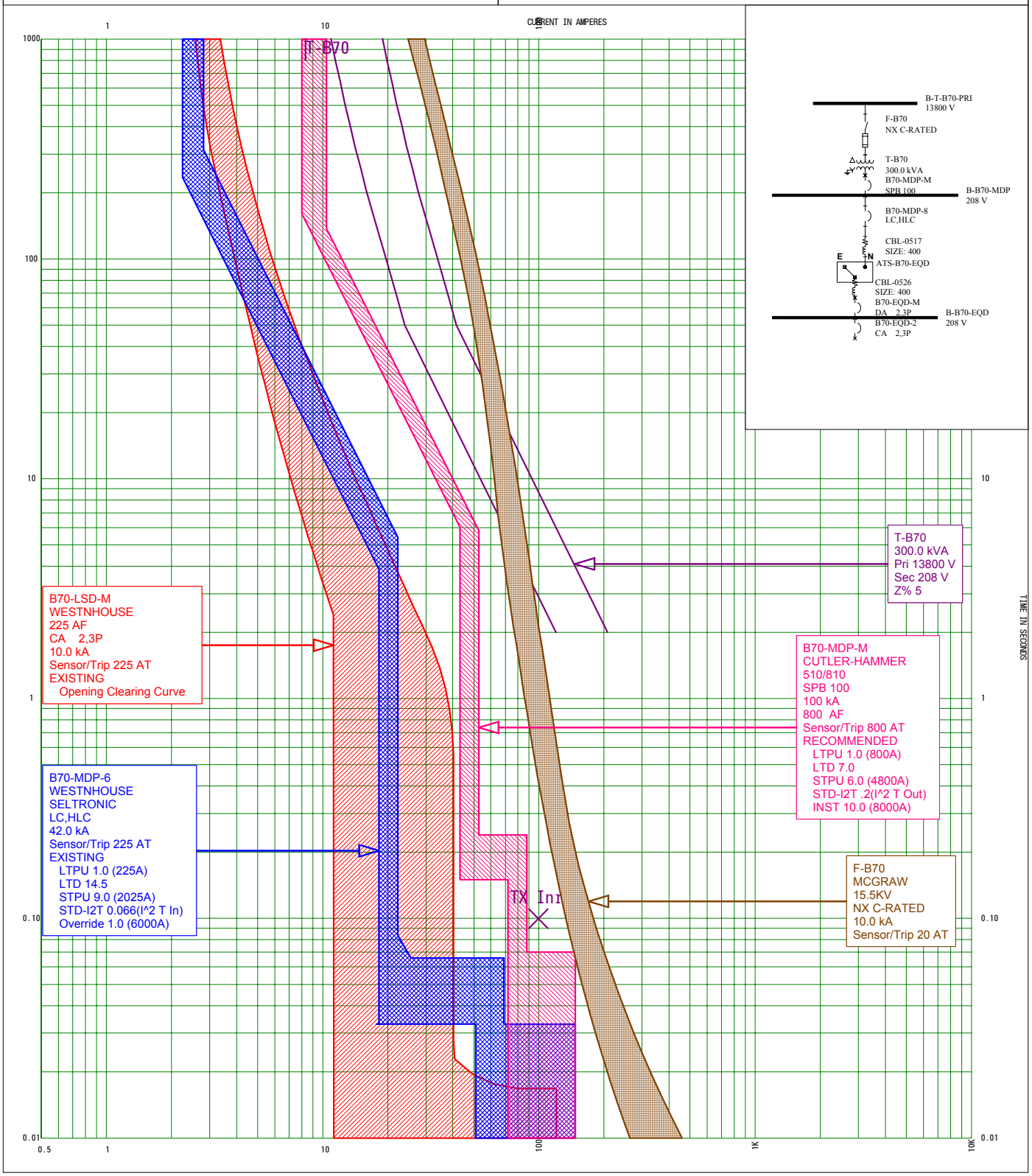
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-70 MDP-EQD
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



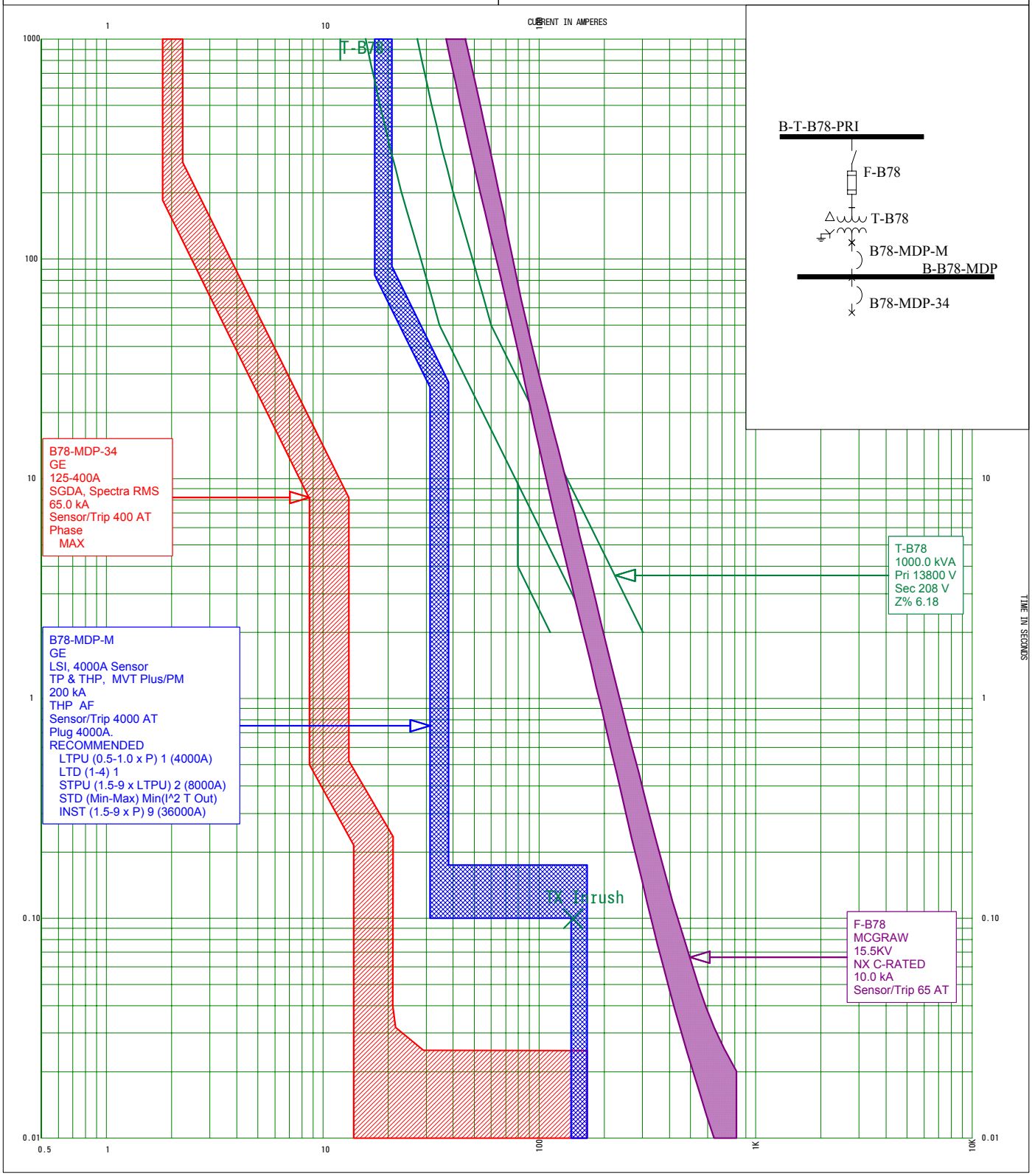
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-70 MDP-LSD
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



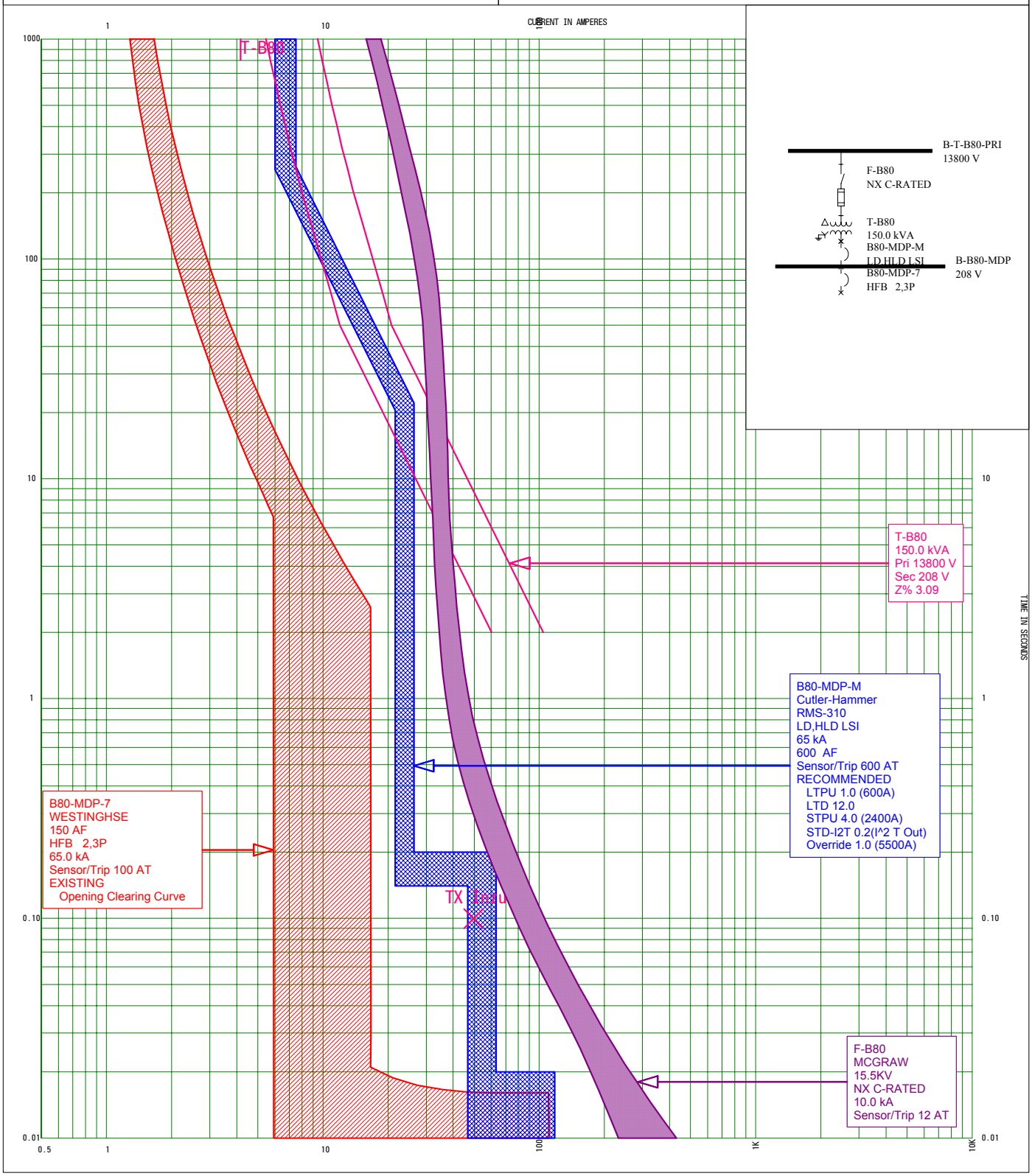
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-78
Ref. Voltage: 480V
Current Scale: X 10^2
ISSUED 4/30/2004



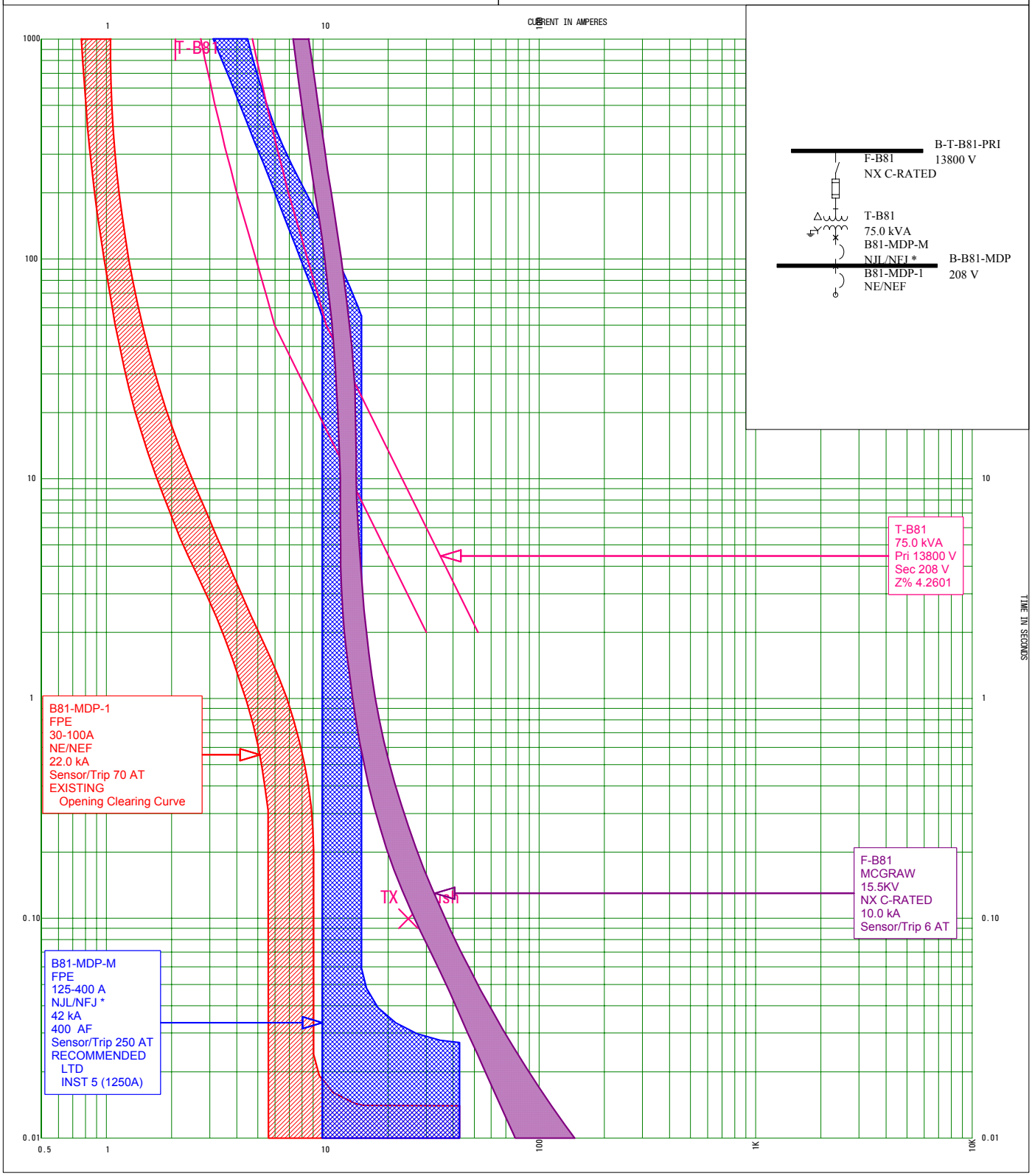
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-80-MDP
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



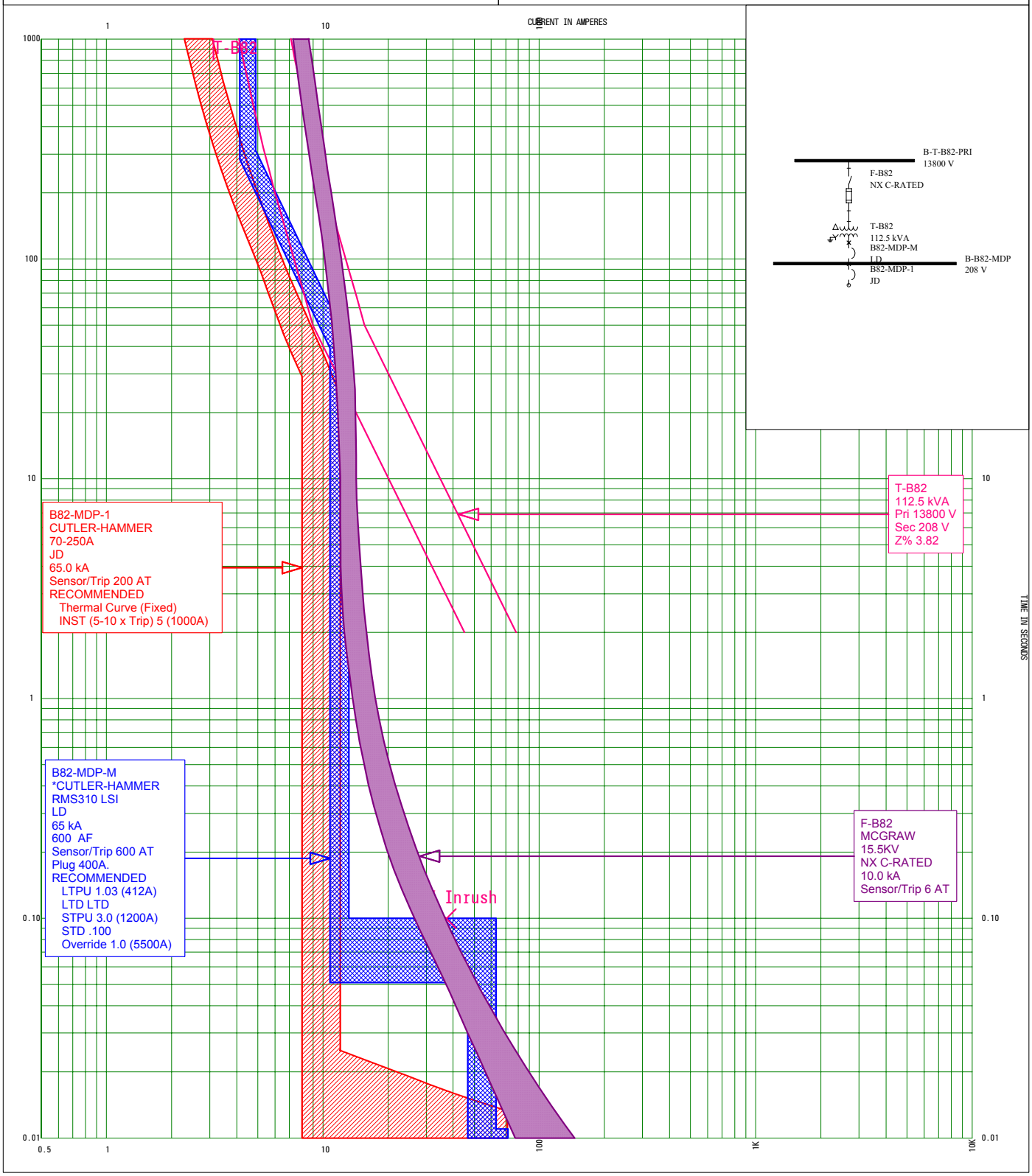
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-81 MDP
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



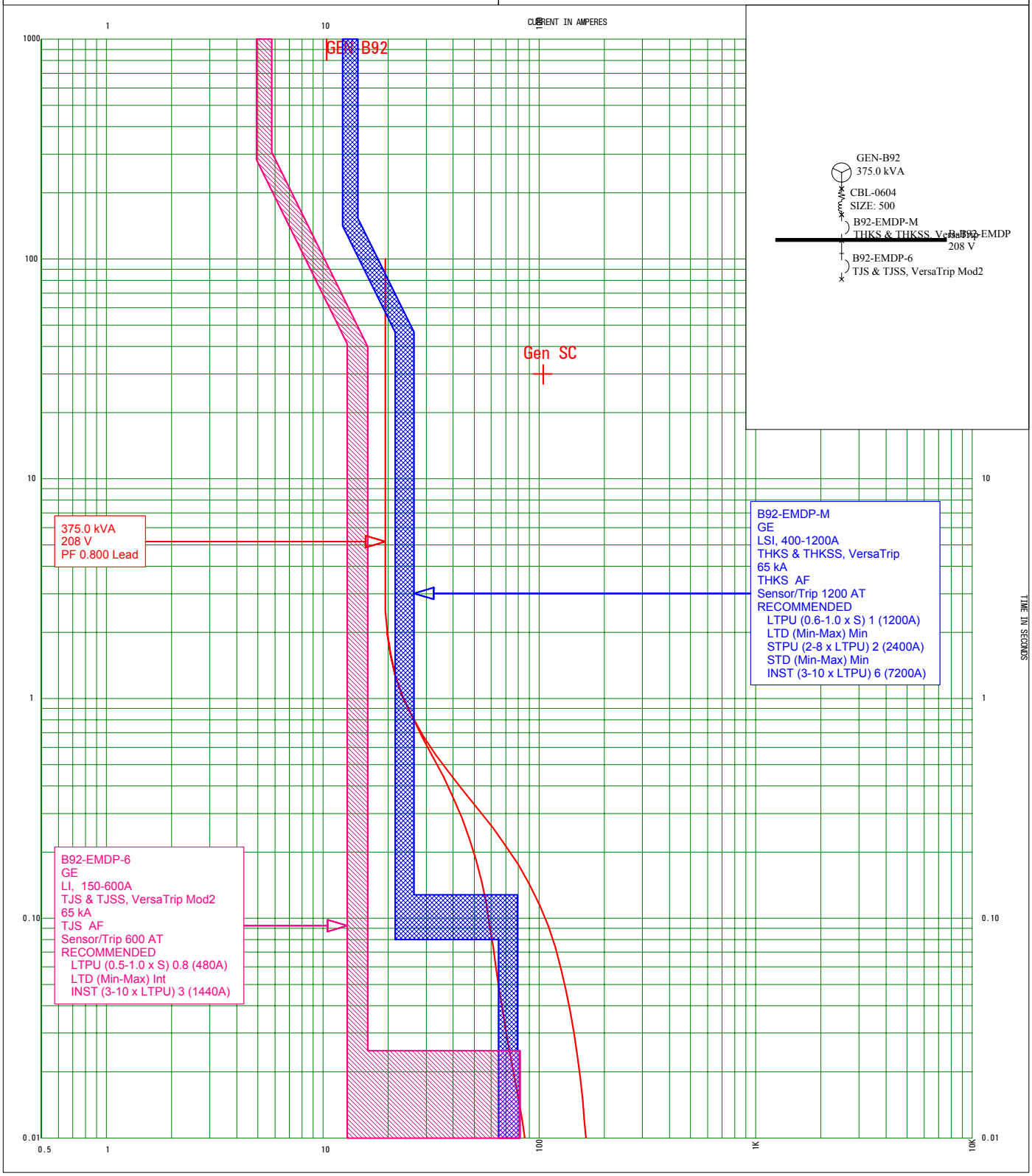
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-82 MDP
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004

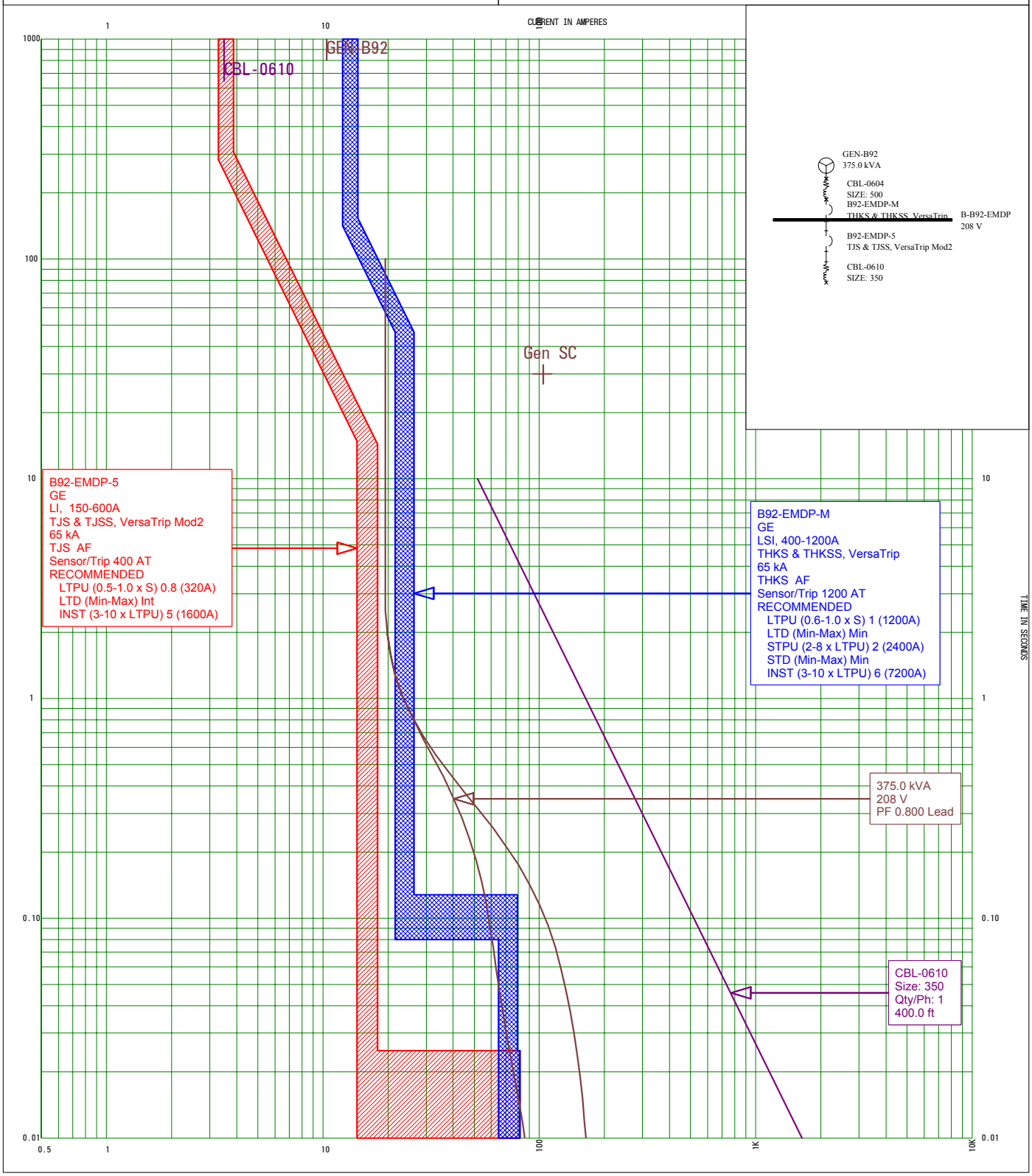


Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

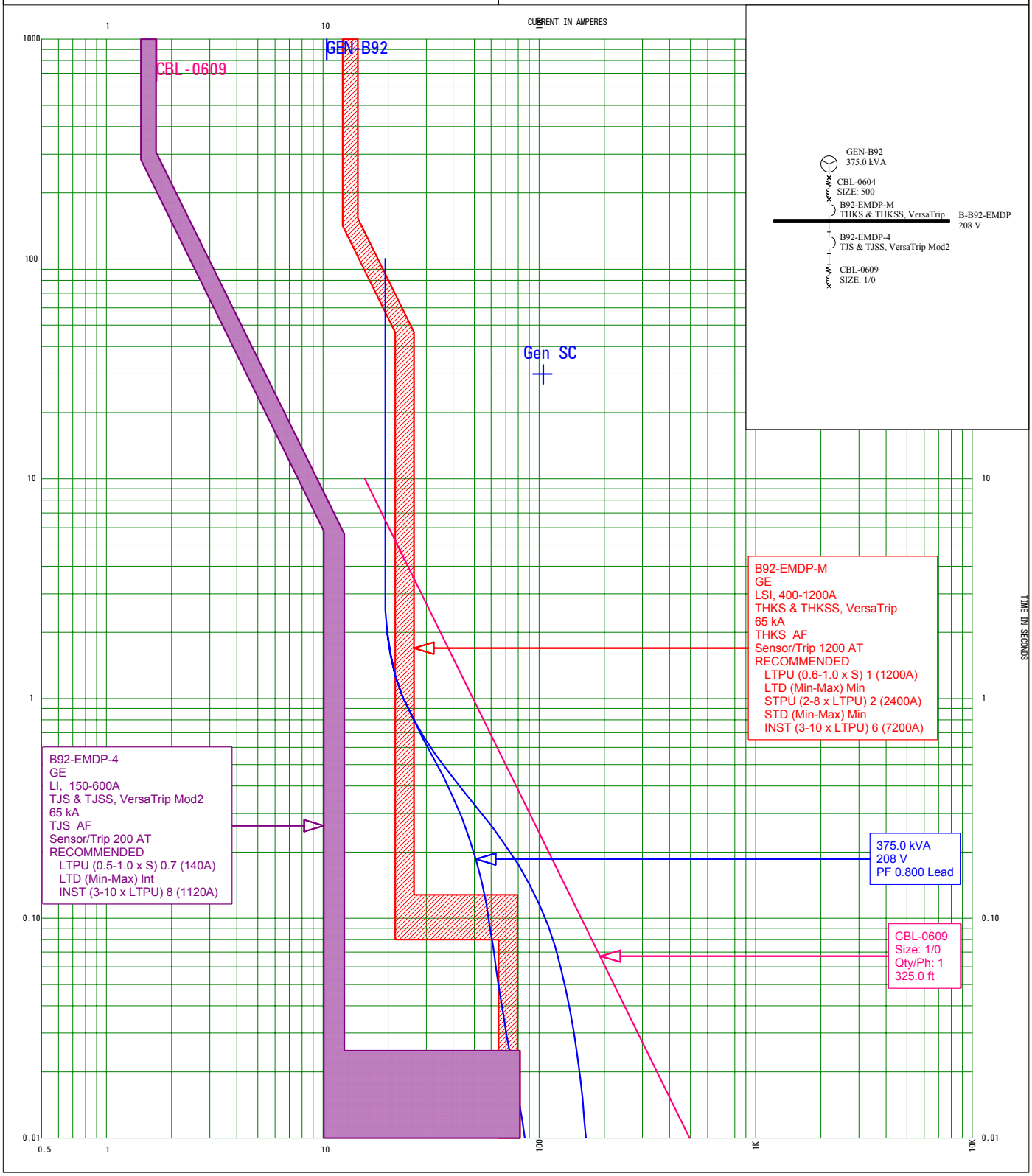
Plot name: BLDG-92 EMDP-600
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



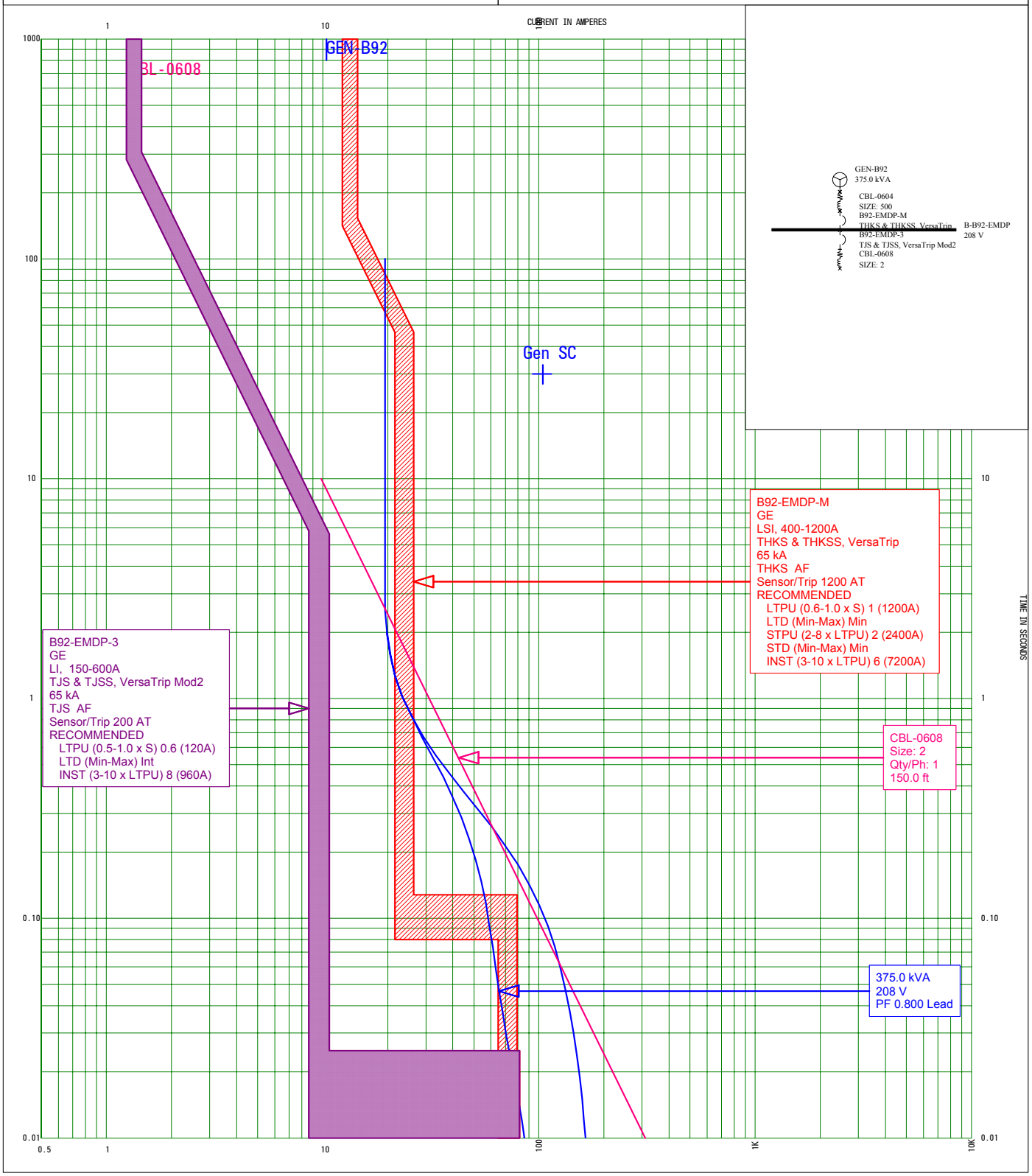
Project Name: BEDFORD VAMC GO# EBS002683 Eaton Electrical Services and Systems	Plot name: BLDG-92 EMDP 400A Ref. Voltage: 208V Current Scale: X 10^2 ISSUED 4/30/2004



Project Name: BEDFORD VAMC GO# EBS002683 Eaton Electrical Services and Systems	Plot name: BLDG-92 EMDP-200-1/0 Ref. Voltage: 208V Current Scale: X 10^2 ISSUED 4/30/2004

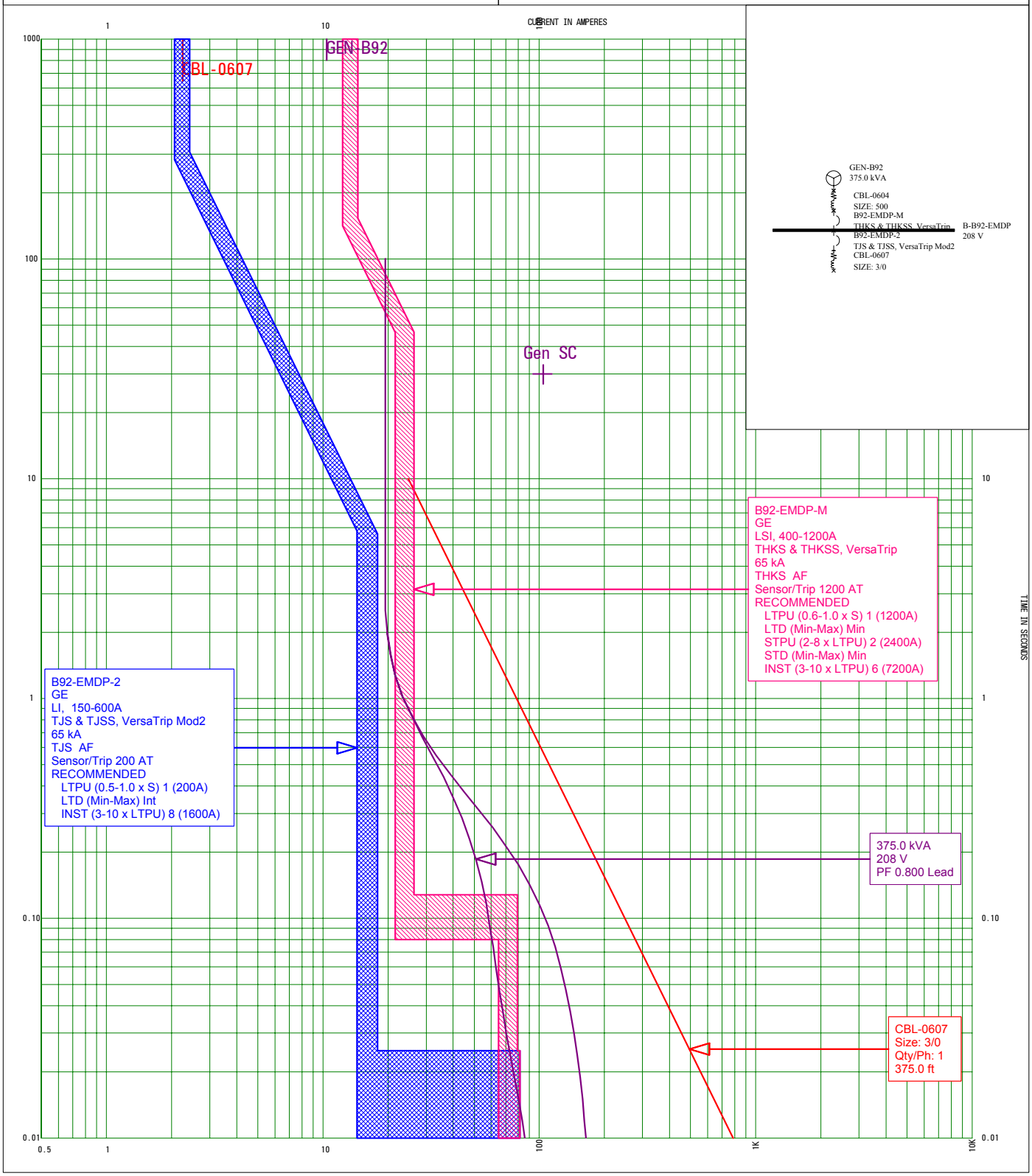


Project Name: BEDFORD VAMC GO# EBS002683 Eaton Electrical Services and Systems	Plot name: BLDG-92 EMDP-200-2 Ref. Voltage: 208V Current Scale: X 10^2 ISSUED 4/30/2004



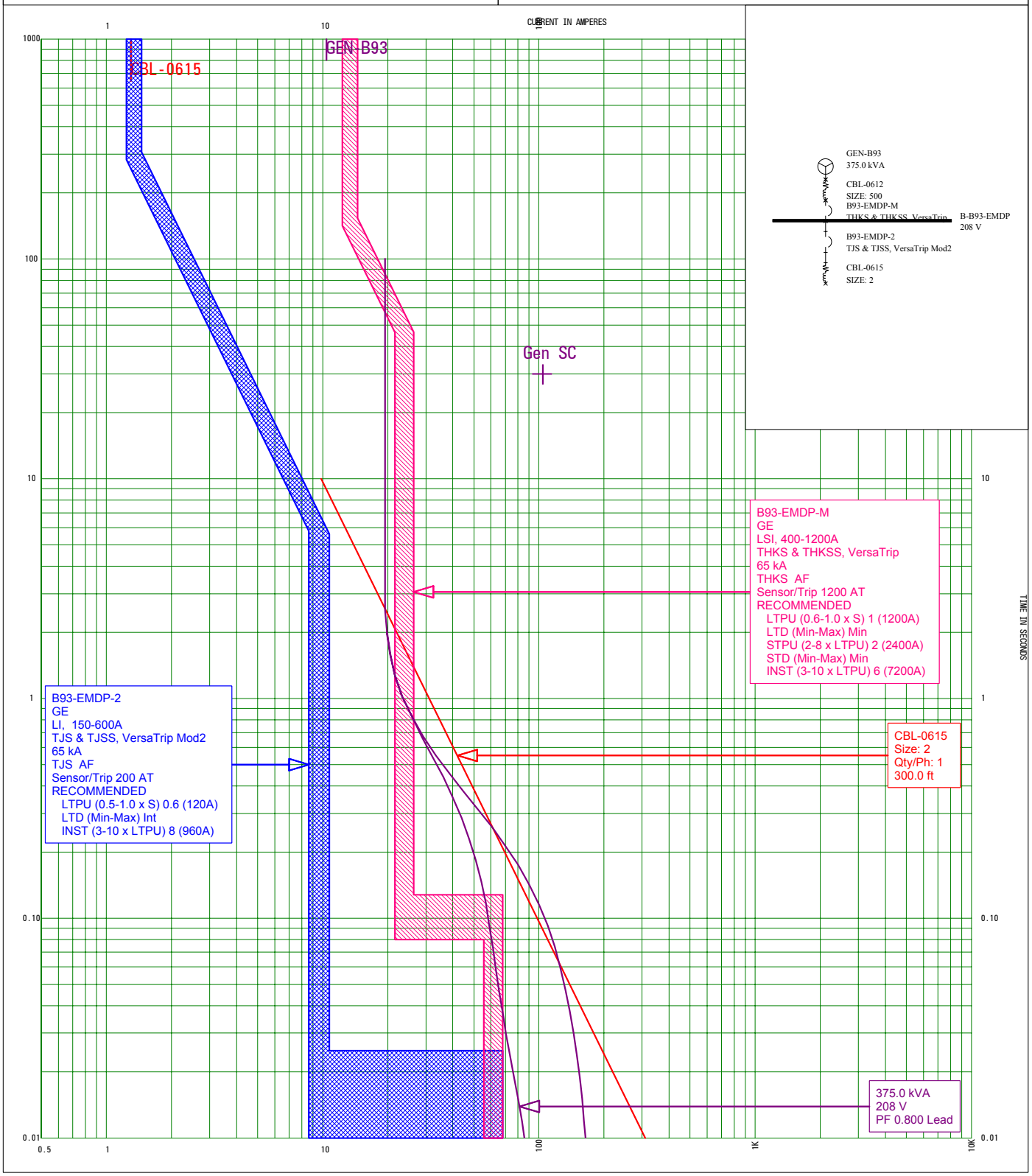
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-92 EMDP-200 3-0
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



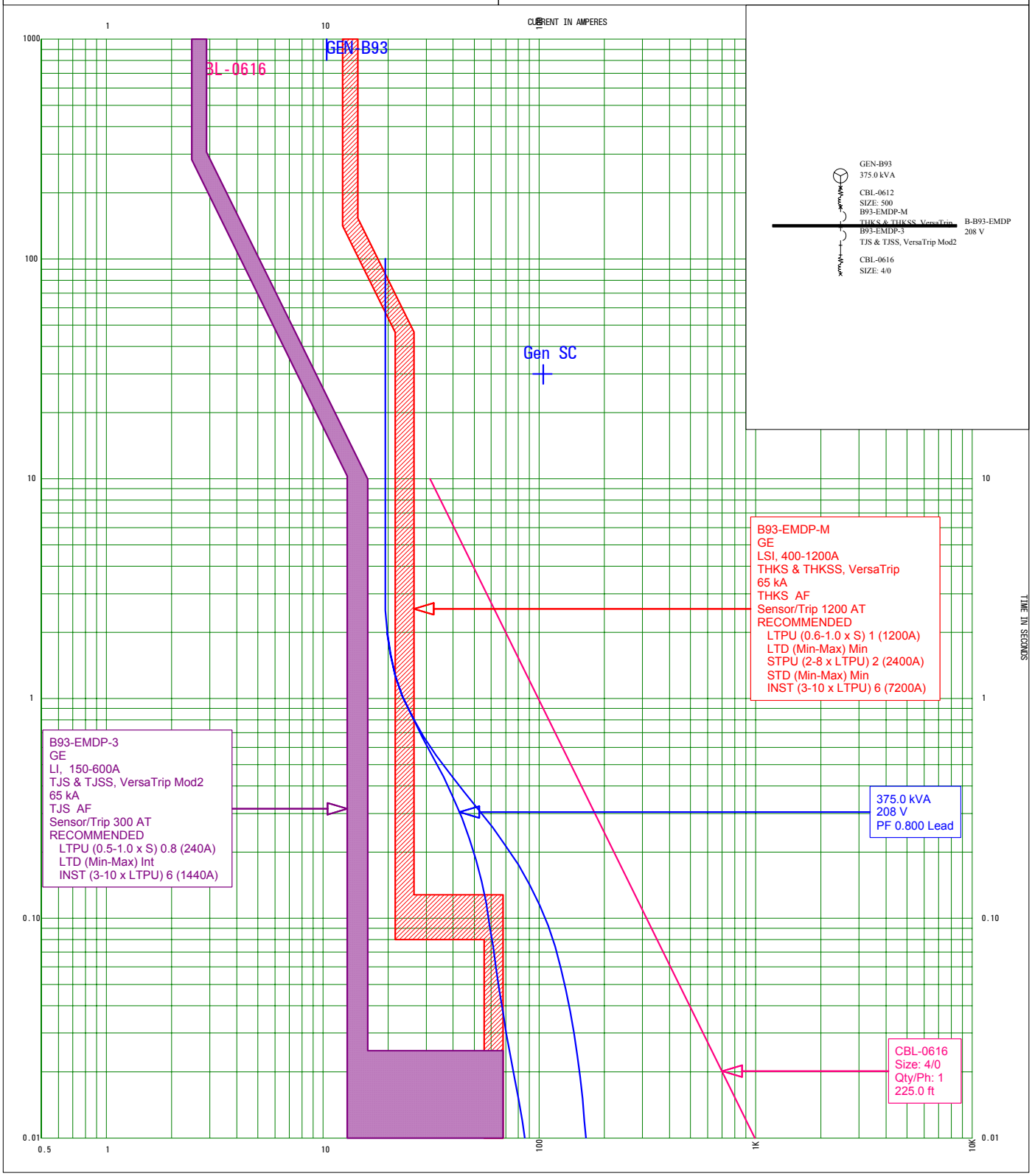
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-93 EMDP 200A-2
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



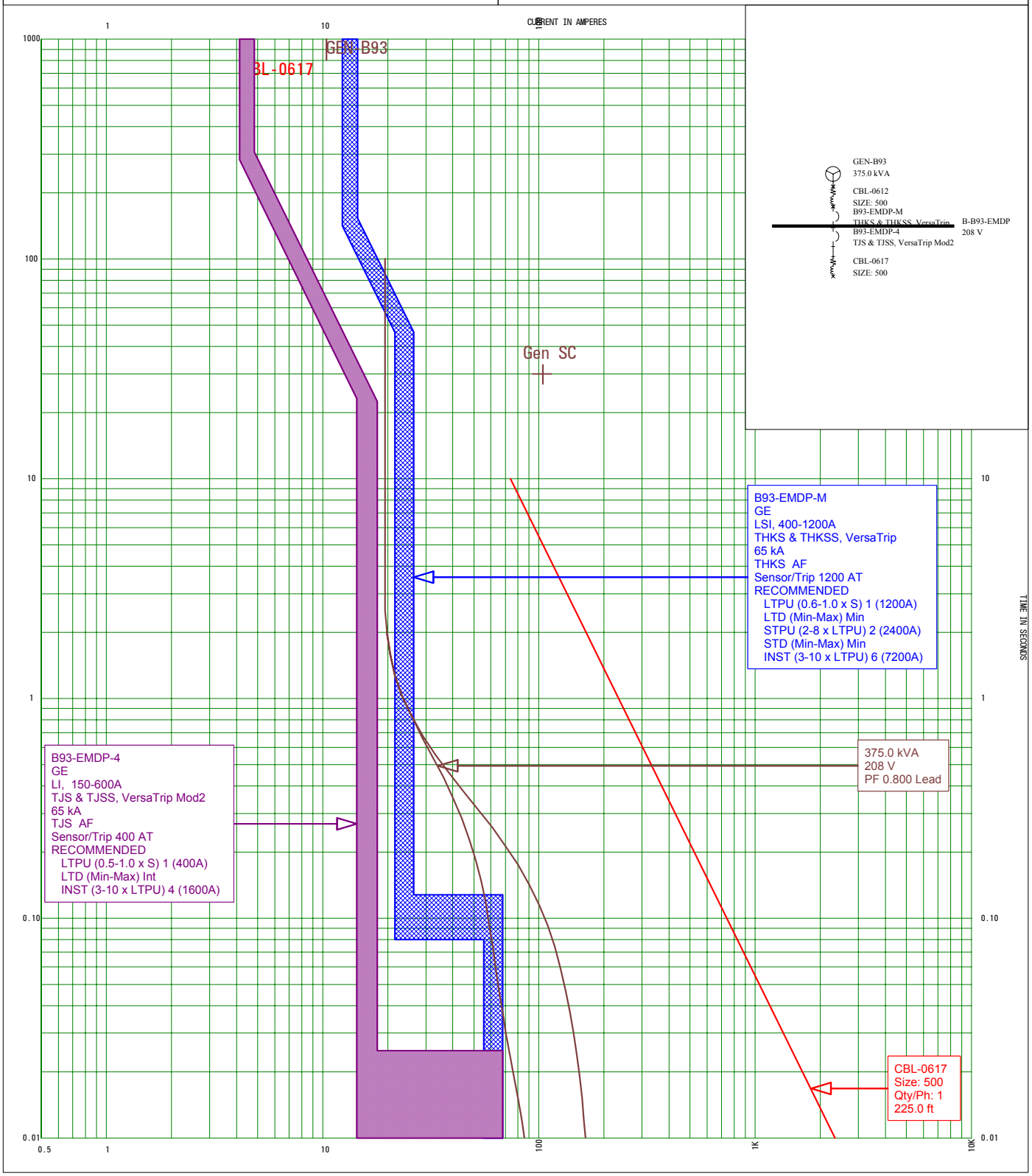
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-93 EMDP-300-4-0
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



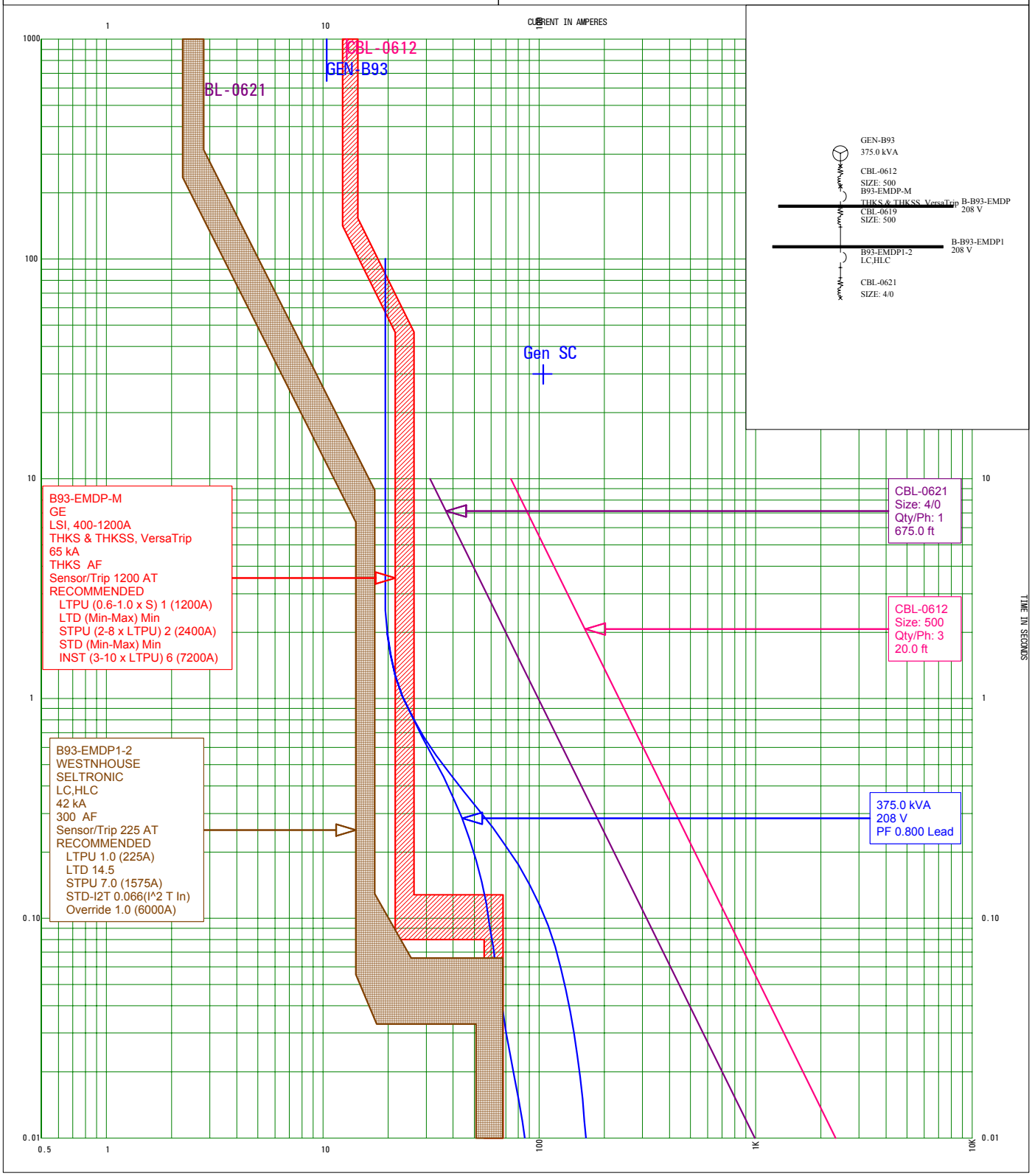
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-93 EMDP-400
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



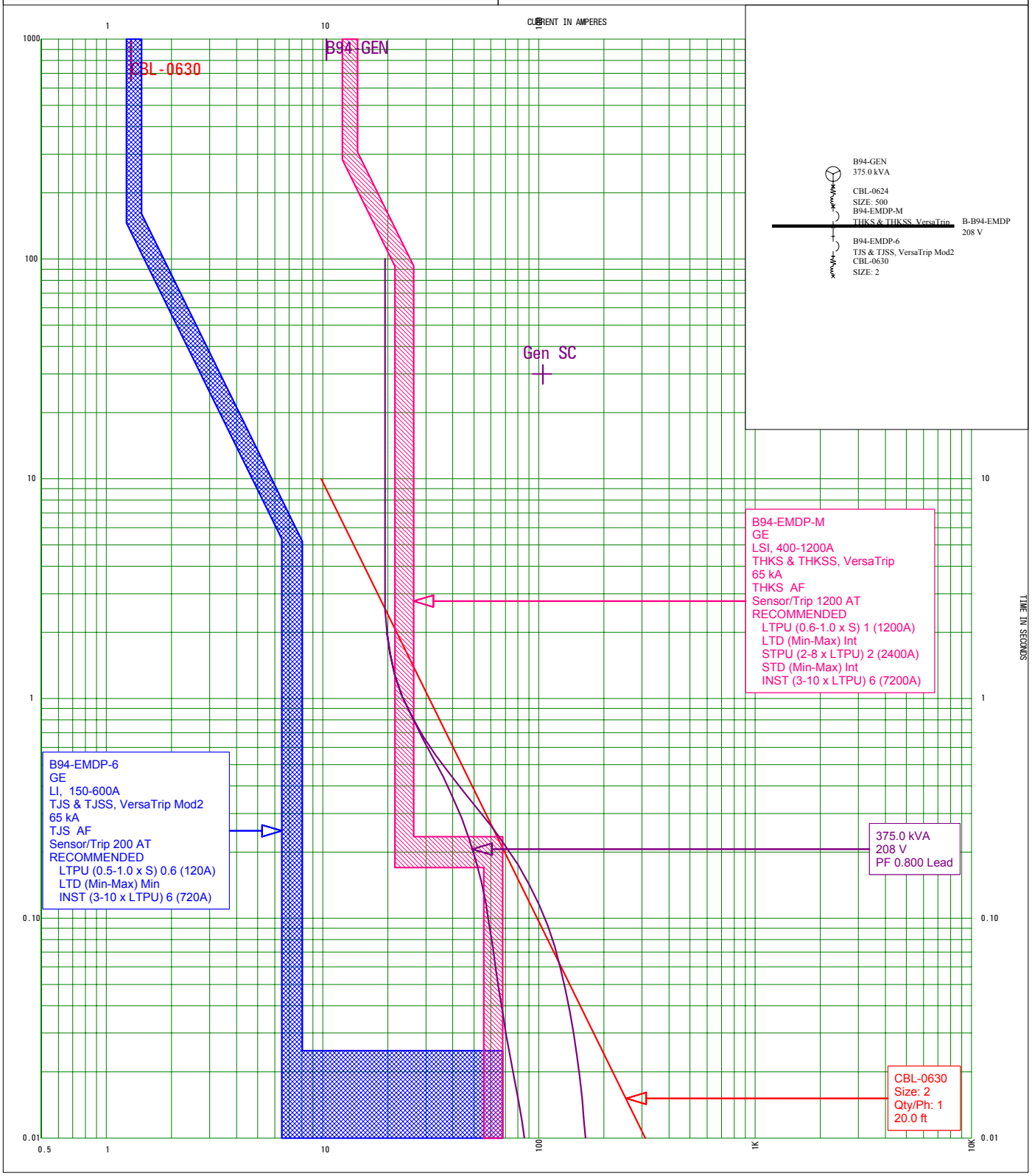
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-93 EMDP1
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



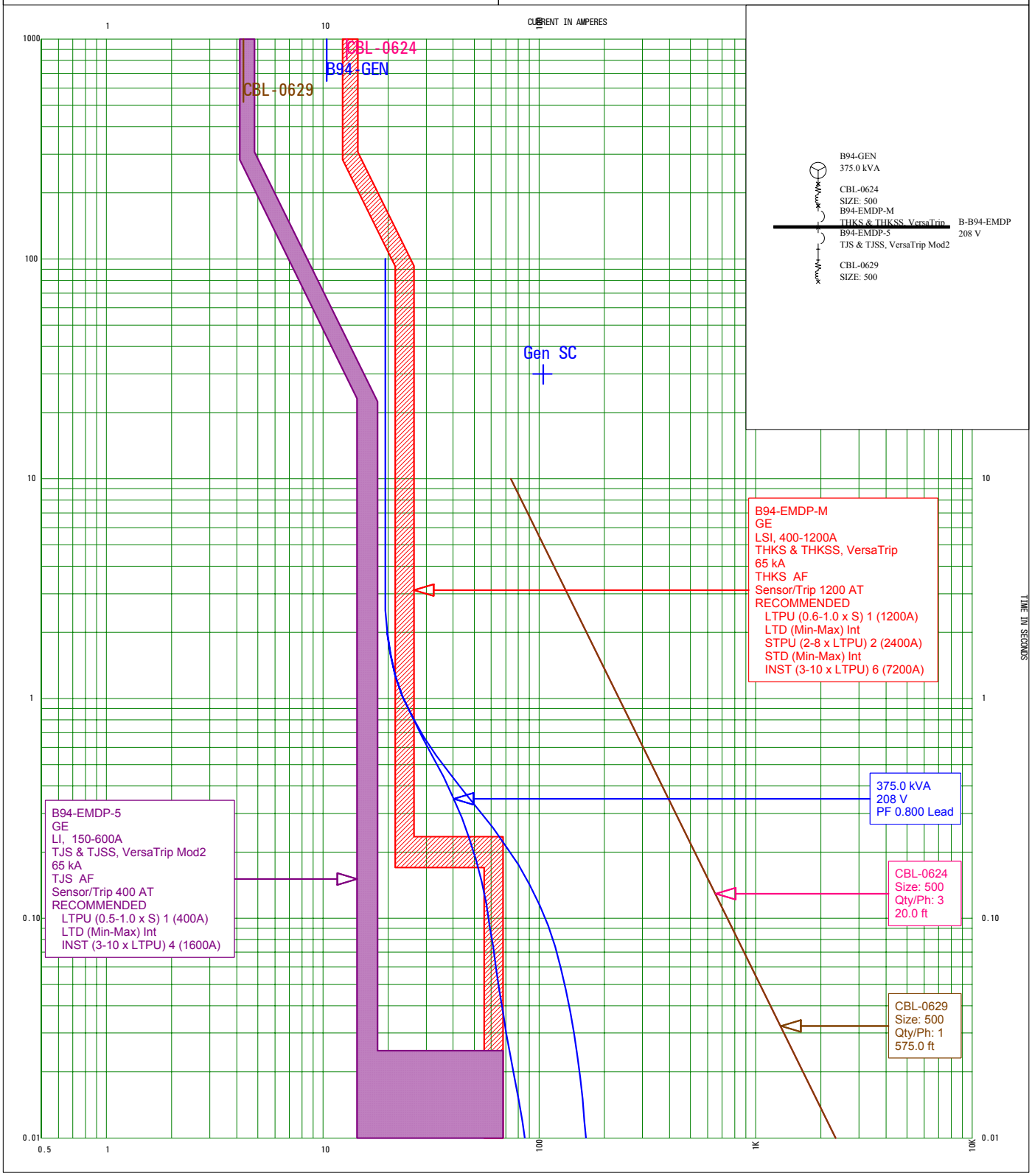
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG94-EMDP-200
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



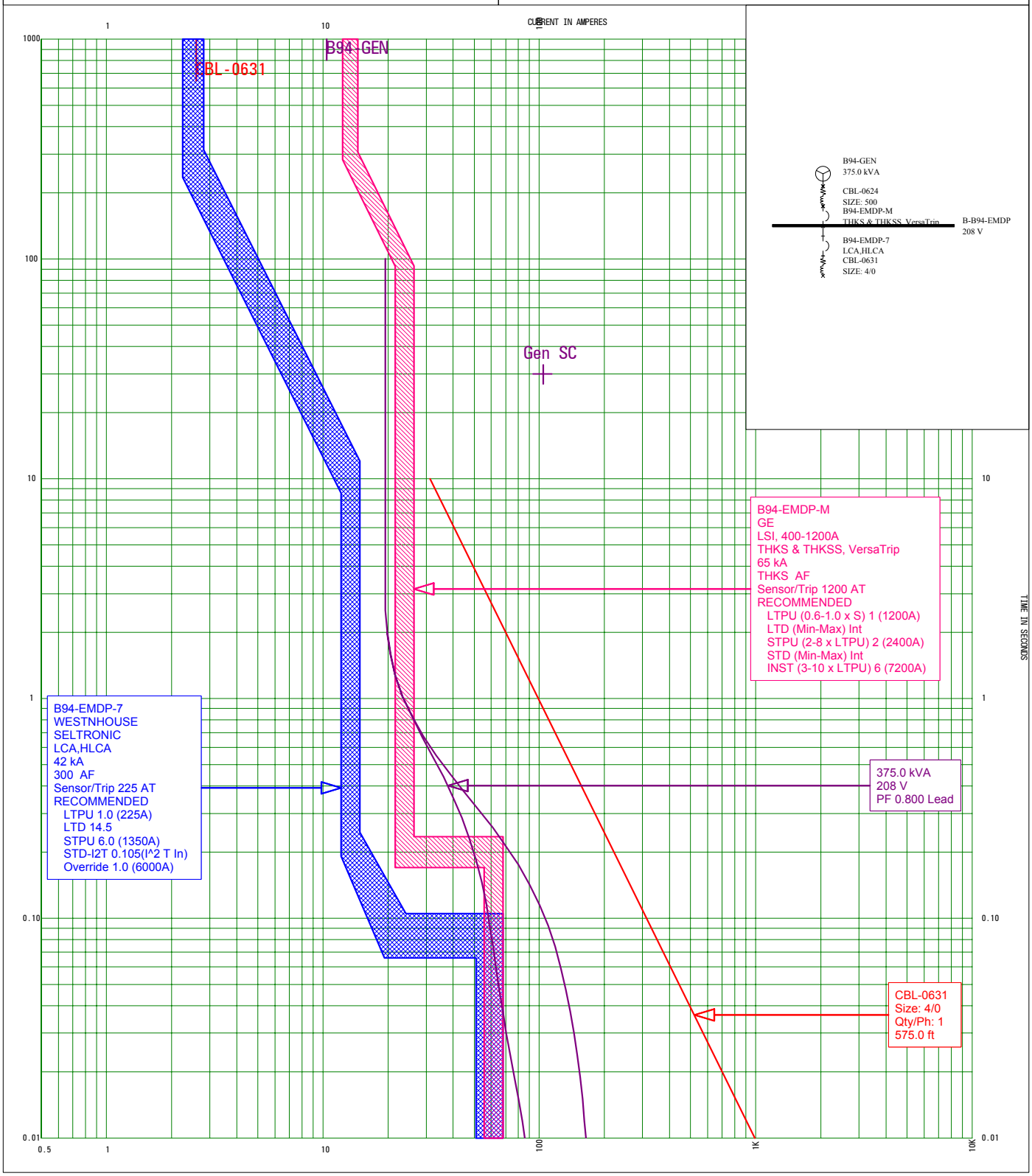
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-94 EMDP-400
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004

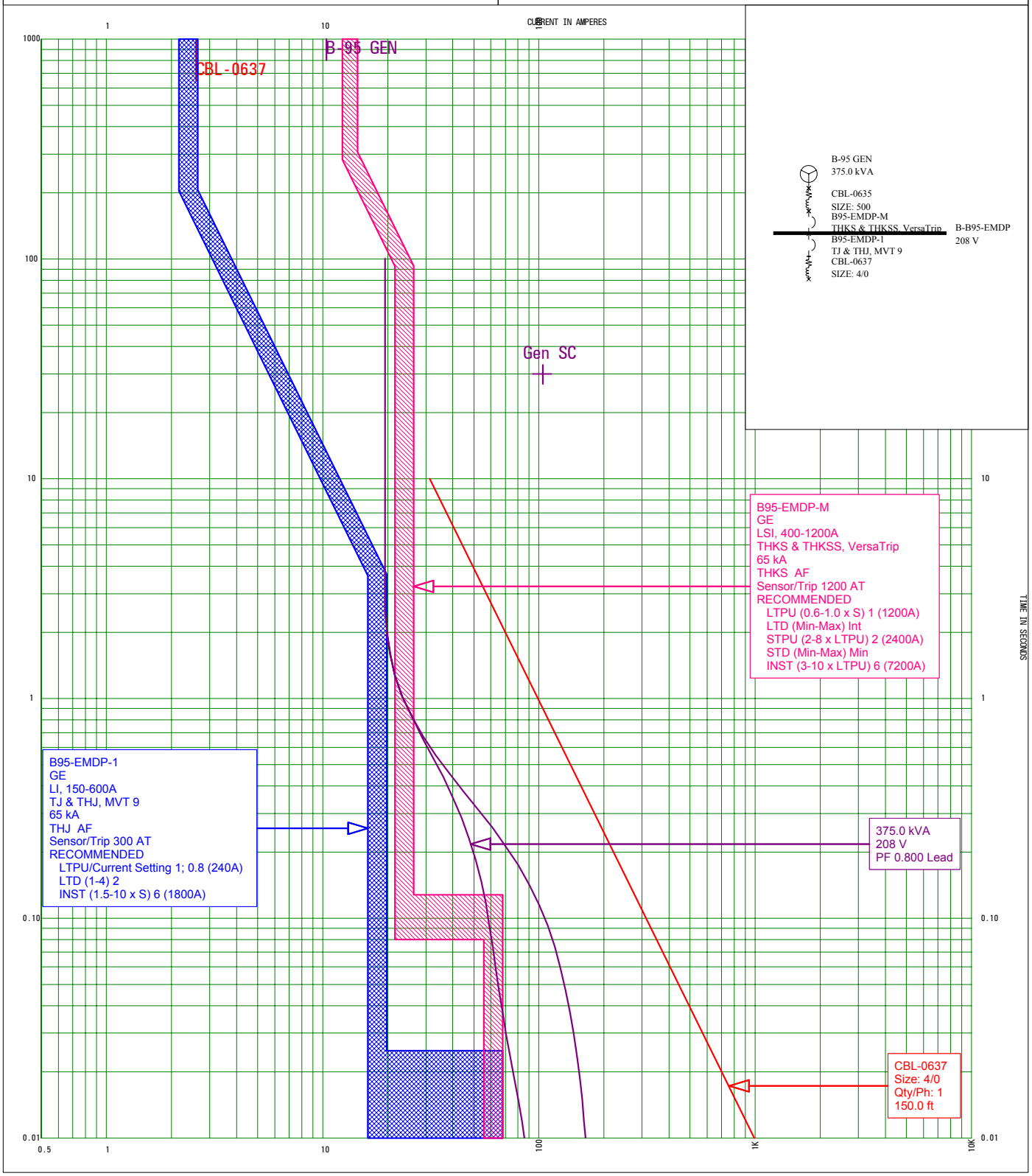


Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-94 EMDP-225
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004

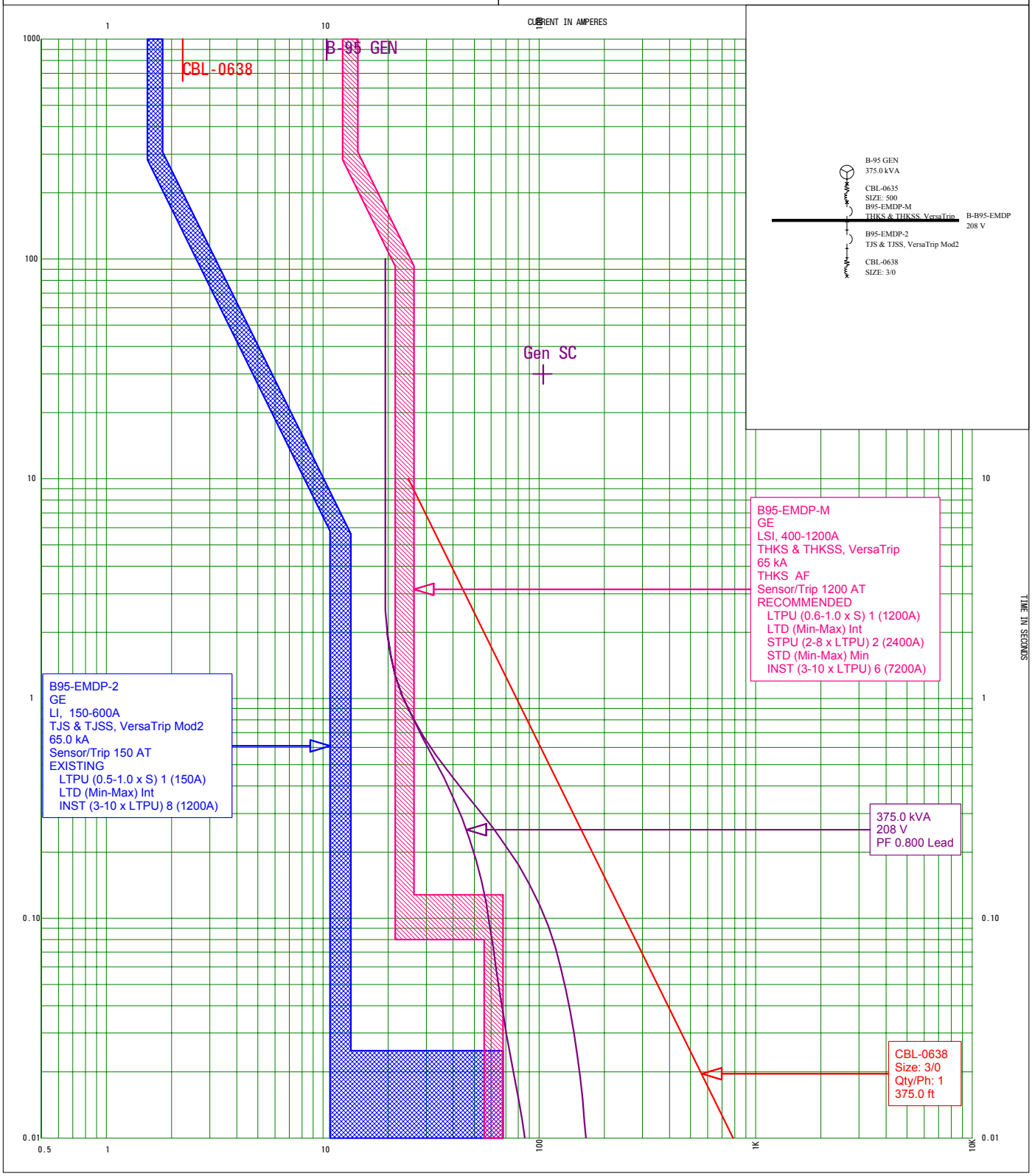


Project Name: BEDFORD VAMC GO# EBS002683 Eaton Electrical Services and Systems	Plot name: BLDG-95 EMDP-300 Ref. Voltage: 208V Current Scale: X 10^2 ISSUED 4/30/2004



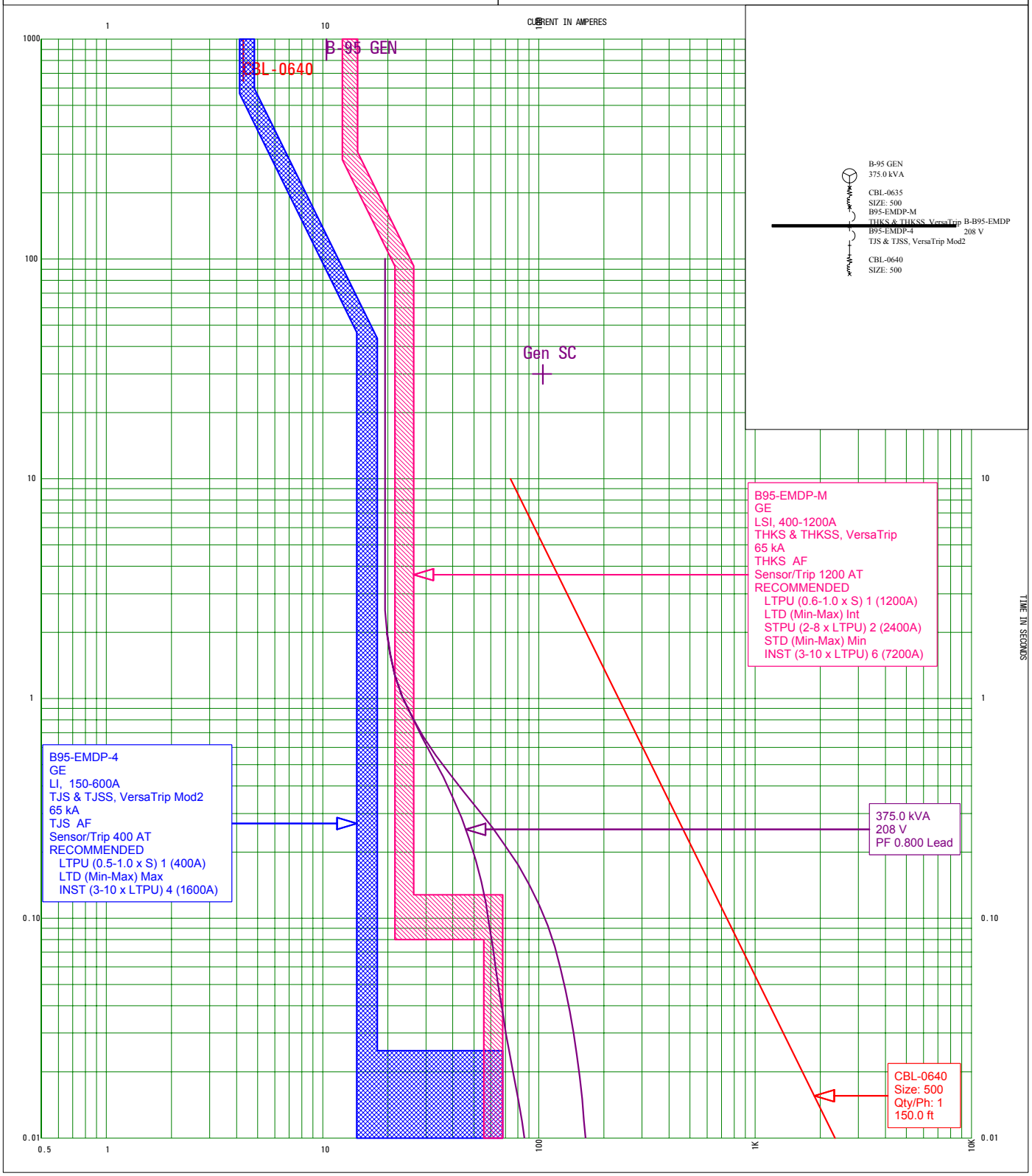
Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-95 EMDP-150
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



Project Name: BEDFORD VAMC
GO# EBS002683
Eaton Electrical
Services and Systems

Plot name: BLDG-95 EMDP-400
Ref. Voltage: 208V
Current Scale: X 10^2
ISSUED 4/30/2004



3.5 Recommended Protective Device Settings

For optimum selectivity, instantaneous settings for smaller feeder breakers within a given MCC or panel should not be above the listed instantaneous current setting for the largest feeder breaker within the same MCC or panel.

Table 3.1 on the following pages shows a comprehensive summary of the recommended settings for the adjustable protective devices. For convenience, the devices are grouped by system bus name/location. Reference the one line diagram in Section 8.

The “Bus” column lists the assigned system bus designation as found on the one line diagram in Section 8.

The “Name” column lists the assigned device names as found on the one line diagram in Section 8. These names also match the curve labels shown on the associated coordination plots at the end of Appendix B.

The “Breaker Model and Manufacturer” and “Trip Unit Type” column lists the assigned library designation as provided in the CAPTOR database.

The “CT Ratio” column (for protective relays requiring current transformation) lists the primary system current rating over the secondary current rating.

The “Frame” column (applicable to circuit breakers) lists the device’s associated frame continuous current rating along with the associated sensor or plug current trip rating for per-unit multiples.

The “Settings” column provides the pertinent information regarding the recommended device adjustable settings (or element continuous current rating, for fuses). Where existing settings information was unavailable, recommended settings are shown and the existing settings are marked as “UNKNOWN”.

Table 3.1 – Protective Device Settings

PROTECTIVE RELAY SETTINGS

BUS ID.	CIRCUIT BREAKER ID	CT RATIO		ANSI RELAY NO.	RELAY MODEL/ MANUF.	SETTINGS	PHASE SETTINGS						GROUND SETTINGS					
		PH	GND				CRV TYPE	LDPU	LDT	SDPU	SDT	INST	CRV TYPE	LDPU	LDT	SDPU	SDT	INST
15kV SWGR	2N MAIN 2 NORMAL	300:5	300:5	51, 51N	CUTLER-HAMMER FP-5000	RECOMMENDED	ANSI VERY	1.2	0.4	(Inst1) 20	17 cycles	NONE	ANSI MOD	0.1	0.4	7	6 cycles	N/A
					GENERAL ELECTRIC IFC-53	EXISTING	IFC-53A	TAP 6A	T.D. 2	N/A	N/A	N/A	IFC-53A	TAP 3	T.D. 3.5	N/A	N/A	N/A
	M1 MAIN	300:5	300:5	27	GENERAL ELECTRIC ICR-53B	EXISTING	ICR	P.U 95v	D.O. 85V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15kV SWGR	1N MAIN 1 EMERGENCY	400/5	400/5	51, 51N	CUTLER-HAMMER FP-5000	RECOMMENDED	ANSI VERY	1.2	0.4	(Inst1) 20	17 cycles	NONE	ANSI MOD	0.1	0.4	7	6 cycles	N/A
					GENERAL ELECTRIC IFC-53	EXISTING	IFC-53A	TAP 6A	T.D. 2	N/A	N/A	N/A	IFC-53A	TAP 3	T.D. 2.0	N/A	N/A	N/A
	M2 MAIN	300:5	300:5	27	GENERAL ELECTRIC ICR-53B	EXISTING	ICR	P.U 95v	D.O. 85V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15kV SWGR	FDR5 TO BLDG #33 LOOP	150:5	150:5	50/51, 50/51N	CUTLER-HAMMER DT-3001	RECOMMENDED	ANSI XTREM	1.5	0.5	11	0.1 SEC	25	ANSI MOD	0.1A	0.2 SEC	N/A	N/A	3.5
					GENERAL ELECTRIC IFC-53A	EXISTING	IFC-53A	TAP 4A	T.D. 1.5	N/A	N/A	UNKWN	IFC-53A	TAP 2.0A	T.D. 1.5	N/A	N/A	UNKNWN
	FDR6 15kV BLDG 2 LOOP	150:5	150:5	50/51, 50/51N	CUTLER-HAMMER DT-3001	RECOMMENDED	I^4T	1	8	10	0.1 SEC	25	ANSI VERY	0.1A	0.3SEC	N/A	N/A	3.5
					GENERAL ELECTRIC IFC-53A	EXISTING	IFC-53A	TAP 4A	T.D. 1.5	N/A	N/A	UNKWN	IFC-53A	T.D. 1.5	T.D. 2.0	N/A	N/A	UNKNWN

PROTECTIVE RELAY SETTINGS

BUS ID.	CIRCUIT BREAKER ID	CT RATIO		ANSI RELAY NO.	RELAY MODEL/ MANUF.	SETTINGS	PHASE SETTINGS						GROUND SETTINGS					
		PH	GND				CRV TYPE	LDPU	LDT	SDPU	SDT	INST	CRV TYPE	LDPU	LDT	SDPU	SDT	INST
15 kV SWGR	FDR7 15kV BLDG 8 LOOP	150:5	150:5	50/51, 50/51N	CUTLER-HAMMER DT-3001	RECOMMENDED	I^4T	1	8	10	0.1 SEC	25	ANSI VERY	0.1A	0.3SEC	N/A	N/A	3.5
					GENERAL ELECTRIC IFC-53A	EXISTING	IFC-53A	TAP 4A	T.D. 1.5	N/A	N/A	UNKWN	IFC-53A	T.D. 1.5	T.D. 2.0	N/A	N/A	UNKNWN
	FDR8 15kV BLDG 3 LOOP	150:5	150:5	50/51, 50/51N	CUTLER-HAMMER DT-3001	RECOMMENDED	ANSI XTREM	1.5	0.5	11	0.1 SEC	25	ANSI VERY	0.1A	0.3SEC	N/A	N/A	3.5
					GENERAL ELECTRIC IFC-53A	EXISTING	IFC-53A	TAP 4A	T.D. 1.5	N/A	N/A	UNKWN	IFC-53A	T.D. 1.5	T.D. 2.0	N/A	N/A	UNKNWN

* All other Protective Relay Settings (i.e. Dip Switch Settings, CT ratio, etc.) are set during the installation of the protective relay.

* All other Protective Relay Settings (i.e. Dip Switch Settings, CT ratio, etc.) are set during the installation of the protective relay.

BUILDING #1 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS															
					PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B1-MDP	B1-MDP-M	C-H, KD	RMS-310	400 / 250	RECOMMENDED	N/A	N/A	4.0	0.1 SEC	OUT	N/A	N/A	N/A	NA
	MAIN	ITE, F6	THERM MAG		EXISTING	N/A	N/A	N/A	N/A	N/A	4	N/A	N/A	N/A

Building #1 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B1-MDP	B1-MDP-1 / LP-4	Cutler-Hammer	JD	250	125	INST 5.0	New Breaker
B-B1-MDP	B1-MDP-1 / LP-4	ITE	QJ2	250	125	REPLACE BREAKER	INST 7.7
B-B1-MDP	B1-MDP-1 / LP-3	Cutler-Hammer	JD	250	125	INST 5.0	New Breaker
B-B1-MDP	B1-MDP-1 / LP-3	ITE	QJ2	250	125	REPLACE BREAKER	INST 7.7
B-B1-MDP	B1-MDP-1 / ATS	Cutler-Hammer	JD	250	100	INST 5.0	New Breaker
B-B1-MDP	B1-MDP-1 / ATS	ITE	NE	250	100	REPLACE BREAKER	INST 7.7
B-B1-MDP	B1-MDP-1 / LP-1	Cutler-Hammer	JD	250	125	INST 5.0	New Breaker
B-B1-MDP	B1-MDP-1 / LP-1	ITE	QJ2	250	125	REPLACE BREAKER	INST 7.7

BUILDING #2 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

					PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B2-MDP-M	B2-MDP-M	C-H, ND	RMS-310-LSIG	1200 / 1200	RECOMMENDED	N/A	N/A	2.0	0.2 SEC	N/A	N/A	0.2	0.3 SEC	N/A
		WEST, NCG	SELTRNC		EXISTING	N/A	N/A	8.0	N/A	N/A	N/A	0.2	0.5 SEC	N/A
B-B2-MDP	B2-MDP-1	C-H, KD	RMS-310-LSIG	400 / 150	RECOMMENDED	N/A	N/A	4.0	0.1 SEC	N/A	N/A	0.2	0.1 SEC	N/A
		FPE, NFJ	THERM MAG	400 / 225	EXISTING	N/A	N/A	N/A	N/A	N/A	INST 5.00	N/A	N/A	N/A
B-B2-MDP	B2-MDP-2	C-H, KD	RMS-310-LSIG	400 / 110	RECOMMENDED	N/A	N/A	4.0	0.1 SEC	N/A	N/A	0.2	0.1 SEC	N/A
		FPE, NFJ	THERM MAG	400 / 225	EXISTING	N/A	N/A	N/A	N/A	N/A	INST 5.00	N/A	N/A	N/A
B-B2-MDP	B2-MDP-3	C-H, KD	RMS-310-LSIG	400 / 200	RECOMMENDED	N/A	N/A	4.0	0.1 SEC	N/A	N/A	0.2	0.1 SEC	N/A
		FPE, NFJ	THERM MAG		EXISTING	N/A	N/A	N/A	N/A	N/A	INST 5.00	N/A	N/A	N/A
B-B2-MDP	B2-MDP-4	C-H, KD	RMS-310-LSIG	400 / 200	RECOMMENDED	N/A	N/A	4.0	0.1 SEC	N/A	N/A	0.2	0.1 SEC	N/A
		GE, TJJ	THERM MAG		EXISTING	N/A	N/A	N/A	N/A	N/A	INST 3.00	N/A	N/A	N/A
B-B2-MDPA-M	B2-MDPA-M	C-H, LD	RMS-310-LSI	600 / 600	RECOMMENDED	N/A	N/A	4.0	0.2 SEC	N/A	N/A	N/A	N/A	N/A
		FPE, NM	THERM MAG		EXISTING	N/A	N/A	N/A	N/A	N/A	INST 5.00	N/A	N/A	N/A
B-B2-MDPA	B2-MDPA-TIE	C-H, KD	RMS-310-LSI	400 / 400	RECOMMENDED	N/A	N/A	5.0	0.1 SEC	N/A	N/A	N/A	N/A	N/A
		FPE, NJL	THERM MAG		EXISTING	N/A	N/A	N/A	N/A	N/A	INST 3.0	N/A	N/A	N/A
B-B2-MDPB-M	B2-MDPB-M	C-H, LD	RMS-310-LSI	600 / 600	RECOMMENDED	N/A	N/A	4.0	0.2 SEC	N/A	N/A	N/A	N/A	N/A
		FPE, NM	THERM MAG		EXISTING	N/A	N/A	N/A	N/A	N/A	INST 3.0	N/A	N/A	N/A

Building #2 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B2-CRIT PNL	B2-CRIT-1	ITE	HE6	100	100	INST 6.0	INST 6.0
B-B2-CRIT PNL	B2-CRIT-2	FPE	NJL	400	200	INST 3.0	INST 3.0
B-B2-CRIT PNL	B2-CRIT-4	FPE	NJL	400	200	INST 3.0	INST 3.0
B-B2-CRIT PNL	B2-CRIT-5	ITE	HE6	100	100	INST 6.0	INST 6.0
B-B2-CRIT PNL	B2-CRIT-6	FPE	NJL	400	200	INST 3.0	INST 3.0
B-B2-PNL LS	B2-LS-1	FPE	NJL	400	225	INST 3.0	INST 3.0
B-B2-PNL LS	B2-LS-2	FPE	NJL	400	200	INST 3.0	INST 3.0
B-B2-PNL LS	B2-LS-3	FPE	NJL	400	200	INST 3.0	INST 3.0
B-B2-PNL LS	B2-LS-4	ITE	HE6	100	100	INST 6.0	INST 6.0
B-B2-PNL LS	B2-LS-5	FPE	NJL	400	200	INST 3.0	INST 3.0
B-B2-PNL LS	B2-LS-6	FPE	NJL	400	200	INST 3.0	INST 3.0
B-B2-PNL LS	B2-LS-7	FPE	NJL	400	200	INST 3.0	INST 3.0
B-B2-PNL LS	B2-LS-8	FPE	NJL	400	200	INST 3.0	INST 3.0
B-B2-MDPA	B2-MDPA-1	ITE	HE6	100	100	INST 6.0	INST 6.0
B-B2-MDPA	B2-MDPA-2	FPE	NJL	400	400	INST 3.0	INST 3.0
B-B2-MDPB	B2-MDPB-1	FPE	NJL	400	400	INST 3.0	INST 3.0
B-B2-MDPB	B2-MDPB-10	ITE	HE6	100	70	INST 6.0	INST 6.0

Building #2 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B2-MDPB	B2-MDPB-11	ITE	HE6	100	70	INST 6.0	INST 6.0
B-B2-MDPB	B2-MDPB-2	FPE	NJL	400	400	INST 3.0	INST 3.0
B-B2-MDPB	B2-MDPB-3	FPE	NJL	400	200	INST 3.0	INST 3.0
B-B2-MDPB	B2-MDPB-4	FPE	NJL	400	200	INST 3.0	INST 3.0
B-B2-MDPB	B2-MDPB-5	FPE	NJL	400	200	INST 3.0	INST 3.0
B-B2-MDPB	B2-MDPB-6	FPE	NJL	400	400	INST 3.0	INST 3.0
B-B2-MDPB	B2-MDPB-7	FPE	NJL	400	200	INST 3.0	INST 3.0
B-B2-MDPB	B2-MDPB-8	FPE	NJL	400	200	INST 3.0	INST 3.0
B-B2-MDPB	B2-MDPB-9	FPE	NJL	400	200	INST 3.0	INST 3.0

BUILDING #3 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS															
						PHASE						GROUND			
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B3-MDP	B3-MDP-M	SQUARE D, NE LSI	MICRO LOGIC	1200 / 1200	RECOMMENDED	1.0	7	5.0	.1	Out	10.0	N/A	N/A	N/A
					EXISTING PHASE	1.0	2	2.0	.1	In	3.0	N/A	N/A	N/A

Building #3 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B3-EP1	B3-EP1-1	SQUARE D	KA	250	225	INST (5-10 x Trip) 5.0	INST (5-10 x Trip) 5.0
B-B3-EP1	B3-EP1-2	SQUARE D	KA	250	225	INST (5-10 x Trip) 5.0	INST (5-10 x Trip) 5.0
B-B3-EP1	B3-EP1-4	SQUARE D	KA	250	200	INST (5-10 x Trip) 5.0	INST (5-10 x Trip) 5.0
B-B3-EP2-M	B3-EP2-M	SQUARE D	LA	400	400	INST 8.00	INST 8.00
B-B3-MDP	B3-MDP-1	SQUARE D	KA	250	200	INST (5-10 x Trip) 10.0	INST (5-10 x Trip) 10.0
B-B3-MDP	B3-MDP-2	SQUARE D	LA	400	400	INST 8.00	INST 8.00
B-B3-MDP	B3-MDP-3	SQUARE D	LA	400	400	INST 10.0	INST 10.0

BUILDING #4 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

						PHASE						GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B4-MDP-M	B4-MDP-M	C-H, RD	DIGITRIP RMS310-LSI	2000 / 1600	RECOMMENDED	N/A	FIXED	4.0	.200 SEC	N/A	N/A	N/A	N/A	N/A
		WEST, PC	SELTRONIC		EXISTING	N/A	FIXED	5.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B4-MDP	B4-MDP-1	WEST, LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B4-MDP	B4-MDP-2	WEST, LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B4-MDP	B4-MDP-3	WEST, LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B4-MDP	B4-MDP-4	WEST, LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B4-MDP	B4-MDP-5	WEST, LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B4-MDP	B4-MDP-6	WEST, LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B4-MDP	B4-MDP-7	WEST, LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B4-MDP	B4-MDP-8	WEST, LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B4-MDP	B4-MDP-9	WEST, LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B4-MDP	B4-MDP-10	WEST, LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A

Building #4 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B4-4EQD	B4-4EQD-1	FPE	NEJH	400	200	INST 5.00	INST 5.00

BUILDING#5 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS															
					PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B5-MDP-M	B5-MDP-M	C-H, ND	DIGITRIP RMS310 LSI	1200 / 1000	RECOMMENDED	FIXED	FIXED	6.0	.100 SEC	FIXED	FIXED	N/A	N/A	N/A
		FPE, NN	THERM MAG		EXISTING	N/A	N/A	N/A	N/A	N/A	HI	N/A	N/A	N/A

Building #5 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B5-EQD	B5-EQD-1	FPE	NEJH	400	150	INST 3.0	INST 3.0
B-B5-EQD	B5-EQD-2	FPE	NEJH	400	150	INST 3.0	INST 3.0
B-B5-EQD	B5-EQD-3	FPE	NEJH	400	150	INST 3.0	INST 3.0
B-B5-EQD	B5-EQD-4	FPE	NEJH	400	150	INST 3.0	INST 3.0
B-B5-EQD	B5-EQD-5	FPE	NFJ	400	REC 150A	INST 3.0	INST 3.0
B-B5-MDP	B5-MDP-1	FPE	NFJ	400	225	INST 10.0	INST 10.0
B-B5-MDP	B5-MDP-2	FPE	NFJ	400	200	INST 10.0	INST 10.0
B-B5-MDP	B5-MDP-4	FPE	NFJ	400	200	INST 10.0	INST 10.0
B-B5-MDP	B5-MDP-5	FPE	NJL	400	400	INST 5.00	INST 5.00
B-B5-MDP	B5-MDP-6	FPE	NFJ	400	125	INST 10.0	INST 10.0
B-B5-MDP	B5-MDP-7	FPE	NFJ	400	200	INST 10.0	INST 10.0
B-B5-MDP	B5-MDP-8	FPE	NFJ	400	200	INST 10.0	INST 10.0
B-B5-MDP	B5-MDP-9	FPE	NFJ	400	200	INST 10.0	INST 10.0

REC = RECOMMENDED

BUILDING #6 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

						PHASE						GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B6-MDP-M	B6-MDP-M	WEST. SPB-100	DIGITRP RMS-510	1200 / 1200	RECOMMENDED	1.0	4.0 SEC	5.0	0.2 SEC	Out	10.0	N/A	N/A	N/A
			POW R TRIP		EXISTING	1.0	INT	N/A	N/A	N/A	8.0	N/A	N/A	N/A
B-B6-MDP	B6-MDP-1	WEST., LC	SELTRONIC	300 / 150	EXISTING	1.0	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B6-MDP	B6-MDP-2	WEST., LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B6-MDP	B6-MDP-3	WEST., LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B6-MDP	B6-MDP-4	WEST., LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B6-MDP	B6-MDP-5	WEST., LC	SELTRONIC	300 / 150	EXISTING	1.0	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B6-MDP	B6-MDP-6	WEST., LC	SELTRONIC	300 / 150	EXISTING	1.0	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B6-MDP	B6-MDP-7	WEST., LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B6-MDP	B6-MDP-8	CH., LD	DIGITRP RMS-310LSI	300 / 200	RECOMMENDED	1.0	FIXED	10.0	0.1 Sec	N/A	N/A	N/A	N/A	N/A
		WEST., LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B6-MDP	B6-MDP-9	CH., LD	DIGITRP RMS-310LSI	300 / 200	RECOMMENDED	1.0	FIXED	10	0.1 Sec	N/A	N/A	N/A	N/A	N/A
		WEST., LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A

BUILDING #7 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

					PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B7-MDP-M	B7-MDP-M	WEST. SPB-100	DIGITRIP RMS-510	800 / 800	RECOMMENDED	1.0	7 SEC	6.0	0.2 SEC	Out	10.0	N/A	N/A	N/A
			POW R-TP 7		EXISTING	1.0	INT	N/A	N/A	N/A	10.0	N/A	N/A	N/A
B-B7-MDP	B7-MDP-1	WEST. LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B7-MDP	B7-MDP-10	WEST. LC	SELTRONIC	300 / 150	EXISTING	1.0	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B7-MDP	B7-MDP-2	WEST. LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B7-MDP	B7-MDP-3	WEST. LC	SELTRONIC	600 / 400	EXISTING	1.0	FIXED	7.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B7-MDP	B7-MDP-4	WEST. LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B7-MDP	B7-MDP-5	WEST. LC	SELTRONIC	300 / 150	EXISTING	1.0	FIXED	10	FIXED	N/A	N/A	N/A	N/A	N/A
B-B7-MDP	B7-MDP-6	WEST. LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B7-MDP	B7-MDP-8	WEST. LC	SELTRONIC	300 / 150	EXISTING	1.0	FIXED	10	FIXED	N/A	N/A	N/A	N/A	N/A
B-B7-MDP	B7-MDP-9	WEST. LC	SELTRONIC	300 / 150	RECOMMENDED	0.85	FIXED	10.0	FIXED	N/A	N/A	N/A	N/A	N/A

Building #7 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B7-EQD	B7-EQD-1	GE	TFJ	225	200	INST (4.5-10 x Trip) HI	INST (4.5-10 x Trip) HI
B-B7-EQD	B7-EQD-2	GE	TFJ	225	200	INST (4.5-10 x Trip) HI	INST (4.5-10 x Trip) HI
B-B7-EQD	B7-EQD-3	GE	TFJ	225	175	INST (4.5-10 x Trip) HI	INST (4.5-10 x Trip) HI
B-B7-EQD	B7-EQD-4	GE	THFK	225	175	INST (4.5-10 x Trip) HI	INST (4.5-10 x Trip) HI
B-B7-EQD	B7-EQD-6	GE	TFJ	225	200	INST (4.5-10 x Trip) HI	INST (4.5-10 x Trip) HI

BUILDING #8 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

						PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B8-208V-MAIN	B8-208V-M	WEST. SPB-65	POW R TRIP	1200 / 700	RECOMMENDED	1.0	MAX	6.0	INT	N/A	N/A	N/A	N/A	N/A
					EXISTING	1.0	INT	8.0	INT	N/A	N/A	N/A	N/A	N/A

Building #8 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B8-GE BKR	B8 GE BKR	GE	TJJ	400	300	INST (3-10 x Trip) HI	UNKNOWN
B-B8-FDR	B8 JBOX BKR	WESTNHOUSE	KD	400	300	INST 10.0	UNKNOWN
B-B8-SYLV	B8-ATS-E	FPE	NJF	400	150	INST 10.0	UNKNOWN
B-B8-SYLV	B8-ATS-N	FPE	NJF	400	150	INST 10.0	UNKNOWN
B-B8-MDP-8	B8-MDP8-1	WESTNHOUSE	DK 240 V	400	400	INST 7.50	UNKNOWN
B-B8-PP1-M	B8-PP1-M	GE	TJK	600	450	INST (3-10 x Trip) 5.00	UNKNOWN

BUILDING #9 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

						PHASE						GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B9-MAIN	B9-MDP-M	WEST. SPB-100	POW R-TP 7	1200 / 700	EXISTING	1.0	MAX	4.0	MIN	N/A	N/A	N/A	N/A	N/A

Building #9 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B9-ATS BKR	B9-ATS-BKR	FPE	NJL	400	250	INST 5.00	UNKNOWN

Building #12 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B12-MDP	B12-MDP-1	FPE	NLJ	400	225	INST 3.0	UNKNOWN
B-B12-MAP-M	B12-MDP-M	FPE	NLJ	400	400	INST 3.0	UNKNOWN

BUILDING #13 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

					PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B13-MDP-M	B13-MDP-M	C-H, ND	DIGITRIP RMS310 LSI	1200 / 1200	RECOMMENDED	1.0	FIXED	3.0	0.1 SEC	N.A	FIXED	N/A	N/A	N/A
		GE, THKM	THERM MAG		EXISTING	N/A	N/A	N/A	N/A	N/A	10	N/A	N/A	N/A

Building #13 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B13-MDP	B13-MDP-1	GE	TFJ	225	200	INST (4.5-10 x Trip) HI	INST (4.5-10 x Trip) HI
B-B13-MDP	B13-MDP-2	GE	TFJ	225	200	INST (4.5-10 x Trip) HI	INST (4.5-10 x Trip) HI
B-B13-MDP	B13-MDP-3	GE	TJJ	400	400	INST (3-10 x Trip) HI	INST (3-10 x Trip) HI
B-B13-MDP	B13-MDP-4	GE	TJJ	400	400	INST (3-10 x Trip) 5.00	INST (3-10 x Trip) 5.00
B-B13-MDP	B13-MDP-5	GE	TJJ	400	125	INST (3-10 x Trip) HI	INST (3-10 x Trip) HI
B-B13-MDP	B13-MDP-6	GE	TJJ	400	125	INST (3-10 x Trip) HI	INST (3-10 x Trip) HI

BUILDING #17 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

					PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B17-MAIN	B17-MAIN	C-H, LD	DIGITRIP RMS-310	600 / 600	RECOMMENDED	1.03	FIXED	5.0	0.1 SEC	N/A	N/A	N/A	N/A	N/A
			THERM-MAG		EXISTING	N/A	N/A	N/A	N/A	N/A	5	N/A	N/A	N/A

BUILDING #18 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

					PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B18-NMDP-M	B18-NMDP-M	C-H, LD	DIGITRIP RMS 310	600 / 600	RECOMMENDED	1.03	FIXED	5.0	0.1 SEC	N/A	N/A	N/A	N/A	N/A
B-B18-NMDP-M	B18-NMDP-M	SQ-D, MA	THERM-MAG	600 / 600	EXISTING	N/A	N/A	N/A	N/A	N/A	5	N/A	N/A	N/A

BUILDING #19 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

					PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B19-MDP1-M	B19-MDP1-M	SQ-D, NE	NE LSI A	1200 / 1200	RECOMMENDED	1.0	7	5.0	0.1 SEC	Out	10.0	N/A	N/A	N/A
B-B19-MDP1-M	B19-MDP1-M	SQUARE D	NE LSI A	1200 / 1200	EXISTING	1.0	2	2.0	0.1 SEC	Out	3.0	N/A	N/A	N/A
B-B19-MDP2-M	B19-MDP2-M	C-H ND	DIGITRIP RMS-310-LSI	1200 / 600	RECOMMENDED	N/A	N/A	3	0.1 SEC	Out	N/A	N/A	N/A	N/A
B-B19-MDP2-M	B19-MDP2-M	SQUARE D	MA,MAL	1200 / 600	EXISTING	N/A	N/A	N/A	N/A	N/A	5	N/A	N/A	N/A

Building #19 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B19-MDP1	B19-MDP1-4	SQUARE D	KA	150	150	INST (5-10 x Trip) 10.0	INST (5-10 x Trip) 10.0
B-B19-MDP1	B19-MDP1-4	SQUARE D	KA	150	150	INST (5-10 x Trip) 5.0	INST (5-10 x Trip) 5.0
B-B19-MDP1	B19-MDP1-5	SQUARE D	400	400	400	INST 10.0	INST 10.0
B-B19-MDP1	B19-MDP1-6	SQUARE D	400	400	400	INST 5.0	INST 5.0
B-B19-MDP1	B19-MDP1-7	SQUARE D	KA	250	225	INST (5-10 x Trip) 10.0	INST (5-10 x Trip) 10.0
B-B19-MDP1	B19-MDP1-7	SQUARE D	KA	250	225	INST (5-10 x Trip) 5.0	INST (5-10 x Trip) 5.0
B-B19-MDP1	B19-MDP1-8	SQUARE D	KA	250	200	INST (5-10 x Trip) 5.0	INST (5-10 x Trip) 5.0
B-B19-MDP1	B19-MDP1-8	SQUARE D	KA	250	200	INST (5-10 x Trip) 10.0	INST (5-10 x Trip) 10.0
B-B19-MDP2	B19-MDP2-1	SQUARE D	KA	250	200	INST (5-10 x Trip) 5.0	INST (5-10 x Trip) 5.0
B-B19-MDP2	B19-MDP2-1	SQUARE D	KA	250	200	INST (5-10 x Trip) 10.0	INST (5-10 x Trip) 10.0
B-B19-MDP2	B19-MDP2-2	SQUARE D	KA	250	200	INST (5-10 x Trip) 10.0	INST (5-10 x Trip) 10.0

BUILDING #22 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

					PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B22-MDP-M	B22-MDP-M	C-H, ND	DIGITRIP RMS310	800 / 400	RECOMMENDED	1.0	LTD	7.0	100	N/A	N/A	N/A	N/A	N/A
		SQUARE D, MA	THERM-MAG	1000 / 800	EXISTING	N/A	N/A	N/A	N/A	N/A	5	N/A	N/A	N/A

Building #22 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B22-EMERG	B22-EMERG-1	SQUARE D	KA	250	225	INST (5-10 x Trip) 5.0	UNKNOWN
B-B22-EMERG	B22-EMERG-2	SQUARE D	KA	250	225	INST (5-10 x Trip) 5.0	UNKNOWN
B-B22-EMERG	B22-EMERG-3	SQUARE D	KA	250	125	INST (5-10 x Trip) 5.0	UNKNOWN
B-B22-EMERG	B22-EMERG-4	SQUARE D	KA	250	125	INST (5-10 x Trip) 5.0	UNKNOWN
B-B22-EMERG	B22-EMERG-5	SQUARE D	KA	250	125	INST (5-10 x Trip) 5.0	UNKNOWN
B-B22-EMERG-M	B22-EMERG-M	SQUARE D	KA	250	225	INST (5-10 x Trip) 5.0	UNKNOWN
B-B22-MDP	B22-MDP-1	SQUARE D	MA	350	300	INST 6.00	UNKNOWN
B-B22-MDP	B22-MDP-2	SQUARE D	MA	350	175	INST 9.00	UNKNOWN
B-B22-N1-M	B22-N1-M	SQUARE D	LA	400	400	INST (5-10 x Trip) 5.0	INST (5-10 x Trip) 9.00

Building #33 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B33-MDP-M	B33-MDP-M	SQUARE D	LA	400	250	INST 5.0	UNKNOWN

Building #60 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B60-MDP	B60-MDP-1	FPE	NJL/NFJ *	400	200	INST 3.0	INST 3.0

BUILDING #61 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

					PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B61-MDP-M	B61-MDP-M	WEST. SPB-100	DIGITRIP RMS-510	800 / 800	RECOMMENDED	1.0	7.0	4.0	0.2 SEC	OUT	10.0	N/A	N/A	N/A
B-B61-MDP-M	B61-MDP-M	WEST. SPB-100	POW R-TP 7	800 / 800	EXISTING	1.0	INT	N/A	N/A	N/A	10.0	N/A	N/A	N/A
B-B61-MDP	B61-MDP-1	WEST. , LC	SELTRONIC	150 / 75	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B61-MDP	B61-MDP-10	WEST. , LC	SELTRONIC	600 / 400	EXISTING	1.0	FIXED	4.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B61-MDP	B61-MDP-2	WEST. , LC	SELTRONIC	150 / 75	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B61-MDP	B61-MDP-3	WEST. , LC	SELTRONIC	150 / 150	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B61-MDP	B61-MDP-4	WEST. , LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B61-MDP	B61-MDP-5	WEST. , LC	SELTRONIC	150 / 75	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B61-MDP	B61-MDP-7	WEST. , LC	SELTRONIC	150 / 150	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B61-MDP	B61-MDP-8	WEST. , LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B61-MDP	B61-MDP-9	WEST. , LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A

Building #61 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B61-EQA	B61-EQA-1	SIEMENS	FXD6 Sentron	200	200	INST (LO-HI) LO	INST (LO-HI) LO
B-B61-EQD	B61-EQD-1	GE	TFJ	225	200	INST (4.5-10 x Trip) LO	UNKNOWN
B-B61-EQD	B61-EQD-2	GE	TFJ	225	200	INST (4.5-10 x Trip) 5.00	UNKNOWN
B-B61-EQD	B61-EQD-4	GE	TFJ	225	175	INST (4.5-10 x Trip) HI	UNKNOWN

BUILDING #62 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

					PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B62-MDP-M	B62-MDP-M	WEST. SPB-100	DIGITRP RMS-510	1200 / 1200	RECOMMENDED	1.0	2.0 SEC	4.0	0.2 SEC	Out	10.0	N/A	N/A	N/A
			DIGTRP RMS		EXISTING	1.0	24.0 SEC	N/A	N/A	N/A	10.0	N/A	N/A	N/A
B-B62-MDP	B62-MDP-1	WEST., LC	SELTRONIC	150 / 75	EXISTING	1.0	FIXED	9.0	FIXED	In	N/A	N/A	N/A	N/A
B-B62-MDP	B62-MDP-10	WEST., LC	SELTRONIC	300 / 175	EXISTING	1.0	FIXED	9.0	FIXED	In	N/A	N/A	N/A	N/A
B-B62-MDP	B62-MDP-11	WEST., LC	SELTRONIC	300 / 175	EXISTING	1.0	FIXED	9.0	FIXED	In	N/A	N/A	N/A	N/A
B-B62-MDP	B62-MDP-12	WEST., LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	In	N/A	N/A	N/A	N/A
B-B62-MDP	B62-MDP-13	WEST., LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	In	N/A	N/A	N/A	N/A
B-B62-MDP	B62-MDP-2	WEST., LC	SELTRONIC	150 / 150	EXISTING	1.0	FIXED	9.0	FIXED	In	N/A	N/A	N/A	N/A
B-B62-MDP	B62-MDP-3	WEST., LC	SELTRONIC	150 / 75	EXISTING	1.0	FIXED	9.0	FIXED	In	N/A	N/A	N/A	N/A
B-B62-MDP	B62-MDP-4	WEST., LC	SELTRONIC	300 / 175	EXISTING	1.0	FIXED	9.0	FIXED	In	N/A	N/A	N/A	N/A
B-B62-MDP	B62-MDP-5	WEST., LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	In	N/A	N/A	N/A	N/A
B-B62-MDP	B62-MDP-6	WEST., LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	In	N/A	N/A	N/A	N/A
B-B62-MDP	B62-MDP-7	WEST., LC	SELTRONIC	150 / 100	EXISTING	1.0	FIXED	9.0	FIXED	In	N/A	N/A	N/A	N/A
B-B62-MDP	B62-MDP-8	WEST., LC	SELTRONIC	150 / 150	EXISTING	1.0	FIXED	9.0	FIXED	In	N/A	N/A	N/A	N/A
B-B62-MDP	B62-MDP-9	WEST., LC	SELTRONIC	150 / 150	EXISTING	1.0	FIXED	9.0	FIXED	In	N/A	N/A	N/A	N/A

Building #62 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B62-EQD	B62-EQD-1	FPE	NEJH	400	175	INST 3.0	UNKNOWN
B-B62-EQD	B62-EQD-2	FPE	NEJH	400	175	INST 3.0	UNKNOWN
B-B62-EQD	B62-EQD-4	FPE	NEJH	400	175	INST 3.0	UNKNOWN

BUILDING #70 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

					PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B70-MDP-M	B70-MDP-M	WEST., SPB-100	DIGITRIP RMS510	800 / 800	RECOMMENDED	1.0	7.0	6.0	.2	Out	10.0	N/A	N/A	N/A
			POW R TRIP		EXISTING	1.0	INT	N/A	N.A	N/A	8.0	N/A	N/A	N/A
B-B70-MDP	B70-MDP-1	WEST., LC	SELTRONIC	150 / 75	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B70-MDP	B70-MDP-10	WEST., LC	SELTRONIC	150 / 100	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B70-MDP	B70-MDP-11	WEST., LC	SELTRONIC	150 / 150	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B70-MDP	B70-MDP-12	WEST., LC	SELTRONIC	150 / 150	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B70-MDP	B70-MDP-13	WEST., LC	SELTRONIC	300 / 200	EXISTING	0.5	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B70-MDP	B70-MDP-14	WEST., LC	SELTRONIC	600 / 350	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B70-MDP	B70-MDP-15	WEST., LC	SELTRONIC	300 / 200	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B70-MDP	B70-MDP-2	WEST., LC	SELTRONIC	150 / 100	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B70-MDP	B70-MDP-3	WEST., LC	SELTRONIC	150 / 150	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B70-MDP	B70-MDP-4	WEST., LC	SELTRONIC	150 / 150	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B70-MDP	B70-MDP-5	WEST., LC	SELTRONIC	150 / 75	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B70-MDP	B70-MDP-6	WEST., LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B70-MDP	B70-MDP-7	WEST., LC	SELTRONIC	300 / 225	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B70-MDP	B70-MDP-8	WEST., LC	SELTRONIC	300 / 300	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A
B-B70-MDP	B70-MDP-9	WEST., LC	SELTRONIC	150 / 100	EXISTING	1.0	FIXED	9.0	FIXED	N/A	N/A	N/A	N/A	N/A

Building #70 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B70-FPMP M	B70-FIREPMP-E	GE J600	TJK	400	400	INST 10.0	INST 10.0
B-B70-FPMP M	B70-FIREPMP-N	GE J600	TJK	400	400	INST 10.0	INST 10.0
B-B70 GEN-M	B70-GEN-M	WESTNHOUSE	LB	400	400	INST 5.0	INST 5.0

BUILDING #78 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS															
					PHASE							GROUND			
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B78-MDP-M	B78-MDP-M	GE THP	MVT Plus/PM LSI	4000 / 4000	RECOMMENDED	1.0	1	2	MIN	Out	MAX	N/A	N/A	N/A
			MVT Plus/PM LI		EXISTING	1	4	N/A	N/A	N/A	3X	N/A	N/A	N/A

Building #78 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B78-MDP	B780MDP-29B	GE	SFHA	250	225	MAX	UNKNOWN

BUILDING #80 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

					PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B80-MDP-M	B80-MDP-M	C-H, LD	DIGITRP RMS-310	600 / 600	RECOMMENDED	1.0	FIXED	4.0	0.2 SEC	Out	N/A	N/A	N/A	N/A
B-B80-MDP-M	B80-MDP-M	WEST. LA	THERM MAG	600 / 600	EXISTING	N/A	N/A	N/A	N/A	N/A	5	N/A	N/A	N/A

Building #81 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B81-MDP-M	B81-MDP-M	FPE	NJL	400	250	INST 5.00	INST 10.0

BUILDING #82 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

					PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B82-MDP-M	B82-MDP-M	C-H, LD	DIGITRIP RMS	600 / 400	RECOMMENDED	1.03	FIXED	3.0	0.1 SEC	N/A	N/A	N/A	N/A	N/A
B-B82-MDP-M	B82-MDP-M	WEST. L FRAME	THERM MAG	600 / 600	EXISTING	N/A	N/A	N/A	N/A	N/A	10	N/A	N/A	N/A

Building #82 Thermal Magnetic Breaker Settings							
				CURRENT RATING		RECOMMENDED TRIP SETTING	EXISTING TRIP SETTING
BUS	NAME	MANUFACTURER	TYPE	FRAME	TRIP	INST	INST
B-B82-MDP	B82-MDP-1	CUTLER-HAMMER	JD	250	200	INST (5-10 x Trip) 5	UNKNOWN

BUILDING #92 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

						PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B92-EMDP-M	B92-EMDP-M	GE, THKS	VersaTrip Mod2	1200 / 1200	RECOMMENDED	1	Min	2	Min	N/A	6	N/A	N/A	N/A
					EXISTING	1	Max	2	Int	N/A	4	N/A	N/A	N/A
B-B92-EMDP	B92-EMDP-1	GE, TJS	VersaTrip Mod2	600 / 200	RECOMMENDED	0.5	Int	N/A	N/A	N/A	8	N/A	N/A	N/A
					EXISTING	0.5	Max	N/A	N/A	N/A	4	N/A	N/A	N/A
B-B92-EMDP	B92-EMDP-2	GE, TJS	VersaTrip Mod2	600 / 200	RECOMMENDED	1	Int	N/A	N/A	N/A	8	N/A	N/A	N/A
					EXISTING	0.9	Int	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B92-EMDP	B92-EMDP-3	GE, TJS	VersaTrip Mod2	600 / 200	RECOMMENDED	0.6	Int	N/A	N/A	N/A	8	N/A	N/A	N/A
					EXISTING	0.8	Max	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B92-EMDP	B92-EMDP-4	GE, TJS	VersaTrip Mod2	600 / 200	RECOMMENDED	0.7	Int	N/A	N/A	N/A	8	N/A	N/A	N/A
					EXISTING	0.7	Int	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B92-EMDP	B92-EMDP-5	GE, TJS	VersaTrip Mod2	600 / 400	RECOMMENDED	0.8	Int	N/A	N/A	N/A	5	N/A	N/A	N/A
					EXISTING	0.8	Max	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B92-EMDP	B92-EMDP-6	GE, TJS	VersaTrip Mod2	600 / 600	RECOMMENDED	0.5	Int	N/A	N/A	N/A	6	N/A	N/A	N/A
					EXISTING	0.8	Max	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B92-GEN	B92-GEN-M	CH, ND	THERM MAG	1200 / 1200	RECOMMENDED	N/A	N/A	N/A	N/A	N/A	5	N/A	N/A	N/A
					EXISTING	NO EXISTING PROTECTION PRESENT								

BUILDING #93 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

						PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B93-EMDP-M	B93-EMDP-M	GE, THKS	VersaTrip Mod2	1200 / 1200	RECOMMENDED	1.0	Min	2	Min	N/A	6	N/A	N/A	N/A
					EXISTING	1.0	Int	2	Max	N/A	4	N/A	N/A	N/A
B-B93-EMDP	B93-EMDP-1	GE, TJS	VersaTrip Mod2	600 / 200	RECOMMENDED	0.5	Int	N/A	N/A	N/A	8	N/A	N/A	N/A
					EXISTING	0.5	Min	N/A	N/A	N/A	4	N/A	N/A	N/A
B-B93-EMDP	B93-EMDP-2	GE, TJS	VersaTrip Mod2	600 / 200	RECOMMENDED	0.5	Int	N/A	N/A	N/A	8	N/A	N/A	N/A
					EXISTING	0.8	Max	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B93-EMDP	B93-EMDP-3	GE, TJS	VersaTrip Mod2	600 / 300	RECOMMENDED	0.8	Int	N/A	N/A	N/A	6	N/A	N/A	N/A
					EXISTING	0.9	Max	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B93-EMDP	B93-EMDP-4	GE, TJS	VersaTrip Mod2	600 / 400	RECOMMENDED	1.0	Int	N/A	N/A	N/A	4	N/A	N/A	N/A
					EXISTING	1.0	Max	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B93-EMDP	B93-EMDP-5	GE, TJS	VersaTrip Mod2	600 / 400	RECOMMENDED	1.0	Int	N/A	N/A	N/A	4	N/A	N/A	N/A
					EXISTING	1.0	Max	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B93-EMDP1	B93-EMDP1-1	WEST. LCA	SELTRONIC	300 / 225	RECOMMENDED	1.0	14.5	7.0	0.066	In	N/A	N/A	N/A	N/A
					EXISTING	1.0	14.5	9.0	0.105	In	N/A	N/A	N/A	N/A
B-B93-EMDP1	B93-EMDP1-2	WEST, LC	SELTRONIC	300 / 225	RECOMMENDED	1.0	14.5	7.0	0.066	In	N/A	N/A	N/A	N/A
					EXISTING	1.0	14.5	9.0	0.066	In	N/A	N/A	N/A	N/A

BUILDING #93 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

						PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B93-GEN	B93-GEN-M	CH, ND	THERM MAG	1200 / 1200	RECOMMENDED	N/A	N/A	N/A	N/A	N/A	5	N/A	N/A	N/A
					EXISTING	NO EXISTING PROTECTION PRESENT								

BUILDING #94 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

						PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B94-EMDP-M	B94-EMDP-M	GE, THKS	VersaTrip	1200 / 1200	RECOMMENDED	1	Int	2	Int	N/A	6	N/A	N/A	N/A
					EXISTING	1	Int	4	Int	N/A	8	N/A	N/A	N/A
B-B94-EMDP	B94-EMDP-1	GE, TJS	VersaTrip	600 / 400	RECOMMENDED	0.6	Int	N/A	N/A		5	N/A	N/A	N/A
					EXISTING	1	Int	N/A	N/A		6	N/A	N/A	N/A
B-B94-EMDP	B94-EMDP-2	GE, TJS	VersaTrip	600 / 400	RECOMMENDED	0.8	Int	N/A	N/A	N/A	5	N/A	N/A	N/A
					EXISTING	0.9	Int	N/A	N/A	N/A	4	N/A	N/A	N/A
B-B94-EMDP	B94-EMDP-3	GE, TJS	VersaTrip	600 / 400	RECOMMENDED	1	Int	N/A	N/A	N/A	4	N/A	N/A	N/A
					EXISTING	1	Max	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B94-EMDP	B94-EMDP-5	GE, TJS	VersaTrip	600 / 400	RECOMMENDED	1	Int	N/A	N/A	N/A	4	N/A	N/A	N/A
					EXISTING	1	Max	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B94-EMDP	B94-EMDP-6	GE, TJS	VersaTrip	600 / 200	RECOMMENDED	0.5	Min	N/A	N/A	N/A	6	N/A	N/A	N/A
					EXISTING	0.5	Min	N/A	N/A	N/A	4	N/A	N/A	N/A
B-B94-EMDP	B94-EMDP-7	WEST, LCA	SELTRONIC	300 / 225	RECOMMENDED	1.0	14.5	6.0	0.105	In	N/A	N/A	N/A	N/A
					EXISTING	1.0	14.5	9.0	0.105	In	N/A	N/A	N/A	N/A
B-B94-EMDP	B94-EMDP-8	WEST, LCA	SELTRONIC	300 / 225	RECOMMENDED	1.0	14.5	6.0	0.105	In	N/A	N/A	N/A	N/A
					EXISTING	1.0	14.5	9.0	0.105	In	N/A	N/A	N/A	N/A

BUILDING #94 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS

						PHASE						GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B94-EMDP	B94-EMDP-9	WEST, LCA	SELTRONIC	300 / 225	RECOMMENDED	1.0	14.5	6.0	0.105	In	N/A	N/A	N/A	N/A
					EXISTING	1.0	14.5	9.0	0.105	In	N/A	N/A	N/A	N/A
B-B94-EMDP	B94-EMDP-10	WEST, LCA	SELTRONIC	300 / 225	RECOMMENDED	1.0	14.5	6.0	0.105	In	N/A	N/A	N/A	N/A
					EXISTING	1.0	14.5	9.0	0.105	In	N/A	N/A	N/A	N/A
B-B94-GEN	B94-GEN-M	CH, ND	THERM MAG	1200 / 1200	RECOMMENDED	N/A	N/A	N/A	N/A	N/A	5	N/A	N/A	N/A
					EXISTING	NO EXISTING PROTECTION PRESENT								

BUILDING #95 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS															
						PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B95-EMDP-M	B95-EMDP-M	GE, THKS	VersaTrip	1200 / 1200	RECOMMENDED	1	Int	2	Min		6	N/A	N/A	N/A
					EXISTING	1	Int	4	Int		6	N/A	N/A	N/A
B-B95-EMDP	B95-EMDP-1	GE, THJ	MVT 9	400 / 300	RECOMMENDED	0.8	2	N/A	N/A	N/A	6	N/A	N/A	N/A
					EXISTING	0.85	2	N/A	N/A	N/A	6	N/A	N/A	N/A
B-B95-EMDP	B95-EMDP-2	GE, TJS	VersaTrip Mod2	600 / 150	RECOMMENDED	1	Int	N/A	N/A	N/A	8	N/A	N/A	N/A
					EXISTING	1	Int	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B95-EMDP	B95-EMDP-3	GE, TJS	VersaTrip Mod2	600 / 300	RECOMMENDED	0.7	Int	N/A	N/A	N/A	6	N/A	N/A	N/A
					EXISTING	0.7	Int	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B95-EMDP	B95-EMDP-4	GE, TJS	VersaTrip Mod2	600 / 400	RECOMMENDED	1	Max	N/A	N/A	N/A	4	N/A	N/A	N/A
					EXISTING	1	Max	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B95-EMDP	B95-EMDP-5	GE, TJS	VersaTrip Mod2	600 / 400	RECOMMENDED	1	Max	N/A	N/A	N/A	4	N/A	N/A	N/A
					EXISTING	1	Max	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B95-EMDP	B95-EMDP-6	GE, TJS	VersaTrip Mod2	600 / 400	RECOMMENDED	1	Max	N/A	N/A	N/A	4	N/A	N/A	N/A
					EXISTING	1	Max	N/A	N/A	N/A	8	N/A	N/A	N/A
B-B95-EMDP	B95-EMDP-7	GE, TJS	VersaTrip Mod2	600 / 400	RECOMMENDED	1	Max	N/A	N/A	N/A	4	N/A	N/A	N/A
					EXISTING	0.8	Max	N/A	N/A	N/A	8	N/A	N/A	N/A

BUILDING #95 RECOMMENDED ELECTRONIC TRIP LV BREAKER SETTINGS															
						PHASE							GROUND		
BUS	BREAKER NAME	BREAKER MANUF. & MODEL	TRIP UNIT TYPE	AF/AT	SETTINGS	LDPU	Time	SDPU	Time	I2t	INST	PU	Time	I2t
B-B95-GEN	B95-GEN-M	CH, ND	THERM MAG	1200 / 1200	RECOMMENDED	N/A	N/A	N/A	N/A	N/A	5	N/A	N/A	N/A
					EXISTING	NO EXISTING PROTECTION PRESENT								

4.0 VOLTAGE DROP ANALYSIS

4.1 Introduction

A Voltage Drop Analysis is performed to calculate the level of voltage drop at each bus and feeder in a power system. The power systems software models power sources, transformer and cable impedances, and system loads to simulate the distribution of power and voltage levels throughout the system for selected operating scenarios. For this study, the normal mode and emergency mode cases are considered.

4.2 Objective

To determine the percent voltage drops on all buses and feeders of power system and to provide a tabular evaluation of the calculated voltage drops as compared to the allowable limits set by the NEC.

4.3 Voltage Drop Data

The power system data for the voltage drop analysis is the same as that used for the short circuit analysis. Estimated loads were added to the buses to simulate an even load distribution. The circuit loading was based on a maximum of 80% of each building transformer full load amps. In some cases where motor loads exists, a load diversity factor was used to properly estimate the distributed load without exceeding a transformer's full load current rating.

4.4 Results

Voltage drops at each bus and feeder were calculated and compared to the requirements in the NEC 210.19(A) FPN#4. These requirements, as stated in the NEC, provide reasonable efficiency of operation when voltage drops do not exceed 3% for branch circuits (Table 4.1 BRANCH %VD), and do not exceed 5% for a combination of both feeder and branch circuits (Table 4.1 BUS %VD). Cable current capacity (Table 4.1 CABLE RATING %) is considered out of spec when % is greater than 100. Because the loads in the model are simulated loads, each location where the % voltage drop and cable current capacity are out of spec should be reviewed further in a more detailed load flow study. The complete computer voltage drop reports for the Normal and Emergency cases are shown below in the computer output.

4.5 Analysis of Results

Cutler-Hammer used simulated loads, which were determined as written above in section 4.3. The detailed load flow study that has been recommended should include load flow measurements taken with a power quality analysis meter like a RPM. The system model was developed from the short circuit analysis as defined in the Executive Summary of this report.

Table 4.1 provides a summary of these results. The column headings are defined below:

Columns #1 and #2 – *FROM & TO (BUS NAME)*: These two columns define the branch associated with the load flow calculations. The names listed in these columns may be referenced on the system onelines included in Section #8. The entire Table is sorted (by building) with respect to Column #2.

Column #3 – *Type*: This column indicates the type of branch considered. This type may either be a transformer (TX2) or a cable (FDR).

Column #4 – *BRANCH %VD*: This column defines the voltage drop (in percent) calculated between the two busses listed in columns #1 and #2.

Columns #5 and #6 – *AMPS and KVA*: These two columns display the simulated loading conditions. The *AMPS* columns refers to the amount of current drawn from the bus location and Column #1 to the bus location in Column #2. The *KVA* column shows the loading with respect to the bus location defined in Column #2.

Column #7 – *CABLE RATING (%)*: According to the simulated loading conditions, this columns defines the duty (in terms of ampacity) of each cable location defined by the two bus locations shown in Columns #1 and #2.

Column #8 - #10: These columns show the system voltage and the associated voltage drop associated with the bus location defined in Column #2. The *VOLTAGE* column displays the nominal system voltage. The *PU RETAINED VOLTAGE* column shows the retained voltage as a fraction of the nominal voltage. The *BUS %VD* column describes the calculated voltage drop at each bus location described in Column #2.

Table 4.1 – Percent Voltage Drop Analysis

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-T-B2-PRI	B-T-B1-PRI	FDR	0.01	28.02	669.06	11.67	13800	0.999	0.10%
B-T-B1-PRI	B-T-B1-SEC	TX2	3.08	2.6	62.2	82.93	208	0.9632	3.68%
B-B1-MDP-M	B-B1-MDP	FDR	0.24	172.81	60.15	54	208	0.9637	3.63%
B-T-B1-SEC	B-B1-MDP-M	FDR	0.21	172.81	60.28	59.59	208	0.9661	3.39%
BUS-0019	B-T-B2-PRI	FDR	0.01	28.02	669.12	11.67	208	0.9992	0.08%
B-B2-PNL LS	B-B2-BATTERYCH	FDR	0.32	17.08	5.9	22.77	208	0.9557	4.43%
B-B2-MDP	B-B2-CATSCAN	FDR	0.61	155.96	125.47	91.74	480	0.9616	3.84%
B-B2-ATS-CRIT	B-B2-CRIT PNL	FDR	0.03	128.02	44.93	28.45	208	0.974	2.60%
B-B2-CRIT PNL	B-B2-DENTAL LB	FDR	0.09	14.21	4.98	10.93	208	0.9731	2.69%
B-B2-PNL LS	B-B2-DENTSUCPM	FDR	0.07	8.52	2.94	6.55	208	0.9582	4.18%
B-B2-PNL LS	B-B2-ELEV	FDR	0.05	19.17	6.62	7.37	208	0.9584	4.16%
B-B2-CRIT PNL	B-B2-ELEV-P1	FDR	0.19	28.47	9.99	10.95	208	0.9721	2.79%
B-B2-ATS-LED3	B-B2-EMERG-M	FDR	0.03	46.72	15.48	20.76	208	0.9197	8.03%
B-B2-EMERG-M	B-B2-EMERG-PNL	FDR	0	46.72	15.48	20.76	208	0.9197	8.03%
B-B2-EPNL-B-M	B-B2-EPNL-B	FDR	0	0	0	0	208	0.9998	0.02%
B-B2-PNL LS	B-B2-L12	FDR	0.07	17.03	5.88	7.57	208	0.9582	4.18%
B-B2-CRIT PNL	B-B2-L2A	FDR	0.23	28.48	9.99	21.91	208	0.9717	2.83%
B-B2-PNL LS	B-B2-L2E	FDR	0.1	17.04	5.89	10.02	208	0.958	4.20%
B-B2-MDPB	B-B2-L4	FDR	0.26	65.03	22.49	28.9	208	0.9574	4.26%
B-B2-MDPB	B-B2-L6	FDR	0.26	65.03	22.49	28.9	208	0.9574	4.26%
B-B2-MDPB	B-B2-L7	FDR	0.26	65.03	22.49	28.9	208	0.9574	4.26%
B-B2-MDPB	B-B2-L8	FDR	0.26	65.03	22.49	28.9	208	0.9574	4.26%
B-B2-PNL LS	B-B2-L9E	FDR	0.1	17.04	5.89	10.02	208	0.958	4.20%
B-B2-PNL LS	B-B2-LB1E	FDR	0.1	17.04	5.89	10.02	208	0.958	4.20%
B-B2-MDPB	B-B2-LB2	FDR	0.26	65.03	22.49	28.9	208	0.9574	4.26%
B-B2-CRIT PNL	B-B2-LB2E	FDR	0.12	14.21	4.99	10.93	208	0.9728	2.72%
B-B2-MDP-M	B-B2-MDP	FDR	0	561.29	451.56	46.77	480	0.9676	3.24%
B-B2-MDPA-M	B-B2-MDPA	FDR	0.03	348.63	121.26	49.8	208	0.9652	3.48%
B-B2-MDPB-M	B-B2-MDPB	FDR	0.04	567.33	196.3	81.05	208	0.96	4.00%
B-B2-CRIT PNL	B-B2-MEDAIRCOM	FDR	0.12	14.21	4.99	10.93	208	0.9728	2.72%
B-B2-NEWLAB-M	B-B2-NEWLAB	FDR	0	40.9	13.55	18.18	208	0.9196	8.04%
B-B2-ATS-LED3	B-B2-NEWLAB-M	FDR	0.04	40.9	13.56	20.97	208	0.9196	8.04%
B-B2-ATS-LED3	B-B2-PNL 1	FDR	0.03	46.72	15.48	20.76	208	0.9197	8.03%
B-B2-ATS-LS	B-B2-PNL LS	FDR	0.05	129.94	44.91	28.88	208	0.9589	4.11%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-B2-ATS-LED3	B-B2-PNL-2	FDR	0.01	19.85	6.58	20.9	208	0.9199	8.01%
B-B2-ATS-LED3	B-B2-PNL-3-M	FDR	0.03	26.87	8.91	20.67	208	0.9197	8.03%
B-B2-MDPA	B-B2-PNL-D2	FDR	0.9	278.67	96.9	64.81	208	0.9562	4.38%
B-B2-CRIT PNL	B-B2-PNL-L11	FDR	0.11	28.45	9.98	12.64	208	0.9729	2.71%
B-B2-PNL-3-M	B-B2-PNL-M1	FDR	0.03	26.87	8.9	20.67	208	0.9194	8.06%
B-B2-MDP	B-B2-PNL-P	FDR	0.62	209.99	168.94	48.84	480	0.9614	3.86%
B-B2-PNL LS	B-B2-POD2PP	FDR	0.06	17.03	5.88	6.55	208	0.9583	4.17%
B-B2-MDPB	B-B2-TEL COMM	FDR	0.09	22.72	7.86	10.1	208	0.9591	4.09%
B-B2-PNL-P	B-B2-UNIT-1	FDR	0.17	105.04	83.96	53.87	480	0.9597	4.03%
B-B2-PNL-P	B-B2-UNIT-2	FDR	0.09	104.95	83.89	53.82	480	0.9605	3.95%
B-B2-MDPB	B-B2-XRAY	FDR	2.78	66.79	23.1	222.64	208	0.9321	6.79%
B-B2-MDP	B-B2-XRAY-124	FDR	1.06	116.88	94.03	44.95	480	0.957	4.30%
B-B2-MDPB	B-B2-XRAY124	FDR	0.15	22.73	7.86	15.16	208	0.9584	4.16%
B-B4-EQ3	B-B4-EQ7	FDR	0.02	11.72	4.07	6.01	208	0.9643	3.57%
B-B4-4EQD	B-B4-EQ9	FDR	0.16	15.61	5.43	8.01	208	0.9636	3.64%
B-B4-4EQD	B-B4-HYDROELEV	FDR	0.16	17.57	6.11	10.34	208	0.9636	3.64%
B-B4-BUS	B-B4-JBOX	FDR	0.14	1154.1	402.66	57.71	208	0.967	3.30%
B-B4-LP1-M	B-B4-LP1	FDR	0	57.65	20	25.62	208	0.963	3.70%
B-B4-LP10-M	B-B4-LP10	FDR	0	57.82	20	25.7	208	0.9601	3.99%
B-B4-LP5-M	B-B4-LP10-M	FDR	0.08	57.82	20.02	22.24	208	0.9601	3.99%
B-B4-LP11-M	B-B4-LP11	FDR	0	57.71	20	25.65	208	0.962	3.80%
B-B4-LP6-M	B-B4-LP11-M	FDR	0.08	57.71	20.02	22.19	208	0.962	3.80%
B-B4-LP12-M	B-B4-LP12	FDR	0.01	115.42	40	51.3	208	0.962	3.80%
B-B4-MDP	B-B4-LP12-M	FDR	0.43	115.42	40.18	44.39	208	0.962	3.80%
B-B4-LP13-M	B-B4-LP13	FDR	0	57.82	20	25.7	208	0.9601	3.99%
B-B4-LP8-M	B-B4-LP13-M	FDR	0.08	57.82	20.02	22.24	208	0.9601	3.99%
B-B4-LP14-M	B-B4-LP14	FDR	0	57.92	20	25.74	208	0.9585	4.15%
B-B4-LP9-M	B-B4-LP14-M	FDR	0.08	57.92	20.02	22.28	208	0.9585	4.15%
B-B4-LP15-M	B-B4-LP15	FDR	0	11.29	3.92	5.02	208	0.9635	3.65%
B-B4-LSD	B-B4-LP15-M	FDR	0.11	11.29	3.92	7.53	208	0.9636	3.64%
B-B4-LP2-M	B-B4-LP1-M	FDR	0.14	57.65	20.03	22.17	208	0.963	3.70%
B-B4-LP2-M	B-B4-LP2	FDR	0	57.57	20	25.58	208	0.9644	3.56%
B-B4-MDP	B-B4-LP2-M	FDR	0.19	115.21	40.11	44.31	208	0.9644	3.56%
B-B4-LP3-M	B-B4-LP3	FDR	0	57.57	20	25.58	208	0.9644	3.56%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-B4-MDP	B-B4-LP3-M	FDR	0.19	115.23	40.11	44.32	208	0.9644	3.56%
B-B4-LP4-M	B-B4-LP4	FDR	0	57.66	20	25.63	208	0.9628	3.72%
B-B4-LP3-M	B-B4-LP4-M	FDR	0.16	57.66	20.03	22.18	208	0.9628	3.72%
B-B4-LP5-M	B-B4-LP5	FDR	0	57.78	20	25.68	208	0.9608	3.92%
B-B4-MDP	B-B4-LP5-M	FDR	0.55	115.6	40.24	44.46	208	0.9609	3.91%
B-B4-LP6-M	B-B4-LP6	FDR	0	57.66	20	25.63	208	0.9628	3.72%
B-B4-MDP	B-B4-LP6-M	FDR	0.35	115.37	40.16	44.37	208	0.9628	3.72%
B-B4-LP7-M	B-B4-LP7	FDR	0.01	115.32	40	51.25	208	0.9628	3.72%
B-B4-MDP	B-B4-LP7-M	FDR	0.35	115.32	40.15	44.35	208	0.9628	3.72%
B-B4-LP8-M	B-B4-LP8	FDR	0	57.78	20	25.68	208	0.9608	3.92%
B-B4-MDP	B-B4-LP8-M	FDR	0.55	115.6	40.24	44.46	208	0.9609	3.91%
B-B4-LP9-M	B-B4-LP9	FDR	0	57.87	20	25.72	208	0.9593	4.07%
B-B4-MDP	B-B4-LP9-M	FDR	0.7	115.79	40.31	44.53	208	0.9593	4.07%
B-B4-LS1-M	B-B4-LS1	FDR	0	6.8	2.36	3.02	208	0.964	3.60%
B-B4-LS10-M	B-B4-LS10	FDR	0	6.8	2.36	3.02	208	0.963	3.70%
B-B4-LS5-M	B-B4-LS10-M	FDR	0.02	6.8	2.36	4	208	0.963	3.70%
B-B4-LS11-M	B-B4-LS11	FDR	0	6.8	2.36	3.02	208	0.9633	3.67%
B-B4-LS6-M	B-B4-LS11-M	FDR	0.02	6.8	2.36	4	208	0.9633	3.67%
B-B4-LS12-M	B-B4-LS12	FDR	0	6.8	2.36	3.02	208	0.9635	3.65%
B-B4-LS7-M	B-B4-LS12-M	FDR	0.02	6.8	2.36	4	208	0.9636	3.64%
B-B4-LS13-M	B-B4-LS13	FDR	0	6.8	2.36	3.02	208	0.9636	3.64%
B-B4-LS8-M	B-B4-LS13-M	FDR	0.02	6.8	2.36	4	208	0.9636	3.64%
B-B4-LS14-M	B-B4-LS14	FDR	0	5.62	1.95	2.5	208	0.9638	3.62%
B-B4-LS9-M	B-B4-LS14-M	FDR	0.01	5.62	1.95	3.3	208	0.9638	3.62%
B-B4-LS2-M	B-B4-LS1-M	FDR	0.03	6.8	2.36	4	208	0.964	3.60%
B-B4-LS2-M	B-B4-LS2	FDR	0	6.79	2.36	3.02	208	0.9642	3.58%
B-B4-LSD	B-B4-LS2-M	FDR	0.05	13.59	4.72	7.99	208	0.9642	3.58%
B-B4-LS3-M	B-B4-LS3	FDR	0	6.79	2.36	3.02	208	0.9645	3.55%
B-B4-LSD	B-B4-LS3-M	FDR	0.02	13.59	4.72	7.99	208	0.9645	3.55%
B-B4-LS4-M	B-B4-LS4	FDR	0	6.79	2.36	3.02	208	0.9642	3.58%
B-B4-LS3-M	B-B4-LS4-M	FDR	0.03	6.79	2.36	4	208	0.9642	3.58%
B-B4-LS5-M	B-B4-LS5	FDR	0	6.8	2.36	3.02	208	0.9631	3.69%
B-B4-LSD	B-B4-LS5-M	FDR	0.16	13.6	4.73	8	208	0.9631	3.69%
B-B4-LS6-M	B-B4-LS6	FDR	0	6.8	2.36	3.02	208	0.9634	3.66%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-B4-LSD	B-B4-LS6-M	FDR	0.13	13.6	4.73	8	208	0.9634	3.66%
B-B4-LS7-M	B-B4-LS7	FDR	0	6.8	2.36	3.02	208	0.9637	3.63%
B-B4-LSD	B-B4-LS7-M	FDR	0.1	13.6	4.73	8	208	0.9637	3.63%
B-B4-LS8-M	B-B4-LS8	FDR	0	6.8	2.36	3.02	208	0.9637	3.63%
B-B4-LSD	B-B4-LS8-M	FDR	0.09	13.6	4.73	8	208	0.9638	3.62%
B-B4-LS9-M	B-B4-LS9	FDR	0	5.62	1.95	2.5	208	0.9639	3.61%
B-B4-LSD	B-B4-LS9-M	FDR	0.08	11.23	3.9	6.61	208	0.9639	3.61%
B-B4-LSD-M	B-B4-LSD	FDR	0.01	115.39	40.1	51.28	208	0.9647	3.53%
B-B4-ATS-LS	B-B4-LSD-M	FDR	0.04	115.39	40.12	44.38	208	0.9647	3.53%
B-B4-MDP-M	B-B4-MDP	FDR	0.01	1154.1	401.81	57.71	208	0.9663	3.37%
B-B4-JBOX	B-B4-MDP-M	FDR	0.06	1154.1	402.07	67.1	208	0.9664	3.36%
B-B4-4EQD	B-B4-PP1	FDR	0.04	17.55	6.1	6.75	208	0.9648	3.52%
B-B4-PP2-M	B-B4-PP2	FDR	0	11.29	3.92	5.02	208	0.9635	3.65%
B-B4-LSD	B-B4-PP2-M	FDR	0.11	11.29	3.92	7.53	208	0.9636	3.64%
B-T-B5-PRI	B-T-B5-SEC	TX2	1.86	10.4	247.9	82.63	208	0.9789	2.11%
B-B5-LS1	B-B55-LS3	FDR	0.15	68.5	23.8	40.3	208	0.9627	3.73%
B-B5-EQD	B-B5-EQ1	FDR	0.12	25.62	8.92	15.07	208	0.9654	3.46%
B-B5-EQD	B-B5-EQ2	FDR	0.13	25.62	8.92	15.07	208	0.9653	3.47%
B-B5-EQD	B-B5-EQ5	FDR	0.12	25.62	8.92	15.07	208	0.9654	3.46%
B-B5-EQD	B-B5-EQ6	FDR	0.16	25.63	8.92	15.08	208	0.965	3.50%
B-B5-ATS-EQ	B-B5-EQD	FDR	0.03	136.63	47.6	31.77	208	0.9666	3.34%
B-B5-EQD	B-B5-HYDR ELEV	FDR	0.1	34.15	11.89	20.09	208	0.9657	3.43%
B-B5-LP1-M	B-B5-LP1	FDR	0	34.07	11.88	8.52	208	0.9678	3.22%
B-B5-MDP	B-B5-LP1-M	FDR	0.14	68.16	23.8	26.21	208	0.9679	3.21%
B-B5-LP2-M	B-B5-LP2	FDR	0	34.11	11.88	8.53	208	0.9669	3.31%
B-B5-MDP	B-B5-LP2-M	FDR	0.24	68.23	23.82	26.24	208	0.9669	3.31%
B-B5-LP3-M	B-B5-LP3	FDR	0	34.09	11.88	8.52	208	0.9674	3.26%
B-B5-LP1-M	B-B5-LP3-M	FDR	0.05	34.09	11.89	13.11	208	0.9674	3.26%
B-B5-LP4-M	B-B5-LP4	FDR	0	34.12	11.88	8.53	208	0.9664	3.36%
B-B5-LP2-M	B-B5-LP4-M	FDR	0.05	34.12	11.89	13.12	208	0.9664	3.36%
B-B5-LP5-M	B-B5-LP5	FDR	0	42.59	14.85	10.65	208	0.9678	3.22%
B-B5-MDP	B-B5-LP5-M	FDR	0.14	42.59	14.87	28.39	208	0.9678	3.22%
B-B5-LSD	B-B5-LS1	FDR	0.17	68.5	23.84	40.3	208	0.9643	3.57%
B-B5-LSD	B-B5-LS2	FDR	0.55	68.78	23.93	40.46	208	0.9605	3.95%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-B5-LS2	B-B5-LS4	FDR	0.15	68.78	23.8	40.46	208	0.9589	4.11%
B-B5-LSD-M	B-B5-LSD	FDR	0	137.28	47.78	34.32	208	0.966	3.40%
B-B5-ATS-LS	B-B5-LSD-M	FDR	0.05	137.28	47.8	52.8	208	0.966	3.40%
B-B5-MDP-M	B-B5-MDP	FDR	0.01	689.83	240.91	68.98	208	0.9693	3.07%
B-T-B5-SEC	B-B5-MDP-M	FDR	0.96	689.83	243.29	215.57	208	0.9694	3.06%
B-B5-MDP	B-B5-NEXTEL	FDR	0.22	68.19	23.81	30.31	208	0.9671	3.29%
B-B5-PNL-H-M	B-B5-PNL-H	FDR	0	76.65	26.73	19.16	208	0.968	3.20%
B-B5-MDP	B-B5-PNL-H-M	FDR	0.13	76.65	26.77	29.48	208	0.968	3.20%
B-B5-MDP	B-B5-STRT LGHT	FDR	0.15	23.86	8.33	25.12	208	0.9678	3.22%
B-B5-MDP	B-B5-TEMP TRAI	FDR	0.27	68.23	23.83	30.33	208	0.9666	3.34%
B-T-B5-PRI	B-T-B6-PRI	FDR	0.01	10.4	247.9	4.33	13800	0.9976	0.24%
B-T-B6-PRI	B-T-B6-SEC	TX2	1.85	10.34	246.62	82.21	208	0.979	2.10%
B-B6-EQD	B-B6-EQ1	FDR	0.03	15.13	5.29	10.09	208	0.9706	2.94%
B-B6-EQD	B-B6-EQ2	FDR	0.07	15.14	5.3	7.76	208	0.9702	2.98%
B-B6-EQD	B-B6-EQ3	FDR	0.06	22.72	7.95	11.65	208	0.9704	2.96%
B-B6-EQ2	B-B6-EQ4	FDR	0.03	15.14	5.29	7.76	208	0.9699	3.01%
B-B6-EQ3	B-B6-EQ5	FDR	0.04	22.72	7.94	11.65	208	0.97	3.00%
B-B6-EQD	B-B6-EQ8	FDR	0.1	22.72	7.95	8.74	208	0.9699	3.01%
B-B6-EQD-M	B-B6-EQD	FDR	0	85.8	30.01	8.58	208	0.9709	2.91%
B-B6-ATS-EQ	B-B6-EQD-M	FDR	0.06	85.8	30.03	22.58	208	0.971	2.90%
B-B6-EQD	B-B6-EQMACH	FDR	0.02	10.09	3.53	6.73	208	0.9707	2.93%
B-B6-LP1-M	B-B6-LP1	FDR	0	57.2	20	5.72	208	0.9705	2.95%
B-B6-MDP	B-B6-LP1-M	FDR	0.29	57.2	20.06	33.65	208	0.9705	2.95%
B-B6-LP2-M	B-B6-LP2	FDR	0	57.17	20	5.72	208	0.9711	2.89%
B-B6-MDP	B-B6-LP2-M	FDR	0.23	57.17	20.05	33.63	208	0.9711	2.89%
B-B6-LP3-M	B-B6-LP3	FDR	0	42.89	15	4.29	208	0.9708	2.92%
B-B6-MDP	B-B6-LP3-M	FDR	0.26	85.8	30.09	33	208	0.9708	2.92%
B-B6-LP4-M	B-B6-LP4	FDR	0	42.88	15	4.29	208	0.971	2.90%
B-B6-MDP	B-B6-LP4-M	FDR	0.24	85.78	30.08	32.99	208	0.971	2.90%
B-B6-LP5-M	B-B6-LP5	FDR	0	42.91	15	4.29	208	0.9702	2.98%
B-B6-LP3-M	B-B6-LP5-M	FDR	0.06	42.91	15.01	16.5	208	0.9703	2.97%
B-B6-LP6-M	B-B6-LP6	FDR	0	42.9	15	4.29	208	0.9704	2.96%
B-B6-LP4-M	B-B6-LP6-M	FDR	0.06	42.9	15.01	16.5	208	0.9704	2.96%
B-B6-LP7-M	B-B6-LP7	FDR	0	57.09	20	5.71	208	0.9725	2.75%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-B6-MDP	B-B6-LP7-M	FDR	0.1	57.09	20.02	33.58	208	0.9725	2.75%
B-B6-LSD	B-B6-LS1	FDR	0.09	23.4	8.19	13.77	208	0.9703	2.97%
B-B6-LSD	B-B6-LS2	FDR	0.03	15.58	5.45	11.99	208	0.9709	2.91%
B-B6-LSD	B-B6-LS3	FDR	0.09	23.41	8.19	13.77	208	0.9703	2.97%
B-B6-LSD	B-B6-LS4	FDR	0.09	23.41	8.19	13.77	208	0.9703	2.97%
B-B6-LS3	B-B6-LS5	FDR	0.05	23.41	8.18	13.77	208	0.9698	3.02%
B-B6-LS4	B-B6-LS6	FDR	0.05	23.41	8.18	13.77	208	0.9698	3.02%
B-B6-LSD-M	B-B6-LSD	FDR	0	85.81	30.02	8.58	208	0.9712	2.88%
B-B6-ATS-LS	B-B6-LSD-M	FDR	0.05	85.81	30.04	33	208	0.9712	2.88%
B-B6-MDP	B-B6-MACH SHOP	FDR	0.34	85.85	30.11	38.15	208	0.97	3.00%
B-B6-MDP-M	B-B6-MDP	FDR	0.01	686.22	240.68	68.62	208	0.9734	2.66%
B-T-B6-SEC	B-B6-MDP-M	FDR	0.55	686.22	242.04	60.19	208	0.9735	2.65%
B-B6-MDP	B-B6-P6-CS	FDR	0.2	85.72	30.06	38.1	208	0.9714	2.86%
B-T-B6-PRI	B-T-B7-PRI	FDR	0.02	20.74	494.54	8.64	13800	0.9977	0.23%
B-T-B7-PRI	B-T-B7-SEC	TX2	1.45	5.98	142.56	63.36	208	0.9833	1.67%
B-B7-EQD	B-B7-ELEV	FDR	0.07	16.37	5.7	6.29	208	0.9667	3.33%
B-B7-EQD	B-B7-EQ1	FDR	0.06	14.33	4.99	7.35	208	0.9668	3.32%
B-B7-EQD	B-B7-EQ2	FDR	0.02	14.32	4.99	7.34	208	0.9672	3.28%
B-B7-EQD	B-B7-EQ4	FDR	0.06	16.36	5.7	9.63	208	0.9668	3.32%
B-B7-ATS-EQ	B-B7-EQD	FDR	0.09	83.51	29.13	19.42	208	0.9674	3.26%
B-B7-LP2-M	B-B7-LP2	FDR	0	31.27	10.91	13.9	208	0.9684	3.16%
B-B7-MDP	B-B7-LP2-M	FDR	0.08	31.27	10.92	10.78	208	0.9684	3.16%
B-B7-LP3-M	B-B7-LP3	FDR	0	23.5	8.18	10.44	208	0.9663	3.37%
B-B7-MDP	B-B7-LP3-M	FDR	0.29	47	16.41	18.08	208	0.9663	3.37%
B-B7-LP4-M	B-B7-LP4	FDR	0	23.46	8.18	10.43	208	0.968	3.20%
B-B7-MDP	B-B7-LP4-M	FDR	0.12	46.92	16.38	16.18	208	0.968	3.20%
B-B7-LP5-M	B-B7-LP5	FDR	0	23.5	8.18	10.44	208	0.9663	3.37%
B-B7-MDP	B-B7-LP5-M	FDR	0.29	47	16.41	18.08	208	0.9663	3.37%
B-B7-LP6-M	B-B7-LP6	FDR	0	23.5	8.18	10.45	208	0.966	3.40%
B-B7-LP3-M	B-B7-LP6-M	FDR	0.03	23.5	8.18	9.04	208	0.966	3.40%
B-B7-LP7-M	B-B7-LP7	FDR	0	23.46	8.18	10.43	208	0.9677	3.23%
B-B7-LP4-M	B-B7-LP7-M	FDR	0.03	23.46	8.18	8.09	208	0.9677	3.23%
B-B7-LP8-M	B-B7-LP8	FDR	0	23.5	8.18	10.45	208	0.966	3.40%
B-B7-LP5-M	B-B7-LP8-M	FDR	0.03	23.5	8.18	9.04	208	0.966	3.40%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-B7-LSD	B-B7-LS1	FDR	0.08	11.74	4.09	6.9	208	0.9673	3.27%
B-B7-LSD	B-B7-LS2	FDR	0.04	11.73	4.09	9.02	208	0.9677	3.23%
B-B7-LSD	B-B7-LS4	FDR	0.09	11.74	4.09	6.9	208	0.9672	3.28%
B-B7-LSD	B-B7-LS5	FDR	0.04	11.73	4.09	6.9	208	0.9676	3.24%
B-B7-LSD-M	B-B7-LSD	FDR	0	46.94	16.37	20.86	208	0.9681	3.19%
B-B7-ATS-LS	B-B7-LSD-M	FDR	0.02	46.94	16.37	18.05	208	0.9681	3.19%
B-B7-EQD	B-B7-MC1	FDR	0.25	16.4	5.71	21.86	208	0.9649	3.51%
B-B7-EQD	B-B7-MCC-1	FDR	0.02	5.74	2	6.04	208	0.9672	3.28%
B-B7-MDP	B-B7-MCC-2	FDR	0.12	31.28	10.92	32.93	208	0.9681	3.19%
B-B7-MDP-M	B-B7-MDP	FDR	0.01	396.61	138.5	49.58	208	0.9692	3.08%
B-T-B7-SEC	B-B7-MDP-M	FDR	1.4	396.61	140.49	41.75	208	0.9693	3.07%
B-B7-MDP	B-B7-SRTLGHT-M	FDR	0.23	31.32	10.94	32.97	208	0.9669	3.31%
B-B7-SRTLGHT-M	B-B7-STRT LGHT	FDR	0	31.32	10.91	13.92	208	0.9669	3.31%
B-T-B62-PRI	B-T-B8-PRI	FDR	0.01	44.86	70.26	18.69	13800	0.9983	0.17%
B-B27-SWGR	B-T-B8-PRI	FDR	0.17	60.5	445.99	25.21	208	0.9716	2.84%
B-T-B8-PRI	B-T-B8-SEC	TX2	1.87	7.76	185.1	82.27	208	0.9796	2.04%
B-T-B8-SEC	B-B8-208V-MAIN	FDR	0.28	514.64	181.62	48.1	208	0.9768	2.32%
B-B8-MDP-8	B-B8 2ND FLR	FDR	0.25	114.63	40.3	26.66	208	0.9734	2.66%
B-B8-480V PNL	B-B8 HYDRO ELV	FDR	1.05	65.92	53.5	69.39	480	0.9655	3.45%
B-B8-480V ATS	B-B8-480V PNL	FDR	0.05	226.61	183.98	64.75	480	0.9761	2.39%
B-B8-MDP-8	B-B8-BS	FDR	0.66	28.78	10.12	22.14	208	0.9692	3.08%
B-B8-TXMR SEC	B-B8-CMOP	FDR	0.37	91.76	31.2	40.78	208	0.9401	5.99%
B-B8-480V PNL	B-B8-COMP	FDR	1.19	39.62	32.15	72.04	480	0.9641	3.59%
B-B8-TXMR SEC	B-B8-FDR	FDR	0.18	142.28	48.38	40.65	208	0.942	5.80%
B-B8-480V PNL	B-B8-FLEXPMACH	FDR	0.42	19.65	15.95	35.73	480	0.9719	2.81%
BUS-0378	B-B8-GE BKR	FDR	0.22	226.61	184.49	64.75	480	0.9771	2.29%
B-B8-FDR	B-B8-J-BOX	FDR	0.21	142.28	48.29	40.65	208	0.9399	6.01%
B-B8-J-BOX	B-B8-ELEVATOR	FDR	0	142.28	48.25	40.65	208	0.9399	6.01%
B-B8-MDP-8	B-B8-L8B	FDR	0.35	28.69	10.09	22.07	208	0.9723	2.77%
B-B8-MDP-8	B-B8-LB1	FDR	0.57	64.73	22.76	24.9	208	0.9702	2.98%
B-B8-LB1	B-B8-LB2	FDR	0.07	64.73	22.63	24.9	208	0.9695	3.05%
B-B8-208V-MAIN	B-B8-MAIN BUS	FDR	0.07	514.64	181.1	48.1	208	0.9761	2.39%
B-B8-MAIN BUS	B-B8-MDP-8	FDR	0.03	279.77	98.38	26.15	208	0.9758	2.42%
B-B8-MDP-8	B-B8-PNL-PK	FDR	0.09	42.93	15.09	19.08	208	0.975	2.50%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-B8-PP1-M	B-B8-PP1	FDR	0	136.46	47.95	22.74	208	0.9754	2.46%
B-B8-MAIN BUS	B-B8-PP1-M	FDR	0.07	136.46	47.99	26.24	208	0.9754	2.46%
B-B8-MAIN BUS	B-B8-SYLV	FDR	0.09	98.41	34.61	25.9	208	0.9752	2.48%
B-B8-480V PNL	B-B8-TXMR PRI	FDR	0.02	101.42	82.3	45.08	480	0.9758	2.42%
B-B8-TXMR PRI	B-B8-TXMR SEC	TX2	3.21	101.42	82.28	73.14	208	0.9438	5.62%
B-T-13-PRI	B-T-B9-PRI	FDR	0.01	14.15	336.97	5.89	13800	0.9966	0.34%
B-T-B9-PRI	B-T-B9-SEC	TX2	2.06	7.8	185.79	82.57	208	0.976	2.40%
B-B9-MDP	B-B9-*PNLXX	FDR	0.23	36.25	12.66	26.85	208	0.9671	3.29%
B-B9-MDP	B-B9-*PNLYY	FDR	0.35	45.38	15.85	37.82	208	0.9658	3.42%
B-B9-MDP	B-B9-*PNLZZ	FDR	0.17	81.52	28.47	21.17	208	0.9677	3.23%
B-B9-MDP	B-B9-ATS BKR	FDR	0.05	90.5	31.6	23.82	208	0.9688	3.12%
B-B9-ATS BKR	B-B9-EM	FDR	0.02	90.5	31.59	31.21	208	0.9686	3.14%
B-B9-L91A-M	B-B9-L91A	FDR	0	36.46	12.63	16.2	208	0.9616	3.84%
B-B9-MDP	B-B9-L91A-M	FDR	0.78	36.46	12.73	18.7	208	0.9616	3.84%
B-B9-MDP	B-B9-L92	FDR	0.54	36.37	12.7	30.31	208	0.964	3.60%
B-B9-MDP	B-B9-L9A	FDR	0.4	45.4	15.86	25.22	208	0.9654	3.46%
B-B9-MDP	B-B9-L9B	FDR	0.12	45.27	15.81	25.15	208	0.9682	3.18%
B-B9-TAP	B-B9-LPN	FDR	1.26	41.29	14.4	27.52	208	0.9553	4.47%
B-B9-TAP	B-B9-LPS	FDR	0.4	40.92	14.27	31.48	208	0.9639	3.61%
B-T-B9-SEC	B-B9-MAIN	FDR	0.44	517.49	181.96	60.17	208	0.9716	2.84%
B-B9-MAIN	B-B9-MDP	FDR	0.22	517.49	181.13	60.17	208	0.9693	3.07%
B-B9-MDP	B-B9-STRT LGHT	FDR	0.2	18.14	6.33	24.18	208	0.9673	3.27%
B-B9-MDP	B-B9-TAP	FDR	0.14	82.21	28.71	45.67	208	0.9679	3.21%
B-T-B9-PRI	B-T-B10-PRI	FDR	0.01	21.95	522.78	9.14	13800	0.9986	0.14%
B-T-B10-PRI	B-T-B10-SEC	TX2	2.44	2.59	61.81	82.41	13800	0.9965	0.35%
B-T-B10-SEC	B-B10 DISC	FDR	0.21	172.14	60.3	59.36	208	0.9702	2.98%
B-B10 DISC	B-B10-MDP	FDR	0.26	172.14	60.16	59.36	208	0.9675	3.25%
B-T-B81-PRI	B-T-B12-PRI	FDR	0	2.61	62.28	1.09	13800	0.9967	0.33%
B-T-B12-PRI	B-T-B12-SEC	TX2	3.24	2.61	62.26	83.01	208	0.9723	2.77%
B-T-B12-SEC	B-B12-MAP-M	FDR	0.38	173.43	60.24	45.64	208	0.9604	3.96%
B-B12-MAP-M	B-B12-MDP	FDR	0.01	173.43	60	43.36	208	0.9603	3.97%
B-T-B12-PRI	B-T-13-PRI	FDR	0	5.23	124.54	2.18	13800	0.9975	0.25%
B-B13-MDP	B-B13-APT-13	FDR	0.21	43.84	17.28	25.79	240	0.946	5.40%
B-B13-MDP	B-B13-APT-14	FDR	0.71	141.03	55.58	32.8	240	0.9411	5.89%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-B13-MDP	B-B13-APT-15	FDR	1.34	141.98	55.96	29.89	240	0.9348	6.52%
B-B13-MDP	B-B13-GARAGE	FDR	0.73	70.54	27.8	31.35	240	0.9409	5.91%
B-B13-MDP-M	B-B13-MDP	FDR	0.01	512.79	202.12	51.28	240	0.9482	5.18%
B-B13-TXMR SEC	B-B13-MDP-M	FDR	1.29	512.79	204.87	134.94	240	0.9482	5.18%
B-B13-MDP	B-B13-MGR H16	FDR	2.07	71.56	28.21	31.81	240	0.9274	7.26%
B-T-13-PRI	B-B13-TXMR SEC	TX2	3.54	8.92	212.43	84.97	240	0.9611	3.89%
B-B13-MDP	B-B13-UNKNOWN	FDR	0.21	43.84	17.28	25.79	240	0.946	5.40%
B-T-B60-PRI	B-T-B17-PRI	FDR	0.01	10.44	249.06	4.35	13800	0.9965	0.35%
B-T-B17-PRI	B-T-B17-SEC	TX2	2.23	5.26	125.61	83.74	208	0.9641	3.59%
B-B17-DP	B-B17-A/C	FDR	0.07	50.19	17.27	19.31	208	0.9545	4.55%
B-B17-DP	B-B17-A/C-2	FDR	0.07	22.31	7.68	17.16	208	0.9544	4.56%
B-B17-DP	B-B17-AC1	FDR	0.07	22.31	7.68	17.16	208	0.9544	4.56%
B-B17-DP	B-B17-ACB	FDR	0.11	22.31	7.68	23.49	208	0.9541	4.59%
B-B17-EMERG	B-B17-ANIMALRM	FDR	0.35	28.39	9.89	21.84	208	0.9631	3.69%
B-B17-MAIN	B-B17-DP	FDR	1.3	275.48	96.09	86.09	208	0.9552	4.48%
B-B17-ATS	B-B17-EMERG	FDR	0.03	73.79	25.71	43.41	208	0.9666	3.34%
B-T-B17-SEC	B-B17-MAIN	FDR	0.78	349.27	122.8	109.15	208	0.9682	3.18%
B-B17-EMERG	B-B17-NEB1	FDR	0.42	28.41	9.89	21.85	208	0.9624	3.76%
B-B17-EMERG	B-B17-NEB2	FDR	0.13	16.99	5.92	17.89	208	0.9653	3.47%
B-B17-DP	B-B17-NP11	FDR	0.1	13.38	4.6	17.84	208	0.9542	4.58%
B-B17-DP	B-B17-NP12	FDR	0.08	50.2	17.27	22.31	208	0.9544	4.56%
B-B17-DP	B-B17-NP22	FDR	0.07	22.31	7.68	17.16	208	0.9544	4.56%
B-B17-DP	B-B17-NPA1	FDR	0.04	13.37	4.6	10.29	208	0.9547	4.53%
B-B17-DP	B-B17-NPB1	FDR	0.07	39.03	13.43	20.01	208	0.9544	4.56%
B-B17-DP	B-B17-NPB2	FDR	0.07	20.07	6.9	15.43	208	0.9545	4.55%
B-T-B17-PRI	B-T-B18-PRI	FDR	0	5.17	123.43	2.16	13800	0.9983	0.17%
B-T-B18-PRI	B-T-B18-SEC	TX2	2.31	5.17	123.43	82.28	208	0.9759	2.41%
B-B18-1STFL-M	B-B18-1STFL	FDR	0.04	13.63	4.76	10.48	208	0.9697	3.03%
B-B18-TAP BOX	B-B18-1STFL-M	FDR	0.01	13.63	4.76	10.48	208	0.9701	2.99%
B-B18-2ND-FL-M	B-B18-2NDFL	FDR	0.09	13.63	4.76	10.49	208	0.9692	3.08%
B-B18-TAP BOX	B-B18-2ND-FL-M	FDR	0.01	13.63	4.76	10.49	208	0.9701	2.99%
B-B18-NMDP	B-B18-AC1	FDR	0.15	24.51	8.58	25.79	208	0.9707	2.93%
B-B18-NMDP	B-B18-AC2	FDR	0.13	54.46	19.08	27.93	208	0.971	2.90%
B-B18-EMERG-M	B-B18-EMERG	FDR	0	13.62	4.76	6.05	208	0.9701	2.99%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-B18-TAP BOX	B-B18-EMERG-M	FDR	0.01	13.62	4.76	10.48	208	0.9701	2.99%
B-B18-NMDP	B-B18-NCP	FDR	0.04	27.19	9.52	20.91	208	0.9719	2.81%
B-B18-NMDP-M	B-B18-NMDP	FDR	0.01	343.19	120.22	57.2	208	0.9722	2.78%
B-T-B18-SEC	B-B18-NMDP-M	FDR	0.29	343.19	120.58	45.16	208	0.9723	2.77%
B-B18-NMDP	B-B18-NP11	FDR	0.15	24.51	8.58	25.79	208	0.9707	2.93%
B-B18-NMDP	B-B18-NP12	FDR	0.15	24.51	8.58	25.79	208	0.9707	2.93%
B-B18-NMDP	B-B18-NP21	FDR	0.13	27.22	9.53	28.65	208	0.9709	2.91%
B-B18-NMDP	B-B18-NP22	FDR	0.14	40.86	14.31	24.03	208	0.9709	2.91%
B-B18-NMDP	B-B18-NP23	FDR	0.33	54.58	19.12	57.45	208	0.9689	3.11%
B-B18-NMDP	B-B18-STRT LHT	FDR	0.15	24.51	8.58	25.79	208	0.9707	2.93%
B-B18-ATS-EMRG	B-B18-TAP BOX	FDR	0.04	40.88	14.29	24.05	208	0.9702	2.98%
B-T-B22-PRI	B-T-B19-PRI	FDR	0.04	44.35	59.37	18.48	13800	0.9983	0.17%
B-T-B19-PRI	B-T-B19-SEC	TX2	3.58	17.87	426.7	85.34	208	0.9752	2.48%
B-B19-MDP2	B-B19-200A PNL	FDR	0.08	193.01	66.72	85.78	208	0.9588	4.12%
B-B19-MDP1	B-B19-B1	FDR	0.08	46.13	15.93	27.14	208	0.9579	4.21%
B-B19-MDP1	B-B19-L1	FDR	1.54	46.85	16.18	36.04	208	0.9433	5.67%
B-B19-MDP1	B-B19-L2	FDR	0.66	69.63	24.05	40.96	208	0.952	4.80%
B-B19-MDP1-M	B-B19-MDP1	FDR	0.01	787.92	272.14	65.66	208	0.9586	4.14%
B-T-B19-SEC	B-B19-MDP1-M	FDR	0.45	787.92	273.42	61.08	208	0.9587	4.13%
B-B19-MDP2-M	B-B19-MDP2	FDR	0.07	397.68	137.57	92.48	208	0.9595	4.05%
B-T-B19-SEC	B-B19-MDP2-M	FDR	0.3	397.68	138	46.24	208	0.9602	3.98%
B-B19-MDP1	B-B19-MDPA	FDR	0.83	195.97	67.68	45.57	208	0.9503	4.97%
B-B19-MDP1	B-B19-P1	FDR	0.8	185.93	64.21	43.24	208	0.9507	4.93%
B-B19-MDP1	B-B19-P2	FDR	0.89	93.06	32.14	54.74	208	0.9497	5.03%
B-B19-MDP1	B-B19-P4	FDR	0.17	103.91	35.89	61.12	208	0.9569	4.31%
B-B19-MDPA	B-B19-P6	FDR	4.83	195.97	67.09	150.75	208	0.902	9.80%
B-B19-MDP1	B-B19-PS	FDR	0.76	46.47	16.05	35.74	208	0.951	4.90%
B-B21-P2	B-B21-P1	FDR	2.69	204.67	68.65	157.44	208	0.9042	9.58%
B-B19-MDP2	B-B21-P2	FDR	2.85	204.67	70.75	90.97	208	0.931	6.90%
B-T-B33-PRI	B-T-B22-PRI	FDR	0.03	52.23	248.06	21.76	13800	0.999	0.10%
B-T-B22-PRI	B-T-B22-SEC	TX2	1.91	7.88	188.3	83.69	208	0.9682	3.18%
B-B22-EMERG-M	B-B22-EMERG	FDR	0	142.4	115	63.29	480	0.9714	2.86%
B-B22-ATS-EMER	B-B22-EMERG-M	FDR	0.11	142.4	115.13	33.12	480	0.9714	2.86%
B-B22-L1-M	B-B22-L1	FDR	0	66.21	22.74	29.43	208	0.9533	4.67%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-B22-T4-SEC	B-B22-L1-M	FDR	0.07	66.21	22.76	25.47	208	0.9534	4.66%
B-B22-L2-M	B-B22-L2	FDR	0	66.21	22.74	29.43	208	0.9533	4.67%
B-B22-T22-SEC	B-B22-L2-M	FDR	0.07	66.21	22.76	25.47	208	0.9534	4.66%
B-B22-L3-M	B-B22-L3	FDR	0	66.2	22.74	29.42	208	0.9534	4.66%
B-B22-T2-SEC	B-B22-L3-M	FDR	0.07	66.2	22.76	25.46	208	0.9534	4.66%
B-B22-MDP-M	B-B22-MDP	FDR	0	226.63	183.5	28.33	480	0.9739	2.61%
B-T-B22-SEC	B-B22-MDP-M	FDR	0.63	226.63	184.69	52.71	480	0.9739	2.61%
B-B22-N1-M	B-B22-N1	FDR	0.01	194.4	66.32	48.6	208	0.947	5.30%
B-B22-T1-SEC	B-B22-N1-M	FDR	0.21	194.4	66.47	45.21	208	0.947	5.30%
B-B22-EMERG	B-B22-P1	FDR	0.02	28.16	22.74	10.83	480	0.9712	2.88%
B-B22-EMERG	B-B22-P2	FDR	0.02	28.16	22.74	10.83	480	0.9712	2.88%
B-B22-MDP	B-B22-T1-PRI	FDR	0.02	84.24	68.2	32.4	480	0.9736	2.64%
B-B22-T1-PRI	B-B22-T1-SEC	TX2	2.45	84.24	68.19	60.61	208	0.9491	5.09%
B-B22-T3 PRI	B-B22-T22-SEC	TX2	1.71	28.69	23.17	30.89	208	0.954	4.60%
B-B22-EMERG	B-B22-T2-PRI	FDR	0.01	28.69	23.17	16.88	480	0.9712	2.88%
B-B22-T2-PRI	B-B22-T2-SEC	TX2	1.71	28.69	23.17	30.89	208	0.9541	4.59%
B-B22-EMERG	B-B22-T3 PRI	FDR	0.02	28.69	23.17	16.88	480	0.9712	2.88%
B-B22-EMERG	B-B22-T4-PRI	FDR	0.02	28.69	23.17	16.88	480	0.9712	2.88%
B-B22-T4-PRI	B-B22-T4-SEC	TX2	1.71	28.69	23.17	30.89	208	0.954	4.60%
B-T-B70-PRI	B-T-B30-PRI	FDR	0.02	14.32	341.99	5.97	480	0.9992	0.08%
B-B27-SWGR	B-T-B33-PRI	FDR	0.03	54.83	310.51	22.84	208	0.9986	0.14%
B-T-B33-PRI	B-T-B33-SEC	TX2	2.4	2.6	62.02	82.69	13800	0.9997	0.03%
B-B33-MDP-M	B-B33-MDP	FDR	0.01	172.2	60	43.05	208	0.9671	3.29%
B-T-B33-SEC	B-B33-MDP-M	FDR	0.85	172.2	60.53	59.38	208	0.9672	3.28%
B-T-B30-PRI	B-T-B60-PRI	FDR	0.03	14.32	341.92	5.97	13800	0.9983	0.17%
B-T-B60-PRI	B-T-B60-SEC	TX2	2.7	3.89	92.77	82.46	208	0.9714	2.86%
B-B60-MDP-M	B-B60-MDP	FDR	0.01	257.93	90.01	64.48	208	0.9685	3.15%
B-T-B60-SEC	B-B60-MDP-M	FDR	0.28	257.93	90.27	59.98	208	0.9686	3.14%
B-T-B7-PRI	B-T-B61-PRI	FDR	0.03	26.72	637.18	11.13	13800	0.998	0.20%
B-T-B61-PRI	B-T-B61-SEC	TX2	2.9	7.84	186.94	83.08	208	0.969	3.10%
B-B61-MDP	B-B61 STRT LGH	FDR	0.14	19.21	6.68	20.22	208	0.9639	3.61%
B-B61-EQA	B-B61-COMP RM	FDR	0.03	24.27	8.42	9.34	208	0.9629	3.71%
B-B61-MDP	B-B61-DP	FDR	0.76	103.07	35.84	108.49	208	0.9577	4.23%
B-B61-EQD	B-B61-ELEV	FDR	0.11	24.29	8.43	9.34	208	0.9621	3.79%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-B61-EQD	B-B61-EQ1	FDR	0.11	24.29	8.43	12.46	208	0.9621	3.79%
B-B61-EQD	B-B61-EQ2	FDR	0.03	21.21	7.36	10.88	208	0.963	3.70%
B-B61-EQD	B-B61-EQ4	FDR	0.04	8.5	2.95	5	208	0.9628	3.72%
B-B61-EQD	B-B61-EQA	FDR	0.01	24.27	8.42	9.34	208	0.9632	3.68%
B-B61-ATS-EQD	B-B61-EQD	FDR	0.07	102.58	35.62	23.85	208	0.9633	3.67%
B-B61-LSD	B-B61-KITCHEN	FDR	0.04	14.81	5.14	5.69	208	0.9636	3.64%
B-B61-MDP	B-B61-LP1	FDR	0.69	38.61	13.43	22.71	208	0.9583	4.17%
B-B61-MDP	B-B61-LP2	FDR	0.69	38.61	13.43	22.71	208	0.9583	4.17%
B-B61-MDP	B-B61-LP3	FDR	0.35	57.72	20.07	22.2	208	0.9618	3.82%
B-B61-MDP	B-B61-LP4	FDR	0.26	64.07	22.28	24.64	208	0.9627	3.73%
B-B61-MDP	B-B61-LP5	FDR	0.19	19.22	6.68	20.23	208	0.9634	3.66%
B-B61-LSD	B-B61-LS1	FDR	0.05	6.6	2.29	3.88	208	0.9635	3.65%
B-B61-LSD	B-B61-LS2	FDR	0.03	6.6	2.29	5.07	208	0.9637	3.63%
B-B61-LSD	B-B61-LS3	FDR	0.1	9.89	3.43	5.82	208	0.963	3.70%
B-B61-LSD	B-B61-LS4	FDR	0.08	9.88	3.43	5.81	208	0.9632	3.68%
B-B61-LSD	B-B61-LS5	FDR	0.1	9.89	3.43	5.82	208	0.963	3.70%
B-B61-LSD-M	B-B61-LSD	FDR	0	57.66	20.02	25.63	208	0.964	3.60%
B-B61-ATS-LSD	B-B61-LSD-M	FDR	0.03	57.66	20.03	22.18	208	0.964	3.60%
B-B61-MDP	B-B61-MCC	FDR	0.14	19.21	6.68	20.22	208	0.9639	3.61%
B-B61-MDP-M	B-B61-MDP	FDR	0.01	519.94	180.83	64.99	208	0.9653	3.47%
B-T-B61-SEC	B-B61-MDP-M	FDR	0.37	519.94	181.51	54.73	208	0.9654	3.46%
B-T-B61-PRI	B-T-B62-PRI	FDR	0.02	34.55	824.28	14.4	13800	0.9982	0.18%
B-T-B62-PRI	B-T-B62-SEC	TX2	1.87	10.3	245.8	81.93	208	0.9795	2.05%
B-B62-MDP	B-B62-A	FDR	0.16	48.8	17.17	21.69	208	0.975	2.50%
B-B62-EQD	B-B62-ATTC PNL	FDR	0.06	14.25	5	7.31	208	0.9742	2.58%
B-B62-MDP	B-B62-B	FDR	0.16	56.94	20.03	25.31	208	0.975	2.50%
B-B62-MDP	B-B62-BL	FDR	0.2	32.55	11.45	21.7	208	0.9746	2.54%
B-B62-MDP	B-B62-BP	FDR	0.23	48.83	17.18	32.56	208	0.9742	2.58%
B-B62-EQD	B-B62-ELEV-1	FDR	0.16	14.26	5.01	15.01	208	0.9732	2.68%
B-B62-EQD	B-B62-ELEV-2	FDR	0.06	14.25	5	7.31	208	0.9742	2.58%
B-B62-EQD	B-B62-EQ	FDR	0.01	14.24	5	10.95	208	0.9747	2.53%
B-B62-ATS-EQD	B-B62-EQD	FDR	0.07	73.26	25.75	28.18	208	0.9748	2.52%
B-B62-MDP	B-B62-KP	FDR	0.18	48.81	17.17	25.03	208	0.9747	2.53%
B-B62-MDP	B-B62-LP1	FDR	0.18	48.81	17.17	28.71	208	0.9748	2.52%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-B62-MDP	B-B62-LP2	FDR	0.22	56.97	20.04	29.22	208	0.9744	2.56%
B-B62-MDP	B-B62-LP3	FDR	0.26	73.27	25.78	32.56	208	0.974	2.60%
B-B62-MDP	B-B62-LP4	FDR	0.2	73.23	25.76	28.16	208	0.9746	2.54%
B-B62-LSD	B-B62-LS1	FDR	0.13	14.66	5.15	11.27	208	0.9735	2.65%
B-B62-LSD	B-B62-LS2	FDR	0.06	14.65	5.14	11.27	208	0.9742	2.58%
B-B62-LSD	B-B62-LS3	FDR	0.14	21.99	7.72	12.93	208	0.9733	2.67%
B-B62-LSD	B-B62-LS4	FDR	0.08	21.97	7.72	12.93	208	0.974	2.60%
B-B62-LSD-M	B-B62-LSD	FDR	0	73.26	25.73	32.56	208	0.9748	2.52%
B-B62-ATS-LSD	B-B62-LSD-M	FDR	0.07	73.26	25.75	28.18	208	0.9748	2.52%
B-B62-MDP-M	B-B62-MDP	FDR	0.01	683.51	240.49	56.96	208	0.9765	2.35%
B-T-B62-SEC	B-B62-MDP-M	FDR	0.29	683.51	241.21	52.99	208	0.9766	2.34%
B-B62-MDP	B-B62-OT	FDR	0.12	24.39	8.58	16.26	208	0.9754	2.46%
B-B62-EQD	B-B62-PAD RM	FDR	0.03	16.26	5.71	9.57	208	0.9745	2.55%
B-B62-MDP	B-B62-STRT LGT	FDR	0.15	24.4	8.58	25.68	208	0.975	2.50%
B-T-B1-PRI	B-T-B70-PRI	FDR	0.02	25.41	606.78	10.59	13800	0.9988	0.12%
B-T-B70-PRI	B-T-B70-SEC	TX2	3.64	11.09	264.66	88.22	208	0.9624	3.76%
B-B70-MDP	B-B70 -BLDG-71	FDR	1.52	18.5	6.37	14.23	208	0.9407	5.93%
B-B70-MDP	B-B70-A	FDR	0.14	27.36	9.42	16.1	208	0.9545	4.55%
B-B70-MDP	B-B70-ATTIC	FDR	0.18	27.38	9.43	16.1	208	0.9541	4.59%
B-B70-MDP	B-B70-B	FDR	0.14	27.36	9.42	16.1	208	0.9545	4.55%
B-B70-MDP	B-B70-CHLLR	FDR	0.64	64.19	22.11	18.34	208	0.9495	5.05%
B-B70-EQD	B-B70-EQ1	FDR	0.2	25.32	8.72	12.99	208	0.9532	4.68%
B-B70-EQD	B-B70-EQ2	FDR	0.36	29.6	10.19	15.18	208	0.9516	4.84%
B-B70-EQ1	B-B70-EQ3	FDR	0.04	25.32	8.7	12.99	208	0.9529	4.71%
B-B70-EQ2	B-B70-EQ4	FDR	0.04	29.6	10.15	15.18	208	0.9512	4.88%
B-B70-EQ3	B-B70-EQ5	FDR	0.04	25.32	8.69	12.99	208	0.9525	4.75%
B-B70-EQ4	B-B70-EQ6	FDR	0.04	29.6	10.14	15.18	208	0.9508	4.92%
B-B70-EQD-M	B-B70-EQD	FDR	0	54.93	18.9	13.73	208	0.9553	4.47%
B-B70-ATS-EQD	B-B70-EQD-M	FDR	0.02	54.93	18.91	14.45	208	0.9553	4.47%
B-B70-FPMP M	B-B70-FIRE PMP	FDR	5.58	246.29	84.95	328.39	208	0.9016	9.84%
B-B70-FP-TAP	B-B70-FPMP M	FDR	0.16	246.29	85.09	70.37	208	0.9574	4.26%
B-T-B70-SEC	B-B70-FP-TAP	FDR	0.34	246.29	85.39	51.85	208	0.959	4.10%
B-B70-MDP	B-B70-K	FDR	0.12	13.69	4.72	14.41	208	0.9547	4.53%
B-B70-MDP	B-B70-LP1	FDR	0.39	41.17	14.18	24.22	208	0.952	4.80%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-B70-MDP	B-B70-LP2	FDR	0.24	18.25	6.29	10.74	208	0.9536	4.64%
B-B70-MDP	B-B70-LP3	FDR	0.21	27.39	9.43	10.53	208	0.9538	4.62%
B-B70-MDP	B-B70-LP-4	FDR	0.4	36.59	12.6	14.07	208	0.952	4.80%
B-B70-LSD	B-B70-LS1	FDR	0.11	7.83	2.69	6.02	208	0.9541	4.59%
B-B70-LSD	B-B70-LS2	FDR	0.15	7.83	2.69	6.02	208	0.9537	4.63%
B-B70-LSD	B-B70-LS3	FDR	0.13	11.73	4.04	6.9	208	0.9539	4.61%
B-B70-LSD	B-B70-LS4	FDR	0.22	13.72	4.72	8.07	208	0.953	4.70%
B-B70-LS3	B-B70-LS5	FDR	0.02	11.73	4.03	6.9	208	0.9537	4.63%
B-B70-LS4	B-B70-LS6	FDR	0.02	13.72	4.71	8.07	208	0.9528	4.72%
B-B70-LSD-M	B-B70-LSD	FDR	0	41.11	14.15	10.28	208	0.9552	4.48%
B-B70-ATS-LSD	B-B70-LSD-M	FDR	0.02	41.11	14.15	10.82	208	0.9552	4.48%
B-B70-MDP-M	B-B70-MDP	FDR	0.01	489.29	168.52	61.16	208	0.9559	4.41%
B-T-B70-SEC	B-B70-MDP-M	FDR	0.64	489.29	169.65	51.5	208	0.956	4.40%
B-B70-MDP	B-B70-PP2	FDR	0.21	41.09	14.15	15.8	208	0.9538	4.62%
B-B70-MDP	B-B70-PP220	FDR	0.36	36.58	12.6	16.26	208	0.9523	4.77%
B-B70-MDP	B-B70-STRTLGHT	FDR	0.1	13.69	4.71	14.41	208	0.9549	4.51%
B-T-B10-PRI	B-T-B78-PRI	FDR	0.01	24.54	584.66	10.23	13800	0.9969	0.31%
B-T-B78-PRI	B-T-B78-SEC	TX2	4.02	36.93	879.98	66.02	208	0.9567	4.33%
B-B78-MDP	B-B78-1P	FDR	1.27	82.58	28.45	31.76	208	0.9435	5.65%
B-B78-ATSG9578	B-B78-78AE1	FDR	0.02	71.69	24.56	16.67	208	0.9509	4.91%
B-B78-MDP	B-B78-A/C	FDR	1.54	62.1	21.39	31.85	208	0.9409	5.91%
B-B78-MDP	B-B78A-PNL-2	FDR	0.24	51.04	17.58	19.63	208	0.9539	4.61%
B-B78-MDP	B-B78-ATS TAP	FDR	0.45	143.42	49.41	37.74	208	0.9517	4.83%
B-B78-MDP	B-B78-BARBER	FDR	1.13	41.24	14.21	54.99	208	0.9449	5.51%
B-B78-MDP	B-B78-CONRM-AC	FDR	1.52	37.26	12.83	28.66	208	0.941	5.90%
B-B78-ATS-CRD	B-B78-CRD	FDR	0.96	62.42	21.27	24.01	208	0.936	6.40%
B-B78-ATS-E1	B-B78-E1	FDR	0.04	165.97	56.16	43.68	208	0.9389	6.11%
B-B78-MDP	B-B78-ELEV-1	FDR	0.43	92.08	31.72	35.42	208	0.952	4.80%
B-B78-MDP	B-B78-ELEV-2	FDR	0.43	92.08	31.72	35.42	208	0.952	4.80%
B-B78-MDP	B-B78-FLPNL	FDR	1.52	82.8	28.52	36.8	208	0.941	5.90%
B-B78-MDP	B-B78-KK	FDR	1.19	92.83	31.98	41.26	208	0.9443	5.57%
B-B78-MDP	B-B78-L10	FDR	1.32	103.71	35.73	27.29	208	0.9431	5.69%
B-B78-MDP	B-B78-LP-1	FDR	1.46	104.72	36.08	36.11	208	0.9416	5.84%
B-B78-LP7	B-B78-LP10	FDR	0.19	124.87	42.28	35.68	208	0.9379	6.21%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-B78-L10	B-B78-LP-13	FDR	0.13	103.71	35.24	27.29	208	0.9361	6.39%
B-B78-LP10	B-B78-LP13	FDR	0.19	124.87	42.19	35.68	208	0.9418	5.82%
B-B78-LP-13	B-B78-LP-14	FDR	0.13	103.71	35.19	27.29	208	0.9404	5.96%
B-B78-LP-14	B-B78-LP-15	FDR	0.13	103.71	35.14	27.29	208	0.9391	6.09%
B-B78-MDP	B-B78-LP-2	FDR	0.71	102.63	35.35	35.39	208	0.9491	5.09%
B-B78-MDP	B-B78-LP3	FDR	0.86	123.65	42.6	42.64	208	0.9476	5.24%
B-B78-LP-1	B-B78-LP-4	FDR	1.16	104.72	35.53	53.7	208	0.9301	6.99%
B-B78-LP3	B-B78-LP6	FDR	0.23	123.65	42.21	42.64	208	0.9453	5.47%
B-B78-MDP	B-B78-LP7	FDR	1.64	124.87	43.02	35.68	208	0.9398	6.02%
B-B78-MDP	B-B78-LP-8	FDR	0.67	123.11	42.41	35.17	208	0.9495	5.05%
B-B78-ATS-LS1	B-B78-LSD	FDR	0.02	71.74	24.57	27.59	208	0.9503	4.97%
B-B78-MDP-M	B-B78-MDP	FDR	0.01	2450.3	844.18	61.26	208	0.9562	4.38%
B-T-B78-SEC	B-B78-MDP-M	FDR	0.04	2450.3	844.52	61.26	208	0.9563	4.37%
B-B78-MDP	B-B78-MEC-1 AC	FDR	1.85	166.17	57.25	38.64	208	0.9378	6.22%
B-B78-MDP	B-B78-MEC2-A/C	FDR	0.61	164.01	56.5	51.25	208	0.9501	4.99%
B-B78-MDP	B-B78-PHARM AC	FDR	1.13	41.24	14.21	54.99	208	0.9449	5.51%
B-B78-MDP	B-B78-PHV	FDR	1.33	41.33	14.24	27.55	208	0.9429	5.71%
B-B78-MDP	B-B78-PK	FDR	1.43	93.06	32.06	32.09	208	0.942	5.80%
B-B78-MDP	B-B78-PNL-330A	FDR	0.69	92.34	31.81	28.85	208	0.9493	5.07%
B-B78-MDP	B-B78-PULM 78B	FDR	0.26	81.7	28.15	21.5	208	0.9536	4.64%
B-B78-MDP	B-B78-QP	FDR	0.54	81.95	28.23	42.02	208	0.9508	4.92%
B-T-B4-PRI	B-T-B80-PRI	FDR	0	5.2	124.05	2.17	13800	0.9986	0.14%
B-T-B80-PRI	B-T-B80-SEC	TX2	2.19	5.2	124.05	82.7	208	0.9767	2.33%
B-B80-ATS-EQ	B-B80-E1	FDR	0.18	71.99	25.11	55.37	208	0.9663	3.37%
B-B80-MDP	B-B80-L1-1	FDR	0.88	35.99	12.61	47.98	208	0.9641	3.59%
B-B80-MDP	B-B80-L1-3	FDR	0.58	28.7	10.06	52.19	208	0.967	3.30%
B-B80-MDP	B-B80-LB-1	FDR	0.32	71.57	25.08	42.1	208	0.9696	3.04%
B-B80-E1	B-B80-LB-E	FDR	0.3	36.01	12.54	27.7	208	0.9634	3.66%
B-B80-MDP-M	B-B80-MDP	FDR	0.19	344.81	121.09	60.49	208	0.9729	2.71%
B-T-B80-SEC	B-B80-MDP-M	FDR	0.19	344.81	121.33	60.49	208	0.9748	2.52%
B-B80-MDP	B-B80-P1	FDR	0.28	71.54	25.07	42.08	208	0.97	3.00%
B-B80-MDP	B-B80-P5	FDR	1.7	36.3	12.72	48.4	208	0.9558	4.42%
B-B80-MDP	B-B80-PB-1	FDR	0.66	28.73	10.07	52.23	208	0.9662	3.38%
B-B80-E1	B-B80-PB-2	FDR	0.18	35.97	12.52	27.67	208	0.9646	3.54%

FROM (BUS NAME)	TO (BUS NAME)	TYPE	BRANCH %VD	AMPS	KVA	CABLE RATING (%)	VOLTAGE	PU RETAINED VOLTAGE	BUS %VD
B-T-B81-PRI	B-T-B81-SEC	TX2	3.22	2.61	62.28	83.04	13800	0.9965	0.35%
B-B81-MDP-M	B-B81-MDP	FDR	0.01	173.49	60	43.37	208	0.9599	4.01%
B-T-B81-SEC	B-B81-MDP-M	FDR	0.43	173.49	60.27	59.83	208	0.96	4.00%
B-T-B19-PRI	B-T-B82-PRI	FDR	0.03	26.48	632.3	11.03	208	0.9643	3.57%
B-T-B82-PRI	B-T-B82-SEC	TX2	2.73	3.91	92.35	82.98	13800	0.9987	0.13%
B-B82-MDP	B-B82-ATS-EMER	FDR	0.35	259.44	90.5	99.78	208	0.9647	3.53%
B-B82-EMERG-M	B-B82-EMER	FDR	0.01	259.44	90.01	64.86	208	0.9629	3.71%
B-B82-ATS-EMER	B-B82-EMERG-M	FDR	0.18	259.44	90.17	99.78	208	0.963	3.70%
B-B82-MDP-M	B-B82-MDP	FDR	0.01	259.44	90.51	43.24	208	0.9683	3.17%
B-T-B82-SEC	B-B82-MDP-M	FDR	0.31	259.44	90.8	34.14	208	0.9684	3.16%

4.6 Voltage Drop Computer Input/Output

Note: All feeder (FDR) entries labeled "UNKNOWN" should be ignored. These entries represent a voltage drop across a zero impedance component model.

4.6.1 Voltage Drop Computer Data – Utility Case

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY
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LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE		TYPE		
CBL-0002	B-B27-SWGR-M1	B-SWGR27 TAP	1	13800	1.000	FEET	1200		Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy		Insulation Class:		Class B	
	+/- Impedance:	0.0119 + J	0.0619	Ohms/1000 ft		0.00001 + J	0.00003	PU			
	Z0 Impedance:	0.0710 + J	0.3314	Ohms/1000 ft		0.00004 + J	0.00017	PU			
CBL-0003	B-SWGR27 TAP	B-B27-SWGR	1	13800	1.000	FEET	1200		Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy		Insulation Class:		Class B	
	+/- Impedance:	0.0119 + J	0.0619	Ohms/1000 ft		0.00001 + J	0.00003	PU			
	Z0 Impedance:	0.0710 + J	0.3314	Ohms/1000 ft		0.00004 + J	0.00017	PU			
CBL-0004	B-B27-SWGR	BUS-0017	1	13800	600.0	FEET	1		Copper		
	Duct Material:	Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance:	0.1600 + J	0.0540	Ohms/1000 ft		0.0504 + J	0.0170	PU			
	Z0 Impedance:	0.2543 + J	0.1374	Ohms/1000 ft		0.0801 + J	0.0433	PU			
CBL-0005	B-B27-SWGR	B-T-B8-PRI	1	13800	1375.0	FEET	1		Copper		
	Duct Material:	Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance:	0.1600 + J	0.0540	Ohms/1000 ft		0.1155 + J	0.0390	PU			
	Z0 Impedance:	0.2543 + J	0.1374	Ohms/1000 ft		0.1836 + J	0.0992	PU			
CBL-0006	B-T-B62-PRI	B-T-B8-PRI	1	13800	150.0	FEET	1		Copper		
	Duct Material:	Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance:	0.1600 + J	0.0540	Ohms/1000 ft		0.0126 + J	0.0043	PU			
	Z0 Impedance:	0.2543 + J	0.1374	Ohms/1000 ft		0.0200 + J	0.0108	PU			
CBL-0007	B-T-B7-PRI	B-T-B61-PRI	1	13800	476.0	FEET	1		Copper		
	Duct Material:	Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance:	0.1600 + J	0.0540	Ohms/1000 ft		0.0400 + J	0.0135	PU			
	Z0 Impedance:	0.2543 + J	0.1374	Ohms/1000 ft		0.0636 + J	0.0343	PU			
CBL-0008	B-T-B61-PRI	B-T-B62-PRI	1	13800	300.0	FEET	1		Copper		
	Duct Material:	Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance:	0.1600 + J	0.0540	Ohms/1000 ft		0.0252 + J	0.0085	PU			
	Z0 Impedance:	0.2543 + J	0.1374	Ohms/1000 ft		0.0401 + J	0.0216	PU			
CBL-0009	B-T-B6-PRI	B-T-B7-PRI	1	13800	400.0	FEET	1		Copper		
	Duct Material:	Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance:	0.1600 + J	0.0540	Ohms/1000 ft		0.0336 + J	0.0113	PU			
	Z0 Impedance:	0.2543 + J	0.1374	Ohms/1000 ft		0.0534 + J	0.0289	PU			
CBL-0010	B-T-B5-PRI	B-T-B6-PRI	1	13800	300.0	FEET	1		Copper		
	Duct Material:	Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance:	0.1600 + J	0.0540	Ohms/1000 ft		0.0252 + J	0.0085	PU			
	Z0 Impedance:	0.2543 + J	0.1374	Ohms/1000 ft		0.0401 + J	0.0216	PU			

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE
CBL-0011	B-SW-MV-1	B-T-B5-PRI	1	13800	100.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0084 + J 0.0028 PU			
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0134 + J 0.0072 PU			
CBL-0012	BUS-0019	B-T-B2-PRI	1	13800	175.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0147 + J 0.0050 PU			
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0234 + J 0.0126 PU			
CBL-0013	B-T-B60-PRI	B-T-B17-PRI	1	13800	300.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0252 + J 0.0085 PU			
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0401 + J 0.0216 PU			
CBL-0014	B-T-B70-PRI	B-T-B30-PRI	1	13800	700.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0588 + J 0.0198 PU			
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0935 + J 0.0505 PU			
CBL-0015	B-T-B30-PRI	B-T-B60-PRI	1	13800	1000.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0840 + J 0.0284 PU			
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.1335 + J 0.0721 PU			
CBL-0016	B-T-B1-PRI	B-T-B70-PRI	1	13800	425.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0357 + J 0.0121 PU			
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0568 + J 0.0307 PU			
CBL-0017	B-T-B2-PRI	B-T-B1-PRI	1	13800	200.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0168 + J 0.0057 PU			
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0267 + J 0.0144 PU			
CBL-0019	B-T-B17-PRI	B-T-B18-PRI	1	13800	100.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0084 + J 0.0028 PU			
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0134 + J 0.0072 PU			
CBL-0020	B-T-B4-PRI	B-T-B80-PRI	1	13800	150.0	FEET	1	Copper
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:	MV
	+/- Impedance: 0.1600 + J 0.0540 Ohms/1000 ft				0.0126 + J 0.0043 PU			
	Z0 Impedance: 0.2543 + J 0.1374 Ohms/1000 ft				0.0200 + J 0.0108 PU			

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0021	B-T-B19-PRI	B-T-B82-PRI	1	13800	476.0	FEET	1	Copper		
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance: 0.1600 + J	0.0540	Ohms/1000 ft		0.0400 + J	0.0135	PU			
	Z0 Impedance: 0.2543 + J	0.1374	Ohms/1000 ft		0.0636 + J	0.0343	PU			
CBL-0022	B-T-B82-PRI	B-T-B4-PRI	1	13800	300.0	FEET	1	Copper		
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance: 0.1600 + J	0.0540	Ohms/1000 ft		0.0252 + J	0.0085	PU			
	Z0 Impedance: 0.2543 + J	0.1374	Ohms/1000 ft		0.0401 + J	0.0216	PU			
CBL-0023	B-T-B22-PRI	B-T-B19-PRI	1	13800	400.0	FEET	1	Copper		
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance: 0.1600 + J	0.0540	Ohms/1000 ft		0.0336 + J	0.0113	PU			
	Z0 Impedance: 0.2543 + J	0.1374	Ohms/1000 ft		0.0534 + J	0.0289	PU			
CBL-0024	B-T-B33-PRI	B-T-B22-PRI	1	13800	300.0	FEET	1	Copper		
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance: 0.1600 + J	0.0540	Ohms/1000 ft		0.0252 + J	0.0085	PU			
	Z0 Impedance: 0.2543 + J	0.1374	Ohms/1000 ft		0.0401 + J	0.0216	PU			
CBL-0027	B-T-B10-PRI	B-T-B78-PRI	1	13800	300.0	FEET	1	Copper		
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance: 0.1600 + J	0.0540	Ohms/1000 ft		0.0252 + J	0.0085	PU			
	Z0 Impedance: 0.2543 + J	0.1374	Ohms/1000 ft		0.0401 + J	0.0216	PU			
CBL-0028	B-T-13-PRI	B-T-B9-PRI	1	13800	200.0	FEET	1	Copper		
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance: 0.1600 + J	0.0540	Ohms/1000 ft		0.0168 + J	0.0057	PU			
	Z0 Impedance: 0.2543 + J	0.1374	Ohms/1000 ft		0.0267 + J	0.0144	PU			
CBL-0029	B-T-B9-PRI	B-T-B10-PRI	1	13800	325.0	FEET	1	Copper		
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance: 0.1600 + J	0.0540	Ohms/1000 ft		0.0273 + J	0.0092	PU			
	Z0 Impedance: 0.2543 + J	0.1374	Ohms/1000 ft		0.0434 + J	0.0234	PU			
CBL-0030	B-T-B12-PRI	B-T-13-PRI	1	13800	300.0	FEET	1	Copper		
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance: 0.1600 + J	0.0540	Ohms/1000 ft		0.0252 + J	0.0085	PU			
	Z0 Impedance: 0.2543 + J	0.1374	Ohms/1000 ft		0.0401 + J	0.0216	PU			
CBL-0031	B-T-B81-PRI	B-T-B12-PRI	1	13800	100.0	FEET	1	Copper		
	Duct Material: Non-Magnetic		Insulation Type:		EPR		Insulation Class:		MV	
	+/- Impedance: 0.1600 + J	0.0540	Ohms/1000 ft		0.0084 + J	0.0028	PU			
	Z0 Impedance: 0.2543 + J	0.1374	Ohms/1000 ft		0.0134 + J	0.0072	PU			

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE		TYPE		
CBL-0032	B-T-B78-PRI	B-T-B3-PRI	1	13800	200.0	FEET	1	Copper			
	Duct Material: Non-Magnetic			Insulation Type:		EPR	Insulation Class:		MV		
	+/- Impedance: 0.1600 + J	0.0540	Ohms/1000 ft		0.0168 + J	0.0057	PU				
	Z0 Impedance: 0.2543 + J	0.1374	Ohms/1000 ft		0.0267 + J	0.0144	PU				
CBL-0033	BUS-0065	B-T-B3-PRI	1	13800	175.0	FEET	1	Copper			
	Duct Material: Non-Magnetic			Insulation Type:		EPR	Insulation Class:		MV		
	+/- Impedance: 0.1600 + J	0.0540	Ohms/1000 ft		0.0147 + J	0.0050	PU				
	Z0 Impedance: 0.2543 + J	0.1374	Ohms/1000 ft		0.0234 + J	0.0126	PU				
CBL-0034	B-SW-MV-2	B-T-B80-PRI	1	13800	150.0	FEET	1	Copper			
	Duct Material: Non-Magnetic			Insulation Type:		EPR	Insulation Class:		MV		
	+/- Impedance: 0.1600 + J	0.0540	Ohms/1000 ft		0.0126 + J	0.0043	PU				
	Z0 Impedance: 0.2543 + J	0.1374	Ohms/1000 ft		0.0200 + J	0.0108	PU				
CBL-0035	B-B27-SWGR	BUS-0063	1	13800	1100.0	FEET	1	Copper			
	Duct Material: Non-Magnetic			Insulation Type:		EPR	Insulation Class:		MV		
	+/- Impedance: 0.1600 + J	0.0540	Ohms/1000 ft		0.0924 + J	0.0312	PU				
	Z0 Impedance: 0.2543 + J	0.1374	Ohms/1000 ft		0.1469 + J	0.0794	PU				
CBL-0036	B-B27-SWGR	B-T-B33-PRI	1	13800	300.0	FEET	1	Copper			
	Duct Material: Non-Magnetic			Insulation Type:		EPR	Insulation Class:		MV		
	+/- Impedance: 0.1600 + J	0.0540	Ohms/1000 ft		0.0252 + J	0.0085	PU				
	Z0 Impedance: 0.2543 + J	0.1374	Ohms/1000 ft		0.0401 + J	0.0216	PU				
CBL-0037	B-T-B1-SEC	B-B1-MDP-M	1	208	20.0	FEET	250	Copper			
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance: 0.0552 + J	0.0495	Ohms/1000 ft		2.55 + J	2.29	PU				
	Z0 Impedance: 0.1739 + J	0.1219	Ohms/1000 ft		8.04 + J	5.64	PU				
CBL-0038	B-B1-MDP-M	B-B1-MDP	1	208	25.0	FEET	300	Copper			
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance: 0.0464 + J	0.0493	Ohms/1000 ft		2.68 + J	2.85	PU				
	Z0 Impedance: 0.1462 + J	0.1214	Ohms/1000 ft		8.45 + J	7.02	PU				
CBL-0039	B-B2-MDP-M	B-B2-MDP	1	480	1.000	FEET	1200	Copper			
	Duct Material: Busway			Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance: 0.0111 + J	0.0052	Ohms/1000 ft		0.0048 + J	0.0023	PU				
	Z0 Impedance: 0.0660 + J	0.0278	Ohms/1000 ft		0.0286 + J	0.0121	PU				
CBL-0040	B-B2-MDP	B-B2-CATSCAN	1	480	80.0	FEET	1/0	Copper			
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance: 0.1280 + J	0.0540	Ohms/1000 ft		4.44 + J	1.88	PU				
	Z0 Impedance: 0.4034 + J	0.1329	Ohms/1000 ft		14.01 + J	4.61	PU				

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0041	B-B2-MDP	B-T-B2-LED-PRI	1	480	80.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		7.01 + J 2.03	PU				
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		22.10 + J 5.00	PU				
CBL-0042	B-T-B2-LED-SEC	B-B2-LED-3	1	208	10.0	FEET	250	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft		1.28 + J 1.14	PU				
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft		4.02 + J 2.82	PU				
CBL-0043	B-B2-LED-3	BUS-0076	1	208	10.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		2.36 + J 1.23	PU				
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		7.43 + J 3.03	PU				
CBL-0044	B-B2-ATS-LED3	B-B2-EMERG-M	1	208	7.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft		1.30 + J 0.8397	PU				
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft		4.10 + J 2.07	PU				
CBL-0045	B-B2-EMERG-M	B-B2-EMERG-PNL	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0046	B-B2-ATS-LED3	B-B2-PNL 1	1	208	7.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft		1.30 + J 0.8397	PU				
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft		4.10 + J 2.07	PU				
CBL-0048	B-B2-ATS-LED3	B-B2-NEWLAB-M	1	208	10.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		2.36 + J 1.23	PU				
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		7.43 + J 3.03	PU				
CBL-0049	B-B2-NEWLAB-M	B-B2-NEWLAB	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0050	B-B2-ATS-LED3	B-B2-PNL-2	1	208	2.0	FEET	4	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft		1.48 + J 0.2922	PU				
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft		4.68 + J 0.7193	PU				

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0051	B-B2-ATS-LED3	B-B2-PNL-3-M	1	208	7.0	FEET	2	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			3.27 + J 0.9465		PU	
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			10.30 + J 2.33		PU	
CBL-0052	B-B2-MDP	B-B2-PNL-P	1	480	160.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466		Ohms/1000 ft			2.04 + J 3.24		PU	
	Z0 Impedance:	0.0926 + J 0.1147		Ohms/1000 ft			6.43 + J 7.97		PU	
CBL-0053	B-B2-PNL-P	B-B2-UNIT-1	1	480	40.0	FEET	2/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533		Ohms/1000 ft			1.77 + J 0.9253		PU	
	Z0 Impedance:	0.3214 + J 0.1312		Ohms/1000 ft			5.58 + J 2.28		PU	
CBL-0054	B-B2-PNL-P	B-B2-UNIT-2	1	480	20.0	FEET	2/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533		Ohms/1000 ft			0.8854 + J 0.4627		PU	
	Z0 Impedance:	0.3214 + J 0.1312		Ohms/1000 ft			2.79 + J 1.14		PU	
CBL-0055	B-B2-MDP	B-B2-XRAY-124	1	480	310.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			8.61 + J 6.69		PU	
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			27.14 + J 16.47		PU	
CBL-0057	B-B2-MDPA-M	B-B2-MDPA	2	208	3.0	FEET	350	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0378 + J 0.0491		Ohms/1000 ft			0.1311 + J 0.1702		PU	
	Z0 Impedance:	0.1191 + J 0.1209		Ohms/1000 ft			0.4129 + J 0.4192		PU	
CBL-0058	B-B2-MDPA	BUS-0091	1	208	150.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540		Ohms/1000 ft			44.38 + J 18.72		PU	
	Z0 Impedance:	0.4034 + J 0.1329		Ohms/1000 ft			139.86 + J 46.08		PU	
CBL-0059	B-B2-MDPA	B-B2-PNL-D2	1	208	75.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466		Ohms/1000 ft			5.10 + J 8.08		PU	
	Z0 Impedance:	0.0926 + J 0.1147		Ohms/1000 ft			16.05 + J 19.88		PU	
CBL-0060	B-B92-ATS	B-B92-PNL-E1	1	208	10.0	FEET	2	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			4.67 + J 1.35		PU	
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			14.71 + J 3.33		PU	

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE		FEEDER TYPE		
CBL-0062	B-B2-PNL-3-M	B-B2-PNL-M1	1	208	7.0	FEET	2		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			3.27 + J	0.9465	PU		
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			10.30 + J	2.33	PU		
CBL-0063	B-B2-MDPB	BUS-0097*	2	208	17.0	FEET	3/0		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			1.58 + J	1.02	PU		
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			4.98 + J	2.51	PU		
CBL-0064	B-B2-ATS-CRIT	B-B2-CRIT PNL	2	208	5.0	FEET	3/0		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			0.4652 + J	0.2999	PU		
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			1.47 + J	0.7385	PU		
CBL-0065	B-B2-CRIT PNL	B-B2-LB2E	1	208	50.0	FEET	2		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			23.35 + J	6.76	PU		
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			73.57 + J	16.64	PU		
CBL-0066	B-B2-CRIT PNL	B-B2-L2A	1	208	50.0	FEET	3/0		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			9.30 + J	6.00	PU		
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			29.32 + J	14.77	PU		
CBL-0067	B-B2-CRIT PNL	B-B2-MEDAIRCOM	1	208	50.0	FEET	2		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			23.35 + J	6.76	PU		
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			73.57 + J	16.64	PU		
CBL-0068	B-B2-CRIT PNL	B-B2-ELEV-P1	1	208	100.0	FEET	4/0		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			14.79 + J	11.49	PU		
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			46.62 + J	28.29	PU		
CBL-0069	B-B2-CRIT PNL	B-B2-DENTAL LB	1	208	40.0	FEET	2		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			18.68 + J	5.41	PU		
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			58.86 + J	13.31	PU		
CBL-0070	B-B2-CRIT PNL	B-B2-PNL-L11	1	208	50.0	FEET	3/0		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			9.30 + J	6.00	PU		
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			29.32 + J	14.77	PU		

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0071	B-B2-MDPB	BUS-0106*	2	208	10.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				0.9303 + J 0.5998	PU	
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				2.93 + J 1.48	PU	
CBL-0072	B-B2-ATS-LS	B-B2-PNL LS	2	208	10.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				0.9303 + J 0.5998	PU	
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				2.93 + J 1.48	PU	
CBL-0073	B-B2-PNL LS	B-B2-ELEV	1	208	40.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				5.92 + J 4.60	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				18.65 + J 11.32	PU	
CBL-0074	B-B2-PNL LS	B-B2-L2E	1	208	50.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				9.30 + J 6.00	PU	
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				29.32 + J 14.77	PU	
CBL-0075	B-B2-PNL LS	B-B2-L12	1	208	50.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				9.30 + J 6.00	PU	
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				29.32 + J 14.77	PU	
CBL-0076	B-B2-PNL LS	B-B2-DENTSUCPM	1	208	50.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				23.35 + J 6.76	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				73.57 + J 16.64	PU	
CBL-0077	B-B2-PNL LS	B-B2-L9E	1	208	50.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				14.79 + J 6.24	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				46.62 + J 15.36	PU	
CBL-0078	B-B2-PNL LS	B-B2-LB1E	1	208	50.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				14.79 + J 6.24	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				46.62 + J 15.36	PU	
CBL-0079	B-B2-PNL LS	B-B2-POD2PP	1	208	50.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				7.40 + J 5.74	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				23.31 + J 14.15	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0080	B-B2-PNL LS	B-B2-BATTERYCH	1	208	50.0	FEET	6	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.5100 + J 0.0685		Ohms/1000 ft			58.94 + J 7.92	PU	
	Z0 Impedance:	1.61 + J 0.1687		Ohms/1000 ft			185.74 + J 19.50	PU	
CBL-0082	B-B2-MDPB	B-B2-LB2	1	208	50.0	FEET	3/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			9.30 + J 6.00	PU	
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			29.32 + J 14.77	PU	
CBL-0083	B-B2-MDPB	B-B2-L6	1	208	50.0	FEET	3/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			9.30 + J 6.00	PU	
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			29.32 + J 14.77	PU	
CBL-0084	B-T-B2-SEC4	B-B2-MDP-M	4	480	10.0	FEET	250	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0552 + J 0.0495		Ohms/1000 ft			0.0599 + J 0.0537	PU	
	Z0 Impedance:	0.1739 + J 0.1219		Ohms/1000 ft			0.1887 + J 0.1323	PU	
CBL-0085	B-T-B2-SEC2	B-B2-MDPA-M	2	208	3.0	FEET	350	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0378 + J 0.0491		Ohms/1000 ft			0.1311 + J 0.1702	PU	
	Z0 Impedance:	0.1191 + J 0.1209		Ohms/1000 ft			0.4129 + J 0.4192	PU	
CBL-0086	B-B2-MDPB-M	B-B2-MDPB	2	208	3.0	FEET	350	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0378 + J 0.0491		Ohms/1000 ft			0.1311 + J 0.1702	PU	
	Z0 Impedance:	0.1191 + J 0.1209		Ohms/1000 ft			0.4129 + J 0.4192	PU	
CBL-0087	B-T-B2-SEC3	B-B2-MDPB-M	3	208	70.0	FEET	500	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466		Ohms/1000 ft			1.59 + J 2.51	PU	
	Z0 Impedance:	0.0926 + J 0.1147		Ohms/1000 ft			4.99 + J 6.19	PU	
CBL-0088	B-B2-MDPB	B-B2-L7	1	208	50.0	FEET	3/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			9.30 + J 6.00	PU	
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			29.32 + J 14.77	PU	
CBL-0089	B-B2-MDPB	B-B2-L8	1	208	50.0	FEET	3/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			9.30 + J 6.00	PU	
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			29.32 + J 14.77	PU	

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE		
CBL-0090	B-B2-MDPB	B-B2-L4	1	208	50.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft			9.30 + J 6.00	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft			29.32 + J 14.77	PU		
CBL-0091	B-B2-MDPB	B-B2-XRAY	1	208	50.0	FEET	10	Copper	
	Duct Material:	Magnetic	Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	1.18 + J 0.0854	Ohms/1000 ft			136.37 + J 9.87	PU		
	Z0 Impedance:	3.72 + J 0.2103	Ohms/1000 ft			429.78 + J 24.30	PU		
CBL-0092	B-B2-MDPB	B-B2-XRAY124	1	208	50.0	FEET	1	Copper	
	Duct Material:	Magnetic	Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft			18.49 + J 6.59	PU		
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft			58.27 + J 16.21	PU		
CBL-0093	B-B2-MDPB	B-B2-TEL COMM	1	208	50.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft			9.30 + J 6.00	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft			29.32 + J 14.77	PU		
CBL-0094	B-T-B3-SEC	B-B3-MDP-M	3	208	35.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft			0.7928 + J 1.26	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft			2.50 + J 3.09	PU		
CBL-0095	B-B3-MDP-M	B-B3-MDP	1	208	1.000	FEET	1000	Copper	
	Duct Material:	Busway	Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft			0.0328 + J 0.0153	PU		
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft			0.1951 + J 0.0816	PU		
CBL-0096	B-B3-MDP	B-B3-P3	1	208	40.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft			7.44 + J 4.80	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft			23.46 + J 11.82	PU		
CBL-0097	B-B3-MDP	BUS-0131	1	208	35.0	FEET	600	Copper	
	Duct Material:	Magnetic	Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0257 + J 0.0463	Ohms/1000 ft			2.08 + J 3.75	PU		
	Z0 Impedance:	0.0809 + J 0.1140	Ohms/1000 ft			6.54 + J 9.22	PU		
CBL-0098	B-B3-ATSTEL RM	B-B3-EP1-M	1	208	7.0	FEET	600	Copper	
	Duct Material:	Magnetic	Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0257 + J 0.0463	Ohms/1000 ft			0.4158 + J 0.7491	PU		
	Z0 Impedance:	0.0809 + J 0.1140	Ohms/1000 ft			1.31 + J 1.84	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0099	B-B3-EP1-M	B-B3-EP1	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft			0.0673 + J 0.0696	PU			
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft			0.3999 + J 0.3724	PU			
CBL-0100	B-B3-EP1	B-B3-TELE PNL	1	208	30.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft			4.44 + J 3.45	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft			13.99 + J 8.49	PU			
CBL-0101	B-B3-EP1	B-B3-KP1	1	208	55.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft			8.14 + J 6.32	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft			25.64 + J 15.56	PU			
CBL-0102	B-B3-EP1	B-B3-P7	1	208	30.0	FEET	2	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft			14.01 + J 4.06	PU			
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft			44.14 + J 9.99	PU			
CBL-0103	B-B3-EP1	B-B3-DBL GRILL	1	208	55.0	FEET	2/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft			12.97 + J 6.78	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft			40.86 + J 16.68	PU			
CBL-0104	B-B3-EP1	B-B3-1ST FL	1	208	30.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft			8.88 + J 3.74	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft			27.97 + J 9.22	PU			
CBL-0105	B-B3-MDP	BUS-0140	1	208	30.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft			2.04 + J 3.23	PU			
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft			6.42 + J 7.95	PU			
CBL-0106	B-B3-ATS-COMP	B-B3-EP2-M	1	208	11.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft			0.7475 + J 1.18	PU			
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft			2.35 + J 2.92	PU			
CBL-0107	B-B3-EP2-M	B-B3-EP2	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft			0.0673 + J 0.0696	PU			
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft			0.3999 + J 0.3724	PU			

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0108	B-B3-EP2	B-B3-TRAY LINE	1	208	30.0	FEET	1	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1600 + J 0.0570		Ohms/1000 ft			11.09 + J 3.95	PU		
	Z0 Impedance:	0.5042 + J 0.1403		Ohms/1000 ft			34.96 + J 9.73	PU		
CBL-0109	B-B3-EP2	B-B3-COMP	1	208	40.0	FEET	1	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1600 + J 0.0570		Ohms/1000 ft			14.79 + J 5.27	PU		
	Z0 Impedance:	0.5042 + J 0.1403		Ohms/1000 ft			46.62 + J 12.97	PU		
CBL-0110	B-B3-EP2	B-B3-HYDRO ELV	1	208	70.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540		Ohms/1000 ft			20.71 + J 8.74	PU		
	Z0 Impedance:	0.4034 + J 0.1329		Ohms/1000 ft			65.27 + J 21.50	PU		
CBL-0111	B-B3-EP2	B-B3-MECH HVAC	1	208	30.0	FEET	1	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1600 + J 0.0570		Ohms/1000 ft			11.09 + J 3.95	PU		
	Z0 Impedance:	0.5042 + J 0.1403		Ohms/1000 ft			34.96 + J 9.73	PU		
CBL-0112	B-B3-EP2	B-B3-COMP AC	1	208	30.0	FEET	10	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	1.18 + J 0.0854		Ohms/1000 ft			81.82 + J 5.92	PU		
	Z0 Impedance:	3.72 + J 0.2103		Ohms/1000 ft			257.87 + J 14.58	PU		
CBL-0113	B-B3-EP2	B-B3-ELEV	1	208	30.0	FEET	1	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1600 + J 0.0570		Ohms/1000 ft			11.09 + J 3.95	PU		
	Z0 Impedance:	0.5042 + J 0.1403		Ohms/1000 ft			34.96 + J 9.73	PU		
CBL-0114	B-B3-EP2	B-B3-STRT PNL	1	208	20.0	FEET	1	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1600 + J 0.0570		Ohms/1000 ft			7.40 + J 2.63	PU		
	Z0 Impedance:	0.5042 + J 0.1403		Ohms/1000 ft			23.31 + J 6.49	PU		
CBL-0115	B-B3-EP2	B-B3-ALDN KIT	1	208	30.0	FEET	4	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.3210 + J 0.0632		Ohms/1000 ft			22.26 + J 4.38	PU		
	Z0 Impedance:	1.01 + J 0.1556		Ohms/1000 ft			70.15 + J 10.79	PU		
CBL-0116	B-B3-EP2	B-B3-MECH RM	1	208	30.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			4.44 + J 3.45	PU		
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			13.99 + J 8.49	PU		

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0117	B-B3-EP2	B-B3-COMP MF	1	208	30.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				5.58 + J 3.60	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				17.59 + J 8.86	PU		
CBL-0118	B-B3-MDP	B-B3-STRT LTS	1	208	20.0	FEET	6	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.5100 + J 0.0685	Ohms/1000 ft				23.58 + J 3.17	PU		
	Z0 Impedance:	1.61 + J 0.1687	Ohms/1000 ft				74.30 + J 7.80	PU		
CBL-0119	B-B3-MDP	B-B3-FRZN FOOD	1	208	20.0	FEET	6	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.5100 + J 0.0685	Ohms/1000 ft				23.58 + J 3.17	PU		
	Z0 Impedance:	1.61 + J 0.1687	Ohms/1000 ft				74.30 + J 7.80	PU		
CBL-0120	B-T-B4-SEC	B-B4-BUS	4	208	20.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.3398 + J 0.5386	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				1.07 + J 1.33	PU		
CBL-0121	B-B4-BUS	B-B4-JBOX	1	208	20.0	FEET	2000	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0066 + J 0.0035	Ohms/1000 ft				0.3051 + J 0.1618	PU		
	Z0 Impedance:	0.0392 + J 0.0187	Ohms/1000 ft				1.81 + J 0.8645	PU		
CBL-0122	B-B4-JBOX	B-B4-MDP-M	4	208	5.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.0849 + J 0.1346	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				0.2675 + J 0.3314	PU		
CBL-0124	B-B4-MDP-M	B-B4-MDP	1	208	1.000	FEET	2000	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0066 + J 0.0035	Ohms/1000 ft				0.0153 + J 0.0081	PU		
	Z0 Impedance:	0.0392 + J 0.0187	Ohms/1000 ft				0.0906 + J 0.0432	PU		
CBL-0125	B-B4-MDP	B-B4-LP3-M	1	208	25.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				3.70 + J 2.87	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				11.66 + J 7.07	PU		
CBL-0126	B-B4-LP3-M	B-B4-LP4-M	1	208	40.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				5.92 + J 4.60	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				18.65 + J 11.32	PU		

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0127	B-B4-LP3-M	B-B4-LP3	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J	0.0323	Ohms/1000 ft		0.0982 + J	0.0747	PU		
	Z0 Impedance:	0.2527 + J	0.1729	Ohms/1000 ft		0.5841 + J	0.3996	PU		
CBL-0128	B-B4-LP4-M	B-B4-LP4	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J	0.0323	Ohms/1000 ft		0.0982 + J	0.0747	PU		
	Z0 Impedance:	0.2527 + J	0.1729	Ohms/1000 ft		0.5841 + J	0.3996	PU		
CBL-0129	B-B4-MDP	B-B4-LP9-M	1	208	90.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0640 + J	0.0497	Ohms/1000 ft		13.31 + J	10.34	PU		
	Z0 Impedance:	0.2017 + J	0.1224	Ohms/1000 ft		41.96 + J	25.46	PU		
CBL-0130	B-B4-LP9-M	B-B4-LP14-M	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0640 + J	0.0497	Ohms/1000 ft		2.96 + J	2.30	PU		
	Z0 Impedance:	0.2017 + J	0.1224	Ohms/1000 ft		9.32 + J	5.66	PU		
CBL-0131	B-B4-LP9-M	B-B4-LP9	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J	0.0323	Ohms/1000 ft		0.0982 + J	0.0747	PU		
	Z0 Impedance:	0.2527 + J	0.1729	Ohms/1000 ft		0.5841 + J	0.3996	PU		
CBL-0132	B-B4-LP14-M	B-B4-LP14	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J	0.0323	Ohms/1000 ft		0.0982 + J	0.0747	PU		
	Z0 Impedance:	0.2527 + J	0.1729	Ohms/1000 ft		0.5841 + J	0.3996	PU		
CBL-0133	B-B4-MDP	B-B4-LP7-M	1	208	45.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0640 + J	0.0497	Ohms/1000 ft		6.66 + J	5.17	PU		
	Z0 Impedance:	0.2017 + J	0.1224	Ohms/1000 ft		20.98 + J	12.73	PU		
CBL-0134	B-B4-LP7-M	B-B4-LP7	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J	0.0323	Ohms/1000 ft		0.0982 + J	0.0747	PU		
	Z0 Impedance:	0.2527 + J	0.1729	Ohms/1000 ft		0.5841 + J	0.3996	PU		
CBL-0135	B-B4-MDP	B-B4-LP12-M	1	208	55.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0640 + J	0.0497	Ohms/1000 ft		8.14 + J	6.32	PU		
	Z0 Impedance:	0.2017 + J	0.1224	Ohms/1000 ft		25.64 + J	15.56	PU		

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0136	B-B4-LP12-M	B-B4-LP12	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU	
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU	
CBL-0137	B-B4-MDP	BUS-0172*	1	208	15.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.22 + J 1.72	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				6.99 + J 4.24	PU	
CBL-0138	B-B4-ATS-LS	B-B4-LSD-M	1	208	5.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				0.7396 + J 0.5744	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				2.33 + J 1.41	PU	
CBL-0139	B-B4-LSD-M	B-B4-LSD	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU	
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU	
CBL-0140	B-B4-LSD	B-B4-LS2-M	1	208	30.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				8.88 + J 3.74	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				27.97 + J 9.22	PU	
CBL-0141	B-B4-LS2-M	B-B4-LS2	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU	
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU	
CBL-0142	B-B4-LS2-M	B-B4-LS1-M	1	208	35.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				10.36 + J 4.37	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				32.63 + J 10.75	PU	
CBL-0143	B-B4-LS1-M	B-B4-LS1	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU	
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU	
CBL-0144	B-B4-LSD	B-B4-LS3-M	1	208	15.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				4.44 + J 1.87	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				13.99 + J 4.61	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0145	B-B4-LS3-M	B-B4-LS3	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:			Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			
CBL-0146	B-B4-LS3-M	B-B4-LS4-M	1	208	35.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		10.36 + J 4.37	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		32.63 + J 10.75	PU			
CBL-0147	B-B4-LS4-M	B-B4-LS4	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:			Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			
CBL-0148	B-B4-LSD	B-B4-LS5-M	1	208	104.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		30.77 + J 12.98	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		96.97 + J 31.95	PU			
CBL-0149	B-B4-LS5-M	B-B4-LS5	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:			Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			
CBL-0150	B-B4-LS5-M	B-B4-LS10-M	1	208	20.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		5.92 + J 2.50	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		18.65 + J 6.14	PU			
CBL-0151	B-B4-LS10-M	B-B4-LS10	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:			Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			
CBL-0152	B-B4-LSD	B-B4-LS6-M	1	208	82.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		24.26 + J 10.23	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		76.46 + J 25.19	PU			
CBL-0153	B-B4-LS6-M	B-B4-LS6	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:			Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0154	B-B4-LS6-M	B-B4-LS11-M	1	208	20.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				5.92 + J 2.50	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				18.65 + J 6.14	PU		
CBL-0155	B-B4-LS11-M	B-B4-LS11	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0156	B-B4-LSD	B-B4-LS7-M	1	208	65.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				19.23 + J 8.11	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				60.61 + J 19.97	PU		
CBL-0157	B-B4-LS7-M	B-B4-LS7	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0158	B-B4-LS7-M	B-B4-LS12-M	1	208	20.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				5.92 + J 2.50	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				18.65 + J 6.14	PU		
CBL-0159	B-B4-LS12-M	B-B4-LS12	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0160	B-B4-LSD	B-B4-LP15-M	1	208	75.0	FEET	1	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				27.74 + J 9.88	PU		
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				87.41 + J 24.32	PU		
CBL-0161	B-B4-LP15-M	B-B4-LP15	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0163	B-B4-LSD	B-B4-PP2-M	1	208	75.0	FEET	1	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				27.74 + J 9.88	PU		
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				87.41 + J 24.32	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0164	B-B4-PP2-M	B-B4-PP2	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J	0.0323	Ohms/1000 ft		0.0982 + J	0.0747	PU		
	Z0 Impedance:	0.2527 + J	0.1729	Ohms/1000 ft		0.5841 + J	0.3996	PU		
CBL-0165	B-B4-LSD	B-B4-LS8-M	1	208	62.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J	0.0540	Ohms/1000 ft		18.34 + J	7.74	PU		
	Z0 Impedance:	0.4034 + J	0.1329	Ohms/1000 ft		57.81 + J	19.05	PU		
CBL-0166	B-B4-LS8-M	B-B4-LS8	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J	0.0323	Ohms/1000 ft		0.0982 + J	0.0747	PU		
	Z0 Impedance:	0.2527 + J	0.1729	Ohms/1000 ft		0.5841 + J	0.3996	PU		
CBL-0167	B-B4-LS8-M	B-B4-LS13-M	1	208	20.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J	0.0540	Ohms/1000 ft		5.92 + J	2.50	PU		
	Z0 Impedance:	0.4034 + J	0.1329	Ohms/1000 ft		18.65 + J	6.14	PU		
CBL-0168	B-B4-LS13-M	B-B4-LS13	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J	0.0323	Ohms/1000 ft		0.0982 + J	0.0747	PU		
	Z0 Impedance:	0.2527 + J	0.1729	Ohms/1000 ft		0.5841 + J	0.3996	PU		
CBL-0169	B-B4-LSD	B-B4-LS9-M	1	208	62.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J	0.0540	Ohms/1000 ft		18.34 + J	7.74	PU		
	Z0 Impedance:	0.4034 + J	0.1329	Ohms/1000 ft		57.81 + J	19.05	PU		
CBL-0170	B-B4-LS9-M	B-B4-LS9	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J	0.0323	Ohms/1000 ft		0.0982 + J	0.0747	PU		
	Z0 Impedance:	0.2527 + J	0.1729	Ohms/1000 ft		0.5841 + J	0.3996	PU		
CBL-0171	B-B4-LS9-M	B-B4-LS14-M	1	208	20.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J	0.0540	Ohms/1000 ft		5.92 + J	2.50	PU		
	Z0 Impedance:	0.4034 + J	0.1329	Ohms/1000 ft		18.65 + J	6.14	PU		
CBL-0172	B-B4-LS14-M	B-B4-LS14	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J	0.0323	Ohms/1000 ft		0.0982 + J	0.0747	PU		
	Z0 Impedance:	0.2527 + J	0.1729	Ohms/1000 ft		0.5841 + J	0.3996	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0173	B-B4-MDP	B-B4-LP2-M	1	208	25.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			3.70 + J 2.87	PU		
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			11.66 + J 7.07	PU		
CBL-0174	B-B4-LP2-M	B-B4-LP1-M	1	208	35.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			5.18 + J 4.02	PU		
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			16.32 + J 9.90	PU		
CBL-0175	B-B4-LP2-M	B-B4-LP2	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323		Ohms/1000 ft			0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729		Ohms/1000 ft			0.5841 + J 0.3996	PU		
CBL-0176	B-B4-LP1-M	B-B4-LP1	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323		Ohms/1000 ft			0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729		Ohms/1000 ft			0.5841 + J 0.3996	PU		
CBL-0177	B-B4-MDP	B-B4-LP5-M	1	208	70.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			10.36 + J 8.04	PU		
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			32.63 + J 19.80	PU		
CBL-0178	B-B4-LP5-M	B-B4-LP10-M	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			2.96 + J 2.30	PU		
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			9.32 + J 5.66	PU		
CBL-0179	B-B4-LP5-M	B-B4-LP5	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323		Ohms/1000 ft			0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729		Ohms/1000 ft			0.5841 + J 0.3996	PU		
CBL-0180	B-B4-LP10-M	B-B4-LP10	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323		Ohms/1000 ft			0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729		Ohms/1000 ft			0.5841 + J 0.3996	PU		
CBL-0181	B-B4-MDP	B-B4-LP6-M	1	208	45.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			6.66 + J 5.17	PU		
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			20.98 + J 12.73	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0182	B-B4-LP6-M	B-B4-LP11-M	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.96 + J 2.30	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				9.32 + J 5.66	PU		
CBL-0183	B-B4-LP6-M	B-B4-LP6	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0184	B-B4-LP11-M	B-B4-LP11	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0185	B-B4-MDP	B-B4-LP8-M	1	208	70.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				10.36 + J 8.04	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				32.63 + J 19.80	PU		
CBL-0186	B-B4-LP8-M	B-B4-LP13-M	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.96 + J 2.30	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				9.32 + J 5.66	PU		
CBL-0187	B-B4-LP8-M	B-B4-LP8	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0188	B-B4-LP13-M	B-B4-LP13	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0193	B-B4-MDP	BUS-0227	1	208	8.0	FEET	400	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				0.6583 + J 0.9061	PU		
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				2.07 + J 2.23	PU		
CBL-0194	B-B4-ATS-EQ	B-B4-4EQD-M	1	208	13.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.8834 + J 1.40	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				2.78 + J 3.45	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0195	B-B4-4EQD-M	B-B4-4EQD	1	208	1.000	FEET	400	Copper		
	Duct Material: Busway			Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft			0.0673 + J 0.0696	PU			
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft			0.3999 + J 0.3724	PU			
CBL-0196	B-B4-4EQD	B-B4-EQ9	1	208	110.0	FEET	2/0	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft			25.93 + J 13.55	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft			81.72 + J 33.36	PU			
CBL-0197	B-B4-4EQD	B-B4-EQ2	1	208	14.0	FEET	2/0	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft			3.30 + J 1.72	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft			10.40 + J 4.25	PU			
CBL-0198	B-B4-4EQD	B-B4-EQ15	1	208	80.0	FEET	2/0	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft			18.86 + J 9.86	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft			59.43 + J 24.26	PU			
CBL-0199	B-B4-4EQD	B-B4-EQ3	1	208	58.0	FEET	2/0	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft			13.67 + J 7.15	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft			43.09 + J 17.59	PU			
CBL-0200	B-B4-4EQD	B-B4-EQ1	1	208	35.0	FEET	2/0	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft			8.25 + J 4.31	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft			26.00 + J 10.61	PU			
CBL-0201	B-B4-4EQD	B-B4-ELEV#4	1	208	80.0	FEET	2/0	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft			18.86 + J 9.86	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft			59.43 + J 24.26	PU			
CBL-0202	B-B4-4EQD	B-B4-HYDROELEV	1	208	80.0	FEET	1/0	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft			23.67 + J 9.99	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft			74.59 + J 24.57	PU			
CBL-0203	B-B4-4EQD	B-B4-PP1	1	208	30.0	FEET	4/0	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft			4.44 + J 3.45	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft			13.99 + J 8.49	PU			

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0204	B-B4-EQ1	B-B4-EQ5	1	208	20.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.72 + J 2.46	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				14.86 + J 6.07	PU		
CBL-0205	B-B4-EQ5	B-B4-EQ10	1	208	18.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.24 + J 2.22	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				13.37 + J 5.46	PU		
CBL-0206	B-B4-EQ3	B-B4-EQ7	1	208	20.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.72 + J 2.46	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				14.86 + J 6.07	PU		
CBL-0207	B-B4-EQ7	B-B4-EQ12	1	208	18.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.24 + J 2.22	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				13.37 + J 5.46	PU		
CBL-0208	B-B4-EQ2	B-B4-EQ6	1	208	20.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.72 + J 2.46	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				14.86 + J 6.07	PU		
CBL-0209	B-B4-EQ6	B-B4-EQ11	1	208	18.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.24 + J 2.22	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				13.37 + J 5.46	PU		
CBL-0210	B-T-B5-SEC	B-B5-MDP-M	1	208	25.0	FEET	300	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0464 + J 0.0493	Ohms/1000 ft				2.68 + J 2.85	PU		
	Z0 Impedance:	0.1462 + J 0.1214	Ohms/1000 ft				8.45 + J 7.02	PU		
CBL-0211	B-B5-MDP-M	B-B5-MDP	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft				0.0328 + J 0.0153	PU		
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft				0.1951 + J 0.0816	PU		
CBL-0212	B-B5-MDP	B-B5-PNL-H-M	1	208	25.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				3.70 + J 2.87	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				11.66 + J 7.07	PU		

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0213	B-B5-MDP	B-B5-LP1-M	1	208	31.0	FEET	4/0	Copper		
	Duct Material: Magnetic				Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft						4.59 + J 3.56 PU			
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft						14.45 + J 8.77 PU			
CBL-0214	B-B5-LP1-M	B-B5-LP1	1	208	1.000	FEET	400	Copper		
	Duct Material: Busway				Insulation Type:		Epoxy	Insulation Class:		Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft						0.0673 + J 0.0696 PU			
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft						0.3999 + J 0.3724 PU			
CBL-0215	B-B5-LP1-M	B-B5-LP3-M	1	208	20.0	FEET	4/0	Copper		
	Duct Material: Magnetic				Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft						2.96 + J 2.30 PU			
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft						9.32 + J 5.66 PU			
CBL-0216	B-B5-LP3-M	B-B5-LP3	1	208	1.000	FEET	400	Copper		
	Duct Material: Busway				Insulation Type:		Epoxy	Insulation Class:		Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft						0.0673 + J 0.0696 PU			
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft						0.3999 + J 0.3724 PU			
CBL-0220	B-B5-MDP	B-B5-STRT LGHT	1	208	25.0	FEET	4	Copper		
	Duct Material: Magnetic				Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft						18.55 + J 3.65 PU			
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft						58.46 + J 8.99 PU			
CBL-0221	B-B5-MDP	B-B5-NEXTEL	1	208	40.0	FEET	3/0	Copper		
	Duct Material: Magnetic				Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft						7.44 + J 4.80 PU			
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft						23.46 + J 11.82 PU			
CBL-0222	B-B5-MDP	BUS-0258*	1	208	40.0	FEET	500	Copper		
	Duct Material: Magnetic				Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft						2.72 + J 4.31 PU			
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft						8.56 + J 10.60 PU			
CBL-0223	B-B5-ATS-EQ	B-B5-EQD	1	208	5.0	FEET	500	Copper		
	Duct Material: Magnetic				Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft						0.3398 + J 0.5386 PU			
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft						1.07 + J 1.33 PU			
CBL-0224	B-B5-EQD	B-B5-EQ1	1	208	42.0	FEET	1/0	Copper		
	Duct Material: Magnetic				Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						12.43 + J 5.24 PU			
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						39.16 + J 12.90 PU			

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0225	B-B5-EQD	B-B5-EQ5	1	208	42.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				12.43 + J 5.24	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				39.16 + J 12.90	PU		
CBL-0226	B-B5-EQD	B-B5-EQ2	1	208	45.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				13.31 + J 5.62	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				41.96 + J 13.82	PU		
CBL-0227	B-B5-EQD	B-B5-EQ6	1	208	55.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				16.27 + J 6.86	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				51.28 + J 16.90	PU		
CBL-0228	B-B5-EQD	B-B5-HYDR ELEV	1	208	25.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				7.40 + J 3.12	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				23.31 + J 7.68	PU		
CBL-0229	B-B5-PNL-H-M	B-B5-PNL-H	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft				0.0673 + J 0.0696	PU		
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft				0.3999 + J 0.3724	PU		
CBL-0230	B-B5-MDP	B-B5-LP5-M	1	208	25.0	FEET	1	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				9.25 + J 3.29	PU		
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				29.14 + J 8.11	PU		
CBL-0231	B-B5-LP5-M	B-B5-LP5	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft				0.0673 + J 0.0696	PU		
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft				0.3999 + J 0.3724	PU		
CBL-0232	B-B5-MDP	BUS-0269	1	208	30.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				4.44 + J 3.45	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				13.99 + J 8.49	PU		
CBL-0233	B-B5-ATS-LS	B-B5-LSD-M	1	208	5.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				0.7396 + J 0.5744	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				2.33 + J 1.41	PU		

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0234	B-B5-LSD-M	B-B5-LSD	1	208	1.000	FEET	400	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft		0.0673 + J 0.0696	PU			
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft		0.3999 + J 0.3724	PU			
CBL-0235	B-B5-LSD	B-B5-LS2	1	208	71.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		21.01 + J 8.86	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		66.20 + J 21.81	PU			
CBL-0236	B-B5-LS2	B-B5-LS4	1	208	20.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		5.92 + J 2.50	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		18.65 + J 6.14	PU			
CBL-0237	B-B5-LSD	B-B5-LS1	1	208	22.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		6.51 + J 2.75	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		20.51 + J 6.76	PU			
CBL-0238	B-B5-LS1	B-B55-LS3	1	208	20.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		5.92 + J 2.50	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		18.65 + J 6.14	PU			
CBL-0239	B-B5-MDP	B-B5-LP2-M	1	208	52.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		7.69 + J 5.97	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		24.24 + J 14.71	PU			
CBL-0240	B-B5-LP2-M	B-B5-LP2	1	208	1.000	FEET	400	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft		0.0673 + J 0.0696	PU			
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft		0.3999 + J 0.3724	PU			
CBL-0241	B-B5-LP2-M	B-B5-LP4-M	1	208	20.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		2.96 + J 2.30	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		9.32 + J 5.66	PU			
CBL-0242	B-B5-LP4-M	B-B5-LP4	1	208	1.000	FEET	400	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft		0.0673 + J 0.0696	PU			
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft		0.3999 + J 0.3724	PU			

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0243	B-B5-MDP	B-B5-TEMP TRAI	1	208	50.0	FEET	3/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			9.30 + J 6.00	PU		
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			29.32 + J 14.77	PU		
CBL-0244	B-T-B6-SEC	B-B6-MDP-M	3	208	50.0	FEET	400	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0356 + J 0.0490		Ohms/1000 ft			1.37 + J 1.89	PU		
	Z0 Impedance:	0.1122 + J 0.1206		Ohms/1000 ft			4.32 + J 4.65	PU		
CBL-0245	B-B6-MDP-M	B-B6-MDP	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066		Ohms/1000 ft			0.0328 + J 0.0153	PU		
	Z0 Impedance:	0.0844 + J 0.0353		Ohms/1000 ft			0.1951 + J 0.0816	PU		
CBL-0246	B-B6-MDP	B-B6-LP1-M	1	208	45.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540		Ohms/1000 ft			13.31 + J 5.62	PU		
	Z0 Impedance:	0.4034 + J 0.1329		Ohms/1000 ft			41.96 + J 13.82	PU		
CBL-0247	B-B6-LP1-M	B-B6-LP1	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066		Ohms/1000 ft			0.0328 + J 0.0153	PU		
	Z0 Impedance:	0.0844 + J 0.0353		Ohms/1000 ft			0.1951 + J 0.0816	PU		
CBL-0248	B-B6-MDP	B-B6-LP3-M	1	208	45.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			6.66 + J 5.17	PU		
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			20.98 + J 12.73	PU		
CBL-0249	B-B6-LP3-M	B-B6-LP3	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066		Ohms/1000 ft			0.0328 + J 0.0153	PU		
	Z0 Impedance:	0.0844 + J 0.0353		Ohms/1000 ft			0.1951 + J 0.0816	PU		
CBL-0250	B-B6-LP3-M	B-B6-LP5-M	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			2.96 + J 2.30	PU		
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			9.32 + J 5.66	PU		
CBL-0251	B-B6-LP5-M	B-B6-LP5	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066		Ohms/1000 ft			0.0328 + J 0.0153	PU		
	Z0 Impedance:	0.0844 + J 0.0353		Ohms/1000 ft			0.1951 + J 0.0816	PU		

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0252	B-B6-MDP	BUS-0290	1	208	30.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				4.44 + J 3.45	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				13.99 + J 8.49	PU	
CBL-0253	B-B6-ATS-LS	B-B6-LSD-M	1	208	8.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				1.18 + J 0.9190	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				3.73 + J 2.26	PU	
CBL-0255	B-B6-LS4	B-B6-LS6	1	208	20.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				5.92 + J 2.50	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				18.65 + J 6.14	PU	
CBL-0257	B-B6-LSD-M	B-B6-LSD	1	208	1.000	FEET	1000	Copper	
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft				0.0328 + J 0.0153	PU	
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft				0.1951 + J 0.0816	PU	
CBL-0258	B-B6-LSD	B-B6-LS4	1	208	35.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				10.36 + J 4.37	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				32.63 + J 10.75	PU	
CBL-0259	B-B6-LS3	B-B6-LS5	1	208	20.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				5.92 + J 2.50	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				18.65 + J 6.14	PU	
CBL-0260	B-B6-LSD	B-B6-LS3	1	208	35.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				10.36 + J 4.37	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				32.63 + J 10.75	PU	
CBL-0261	B-B6-LSD	B-B6-LS1	1	208	35.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				10.36 + J 4.37	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				32.63 + J 10.75	PU	
CBL-0262	B-B6-LSD	B-B6-LS2	1	208	12.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				5.60 + J 1.62	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				17.66 + J 3.99	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0263	B-B6-MDP	BUS-0302	1	208	50.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				3.40 + J 5.39	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				10.70 + J 13.26	PU		
CBL-0264	B-B6-ATS-EQ	B-B6-EQD-M	1	208	15.0	FEET	400	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				1.23 + J 1.70	PU		
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				3.89 + J 4.18	PU		
CBL-0265	B-B6-EQD-M	B-B6-EQD	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft				0.0328 + J 0.0153	PU		
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft				0.1951 + J 0.0816	PU		
CBL-0266	B-B6-EQD	B-B6-EQ8	1	208	66.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				9.76 + J 7.58	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				30.77 + J 18.67	PU		
CBL-0267	B-B6-EQD	B-B6-EQ1	1	208	15.0	FEET	1	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				5.55 + J 1.98	PU		
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				17.48 + J 4.86	PU		
CBL-0268	B-B6-EQD	B-B6-EQ3	1	208	26.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				6.13 + J 3.20	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				19.31 + J 7.88	PU		
CBL-0269	B-B6-EQD	B-B6-EQ2	1	208	50.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				11.79 + J 6.16	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				37.14 + J 15.16	PU		
CBL-0270	B-B6-EQ3	B-B6-EQ5	1	208	20.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.72 + J 2.46	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				14.86 + J 6.07	PU		
CBL-0271	B-B6-EQ2	B-B6-EQ4	1	208	20.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.72 + J 2.46	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				14.86 + J 6.07	PU		

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0272	B-B6-EQD	B-B6-EQMACH	1	208	15.0	FEET	1	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				5.55 + J 1.98	PU		
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				17.48 + J 4.86	PU		
CBL-0273	B-B6-MDP	B-B6-LP2-M	1	208	36.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				10.65 + J 4.49	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				33.57 + J 11.06	PU		
CBL-0274	B-B6-LP2-M	B-B6-LP2	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft				0.0328 + J 0.0153	PU		
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft				0.1951 + J 0.0816	PU		
CBL-0275	B-B6-MDP	B-B6-LP7-M	1	208	15.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				4.44 + J 1.87	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				13.99 + J 4.61	PU		
CBL-0276	B-B6-LP7-M	B-B6-LP7	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft				0.0328 + J 0.0153	PU		
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft				0.1951 + J 0.0816	PU		
CBL-0277	B-B6-LP4-M	B-B6-LP4	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft				0.0328 + J 0.0153	PU		
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft				0.1951 + J 0.0816	PU		
CBL-0278	B-B6-LP4-M	B-B6-LP6-M	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.96 + J 2.30	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				9.32 + J 5.66	PU		
CBL-0279	B-B6-LP6-M	B-B6-LP6	1	208	1.000	FEET	1000	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft				0.0328 + J 0.0153	PU		
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft				0.1951 + J 0.0816	PU		
CBL-0280	B-B6-MDP	B-B6-LP4-M	1	208	42.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				6.21 + J 4.82	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				19.58 + J 11.88	PU		

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0281	B-B6-MDP	B-B6-MACH SHOP	1	208	50.0	FEET	3/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			9.30 + J 6.00	PU	
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			29.32 + J 14.77	PU	
CBL-0282	B-B6-MDP	B-B6-P6-CS	1	208	30.0	FEET	3/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			5.58 + J 3.60	PU	
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			17.59 + J 8.86	PU	
CBL-0283	B-T-B7-SEC	B-B7-MDP-M	2	208	175.0	FEET	600	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0257 + J 0.0463		Ohms/1000 ft			5.20 + J 9.36	PU	
	Z0 Impedance:	0.0809 + J 0.1140		Ohms/1000 ft			16.36 + J 23.06	PU	
CBL-0284	B-B7-MDP-M	B-B7-MDP	1	208	1.000	FEET	800	Copper	
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0167 + J 0.0127		Ohms/1000 ft			0.0386 + J 0.0294	PU	
	Z0 Impedance:	0.0992 + J 0.0679		Ohms/1000 ft			0.2293 + J 0.1569	PU	
CBL-0285	B-B7-MDP	BUS-0327	1	208	25.0	FEET	500	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466		Ohms/1000 ft			1.70 + J 2.69	PU	
	Z0 Impedance:	0.0926 + J 0.1147		Ohms/1000 ft			5.35 + J 6.63	PU	
CBL-0286	B-B7-ATS-EQ	B-B7-EQD	1	208	25.0	FEET	500	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466		Ohms/1000 ft			1.70 + J 2.69	PU	
	Z0 Impedance:	0.0926 + J 0.1147		Ohms/1000 ft			5.35 + J 6.63	PU	
CBL-0287	B-B7-EQD	B-B7-ELEV	1	208	62.0	FEET	4/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			9.17 + J 7.12	PU	
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			28.90 + J 17.54	PU	
CBL-0288	B-B7-EQD	bB-B7-MC1	1	208	40.0	FEET	6	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.5100 + J 0.0685		Ohms/1000 ft			47.15 + J 6.33	PU	
	Z0 Impedance:	1.61 + J 0.1687		Ohms/1000 ft			148.59 + J 15.60	PU	
CBL-0289	B-B7-EQD	B-B7-EQ2	1	208	15.0	FEET	2/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533		Ohms/1000 ft			3.54 + J 1.85	PU	
	Z0 Impedance:	0.3214 + J 0.1312		Ohms/1000 ft			11.14 + J 4.55	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0290	B-B7-EQD	B-B7-EQ1	1	208	45.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		10.61 + J 5.54	PU				
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		33.43 + J 13.65	PU				
CBL-0291	B-B7-EQD	B-B7-MCC-1	1	208	15.0	FEET	4	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft		11.13 + J 2.19	PU				
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft		35.07 + J 5.39	PU				
CBL-0292	B-B7-EQD	B-B7-EQ4	1	208	32.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		9.47 + J 3.99	PU				
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		29.84 + J 9.83	PU				
CBL-0293	B-B7-MDP	B-B7-LP3-M	1	208	91.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		13.46 + J 10.45	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		42.42 + J 25.75	PU				
CBL-0294	B-B7-LP3-M	B-B7-LP3	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0295	B-B7-LP3-M	B-B7-LP6-M	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		2.96 + J 2.30	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		9.32 + J 5.66	PU				
CBL-0296	B-B7-LP6-M	B-B7-LP6	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0297	B-B7-MDP	B-B7-LP5-M	1	208	91.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		13.46 + J 10.45	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		42.42 + J 25.75	PU				
CBL-0298	B-B7-LP5-M	B-B7-LP5	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0299	B-B7-LP5-M	B-B7-LP8-M	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.96 + J 2.30	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				9.32 + J 5.66	PU		
CBL-0300	B-B7-LP8-M	B-B7-LP8	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0301	B-B7-MDP	BUS-0344	1	208	30.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				4.44 + J 3.45	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				13.99 + J 8.49	PU		
CBL-0302	B-B7-ATS-LS	B-B7-LSD-M	1	208	5.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				0.7396 + J 0.5744	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				2.33 + J 1.41	PU		
CBL-0303	B-B7-LSD-M	B-B7-LSD	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU		
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU		
CBL-0304	B-B7-LSD	B-B7-LS5	1	208	34.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				10.06 + J 4.24	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				31.70 + J 10.44	PU		
CBL-0305	B-B7-LSD	B-B7-LS4	1	208	67.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				19.82 + J 8.36	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				62.47 + J 20.58	PU		
CBL-0306	B-B7-LSD	B-B7-LS1	1	208	60.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				17.75 + J 7.49	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				55.94 + J 18.43	PU		
CBL-0307	B-B7-LSD	B-B7-LS2	1	208	20.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				9.34 + J 2.70	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				29.43 + J 6.66	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0308	B-B7-MDP	B-B7-LP4-M	1	208	42.0	FEET	250	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft		5.36 + J 4.81	PU				
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft		16.88 + J 11.83	PU				
CBL-0309	B-B7-LP4-M	B-B7-LP4	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0310	B-B7-LP4-M	B-B7-LP7-M	1	208	20.0	FEET	250	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft		2.55 + J 2.29	PU				
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft		8.04 + J 5.64	PU				
CBL-0311	B-B7-LP7-M	B-B7-LP7	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0312	B-B7-MDP	B-B7-SRTLGHT-M	1	208	30.0	FEET	4	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft		22.26 + J 4.38	PU				
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft		70.15 + J 10.79	PU				
CBL-0313	B-B7-SRTLGHT-M	B-B7-STRT LGHT	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0314	B-B7-MDP	B-B7-LP2-M	1	208	42.0	FEET	250	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft		5.36 + J 4.81	PU				
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft		16.88 + J 11.83	PU				
CBL-0315	B-B7-LP2-M	B-B7-LP2	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0316	B-B7-MDP	BUS-0360	1	208	100.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		29.59 + J 12.48	PU				
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		93.24 + J 30.72	PU				

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE		TYPE		
CBL-0317	B-B7-MDP	B-B7-MCC-2	1	208	15.0	FEET	4		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.3210 + J 0.0632		Ohms/1000 ft			11.13 + J	2.19	PU		
	Z0 Impedance:	1.01 + J 0.1556		Ohms/1000 ft			35.07 + J	5.39	PU		
CBL-0318	B-T-B8-SEC	B-B8-208V-MAIN	2	208	30.0	FEET	750		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.0216 + J 0.0445		Ohms/1000 ft			0.7489 + J	1.54	PU		
	Z0 Impedance:	0.0680 + J 0.1095		Ohms/1000 ft			2.36 + J	3.80	PU		
CBL-0319	B-B8-208V-MAIN	B-B8-MAIN BUS	2	208	7.0	FEET	750		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.0216 + J 0.0445		Ohms/1000 ft			0.1747 + J	0.3600	PU		
	Z0 Impedance:	0.0680 + J 0.1095		Ohms/1000 ft			0.5501 + J	0.8858	PU		
CBL-0320	B-B8-MAIN BUS	B-B8-MDP-8	2	208	5.0	FEET	750		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.0216 + J 0.0445		Ohms/1000 ft			0.1248 + J	0.2571	PU		
	Z0 Impedance:	0.0680 + J 0.1095		Ohms/1000 ft			0.3929 + J	0.6327	PU		
CBL-0321	B-B8-MDP-8	B-B8-L8B	1	208	75.0	FEET	2		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			35.02 + J	10.14	PU		
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			110.36 + J	24.96	PU		
CBL-0322	B-B8-MDP-8	B-B8 2ND FLR	1	208	50.0	FEET	500		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466		Ohms/1000 ft			3.40 + J	5.39	PU		
	Z0 Impedance:	0.0926 + J 0.1147		Ohms/1000 ft			10.70 + J	13.26	PU		
CBL-0323	B-B8-MDP-8	B-B8-BS	1	208	140.0	FEET	2		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			65.37 + J	18.93	PU		
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			206.00 + J	46.60	PU		
CBL-0324	B-B8-MDP-8	B-B8-PNL-PK	1	208	26.0	FEET	3/0		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			4.84 + J	3.12	PU		
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			15.25 + J	7.68	PU		
CBL-0325	B-B8-MDP-8	B-B8-LB1	1	208	130.0	FEET	4/0		Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC		Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			19.23 + J	14.93	PU		
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			60.61 + J	36.78	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0326	B-B8-LB1	B-B8-LB2	1	208	15.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			2.22 + J 1.72	PU		
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			6.99 + J 4.24	PU		
CBL-0327	B-B8-MAIN BUS	B-B8-PP1-M	2	208	15.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			1.11 + J 0.8616	PU		
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			3.50 + J 2.12	PU		
CBL-0328	B-B8-PP1-M	B-B8-PP1	1	208	1.000	FEET	600	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0202 + J 0.0170		Ohms/1000 ft			0.0467 + J 0.0393	PU		
	Z0 Impedance:	0.1201 + J 0.0910		Ohms/1000 ft			0.2776 + J 0.2103	PU		
CBL-0329	B-B8-MAIN BUS	B-B8-SYLV	1	208	20.0	FEET	400	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0356 + J 0.0490		Ohms/1000 ft			1.65 + J 2.27	PU		
	Z0 Impedance:	0.1122 + J 0.1206		Ohms/1000 ft			5.19 + J 5.58	PU		
CBL-0330	B-B8-SYLV	BUS-0375	1	208	5.0	FEET	3/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			0.9303 + J 0.5998	PU		
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			2.93 + J 1.48	PU		
CBL-0331	B-B8-SYLV	BUS-0376	1	208	6.0	FEET	3/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			1.12 + J 0.7198	PU		
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			3.52 + J 1.77	PU		
CBL-0332	B-T-B8-2-SEC	B-B8-GE BKR	1	480	45.0	FEET	350	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0378 + J 0.0491		Ohms/1000 ft			0.7383 + J 0.9590	PU		
	Z0 Impedance:	0.1191 + J 0.1209		Ohms/1000 ft			2.33 + J 2.36	PU		
CBL-0333	B-B8-GE BKR	BUS-0380	1	480	8.0	FEET	350	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0378 + J 0.0491		Ohms/1000 ft			0.1313 + J 0.1705	PU		
	Z0 Impedance:	0.1191 + J 0.1209		Ohms/1000 ft			0.4135 + J 0.4198	PU		
CBL-0334	B-B8-480V ATS	B-B8-480V PNL	1	480	10.0	FEET	350	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0378 + J 0.0491		Ohms/1000 ft			0.1641 + J 0.2131	PU		
	Z0 Impedance:	0.1191 + J 0.1209		Ohms/1000 ft			0.5169 + J 0.5247	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0335	B-B8-480V PNL	B-B8-FLEXPMACH	1	480	85.0	FEET	8	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.8110 + J 0.0754	Ohms/1000 ft			29.92 + J 2.78	PU			
	Z0 Impedance:	2.56 + J 0.1856	Ohms/1000 ft			94.29 + J 6.85	PU			
CBL-0336	B-B8-480V PNL	B-B8 HYDRO ELV	1	480	150.0	FEET	4	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft			20.90 + J 4.11	PU			
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft			65.86 + J 10.13	PU			
CBL-0337	B-B8-480V PNL	B-B8-TXMR PRI	1	480	7.0	FEET	3/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0805 + J 0.0397	Ohms/1000 ft			0.2446 + J 0.1206	PU			
	Z0 Impedance:	0.2537 + J 0.0978	Ohms/1000 ft			0.7708 + J 0.2971	PU			
CBL-0338	B-B8-TXMR SEC	B-B8-CMOP	1	208	50.0	FEET	3/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft			9.30 + J 6.00	PU			
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft			29.32 + J 14.77	PU			
CBL-0339	B-B8-TXMR SEC	B-B8-FDR	1	208	25.0	FEET	350	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0378 + J 0.0491	Ohms/1000 ft			2.18 + J 2.84	PU			
	Z0 Impedance:	0.1191 + J 0.1209	Ohms/1000 ft			6.88 + J 6.99	PU			
CBL-0340	B-B8-FDR	B-B8-J-BOX	1	208	30.0	FEET	350	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0378 + J 0.0491	Ohms/1000 ft			2.62 + J 3.40	PU			
	Z0 Impedance:	0.1191 + J 0.1209	Ohms/1000 ft			8.26 + J 8.38	PU			
CBL-0341	B-B8-480V PNL	B-B8-COMP	1	480	120.0	FEET	8	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.8110 + J 0.0754	Ohms/1000 ft			42.24 + J 3.93	PU			
	Z0 Impedance:	2.56 + J 0.1856	Ohms/1000 ft			133.12 + J 9.67	PU			
CBL-0342	B-T-B9-SEC	B-B9-MAIN	2	208	40.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft			1.36 + J 2.15	PU			
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft			4.28 + J 5.30	PU			
CBL-0343	B-B9-MAIN	B-B9-MDP	2	208	20.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft			0.6795 + J 1.08	PU			
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft			2.14 + J 2.65	PU			

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0344	B-B9-MDP	B-B9-*PNLZZ	1	208	50.0	FEET	750	Aluminum	
	Duct Material: Magnetic		Insulation Type:				XLPE	Insulation Class:	USE-2
	+/- Impedance: 0.0329 + J 0.0377 Ohms/1000 ft						3.80 + J 4.36 PU		
	Z0 Impedance: 0.0750 + J 0.1085 Ohms/1000 ft						8.67 + J 12.54 PU		
CBL-0345	B-B9-MDP	B-B9-*PNLYY	1	208	50.0	FEET	1/0	Aluminum	
	Duct Material: Magnetic		Insulation Type:				XLPE	Insulation Class:	USE-2
	+/- Impedance: 0.2001 + J 0.0434 Ohms/1000 ft						23.13 + J 5.02 PU		
	Z0 Impedance: 0.4271 + J 0.1246 Ohms/1000 ft						49.36 + J 14.40 PU		
CBL-0346	B-B9-MDP	B-B9-*PNLXX	1	208	50.0	FEET	2/0	Aluminum	
	Duct Material: Magnetic		Insulation Type:				XLPE	Insulation Class:	USE-2
	+/- Impedance: 0.1585 + J 0.0421 Ohms/1000 ft						18.32 + J 4.87 PU		
	Z0 Impedance: 0.3421 + J 0.1209 Ohms/1000 ft						39.54 + J 13.97 PU		
CBL-0347	B-B9-MDP	B-B9-L91A-M	1	208	225.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						53.05 + J 27.72 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						167.15 + J 68.23 PU		
CBL-0348	B-B9-L91A-M	B-B9-L91A	1	208	1.000	FEET	225	Copper	
	Duct Material: Busway		Insulation Type:				Epoxy	Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft						0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft						0.5841 + J 0.3996 PU		
CBL-0349	B-B9-MDP	B-B9-L9A	1	208	100.0	FEET	4/0	Aluminum	
	Duct Material: Magnetic		Insulation Type:				XLPE	Insulation Class:	USE-2
	+/- Impedance: 0.1016 + J 0.0401 Ohms/1000 ft						23.48 + J 9.27 PU		
	Z0 Impedance: 0.2230 + J 0.1152 Ohms/1000 ft						51.54 + J 26.63 PU		
CBL-0351	B-B9-MDP	B-B9-L9B	1	208	30.0	FEET	4/0	Aluminum	
	Duct Material: Magnetic		Insulation Type:				XLPE	Insulation Class:	USE-2
	+/- Impedance: 0.1016 + J 0.0401 Ohms/1000 ft						7.05 + J 2.78 PU		
	Z0 Impedance: 0.2230 + J 0.1152 Ohms/1000 ft						15.46 + J 7.99 PU		
CBL-0352	B-B9-MDP	B-B9-L92	1	208	95.0	FEET	1/0	Aluminum	
	Duct Material: Magnetic		Insulation Type:				XLPE	Insulation Class:	USE-2
	+/- Impedance: 0.2001 + J 0.0434 Ohms/1000 ft						43.94 + J 9.53 PU		
	Z0 Impedance: 0.4271 + J 0.1246 Ohms/1000 ft						93.78 + J 27.36 PU		
CBL-0353	B-B9-MDP	B-B9-STRT LGHT	1	208	30.0	FEET	6	Copper	
	Duct Material: Magnetic		Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance: 0.5100 + J 0.0685 Ohms/1000 ft						35.36 + J 4.75 PU		
	Z0 Impedance: 1.61 + J 0.1687 Ohms/1000 ft						111.45 + J 11.70 PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0354	B-B9-MDP	B-B9-TAP	1	208	20.0	FEET	4/0	Aluminum	
	Duct Material:	Magnetic	Insulation Type:				XLPE	Insulation Class:	USE-2
	+/- Impedance:	0.1016 + J 0.0401	Ohms/1000 ft				4.70 + J 1.85	PU	
	Z0 Impedance:	0.2230 + J 0.1152	Ohms/1000 ft				10.31 + J 5.33	PU	
CBL-0355	B-B9-TAP	B-B9-LPS	1	208	60.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				28.01 + J 8.11	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				88.29 + J 19.97	PU	
CBL-0356	B-B9-TAP	B-B9-LPN	1	208	225.0	FEET	1	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				83.21 + J 29.64	PU	
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				262.22 + J 72.96	PU	
CBL-0357	B-B9-MDP	B-B9-ATS BKR	1	208	12.0	FEET	400	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				0.9874 + J 1.36	PU	
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				3.11 + J 3.35	PU	
CBL-0358	B-B9-ATS BKR	B-B9-EM	1	208	4.0	FEET	250	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft				0.5104 + J 0.4577	PU	
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft				1.61 + J 1.13	PU	
CBL-0359	B-T-B10-SEC	B-B10 DISC	1	208	20.0	FEET	250	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft				2.55 + J 2.29	PU	
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft				8.04 + J 5.64	PU	
CBL-0360	B-B10 DISC	B-B10-MDP	1	208	25.0	FEET	250	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft				3.19 + J 2.86	PU	
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft				10.05 + J 7.04	PU	
CBL-0361	B-T-B12-SEC	B-B12-MAP-M	1	208	45.0	FEET	400	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				3.70 + J 5.10	PU	
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				11.67 + J 12.54	PU	
CBL-0362	B-B12-MAP-M	B-B12-MDP	1	208	1.000	FEET	400	Copper	
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft				0.0673 + J 0.0696	PU	
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft				0.3999 + J 0.3724	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0363	B-B13-TXMR SEC	B-B13-MDP-M	1	240	60.0	FEET	400	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				3.71 + J 5.10	PU		
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				11.69 + J 12.56	PU		
CBL-0364	B-B13-MDP-M	B-B13-MDP	1	240	1.000	FEET	1000	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0142 + J 0.0066	Ohms/1000 ft				0.0247 + J 0.0115	PU		
	Z0 Impedance:	0.0844 + J 0.0353	Ohms/1000 ft				0.1465 + J 0.0613	PU		
CBL-0365	B-B13-MDP	B-B13-GARAGE	1	240	150.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				20.96 + J 13.52	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				66.07 + J 33.28	PU		
CBL-0366	B-B13-MDP	B-B13-MGR H16	1	240	420.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				58.70 + J 37.84	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				184.99 + J 93.19	PU		
CBL-0367	B-B13-MDP	B-B13-APT-15	1	240	270.0	FEET	600	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0257 + J 0.0463	Ohms/1000 ft				12.05 + J 21.70	PU		
	Z0 Impedance:	0.0809 + J 0.1140	Ohms/1000 ft				37.92 + J 53.44	PU		
CBL-0368	B-B13-MDP	B-B13-APT-14	1	240	135.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				6.89 + J 10.92	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				21.70 + J 26.88	PU		
CBL-0369	B-B13-MDP	B-B13-APT-13	1	240	50.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				11.11 + J 4.69	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				35.02 + J 11.54	PU		
CBL-0370	B-B13-MDP	B-B13-UNKNOWN	1	240	50.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				11.11 + J 4.69	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				35.02 + J 11.54	PU		
CBL-0371	B-T-B17-SEC	B-B17-MAIN	2	208	40.0	FEET	300	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0464 + J 0.0493	Ohms/1000 ft				2.14 + J 2.28	PU		
	Z0 Impedance:	0.1462 + J 0.1214	Ohms/1000 ft				6.76 + J 5.61	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0372	B-B17-MAIN	B-B17-EMAIN	1	208	3.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				0.8876 + J 0.3744	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				2.80 + J 0.9216	PU	
CBL-0373	B-B17-MAIN	B-B17-DP	2	208	85.0	FEET	300	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0464 + J 0.0493	Ohms/1000 ft				4.56 + J 4.84	PU	
	Z0 Impedance:	0.1462 + J 0.1214	Ohms/1000 ft				14.36 + J 11.93	PU	
CBL-0374	B-B17-ATS	B-B17-EMERG	1	208	4.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				1.18 + J 0.4993	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				3.73 + J 1.23	PU	
CBL-0375	B-B17-EMERG	B-B17-NEB2	1	208	30.0	FEET	4	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft				22.26 + J 4.38	PU	
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft				70.15 + J 10.79	PU	
CBL-0376	B-B17-EMERG	B-B17-NEB1	1	208	90.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				42.02 + J 12.17	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				132.43 + J 29.96	PU	
CBL-0377	B-B17-EMERG	B-B17-ANIMALRM	1	208	75.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				35.02 + J 10.14	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				110.36 + J 24.96	PU	
CBL-0378	B-B17-DP	B-B17-NP11	1	208	20.0	FEET	6	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.5100 + J 0.0685	Ohms/1000 ft				23.58 + J 3.17	PU	
	Z0 Impedance:	1.61 + J 0.1687	Ohms/1000 ft				74.30 + J 7.80	PU	
CBL-0379	B-B17-DP	B-B17-NP21	1	208	20.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				9.34 + J 2.70	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				29.43 + J 6.66	PU	
CBL-0380	B-B17-DP	B-B17-ACB	1	208	20.0	FEET	4	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft				14.84 + J 2.92	PU	
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft				46.76 + J 7.19	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0381	B-B17-DP	B-B17-AC1	1	208	20.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				9.34 + J 2.70	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				29.43 + J 6.66	PU	
CBL-0382	B-B17-DP	B-B17-NPA1	1	208	20.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				9.34 + J 2.70	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				29.43 + J 6.66	PU	
CBL-0383	B-B17-DP	B-B17-NP12	1	208	20.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				3.72 + J 2.40	PU	
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				11.73 + J 5.91	PU	
CBL-0384	B-B17-DP	B-B17-A/C	1	208	20.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.96 + J 2.30	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				9.32 + J 5.66	PU	
CBL-0385	B-B17-DP	B-B17-NPB2	1	208	20.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				9.34 + J 2.70	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				29.43 + J 6.66	PU	
CBL-0386	B-B17-DP	B-B17-A/C-2	1	208	20.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				9.34 + J 2.70	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				29.43 + J 6.66	PU	
CBL-0387	B-B17-DP	B-B17-NP22	1	208	20.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				9.34 + J 2.70	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				29.43 + J 6.66	PU	
CBL-0388	B-B17-DP	B-B17-NPB1	1	208	20.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.72 + J 2.46	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				14.86 + J 6.07	PU	
CBL-0390	B-T-B18-SEC	B-B18-NMDP-M	2	208	35.0	FEET	400	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				1.44 + J 1.98	PU	
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				4.54 + J 4.88	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0391	B-B18-NMDP-M	B-B18-NMDP	1	208	1.000	FEET	600	Copper		
	Duct Material: Busway			Insulation Type:		Epoxy		Insulation Class:		Class B
	+/- Impedance:	0.0202 + J 0.0170	Ohms/1000 ft			0.0467 + J 0.0393	PU			
	Z0 Impedance:	0.1201 + J 0.0910	Ohms/1000 ft			0.2776 + J 0.2103	PU			
CBL-0392	B-B18-NMDP	B-B18-NP11	1	208	25.0	FEET	4	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft			18.55 + J 3.65	PU			
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft			58.46 + J 8.99	PU			
CBL-0393	B-B18-NMDP	B-B18-AC1	1	208	25.0	FEET	4	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft			18.55 + J 3.65	PU			
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft			58.46 + J 8.99	PU			
CBL-0394	B-B18-NMDP	B-B18-NCP	1	208	8.0	FEET	2	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft			3.74 + J 1.08	PU			
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft			11.77 + J 2.66	PU			
CBL-0395	B-B18-NMDP	B-B18-NP22	1	208	30.0	FEET	1/0	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft			8.88 + J 3.74	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft			27.97 + J 9.22	PU			
CBL-0396	B-B18-NMDP	B-B18-NP23	1	208	25.0	FEET	3/0	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft			4.65 + J 3.00	PU			
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft			14.66 + J 7.38	PU			
CBL-0397	B-B18-NMDP	B-B18-NP12	1	208	25.0	FEET	4	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft			18.55 + J 3.65	PU			
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft			58.46 + J 8.99	PU			
CBL-0398	B-B18-NMDP	B-B18-NP21	1	208	20.0	FEET	4	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft			14.84 + J 2.92	PU			
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft			46.76 + J 7.19	PU			
CBL-0399	B-B18-NMDP	BUS-0452	1	208	25.0	FEET	2	Copper		
	Duct Material: Magnetic			Insulation Type:		PVC		Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft			11.67 + J 3.38	PU			
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft			36.79 + J 8.32	PU			

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0400	B-B18-ATS-EMRG	B-B18-TAP BOX	1	208	8.0	FEET	1/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				2.37 + J 0.9985	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				7.46 + J 2.46	PU	
CBL-0401	B-B18-TAP BOX	B-B18-2ND-FL-M	1	208	3.0	FEET	2	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				1.40 + J 0.4056	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				4.41 + J 0.9985	PU	
CBL-0402	B-B18-2ND-FL-M	B-B18-2NDFL	1	208	40.0	FEET	2	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				18.68 + J 5.41	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				58.86 + J 13.31	PU	
CBL-0403	B-B18-TAP BOX	B-B18-1STFL-M	1	208	3.0	FEET	2	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				1.40 + J 0.4056	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				4.41 + J 0.9985	PU	
CBL-0404	B-B18-1STFL-M	B-B18-1STFL	1	208	20.0	FEET	2	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				9.34 + J 2.70	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				29.43 + J 6.66	PU	
CBL-0405	B-B18-TAP BOX	B-B18-EMERG-M	1	208	4.0	FEET	2	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				1.87 + J 0.5409	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				5.89 + J 1.33	PU	
CBL-0406	B-B18-EMERG-M	B-B18-EMERG	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU	
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU	
CBL-0407	B-B18-NMDP	B-B18-AC2	1	208	25.0	FEET	2/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				5.89 + J 3.08	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				18.57 + J 7.58	PU	
CBL-0408	B-B18-NMDP	B-B18-STRT LHT	1	208	35.0	FEET	6	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.5100 + J 0.0685	Ohms/1000 ft				41.26 + J 5.54	PU	
	Z0 Impedance:	1.61 + J 0.1687	Ohms/1000 ft				130.02 + J 13.65	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0410	B-T-B19-SEC	B-B19-MDP1-M	3	208	40.0	FEET	500	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft						0.9061 + J 1.44 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft						2.85 + J 3.53 PU		
CBL-0411	B-B19-MDP1-M	B-B19-MDP1	1	208	1.000	FEET	1200	Copper	
	Duct Material: Busway			Insulation Type:			Epoxy	Insulation Class:	Class B
	+/- Impedance: 0.0111 + J 0.0052 Ohms/1000 ft						0.0257 + J 0.0120 PU		
	Z0 Impedance: 0.0660 + J 0.0278 Ohms/1000 ft						0.1526 + J 0.0643 PU		
CBL-0412	B-B19-MDP1	B-B19-PS	1	208	100.0	FEET	2	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft						46.69 + J 13.52 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft						147.14 + J 33.28 PU		
CBL-0413	B-B19-MDP1	B-B19-L1	1	208	200.0	FEET	2	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft						93.38 + J 27.04 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft						294.29 + J 66.57 PU		
CBL-0414	B-B19-MDP1	B-B19-B1	1	208	15.0	FEET	1/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						4.44 + J 1.87 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						13.99 + J 4.61 PU		
CBL-0415	B-B19-MDP1	B-B19-L2	1	208	85.0	FEET	1/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						25.15 + J 10.61 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						79.26 + J 26.11 PU		
CBL-0416	B-B19-MDP1	B-B19-MDPA	1	208	100.0	FEET	500	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft						6.80 + J 10.77 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft						21.40 + J 26.51 PU		
CBL-0417	B-B19-MDP1	B-B19-P1	1	208	100.0	FEET	500	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft						6.80 + J 10.77 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft						21.40 + J 26.51 PU		
CBL-0418	B-B19-MDP1	B-B19-P4	1	208	15.0	FEET	3/0	Copper	
	Duct Material: Magnetic			Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft						2.79 + J 1.80 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft						8.80 + J 4.43 PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0419	B-B19-MDP1	B-B19-P2	1	208	85.0	FEET	3/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			15.82 + J 10.20		PU	
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			49.84 + J 25.11		PU	
CBL-0420	B-B19-MDPA	B-B19-P6	1	208	150.0	FEET	2	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			70.04 + J 20.28		PU	
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			220.71 + J 49.93		PU	
CBL-0421	B-T-B19-SEC	B-B19-MDP2-M	2	208	35.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466		Ohms/1000 ft			1.19 + J 1.88		PU	
	Z0 Impedance:	0.0926 + J 0.1147		Ohms/1000 ft			3.75 + J 4.64		PU	
CBL-0422	B-B19-MDP2-M	B-B19-MDP2	2	208	4.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466		Ohms/1000 ft			0.1359 + J 0.2154		PU	
	Z0 Impedance:	0.0926 + J 0.1147		Ohms/1000 ft			0.4281 + J 0.5302		PU	
CBL-0423	B-B19-MDP2	B-B21-P2	1	208	175.0	FEET	3/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			32.56 + J 20.99		PU	
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			102.62 + J 51.69		PU	
CBL-0424	B-B19-MDP2	B-B19-200A PNL	1	208	5.0	FEET	3/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			0.9303 + J 0.5998		PU	
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			2.93 + J 1.48		PU	
CBL-0425	B-B21-P2	B-B21-P1	1	208	80.0	FEET	2	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			37.35 + J 10.82		PU	
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			117.71 + J 26.63		PU	
CBL-0426	B-T-B22-SEC	B-B22-MDP-M	1	480	150.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466		Ohms/1000 ft			1.91 + J 3.03		PU	
	Z0 Impedance:	0.0926 + J 0.1147		Ohms/1000 ft			6.03 + J 7.47		PU	
CBL-0427	B-B22-MDP-M	B-B22-MDP	1	480	1.000	FEET	800	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0167 + J 0.0127		Ohms/1000 ft			0.0072 + J 0.0055		PU	
	Z0 Impedance:	0.0992 + J 0.0679		Ohms/1000 ft			0.0431 + J 0.0295		PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0428	B-B22-MDP	BUS-0481	1	480	50.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.6380 + J 1.01	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				2.01 + J 2.49	PU	
CBL-0429	B-B22-ATS-EMER	B-B22-EMERG-M	1	480	40.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.5104 + J 0.8090	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				1.61 + J 1.99	PU	
CBL-0430	B-B22-EMERG-M	B-B22-EMERG	1	480	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0184 + J 0.0140	PU	
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.1097 + J 0.0750	PU	
CBL-0431	B-B22-EMERG	B-B22-P1	1	480	25.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				0.6944 + J 0.5393	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				2.19 + J 1.33	PU	
CBL-0432	B-B22-EMERG	B-B22-P2	1	480	25.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				0.6944 + J 0.5393	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				2.19 + J 1.33	PU	
CBL-0433	B-B22-EMERG	B-B22-T2-PRI	1	480	10.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				0.5556 + J 0.2344	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				1.75 + J 0.5768	PU	
CBL-0434	B-B22-T2-SEC	B-B22-L3-M	1	208	15.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.22 + J 1.72	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				6.99 + J 4.24	PU	
CBL-0435	B-B22-L3-M	B-B22-L3	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU	
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU	
CBL-0436	B-B22-EMERG	B-B22-T3 PRI	1	480	15.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				0.8333 + J 0.3516	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				2.63 + J 0.8652	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0437	B-B22-T22-SEC	B-B22-L2-M	1	208	15.0	FEET	4/0	Copper		
	Duct Material: Magnetic			Insulation Type: PVC			Insulation Class: THHN			
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft			2.22 + J 1.72 PU						
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft			6.99 + J 4.24 PU						
CBL-0438	B-B22-L2-M	B-B22-L2	1	208	1.000	FEET	225	Copper		
	Duct Material: Busway			Insulation Type: Epoxy			Insulation Class: Class B			
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft			0.0982 + J 0.0747 PU						
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft			0.5841 + J 0.3996 PU						
CBL-0439	B-B22-EMERG	B-B22-T4-PRI	1	480	15.0	FEET	1/0	Copper		
	Duct Material: Magnetic			Insulation Type: PVC			Insulation Class: THHN			
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft			0.8333 + J 0.3516 PU						
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft			2.63 + J 0.8652 PU						
CBL-0440	B-B22-T4-SEC	B-B22-L1-M	1	208	15.0	FEET	4/0	Copper		
	Duct Material: Magnetic			Insulation Type: PVC			Insulation Class: THHN			
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft			2.22 + J 1.72 PU						
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft			6.99 + J 4.24 PU						
CBL-0441	B-B22-L1-M	B-B22-L1	1	208	1.000	FEET	225	Copper		
	Duct Material: Busway			Insulation Type: Epoxy			Insulation Class: Class B			
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft			0.0982 + J 0.0747 PU						
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft			0.5841 + J 0.3996 PU						
CBL-0442	B-B22-MDP	B-B22-T1-PRI	1	480	10.0	FEET	4/0	Copper		
	Duct Material: Magnetic			Insulation Type: PVC			Insulation Class: THHN			
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft			0.2778 + J 0.2157 PU						
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft			0.8754 + J 0.5313 PU						
CBL-0443	B-B22-T1-SEC	B-B22-N1-M	1	208	25.0	FEET	500	Copper		
	Duct Material: Magnetic			Insulation Type: PVC			Insulation Class: THHN			
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft			1.70 + J 2.69 PU						
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft			5.35 + J 6.63 PU						
CBL-0444	B-B22-N1-M	B-B22-N1	1	208	1.000	FEET	400	Copper		
	Duct Material: Busway			Insulation Type: Epoxy			Insulation Class: Class B			
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft			0.0673 + J 0.0696 PU						
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft			0.3999 + J 0.3724 PU						
CBL-0445	B-T-B33-SEC	B-B33-MDP-M	1	208	80.0	FEET	250	Copper		
	Duct Material: Magnetic			Insulation Type: PVC			Insulation Class: THHN			
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft			10.21 + J 9.15 PU						
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft			32.16 + J 22.54 PU						

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0446	B-B33-MDP-M	B-B33-MDP	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft			0.0673 + J 0.0696	PU			
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft			0.3999 + J 0.3724	PU			
CBL-0448	B-T-B60-SEC	B-B60-MDP-M	1	208	25.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft			1.70 + J 2.69	PU			
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft			5.35 + J 6.63	PU			
CBL-0449	B-B60-MDP-M	B-B60-MDP	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft			0.0673 + J 0.0696	PU			
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft			0.3999 + J 0.3724	PU			
CBL-0450	B-T-B61-SEC	B-B61-MDP-M	2	208	35.0	FEET	600	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0257 + J 0.0463	Ohms/1000 ft			1.04 + J 1.87	PU			
	Z0 Impedance:	0.0809 + J 0.1140	Ohms/1000 ft			3.27 + J 4.61	PU			
CBL-0451	B-B61-MDP-M	B-B61-MDP	1	208	1.000	FEET	800	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0167 + J 0.0127	Ohms/1000 ft			0.0386 + J 0.0294	PU			
	Z0 Impedance:	0.0992 + J 0.0679	Ohms/1000 ft			0.2293 + J 0.1569	PU			
CBL-0452	B-B61-MDP	B-B61-MCC	1	208	30.0	FEET	4	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft			22.26 + J 4.38	PU			
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft			70.15 + J 10.79	PU			
CBL-0453	B-B61-MDP	B-B61 STRT LGH	1	208	30.0	FEET	4	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft			22.26 + J 4.38	PU			
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft			70.15 + J 10.79	PU			
CBL-0454	B-B61-MDP	B-B61-LP1	1	208	160.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft			47.34 + J 19.97	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft			149.19 + J 49.15	PU			
CBL-0455	B-B61-MDP	B-B61-LP3	1	208	90.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft			13.31 + J 10.34	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft			41.96 + J 25.46	PU			

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0456	B-B61-MDP	B-B61-LP5	1	208	40.0	FEET	4	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft				29.68 + J 5.84	PU	
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft				93.53 + J 14.39	PU	
CBL-0457	B-B61-MDP	B-B61-DP	1	208	30.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				2.04 + J 3.23	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				6.42 + J 7.95	PU	
CBL-0458	B-B61-MDP	B-B61-LP2	1	208	160.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				47.34 + J 19.97	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				149.19 + J 49.15	PU	
CBL-0459	B-B61-MDP	B-B61-LP4	1	208	60.0	FEET	250	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft				7.66 + J 6.86	PU	
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft				24.12 + J 16.91	PU	
CBL-0460	B-B61-MDP	BUS-0518	1	208	25.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				3.70 + J 2.87	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				11.66 + J 7.07	PU	
CBL-0461	B-B61-MDP	BUS-0520	1	208	30.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				2.04 + J 3.23	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				6.42 + J 7.95	PU	
CBL-0462	B-B61-ATS-LSD	B-B61-LSD-M	1	208	7.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				1.04 + J 0.8041	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				3.26 + J 1.98	PU	
CBL-0463	B-B61-LSD-M	B-B61-LSD	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft				0.0982 + J 0.0747	PU	
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft				0.5841 + J 0.3996	PU	
CBL-0464	B-B61-LSD	B-B61-LS3	1	208	90.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				26.63 + J 11.23	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				83.92 + J 27.65	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0465	B-B61-LSD	B-B61-LS4	1	208	70.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				20.71 + J 8.74	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				65.27 + J 21.50	PU	
CBL-0466	B-B61-LSD	B-B61-LS5	1	208	90.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				26.63 + J 11.23	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				83.92 + J 27.65	PU	
CBL-0467	B-B61-LSD	B-B61-KITCHEN	1	208	40.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				5.92 + J 4.60	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				18.65 + J 11.32	PU	
CBL-0468	B-B61-LSD	B-B61-LS1	1	208	70.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				20.71 + J 8.74	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				65.27 + J 21.50	PU	
CBL-0469	B-B61-LSD	B-B61-LS2	1	208	26.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				12.14 + J 3.52	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				38.26 + J 8.65	PU	
CBL-0470	B-B61-ATS-EQD	B-B61-EQD	1	208	15.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				1.02 + J 1.62	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				3.21 + J 3.98	PU	
CBL-0472	B-B61-EQD	B-B61-ELEV	1	208	70.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				10.36 + J 8.04	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				32.63 + J 19.80	PU	
CBL-0473	B-B61-EQD	B-B61-EQ1	1	208	50.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				11.79 + J 6.16	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				37.14 + J 15.16	PU	
CBL-0474	B-B61-EQD	B-B61-EQ4	1	208	45.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				13.31 + J 5.62	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				41.96 + J 13.82	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0475	B-B61-EQD	B-B61-EQ2	1	208	15.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				3.54 + J 1.85	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				11.14 + J 4.55	PU		
CBL-0476	B-B61-EQD	B-B61-EQA	1	208	4.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				0.5917 + J 0.4595	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				1.86 + J 1.13	PU		
CBL-0477	B-B61-EQA	B-B61-COMP RM	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.96 + J 2.30	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				9.32 + J 5.66	PU		
CBL-0478	B-T-B62-SEC	B-B62-MDP-M	3	208	30.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.6795 + J 1.08	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				2.14 + J 2.65	PU		
CBL-0479	B-B62-MDP-M	B-B62-MDP	1	208	1.000	FEET	1200	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0111 + J 0.0052	Ohms/1000 ft				0.0257 + J 0.0120	PU		
	Z0 Impedance:	0.0660 + J 0.0278	Ohms/1000 ft				0.1526 + J 0.0643	PU		
CBL-0480	B-B62-MDP	B-B62-OT	1	208	35.0	FEET	1	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				12.94 + J 4.61	PU		
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				40.79 + J 11.35	PU		
CBL-0481	B-B62-MDP	B-B62-BP	1	208	35.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				10.36 + J 4.37	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				32.63 + J 10.75	PU		
CBL-0482	B-B62-MDP	B-B62-STRT LGT	1	208	25.0	FEET	4	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft				18.55 + J 3.65	PU		
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft				58.46 + J 8.99	PU		
CBL-0483	B-B62-MDP	B-B62-A	1	208	40.0	FEET	3/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				7.44 + J 4.80	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				23.46 + J 11.82	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0484	B-B62-MDP	B-B62-LP3	1	208	44.0	FEET	4/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			6.51 + J 5.05	PU	
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			20.51 + J 12.45	PU	
CBL-0485	B-B62-MDP	BUS-0546	1	208	20.0	FEET	4/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			2.96 + J 2.30	PU	
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			9.32 + J 5.66	PU	
CBL-0486	B-B62-MDP	B-B62-BL	1	208	45.0	FEET	1	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.1600 + J 0.0570		Ohms/1000 ft			16.64 + J 5.93	PU	
	Z0 Impedance:	0.5042 + J 0.1403		Ohms/1000 ft			52.44 + J 14.59	PU	
CBL-0487	B-B62-MDP	B-B62-KP	1	208	40.0	FEET	2/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533		Ohms/1000 ft			9.43 + J 4.93	PU	
	Z0 Impedance:	0.3214 + J 0.1312		Ohms/1000 ft			29.72 + J 12.13	PU	
CBL-0488	B-B62-MDP	B-B62-LP1	1	208	32.0	FEET	1/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540		Ohms/1000 ft			9.47 + J 3.99	PU	
	Z0 Impedance:	0.4034 + J 0.1329		Ohms/1000 ft			29.84 + J 9.83	PU	
CBL-0489	B-B62-MDP	B-B62-LP2	1	208	40.0	FEET	2/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533		Ohms/1000 ft			9.43 + J 4.93	PU	
	Z0 Impedance:	0.3214 + J 0.1312		Ohms/1000 ft			29.72 + J 12.13	PU	
CBL-0490	B-B62-MDP	B-B62-B	1	208	35.0	FEET	3/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			6.51 + J 4.20	PU	
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			20.52 + J 10.34	PU	
CBL-0491	B-B62-MDP	B-B62-LP4	1	208	40.0	FEET	4/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			5.92 + J 4.60	PU	
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			18.65 + J 11.32	PU	
CBL-0492	B-B62-MDP	BUS-0554	1	208	20.0	FEET	4/0	Copper	
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			2.96 + J 2.30	PU	
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			9.32 + J 5.66	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0493	B-B62-ATS-EQD	B-B62-EQD	1	208	15.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			2.22 + J 1.72		PU	
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			6.99 + J 4.24		PU	
CBL-0494	B-B62-EQD	B-B62-ELEV-1	1	208	45.0	FEET	2/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533		Ohms/1000 ft			10.61 + J 5.54		PU	
	Z0 Impedance:	0.3214 + J 0.1312		Ohms/1000 ft			33.43 + J 13.65		PU	
CBL-0495	B-B62-EQD	B-B62-ATTC PNL	1	208	45.0	FEET	2/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533		Ohms/1000 ft			10.61 + J 5.54		PU	
	Z0 Impedance:	0.3214 + J 0.1312		Ohms/1000 ft			33.43 + J 13.65		PU	
CBL-0496	B-B62-EQD	B-B62-EQ	1	208	5.0	FEET	2	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			2.33 + J 0.6761		PU	
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			7.36 + J 1.66		PU	
CBL-0497	B-B62-EQD	B-B62-ELEV-2	1	208	45.0	FEET	2/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533		Ohms/1000 ft			10.61 + J 5.54		PU	
	Z0 Impedance:	0.3214 + J 0.1312		Ohms/1000 ft			33.43 + J 13.65		PU	
CBL-0498	B-B62-EQD	B-B62-PAD RM	1	208	16.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540		Ohms/1000 ft			4.73 + J 2.00		PU	
	Z0 Impedance:	0.4034 + J 0.1329		Ohms/1000 ft			14.92 + J 4.91		PU	
CBL-0499	B-B62-ATS-LSD	B-B62-LSD-M	1	208	15.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			2.22 + J 1.72		PU	
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			6.99 + J 4.24		PU	
CBL-0500	B-B62-LSD-M	B-B62-LSD	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0425 + J 0.0323		Ohms/1000 ft			0.0982 + J 0.0747		PU	
	Z0 Impedance:	0.2527 + J 0.1729		Ohms/1000 ft			0.5841 + J 0.3996		PU	
CBL-0501	B-B62-LSD	B-B62-LS3	1	208	58.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540		Ohms/1000 ft			17.16 + J 7.24		PU	
	Z0 Impedance:	0.4034 + J 0.1329		Ohms/1000 ft			54.08 + J 17.82		PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0502	B-B62-LSD	B-B62-LS4	1	208	32.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540		Ohms/1000 ft			9.47 + J 3.99	PU		
	Z0 Impedance:	0.4034 + J 0.1329		Ohms/1000 ft			29.84 + J 9.83	PU		
CBL-0503	B-B62-LSD	B-B62-LS1	1	208	54.0	FEET	2	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			25.21 + J 7.30	PU		
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			79.46 + J 17.97	PU		
CBL-0504	B-B62-LSD	B-B62-LS2	1	208	24.0	FEET	2	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			11.21 + J 3.25	PU		
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			35.31 + J 7.99	PU		
CBL-0505	B-T-B70-SEC	B-B70-MDP-M	2	208	65.0	FEET	600	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0257 + J 0.0463		Ohms/1000 ft			1.93 + J 3.48	PU		
	Z0 Impedance:	0.0809 + J 0.1140		Ohms/1000 ft			6.08 + J 8.56	PU		
CBL-0506	B-T-B70-SEC	B-B70-FP-TAP	1	208	35.0	FEET	600	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0257 + J 0.0463		Ohms/1000 ft			2.08 + J 3.75	PU		
	Z0 Impedance:	0.0809 + J 0.1140		Ohms/1000 ft			6.54 + J 9.22	PU		
CBL-0507	B-B70-FP-TAP	B-B70-FPMP M	1	208	15.0	FEET	350	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0378 + J 0.0373		Ohms/1000 ft			1.31 + J 1.29	PU		
	Z0 Impedance:	0.1191 + J 0.0918		Ohms/1000 ft			4.13 + J 3.18	PU		
CBL-0508	B-B70-FPMP M	B-B70-FIRE PMP	1	208	60.0	FEET	6	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.5100 + J 0.0685		Ohms/1000 ft			70.73 + J 9.50	PU		
	Z0 Impedance:	1.61 + J 0.1687		Ohms/1000 ft			222.89 + J 23.40	PU		
CBL-0509	B-B70-MDP-M	B-B70-MDP	1	208	1.000	FEET	800	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0167 + J 0.0127		Ohms/1000 ft			0.0386 + J 0.0294	PU		
	Z0 Impedance:	0.0992 + J 0.0679		Ohms/1000 ft			0.2293 + J 0.1569	PU		
CBL-0510	B-B70-MDP	B-B70-STRTLGHT	1	208	30.0	FEET	4	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.3210 + J 0.0632		Ohms/1000 ft			22.26 + J 4.38	PU		
	Z0 Impedance:	1.01 + J 0.1556		Ohms/1000 ft			70.15 + J 10.79	PU		

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0511	B-B70-MDP	B0B70-LP2	1	208	115.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				34.02 + J 14.35	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				107.23 + J 35.33	PU	
CBL-0512	B-B70-MDP	B-B70-ATTIC	1	208	60.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				17.75 + J 7.49	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				55.94 + J 18.43	PU	
CBL-0513	B-B70-MDP	B-B70-A	1	208	45.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				13.31 + J 5.62	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				41.96 + J 13.82	PU	
CBL-0514	B-B70-MDP	B-B70-K	1	208	35.0	FEET	4	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft				25.97 + J 5.11	PU	
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft				81.84 + J 12.59	PU	
CBL-0515	B-B70-MDP	BUS-0581	1	208	20.0	FEET	250	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft				2.55 + J 2.29	PU	
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft				8.04 + J 5.64	PU	
CBL-0516	B-B70-MDP	B-B70-PP2	1	208	75.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				11.09 + J 8.62	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				34.97 + J 21.22	PU	
CBL-0517	B-B70-MDP	BUS-0582	1	208	15.0	FEET	400	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				1.23 + J 1.70	PU	
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				3.89 + J 4.18	PU	
CBL-0518	B-B70-MDP	B-B70 -BLDG-71	1	208	500.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				233.45 + J 67.61	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				735.72 + J 166.42	PU	
CBL-0519	B-B70-MDP	B-B70-LP1	1	208	85.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				25.15 + J 10.61	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				79.26 + J 26.11	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0520	B-B70-MDP	B-B70-LP3	1	208	115.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			17.01 + J 13.21	PU		
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			53.61 + J 32.54	PU		
CBL-0521	B-B70-MDP	B-B70-B	1	208	45.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540		Ohms/1000 ft			13.31 + J 5.62	PU		
	Z0 Impedance:	0.4034 + J 0.1329		Ohms/1000 ft			41.96 + J 13.82	PU		
CBL-0522	B-B70-MDP	B-B70-LP-4	1	208	160.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497		Ohms/1000 ft			23.67 + J 18.38	PU		
	Z0 Impedance:	0.2017 + J 0.1224		Ohms/1000 ft			74.59 + J 45.27	PU		
CBL-0524	B-B70-MDP	B-B70-CHLLR	1	208	200.0	FEET	350	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0378 + J 0.0491		Ohms/1000 ft			17.47 + J 22.70	PU		
	Z0 Impedance:	0.1191 + J 0.1209		Ohms/1000 ft			55.06 + J 55.89	PU		
CBL-0525	B-B70-MDP	B-B70-PP220	1	208	125.0	FEET	3/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519		Ohms/1000 ft			23.26 + J 15.00	PU		
	Z0 Impedance:	0.2537 + J 0.1278		Ohms/1000 ft			73.30 + J 36.92	PU		
CBL-0526	B-B70-ATS-EQD	B-B70-EQD-M	1	208	8.0	FEET	400	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0356 + J 0.0490		Ohms/1000 ft			0.6583 + J 0.9061	PU		
	Z0 Impedance:	0.1122 + J 0.1206		Ohms/1000 ft			2.07 + J 2.23	PU		
CBL-0527	B-B70-EQD-M	B-B70-EQD	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0291 + J 0.0301		Ohms/1000 ft			0.0673 + J 0.0696	PU		
	Z0 Impedance:	0.1730 + J 0.1611		Ohms/1000 ft			0.3999 + J 0.3724	PU		
CBL-0528	B-B70-EQD	B-B70-EQ1	1	208	85.0	FEET	2/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533		Ohms/1000 ft			20.04 + J 10.47	PU		
	Z0 Impedance:	0.3214 + J 0.1312		Ohms/1000 ft			63.14 + J 25.78	PU		
CBL-0529	B-B70-EQ1	B-B70-EQ3	1	208	15.0	FEET	2/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0533		Ohms/1000 ft			3.54 + J 1.85	PU		
	Z0 Impedance:	0.3214 + J 0.1312		Ohms/1000 ft			11.14 + J 4.55	PU		

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0530	B-B70-EQ3	B-B70-EQ5	1	208	15.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				3.54 + J 1.85	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				11.14 + J 4.55	PU	
CBL-0531	B-B70-EQD	B-B70-EQ2	1	208	130.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				30.65 + J 16.02	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				96.57 + J 39.42	PU	
CBL-0532	B-B70-EQ2	B-B70-EQ4	1	208	15.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				3.54 + J 1.85	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				11.14 + J 4.55	PU	
CBL-0533	B-B70-EQ4	B-B70-EQ6	1	208	15.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				3.54 + J 1.85	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				11.14 + J 4.55	PU	
CBL-0534	B-B70-LSD	B-B70-LS3	1	208	100.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				29.59 + J 12.48	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				93.24 + J 30.72	PU	
CBL-0535	B-B70-LS3	B-B70-LS5	1	208	15.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				4.44 + J 1.87	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				13.99 + J 4.61	PU	
CBL-0537	B-B70-LSD	B-B70-LS4	1	208	145.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				42.90 + J 18.10	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				135.20 + J 44.54	PU	
CBL-0538	B-B70-LS4	B-B70-LS6	1	208	15.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				4.44 + J 1.87	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				13.99 + J 4.61	PU	
CBL-0540	B-B70-ATS-LSD	B-B70-LSD-M	1	208	8.0	FEET	400	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				0.6583 + J 0.9061	PU	
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				2.07 + J 2.23	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0541	B-B70-LSD-M	B-B70-LSD	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0291 + J	0.0301	Ohms/1000 ft		0.0673 + J	0.0696	PU		
	Z0 Impedance:	0.1730 + J	0.1611	Ohms/1000 ft		0.3999 + J	0.3724	PU		
CBL-0542	B-B70-LSD	B-B70-LS1	1	208	85.0	FEET	2	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.2020 + J	0.0585	Ohms/1000 ft		39.69 + J	11.49	PU		
	Z0 Impedance:	0.6366 + J	0.1440	Ohms/1000 ft		125.07 + J	28.29	PU		
CBL-0543	B-B70-LSD	B-B70-LS2	1	208	115.0	FEET	2	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.2020 + J	0.0585	Ohms/1000 ft		53.69 + J	15.55	PU		
	Z0 Impedance:	0.6366 + J	0.1440	Ohms/1000 ft		169.21 + J	38.28	PU		
CBL-0544	B-B70 GEN-M	B-B70-EM-TAP	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0291 + J	0.0301	Ohms/1000 ft		0.0673 + J	0.0696	PU		
	Z0 Impedance:	0.1730 + J	0.1611	Ohms/1000 ft		0.3999 + J	0.3724	PU		
CBL-0545	B-B70-GEN	B-B70 GEN-M	1	208	7.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0294 + J	0.0466	Ohms/1000 ft		0.4757 + J	0.7540	PU		
	Z0 Impedance:	0.0926 + J	0.1147	Ohms/1000 ft		1.50 + J	1.86	PU		
CBL-0546	B-B70-EM-TAP	BUS-0612	1	208	30.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0294 + J	0.0466	Ohms/1000 ft		2.04 + J	3.23	PU		
	Z0 Impedance:	0.0926 + J	0.1147	Ohms/1000 ft		6.42 + J	7.95	PU		
CBL-0547	B-B70-EM-TAP	BUS-0613	1	208	30.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0640 + J	0.0497	Ohms/1000 ft		4.44 + J	3.45	PU		
	Z0 Impedance:	0.2017 + J	0.1224	Ohms/1000 ft		13.99 + J	8.49	PU		
CBL-0548	B-B70-EM-TAP	B-B70-FPMP M	1	208	25.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0294 + J	0.0466	Ohms/1000 ft		1.70 + J	2.69	PU		
	Z0 Impedance:	0.0926 + J	0.1147	Ohms/1000 ft		5.35 + J	6.63	PU		
CBL-0549	B-B78-MDP-M	B-B78-MDP	1	208	1.000	FEET	4000	Copper		
	Duct Material:	Busway		Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0033 + J	0.0019	Ohms/1000 ft		0.0076 + J	0.0044	PU		
	Z0 Impedance:	0.0196 + J	0.0101	Ohms/1000 ft		0.0453 + J	0.0233	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0550	B-T-B78-SEC	B-B78-MDP-M	1	208	5.0	FEET	4000	Copper	
	Duct Material: Busway			Insulation Type:		Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0033 + J 0.0019	Ohms/1000 ft			0.0381 + J 0.0220	PU		
	Z0 Impedance:	0.0196 + J 0.0101	Ohms/1000 ft			0.2265 + J 0.1167	PU		
CBL-0551	B-B78-MDP	B-B78-A/C	1	208	280.0	FEET	2/0	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0407	Ohms/1000 ft			66.01 + J 26.34	PU		
	Z0 Impedance:	0.3214 + J 0.1002	Ohms/1000 ft			208.01 + J 64.85	PU		
CBL-0552	B-B78-MDP	B-B78-ATS TAP	1	208	75.0	FEET	400	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.0356 + J 0.0371	Ohms/1000 ft			6.17 + J 6.43	PU		
	Z0 Impedance:	0.1122 + J 0.0913	Ohms/1000 ft			19.45 + J 15.83	PU		
CBL-0553	B-B78-ATS TAP	BUS-0618	1	208	10.0	FEET	3/0	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft			1.86 + J 1.20	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft			5.86 + J 2.95	PU		
CBL-0554	B-B78-ATS TAP	BUS-0620	1	208	25.0	FEET	250	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft			3.19 + J 2.86	PU		
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft			10.05 + J 7.04	PU		
CBL-0555	B-B78-ATSG9578	B-B78-78AE1	1	208	5.0	FEET	500	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft			0.3398 + J 0.5386	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft			1.07 + J 1.33	PU		
CBL-0556	B-B78-ATS-LS1	B-B78-LSD	1	208	5.0	FEET	4/0	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft			0.7396 + J 0.5744	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft			2.33 + J 1.41	PU		
CBL-0557	B-B78-MDP	B-B78-LP7	1	208	300.0	FEET	350	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.0378 + J 0.0373	Ohms/1000 ft			26.21 + J 25.86	PU		
	Z0 Impedance:	0.1191 + J 0.0918	Ohms/1000 ft			82.59 + J 63.66	PU		
CBL-0558	B-B78-LP7	B-B78-LP10	1	208	30.0	FEET	350	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.0378 + J 0.0491	Ohms/1000 ft			2.62 + J 3.40	PU		
	Z0 Impedance:	0.1191 + J 0.1209	Ohms/1000 ft			8.26 + J 8.38	PU		

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0559	B-B78-LP10	B-B78-LP13	1	208	30.0	FEET	350	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0378 + J 0.0491	Ohms/1000 ft				2.62 + J 3.40	PU	
	Z0 Impedance:	0.1191 + J 0.1209	Ohms/1000 ft				8.26 + J 8.38	PU	
CBL-0561	B-B78-MDP	B-B78-PULM 78B	1	208	75.0	FEET	400	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0356 + J 0.0371	Ohms/1000 ft				6.17 + J 6.43	PU	
	Z0 Impedance:	0.1122 + J 0.0913	Ohms/1000 ft				19.45 + J 15.83	PU	
CBL-0562	B-B78-MDP	B-B78-LP3	1	208	125.0	FEET	250	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0552 + J 0.0379	Ohms/1000 ft				15.95 + J 10.95	PU	
	Z0 Impedance:	0.1739 + J 0.0933	Ohms/1000 ft				50.24 + J 26.96	PU	
CBL-0563	B-B78-LP3	B-B78-LP6	1	208	30.0	FEET	250	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft				3.83 + J 3.43	PU	
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft				12.06 + J 8.45	PU	
CBL-0564	B-B78-MDP	B-B78-ELEV-1	1	208	75.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0381	Ohms/1000 ft				11.09 + J 6.60	PU	
	Z0 Impedance:	0.2017 + J 0.0938	Ohms/1000 ft				34.97 + J 16.26	PU	
CBL-0565	B-B78-MDP	B-B78-ELEV-2	1	208	75.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0381	Ohms/1000 ft				11.09 + J 6.60	PU	
	Z0 Impedance:	0.2017 + J 0.0938	Ohms/1000 ft				34.97 + J 16.26	PU	
CBL-0566	B-B78-MDP	B-B78-QP	1	208	75.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0407	Ohms/1000 ft				17.68 + J 7.06	PU	
	Z0 Impedance:	0.3214 + J 0.1002	Ohms/1000 ft				55.72 + J 17.37	PU	
CBL-0567	B-B78-MDP	B-B78-BARBER	1	208	75.0	FEET	6	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.5100 + J 0.0525	Ohms/1000 ft				88.41 + J 9.10	PU	
	Z0 Impedance:	1.61 + J 0.1293	Ohms/1000 ft				278.62 + J 22.41	PU	
CBL-0568	B-B78-MDP	B-B78-PHARM AC	1	208	75.0	FEET	6	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.5100 + J 0.0525	Ohms/1000 ft				88.41 + J 9.10	PU	
	Z0 Impedance:	1.61 + J 0.1293	Ohms/1000 ft				278.62 + J 22.41	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0569	B-B78-MDP	B-B78-L10	1	208	300.0	FEET	400	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0356 + J 0.0371	Ohms/1000 ft				24.69 + J 25.73	PU	
	Z0 Impedance:	0.1122 + J 0.0913	Ohms/1000 ft				77.80 + J 63.31	PU	
CBL-0571	B-B78-MDP	BUS-0730	1	208	275.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0349	Ohms/1000 ft				18.69 + J 22.18	PU	
	Z0 Impedance:	0.0926 + J 0.0859	Ohms/1000 ft				58.86 + J 54.60	PU	
CBL-0573	B-B78-MDP	B-B78-MEC-1 AC	1	208	300.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0349	Ohms/1000 ft				20.39 + J 24.20	PU	
	Z0 Impedance:	0.0926 + J 0.0859	Ohms/1000 ft				64.21 + J 59.56	PU	
CBL-0574	B-B78-MDP	B-B78-LP-1	1	208	250.0	FEET	250	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0552 + J 0.0379	Ohms/1000 ft				31.90 + J 21.90	PU	
	Z0 Impedance:	0.1739 + J 0.0933	Ohms/1000 ft				100.49 + J 53.91	PU	
CBL-0575	B-B78-MDP	B-B78-KK	1	208	175.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0397	Ohms/1000 ft				32.56 + J 16.06	PU	
	Z0 Impedance:	0.2537 + J 0.0978	Ohms/1000 ft				102.62 + J 39.56	PU	
CBL-0576	B-B78-MDP	B-B78-1P	1	208	250.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0381	Ohms/1000 ft				36.98 + J 22.02	PU	
	Z0 Impedance:	0.2017 + J 0.0938	Ohms/1000 ft				116.55 + J 54.20	PU	
CBL-0577	B-B78-MDP	B-B78-FLPNL	1	208	250.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0397	Ohms/1000 ft				46.52 + J 22.94	PU	
	Z0 Impedance:	0.2537 + J 0.0978	Ohms/1000 ft				146.60 + J 56.51	PU	
CBL-0578	B-B78-MDP	B-B78-PHV	1	208	250.0	FEET	1	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1600 + J 0.0436	Ohms/1000 ft				92.46 + J 25.19	PU	
	Z0 Impedance:	0.5042 + J 0.1073	Ohms/1000 ft				291.35 + J 62.00	PU	
CBL-0579	B-B78-MDP	B-B78A-PNL-2	1	208	75.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0381	Ohms/1000 ft				11.09 + J 6.60	PU	
	Z0 Impedance:	0.2017 + J 0.0938	Ohms/1000 ft				34.97 + J 16.26	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0580	B-B78-MDP	B-B78-LP-8	1	208	125.0	FEET	350	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0378 + J 0.0373	Ohms/1000 ft				10.92 + J 10.78	PU		
	Z0 Impedance:	0.1191 + J 0.0918	Ohms/1000 ft				34.41 + J 26.52	PU		
CBL-0581	B-B78-MDP	B-B78-MEC2-A/C	1	208	75.0	FEET	300	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0464 + J 0.0377	Ohms/1000 ft				8.04 + J 6.54	PU		
	Z0 Impedance:	0.1462 + J 0.0928	Ohms/1000 ft				25.34 + J 16.09	PU		
CBL-0582	B-B78-MDP	B-B78-LP-2	1	208	125.0	FEET	250	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0552 + J 0.0379	Ohms/1000 ft				15.95 + J 10.95	PU		
	Z0 Impedance:	0.1739 + J 0.0933	Ohms/1000 ft				50.24 + J 26.96	PU		
CBL-0583	B-B78-MDP	B-B78-PNL-330A	1	208	150.0	FEET	300	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0464 + J 0.0377	Ohms/1000 ft				16.09 + J 13.07	PU		
	Z0 Impedance:	0.1462 + J 0.0928	Ohms/1000 ft				50.69 + J 32.17	PU		
CBL-0584	B-B78-MDP	B-B78-PK	1	208	275.0	FEET	250	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0552 + J 0.0379	Ohms/1000 ft				35.09 + J 24.09	PU		
	Z0 Impedance:	0.1739 + J 0.0933	Ohms/1000 ft				110.54 + J 59.30	PU		
CBL-0585	B-B78-MDP	BUS-0652	1	208	275.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0381	Ohms/1000 ft				40.68 + J 24.22	PU		
	Z0 Impedance:	0.2017 + J 0.0938	Ohms/1000 ft				128.21 + J 59.62	PU		
CBL-0586	B-B78-ATS-CRD	B-B78-CRD	1	208	250.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0381	Ohms/1000 ft				36.98 + J 22.02	PU		
	Z0 Impedance:	0.2017 + J 0.0938	Ohms/1000 ft				116.55 + J 54.20	PU		
CBL-0587	B-B78-MDP	B-B78-CONRM-AC	1	208	260.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0448	Ohms/1000 ft				121.39 + J 26.92	PU		
	Z0 Impedance:	0.6366 + J 0.1103	Ohms/1000 ft				382.57 + J 66.29	PU		
CBL-0588	B-T-B80-SEC	B-B80-MDP-M	2	208	20.0	FEET	300	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THWN
	+/- Impedance:	0.0464 + J 0.0493	Ohms/1000 ft				1.07 + J 1.14	PU		
	Z0 Impedance:	0.1462 + J 0.1214	Ohms/1000 ft				3.38 + J 2.81	PU		

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0589	B-B80-MDP-M	B-B80-MDP	2	208	20.0	FEET	300	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THWN
	+/- Impedance:	0.0464 + J 0.0493		Ohms/1000 ft			1.07 + J 1.14	PU		
	Z0 Impedance:	0.1462 + J 0.1214		Ohms/1000 ft			3.38 + J 2.81	PU		
CBL-0590	B-B80-MDP	B-B80-L1-1	1	208	65.0	FEET	6	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.5100 + J 0.0685		Ohms/1000 ft			76.62 + J 10.29	PU		
	Z0 Impedance:	1.61 + J 0.1687		Ohms/1000 ft			241.47 + J 25.35	PU		
CBL-0591	B-B80-MDP	B-B80-P1	1	208	35.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540		Ohms/1000 ft			10.36 + J 4.37	PU		
	Z0 Impedance:	0.4034 + J 0.1329		Ohms/1000 ft			32.63 + J 10.75	PU		
CBL-0592	B-B80-MDP	B-B80-P5	1	208	125.0	FEET	6	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.5100 + J 0.0685		Ohms/1000 ft			147.35 + J 19.79	PU		
	Z0 Impedance:	1.61 + J 0.1687		Ohms/1000 ft			464.36 + J 48.74	PU		
CBL-0593	B-B80-MDP	B-B80-L1-3	1	208	35.0	FEET	8	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.8110 + J 0.0754		Ohms/1000 ft			65.61 + J 6.10	PU		
	Z0 Impedance:	2.56 + J 0.1856		Ohms/1000 ft			206.77 + J 15.01	PU		
CBL-0594	B-B80-MDP	B-B80-PB-1	1	208	40.0	FEET	8	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.8110 + J 0.0754		Ohms/1000 ft			74.98 + J 6.97	PU		
	Z0 Impedance:	2.56 + J 0.1856		Ohms/1000 ft			236.31 + J 17.16	PU		
CBL-0595	B-B80-MDP	B-B80-LB-1	1	208	40.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540		Ohms/1000 ft			11.83 + J 4.99	PU		
	Z0 Impedance:	0.4034 + J 0.1329		Ohms/1000 ft			37.30 + J 12.29	PU		
CBL-0596	B-B80-MDP	BUS-0664	1	208	40.0	FEET	2	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			18.68 + J 5.41	PU		
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			58.86 + J 13.31	PU		
CBL-0597	B-B80-ATS-EQ	B-B80-E1	1	208	15.0	FEET	2	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585		Ohms/1000 ft			7.00 + J 2.03	PU		
	Z0 Impedance:	0.6366 + J 0.1440		Ohms/1000 ft			22.07 + J 4.99	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0598	B-B80-E1	B-B80-LB-E	1	208	50.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				23.35 + J 6.76	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				73.57 + J 16.64	PU		
CBL-0599	B-B80-E1	B-B80-PB-2	1	208	30.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				14.01 + J 4.06	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				44.14 + J 9.99	PU		
CBL-0600	B-T-B81-SEC	B-B81-MDP-M	1	208	40.0	FEET	250	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft				5.10 + J 4.58	PU		
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft				16.08 + J 11.27	PU		
CBL-0601	B-B81-MDP-M	B-B81-MDP	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft				0.0673 + J 0.0696	PU		
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft				0.3999 + J 0.3724	PU		
CBL-0602	B-T-B82-SEC	B-B82-MDP-M	2	208	50.0	FEET	400	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				2.06 + J 2.83	PU		
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				6.48 + J 6.97	PU		
CBL-0603	B-B82-MDP-M	B-B82-MDP	1	208	1.000	FEET	600	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0202 + J 0.0170	Ohms/1000 ft				0.0467 + J 0.0393	PU		
	Z0 Impedance:	0.1201 + J 0.0910	Ohms/1000 ft				0.2776 + J 0.2103	PU		
CBL-0604	B-B92 GEN	B-B92-EMDP-M	3	208	12.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.2718 + J 0.4308	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				0.8561 + J 1.06	PU		
CBL-0605	B-B92-EMDP-M	B-B92-EMDP	1	208	1.000	FEET	1200	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0111 + J 0.0052	Ohms/1000 ft				0.0257 + J 0.0120	PU		
	Z0 Impedance:	0.0660 + J 0.0278	Ohms/1000 ft				0.1526 + J 0.0643	PU		
CBL-0606	B-B92-EMDP	BUS-0676	1	208	25.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				11.67 + J 3.38	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				36.79 + J 8.32	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0607	B-B92-EMDP	BUS-0677	1	208	375.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				69.78 + J 44.99	PU	
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				219.90 + J 110.77	PU	
CBL-0608	B-B92-EMDP	BUS-0678	1	208	150.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				70.04 + J 20.28	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				220.71 + J 49.93	PU	
CBL-0609	B-B92-EMDP	BUS-0680	1	208	325.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				96.15 + J 40.56	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				303.03 + J 99.83	PU	
CBL-0610	B-B92-EMDP	BUS-0736	1	208	400.0	FEET	350	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0378 + J 0.0491	Ohms/1000 ft				34.95 + J 45.40	PU	
	Z0 Impedance:	0.1191 + J 0.1209	Ohms/1000 ft				110.11 + J 111.78	PU	
CBL-0611	B-B92-EMDP	B-B2-EPNL-B-M	1	208	400.0	FEET	350	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0378 + J 0.0491	Ohms/1000 ft				34.95 + J 45.40	PU	
	Z0 Impedance:	0.1191 + J 0.1209	Ohms/1000 ft				110.11 + J 111.78	PU	
CBL-0612	B-B93-GEN	B-B93-EMDP-M	3	208	20.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.4530 + J 0.7181	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				1.43 + J 1.77	PU	
CBL-0613	B-B93-EMDP-M	B-B93-EMDP	1	208	1.000	FEET	1200	Copper	
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0111 + J 0.0052	Ohms/1000 ft				0.0257 + J 0.0120	PU	
	Z0 Impedance:	0.0660 + J 0.0278	Ohms/1000 ft				0.1526 + J 0.0643	PU	
CBL-0614	B-B93-EMDP	BUS-0685	1	208	25.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				11.67 + J 3.38	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				36.79 + J 8.32	PU	
CBL-0615	B-B93-EMDP	BUS-0688	1	208	300.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				140.07 + J 40.56	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				441.43 + J 99.85	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0616	B-B93-EMDP	BUS-0689	1	208	225.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				33.28 + J 25.85	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				104.90 + J 63.66	PU	
CBL-0617	B-B93-EMDP	BUS-0691	1	208	225.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				15.29 + J 24.23	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				48.16 + J 59.65	PU	
CBL-0618	B-B93-EMDP	BUS-0692	1	208	675.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				45.87 + J 72.70	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				144.47 + J 178.95	PU	
CBL-0619	B-B93-EMDP	B-B93-EMDP1	3	208	5.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.1133 + J 0.1795	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				0.3567 + J 0.4419	PU	
CBL-0620	B-B93-EMDP1	BUS-0694	1	208	225.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				33.28 + J 25.85	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				104.90 + J 63.66	PU	
CBL-0621	B-B93-EMDP1	BUS-0695	1	208	675.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				99.85 + J 77.54	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				314.69 + J 190.97	PU	
CBL-0624	B-B94-GEN	B-B94-EMDP-M	3	208	20.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.4530 + J 0.7181	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				1.43 + J 1.77	PU	
CBL-0625	B-B94-EMDP-M	B-B94-EMDP	1	208	1.000	FEET	1200	Copper	
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:	Class B
	+/- Impedance:	0.0111 + J 0.0052	Ohms/1000 ft				0.0257 + J 0.0120	PU	
	Z0 Impedance:	0.0660 + J 0.0278	Ohms/1000 ft				0.1526 + J 0.0643	PU	
CBL-0626	B-B94-EMDP	BUS-0700	1	208	775.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				52.67 + J 83.48	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				165.88 + J 205.47	PU	

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0627	B-B94-EMDP	BUS-0701	1	208	500.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				33.98 + J 53.86	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				107.02 + J 132.56	PU	
CBL-0628	B-B94-EMDP	BUS-0702	1	208	250.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				16.99 + J 26.93	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				53.51 + J 66.28	PU	
CBL-0629	B-B94-EMDP	BUS-0703	1	208	575.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				39.07 + J 61.93	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				123.07 + J 152.44	PU	
CBL-0630	B-B94-EMDP	BUS-0704	1	208	20.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				9.34 + J 2.70	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				29.43 + J 6.66	PU	
CBL-0631	B-B94-EMDP	BUS-0705	1	208	575.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				85.06 + J 66.05	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				268.07 + J 162.68	PU	
CBL-0632	B-B94-EMDP	BUS-0706	1	208	775.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				114.64 + J 89.03	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				361.31 + J 219.26	PU	
CBL-0633	B-B94-EMDP	BUS-0707	1	208	450.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				66.57 + J 51.69	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				209.79 + J 127.31	PU	
CBL-0634	B-B94-EMDP	BUS-0708	1	208	250.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				36.98 + J 28.72	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				116.55 + J 70.73	PU	
CBL-0635	B-B95-GEN	B-B95-EMDP-M	3	208	20.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.4530 + J 0.7181	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				1.43 + J 1.77	PU	

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0636	B-B95-EMDP-M	B-B95-EMDP	1	208	1.000	FEET	1200	Copper	
	Duct Material: Busway			Insulation Type:		Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0111 + J 0.0052	Ohms/1000 ft			0.0257 + J 0.0120	PU		
	Z0 Impedance:	0.0660 + J 0.0278	Ohms/1000 ft			0.1526 + J 0.0643	PU		
CBL-0637	B-B95-EMDP	BUS-0712	1	208	150.0	FEET	4/0	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft			22.19 + J 17.23	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft			69.93 + J 42.44	PU		
CBL-0638	B-B95-EMDP	BUS-0713	1	208	375.0	FEET	3/0	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft			69.78 + J 44.99	PU		
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft			219.90 + J 110.77	PU		
CBL-0639	B-B95-EMDP	BUS-0714	1	208	150.0	FEET	250	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.0552 + J 0.0495	Ohms/1000 ft			19.14 + J 17.16	PU		
	Z0 Impedance:	0.1739 + J 0.1219	Ohms/1000 ft			60.29 + J 42.26	PU		
CBL-0640	B-B95-EMDP	BUS-0715	1	208	150.0	FEET	500	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft			10.19 + J 16.16	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft			32.11 + J 39.77	PU		
CBL-0641	B-B95-EMDP	B-B10 EMRG TAP	1	208	425.0	FEET	500	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft			28.88 + J 45.78	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft			90.96 + J 112.67	PU		
CBL-0642	B-B95-EMDP	BUS-0718	1	208	150.0	FEET	600	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.0257 + J 0.0463	Ohms/1000 ft			8.91 + J 16.05	PU		
	Z0 Impedance:	0.0809 + J 0.1140	Ohms/1000 ft			28.05 + J 39.52	PU		
CBL-0643	B-B95-EMDP	BUS-0719	1	208	150.0	FEET	500	Copper	
	Duct Material: Magnetic			Insulation Type:		PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft			10.19 + J 16.16	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft			32.11 + J 39.77	PU		
CBL-0645	B-B2-EPNL-B-M	B-B2-EPNL-B	1	208	1.000	FEET	800	Copper	
	Duct Material: Busway			Insulation Type:		Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0167 + J 0.0127	Ohms/1000 ft			0.0386 + J 0.0294	PU		
	Z0 Impedance:	0.0992 + J 0.0679	Ohms/1000 ft			0.2293 + J 0.1569	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0646	B-B2-EPNL-B	BUS-0722	1	208	56.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0294 + J 0.0466		Ohms/1000 ft			3.81 + J 6.03	PU		
	Z0 Impedance:	0.0926 + J 0.1147		Ohms/1000 ft			11.99 + J 14.85	PU		
CBL-0647	B-B2-EPNL-B	BUS-0723	1	208	225.0	FEET	250	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0552 + J 0.0495		Ohms/1000 ft			28.71 + J 25.74	PU		
	Z0 Impedance:	0.1739 + J 0.1219		Ohms/1000 ft			90.44 + J 63.40	PU		
CBL-0648	B-B8-GEN	BUS-0725	1	480	60.0	FEET	350	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0378 + J 0.0491		Ohms/1000 ft			0.9844 + J 1.28	PU		
	Z0 Impedance:	0.1191 + J 0.1209		Ohms/1000 ft			3.10 + J 3.15	PU		
CBL-0649	B-B22-GEN	BUS-0727	1	480	50.0	FEET	300	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0464 + J 0.0493		Ohms/1000 ft			1.01 + J 1.07	PU		
	Z0 Impedance:	0.1462 + J 0.1214		Ohms/1000 ft			3.17 + J 2.63	PU		
CBL-0651	B-B78-ATS-E1	B-B78-E1	1	208	5.0	FEET	500	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THWN
	+/- Impedance:	0.0294 + J 0.0466		Ohms/1000 ft			0.3398 + J 0.5386	PU		
	Z0 Impedance:	0.0926 + J 0.1147		Ohms/1000 ft			1.07 + J 1.33	PU		
CBL-0652	B-B78-L10	B-B78-LP-13	1	208	30.0	FEET	400	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0356 + J 0.0371		Ohms/1000 ft			2.47 + J 2.57	PU		
	Z0 Impedance:	0.1122 + J 0.0913		Ohms/1000 ft			7.78 + J 6.33	PU		
CBL-0653	B-B78-LP-13	B-B78-LP-14	1	208	30.0	FEET	400	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0356 + J 0.0371		Ohms/1000 ft			2.47 + J 2.57	PU		
	Z0 Impedance:	0.1122 + J 0.0913		Ohms/1000 ft			7.78 + J 6.33	PU		
CBL-0654	B-B78-LP-14	B-B78-LP-15	1	208	30.0	FEET	400	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0356 + J 0.0371		Ohms/1000 ft			2.47 + J 2.57	PU		
	Z0 Impedance:	0.1122 + J 0.0913		Ohms/1000 ft			7.78 + J 6.33	PU		
CBL-0655	B-B78-LP-1	B-B78-LP-4	1	208	125.0	FEET	2/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1020 + J 0.0407		Ohms/1000 ft			29.47 + J 11.76	PU		
	Z0 Impedance:	0.3214 + J 0.1002		Ohms/1000 ft			92.86 + J 28.95	PU		

STUDY CASE-1 UTILITY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE		
CBL-0658	B-B8-J-BOX	B-B8-ELEV	1	208	20.0	FEET	350	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0378 + J 0.0491	Ohms/1000 ft				1.75 + J 2.27	PU		
	Z0 Impedance:	0.1191 + J 0.1209	Ohms/1000 ft				5.51 + J 5.59	PU		
CBL-0659	BUS-0739	B-B9-ATS BKR	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft				0.0673 + J 0.0696	PU		
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft				0.3999 + J 0.3724	PU		
CBL-0660	B-B17-EMAIN	BUS-0740	1	208	12.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				3.55 + J 1.50	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				11.19 + J 3.69	PU		
CBL-0662	B-B94-ATS	B-B94-E1	1	208	20.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				9.34 + J 2.70	PU		
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				29.43 + J 6.66	PU		
CBL-0663	B-B82-MDP	BUS-0744	1	208	20.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				2.96 + J 2.30	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				9.32 + J 5.66	PU		
CBL-0664	B-B82-ATS-EMER	B-B82-EMERG-M	1	208	10.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				1.48 + J 1.15	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				4.66 + J 2.83	PU		
CBL-0665	B-B82-EMERG-M	B-B82-EMER	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway	Insulation Type:				Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft				0.0673 + J 0.0696	PU		
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft				0.3999 + J 0.3724	PU		
CBL-0666	B-T-B2-PRI	BUS-0747	5	13800	1.000	FEET		Copper		
	Duct Material:	Non-Magnetic	Insulation Type:					Insulation Class:		
	+/- Impedance:	0.00010 + J 0.00010	Ohms/1000 ft				0.00001 + J 0.00001	PU		
	Z0 Impedance:	0.00010 + J 0.00010	Ohms/1000 ft				0.00000 + J 0.00000	PU		

STUDY CASE-1 UTILITY

TRANSFORMER INPUT DATA

TRANSFORMER NAME	PRIMARY RECORD NO	NAME	VOLTS L-L	* SECONDARY RECORD NO	NAME	VOLTS L-L	FULL-LOAD KVA	NOMINAL KVA
T -B2	BUS-0747	D 13800.0		B-T-B2-SEC2	YG	208.00	150.00	150.00
	Pos. Seq. Z%:	0.930 + J 5.12	6.20 + j 34.11 PU					
	Zero Seq. Z%:	0.930 + J 5.12	6.20 + j 34.11 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T- B2	BUS-0747	D 13800.0		B-T-B2-SEC4	YG	480.00	600.00	600.00
	Pos. Seq. Z%:	0.946 + J 5.11	1.58 + j 8.52 PU					
	Zero Seq. Z%:	0.946 + J 5.11	1.58 + j 8.52 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B1	B-T-B1-PRI	D 13800.0		B-T-B1-SEC	YG	208.00	75.00	75.00
	Pos. Seq. Z%:	1.90 + J 3.62	25.40 + j 48.26 PU					
	Zero Seq. Z%:	0.948 + J 2.85	12.65 + j 37.95 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B10	B-T-B10-PRI	D 13800.0		B-T-B10-SEC	YG	208.00	75.00	75.00
	Pos. Seq. Z%:	1.52 + J 2.88	20.24 + j 38.46 PU					
	Zero Seq. Z%:	0.948 + J 2.85	12.65 + j 37.95 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B12	B-T-B12-PRI	D 13800.0		B-T-B12-SEC	YG	208.00	75.00	75.00
	Pos. Seq. Z%:	1.99 + J 3.79	26.58 + j 50.50 PU					
	Zero Seq. Z%:	0.948 + J 2.85	12.65 + j 37.95 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B13	B-T-13-PRI	YG 13800.0		B-B13-TXMR SEC	D	240.00	250.00	250.00
	Pos. Seq. Z%:	1.58 + J 4.74	6.32 + j 18.97 PU					
	Zero Seq. Z%:	0.948 + J 2.85	3.79 + j 11.38 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): -30.0 Deg.					

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

TRANSFORMER INPUT DATA

TRANSFORMER NAME	PRIMARY RECORD NO	NAME	VOLTS L-L	* SECONDARY RECORD NO	NAME	VOLTS L-L	FULL-LOAD KVA	NOMINAL KVA
T-B17	B-T-B17-PRI	D 13800.0		B-T-B17-SEC	YG	208.00	150.00	150.00
	Pos. Seq. Z%:	1.15 + J 2.88	7.68 + j 19.19 PU					
	Zero Seq. Z%:	0.948 + J 2.85	6.32 + j 18.97 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B18	B-T-B18-PRI	D 13800.0		B-T-B18-SEC	YG	208.00	150.00	150.00
	Pos. Seq. Z%:	1.21 + J 3.03	8.07 + j 20.18 PU					
	Zero Seq. Z%:	0.948 + J 2.85	6.32 + j 18.97 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B19	B-T-B19-PRI	D 13800.0		B-T-B19-SEC	YG	208.00	500.00	500.00
	Pos. Seq. Z%:	1.30 + J 5.19	2.60 + j 10.38 PU					
	Zero Seq. Z%:	0.948 + J 2.85	1.90 + j 5.69 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B2 LED-3	B-T-B2-LED-PRI	D 480.00		B-T-B2-LED-SEC	YG	208.00	75.00	75.00
	Pos. Seq. Z%:	2.73 + J 4.07	36.43 + j 54.23 PU					
	Zero Seq. Z%:	2.73 + J 4.07	36.43 + j 54.23 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B22	B-T-B22-PRI	D 13800.0		B-T-B22-SEC	YG	480.00	225.00	225.00
	Pos. Seq. Z%:	0.869 + J 2.61	3.87 + j 11.60 PU					
	Zero Seq. Z%:	0.948 + J 2.85	4.22 + j 12.65 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B2A	B-T-B2-PRI	D 13800.0		B-T-B2-SEC3	YG	208.00	300.00	300.00
	Pos. Seq. Z%:	1.80 + J 5.39	5.99 + j 17.96 PU					
	Zero Seq. Z%:	0.948 + J 2.85	3.16 + j 9.49 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

TRANSFORMER INPUT DATA

TRANSFORMER NAME	PRIMARY RECORD NO	NAME	VOLTS L-L	* SECONDARY RECORD NO	NAME	VOLTS L-L	FULL-LOAD KVA	NOMINAL KVA
T-B3	B-T-B3-PRI	D 13800.0		B-T-B3-SEC	YG	208.00	300.00	300.00
	Pos. Seq. Z%:	1.23 + J 3.68		4.09 + j 12.27 PU				
	Zero Seq. Z%:	0.948 + J 2.85		3.16 + j 9.49 PU				
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B30	B-T-B30-PRI	D 13800.0		B-T-B30-SEC	YG	208.00	75.00	75.00
	Pos. Seq. Z%:	1.90 + J 3.62		25.40 + j 48.26 PU				
	Zero Seq. Z%:	0.948 + J 2.85		12.65 + j 37.95 PU				
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B33	B-T-B33-PRI	D 13800.0		B-T-B33-SEC	YG	208.00	75.00	75.00
	Pos. Seq. Z%:	1.49 + J 2.83		19.87 + j 37.76 PU				
	Zero Seq. Z%:	0.948 + J 2.85		12.65 + j 37.95 PU				
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B4	B-T-B4-PRI	D 13800.0		B-T-B4-SEC	YG	208.00	500.00	500.00
	Pos. Seq. Z%:	1.03 + J 4.12		2.06 + j 8.25 PU				
	Zero Seq. Z%:	0.948 + J 2.85		1.90 + j 5.69 PU				
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B5	B-T-B5-PRI	D 13800.0		B-T-B5-SEC	YG	208.00	300.00	300.00
	Pos. Seq. Z%:	0.857 + J 2.57		2.86 + j 8.57 PU				
	Zero Seq. Z%:	0.948 + J 2.85		3.16 + j 9.49 PU				
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B6	B-T-B6-PRI	D 13800.0		B-T-B6-SEC	YG	208.00	300.00	300.00
	Pos. Seq. Z%:	0.860 + J 2.58		2.87 + j 8.60 PU				
	Zero Seq. Z%:	0.948 + J 2.85		3.16 + j 9.49 PU				
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

TRANSFORMER INPUT DATA

TRANSFORMER NAME	PRIMARY RECORD NO	NAME	VOLTS L-L	* SECONDARY RECORD NO	NAME	VOLTS L-L	FULL-LOAD KVA	NOMINAL KVA
T-B60	B-T-B60-PRI	D 13800.0		B-T-B60-SEC	YG	208.00	112.50	112.50
	Pos. Seq. Z%:	1.41 + J 3.53		12.54 + j 31.36 PU				
	Zero Seq. Z%:	0.948 + J 2.85		8.43 + j 25.30 PU				
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B61	B-T-B61-PRI	D 13800.0		B-T-B61-SEC	YG	208.00	225.00	225.00
	Pos. Seq. Z%:	1.33 + J 3.98		5.90 + j 17.71 PU				
	Zero Seq. Z%:	0.948 + J 2.85		4.22 + j 12.65 PU				
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B62	B-T-B62-PRI	D 13800.0		B-T-B62-SEC	YG	208.00	300.00	300.00
	Pos. Seq. Z%:	0.869 + J 2.61		2.90 + j 8.70 PU				
	Zero Seq. Z%:	0.948 + J 2.85		3.16 + j 9.49 PU				
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B7	B-T-B7-PRI	D 13800.0		B-T-B7-SEC	YG	208.00	225.00	225.00
	Pos. Seq. Z%:	0.869 + J 2.61		3.87 + j 11.60 PU				
	Zero Seq. Z%:	0.948 + J 2.85		4.22 + j 12.65 PU				
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B70	B-T-B70-PRI	D 13800.0		B-T-B70-SEC	YG	208.00	300.00	300.00
	Pos. Seq. Z%:	1.58 + J 4.74		5.27 + j 15.81 PU				
	Zero Seq. Z%:	0.948 + J 2.85		3.16 + j 9.49 PU				
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
T-B78	B-T-B78-PRI	D 13800.0		B-T-B78-SEC	YG	208.00	1333.00	1000.00
	Pos. Seq. Z%:	1.02 + J 6.10		1.02 + j 6.10 PU				
	Zero Seq. Z%:	0.948 + J 2.85		0.948 + j 2.85 PU				
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

TRANSFORMER INPUT DATA

TRANSFORMER NAME	PRIMARY RECORD NO	NAME	VOLTS L-L	* SECONDARY RECORD NO	NAME		VOLTS L-L	FULL-LOAD KVA	NOMINAL KVA
T-B8	B-T-B8-PRI	D 13800.0		B-T-B8-SEC		YG	208.00	225.00	225.00
	Pos. Seq. Z%:	0.869 + J 2.61		3.87 + j 11.60 PU					
	Zero Seq. Z%:	0.948 + J 2.85		4.22 + j 12.65 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.						
T-B8-2	B-T-B8-PRI	D 13800.0		B-T-B8-2-SEC		YG	480.00	225.00	225.00
	Pos. Seq. Z%:	0.869 + J 2.61		3.87 + j 11.60 PU					
	Zero Seq. Z%:	0.948 + J 2.85		4.22 + j 12.65 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.						
T-B80	B-T-B80-PRI	D 13800.0		B-T-B80-SEC		YG	208.00	150.00	150.00
	Pos. Seq. Z%:	1.15 + J 2.87		7.65 + j 19.13 PU					
	Zero Seq. Z%:	0.948 + J 2.85		6.32 + j 18.97 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.						
T-B81	B-T-B81-PRI	D 13800.0		B-T-B81-SEC		YG	208.00	75.00	75.00
	Pos. Seq. Z%:	1.98 + J 3.77		26.45 + j 50.26 PU					
	Zero Seq. Z%:	0.948 + J 2.85		12.65 + j 37.95 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.						
T-B82	B-T-B82-PRI	D 13800.0		B-T-B82-SEC		YG	208.00	112.50	112.50
	Pos. Seq. Z%:	1.42 + J 3.55		12.61 + j 31.53 PU					
	Zero Seq. Z%:	0.948 + J 2.85		8.43 + j 25.30 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.						
T-B9	B-T-B9-PRI	D 13800.0		B-T-B9-SEC		YG	208.00	225.00	225.00
	Pos. Seq. Z%:	0.948 + J 2.85		4.22 + j 12.65 PU					
	Zero Seq. Z%:	0.948 + J 2.85		4.22 + j 12.65 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.						

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

TRANSFORMER INPUT DATA

TRANSFORMER NAME	PRIMARY RECORD NO	NAME	VOLTS L-L	* SECONDARY RECORD NO	NAME	VOLTS L-L	FULL-LOAD KVA	NOMINAL KVA
XF2-0032	B-B8-TXMR PRI	D 480.00		B-B8-TXMR SEC	YG 208.00		112.50	112.50
	Pos. Seq. Z%:	2.44 + J 3.85	21.73 + j 34.22 PU					
	Zero Seq. Z%:	2.44 + J 3.85	21.73 + j 34.22 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
XF2-0033	B-B22-T2-PRI	D 480.00		B-B22-T2-SEC	YG 208.00		75.00	75.00
	Pos. Seq. Z%:	3.18 + J 4.73	42.38 + j 63.09 PU					
	Zero Seq. Z%:	3.18 + J 4.73	42.38 + j 63.09 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
XF2-0034	B-B22-T3 PRI	D 480.00		B-B22-T22-SEC	YG 208.00		75.00	75.00
	Pos. Seq. Z%:	3.18 + J 4.73	42.38 + j 63.09 PU					
	Zero Seq. Z%:	3.18 + J 4.73	42.38 + j 63.09 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
XF2-0035	B-B22-T4-PRI	D 480.00		B-B22-T4-SEC	YG 208.00		75.00	75.00
	Pos. Seq. Z%:	3.18 + J 4.73	42.38 + j 63.09 PU					
	Zero Seq. Z%:	3.18 + J 4.73	42.38 + j 63.09 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
XF2-0036	B-B22-T1-PRI	D 480.00		B-B22-T1-SEC	YG 208.00		112.50	112.50
	Pos. Seq. Z%:	2.25 + J 3.55	20.02 + j 31.51 PU					
	Zero Seq. Z%:	3.18 + J 4.73	28.25 + j 42.06 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
XF2-0040	B-T-B2-PRI	D 13800.0		B-T-B2-SEC4	YG 480.00		600.00	600.00
	Pos. Seq. Z%:	0.930 + J 5.12	1.55 + j 8.53 PU					
	Zero Seq. Z%:	0.930 + J 5.12	1.55 + j 8.53 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

GENERATION DATA

BUS NAME	GENERATION	VOLT	SIZE	InitKW	MaxKVAR	TYPE
B-B27-SWGR-M1	UTIL-STN 559-2	1 pu				SB
	Three Phase Contribution: 2700.00 AMPS X/R : 3.00					
	Line to Earth Contribution: 1200.00 AMPS X/R : 3.00					
	Pos sequence impedance (100 MVA base) 0.4900 + J 1.47 PU					
	Zero sequence impedance (100 MVA base) 2.33 + J 6.98 PU					
B-B70-GEN	B70-GEN	1 pu	156.00 kVA	0.00000	0.00000	SB
B-B92 GEN	GEN-B92	1 pu	375.00 kVA	0.00000	0.00000	SB
B-B93-GEN	GEN-B93	1 pu	375.00 kVA	0.00000	0.00000	SB
B-B94-GEN	B94-GEN	1 pu	375.00 kVA	0.00000	0.00000	SB
B-B95-GEN	B-95 GEN	1 pu	375.00 kVA	0.00000	0.00000	SB
B-B8-GEN	G-B8 GEN	1 pu	225.00 kVA	0.00000	0.00000	SB
B-B22-GEN	G-B22-GEN	1 pu	225.00 kVA	0.00000	0.00000	SB

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

ENERGY AUDIT LOADS

BUS NAME	LOAD NAME	VOLTS	SIZE	LOADTYPE	PF	LAG/LEAD
B-B1-MDP	LOAD-0001	208	60.0*1.00kVA	KVA	0.80	LAG
B-B10-MDP	LOAD-0002	208	60.0*1.00kVA	KVA	0.80	LAG
B-B12-MDP	LOAD-0003	208	60.0*1.00kVA	KVA	0.80	LAG
B-B13-APT-13	LOAD-0006	208	17.2*1.00kVA	KVA	0.80	LAG
B-B13-APT-14	LOAD-0008	208	55.2*1.00kVA	KVA	0.80	LAG
B-B13-APT-15	LOAD-0005	208	55.2*1.00kVA	KVA	0.80	LAG
B-B13-GARAGE	LOAD-0004	208	27.6*1.00kVA	KVA	0.80	LAG
B-B13-MGR H16	LOAD-0007	208	27.6*1.00kVA	KVA	0.80	LAG
B-B13-UNKNOWN	LOAD-0009	208	17.2*1.00kVA	KVA	0.80	LAG
B-B17-A/C	LOAD-0021	208	17.3*1.00kVA	KVA	0.80	LAG
B-B17-A/C-2	LOAD-0018	208	7.7*1.00kVA	KVA	0.80	LAG
B-B17-AC1	LOAD-0017	208	7.7*1.00kVA	KVA	0.80	LAG
B-B17-ACB	LOAD-0016	208	7.7*1.00kVA	KVA	0.80	LAG
B-B17-ANIMALRM	LOAD-0011	208	9.9*1.00kVA	KVA	0.80	LAG
B-B17-NEB1	LOAD-0012	208	9.9*1.00kVA	KVA	0.80	LAG
B-B17-NEB2	LOAD-0010	208	5.9*1.00kVA	KVA	0.80	LAG
B-B17-NP11	LOAD-0013	208	4.6*1.00kVA	KVA	0.80	LAG
B-B17-NP12	LOAD-0020	208	17.3*1.00kVA	KVA	0.80	LAG
B-B17-NP21	LOAD-0015	208	0.0*1.00kVA	KVA	0.80	LAG
B-B17-NP22	LOAD-0019	208	7.7*1.00kVA	KVA	0.80	LAG
B-B17-NPA1	LOAD-0014	208	4.6*1.00kVA	KVA	0.80	LAG
B-B17-NPB1	LOAD-0023	208	13.4*1.00kVA	KVA	0.80	LAG
B-B17-NPB2	LOAD-0022	208	6.9*1.00kVA	KVA	0.80	LAG
B-B18-1STFL	LOAD-0034	208	4.8*1.00kVA	KVA	0.80	LAG
B-B18-2NDFL	LOAD-0033	208	4.8*1.00kVA	KVA	0.80	LAG
B-B18-AC1	LOAD-0025	208	8.6*1.00kVA	KVA	0.80	LAG
B-B18-AC2	LOAD-0032	208	19.0*1.00kVA	KVA	0.80	LAG
B-B18-EMERG	LOAD-0035	208	4.8*1.00kVA	KVA	0.80	LAG
B-B18-NCP	LOAD-0026	208	9.5*1.00kVA	KVA	0.80	LAG
B-B18-NP11	LOAD-0024	208	8.6*1.00kVA	KVA	0.80	LAG
B-B18-NP12	LOAD-0029	208	8.6*1.00kVA	KVA	0.80	LAG
B-B18-NP21	LOAD-0030	208	9.5*1.00kVA	KVA	0.80	LAG
B-B18-NP22	LOAD-0027	208	14.3*1.00kVA	KVA	0.80	LAG
B-B18-NP23	LOAD-0028	208	19.0*1.00kVA	KVA	0.80	LAG
B-B18-STRT LHT	LOAD-0031	208	8.6*1.00kVA	KVA	0.80	LAG
B-B19-200A PNL	LOAD-0045	208	66.7*1.00kVA	KVA	0.80	LAG
B-B19-B1	LOAD-0036	208	15.9*1.00kVA	KVA	0.80	LAG
B-B19-L1	LOAD-0037	208	15.9*1.00kVA	KVA	0.80	LAG
B-B19-L2	LOAD-0039	208	23.9*1.00kVA	KVA	0.80	LAG
B-B19-P1	LOAD-0041	208	63.7*1.00kVA	KVA	0.80	LAG
B-B19-P2	LOAD-0043	208	31.8*1.00kVA	KVA	0.80	LAG
B-B19-P4	LOAD-0042	208	35.8*1.00kVA	KVA	0.80	LAG
B-B19-P6	LOAD-0040	208	63.7*1.00kVA	KVA	0.80	LAG

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

ENERGY AUDIT LOADS

BUS NAME	LOAD NAME	VOLTS	SIZE	LOADTYPE	PF	LAG/LEAD
B-B19-PS	LOAD-0038	208	15.9*1.00kVA	KVA	0.80	LAG
B-B2-BATTERYCH	LOAD-0314	208	5.9*1.00kVA	KVA	0.80	LAG
B-B2-DENTAL LB	LOAD-0307	208	5.0*1.00kVA	KVA	0.80	LAG
B-B2-DENTSUCPM	LOAD-0315	208	2.9*1.00kVA	KVA	0.80	LAG
B-B2-ELEV	LOAD-0308	208	6.6*1.00kVA	KVA	0.80	LAG
B-B2-ELEV-P1	LOAD-0304	208	10.0*1.00kVA	KVA	0.80	LAG
B-B2-EMERG-PNL	LOAD-0288	208	15.5*1.00kVA	KVA	0.80	LAG
B-B2-L12	LOAD-0310	208	5.9*1.00kVA	KVA	0.80	LAG
B-B2-L2A	LOAD-0303	208	10.0*1.00kVA	KVA	0.80	LAG
B-B2-L2E	LOAD-0309	208	5.9*1.00kVA	KVA	0.80	LAG
B-B2-L4	LOAD-0297	208	22.4*1.00kVA	KVA	0.80	LAG
B-B2-L6	LOAD-0295	208	22.4*1.00kVA	KVA	0.80	LAG
B-B2-L7	LOAD-0296	208	22.4*1.00kVA	KVA	0.80	LAG
B-B2-L8	LOAD-0299	208	22.4*1.00kVA	KVA	0.80	LAG
B-B2-L9E	LOAD-0311	208	5.9*1.00kVA	KVA	0.80	LAG
B-B2-LB1E	LOAD-0312	208	5.9*1.00kVA	KVA	0.80	LAG
B-B2-LB2	LOAD-0294	208	22.4*1.00kVA	KVA	0.80	LAG
B-B2-LB2E	LOAD-0302	208	5.0*1.00kVA	KVA	0.80	LAG
B-B2-MEDAIRCOM	LOAD-0305	208	5.0*1.00kVA	KVA	0.80	LAG
B-B2-NEWLAB	LOAD-0290	208	13.6*1.00kVA	KVA	0.80	LAG
B-B2-PNL 1	LOAD-0289	208	15.5*1.00kVA	KVA	0.80	LAG
B-B2-PNL-2	LOAD-0291	208	6.6*1.00kVA	KVA	0.80	LAG
B-B2-PNL-D2	LOAD-0293	208	96.0*1.00kVA	KVA	0.80	LAG
B-B2-PNL-L11	LOAD-0306	208	10.0*1.00kVA	KVA	0.80	LAG
B-B2-PNL-M1	LOAD-0287	208	8.9*1.00kVA	KVA	0.80	LAG
B-B2-POD2PP	LOAD-0313	208	5.9*1.00kVA	KVA	0.80	LAG
B-B2-TEL COMM	LOAD-0301	208	7.8*1.00kVA	KVA	0.80	LAG
B-B2-UNIT-1	LOAD-0284	480	83.8*1.00kVA	KVA	0.80	LAG
B-B2-UNIT-2	LOAD-0285	480	83.8*1.00kVA	KVA	0.80	LAG
B-B2-XRAY	LOAD-0298	208	22.4*1.00kVA	KVA	0.80	LAG
B-B2-XRAY-124	LOAD-0286	480	93.0*1.00kVA	KVA	0.80	LAG
B-B2-XRAY124	LOAD-0300	208	7.8*1.00kVA	KVA	0.80	LAG
B-B21-P1	LOAD-0044	208	66.7*1.00kVA	KVA	0.80	LAG
B-B22-L1	LOAD-0051	480	22.7*1.00kVA	KVA	0.80	LAG
B-B22-L2	LOAD-0050	480	22.7*1.00kVA	KVA	0.80	LAG
B-B22-L3	LOAD-0049	480	22.7*1.00kVA	KVA	0.80	LAG
B-B22-N1	LOAD-0046	208	66.3*1.00kVA	KVA	0.80	LAG
B-B22-P1	LOAD-0047	480	22.7*1.00kVA	KVA	0.80	LAG
B-B22-P2	LOAD-0048	480	22.7*1.00kVA	KVA	0.80	LAG
B-B3-1ST FL	LOAD-0059	208	6.3*1.00kVA	KVA	0.80	LAG
B-B3-ALDN KIT	LOAD-0065	208	4.0*1.00kVA	KVA	0.80	LAG
B-B3-COMP	LOAD-0061	208	4.0*1.00kVA	KVA	0.80	LAG
B-B3-COMP AC	LOAD-0066	208	1.2*1.00kVA	KVA	0.80	LAG

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

ENERGY AUDIT LOADS

BUS NAME	LOAD NAME	VOLTS	SIZE	LOADTYPE	PF	LAG/LEAD
B-B3-COMP MF	LOAD-0069	208	8.0*1.00kVA	KVA	0.80	LAG
B-B3-DBL GRILL	LOAD-0058	208	12.6*1.00kVA	KVA	0.80	LAG
B-B3-ELEV	LOAD-0067	208	7.0*1.00kVA	KVA	0.80	LAG
B-B3-FRZN FOOD	LOAD-0054	208	53.3*1.00kVA	KVA	0.80	LAG
B-B3-HYDRO ELV	LOAD-0062	208	8.0*1.00kVA	KVA	0.80	LAG
B-B3-KP1	LOAD-0056	208	14.1*1.00kVA	KVA	0.80	LAG
B-B3-MECH HVAC	LOAD-0063	208	4.0*1.00kVA	KVA	0.80	LAG
B-B3-MECH RM	LOAD-0068	208	8.0*1.00kVA	KVA	0.80	LAG
B-B3-P3	LOAD-0052	208	26.7*1.00kVA	KVA	0.80	LAG
B-B3-P7	LOAD-0057	208	6.3*1.00kVA	KVA	0.80	LAG
B-B3-STRT LTS	LOAD-0053	208	53.3*1.00kVA	KVA	0.80	LAG
B-B3-STRT PNL	LOAD-0064	208	4.0*1.00kVA	KVA	0.80	LAG
B-B3-TELE PNL	LOAD-0055	208	14.1*1.00kVA	KVA	0.80	LAG
B-B3-TRAY LINE	LOAD-0060	208	5.0*1.00kVA	KVA	0.80	LAG
B-B33-MDP	LOAD-0070	208	60.0*1.00kVA	KVA	0.80	LAG
B-B4-ELEV#4	LOAD-0073	208	4.1*1.00kVA	KVA	0.80	LAG
B-B4-EQ10	LOAD-0075	208	4.8*1.00kVA	KVA	0.80	LAG
B-B4-EQ11	LOAD-0108	208	4.8*1.00kVA	KVA	0.80	LAG
B-B4-EQ12	LOAD-0074	208	4.1*1.00kVA	KVA	0.80	LAG
B-B4-EQ15	LOAD-0076	208	4.8*1.00kVA	KVA	0.80	LAG
B-B4-EQ9	LOAD-0077	208	5.4*1.00kVA	KVA	0.80	LAG
B-B4-HYDROELEV	LOAD-0072	208	6.1*1.00kVA	KVA	0.80	LAG
B-B4-LP1	LOAD-0085	208	20.0*1.00kVA	KVA	0.80	LAG
B-B4-LP10	LOAD-0083	208	20.0*1.00kVA	KVA	0.80	LAG
B-B4-LP11	LOAD-0079	208	20.0*1.00kVA	KVA	0.80	LAG
B-B4-LP12	LOAD-0091	208	40.0*1.00kVA	KVA	0.80	LAG
B-B4-LP13	LOAD-0080	208	20.0*1.00kVA	KVA	0.80	LAG
B-B4-LP14	LOAD-0087	208	20.0*1.00kVA	KVA	0.80	LAG
B-B4-LP15	LOAD-0102	208	3.9*1.00kVA	KVA	0.80	LAG
B-B4-LP2	LOAD-0084	208	20.0*1.00kVA	KVA	0.80	LAG
B-B4-LP3	LOAD-0088	208	20.0*1.00kVA	KVA	0.80	LAG
B-B4-LP4	LOAD-0089	208	20.0*1.00kVA	KVA	0.80	LAG
B-B4-LP5	LOAD-0082	208	20.0*1.00kVA	KVA	0.80	LAG
B-B4-LP6	LOAD-0081	208	20.0*1.00kVA	KVA	0.80	LAG
B-B4-LP7	LOAD-0090	208	40.0*1.00kVA	KVA	0.80	LAG
B-B4-LP8	LOAD-0078	208	20.0*1.00kVA	KVA	0.80	LAG
B-B4-LP9	LOAD-0086	208	20.0*1.00kVA	KVA	0.80	LAG
B-B4-LS1	LOAD-0092	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS10	LOAD-0096	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS11	LOAD-0098	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS12	LOAD-0100	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS13	LOAD-0104	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS14	LOAD-0106	208	2.0*1.00kVA	KVA	0.80	LAG

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

ENERGY AUDIT LOADS

BUS NAME	LOAD NAME	VOLTS	SIZE	LOADTYPE	PF	LAG/LEAD
B-B4-LS2	LOAD-0093	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS3	LOAD-0095	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS4	LOAD-0094	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS5	LOAD-0097	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS6	LOAD-0099	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS7	LOAD-0101	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS8	LOAD-0105	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS9	LOAD-0107	208	2.0*1.00kVA	KVA	0.80	LAG
B-B4-PP1	LOAD-0071	208	6.1*1.00kVA	KVA	0.80	LAG
B-B4-PP2	LOAD-0103	208	3.9*1.00kVA	KVA	0.80	LAG
B-B5-EQ1	LOAD-0115	208	8.9*1.00kVA	KVA	0.80	LAG
B-B5-EQ2	LOAD-0117	208	8.9*1.00kVA	KVA	0.80	LAG
B-B5-EQ5	LOAD-0116	208	8.9*1.00kVA	KVA	0.80	LAG
B-B5-EQ6	LOAD-0118	208	8.9*1.00kVA	KVA	0.80	LAG
B-B5-HYDR ELEV	LOAD-0119	208	11.9*1.00kVA	KVA	0.80	LAG
B-B5-LP1	LOAD-0120	208	11.9*1.00kVA	KVA	0.80	LAG
B-B5-LP2	LOAD-0110	208	11.9*1.00kVA	KVA	0.80	LAG
B-B5-LP3	LOAD-0121	208	11.9*1.00kVA	KVA	0.80	LAG
B-B5-LP4	LOAD-0111	208	11.9*1.00kVA	KVA	0.80	LAG
B-B5-LP5	LOAD-0114	208	14.9*1.00kVA	KVA	0.80	LAG
B-B5-LS4	LOAD-0112	208	23.8*1.00kVA	KVA	0.80	LAG
B-B5-NEXTEL	LOAD-0122	208	23.8*1.00kVA	KVA	0.80	LAG
B-B5-PNL-H	LOAD-0124	208	26.7*1.00kVA	KVA	0.80	LAG
B-B5-STRT LGHT	LOAD-0123	208	8.3*1.00kVA	KVA	0.80	LAG
B-B5-TEMP TRAI	LOAD-0109	208	23.8*1.00kVA	KVA	0.80	LAG
B-B55-LS3	LOAD-0113	208	23.8*1.00kVA	KVA	0.80	LAG
B-B6-EQ1	LOAD-0132	208	5.3*1.00kVA	KVA	0.80	LAG
B-B6-EQ4	LOAD-0134	208	5.3*1.00kVA	KVA	0.80	LAG
B-B6-EQ5	LOAD-0135	208	7.9*1.00kVA	KVA	0.80	LAG
B-B6-EQ8	LOAD-0131	208	7.9*1.00kVA	KVA	0.80	LAG
B-B6-EQMACH	LOAD-0133	208	3.5*1.00kVA	KVA	0.80	LAG
B-B6-LP1	LOAD-0142	208	20.0*1.00kVA	KVA	0.80	LAG
B-B6-LP2	LOAD-0130	208	20.0*1.00kVA	KVA	0.80	LAG
B-B6-LP3	LOAD-0141	208	15.0*1.00kVA	KVA	0.80	LAG
B-B6-LP4	LOAD-0127	208	15.0*1.00kVA	KVA	0.80	LAG
B-B6-LP5	LOAD-0140	208	15.0*1.00kVA	KVA	0.80	LAG
B-B6-LP6	LOAD-0128	208	15.0*1.00kVA	KVA	0.80	LAG
B-B6-LP7	LOAD-0129	208	20.0*1.00kVA	KVA	0.80	LAG
B-B6-LS1	LOAD-0138	208	8.2*1.00kVA	KVA	0.80	LAG
B-B6-LS2	LOAD-0139	208	5.4*1.00kVA	KVA	0.80	LAG
B-B6-LS5	LOAD-0137	208	8.2*1.00kVA	KVA	0.80	LAG
B-B6-LS6	LOAD-0136	208	8.2*1.00kVA	KVA	0.80	LAG
B-B6-MACH SHOP	LOAD-0126	208	30.0*1.00kVA	KVA	0.80	LAG

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

ENERGY AUDIT LOADS

BUS NAME	LOAD NAME	VOLTS	SIZE	LOADTYPE	PF	LAG/LEAD
B-B6-P6-CS	LOAD-0125	208	30.0*1.00kVA	KVA	0.80	LAG
B-B60-MDP	LOAD-0143	208	90.0*1.00kVA	KVA	0.80	LAG
B-B61 STRT LGH	LOAD-0145	208	6.7*1.00kVA	KVA	0.80	LAG
B-B61-COMP RM	LOAD-0160	208	8.4*1.00kVA	KVA	0.80	LAG
B-B61-DP	LOAD-0149	208	35.6*1.00kVA	KVA	0.80	LAG
B-B61-ELEV	LOAD-0158	208	8.4*1.00kVA	KVA	0.80	LAG
B-B61-EQ1	LOAD-0159	208	8.4*1.00kVA	KVA	0.80	LAG
B-B61-EQ2	LOAD-0162	208	7.4*1.00kVA	KVA	0.80	LAG
B-B61-EQ4	LOAD-0161	208	3.0*1.00kVA	KVA	0.80	LAG
B-B61-KITCHEN	LOAD-0155	208	5.1*1.00kVA	KVA	0.80	LAG
B-B61-LP1	LOAD-0147	208	13.3*1.00kVA	KVA	0.80	LAG
B-B61-LP2	LOAD-0150	208	13.3*1.00kVA	KVA	0.80	LAG
B-B61-LP3	LOAD-0148	208	20.0*1.00kVA	KVA	0.80	LAG
B-B61-LP4	LOAD-0151	208	22.2*1.00kVA	KVA	0.80	LAG
B-B61-LP5	LOAD-0146	208	6.7*1.00kVA	KVA	0.80	LAG
B-B61-LS1	LOAD-0156	208	2.3*1.00kVA	KVA	0.80	LAG
B-B61-LS2	LOAD-0157	208	2.3*1.00kVA	KVA	0.80	LAG
B-B61-LS3	LOAD-0152	208	3.4*1.00kVA	KVA	0.80	LAG
B-B61-LS4	LOAD-0153	208	3.4*1.00kVA	KVA	0.80	LAG
B-B61-LS5	LOAD-0154	208	3.4*1.00kVA	KVA	0.80	LAG
B-B61-MCC	LOAD-0144	208	6.7*1.00kVA	KVA	0.80	LAG
B-B62-A	LOAD-0166	208	17.1*1.00kVA	KVA	0.80	LAG
B-B62-ATTC PNL	LOAD-0179	208	5.0*1.00kVA	KVA	0.80	LAG
B-B62-B	LOAD-0172	208	20.0*1.00kVA	KVA	0.80	LAG
B-B62-BL	LOAD-0170	208	11.4*1.00kVA	KVA	0.80	LAG
B-B62-BP	LOAD-0165	208	17.1*1.00kVA	KVA	0.80	LAG
B-B62-ELEV-1	LOAD-0178	208	5.0*1.00kVA	KVA	0.80	LAG
B-B62-ELEV-2	LOAD-0181	208	5.0*1.00kVA	KVA	0.80	LAG
B-B62-EQ	LOAD-0180	208	5.0*1.00kVA	KVA	0.80	LAG
B-B62-KP	LOAD-0167	208	17.1*1.00kVA	KVA	0.80	LAG
B-B62-LP1	LOAD-0168	208	17.1*1.00kVA	KVA	0.80	LAG
B-B62-LP2	LOAD-0171	208	20.0*1.00kVA	KVA	0.80	LAG
B-B62-LP3	LOAD-0169	208	25.7*1.00kVA	KVA	0.80	LAG
B-B62-LP4	LOAD-0173	208	25.7*1.00kVA	KVA	0.80	LAG
B-B62-LS1	LOAD-0176	208	5.1*1.00kVA	KVA	0.80	LAG
B-B62-LS2	LOAD-0177	208	5.1*1.00kVA	KVA	0.80	LAG
B-B62-LS3	LOAD-0174	208	7.7*1.00kVA	KVA	0.80	LAG
B-B62-LS4	LOAD-0175	208	7.7*1.00kVA	KVA	0.80	LAG
B-B62-OT	LOAD-0163	208	8.6*1.00kVA	KVA	0.80	LAG
B-B62-PAD RM	LOAD-0182	208	5.7*1.00kVA	KVA	0.80	LAG
B-B62-STRT LGT	LOAD-0164	208	8.6*1.00kVA	KVA	0.80	LAG
B-B7-ELEV	LOAD-0196	208	5.7*1.00kVA	KVA	0.80	LAG
B-B7-EQ1	LOAD-0192	208	5.0*1.00kVA	KVA	0.80	LAG

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

ENERGY AUDIT LOADS

BUS NAME	LOAD NAME	VOLTS	SIZE	LOADTYPE	PF	LAG/LEAD
B-B7-EQ2	LOAD-0194	208	5.0*1.00kVA	KVA	0.80	LAG
B-B7-EQ4	LOAD-0197	208	5.7*1.00kVA	KVA	0.80	LAG
B-B7-LP2	LOAD-0190	208	10.9*1.00kVA	KVA	0.80	LAG
B-B7-LP3	LOAD-0183	208	8.2*1.00kVA	KVA	0.80	LAG
B-B7-LP4	LOAD-0188	208	8.2*1.00kVA	KVA	0.80	LAG
B-B7-LP5	LOAD-0186	208	8.2*1.00kVA	KVA	0.80	LAG
B-B7-LP6	LOAD-0184	208	8.2*1.00kVA	KVA	0.80	LAG
B-B7-LP7	LOAD-0187	208	8.2*1.00kVA	KVA	0.80	LAG
B-B7-LP8	LOAD-0185	208	8.2*1.00kVA	KVA	0.80	LAG
B-B7-LS1	LOAD-0201	208	4.1*1.00kVA	KVA	0.80	LAG
B-B7-LS2	LOAD-0202	208	4.1*1.00kVA	KVA	0.80	LAG
B-B7-LS4	LOAD-0200	208	4.1*1.00kVA	KVA	0.80	LAG
B-B7-LS5	LOAD-0199	208	4.1*1.00kVA	KVA	0.80	LAG
B-B7-MCC-1	LOAD-0198	208	2.0*1.00kVA	KVA	0.80	LAG
B-B7-MCC-2	LOAD-0191	208	10.9*1.00kVA	KVA	0.80	LAG
B-B7-STRT LGHT	LOAD-0189	208	10.9*1.00kVA	KVA	0.80	LAG
B-B70 -BLDG-71	LOAD-0209	208	6.3*1.00kVA	KVA	0.80	LAG
B-B70-A	LOAD-0207	208	9.4*1.00kVA	KVA	0.80	LAG
B-B70-ATTIC	LOAD-0206	208	9.4*1.00kVA	KVA	0.80	LAG
B-B70-B	LOAD-0213	208	9.4*1.00kVA	KVA	0.80	LAG
B-B70-CHLLR	LOAD-0216	208	22.0*1.00kVA	KVA	0.80	LAG
B-B70-EQ5	LOAD-0221	208	8.7*1.00kVA	KVA	0.80	LAG
B-B70-EQ6	LOAD-0222	208	10.1*1.00kVA	KVA	0.80	LAG
B-B70-FIRE PMP	LOAD-0203	208	80.0*1.00kVA	KVA	0.80	LAG
B-B70-K	LOAD-0208	208	4.7*1.00kVA	KVA	0.80	LAG
B-B70-LP-4	LOAD-0214	208	12.6*1.00kVA	KVA	0.80	LAG
B-B70-LP1	LOAD-0211	208	14.1*1.00kVA	KVA	0.80	LAG
B-B70-LP3	LOAD-0212	208	9.4*1.00kVA	KVA	0.80	LAG
B-B70-LS1	LOAD-0217	208	2.7*1.00kVA	KVA	0.80	LAG
B-B70-LS2	LOAD-0219	208	2.7*1.00kVA	KVA	0.80	LAG
B-B70-LS5	LOAD-0218	208	4.0*1.00kVA	KVA	0.80	LAG
B-B70-LS6	LOAD-0220	208	4.7*1.00kVA	KVA	0.80	LAG
B-B70-PP2	LOAD-0210	208	14.1*1.00kVA	KVA	0.80	LAG
B-B70-PP220	LOAD-0215	208	12.6*1.00kVA	KVA	0.80	LAG
B-B70-STRTLGHT	LOAD-0204	208	4.7*1.00kVA	KVA	0.80	LAG
B-B78-1P	LOAD-0272	208	28.1*1.00kVA	KVA	0.80	LAG
B-B78-78AE1	LOAD-0258	208	24.6*1.00kVA	KVA	0.80	LAG
B-B78-A/C	LOAD-0256	208	21.0*1.00kVA	KVA	0.80	LAG
B-B78-BARBER	LOAD-0265	208	14.0*1.00kVA	KVA	0.80	LAG
B-B78-CONRM-AC	LOAD-0282	208	12.6*1.00kVA	KVA	0.80	LAG
B-B78-CRD	LOAD-0281	208	21.0*1.00kVA	KVA	0.80	LAG
B-B78-E1	LOAD-0266	208	56.1*1.00kVA	KVA	0.80	LAG
B-B78-ELEV-1	LOAD-0262	208	31.6*1.00kVA	KVA	0.80	LAG

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

ENERGY AUDIT LOADS

BUS NAME	LOAD NAME	VOLTS	SIZE	LOADTYPE	PF	LAG/LEAD
B-B78-ELEV-2	LOAD-0263	208	31.6*1.00kVA	KVA	0.80	LAG
B-B78-FLPNL	LOAD-0273	208	28.1*1.00kVA	KVA	0.80	LAG
B-B78-KK	LOAD-0271	208	31.6*1.00kVA	KVA	0.80	LAG
B-B78-LP-15	LOAD-0267	208	35.1*1.00kVA	KVA	0.80	LAG
B-B78-LP-2	LOAD-0278	208	35.1*1.00kVA	KVA	0.80	LAG
B-B78-LP-4	LOAD-0270	208	35.1*1.00kVA	KVA	0.80	LAG
B-B78-LP-8	LOAD-0276	208	42.1*1.00kVA	KVA	0.80	LAG
B-B78-LP13	LOAD-0259	208	42.1*1.00kVA	KVA	0.80	LAG
B-B78-LP6	LOAD-0261	208	42.1*1.00kVA	KVA	0.80	LAG
B-B78-LSD	LOAD-0257	208	24.6*1.00kVA	KVA	0.80	LAG
B-B78-MEC-1 AC	LOAD-0269	208	56.1*1.00kVA	KVA	0.80	LAG
B-B78-MEC2-A/C	LOAD-0277	208	56.1*1.00kVA	KVA	0.80	LAG
B-B78-PHARM AC	LOAD-0268	208	14.0*1.00kVA	KVA	0.80	LAG
B-B78-PHV	LOAD-0274	208	14.0*1.00kVA	KVA	0.80	LAG
B-B78-PK	LOAD-0280	208	31.6*1.00kVA	KVA	0.80	LAG
B-B78-PNL-330A	LOAD-0279	208	31.6*1.00kVA	KVA	0.80	LAG
B-B78-PULM 78B	LOAD-0260	208	28.1*1.00kVA	KVA	0.80	LAG
B-B78-QP	LOAD-0264	208	28.1*1.00kVA	KVA	0.80	LAG
B-B78A-PNL-2	LOAD-0275	208	17.5*1.00kVA	KVA	0.80	LAG
B-B8 2ND FLR	LOAD-0228	208	40.2*1.00kVA	KVA	0.80	LAG
B-B8 HYDRO ELV	LOAD-0224	480	52.9*1.00kVA	KVA	0.80	LAG
B-B8-ATS	LOAD-0234	208	34.6*1.00kVA	KVA	0.80	LAG
B-B8-BS	LOAD-0230	208	10.1*1.00kVA	KVA	0.80	LAG
B-B8-CMOP	LOAD-0225	208	31.1*1.00kVA	KVA	0.80	LAG
B-B8-COMP	LOAD-0227	480	31.8*1.00kVA	KVA	0.80	LAG
B-B8-FLEXPMACH	LOAD-0223	480	15.9*1.00kVA	KVA	0.80	LAG
B-B8-J-BOX	LOAD-0226	208	48.2*1.00kVA	KVA	0.80	LAG
B-B8-L8B	LOAD-0229	208	10.1*1.00kVA	KVA	0.80	LAG
B-B8-LB2	LOAD-0232	208	22.6*1.00kVA	KVA	0.80	LAG
B-B8-PNL-PK	LOAD-0231	208	15.1*1.00kVA	KVA	0.80	LAG
B-B8-PP1	LOAD-0233	208	48.0*1.00kVA	KVA	0.80	LAG
B-B80-L1-1	LOAD-0235	208	12.5*1.00kVA	KVA	0.80	LAG
B-B80-L1-3	LOAD-0241	208	10.0*1.00kVA	KVA	0.80	LAG
B-B80-LB-1	LOAD-0237	208	25.0*1.00kVA	KVA	0.80	LAG
B-B80-LB-E	LOAD-0239	208	12.5*1.00kVA	KVA	0.80	LAG
B-B80-P1	LOAD-0236	208	25.0*1.00kVA	KVA	0.80	LAG
B-B80-P5	LOAD-0238	208	12.5*1.00kVA	KVA	0.80	LAG
B-B80-PB-1	LOAD-0242	208	10.0*1.00kVA	KVA	0.80	LAG
B-B80-PB-2	LOAD-0240	208	12.5*1.00kVA	KVA	0.80	LAG
B-B81-MDP	LOAD-0243	208	60.0*1.00kVA	KVA	0.80	LAG
B-B82-EMER	LOAD-0244	208	90.0*1.00kVA	KVA	0.80	LAG
B-B9-*PNLXX	LOAD-0248	208	12.6*1.00kVA	KVA	0.80	LAG
B-B9-*PNLYY	LOAD-0247	208	15.8*1.00kVA	KVA	0.80	LAG

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

ENERGY AUDIT LOADS

BUS NAME	LOAD NAME	VOLTS	SIZE	LOADTYPE	PF	LAG/LEAD
B-B9-*PNLZZ	LOAD-0246	208	28.4*1.00kVA	KVA	0.80	LAG
B-B9-EM	LOAD-0245	208	31.6*1.00kVA	KVA	0.80	LAG
B-B9-L91A	LOAD-0249	208	12.6*1.00kVA	KVA	0.80	LAG
B-B9-L92	LOAD-0250	208	12.6*1.00kVA	KVA	0.80	LAG
B-B9-L9A	LOAD-0251	208	15.8*1.00kVA	KVA	0.80	LAG
B-B9-L9B	LOAD-0252	208	15.8*1.00kVA	KVA	0.80	LAG
B-B9-LPN	LOAD-0254	208	14.2*1.00kVA	KVA	0.80	LAG
B-B9-LPS	LOAD-0255	208	14.2*1.00kVA	KVA	0.80	LAG
B-B9-STRT LGHT	LOAD-0253	208	6.3*1.00kVA	KVA	0.80	LAG
B-B92-PNL-E1	LOAD-0292	208	24.0*1.00kVA	KVA	0.80	LAG
B-B94-ATS	LOAD-0193	208	10.9*1.00kVA	KVA	0.80	LAG
B0B70-LP2	LOAD-0205	208	6.3*1.00kVA	KVA	0.80	LAG
bB-B7-MC1	LOAD-0195	208	5.7*1.00kVA	KVA	0.80	LAG

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY
December 28, 2004 13:32:51

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SKM POWER*TOOLS FOR WINDOWS
LOAD FLOW AND VOLTAGE DROP ANALYSIS REPORT
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LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

*** SOLUTION COMMENTS ***
==========

SOLUTION PARAMETERS

BRANCH VOLTAGE CRITERIA	:	3.00 %
BUS VOLTAGE CRITERIA	:	5.00 %
ACCELERATION FACTOR FOR 'PV' GENERATORS	:	1.00
ACCELERATION FACTOR FOR CONSTANT KVA LOADS	:	1.00
EXACT(ITERATIVE) SOLUTION	:	YES
UTILITY IMPEDANCE	:	NO
TRANSFORMER PHASE SHIFT	:	NO

ALL PU VALUES ARE EXPRESSED ON A 100 MVA BASE

LOAD FLOW IS BASED ON DIRECTLY CONNECTED LOADS.
LOAD ANALYSIS INCLUDES ALL LOADS.

<<PERCENT VOLTAGE DROPS ARE BASED ON NOMINAL DESIGN VOLTAGES>>

SWING GENERATORS

SOURCE NAME	VOLTAGE	ANGLE
UTIL-STN 559-2	1.000	0.00
B70-GEN	1.000	0.00
GEN-B92	1.000	0.00
GEN-B93	1.000	0.00
B94-GEN	1.000	0.00
B-95 GEN	1.000	0.00
G-B8 GEN	1.000	0.00
G-B22-GEN	1.000	0.00

LARGEST LOAD: 124.68 KVA
CONVERGENCE CRITERIA: 0.006 KVA

LARGEST BUS MISMATCH	B-B70-FIRE PMP	12.917 KVA
LARGEST BUS MISMATCH	B-B70-FIRE PMP	1.215 KVA
LARGEST BUS MISMATCH	B-B70-FIRE PMP	0.118 KVA
LARGEST BUS MISMATCH	B-B70-FIRE PMP	0.011 KVA
LARGEST BUS MISMATCH	B-B70-FIRE PMP	0.001 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS (SWING GENERATORS)

****

SOURCE	VOLTAGE	ANGLE	KW	KVAR	VD% (UTILITY IMPEDANCE)
UTIL-STN 559-2	1.000	0.00	4672.22	3672.44	Gen Z Ignored
B70-GEN	1.000	0.00	0.00	0.00	Gen Z Ignored
GEN-B92	1.000	0.00	36.71	27.92	Gen Z Ignored
GEN-B93	1.000	0.00	0.00	0.00	Gen Z Ignored
B94-GEN	1.000	0.00	0.00	0.00	Gen Z Ignored
B-95 GEN	1.000	0.00	0.00	0.00	Gen Z Ignored
G-B8 GEN	1.000	0.00	0.00	0.00	Gen Z Ignored
G-B22-GEN	1.000	0.00	0.00	0.00	Gen Z Ignored

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B1-MDP DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.73
========== PU BUS VOLTAGE: 0.963 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 48.0 KW 36.0 KVAR

LOAD FROM: B-B1-MDP-M CBL-0038 FEEDER AMPS: 173.0 VOLTAGE DROP: 0. %VD: 0.24
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B1-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.49
========== PU BUS VOLTAGE: 0.965 ANGLE: -0.9 DEGREES

LOAD FROM: B-T-B1-SEC CBL-0037 FEEDER AMPS: 173.0 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 48.1 KW 36.1 KVAR 60.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B1-MDP CBL-0038 FEEDER AMPS: 173.0 VOLTAGE DROP: 0. %VD: 0.24
PROJECTED POWER FLOW: 48.1 KW 36.1 KVAR 60.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B10 DISC DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.98
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.7 DEGREES

LOAD FROM: B-T-B10-SEC CBL-0359 FEEDER AMPS: 172.1 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 48.1 KW 36.1 KVAR 60.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B10-MDP CBL-0360 FEEDER AMPS: 172.1 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 48.1 KW 36.1 KVAR 60.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B10 EMRG TAP DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B10-MDP DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.25
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 48.0 KW 36.0 KVAR

LOAD FROM: B-B10 DISC CBL-0360 FEEDER AMPS: 172.1 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B12-MAP-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.96
========== PU BUS VOLTAGE: 0.960 ANGLE: -1.0 DEGREES

LOAD FROM: B-T-B12-SEC CBL-0361 FEEDER AMPS: 173.4 VOLTAGE DROP: 1. %VD: 0.38
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.2 KVAR 0.2 KVA

LOAD TO: B-B12-MDP CBL-0362 FEEDER AMPS: 173.4 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B12-MDP DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.97
========== PU BUS VOLTAGE: 0.960 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 48.0 KW 36.0 KVAR

LOAD FROM: B-B12-MAP-M CBL-0362 FEEDER AMPS: 173.4 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B13-APT-13 DESIGN VOLTS: 240 BUS VOLTS: 227 %VD: 5.40$
========== PU BUS VOLTAGE: 0.946 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 13.8 KW 10.3 KVAR

LOAD FROM: B-B13-MDP CBL-0369 FEEDER AMPS: 43.8 VOLTAGE DROP: 1. %VD: 0.21
PROJECTED POWER FLOW: 13.8 KW 10.3 KVAR 17.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B13-APT-14 DESIGN VOLTS: 240 BUS VOLTS: 226 %VD: 5.89$
========== PU BUS VOLTAGE: 0.941 ANGLE: -1.8 DEGREES
NET BRANCH DIVERSITY LOAD: 44.1 KW 33.1 KVAR

LOAD FROM: B-B13-MDP CBL-0368 FEEDER AMPS: 141.0 VOLTAGE DROP: 2. %VD: 0.71
PROJECTED POWER FLOW: 44.1 KW 33.1 KVAR 55.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.4 KVAR 0.4 KVA

==== BUS: B-B13-APT-15 DESIGN VOLTS: 240 BUS VOLTS: 224 %VD: 6.52$
========== PU BUS VOLTAGE: 0.935 ANGLE: -2.0 DEGREES
NET BRANCH DIVERSITY LOAD: 44.1 KW 33.1 KVAR

LOAD FROM: B-B13-MDP CBL-0367 FEEDER AMPS: 141.9 VOLTAGE DROP: 3. %VD: 1.34
PROJECTED POWER FLOW: 44.1 KW 33.1 KVAR 55.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.8 KVAR 0.9 KVA

==== BUS: B-B13-GARAGE DESIGN VOLTS: 240 BUS VOLTS: 226 %VD: 5.91$
========== PU BUS VOLTAGE: 0.941 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 22.1 KW 16.6 KVAR

LOAD FROM: B-B13-MDP CBL-0365 FEEDER AMPS: 70.5 VOLTAGE DROP: 2. %VD: 0.73
PROJECTED POWER FLOW: 22.1 KW 16.6 KVAR 27.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B13-MDP DESIGN VOLTS: 240 BUS VOLTS: 228 %VD: 5.18$
========== PU BUS VOLTAGE: 0.948 ANGLE: -1.6 DEGREES

LOAD FROM: B-B13-MDP-M CBL-0364 FEEDER AMPS: 512.7 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 161.4 KW 121.6 KVAR 202.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B13-GARAGE CBL-0365 FEEDER AMPS: 70.5 VOLTAGE DROP: 2. %VD: 0.73
PROJECTED POWER FLOW: 22.3 KW 16.7 KVAR 27.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B13-MGR H16 CBL-0366 FEEDER AMPS: 71.5 VOLTAGE DROP: 5. %VD: 2.07
PROJECTED POWER FLOW: 22.6 KW 16.9 KVAR 28.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.3 KVAR 0.6 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B13-APT-15 CBL-0367 FEEDER AMPS: 141.9 VOLTAGE DROP: 3. %VD: 1.34
PROJECTED POWER FLOW: 44.6 KW 33.9 KVAR 56.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.8 KVAR 0.9 KVA

LOAD TO: B-B13-APT-14 CBL-0368 FEEDER AMPS: 141.0 VOLTAGE DROP: 2. %VD: 0.71
PROJECTED POWER FLOW: 44.4 KW 33.5 KVAR 55.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.4 KVAR 0.4 KVA

LOAD TO: B-B13-APT-13 CBL-0369 FEEDER AMPS: 43.8 VOLTAGE DROP: 1. %VD: 0.21
PROJECTED POWER FLOW: 13.8 KW 10.4 KVAR 17.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B13-UNKNOWN CBL-0370 FEEDER AMPS: 43.8 VOLTAGE DROP: 1. %VD: 0.21
PROJECTED POWER FLOW: 13.8 KW 10.4 KVAR 17.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B13-MDP-M DESIGN VOLTS: 240 BUS VOLTS: 228 %VD: 5.18$
========== PU BUS VOLTAGE: 0.948 ANGLE: -1.6 DEGREES

LOAD FROM: B-B13-TXMR SEC CBL-0363 FEEDER AMPS: 512.7 VOLTAGE DROP: 3. %VD: 1.29
PROJECTED POWER FLOW: 161.4 KW 121.6 KVAR 202.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 1.7 KW 2.3 KVAR 2.9 KVA

LOAD TO: B-B13-MDP CBL-0364 FEEDER AMPS: 512.7 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 161.4 KW 121.6 KVAR 202.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B13-MGR H16 DESIGN VOLTS: 240 BUS VOLTS: 223 %VD: 7.26$
========== PU BUS VOLTAGE: 0.927 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 22.1 KW 16.6 KVAR

LOAD FROM: B-B13-MDP CBL-0366 FEEDER AMPS: 71.5 VOLTAGE DROP: 5. %VD: 2.07
PROJECTED POWER FLOW: 22.1 KW 16.6 KVAR 27.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.3 KVAR 0.6 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B13-TXMR SEC DESIGN VOLTS: 240 BUS VOLTS: 231 %VD: 3.89
========== PU BUS VOLTAGE: 0.961 ANGLE: -1.4 DEGREES

LOAD FROM: B-T-13-PRI T-B13 TRANSF AMPS: 512.7 VOLTAGE DROP: 9. %VD: 3.54$
PROJECTED POWER FLOW: 163.1 KW 123.9 KVAR 204.9 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 2.9 KW 8.6 KVAR 9.1 KVA

LOAD TO: B-B13-MDP-M CBL-0363 FEEDER AMPS: 512.7 VOLTAGE DROP: 3. %VD: 1.29
PROJECTED POWER FLOW: 163.1 KW 123.9 KVAR 204.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 1.7 KW 2.3 KVAR 2.9 KVA

==== BUS: B-B13-UNKNOWN DESIGN VOLTS: 240 BUS VOLTS: 227 %VD: 5.40$
========== PU BUS VOLTAGE: 0.946 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 13.8 KW 10.3 KVAR

LOAD FROM: B-B13-MDP CBL-0370 FEEDER AMPS: 43.8 VOLTAGE DROP: 1. %VD: 0.21
PROJECTED POWER FLOW: 13.8 KW 10.3 KVAR 17.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-A/C DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.66
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 13.8 KW 10.4 KVAR

LOAD FROM: B-B17-DP CBL-0384 FEEDER AMPS: 50.2 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 13.8 KW 10.4 KVAR 17.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-A/C-2 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.66
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 6.1 KW 4.6 KVAR

LOAD FROM: B-B17-DP CBL-0386 FEEDER AMPS: 22.3 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 6.1 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B17-AC1 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.66
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 6.1 KW 4.6 KVAR

LOAD FROM: B-B17-DP CBL-0381 FEEDER AMPS: 22.3 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 6.1 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-ACB DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.70
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 6.1 KW 4.6 KVAR

LOAD FROM: B-B17-DP CBL-0380 FEEDER AMPS: 22.3 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 6.1 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-ANIMALRM DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.80
========== PU BUS VOLTAGE: 0.962 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 7.9 KW 5.9 KVAR

LOAD FROM: B-B17-EMERG CBL-0377 FEEDER AMPS: 28.4 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 7.9 KW 5.9 KVAR 9.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-ATS DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.41
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.9 DEGREES

LOAD FROM: BUS-0423 ATS-B-17 FEEDER AMPS: 73.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-EMERG CBL-0374 FEEDER AMPS: 73.8 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B17-DP DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.59

========== PU BUS VOLTAGE: 0.954 ANGLE: -1.0 DEGREES

LOAD FROM: B-B17-MAIN CBL-0373 FEEDER AMPS: 275.7 VOLTAGE DROP: 3. %VD: 1.30

PROJECTED POWER FLOW: 75.8 KW 56.9 KVAR 94.8 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.9 KW 1.0 KVAR 1.3 KVA

LOAD TO: B-B17-NP11 CBL-0378 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.10

PROJECTED POWER FLOW: 3.7 KW 2.8 KVAR 4.6 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: B-B17-NP21 CBL-0379 FEEDER AMPS: 0.0 VOLTAGE DROP: 0. %VD: 0.00

PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-ACB CBL-0380 FEEDER AMPS: 22.3 VOLTAGE DROP: 0. %VD: 0.11

PROJECTED POWER FLOW: 6.1 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-AC1 CBL-0381 FEEDER AMPS: 22.3 VOLTAGE DROP: 0. %VD: 0.07

PROJECTED POWER FLOW: 6.1 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-NPA1 CBL-0382 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.04

PROJECTED POWER FLOW: 3.7 KW 2.8 KVAR 4.6 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-NP12 CBL-0383 FEEDER AMPS: 50.2 VOLTAGE DROP: 0. %VD: 0.08

PROJECTED POWER FLOW: 13.8 KW 10.4 KVAR 17.3 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-A/C CBL-0384 FEEDER AMPS: 50.2 VOLTAGE DROP: 0. %VD: 0.07

PROJECTED POWER FLOW: 13.8 KW 10.4 KVAR 17.3 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-NPB2 CBL-0385 FEEDER AMPS: 20.0 VOLTAGE DROP: 0. %VD: 0.07

PROJECTED POWER FLOW: 5.5 KW 4.1 KVAR 6.9 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-A/C-2 CBL-0386 FEEDER AMPS: 22.3 VOLTAGE DROP: 0. %VD: 0.07

PROJECTED POWER FLOW: 6.1 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B17-NP22 CBL-0387 FEEDER AMPS: 22.3 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 6.1 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-NPB1 CBL-0388 FEEDER AMPS: 39.0 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 10.7 KW 8.1 KVAR 13.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-EMERG DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.45
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.9 DEGREES

LOAD FROM: B-B17-ATS CBL-0374 FEEDER AMPS: 73.8 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-NEB2 CBL-0375 FEEDER AMPS: 17.0 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-NEB1 CBL-0376 FEEDER AMPS: 28.4 VOLTAGE DROP: 1. %VD: 0.42
PROJECTED POWER FLOW: 7.9 KW 5.9 KVAR 9.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-ANIMALRM CBL-0377 FEEDER AMPS: 28.4 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 7.9 KW 5.9 KVAR 9.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-MAIN DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.29
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.9 DEGREES

LOAD FROM: B-T-B17-SEC CBL-0371 FEEDER AMPS: 349.6 VOLTAGE DROP: 2. %VD: 0.78
PROJECTED POWER FLOW: 97.4 KW 73.2 KVAR 121.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 0.7 KVAR 1.0 KVA

LOAD TO: BUS-0423 CBL-0372 FEEDER AMPS: 73.8 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-DP CBL-0373 FEEDER AMPS: 275.7 VOLTAGE DROP: 3. %VD: 1.30
PROJECTED POWER FLOW: 76.7 KW 57.8 KVAR 96.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.9 KW 1.0 KVAR 1.3 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B17-NEB1 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.87
========== PU BUS VOLTAGE: 0.961 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 7.9 KW 5.9 KVAR

LOAD FROM: B-B17-EMERG CBL-0376 FEEDER AMPS: 28.4 VOLTAGE DROP: 1. %VD: 0.42
PROJECTED POWER FLOW: 7.9 KW 5.9 KVAR 9.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-NEB2 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.57
========== PU BUS VOLTAGE: 0.964 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 4.7 KW 3.5 KVAR

LOAD FROM: B-B17-EMERG CBL-0375 FEEDER AMPS: 17.0 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-NP11 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.69
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 3.7 KW 2.8 KVAR

LOAD FROM: B-B17-DP CBL-0378 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 3.7 KW 2.8 KVAR 4.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-NP12 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.67
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 13.8 KW 10.4 KVAR

LOAD FROM: B-B17-DP CBL-0383 FEEDER AMPS: 50.2 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 13.8 KW 10.4 KVAR 17.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-NP21 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.59
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.0 DEGREES
**** NO LOAD SPECIFIED ****

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B17-NP22 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.66
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 6.1 KW 4.6 KVAR

LOAD FROM: B-B17-DP CBL-0387 FEEDER AMPS: 22.3 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 6.1 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-NPA1 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.63
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 3.7 KW 2.8 KVAR

LOAD FROM: B-B17-DP CBL-0382 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 3.7 KW 2.8 KVAR 4.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-NPB1 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.66
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 10.7 KW 8.1 KVAR

LOAD FROM: B-B17-DP CBL-0388 FEEDER AMPS: 39.0 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 10.7 KW 8.1 KVAR 13.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-NPB2 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.66
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 5.5 KW 4.1 KVAR

LOAD FROM: B-B17-DP CBL-0385 FEEDER AMPS: 20.0 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 5.5 KW 4.1 KVAR 6.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-1STFL DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.14
========== PU BUS VOLTAGE: 0.969 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.9 KVAR

LOAD FROM: B-B18-1STFL-M CBL-0404 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B18-1STFL-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.09
========== PU BUS VOLTAGE: 0.969 ANGLE: -0.8 DEGREES

LOAD FROM: B-B18-TAP BOX CBL-0403 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-1STFL CBL-0404 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-2ND-FL-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.09
========== PU BUS VOLTAGE: 0.969 ANGLE: -0.8 DEGREES

LOAD FROM: B-B18-TAP BOX CBL-0401 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-2NDFL CBL-0402 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-2NDFL DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.18
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.9 KVAR

LOAD FROM: B-B18-2ND-FL-M CBL-0402 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-AC1 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.03
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 6.9 KW 5.1 KVAR

LOAD FROM: B-B18-NMDP CBL-0393 FEEDER AMPS: 24.5 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 6.9 KW 5.1 KVAR 8.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B18-AC2 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.01
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 15.2 KW 11.4 KVAR

LOAD FROM: B-B18-NMDP CBL-0407 FEEDER AMPS: 54.5 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 15.2 KW 11.4 KVAR 19.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-ATS-EMRG DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.05
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES

LOAD FROM: BUS-0452 ATS-B18-EMERG FEEDER AMPS: 40.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 11.4 KW 8.6 KVAR 14.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-TAP BOX CBL-0400 FEEDER AMPS: 40.9 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 11.4 KW 8.6 KVAR 14.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-EMERG DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.10
========== PU BUS VOLTAGE: 0.969 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.9 KVAR

LOAD FROM: B-B18-EMERG-M CBL-0406 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-EMERG-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.09
========== PU BUS VOLTAGE: 0.969 ANGLE: -0.8 DEGREES

LOAD FROM: B-B18-TAP BOX CBL-0405 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-EMERG CBL-0406 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B18-NCP DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.92
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 7.6 KW 5.7 KVAR

LOAD FROM: B-B18-NMDP CBL-0394 FEEDER AMPS: 27.2 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 7.6 KW 5.7 KVAR 9.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-NMDP DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.88
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.9 DEGREES

LOAD FROM: B-B18-NMDP-M CBL-0391 FEEDER AMPS: 343.5 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 96.2 KW 72.1 KVAR 120.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-NP11 CBL-0392 FEEDER AMPS: 24.5 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 6.9 KW 5.1 KVAR 8.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-AC1 CBL-0393 FEEDER AMPS: 24.5 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 6.9 KW 5.1 KVAR 8.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-NCP CBL-0394 FEEDER AMPS: 27.2 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 7.6 KW 5.7 KVAR 9.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-NP22 CBL-0395 FEEDER AMPS: 40.8 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 11.5 KW 8.6 KVAR 14.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-NP23 CBL-0396 FEEDER AMPS: 54.6 VOLTAGE DROP: 1. %VD: 0.34
PROJECTED POWER FLOW: 15.3 KW 11.4 KVAR 19.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B18-NP12 CBL-0397 FEEDER AMPS: 24.5 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 6.9 KW 5.1 KVAR 8.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-NP21 CBL-0398 FEEDER AMPS: 27.2 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 7.6 KW 5.7 KVAR 9.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: BUS-0452 CBL-0399 FEEDER AMPS: 40.9 VOLTAGE DROP: 0. %VD: 0.17

PROJECTED POWER FLOW: 11.5 KW 8.6 KVAR 14.3 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-AC2 CBL-0407 FEEDER AMPS: 54.5 VOLTAGE DROP: 0. %VD: 0.13

PROJECTED POWER FLOW: 15.3 KW 11.4 KVAR 19.1 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-STRT LHT CBL-0408 FEEDER AMPS: 24.5 VOLTAGE DROP: 0. %VD: 0.15

PROJECTED POWER FLOW: 6.9 KW 5.1 KVAR 8.6 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-NMDP-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.87

========== PU BUS VOLTAGE: 0.971 ANGLE: -0.9 DEGREES

LOAD FROM: B-T-B18-SEC CBL-0390 FEEDER AMPS: 343.5 VOLTAGE DROP: 1. %VD: 0.29

PROJECTED POWER FLOW: 96.2 KW 72.1 KVAR 120.2 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.2 KW 0.3 KVAR 0.4 KVA

LOAD TO: B-B18-NMDP CBL-0391 FEEDER AMPS: 343.5 VOLTAGE DROP: 0. %VD: 0.01

PROJECTED POWER FLOW: 96.2 KW 72.1 KVAR 120.2 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-NP11 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.03

========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES

NET BRANCH DIVERSITY LOAD: 6.9 KW 5.1 KVAR

LOAD FROM: B-B18-NMDP CBL-0392 FEEDER AMPS: 24.5 VOLTAGE DROP: 0. %VD: 0.15

PROJECTED POWER FLOW: 6.9 KW 5.1 KVAR 8.6 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-NP12 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.03

========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES

NET BRANCH DIVERSITY LOAD: 6.9 KW 5.1 KVAR

LOAD FROM: B-B18-NMDP CBL-0397 FEEDER AMPS: 24.5 VOLTAGE DROP: 0. %VD: 0.15

PROJECTED POWER FLOW: 6.9 KW 5.1 KVAR 8.6 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B18-NP21 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.01
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 7.6 KW 5.7 KVAR

LOAD FROM: B-B18-NMDP CBL-0398 FEEDER AMPS: 27.2 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 7.6 KW 5.7 KVAR 9.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-NP22 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.02
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 11.4 KW 8.6 KVAR

LOAD FROM: B-B18-NMDP CBL-0395 FEEDER AMPS: 40.8 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 11.4 KW 8.6 KVAR 14.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-NP23 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.22
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 15.2 KW 11.4 KVAR

LOAD FROM: B-B18-NMDP CBL-0396 FEEDER AMPS: 54.6 VOLTAGE DROP: 1. %VD: 0.34
PROJECTED POWER FLOW: 15.2 KW 11.4 KVAR 19.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B18-STRT LHT DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.03
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 6.9 KW 5.1 KVAR

LOAD FROM: B-B18-NMDP CBL-0408 FEEDER AMPS: 24.5 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 6.9 KW 5.1 KVAR 8.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-TAP BOX DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.09
========== PU BUS VOLTAGE: 0.969 ANGLE: -0.8 DEGREES

LOAD FROM: B-B18-ATS-EMRG CBL-0400 FEEDER AMPS: 40.9 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 11.4 KW 8.6 KVAR 14.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B18-2ND-FL-M CBL-0401 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.01

PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-1STFL-M CBL-0403 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.01

PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-EMERG-M CBL-0405 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.01

PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B19-200A PNL DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.12

========== PU BUS VOLTAGE: 0.959 ANGLE: -1.7 DEGREES

NET BRANCH DIVERSITY LOAD: 53.3 KW 40.0 KVAR

LOAD FROM: B-B19-MDP2 CBL-0424 FEEDER AMPS: 193.0 VOLTAGE DROP: 0. %VD: 0.08

PROJECTED POWER FLOW: 53.3 KW 40.0 KVAR 66.7 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B19-B1 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.21

========== PU BUS VOLTAGE: 0.958 ANGLE: -1.7 DEGREES

NET BRANCH DIVERSITY LOAD: 12.7 KW 9.6 KVAR

LOAD FROM: B-B19-MDP1 CBL-0414 FEEDER AMPS: 46.1 VOLTAGE DROP: 0. %VD: 0.08

PROJECTED POWER FLOW: 12.7 KW 9.6 KVAR 15.9 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B19-L1 DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.67$

========== PU BUS VOLTAGE: 0.943 ANGLE: -1.4 DEGREES

NET BRANCH DIVERSITY LOAD: 12.7 KW 9.6 KVAR

LOAD FROM: B-B19-MDP1 CBL-0413 FEEDER AMPS: 46.8 VOLTAGE DROP: 3. %VD: 1.54

PROJECTED POWER FLOW: 12.7 KW 9.6 KVAR 15.9 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.3 KW 0.1 KVAR 0.3 KVA

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B19-L2 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.80
========== PU BUS VOLTAGE: 0.952 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 19.1 KW 14.3 KVAR

LOAD FROM: B-B19-MDP1 CBL-0415 FEEDER AMPS: 69.6 VOLTAGE DROP: 1. %VD: 0.66
PROJECTED POWER FLOW: 19.1 KW 14.3 KVAR 23.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B19-MDP1 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.14
========== PU BUS VOLTAGE: 0.959 ANGLE: -1.7 DEGREES

LOAD FROM: B-B19-MDP1-M CBL-0411 FEEDER AMPS: 787.9 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 218.4 KW 162.4 KVAR 272.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B19-PS CBL-0412 FEEDER AMPS: 46.4 VOLTAGE DROP: 2. %VD: 0.76
PROJECTED POWER FLOW: 12.9 KW 9.6 KVAR 16.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B19-L1 CBL-0413 FEEDER AMPS: 46.8 VOLTAGE DROP: 3. %VD: 1.54
PROJECTED POWER FLOW: 13.0 KW 9.6 KVAR 16.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.1 KVAR 0.3 KVA

LOAD TO: B-B19-B1 CBL-0414 FEEDER AMPS: 46.1 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 12.7 KW 9.6 KVAR 15.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B19-L2 CBL-0415 FEEDER AMPS: 69.6 VOLTAGE DROP: 1. %VD: 0.66
PROJECTED POWER FLOW: 19.3 KW 14.4 KVAR 24.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B19-MDPA CBL-0416 FEEDER AMPS: 195.9 VOLTAGE DROP: 2. %VD: 0.83
PROJECTED POWER FLOW: 54.8 KW 39.8 KVAR 67.7 KVA PF:0.81 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.5 KVAR 0.6 KVA

LOAD TO: B-B19-P1 CBL-0417 FEEDER AMPS: 185.9 VOLTAGE DROP: 2. %VD: 0.80
PROJECTED POWER FLOW: 51.2 KW 38.7 KVAR 64.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.5 KVAR 0.6 KVA

LOAD TO: B-B19-P4 CBL-0418 FEEDER AMPS: 103.9 VOLTAGE DROP: 0. %VD: 0.17
PROJECTED POWER FLOW: 28.7 KW 21.5 KVAR 35.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B19-P2 CBL-0419 FEEDER AMPS: 93.0 VOLTAGE DROP: 2. %VD: 0.89
PROJECTED POWER FLOW: 25.8 KW 19.2 KVAR 32.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.1 KVAR 0.3 KVA

==== BUS: B-B19-MDP1-M DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.13
========== PU BUS VOLTAGE: 0.959 ANGLE: -1.7 DEGREES

LOAD FROM: B-T-B19-SEC CBL-0410 FEEDER AMPS: 787.9 VOLTAGE DROP: 1. %VD: 0.45
PROJECTED POWER FLOW: 218.4 KW 162.4 KVAR 272.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 1.2 KVAR 1.4 KVA

LOAD TO: B-B19-MDP1 CBL-0411 FEEDER AMPS: 787.9 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 218.4 KW 162.4 KVAR 272.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B19-MDP2 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 4.05
========== PU BUS VOLTAGE: 0.960 ANGLE: -1.7 DEGREES

LOAD FROM: B-B19-MDP2-M CBL-0422 FEEDER AMPS: 397.6 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 110.5 KW 81.8 KVAR 137.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B21-P2 CBL-0423 FEEDER AMPS: 204.6 VOLTAGE DROP: 6. %VD: 2.85
PROJECTED POWER FLOW: 57.1 KW 41.7 KVAR 70.8 KVA PF:0.81 LAGGING
LOSSES THRU FEEDER: 1.8 KW 1.1 KVAR 2.1 KVA

LOAD TO: B-B19-200A PNL CBL-0424 FEEDER AMPS: 193.0 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 53.4 KW 40.0 KVAR 66.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B19-MDP2-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.98
========== PU BUS VOLTAGE: 0.960 ANGLE: -1.7 DEGREES

LOAD FROM: B-T-B19-SEC CBL-0421 FEEDER AMPS: 397.6 VOLTAGE DROP: 1. %VD: 0.30
PROJECTED POWER FLOW: 110.6 KW 81.9 KVAR 137.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.4 KVAR 0.5 KVA

LOAD TO: B-B19-MDP2 CBL-0422 FEEDER AMPS: 397.6 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 110.6 KW 81.9 KVAR 137.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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 VOLTAGE EFFECT ON LOADS MODELED
 VOLTAGE DROP CRITERIA: BRANCH =  3.00 %   BUS =  5.00


 ==== BUS:  B-B19-MDPA     DESIGN VOLTS:     208 BUS VOLTS:     198 %VD:  4.97
 ========================= PU BUS VOLTAGE:  0.950       ANGLE:  -1.9 DEGREES

 LOAD FROM:  B-B19-MDP1     CBL-0416        FEEDER AMPS: 195.9 VOLTAGE DROP:     2. %VD:
0.83
 PROJECTED POWER FLOW:     54.4 KW      39.2 KVAR      67.1 KVA  PF:0.81 LAGGING
 LOSSES THRU FEEDER:      0.3 KW       0.5 KVAR       0.6 KVA

 LOAD   TO:  B-B19-P6       CBL-0420        FEEDER AMPS: 195.9 VOLTAGE DROP:    10. %VD:
4.83$
 PROJECTED POWER FLOW:     54.4 KW      39.2 KVAR      67.1 KVA  PF:0.81 LAGGING
 LOSSES THRU FEEDER:      3.5 KW       1.0 KVAR       3.6 KVA


 ==== BUS:  B-B19-P1       DESIGN VOLTS:     208 BUS VOLTS:     198 %VD:  4.93
 ========================= PU BUS VOLTAGE:  0.951       ANGLE:  -1.9 DEGREES
                NET BRANCH DIVERSITY LOAD:    50.9 KW    38.2 KVAR

 LOAD FROM:  B-B19-MDP1     CBL-0417        FEEDER AMPS: 185.9 VOLTAGE DROP:     2. %VD:
0.80
 PROJECTED POWER FLOW:     50.9 KW      38.2 KVAR      63.7 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.3 KW       0.5 KVAR       0.6 KVA


 ==== BUS:  B-B19-P2       DESIGN VOLTS:     208 BUS VOLTS:     198 %VD:  5.03$
 ========================= PU BUS VOLTAGE:  0.950       ANGLE:  -1.6 DEGREES
                NET BRANCH DIVERSITY LOAD:    25.5 KW    19.1 KVAR

 LOAD FROM:  B-B19-MDP1     CBL-0419        FEEDER AMPS:  93.0 VOLTAGE DROP:     2. %VD:
0.89
 PROJECTED POWER FLOW:     25.5 KW      19.1 KVAR      31.8 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.3 KW       0.1 KVAR       0.3 KVA


 ==== BUS:  B-B19-P4       DESIGN VOLTS:     208 BUS VOLTS:     199 %VD:  4.31
 ========================= PU BUS VOLTAGE:  0.957       ANGLE:  -1.7 DEGREES
                NET BRANCH DIVERSITY LOAD:    28.7 KW    21.5 KVAR

 LOAD FROM:  B-B19-MDP1     CBL-0418        FEEDER AMPS: 103.9 VOLTAGE DROP:     0. %VD:
0.17
 PROJECTED POWER FLOW:     28.7 KW      21.5 KVAR      35.8 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.1 KW       0.0 KVAR       0.1 KVA
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LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B19-P6 DESIGN VOLTS: 208 BUS VOLTS: 188 %VD: 9.80$
========== PU BUS VOLTAGE: 0.902 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 50.9 KW 38.2 KVAR

LOAD FROM: B-B19-MDPA CBL-0420 FEEDER AMPS: 195.9 VOLTAGE DROP: 10. %VD: 4.83$
PROJECTED POWER FLOW: 50.9 KW 38.2 KVAR 63.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 3.5 KW 1.0 KVAR 3.6 KVA

==== BUS: B-B19-PS DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.90
========== PU BUS VOLTAGE: 0.951 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 12.7 KW 9.6 KVAR

LOAD FROM: B-B19-MDP1 CBL-0412 FEEDER AMPS: 46.4 VOLTAGE DROP: 2. %VD: 0.76
PROJECTED POWER FLOW: 12.7 KW 9.6 KVAR 15.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B2-ATS-CRIT DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.57
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.4 DEGREES

LOAD TO: B-B2-CRIT PNL CBL-0064 FEEDER AMPS: 128.0 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 36.0 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0117 ATS-B2-CRIT FEEDER AMPS: 128.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 36.0 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-ATS-LED3 DESIGN VOLTS: 208 BUS VOLTS: 191 %VD: 8.00$
========== PU BUS VOLTAGE: 0.920 ANGLE: -2.3 DEGREES

LOAD FROM: BUS-0076 ATS-B2-LED3 FEEDER AMPS: 181.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-EMERG-M CBL-0044 FEEDER AMPS: 46.7 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 12.4 KW 9.3 KVAR 15.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B2-PNL 1 CBL-0046 FEEDER AMPS: 46.7 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 12.4 KW 9.3 KVAR 15.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-NEWLAB-M CBL-0048 FEEDER AMPS: 40.8 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 10.8 KW 8.1 KVAR 13.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-PNL-2 CBL-0050 FEEDER AMPS: 19.8 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 5.3 KW 3.9 KVAR 6.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-PNL-3-M CBL-0051 FEEDER AMPS: 26.8 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-ATS-LS DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 4.06
========== PU BUS VOLTAGE: 0.959 ANGLE: -1.4 DEGREES

LOAD FROM: BUS-0106* ATS-B2-LS FEEDER AMPS: 129.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 35.9 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-PNL LS CBL-0072 FEEDER AMPS: 129.9 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 35.9 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-BATTERYCH DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.43
========== PU BUS VOLTAGE: 0.956 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 4.7 KW 3.5 KVAR

LOAD FROM: B-B2-PNL LS CBL-0080 FEEDER AMPS: 17.0 VOLTAGE DROP: 1. %VD: 0.32
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-CATSCAN DESIGN VOLTS: 480 BUS VOLTS: 462 %VD: 3.84
========== PU BUS VOLTAGE: 0.962 ANGLE: -1.5 DEGREES
NET BRANCH DIVERSITY LOAD: 99.7 KW 74.8 KVAR

LOAD FROM: B-B2-MDP CBL-0040 FEEDER AMPS: 155.9 VOLTAGE DROP: 3. %VD: 0.61
PROJECTED POWER FLOW: 99.7 KW 74.8 KVAR 124.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 0.3 KVAR 0.8 KVA

==== BUS: B-B2-CRIT PNL DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.60
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.4 DEGREES

LOAD FROM: B-B2-ATS-CRIT CBL-0064 FEEDER AMPS: 128.0 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 35.9 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-LB2E CBL-0065 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-L2A CBL-0066 FEEDER AMPS: 28.4 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-MEDAIRCOM CBL-0067 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-ELEV-P1 CBL-0068 FEEDER AMPS: 28.4 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-DENTAL LB CBL-0069 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-PNL-L11 CBL-0070 FEEDER AMPS: 28.4 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-DENTAL LB DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.69
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B2-CRIT PNL CBL-0069 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-DENTSUCPM DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.18
========== PU BUS VOLTAGE: 0.958 ANGLE: -1.4 DEGREES
NET BRANCH DIVERSITY LOAD: 2.4 KW 1.8 KVAR

LOAD FROM: B-B2-PNL LS CBL-0076 FEEDER AMPS: 8.5 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 2.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-ELEV DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.16
========== PU BUS VOLTAGE: 0.958 ANGLE: -1.4 DEGREES
NET BRANCH DIVERSITY LOAD: 5.3 KW 4.0 KVAR

LOAD FROM: B-B2-PNL LS CBL-0073 FEEDER AMPS: 19.1 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 5.3 KW 4.0 KVAR 6.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-ELEV-P1 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.79
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 8.0 KW 6.0 KVAR

LOAD FROM: B-B2-CRIT PNL CBL-0068 FEEDER AMPS: 28.4 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-EMERG-M DESIGN VOLTS: 208 BUS VOLTS: 191 %VD: 8.03$
========== PU BUS VOLTAGE: 0.920 ANGLE: -2.3 DEGREES

LOAD FROM: B-B2-ATS-LED3 CBL-0044 FEEDER AMPS: 46.7 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 12.4 KW 9.3 KVAR 15.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B2-EMERG-PNL CBL-0045 FEEDER AMPS: 46.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 12.4 KW 9.3 KVAR 15.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-EMERG-PNL DESIGN VOLTS: 208 BUS VOLTS: 191 %VD: 8.03$
========== PU BUS VOLTAGE: 0.920 ANGLE: -2.3 DEGREES
NET BRANCH DIVERSITY LOAD: 12.4 KW 9.3 KVAR

LOAD FROM: B-B2-EMERG-M CBL-0045 FEEDER AMPS: 46.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 12.4 KW 9.3 KVAR 15.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-EPNL-B DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.02
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-B2-EPNL-B-M DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.02
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-B2-L12 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.18
========== PU BUS VOLTAGE: 0.958 ANGLE: -1.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.7 KW 3.5 KVAR

LOAD FROM: B-B2-PNL LS CBL-0075 FEEDER AMPS: 17.0 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-L2A DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.83
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 8.0 KW 6.0 KVAR

LOAD FROM: B-B2-CRIT PNL CBL-0066 FEEDER AMPS: 28.4 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-L2E DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.20
========== PU BUS VOLTAGE: 0.958 ANGLE: -1.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.7 KW 3.5 KVAR

LOAD FROM: B-B2-PNL LS CBL-0074 FEEDER AMPS: 17.0 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-L4 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.26
========== PU BUS VOLTAGE: 0.957 ANGLE: -1.4 DEGREES
NET BRANCH DIVERSITY LOAD: 17.9 KW 13.5 KVAR

LOAD FROM: B-B2-MDPB CBL-0090 FEEDER AMPS: 65.0 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 17.9 KW 13.5 KVAR 22.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B2-L6 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.26
========== PU BUS VOLTAGE: 0.957 ANGLE: -1.4 DEGREES
NET BRANCH DIVERSITY LOAD: 17.9 KW 13.5 KVAR

LOAD FROM: B-B2-MDPB CBL-0083 FEEDER AMPS: 65.0 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 17.9 KW 13.5 KVAR 22.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B2-L7 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.26
========== PU BUS VOLTAGE: 0.957 ANGLE: -1.4 DEGREES
NET BRANCH DIVERSITY LOAD: 17.9 KW 13.5 KVAR

LOAD FROM: B-B2-MDPB CBL-0088 FEEDER AMPS: 65.0 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 17.9 KW 13.5 KVAR 22.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B2-L8 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.26
========== PU BUS VOLTAGE: 0.957 ANGLE: -1.4 DEGREES
NET BRANCH DIVERSITY LOAD: 17.9 KW 13.5 KVAR

LOAD FROM: B-B2-MDPB CBL-0089 FEEDER AMPS: 65.0 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 17.9 KW 13.5 KVAR 22.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-L9E DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.20
========== PU BUS VOLTAGE: 0.958 ANGLE: -1.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.7 KW 3.5 KVAR

LOAD FROM: B-B2-PNL LS CBL-0077 FEEDER AMPS: 17.0 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-LB1E DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.20
========== PU BUS VOLTAGE: 0.958 ANGLE: -1.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.7 KW 3.5 KVAR

LOAD FROM: B-B2-PNL LS CBL-0078 FEEDER AMPS: 17.0 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-LB2 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.26
========== PU BUS VOLTAGE: 0.957 ANGLE: -1.4 DEGREES
NET BRANCH DIVERSITY LOAD: 17.9 KW 13.5 KVAR

LOAD FROM: B-B2-MDPB CBL-0082 FEEDER AMPS: 65.0 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 17.9 KW 13.5 KVAR 22.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B2-LB2E DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.72
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B2-CRIT PNL CBL-0065 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-LED-3 DESIGN VOLTS: 208 BUS VOLTS: 192 %VD: 7.82$
========== PU BUS VOLTAGE: 0.922 ANGLE: -2.4 DEGREES

LOAD FROM: B-T-B2-LED-SEC CBL-0042 FEEDER AMPS: 181.0 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 48.1 KW 36.1 KVAR 60.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: BUS-0076 CBL-0043 FEEDER AMPS: 181.0 VOLTAGE DROP: 0. %VD: 0.17
PROJECTED POWER FLOW: 48.1 KW 36.1 KVAR 60.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B2-MDP DESIGN VOLTS: 480 BUS VOLTS: 464 %VD: 3.24
========== PU BUS VOLTAGE: 0.968 ANGLE: -1.6 DEGREES

LOAD FROM: B-B2-MDP-M CBL-0039 FEEDER AMPS: 561.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 360.6 KW 271.7 KVAR 451.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-CATSCAN CBL-0040 FEEDER AMPS: 155.9 VOLTAGE DROP: 3. %VD: 0.61
PROJECTED POWER FLOW: 100.5 KW 75.1 KVAR 125.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 0.3 KVAR 0.8 KVA

LOAD TO: B-T-B2-LED-PRI CBL-0041 FEEDER AMPS: 78.4 VOLTAGE DROP: 2. %VD: 0.44
PROJECTED POWER FLOW: 50.0 KW 38.5 KVAR 63.1 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.1 KVAR 0.3 KVA

LOAD TO: B-B2-PNL-P CBL-0052 FEEDER AMPS: 209.9 VOLTAGE DROP: 3. %VD: 0.62
PROJECTED POWER FLOW: 134.9 KW 101.7 KVAR 168.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.6 KW 1.0 KVAR 1.2 KVA

LOAD TO: B-B2-XRAY-124 CBL-0055 FEEDER AMPS: 116.8 VOLTAGE DROP: 5. %VD: 1.06
PROJECTED POWER FLOW: 75.2 KW 56.4 KVAR 94.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.8 KW 0.6 KVAR 1.0 KVA

==== BUS: B-B2-MDP-M DESIGN VOLTS: 480 BUS VOLTS: 464 %VD: 3.23
========== PU BUS VOLTAGE: 0.968 ANGLE: -1.6 DEGREES

LOAD FROM: B-T-B2-SEC4 CBL-0084 FEEDER AMPS: 561.2 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 360.7 KW 271.7 KVAR 451.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B2-MDP CBL-0039 FEEDER AMPS: 561.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 360.7 KW 271.7 KVAR 451.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-MDPA DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.48
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.8 DEGREES

LOAD TO: BUS-0091 CBL-0058 FEEDER AMPS: 69.9 VOLTAGE DROP: 2. %VD: 1.18
PROJECTED POWER FLOW: 19.5 KW 14.5 KVAR 24.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.1 KVAR 0.3 KVA

LOAD TO: B-B2-PNL-D2 CBL-0059 FEEDER AMPS: 278.6 VOLTAGE DROP: 2. %VD: 0.90
PROJECTED POWER FLOW: 77.3 KW 58.4 KVAR 96.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.8 KVAR 1.0 KVA

LOAD FROM: B-B2-MDPA-M CBL-0057 FEEDER AMPS: 348.6 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 96.8 KW 72.9 KVAR 121.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-MDPA-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.46
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.7 DEGREES

LOAD FROM: B-T-B2-SEC2 CBL-0085 FEEDER AMPS: 348.6 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 96.8 KW 73.0 KVAR 121.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-MDPA CBL-0057 FEEDER AMPS: 348.6 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 96.8 KW 73.0 KVAR 121.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-MDPB DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 4.00
========== PU BUS VOLTAGE: 0.960 ANGLE: -1.4 DEGREES

LOAD FROM: BUS-0097* CBL-0063 FEEDER AMPS: VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0106* CBL-0071 FEEDER AMPS: 129.9 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 36.0 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-LB2 CBL-0082 FEEDER AMPS: 65.0 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 18.0 KW 13.5 KVAR 22.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B2-L6 CBL-0083 FEEDER AMPS: 65.0 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 18.0 KW 13.5 KVAR 22.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FROM: B-B2-MDPB-M CBL-0086 FEEDER AMPS: 567.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 157.3 KW 117.3 KVAR 196.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B2-L7 CBL-0088 FEEDER AMPS: 65.0 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 18.0 KW 13.5 KVAR 22.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B2-L8 CBL-0089 FEEDER AMPS: 65.0 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 18.0 KW 13.5 KVAR 22.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B2-L4 CBL-0090 FEEDER AMPS: 65.0 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 18.0 KW 13.5 KVAR 22.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B2-XRAY CBL-0091 FEEDER AMPS: 66.7 VOLTAGE DROP: 6. %VD: 2.78
PROJECTED POWER FLOW: 18.7 KW 13.5 KVAR 23.1 KVA PF:0.81 LAGGING
LOSSES THRU FEEDER: 0.8 KW 0.1 KVAR 0.8 KVA

LOAD TO: B-B2-XRAY124 CBL-0092 FEEDER AMPS: 22.7 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 6.3 KW 4.7 KVAR 7.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-TEL COMM CBL-0093 FEEDER AMPS: 22.7 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 6.3 KW 4.7 KVAR 7.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-MDPB-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.96
========== PU BUS VOLTAGE: 0.960 ANGLE: -1.4 DEGREES

LOAD FROM: B-T-B2-SEC3 CBL-0087 FEEDER AMPS: 567.3 VOLTAGE DROP: 1. %VD: 0.57
PROJECTED POWER FLOW: 157.3 KW 117.4 KVAR 196.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 1.0 KVAR 1.2 KVA

LOAD TO: B-B2-MDPB CBL-0086 FEEDER AMPS: 567.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 157.3 KW 117.4 KVAR 196.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-MEDAIRCOM DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.72
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B2-CRIT PNL CBL-0067 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-NEWLAB DESIGN VOLTS: 208 BUS VOLTS: 191 %VD: 8.04$
========== PU BUS VOLTAGE: 0.920 ANGLE: -2.3 DEGREES
NET BRANCH DIVERSITY LOAD: 10.8 KW 8.1 KVAR

LOAD FROM: B-B2-NEWLAB-M CBL-0049 FEEDER AMPS: 40.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 10.8 KW 8.1 KVAR 13.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-NEWLAB-M DESIGN VOLTS: 208 BUS VOLTS: 191 %VD: 8.04$
========== PU BUS VOLTAGE: 0.920 ANGLE: -2.3 DEGREES

LOAD FROM: B-B2-ATS-LED3 CBL-0048 FEEDER AMPS: 40.8 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 10.8 KW 8.1 KVAR 13.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-NEWLAB CBL-0049 FEEDER AMPS: 40.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 10.8 KW 8.1 KVAR 13.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-PNL 1 DESIGN VOLTS: 208 BUS VOLTS: 191 %VD: 8.03$
========== PU BUS VOLTAGE: 0.920 ANGLE: -2.3 DEGREES
NET BRANCH DIVERSITY LOAD: 12.4 KW 9.3 KVAR

LOAD FROM: B-B2-ATS-LED3 CBL-0046 FEEDER AMPS: 46.7 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 12.4 KW 9.3 KVAR 15.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-PNL LS DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.11
========== PU BUS VOLTAGE: 0.959 ANGLE: -1.4 DEGREES

LOAD FROM: B-B2-ATS-LS CBL-0072 FEEDER AMPS: 129.9 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 35.9 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-L2E CBL-0074 FEEDER AMPS: 17.0 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-L12 CBL-0075 FEEDER AMPS: 17.0 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-DENTSUCPM CBL-0076 FEEDER AMPS: 8.5 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 2.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-L9E CBL-0077 FEEDER AMPS: 17.0 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-LB1E CBL-0078 FEEDER AMPS: 17.0 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-ELEV CBL-0073 FEEDER AMPS: 19.1 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 5.3 KW 4.0 KVAR 6.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-POD2PP CBL-0079 FEEDER AMPS: 17.0 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-BATTERYCH CBL-0080 FEEDER AMPS: 17.0 VOLTAGE DROP: 1. %VD: 0.32
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-PNL-2 DESIGN VOLTS: 208 BUS VOLTS: 191 %VD: 8.01$
========== PU BUS VOLTAGE: 0.920 ANGLE: -2.3 DEGREES
NET BRANCH DIVERSITY LOAD: 5.3 KW 3.9 KVAR

LOAD FROM: B-B2-ATS-LED3 CBL-0050 FEEDER AMPS: 19.8 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 5.3 KW 3.9 KVAR 6.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-PNL-3-M DESIGN VOLTS: 208 BUS VOLTS: 191 %VD: 8.03$
========== PU BUS VOLTAGE: 0.920 ANGLE: -2.3 DEGREES

LOAD FROM: B-B2-ATS-LED3 CBL-0051 FEEDER AMPS: 26.8 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-PNL-M1 CBL-0062 FEEDER AMPS: 26.8 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-PNL-D2 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.38
========== PU BUS VOLTAGE: 0.956 ANGLE: -2.0 DEGREES
NET BRANCH DIVERSITY LOAD: 76.8 KW 57.6 KVAR

LOAD FROM: B-B2-MDPA CBL-0059 FEEDER AMPS: 278.6 VOLTAGE DROP: 2. %VD: 0.90
PROJECTED POWER FLOW: 76.8 KW 57.6 KVAR 96.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.8 KVAR 1.0 KVA

==== BUS: B-B2-PNL-L11 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.71
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 8.0 KW 6.0 KVAR

LOAD FROM: B-B2-CRIT PNL CBL-0070 FEEDER AMPS: 28.4 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-PNL-M1 DESIGN VOLTS: 208 BUS VOLTS: 191 %VD: 8.06$
========== PU BUS VOLTAGE: 0.919 ANGLE: -2.3 DEGREES
NET BRANCH DIVERSITY LOAD: 7.1 KW 5.3 KVAR

LOAD FROM: B-B2-PNL-3-M CBL-0062 FEEDER AMPS: 26.8 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-PNL-P DESIGN VOLTS: 480 BUS VOLTS: 461 %VD: 3.86
========== PU BUS VOLTAGE: 0.961 ANGLE: -1.8 DEGREES

LOAD FROM: B-B2-MDP CBL-0052 FEEDER AMPS: 209.9 VOLTAGE DROP: 3. %VD: 0.62
PROJECTED POWER FLOW: 134.3 KW 100.7 KVAR 167.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.6 KW 1.0 KVAR 1.2 KVA

LOAD TO: B-B2-UNIT-1 CBL-0053 FEEDER AMPS: 105.0 VOLTAGE DROP: 1. %VD: 0.17
PROJECTED POWER FLOW: 67.2 KW 50.4 KVAR 84.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B2-UNIT-2 CBL-0054 FEEDER AMPS: 104.9 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 67.1 KW 50.3 KVAR 83.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B2-POD2PP DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.17
========== PU BUS VOLTAGE: 0.958 ANGLE: -1.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.7 KW 3.5 KVAR

LOAD FROM: B-B2-PNL LS CBL-0079 FEEDER AMPS: 17.0 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-TEL COMM DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.09
========== PU BUS VOLTAGE: 0.959 ANGLE: -1.4 DEGREES
NET BRANCH DIVERSITY LOAD: 6.3 KW 4.7 KVAR

LOAD FROM: B-B2-MDPB CBL-0093 FEEDER AMPS: 22.7 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 6.3 KW 4.7 KVAR 7.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-UNIT-1 DESIGN VOLTS: 480 BUS VOLTS: 461 %VD: 4.03
========== PU BUS VOLTAGE: 0.960 ANGLE: -1.7 DEGREES
NET BRANCH DIVERSITY LOAD: 67.0 KW 50.3 KVAR

LOAD FROM: B-B2-PNL-P CBL-0053 FEEDER AMPS: 105.0 VOLTAGE DROP: 1. %VD: 0.17
PROJECTED POWER FLOW: 67.0 KW 50.3 KVAR 83.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B2-UNIT-2 DESIGN VOLTS: 480 BUS VOLTS: 461 %VD: 3.95
========== PU BUS VOLTAGE: 0.961 ANGLE: -1.8 DEGREES
NET BRANCH DIVERSITY LOAD: 67.0 KW 50.3 KVAR

LOAD FROM: B-B2-PNL-P CBL-0054 FEEDER AMPS: 104.9 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 67.0 KW 50.3 KVAR 83.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B2-XRAY DESIGN VOLTS: 208 BUS VOLTS: 194 %VD: 6.79$
========== PU BUS VOLTAGE: 0.932 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 17.9 KW 13.5 KVAR

LOAD FROM: B-B2-MDPB CBL-0091 FEEDER AMPS: 66.7 VOLTAGE DROP: 6. %VD: 2.78
PROJECTED POWER FLOW: 17.9 KW 13.5 KVAR 22.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.8 KW 0.1 KVAR 0.8 KVA

==== BUS: B-B2-XRAY-124 DESIGN VOLTS: 480 BUS VOLTS: 459 %VD: 4.30
========== PU BUS VOLTAGE: 0.957 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 74.4 KW 55.8 KVAR

LOAD FROM: B-B2-MDP CBL-0055 FEEDER AMPS: 116.8 VOLTAGE DROP: 5. %VD: 1.06
PROJECTED POWER FLOW: 74.4 KW 55.8 KVAR 93.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.8 KW 0.6 KVAR 1.0 KVA

==== BUS: B-B2-XRAY124 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.16
========== PU BUS VOLTAGE: 0.958 ANGLE: -1.4 DEGREES
NET BRANCH DIVERSITY LOAD: 6.3 KW 4.7 KVAR

LOAD FROM: B-B2-MDPB CBL-0092 FEEDER AMPS: 22.7 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 6.3 KW 4.7 KVAR 7.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B21-P1 DESIGN VOLTS: 208 BUS VOLTS: 188 %VD: 9.58$
========== PU BUS VOLTAGE: 0.904 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 53.3 KW 40.0 KVAR

LOAD FROM: B-B21-P2 CBL-0425 FEEDER AMPS: 204.6 VOLTAGE DROP: 6. %VD: 2.69
PROJECTED POWER FLOW: 53.3 KW 40.0 KVAR 66.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 2.0 KW 0.6 KVAR 2.1 KVA

==== BUS: B-B21-P2 DESIGN VOLTS: 208 BUS VOLTS: 194 %VD: 6.90$
========== PU BUS VOLTAGE: 0.931 ANGLE: -1.6 DEGREES

LOAD FROM: B-B19-MDP2 CBL-0423 FEEDER AMPS: 204.6 VOLTAGE DROP: 6. %VD: 2.85
PROJECTED POWER FLOW: 55.4 KW 40.6 KVAR 68.7 KVA PF:0.81 LAGGING
LOSSES THRU FEEDER: 1.8 KW 1.1 KVAR 2.1 KVA

LOAD TO: B-B21-P1 CBL-0425 FEEDER AMPS: 204.6 VOLTAGE DROP: 6. %VD: 2.69
PROJECTED POWER FLOW: 55.4 KW 40.6 KVAR 68.7 KVA PF:0.81 LAGGING
LOSSES THRU FEEDER: 2.0 KW 0.6 KVAR 2.1 KVA

==== BUS: B-B22-ATS-EMER DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.75
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.9 DEGREES

LOAD FROM: BUS-0481 ATS-B22-EMERG FEEDER AMPS: 142.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 91.8 KW 69.5 KVAR 115.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-EMERG-M CBL-0429 FEEDER AMPS: 142.3 VOLTAGE DROP: 1. %VD: 0.11
PROJECTED POWER FLOW: 91.8 KW 69.5 KVAR 115.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B22-EMERG DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.86
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.9 DEGREES

LOAD FROM: B-B22-EMERG-M CBL-0430 FEEDER AMPS: 142.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 91.7 KW 69.3 KVAR 115.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-P1 CBL-0431 FEEDER AMPS: 28.1 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B22-P2 CBL-0432 FEEDER AMPS: 28.1 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-T2-PRI CBL-0433 FEEDER AMPS: 28.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-T3 PRI CBL-0436 FEEDER AMPS: 28.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.5 KW 14.0 KVAR 23.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-T4-PRI CBL-0439 FEEDER AMPS: 28.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.5 KW 14.0 KVAR 23.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-EMERG-M DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.86
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.9 DEGREES

LOAD FROM: B-B22-ATS-EMER CBL-0429 FEEDER AMPS: 142.3 VOLTAGE DROP: 1. %VD: 0.11
PROJECTED POWER FLOW: 91.7 KW 69.3 KVAR 115.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B22-EMERG CBL-0430 FEEDER AMPS: 142.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 91.7 KW 69.3 KVAR 115.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-GEN DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
*** SWING GENERATOR: G-B22-GEN 0.0 KW 0.0 KVAR
**** NO LOAD SPECIFIED ****

==== BUS: B-B22-L1 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.67
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 18.2 KW 13.6 KVAR

LOAD FROM: B-B22-L1-M CBL-0441 FEEDER AMPS: 66.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B22-L1-M DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.66
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.3 DEGREES

LOAD FROM: B-B22-T4-SEC CBL-0440 FEEDER AMPS: 66.2 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-L1 CBL-0441 FEEDER AMPS: 66.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-L2 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.67
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 18.2 KW 13.6 KVAR

LOAD FROM: B-B22-L2-M CBL-0438 FEEDER AMPS: 66.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-L2-M DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.66
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.3 DEGREES

LOAD FROM: B-B22-T22-SEC CBL-0437 FEEDER AMPS: 66.2 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-L2 CBL-0438 FEEDER AMPS: 66.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-L3 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.66
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 18.2 KW 13.6 KVAR

LOAD FROM: B-B22-L3-M CBL-0435 FEEDER AMPS: 66.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B22-L3-M DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.66
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.3 DEGREES

LOAD FROM: B-B22-T2-SEC CBL-0434 FEEDER AMPS: 66.2 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-L3 CBL-0435 FEEDER AMPS: 66.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-MDP DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.61
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.9 DEGREES

LOAD FROM: B-B22-MDP-M CBL-0427 FEEDER AMPS: 226.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 146.0 KW 111.1 KVAR 183.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0481 CBL-0428 FEEDER AMPS: 142.3 VOLTAGE DROP: 1. %VD: 0.13
PROJECTED POWER FLOW: 91.9 KW 69.6 KVAR 115.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B22-T1-PRI CBL-0442 FEEDER AMPS: 84.2 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 54.1 KW 41.5 KVAR 68.2 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-MDP-M DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.61
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.9 DEGREES

LOAD FROM: B-T-B22-SEC CBL-0426 FEEDER AMPS: 226.6 VOLTAGE DROP: 3. %VD: 0.63
PROJECTED POWER FLOW: 146.0 KW 111.1 KVAR 183.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 1.1 KVAR 1.3 KVA

LOAD TO: B-B22-MDP CBL-0427 FEEDER AMPS: 226.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 146.0 KW 111.1 KVAR 183.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B22-N1 DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.30$
========== PU BUS VOLTAGE: 0.947 ANGLE: -1.5 DEGREES
NET BRANCH DIVERSITY LOAD: 53.1 KW 39.8 KVAR

LOAD FROM: B-B22-N1-M CBL-0444 FEEDER AMPS: 194.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 53.1 KW 39.8 KVAR 66.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-N1-M DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.30$
========== PU BUS VOLTAGE: 0.947 ANGLE: -1.5 DEGREES

LOAD FROM: B-B22-T1-SEC CBL-0443 FEEDER AMPS: 194.3 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 53.1 KW 39.8 KVAR 66.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B22-N1 CBL-0444 FEEDER AMPS: 194.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 53.1 KW 39.8 KVAR 66.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-P1 DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.88
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 18.2 KW 13.6 KVAR

LOAD FROM: B-B22-EMERG CBL-0431 FEEDER AMPS: 28.1 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-P2 DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.88
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 18.2 KW 13.6 KVAR

LOAD FROM: B-B22-EMERG CBL-0432 FEEDER AMPS: 28.1 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B22-T1-PRI DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.64
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.9 DEGREES

LOAD FROM: B-B22-MDP CBL-0442 FEEDER AMPS: 84.2 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 54.1 KW 41.5 KVAR 68.2 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-T1-SEC XF2-0036 TRANSF AMPS: 84.2 VOLTAGE DROP: 12. %VD: 2.45
PROJECTED POWER FLOW: 54.1 KW 41.5 KVAR 68.2 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.0 KW 1.5 KVAR 1.8 KVA

==== BUS: B-B22-T1-SEC DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.09$
========== PU BUS VOLTAGE: 0.949 ANGLE: -1.4 DEGREES

LOAD FROM: B-B22-T1-PRI XF2-0036 TRANSF AMPS: 194.3 VOLTAGE DROP: 5. %VD: 2.45
PROJECTED POWER FLOW: 53.1 KW 39.9 KVAR 66.5 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.0 KW 1.5 KVAR 1.8 KVA

LOAD TO: B-B22-N1-M CBL-0443 FEEDER AMPS: 194.3 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 53.1 KW 39.9 KVAR 66.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B22-T2-PRI DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.88
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.9 DEGREES

LOAD FROM: B-B22-EMERG CBL-0433 FEEDER AMPS: 28.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-T2-SEC XF2-0033 TRANSF AMPS: 28.6 VOLTAGE DROP: 8. %VD: 1.71
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.2 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.2 KW 0.4 KVAR 0.4 KVA

==== BUS: B-B22-T2-SEC DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.59
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.3 DEGREES

LOAD FROM: B-B22-T2-PRI XF2-0033 TRANSF AMPS: 66.2 VOLTAGE DROP: 4. %VD: 1.71
PROJECTED POWER FLOW: 18.2 KW 13.7 KVAR 22.8 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.2 KW 0.4 KVAR 0.4 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B22-L3-M CBL-0434 FEEDER AMPS: 66.2 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 18.2 KW 13.7 KVAR 22.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-T22-SEC DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.60
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.3 DEGREES

LOAD FROM: B-B22-T3 PRI XF2-0034 TRANSF AMPS: 66.2 VOLTAGE DROP: 4. %VD: 1.71
PROJECTED POWER FLOW: 18.2 KW 13.7 KVAR 22.8 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.2 KW 0.4 KVAR 0.4 KVA

LOAD TO: B-B22-L2-M CBL-0437 FEEDER AMPS: 66.2 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 18.2 KW 13.7 KVAR 22.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-T3 PRI DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.88
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.9 DEGREES

LOAD FROM: B-B22-EMERG CBL-0436 FEEDER AMPS: 28.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-T22-SEC XF2-0034 TRANSF AMPS: 28.6 VOLTAGE DROP: 8. %VD: 1.71
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.2 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.2 KW 0.4 KVAR 0.4 KVA

==== BUS: B-B22-T4-PRI DESIGN VOLTS: 480 BUS VOLTS: 466 %VD: 2.88
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.9 DEGREES

LOAD FROM: B-B22-EMERG CBL-0439 FEEDER AMPS: 28.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-T4-SEC XF2-0035 TRANSF AMPS: 28.6 VOLTAGE DROP: 8. %VD: 1.71
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.2 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.2 KW 0.4 KVAR 0.4 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B22-T4-SEC DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.60
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.3 DEGREES

LOAD FROM: B-B22-T4-PRI XF2-0035 TRANSF AMPS: 66.2 VOLTAGE DROP: 4. %VD: 1.71
PROJECTED POWER FLOW: 18.2 KW 13.7 KVAR 22.8 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.2 KW 0.4 KVAR 0.4 KVA

LOAD TO: B-B22-L1-M CBL-0440 FEEDER AMPS: 66.2 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 18.2 KW 13.7 KVAR 22.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B27-SWGR DESIGN VOLTS: 13800 BUS VOLTS: 13800 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES

LOAD FROM: B-SWGR27 TAP CBL-0003 FEEDER AMPS: 248.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 4672.2 KW 3672.4 KVAR 5942.7 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-T-B8-PRI CBL-0005 FEEDER AMPS: 60.4 VOLTAGE DROP: 23. %VD: 0.17
PROJECTED POWER FLOW: 1143.7 KW 884.7 KVAR 1446.0 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 2.4 KW 0.8 KVAR 2.5 KVA

LOAD TO: BUS-0017 CBL-0004 FEEDER AMPS: 61.3 VOLTAGE DROP: 10. %VD: 0.07
PROJECTED POWER FLOW: 1152.6 KW 907.4 KVAR 1467.0 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 1.1 KW 0.4 KVAR 1.1 KVA

LOAD TO: B-T-B33-PRI CBL-0036 FEEDER AMPS: 54.8 VOLTAGE DROP: 5. %VD: 0.03
PROJECTED POWER FLOW: 1031.3 KW 808.6 KVAR 1310.5 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.1 KVAR 0.5 KVA

LOAD TO: BUS-0063 CBL-0035 FEEDER AMPS: 71.9 VOLTAGE DROP: 22. %VD: 0.16
PROJECTED POWER FLOW: 1344.5 KW 1071.7 KVAR 1719.4 KVA PF:0.78 LAGGING
LOSSES THRU FEEDER: 2.7 KW 0.9 KVAR 2.9 KVA

==== BUS: B-B27-SWGR-M1 DESIGN VOLTS: 13800 BUS VOLTS: 13800 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
*** SWING GENERATOR: UTIL-STN 559-2 4672.2 KW 3672.4 KVAR

LOAD TO: B-SWGR27 TAP CBL-0002 FEEDER AMPS: 248.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 4672.2 KW 3672.4 KVAR 5942.8 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B3-1ST FL DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.65
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 5.0 KW 3.8 KVAR

LOAD FROM: B-B3-EP1 CBL-0104 FEEDER AMPS: 18.0 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 5.0 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-ALDN KIT DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.68
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 3.2 KW 2.4 KVAR

LOAD FROM: B-B3-EP2 CBL-0115 FEEDER AMPS: 11.5 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-ATS-COMP DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.52
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.2 DEGREES

LOAD FROM: BUS-0140 ATS-B3-COMP FEEDER AMPS: 153.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 42.7 KW 32.1 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-EP2-M CBL-0106 FEEDER AMPS: 153.6 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 42.7 KW 32.1 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-ATSTEL RM DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.54
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.2 DEGREES

LOAD FROM: BUS-0131 ATS-B3-TEL RM FEEDER AMPS: 153.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 42.7 KW 32.1 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-EP1-M CBL-0098 FEEDER AMPS: 153.7 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 42.7 KW 32.1 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B3-COMP DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.66
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 3.2 KW 2.4 KVAR

LOAD FROM: B-B3-EP2 CBL-0109 FEEDER AMPS: 11.5 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-COMP AC DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.68
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 1.0 KW 0.7 KVAR

LOAD FROM: B-B3-EP2 CBL-0112 FEEDER AMPS: 3.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 1.0 KW 0.7 KVAR 1.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-COMP MF DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.65
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 6.4 KW 4.8 KVAR

LOAD FROM: B-B3-EP2 CBL-0117 FEEDER AMPS: 23.1 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 8.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-DBL GRILL DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.78
========== PU BUS VOLTAGE: 0.962 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 10.0 KW 7.5 KVAR

LOAD FROM: B-B3-EP1 CBL-0103 FEEDER AMPS: 36.2 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-ELEV DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.68
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 5.6 KW 4.2 KVAR

LOAD FROM: B-B3-EP2 CBL-0113 FEEDER AMPS: 20.2 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 5.6 KW 4.2 KVAR 7.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B3-EP1 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.59
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES

LOAD FROM: B-B3-EP1-M CBL-0099 FEEDER AMPS: 153.7 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 42.7 KW 32.0 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-TELE PNL CBL-0100 FEEDER AMPS: 40.6 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-KP1 CBL-0101 FEEDER AMPS: 40.7 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-P7 CBL-0102 FEEDER AMPS: 18.0 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 5.0 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-DBL GRILL CBL-0103 FEEDER AMPS: 36.2 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 10.1 KW 7.5 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-1ST FL CBL-0104 FEEDER AMPS: 18.0 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 5.0 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-EP1-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.58
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES

LOAD FROM: B-B3-ATSTEL RM CBL-0098 FEEDER AMPS: 153.7 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 42.7 KW 32.0 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-EP1 CBL-0099 FEEDER AMPS: 153.7 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 42.7 KW 32.0 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B3-EP2 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.60
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES

LOAD FROM: B-B3-EP2-M CBL-0107 FEEDER AMPS: 153.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 42.7 KW 32.0 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-TRAY LINE CBL-0108 FEEDER AMPS: 14.4 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-COMP CBL-0109 FEEDER AMPS: 11.5 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-HYDRO ELV CBL-0110 FEEDER AMPS: 23.1 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 8.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-MECH HVAC CBL-0111 FEEDER AMPS: 11.5 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-COMP AC CBL-0112 FEEDER AMPS: 3.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 1.0 KW 0.7 KVAR 1.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-ELEV CBL-0113 FEEDER AMPS: 20.2 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 5.6 KW 4.2 KVAR 7.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-STRT PNL CBL-0114 FEEDER AMPS: 11.5 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-ALDN KIT CBL-0115 FEEDER AMPS: 11.5 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-MECH RM CBL-0116 FEEDER AMPS: 23.1 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 8.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B3-COMP MF CBL-0117 FEEDER AMPS: 23.1 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 8.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-EP2-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.59
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES

LOAD FROM: B-B3-ATS-COMP CBL-0106 FEEDER AMPS: 153.6 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 42.7 KW 32.0 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-EP2 CBL-0107 FEEDER AMPS: 153.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 42.7 KW 32.0 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-FRZN FOOD DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.48
========== PU BUS VOLTAGE: 0.955 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 42.7 KW 32.0 KVAR

LOAD FROM: B-B3-MDP CBL-0119 FEEDER AMPS: 154.9 VOLTAGE DROP: 2. %VD: 1.16
PROJECTED POWER FLOW: 42.7 KW 32.0 KVAR 53.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 0.1 KVAR 0.7 KVA

==== BUS: B-B3-HYDRO ELV DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.78
========== PU BUS VOLTAGE: 0.962 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 6.4 KW 4.8 KVAR

LOAD FROM: B-B3-EP2 CBL-0110 FEEDER AMPS: 23.1 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 8.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-KP1 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.74
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 11.3 KW 8.5 KVAR

LOAD FROM: B-B3-EP1 CBL-0101 FEEDER AMPS: 40.7 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B3-MDP DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.32
========== PU BUS VOLTAGE: 0.967 ANGLE: -1.2 DEGREES

LOAD FROM: B-B3-MDP-M CBL-0095 FEEDER AMPS: 694.1 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 193.8 KW 144.6 KVAR 241.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-P3 CBL-0096 FEEDER AMPS: 76.7 VOLTAGE DROP: 1. %VD: 0.24
PROJECTED POWER FLOW: 21.4 KW 16.0 KVAR 26.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: BUS-0131 CBL-0097 FEEDER AMPS: 153.7 VOLTAGE DROP: 0. %VD: 0.22
PROJECTED POWER FLOW: 42.8 KW 32.2 KVAR 53.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: BUS-0140 CBL-0105 FEEDER AMPS: 153.6 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 42.8 KW 32.2 KVAR 53.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B3-STRT LTS CBL-0118 FEEDER AMPS: 154.9 VOLTAGE DROP: 2. %VD: 1.16
PROJECTED POWER FLOW: 43.4 KW 32.1 KVAR 54.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 0.1 KVAR 0.7 KVA

LOAD TO: B-B3-FRZN FOOD CBL-0119 FEEDER AMPS: 154.9 VOLTAGE DROP: 2. %VD: 1.16
PROJECTED POWER FLOW: 43.4 KW 32.1 KVAR 54.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 0.1 KVAR 0.7 KVA

==== BUS: B-B3-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.31
========== PU BUS VOLTAGE: 0.967 ANGLE: -1.2 DEGREES

LOAD FROM: B-T-B3-SEC CBL-0094 FEEDER AMPS: 694.1 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 193.8 KW 144.6 KVAR 241.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.8 KVAR 0.9 KVA

LOAD TO: B-B3-MDP CBL-0095 FEEDER AMPS: 694.1 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 193.8 KW 144.6 KVAR 241.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B3-MECH HVAC DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.65
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 3.2 KW 2.4 KVAR

LOAD FROM: B-B3-EP2 CBL-0111 FEEDER AMPS: 11.5 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-MECH RM DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.65
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 6.4 KW 4.8 KVAR

LOAD FROM: B-B3-EP2 CBL-0116 FEEDER AMPS: 23.1 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 8.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-P3 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.56
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 21.3 KW 16.0 KVAR

LOAD FROM: B-B3-MDP CBL-0096 FEEDER AMPS: 76.7 VOLTAGE DROP: 1. %VD: 0.24
PROJECTED POWER FLOW: 21.3 KW 16.0 KVAR 26.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B3-P7 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.68
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 5.0 KW 3.8 KVAR

LOAD FROM: B-B3-EP1 CBL-0102 FEEDER AMPS: 18.0 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 5.0 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-STRT LTS DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.48
========== PU BUS VOLTAGE: 0.955 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 42.7 KW 32.0 KVAR

LOAD FROM: B-B3-MDP CBL-0118 FEEDER AMPS: 154.9 VOLTAGE DROP: 2. %VD: 1.16
PROJECTED POWER FLOW: 42.7 KW 32.0 KVAR 53.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 0.1 KVAR 0.7 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B3-STRT PNL DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.63
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 3.2 KW 2.4 KVAR

LOAD FROM: B-B3-EP2 CBL-0114 FEEDER AMPS: 11.5 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-TELE PNL DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.67
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 11.3 KW 8.5 KVAR

LOAD FROM: B-B3-EP1 CBL-0100 FEEDER AMPS: 40.6 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-TRAY LINE DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.66
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B3-EP2 CBL-0108 FEEDER AMPS: 14.4 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B33-MDP DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.29
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 48.0 KW 36.0 KVAR

LOAD FROM: B-B33-MDP-M CBL-0446 FEEDER AMPS: 172.2 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B33-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.28
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.7 DEGREES

LOAD FROM: B-T-B33-SEC CBL-0445 FEEDER AMPS: 172.2 VOLTAGE DROP: 2. %VD: 0.85
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.4 KVAR 0.5 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B33-MDP CBL-0446 FEEDER AMPS: 172.2 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-4EQD DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.48
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-4EQD-M CBL-0195 FEEDER AMPS: 115.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ9 CBL-0196 FEEDER AMPS: 15.6 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 4.3 KW 3.3 KVAR 5.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ2 CBL-0197 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ15 CBL-0198 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ3 CBL-0199 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ1 CBL-0200 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-ELEV#4 CBL-0201 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-HYDROELEV CBL-0202 FEEDER AMPS: 17.5 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 4.9 KW 3.7 KVAR 6.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-PP1 CBL-0203 FEEDER AMPS: 17.5 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 4.9 KW 3.7 KVAR 6.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-4EQD-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.48
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-ATS-EQ CBL-0194 FEEDER AMPS: 115.1 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-4EQD CBL-0195 FEEDER AMPS: 115.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-ATS-EQ DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.41
========== PU BUS VOLTAGE: 0.966 ANGLE: -1.3 DEGREES

LOAD FROM: BUS-0227 ATS-B4-EQ FEEDER AMPS: 115.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-4EQD-M CBL-0194 FEEDER AMPS: 115.1 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-ATS-LS DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.49
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.3 DEGREES

LOAD FROM: BUS-0172* ATS-B4-LS FEEDER AMPS: 115.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LSD-M CBL-0138 FEEDER AMPS: 115.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-BUS DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.16
========== PU BUS VOLTAGE: 0.968 ANGLE: -1.3 DEGREES

LOAD FROM: B-T-B4-SEC CBL-0120 FEEDER AMPS:1154.1 VOLTAGE DROP: 1. %VD: 0.25
PROJECTED POWER FLOW: 322.1 KW 241.6 KVAR 402.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.6 KW 0.9 KVAR 1.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B4-JBOX CBL-0121 FEEDER AMPS:1154.1 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 322.1 KW 241.6 KVAR 402.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.3 KVAR 0.6 KVA

==== BUS: B-B4-ELEV#4 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.57
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 3.3 KW 2.4 KVAR

LOAD FROM: B-B4-4EQD CBL-0201 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ1 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.53
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-4EQD CBL-0200 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ5 CBL-0204 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ10 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.58
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.9 KVAR

LOAD FROM: B-B4-EQ5 CBL-0205 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ11 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.55
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.9 KVAR

LOAD FROM: B-B4-EQ6 CBL-0209 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-EQ12 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.59

========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

NET BRANCH DIVERSITY LOAD: 3.3 KW 2.4 KVAR

LOAD FROM: B-B4-EQ7 CBL-0207 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.02

PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ15 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.59

========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

NET BRANCH DIVERSITY LOAD: 3.8 KW 2.8 KVAR

LOAD FROM: B-B4-4EQD CBL-0198 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.10

PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ2 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.50

========== PU BUS VOLTAGE: 0.965 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-4EQD CBL-0197 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.02

PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ6 CBL-0208 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.03

PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ3 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.55

========== PU BUS VOLTAGE: 0.965 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-4EQD CBL-0199 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.06

PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ7 CBL-0206 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.02

PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-EQ5 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.55

========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-EQ1 CBL-0204 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.03

PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ10 CBL-0205 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.02

PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ6 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.53

========== PU BUS VOLTAGE: 0.965 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-EQ2 CBL-0208 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.03

PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ11 CBL-0209 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.02

PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ7 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.57

========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-EQ3 CBL-0206 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.02

PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ12 CBL-0207 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.02

PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ9 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.64

========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

NET BRANCH DIVERSITY LOAD: 4.3 KW 3.3 KVAR

LOAD FROM: B-B4-4EQD CBL-0196 FEEDER AMPS: 15.6 VOLTAGE DROP: 0. %VD: 0.16

PROJECTED POWER FLOW: 4.3 KW 3.3 KVAR 5.4 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-HYDROELEV DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.64
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 4.9 KW 3.7 KVAR

LOAD FROM: B-B4-4EQD CBL-0202 FEEDER AMPS: 17.5 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 4.9 KW 3.7 KVAR 6.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-JBOX DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.30
========== PU BUS VOLTAGE: 0.967 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-BUS CBL-0121 FEEDER AMPS:1154.1 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 321.6 KW 241.3 KVAR 402.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.3 KVAR 0.6 KVA

LOAD TO: B-B4-MDP-M CBL-0122 FEEDER AMPS:1154.1 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 321.6 KW 241.3 KVAR 402.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.2 KVAR 0.3 KVA

==== BUS: B-B4-LP1 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.70
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B4-LP1-M CBL-0176 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP1-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.70
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LP2-M CBL-0174 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP1 CBL-0176 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LP10 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.99

========== PU BUS VOLTAGE: 0.960 ANGLE: -1.3 DEGREES

NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B4-LP10-M CBL-0180 FEEDER AMPS: 57.8 VOLTAGE DROP: 0. %VD: 0.00

PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP10-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.99

========== PU BUS VOLTAGE: 0.960 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LP5-M CBL-0178 FEEDER AMPS: 57.8 VOLTAGE DROP: 0. %VD: 0.08

PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP10 CBL-0180 FEEDER AMPS: 57.8 VOLTAGE DROP: 0. %VD: 0.00

PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP11 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.80

========== PU BUS VOLTAGE: 0.962 ANGLE: -1.3 DEGREES

NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B4-LP11-M CBL-0184 FEEDER AMPS: 57.7 VOLTAGE DROP: 0. %VD: 0.00

PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP11-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.80

========== PU BUS VOLTAGE: 0.962 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LP6-M CBL-0182 FEEDER AMPS: 57.7 VOLTAGE DROP: 0. %VD: 0.08

PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP11 CBL-0184 FEEDER AMPS: 57.7 VOLTAGE DROP: 0. %VD: 0.00

PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LP12 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.80
========== PU BUS VOLTAGE: 0.962 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 32.0 KW 24.0 KVAR

LOAD FROM: B-B4-LP12-M CBL-0136 FEEDER AMPS: 115.4 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP12-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.80
========== PU BUS VOLTAGE: 0.962 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-MDP CBL-0135 FEEDER AMPS: 115.4 VOLTAGE DROP: 1. %VD: 0.43
PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B4-LP12 CBL-0136 FEEDER AMPS: 115.4 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP13 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.99
========== PU BUS VOLTAGE: 0.960 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B4-LP13-M CBL-0188 FEEDER AMPS: 57.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP13-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.99
========== PU BUS VOLTAGE: 0.960 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LP8-M CBL-0186 FEEDER AMPS: 57.8 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP13 CBL-0188 FEEDER AMPS: 57.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LP14 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.15
========== PU BUS VOLTAGE: 0.958 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B4-LP14-M CBL-0132 FEEDER AMPS: 57.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP14-M DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.15
========== PU BUS VOLTAGE: 0.959 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LP9-M CBL-0130 FEEDER AMPS: 57.9 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP14 CBL-0132 FEEDER AMPS: 57.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP15 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.65
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 3.1 KW 2.4 KVAR

LOAD FROM: B-B4-LP15-M CBL-0161 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP15-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.64
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LSD CBL-0160 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP15 CBL-0161 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LP2 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.56
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B4-LP2-M CBL-0175 FEEDER AMPS: 57.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP2-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.56
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-MDP CBL-0173 FEEDER AMPS: 115.2 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B4-LP2 CBL-0175 FEEDER AMPS: 57.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP1-M CBL-0174 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP3 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.56
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B4-LP3-M CBL-0127 FEEDER AMPS: 57.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP3-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.56
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-MDP CBL-0125 FEEDER AMPS: 115.2 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B4-LP3 CBL-0127 FEEDER AMPS: 57.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP4-M CBL-0126 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP4 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.72
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B4-LP4-M CBL-0128 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP4-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.72
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LP3-M CBL-0126 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP4 CBL-0128 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP5 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.92
========== PU BUS VOLTAGE: 0.961 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B4-LP5-M CBL-0179 FEEDER AMPS: 57.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LP5-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.91
========== PU BUS VOLTAGE: 0.961 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-MDP CBL-0177 FEEDER AMPS: 115.6 VOLTAGE DROP: 1. %VD: 0.55
PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B4-LP5 CBL-0179 FEEDER AMPS: 57.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP10-M CBL-0178 FEEDER AMPS: 57.8 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP6 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.72
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B4-LP6-M CBL-0183 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP6-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.72
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-MDP CBL-0181 FEEDER AMPS: 115.3 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B4-LP6 CBL-0183 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP11-M CBL-0182 FEEDER AMPS: 57.7 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LP7 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.72

========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES

NET BRANCH DIVERSITY LOAD: 32.0 KW 24.0 KVAR

LOAD FROM: B-B4-LP7-M CBL-0134 FEEDER AMPS: 115.3 VOLTAGE DROP: 0. %VD: 0.01

PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP7-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.72

========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-MDP CBL-0133 FEEDER AMPS: 115.3 VOLTAGE DROP: 1. %VD: 0.35

PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B4-LP7 CBL-0134 FEEDER AMPS: 115.3 VOLTAGE DROP: 0. %VD: 0.01

PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP8 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.92

========== PU BUS VOLTAGE: 0.961 ANGLE: -1.3 DEGREES

NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B4-LP8-M CBL-0187 FEEDER AMPS: 57.7 VOLTAGE DROP: 0. %VD: 0.00

PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP8-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.91

========== PU BUS VOLTAGE: 0.961 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-MDP CBL-0185 FEEDER AMPS: 115.6 VOLTAGE DROP: 1. %VD: 0.55

PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B4-LP8 CBL-0187 FEEDER AMPS: 57.7 VOLTAGE DROP: 0. %VD: 0.00

PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B4-LP13-M CBL-0186 FEEDER AMPS: 57.8 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP9 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 4.07
========== PU BUS VOLTAGE: 0.959 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B4-LP9-M CBL-0131 FEEDER AMPS: 57.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP9-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 4.07
========== PU BUS VOLTAGE: 0.959 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-MDP CBL-0129 FEEDER AMPS: 115.7 VOLTAGE DROP: 1. %VD: 0.70
PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.3 KVA

LOAD TO: B-B4-LP9 CBL-0131 FEEDER AMPS: 57.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP14-M CBL-0130 FEEDER AMPS: 57.9 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS1 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.60
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS1-M CBL-0143 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LS1-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.60
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LS2-M CBL-0142 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS1 CBL-0143 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS10 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.70
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS10-M CBL-0151 FEEDER AMPS: 6.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS10-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.70
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LS5-M CBL-0150 FEEDER AMPS: 6.8 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS10 CBL-0151 FEEDER AMPS: 6.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS11 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.67
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS11-M CBL-0155 FEEDER AMPS: 6.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LS11-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.67
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LS6-M CBL-0154 FEEDER AMPS: 6.8 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS11 CBL-0155 FEEDER AMPS: 6.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS12 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.65
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS12-M CBL-0159 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS12-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.64
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LS7-M CBL-0158 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS12 CBL-0159 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS13 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.64
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS13-M CBL-0168 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LS13-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.64
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LS8-M CBL-0167 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS13 CBL-0168 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS14 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.62
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.6 KW 1.2 KVAR

LOAD FROM: B-B4-LS14-M CBL-0172 FEEDER AMPS: 5.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS14-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.62
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LS9-M CBL-0171 FEEDER AMPS: 5.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS14 CBL-0172 FEEDER AMPS: 5.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS2 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.58
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS2-M CBL-0141 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LS2-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.58

========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LSD CBL-0140 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: 0.05

PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS2 CBL-0141 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00

PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS1-M CBL-0142 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.03

PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS3 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.55

========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS3-M CBL-0145 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00

PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS3-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.55

========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LSD CBL-0144 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: 0.02

PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS3 CBL-0145 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00

PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS4-M CBL-0146 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.03

PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LS4 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.58
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS4-M CBL-0147 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS4-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.58
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LS3-M CBL-0146 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS4 CBL-0147 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS5 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.69
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS5-M CBL-0149 FEEDER AMPS: 6.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS5-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.69
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LSD CBL-0148 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS5 CBL-0149 FEEDER AMPS: 6.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B4-LS10-M CBL-0150 FEEDER AMPS: 6.8 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS6 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.66
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS6-M CBL-0153 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS6-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.66
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LSD CBL-0152 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS6 CBL-0153 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS11-M CBL-0154 FEEDER AMPS: 6.8 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS7 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.63
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS7-M CBL-0157 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LS7-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.63
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LSD CBL-0156 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS7 CBL-0157 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS12-M CBL-0158 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS8 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.63
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS8-M CBL-0166 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS8-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.62
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LSD CBL-0165 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS8 CBL-0166 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS13-M CBL-0167 FEEDER AMPS: 6.7 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LS9 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.61
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 1.6 KW 1.2 KVAR

LOAD FROM: B-B4-LS9-M CBL-0170 FEEDER AMPS: 5.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS9-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.61
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LSD CBL-0169 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 3.1 KW 2.3 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS9 CBL-0170 FEEDER AMPS: 5.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS14-M CBL-0171 FEEDER AMPS: 5.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LSD DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.53
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LSD-M CBL-0139 FEEDER AMPS: 115.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS2-M CBL-0140 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS3-M CBL-0144 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS5-M CBL-0148 FEEDER AMPS: 13.6 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B4-LS6-M CBL-0152 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS7-M CBL-0156 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP15-M CBL-0160 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-PP2-M CBL-0163 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS8-M CBL-0165 FEEDER AMPS: 13.5 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS9-M CBL-0169 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 3.1 KW 2.3 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LSD-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.53
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-ATS-LS CBL-0138 FEEDER AMPS: 115.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LSD CBL-0139 FEEDER AMPS: 115.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-MDP DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.37
========== PU BUS VOLTAGE: 0.966 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-MDP-M CBL-0124 FEEDER AMPS:1154.1 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 321.4 KW 241.1 KVAR 401.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP3-M CBL-0125 FEEDER AMPS: 115.2 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B4-LP9-M CBL-0129 FEEDER AMPS: 115.7 VOLTAGE DROP: 1. %VD: 0.70
PROJECTED POWER FLOW: 32.2 KW 24.2 KVAR 40.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.3 KVA

LOAD TO: B-B4-LP7-M CBL-0133 FEEDER AMPS: 115.3 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B4-LP12-M CBL-0135 FEEDER AMPS: 115.4 VOLTAGE DROP: 1. %VD: 0.43
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD TO: BUS-0172* CBL-0137 FEEDER AMPS: 115.3 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP2-M CBL-0173 FEEDER AMPS: 115.2 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B4-LP5-M CBL-0177 FEEDER AMPS: 115.6 VOLTAGE DROP: 1. %VD: 0.55
PROJECTED POWER FLOW: 32.2 KW 24.2 KVAR 40.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B4-LP6-M CBL-0181 FEEDER AMPS: 115.3 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B4-LP8-M CBL-0185 FEEDER AMPS: 115.6 VOLTAGE DROP: 1. %VD: 0.55
PROJECTED POWER FLOW: 32.2 KW 24.2 KVAR 40.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: BUS-0227 CBL-0193 FEEDER AMPS: 115.1 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.36
========== PU BUS VOLTAGE: 0.966 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-JBOX CBL-0122 FEEDER AMPS:1154.1 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 321.4 KW 241.1 KVAR 401.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.2 KVAR 0.3 KVA

LOAD TO: B-B4-MDP CBL-0124 FEEDER AMPS:1154.1 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 321.4 KW 241.1 KVAR 401.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-PP1 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.52
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 4.9 KW 3.7 KVAR

LOAD FROM: B-B4-4EQD CBL-0203 FEEDER AMPS: 17.5 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 4.9 KW 3.7 KVAR 6.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-PP2 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.65
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 3.1 KW 2.4 KVAR

LOAD FROM: B-B4-PP2-M CBL-0164 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-PP2-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.64
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-LSD CBL-0163 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B4-PP2 CBL-0164 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-ATS-EQ DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.31
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.8 DEGREES

LOAD FROM: BUS-0258* ATS-B5-EQ FEEDER AMPS: 136.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 38.1 KW 28.5 KVAR 47.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-EQD CBL-0223 FEEDER AMPS: 136.6 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 38.1 KW 28.5 KVAR 47.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-ATS-LS DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.35
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.8 DEGREES

LOAD FROM: BUS-0269 ATS-B5-LS FEEDER AMPS: 137.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 38.3 KW 28.6 KVAR 47.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-LSD-M CBL-0233 FEEDER AMPS: 137.2 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 38.3 KW 28.6 KVAR 47.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-EQ1 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.46
========== PU BUS VOLTAGE: 0.965 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 7.1 KW 5.3 KVAR

LOAD FROM: B-B5-EQD CBL-0224 FEEDER AMPS: 25.6 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B5-EQ2 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.47

========== PU BUS VOLTAGE: 0.965 ANGLE: -0.8 DEGREES

NET BRANCH DIVERSITY LOAD: 7.1 KW 5.3 KVAR

LOAD FROM: B-B5-EQD CBL-0226 FEEDER AMPS: 25.6 VOLTAGE DROP: 0. %VD: 0.13

PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-EQ5 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.46

========== PU BUS VOLTAGE: 0.965 ANGLE: -0.8 DEGREES

NET BRANCH DIVERSITY LOAD: 7.1 KW 5.3 KVAR

LOAD FROM: B-B5-EQD CBL-0225 FEEDER AMPS: 25.6 VOLTAGE DROP: 0. %VD: 0.12

PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-EQ6 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.50

========== PU BUS VOLTAGE: 0.965 ANGLE: -0.8 DEGREES

NET BRANCH DIVERSITY LOAD: 7.1 KW 5.3 KVAR

LOAD FROM: B-B5-EQD CBL-0227 FEEDER AMPS: 25.6 VOLTAGE DROP: 0. %VD: 0.16

PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-EQD DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.34

========== PU BUS VOLTAGE: 0.967 ANGLE: -0.8 DEGREES

LOAD FROM: B-B5-ATS-EQ CBL-0223 FEEDER AMPS: 136.6 VOLTAGE DROP: 0. %VD: 0.03

PROJECTED POWER FLOW: 38.1 KW 28.5 KVAR 47.6 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-EQ1 CBL-0224 FEEDER AMPS: 25.6 VOLTAGE DROP: 0. %VD: 0.12

PROJECTED POWER FLOW: 7.1 KW 5.4 KVAR 8.9 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-EQ5 CBL-0225 FEEDER AMPS: 25.6 VOLTAGE DROP: 0. %VD: 0.12

PROJECTED POWER FLOW: 7.1 KW 5.4 KVAR 8.9 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B5-EQ2 CBL-0226 FEEDER AMPS: 25.6 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 7.1 KW 5.4 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-EQ6 CBL-0227 FEEDER AMPS: 25.6 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 7.1 KW 5.4 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-HYDR ELEV CBL-0228 FEEDER AMPS: 34.1 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-HYDR ELEV DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.43
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 9.5 KW 7.1 KVAR

LOAD FROM: B-B5-EQD CBL-0228 FEEDER AMPS: 34.1 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LP1 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.22
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 9.5 KW 7.1 KVAR

LOAD FROM: B-B5-LP1-M CBL-0214 FEEDER AMPS: 34.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LP1-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.21
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.8 DEGREES

LOAD FROM: B-B5-MDP CBL-0213 FEEDER AMPS: 68.1 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-LP1 CBL-0214 FEEDER AMPS: 34.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B5-LP3-M CBL-0215 FEEDER AMPS: 34.0 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LP2 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.31
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 9.5 KW 7.1 KVAR

LOAD FROM: B-B5-LP2-M CBL-0240 FEEDER AMPS: 34.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LP2-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.31
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.8 DEGREES

LOAD FROM: B-B5-MDP CBL-0239 FEEDER AMPS: 68.2 VOLTAGE DROP: 0. %VD: 0.24
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B5-LP2 CBL-0240 FEEDER AMPS: 34.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-LP4-M CBL-0241 FEEDER AMPS: 34.1 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LP3 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.26
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 9.5 KW 7.1 KVAR

LOAD FROM: B-B5-LP3-M CBL-0216 FEEDER AMPS: 34.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B5-LP3-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.26
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.8 DEGREES

LOAD FROM: B-B5-LP1-M CBL-0215 FEEDER AMPS: 34.0 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-LP3 CBL-0216 FEEDER AMPS: 34.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LP4 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.36
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 9.5 KW 7.1 KVAR

LOAD FROM: B-B5-LP4-M CBL-0242 FEEDER AMPS: 34.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LP4-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.36
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.8 DEGREES

LOAD FROM: B-B5-LP2-M CBL-0241 FEEDER AMPS: 34.1 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-LP4 CBL-0242 FEEDER AMPS: 34.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LP5 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.22
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 11.9 KW 8.9 KVAR

LOAD FROM: B-B5-LP5-M CBL-0231 FEEDER AMPS: 42.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 11.9 KW 8.9 KVAR 14.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B5-LP5-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.22
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.8 DEGREES

LOAD FROM: B-B5-MDP CBL-0230 FEEDER AMPS: 42.5 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 11.9 KW 8.9 KVAR 14.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-LP5 CBL-0231 FEEDER AMPS: 42.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 11.9 KW 8.9 KVAR 14.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LS1 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.57
========== PU BUS VOLTAGE: 0.964 ANGLE: -0.8 DEGREES

LOAD FROM: B-B5-LSD CBL-0237 FEEDER AMPS: 68.5 VOLTAGE DROP: 0. %VD: 0.17
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B55-LS3 CBL-0238 FEEDER AMPS: 68.5 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LS2 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.95
========== PU BUS VOLTAGE: 0.960 ANGLE: -0.7 DEGREES

LOAD FROM: B-B5-LSD CBL-0235 FEEDER AMPS: 68.7 VOLTAGE DROP: 1. %VD: 0.55
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B5-LS4 CBL-0236 FEEDER AMPS: 68.7 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LS4 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.11
========== PU BUS VOLTAGE: 0.959 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 19.0 KW 14.3 KVAR

LOAD FROM: B-B5-LS2 CBL-0236 FEEDER AMPS: 68.7 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B5-LSD DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.40
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.8 DEGREES

LOAD FROM: B-B5-LSD-M CBL-0234 FEEDER AMPS: 137.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 38.3 KW 28.6 KVAR 47.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-LS2 CBL-0235 FEEDER AMPS: 68.7 VOLTAGE DROP: 1. %VD: 0.55
PROJECTED POWER FLOW: 19.2 KW 14.3 KVAR 23.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B5-LS1 CBL-0237 FEEDER AMPS: 68.5 VOLTAGE DROP: 0. %VD: 0.17
PROJECTED POWER FLOW: 19.1 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LSD-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.40
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.8 DEGREES

LOAD FROM: B-B5-ATS-LS CBL-0233 FEEDER AMPS: 137.2 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 38.3 KW 28.6 KVAR 47.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-LSD CBL-0234 FEEDER AMPS: 137.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 38.3 KW 28.6 KVAR 47.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-MDP DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.07
========== PU BUS VOLTAGE: 0.969 ANGLE: -0.8 DEGREES

LOAD FROM: B-B5-MDP-M CBL-0211 FEEDER AMPS: 689.8 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 192.7 KW 144.5 KVAR 240.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-PNL-H-M CBL-0212 FEEDER AMPS: 76.6 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 21.4 KW 16.1 KVAR 26.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-LP1-M CBL-0213 FEEDER AMPS: 68.1 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B5-STRT LGHT CBL-0220 FEEDER AMPS: 23.8 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 6.7 KW 5.0 KVAR 8.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-NEXTEL CBL-0221 FEEDER AMPS: 68.1 VOLTAGE DROP: 0. %VD: 0.22
PROJECTED POWER FLOW: 19.1 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

LOAD TO: BUS-0258* CBL-0222 FEEDER AMPS: 136.6 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 38.1 KW 28.7 KVAR 47.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B5-LP5-M CBL-0230 FEEDER AMPS: 42.5 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 11.9 KW 8.9 KVAR 14.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0269 CBL-0232 FEEDER AMPS: 137.2 VOLTAGE DROP: 1. %VD: 0.28
PROJECTED POWER FLOW: 38.4 KW 28.7 KVAR 47.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B5-LP2-M CBL-0239 FEEDER AMPS: 68.2 VOLTAGE DROP: 0. %VD: 0.24
PROJECTED POWER FLOW: 19.1 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B5-TEMP TRAI CBL-0243 FEEDER AMPS: 68.2 VOLTAGE DROP: 1. %VD: 0.27
PROJECTED POWER FLOW: 19.1 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B5-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.06
========== PU BUS VOLTAGE: 0.969 ANGLE: -0.8 DEGREES

LOAD FROM: B-T-B5-SEC CBL-0210 FEEDER AMPS: 689.8 VOLTAGE DROP: 2. %VD: 0.96
PROJECTED POWER FLOW: 192.8 KW 144.5 KVAR 240.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 1.7 KW 1.8 KVAR 2.4 KVA

LOAD TO: B-B5-MDP CBL-0211 FEEDER AMPS: 689.8 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 192.8 KW 144.5 KVAR 240.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B5-NEXTEL DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.29
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 19.0 KW 14.3 KVAR

LOAD FROM: B-B5-MDP CBL-0221 FEEDER AMPS: 68.1 VOLTAGE DROP: 0. %VD: 0.22
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B5-PNL-H DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.20
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 21.4 KW 16.0 KVAR

LOAD FROM: B-B5-PNL-H-M CBL-0229 FEEDER AMPS: 76.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 21.4 KW 16.0 KVAR 26.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-PNL-H-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.20
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.8 DEGREES

LOAD FROM: B-B5-MDP CBL-0212 FEEDER AMPS: 76.6 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 21.4 KW 16.0 KVAR 26.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-PNL-H CBL-0229 FEEDER AMPS: 76.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 21.4 KW 16.0 KVAR 26.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-STRT LGHT DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.22
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 6.7 KW 5.0 KVAR

LOAD FROM: B-B5-MDP CBL-0220 FEEDER AMPS: 23.8 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 6.7 KW 5.0 KVAR 8.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B5-TEMP TRAI DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.34
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 19.0 KW 14.3 KVAR

LOAD FROM: B-B5-MDP CBL-0243 FEEDER AMPS: 68.2 VOLTAGE DROP: 1. %VD: 0.27
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B55-LS3 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.73
========== PU BUS VOLTAGE: 0.963 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 19.0 KW 14.3 KVAR

LOAD FROM: B-B5-LS1 CBL-0238 FEEDER AMPS: 68.5 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-ATS-EQ DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.84
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.8 DEGREES

LOAD FROM: BUS-0302 ATS-B6-EQ FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQD-M CBL-0264 FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-ATS-LS DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.83
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.8 DEGREES

LOAD FROM: BUS-0290 ATS-B6-LS FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LSD-M CBL-0253 FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B6-EQ1 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.94
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 4.2 KW 3.2 KVAR

LOAD FROM: B-B6-EQD CBL-0267 FEEDER AMPS: 15.1 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.2 KW 3.2 KVAR 5.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-EQ2 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.98
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-EQD CBL-0269 FEEDER AMPS: 15.1 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 4.2 KW 3.2 KVAR 5.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQ4 CBL-0271 FEEDER AMPS: 15.1 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.2 KW 3.2 KVAR 5.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-EQ3 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.96
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-EQD CBL-0268 FEEDER AMPS: 22.7 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 7.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQ5 CBL-0270 FEEDER AMPS: 22.7 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 7.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-EQ4 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.01
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 4.2 KW 3.2 KVAR

LOAD FROM: B-B6-EQ2 CBL-0271 FEEDER AMPS: 15.1 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.2 KW 3.2 KVAR 5.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B6-EQ5 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.00

========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES

NET BRANCH DIVERSITY LOAD: 6.4 KW 4.8 KVAR

LOAD FROM: B-B6-EQ3 CBL-0270 FEEDER AMPS: 22.7 VOLTAGE DROP: 0. %VD: 0.04

PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 7.9 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-EQ8 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.01

========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES

NET BRANCH DIVERSITY LOAD: 6.4 KW 4.8 KVAR

LOAD FROM: B-B6-EQD CBL-0266 FEEDER AMPS: 22.7 VOLTAGE DROP: 0. %VD: 0.10

PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 7.9 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-EQD DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.91

========== PU BUS VOLTAGE: 0.971 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-EQD-M CBL-0265 FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.00

PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQ8 CBL-0266 FEEDER AMPS: 22.7 VOLTAGE DROP: 0. %VD: 0.10

PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 7.9 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQ1 CBL-0267 FEEDER AMPS: 15.1 VOLTAGE DROP: 0. %VD: 0.03

PROJECTED POWER FLOW: 4.2 KW 3.2 KVAR 5.3 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQ3 CBL-0268 FEEDER AMPS: 22.7 VOLTAGE DROP: 0. %VD: 0.06

PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 7.9 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQ2 CBL-0269 FEEDER AMPS: 15.1 VOLTAGE DROP: 0. %VD: 0.07

PROJECTED POWER FLOW: 4.2 KW 3.2 KVAR 5.3 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B6-EQMACH CBL-0272 FEEDER AMPS: 10.0 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 2.8 KW 2.1 KVAR 3.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-EQD-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.90
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-ATS-EQ CBL-0264 FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQD CBL-0265 FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-EQMACH DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.93
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 2.8 KW 2.1 KVAR

LOAD FROM: B-B6-EQD CBL-0272 FEEDER AMPS: 10.0 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 2.8 KW 2.1 KVAR 3.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LP1 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.95
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B6-LP1-M CBL-0247 FEEDER AMPS: 57.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LP1-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.95
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.7 DEGREES

LOAD FROM: B-B6-MDP CBL-0246 FEEDER AMPS: 57.1 VOLTAGE DROP: 1. %VD: 0.29
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B6-LP1 CBL-0247 FEEDER AMPS: 57.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LP2 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.89
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B6-LP2-M CBL-0274 FEEDER AMPS: 57.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LP2-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.89
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.7 DEGREES

LOAD FROM: B-B6-MDP CBL-0273 FEEDER AMPS: 57.1 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LP2 CBL-0274 FEEDER AMPS: 57.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LP3 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.92
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 12.0 KW 9.0 KVAR

LOAD FROM: B-B6-LP3-M CBL-0249 FEEDER AMPS: 42.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 12.0 KW 9.0 KVAR 15.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LP3-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.92
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-MDP CBL-0248 FEEDER AMPS: 85.7 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B6-LP3 CBL-0249 FEEDER AMPS: 42.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 12.0 KW 9.0 KVAR 15.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LP5-M CBL-0250 FEEDER AMPS: 42.9 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 12.0 KW 9.0 KVAR 15.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LP4 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.90
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 12.0 KW 9.0 KVAR

LOAD FROM: B-B6-LP4-M CBL-0277 FEEDER AMPS: 42.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 12.0 KW 9.0 KVAR 15.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LP4-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.90
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-MDP CBL-0280 FEEDER AMPS: 85.7 VOLTAGE DROP: 1. %VD: 0.24
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B6-LP4 CBL-0277 FEEDER AMPS: 42.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 12.0 KW 9.0 KVAR 15.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LP6-M CBL-0278 FEEDER AMPS: 42.9 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 12.0 KW 9.0 KVAR 15.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LP5 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.98
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 12.0 KW 9.0 KVAR

LOAD FROM: B-B6-LP5-M CBL-0251 FEEDER AMPS: 42.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 12.0 KW 9.0 KVAR 15.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B6-LP5-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.97
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-LP3-M CBL-0250 FEEDER AMPS: 42.9 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 12.0 KW 9.0 KVAR 15.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LP5 CBL-0251 FEEDER AMPS: 42.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 12.0 KW 9.0 KVAR 15.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LP6 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.96
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 12.0 KW 9.0 KVAR

LOAD FROM: B-B6-LP6-M CBL-0279 FEEDER AMPS: 42.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 12.0 KW 9.0 KVAR 15.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LP6-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.96
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-LP4-M CBL-0278 FEEDER AMPS: 42.9 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 12.0 KW 9.0 KVAR 15.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LP6 CBL-0279 FEEDER AMPS: 42.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 12.0 KW 9.0 KVAR 15.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LP7 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.75
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B6-LP7-M CBL-0276 FEEDER AMPS: 57.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B6-LP7-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.75
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-MDP CBL-0275 FEEDER AMPS: 57.0 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LP7 CBL-0276 FEEDER AMPS: 57.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LS1 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.97
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 6.5 KW 4.9 KVAR

LOAD FROM: B-B6-LSD CBL-0261 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LS2 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.91
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 4.4 KW 3.3 KVAR

LOAD FROM: B-B6-LSD CBL-0262 FEEDER AMPS: 15.5 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.4 KW 3.3 KVAR 5.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LS3 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.97
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-LSD CBL-0260 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LS5 CBL-0259 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B6-LS4 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.97
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES

LOAD TO: B-B6-LS6 CBL-0255 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: B-B6-LSD CBL-0258 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LS5 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.02
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 6.5 KW 4.9 KVAR

LOAD FROM: B-B6-LS3 CBL-0259 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LS6 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.02
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 6.5 KW 4.9 KVAR

LOAD FROM: B-B6-LS4 CBL-0255 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LSD DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.88
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-LSD-M CBL-0257 FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LS4 CBL-0258 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 6.6 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B6-LS3 CBL-0260 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 6.6 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LS1 CBL-0261 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 6.6 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LS2 CBL-0262 FEEDER AMPS: 15.5 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.4 KW 3.3 KVAR 5.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LSD-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.88
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-ATS-LS CBL-0253 FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LSD CBL-0257 FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-MACH SHOP DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.00
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 24.0 KW 18.0 KVAR

LOAD FROM: B-B6-MDP CBL-0281 FEEDER AMPS: 85.8 VOLTAGE DROP: 1. %VD: 0.34
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B6-MDP DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.66
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-MDP-M CBL-0245 FEEDER AMPS: 686.2 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 192.5 KW 144.4 KVAR 240.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B6-LP1-M CBL-0246 FEEDER AMPS: 57.1 VOLTAGE DROP: 1. %VD: 0.29
PROJECTED POWER FLOW: 16.1 KW 12.0 KVAR 20.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B6-LP3-M CBL-0248 FEEDER AMPS: 85.7 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 24.1 KW 18.1 KVAR 30.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: BUS-0290 CBL-0252 FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.17
PROJECTED POWER FLOW: 24.1 KW 18.1 KVAR 30.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

LOAD TO: BUS-0302 CBL-0263 FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 24.1 KW 18.1 KVAR 30.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B6-LP2-M CBL-0273 FEEDER AMPS: 57.1 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LP7-M CBL-0275 FEEDER AMPS: 57.0 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LP4-M CBL-0280 FEEDER AMPS: 85.7 VOLTAGE DROP: 1. %VD: 0.24
PROJECTED POWER FLOW: 24.1 KW 18.1 KVAR 30.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B6-MACH SHOP CBL-0281 FEEDER AMPS: 85.8 VOLTAGE DROP: 1. %VD: 0.34
PROJECTED POWER FLOW: 24.1 KW 18.1 KVAR 30.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B6-P6-CS CBL-0282 FEEDER AMPS: 85.7 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 24.1 KW 18.0 KVAR 30.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B6-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.65

========== PU BUS VOLTAGE: 0.974 ANGLE: -0.8 DEGREES

LOAD FROM: B-T-B6-SEC CBL-0244 FEEDER AMPS: 686.2 VOLTAGE DROP: 1. %VD: 0.55

PROJECTED POWER FLOW: 192.6 KW 144.4 KVAR 240.7 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.8 KW 1.2 KVAR 1.4 KVA

LOAD TO: B-B6-MDP CBL-0245 FEEDER AMPS: 686.2 VOLTAGE DROP: 0. %VD: 0.01

PROJECTED POWER FLOW: 192.6 KW 144.4 KVAR 240.7 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-P6-CS DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.86

========== PU BUS VOLTAGE: 0.971 ANGLE: -0.8 DEGREES

NET BRANCH DIVERSITY LOAD: 24.0 KW 18.0 KVAR

LOAD FROM: B-B6-MDP CBL-0282 FEEDER AMPS: 85.7 VOLTAGE DROP: 0. %VD: 0.20

PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B60-MDP DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.25

========== PU BUS VOLTAGE: 0.967 ANGLE: -1.0 DEGREES

NET BRANCH DIVERSITY LOAD: 72.0 KW 54.0 KVAR

LOAD FROM: B-B60-MDP-M CBL-0449 FEEDER AMPS: 258.2 VOLTAGE DROP: 0. %VD: 0.01

PROJECTED POWER FLOW: 72.0 KW 54.0 KVAR 90.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B60-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.24

========== PU BUS VOLTAGE: 0.968 ANGLE: -1.0 DEGREES

LOAD FROM: B-T-B60-SEC CBL-0448 FEEDER AMPS: 258.2 VOLTAGE DROP: 1. %VD: 0.28

PROJECTED POWER FLOW: 72.0 KW 54.0 KVAR 90.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.1 KW 0.2 KVAR 0.3 KVA

LOAD TO: B-B60-MDP CBL-0449 FEEDER AMPS: 258.2 VOLTAGE DROP: 0. %VD: 0.01

PROJECTED POWER FLOW: 72.0 KW 54.0 KVAR 90.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B61 STRT LGH DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.61
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 5.3 KW 4.0 KVAR

LOAD FROM: B-B61-MDP CBL-0453 FEEDER AMPS: 19.2 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 5.3 KW 4.0 KVAR 6.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-ATS-EQD DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.61
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES

LOAD FROM: BUS-0520 ATS-B61-EQD FEEDER AMPS: 102.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 28.5 KW 21.4 KVAR 35.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-EQD CBL-0470 FEEDER AMPS: 102.5 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 28.5 KW 21.4 KVAR 35.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-ATS-LSD DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.57
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES

LOAD FROM: BUS-0518 ATS-B61-LSD FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-LSD-M CBL-0462 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-COMP RM DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.71
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 6.7 KW 5.1 KVAR

LOAD FROM: B-B61-EQA CBL-0477 FEEDER AMPS: 24.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B61-DP DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.23
========== PU BUS VOLTAGE: 0.958 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 28.4 KW 21.3 KVAR

LOAD FROM: B-B61-MDP CBL-0457 FEEDER AMPS: 103.0 VOLTAGE DROP: 2. %VD: 0.76
PROJECTED POWER FLOW: 28.4 KW 21.3 KVAR 35.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.1 KVAR 0.3 KVA

==== BUS: B-B61-ELEV DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.79
========== PU BUS VOLTAGE: 0.962 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 6.7 KW 5.1 KVAR

LOAD FROM: B-B61-EQD CBL-0472 FEEDER AMPS: 24.2 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-EQ1 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.79
========== PU BUS VOLTAGE: 0.962 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 6.7 KW 5.1 KVAR

LOAD FROM: B-B61-EQD CBL-0473 FEEDER AMPS: 24.2 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-EQ2 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.70
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 5.9 KW 4.4 KVAR

LOAD FROM: B-B61-EQD CBL-0475 FEEDER AMPS: 21.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 5.9 KW 4.4 KVAR 7.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-EQ4 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.72
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 2.4 KW 1.8 KVAR

LOAD FROM: B-B61-EQD CBL-0474 FEEDER AMPS: 8.5 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B61-EQA DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.68
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES

LOAD FROM: B-B61-EQD CBL-0476 FEEDER AMPS: 24.2 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-COMP RM CBL-0477 FEEDER AMPS: 24.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-EQD DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.67
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES

LOAD FROM: B-B61-ATS-EQD CBL-0470 FEEDER AMPS: 102.5 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 28.5 KW 21.4 KVAR 35.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-ELEV CBL-0472 FEEDER AMPS: 24.2 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-EQ1 CBL-0473 FEEDER AMPS: 24.2 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-EQ4 CBL-0474 FEEDER AMPS: 8.5 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-EQ2 CBL-0475 FEEDER AMPS: 21.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 5.9 KW 4.4 KVAR 7.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-EQA CBL-0476 FEEDER AMPS: 24.2 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B61-KITCHEN DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.64
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 4.1 KW 3.1 KVAR

LOAD FROM: B-B61-LSD CBL-0467 FEEDER AMPS: 14.8 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 4.1 KW 3.1 KVAR 5.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-LP1 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.17
========== PU BUS VOLTAGE: 0.958 ANGLE: -1.1 DEGREES
NET BRANCH DIVERSITY LOAD: 10.7 KW 8.0 KVAR

LOAD FROM: B-B61-MDP CBL-0454 FEEDER AMPS: 38.6 VOLTAGE DROP: 1. %VD: 0.69
PROJECTED POWER FLOW: 10.7 KW 8.0 KVAR 13.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B61-LP2 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.17
========== PU BUS VOLTAGE: 0.958 ANGLE: -1.1 DEGREES
NET BRANCH DIVERSITY LOAD: 10.7 KW 8.0 KVAR

LOAD FROM: B-B61-MDP CBL-0458 FEEDER AMPS: 38.6 VOLTAGE DROP: 1. %VD: 0.69
PROJECTED POWER FLOW: 10.7 KW 8.0 KVAR 13.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B61-LP3 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.82
========== PU BUS VOLTAGE: 0.962 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B61-MDP CBL-0455 FEEDER AMPS: 57.7 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B61-LP4 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.73
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 17.8 KW 13.3 KVAR

LOAD FROM: B-B61-MDP CBL-0459 FEEDER AMPS: 64.0 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 17.8 KW 13.3 KVAR 22.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B61-LP5 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.66
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.1 DEGREES
NET BRANCH DIVERSITY LOAD: 5.3 KW 4.0 KVAR

LOAD FROM: B-B61-MDP CBL-0456 FEEDER AMPS: 19.2 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 5.3 KW 4.0 KVAR 6.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-LS1 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.65
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 1.8 KW 1.4 KVAR

LOAD FROM: B-B61-LSD CBL-0468 FEEDER AMPS: 6.5 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 1.8 KW 1.4 KVAR 2.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-LS2 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.63
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 1.8 KW 1.4 KVAR

LOAD FROM: B-B61-LSD CBL-0469 FEEDER AMPS: 6.5 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 1.8 KW 1.4 KVAR 2.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-LS3 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.70
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 2.7 KW 2.1 KVAR

LOAD FROM: B-B61-LSD CBL-0464 FEEDER AMPS: 9.8 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 2.7 KW 2.1 KVAR 3.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-LS4 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.68
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 2.7 KW 2.1 KVAR

LOAD FROM: B-B61-LSD CBL-0465 FEEDER AMPS: 9.8 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 2.7 KW 2.1 KVAR 3.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B61-LS5 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.70
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 2.7 KW 2.1 KVAR

LOAD FROM: B-B61-LSD CBL-0466 FEEDER AMPS: 9.8 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 2.7 KW 2.1 KVAR 3.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-LSD DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.60
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES

LOAD FROM: B-B61-LSD-M CBL-0463 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-LS3 CBL-0464 FEEDER AMPS: 9.8 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 2.7 KW 2.1 KVAR 3.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-LS4 CBL-0465 FEEDER AMPS: 9.8 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 2.7 KW 2.1 KVAR 3.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-LS5 CBL-0466 FEEDER AMPS: 9.8 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 2.7 KW 2.1 KVAR 3.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-KITCHEN CBL-0467 FEEDER AMPS: 14.8 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 4.1 KW 3.1 KVAR 5.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-LS1 CBL-0468 FEEDER AMPS: 6.5 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 1.8 KW 1.4 KVAR 2.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-LS2 CBL-0469 FEEDER AMPS: 6.5 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 1.8 KW 1.4 KVAR 2.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B61-LSD-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.60
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES

LOAD FROM: B-B61-ATS-LSD CBL-0462 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-LSD CBL-0463 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-MCC DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.61
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 5.3 KW 4.0 KVAR

LOAD FROM: B-B61-MDP CBL-0452 FEEDER AMPS: 19.2 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 5.3 KW 4.0 KVAR 6.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-MDP DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.47
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.2 DEGREES

LOAD FROM: B-B61-MDP-M CBL-0451 FEEDER AMPS: 519.9 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 144.8 KW 108.3 KVAR 180.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-MCC CBL-0452 FEEDER AMPS: 19.2 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 5.3 KW 4.0 KVAR 6.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61 STRT LGH CBL-0453 FEEDER AMPS: 19.2 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 5.3 KW 4.0 KVAR 6.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-LP1 CBL-0454 FEEDER AMPS: 38.6 VOLTAGE DROP: 1. %VD: 0.69
PROJECTED POWER FLOW: 10.8 KW 8.0 KVAR 13.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B61-LP3 CBL-0455 FEEDER AMPS: 57.7 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 16.1 KW 12.0 KVAR 20.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B61-LP5 CBL-0456 FEEDER AMPS: 19.2 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 5.4 KW 4.0 KVAR 6.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-DP CBL-0457 FEEDER AMPS: 103.0 VOLTAGE DROP: 2. %VD: 0.76
PROJECTED POWER FLOW: 28.8 KW 21.4 KVAR 35.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.1 KVAR 0.3 KVA

LOAD TO: B-B61-LP2 CBL-0458 FEEDER AMPS: 38.6 VOLTAGE DROP: 1. %VD: 0.69
PROJECTED POWER FLOW: 10.8 KW 8.0 KVAR 13.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B61-LP4 CBL-0459 FEEDER AMPS: 64.0 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 17.8 KW 13.4 KVAR 22.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

LOAD TO: BUS-0518 CBL-0460 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0520 CBL-0461 FEEDER AMPS: 102.5 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 28.5 KW 21.4 KVAR 35.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B61-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.46
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.2 DEGREES

LOAD FROM: B-T-B61-SEC CBL-0450 FEEDER AMPS: 519.9 VOLTAGE DROP: 1. %VD: 0.37
PROJECTED POWER FLOW: 144.8 KW 108.4 KVAR 180.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.7 KVAR 0.8 KVA

LOAD TO: B-B61-MDP CBL-0451 FEEDER AMPS: 519.9 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 144.8 KW 108.4 KVAR 180.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B62-A DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.50
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 13.7 KW 10.3 KVAR

LOAD FROM: B-B62-MDP CBL-0483 FEEDER AMPS: 48.7 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 13.7 KW 10.3 KVAR 17.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-ATS-EQD DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.45
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.8 DEGREES

LOAD FROM: BUS-0546 ATS-B62-EQD FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-EQD CBL-0493 FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-ATS-LSD DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.45
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.8 DEGREES

LOAD FROM: BUS-0554 ATS-B62-LSD FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-LSD-M CBL-0499 FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-ATTC PNL DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.58
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B62-EQD CBL-0495 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B62-B DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.50
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B62-MDP CBL-0490 FEEDER AMPS: 56.9 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-BL DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.54
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 9.1 KW 6.9 KVAR

LOAD FROM: B-B62-MDP CBL-0486 FEEDER AMPS: 32.5 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 9.1 KW 6.9 KVAR 11.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-BP DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.58
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 13.7 KW 10.3 KVAR

LOAD FROM: B-B62-MDP CBL-0481 FEEDER AMPS: 48.8 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 13.7 KW 10.3 KVAR 17.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-ELEV-1 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.68
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B62-EQD CBL-0494 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-ELEV-2 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.58
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B62-EQD CBL-0497 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B62-EQ DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.53
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B62-EQD CBL-0496 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-EQD DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.52
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES

LOAD FROM: B-B62-ATS-EQD CBL-0493 FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-ELEV-1 CBL-0494 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-ATTC PNL CBL-0495 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-EQ CBL-0496 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-ELEV-2 CBL-0497 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-PAD RM CBL-0498 FEEDER AMPS: 16.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B62-KP DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.53
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 13.7 KW 10.3 KVAR

LOAD FROM: B-B62-MDP CBL-0487 FEEDER AMPS: 48.8 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 13.7 KW 10.3 KVAR 17.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-LP1 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.52
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 13.7 KW 10.3 KVAR

LOAD FROM: B-B62-MDP CBL-0488 FEEDER AMPS: 48.8 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 13.7 KW 10.3 KVAR 17.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-LP2 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.56
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 16.0 KW 12.0 KVAR

LOAD FROM: B-B62-MDP CBL-0489 FEEDER AMPS: 56.9 VOLTAGE DROP: 0. %VD: 0.22
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-LP3 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.60
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 20.6 KW 15.4 KVAR

LOAD FROM: B-B62-MDP CBL-0484 FEEDER AMPS: 73.2 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B62-LP4 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.54
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 20.6 KW 15.4 KVAR

LOAD FROM: B-B62-MDP CBL-0491 FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B62-LS1 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.65
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 4.1 KW 3.1 KVAR

LOAD FROM: B-B62-LSD CBL-0503 FEEDER AMPS: 14.6 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 4.1 KW 3.1 KVAR 5.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-LS2 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.58
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 4.1 KW 3.1 KVAR

LOAD FROM: B-B62-LSD CBL-0504 FEEDER AMPS: 14.6 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.1 KW 3.1 KVAR 5.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-LS3 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.67
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 6.2 KW 4.6 KVAR

LOAD FROM: B-B62-LSD CBL-0501 FEEDER AMPS: 21.9 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 6.2 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-LS4 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.60
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 6.2 KW 4.6 KVAR

LOAD FROM: B-B62-LSD CBL-0502 FEEDER AMPS: 21.9 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 6.2 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-LSD DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.52
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES

LOAD FROM: B-B62-LSD-M CBL-0500 FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B62-LS3 CBL-0501 FEEDER AMPS: 21.9 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 6.2 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-LS4 CBL-0502 FEEDER AMPS: 21.9 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 6.2 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-LS2 CBL-0504 FEEDER AMPS: 14.6 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.1 KW 3.1 KVAR 5.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-LS1 CBL-0503 FEEDER AMPS: 14.6 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 4.1 KW 3.1 KVAR 5.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-LSD-M DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.52
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES

LOAD FROM: B-B62-ATS-LSD CBL-0499 FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-LSD CBL-0500 FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-MDP DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.35
========== PU BUS VOLTAGE: 0.977 ANGLE: -0.8 DEGREES

LOAD FROM: B-B62-MDP-M CBL-0479 FEEDER AMPS: 683.5 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 192.4 KW 144.2 KVAR 240.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-OT CBL-0480 FEEDER AMPS: 24.3 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 6.9 KW 5.1 KVAR 8.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-BP CBL-0481 FEEDER AMPS: 48.8 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 13.8 KW 10.3 KVAR 17.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B62-STRT LGT CBL-0482 FEEDER AMPS: 24.3 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 6.9 KW 5.1 KVAR 8.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-A CBL-0483 FEEDER AMPS: 48.7 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 13.7 KW 10.3 KVAR 17.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-LP3 CBL-0484 FEEDER AMPS: 73.2 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 20.6 KW 15.5 KVAR 25.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: BUS-0546 CBL-0485 FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 20.6 KW 15.5 KVAR 25.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-BL CBL-0486 FEEDER AMPS: 32.5 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 9.2 KW 6.9 KVAR 11.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-KP CBL-0487 FEEDER AMPS: 48.8 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 13.7 KW 10.3 KVAR 17.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-LP1 CBL-0488 FEEDER AMPS: 48.8 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 13.7 KW 10.3 KVAR 17.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-LP2 CBL-0489 FEEDER AMPS: 56.9 VOLTAGE DROP: 0. %VD: 0.22
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-B CBL-0490 FEEDER AMPS: 56.9 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-LP4 CBL-0491 FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 20.6 KW 15.5 KVAR 25.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

LOAD TO: BUS-0554 CBL-0492 FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 20.6 KW 15.5 KVAR 25.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B62-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.34
========== PU BUS VOLTAGE: 0.977 ANGLE: -0.8 DEGREES

LOAD FROM: B-T-B62-SEC CBL-0478 FEEDER AMPS: 683.5 VOLTAGE DROP: 1. %VD: 0.29
PROJECTED POWER FLOW: 192.4 KW 144.2 KVAR 240.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.7 KVAR 0.8 KVA

LOAD TO: B-B62-MDP CBL-0479 FEEDER AMPS: 683.5 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 192.4 KW 144.2 KVAR 240.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-OT DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.46
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 6.9 KW 5.1 KVAR

LOAD FROM: B-B62-MDP CBL-0480 FEEDER AMPS: 24.3 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 6.9 KW 5.1 KVAR 8.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-PAD RM DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.55
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 4.6 KW 3.4 KVAR

LOAD FROM: B-B62-EQD CBL-0498 FEEDER AMPS: 16.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-STRT LGT DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.50
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 6.9 KW 5.1 KVAR

LOAD FROM: B-B62-MDP CBL-0482 FEEDER AMPS: 24.3 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 6.9 KW 5.1 KVAR 8.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B7-ATS-EQ DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.17
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES

LOAD FROM: BUS-0327 ATS-B7-EQ FEEDER AMPS: 83.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 23.3 KW 17.5 KVAR 29.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-EQD CBL-0286 FEEDER AMPS: 83.5 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 23.3 KW 17.5 KVAR 29.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-ATS-LS DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.18
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES

LOAD FROM: BUS-0344 ATS-B7-LS FEEDER AMPS: 46.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LSD-M CBL-0302 FEEDER AMPS: 46.9 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-ELEV DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.33
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 4.6 KW 3.4 KVAR

LOAD FROM: B-B7-EQD CBL-0287 FEEDER AMPS: 16.3 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-EQ1 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.32
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B7-EQD CBL-0290 FEEDER AMPS: 14.3 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B7-EQ2 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.28
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B7-EQD CBL-0289 FEEDER AMPS: 14.3 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-EQ4 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.32
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 4.6 KW 3.4 KVAR

LOAD FROM: B-B7-EQD CBL-0292 FEEDER AMPS: 16.3 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-EQD DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.26
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.9 DEGREES

LOAD FROM: B-B7-ATS-EQ CBL-0286 FEEDER AMPS: 83.5 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 23.3 KW 17.5 KVAR 29.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-ELEV CBL-0287 FEEDER AMPS: 16.3 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: bB-B7-MC1 CBL-0288 FEEDER AMPS: 16.3 VOLTAGE DROP: 1. %VD: 0.25
PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-EQ2 CBL-0289 FEEDER AMPS: 14.3 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-EQ1 CBL-0290 FEEDER AMPS: 14.3 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B7-MCC-1 CBL-0291 FEEDER AMPS: 5.7 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-EQ4 CBL-0292 FEEDER AMPS: 16.3 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LP2 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.16
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 8.7 KW 6.5 KVAR

LOAD FROM: B-B7-LP2-M CBL-0315 FEEDER AMPS: 31.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 8.7 KW 6.5 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LP2-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.16
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES

LOAD FROM: B-B7-MDP CBL-0314 FEEDER AMPS: 31.2 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 8.7 KW 6.5 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LP2 CBL-0315 FEEDER AMPS: 31.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 8.7 KW 6.5 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LP3 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.37
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 6.5 KW 4.9 KVAR

LOAD FROM: B-B7-LP3-M CBL-0294 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B7-LP3-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.37
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.9 DEGREES

LOAD FROM: B-B7-MDP CBL-0293 FEEDER AMPS: 47.0 VOLTAGE DROP: 1. %VD: 0.29
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LP3 CBL-0294 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LP6-M CBL-0295 FEEDER AMPS: 23.5 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LP4 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.20
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 6.5 KW 4.9 KVAR

LOAD FROM: B-B7-LP4-M CBL-0309 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LP4-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.20
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES

LOAD FROM: B-B7-MDP CBL-0308 FEEDER AMPS: 46.9 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LP4 CBL-0309 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LP7-M CBL-0310 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B7-LP5 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.37
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 6.5 KW 4.9 KVAR

LOAD FROM: B-B7-LP5-M CBL-0298 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LP5-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.37
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.9 DEGREES

LOAD FROM: B-B7-MDP CBL-0297 FEEDER AMPS: 47.0 VOLTAGE DROP: 1. %VD: 0.29
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LP5 CBL-0298 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LP8-M CBL-0299 FEEDER AMPS: 23.5 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LP6 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.40
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 6.5 KW 4.9 KVAR

LOAD FROM: B-B7-LP6-M CBL-0296 FEEDER AMPS: 23.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LP6-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.40
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.9 DEGREES

LOAD FROM: B-B7-LP3-M CBL-0295 FEEDER AMPS: 23.5 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B7-LP6 CBL-0296 FEEDER AMPS: 23.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LP7 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.23
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 6.5 KW 4.9 KVAR

LOAD FROM: B-B7-LP7-M CBL-0311 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LP7-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.23
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES

LOAD FROM: B-B7-LP4-M CBL-0310 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LP7 CBL-0311 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LP8 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.40
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 6.5 KW 4.9 KVAR

LOAD FROM: B-B7-LP8-M CBL-0300 FEEDER AMPS: 23.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LP8-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.40
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.9 DEGREES

LOAD FROM: B-B7-LP5-M CBL-0299 FEEDER AMPS: 23.5 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B7-LP8 CBL-0300 FEEDER AMPS: 23.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LS1 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.27
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 3.3 KW 2.5 KVAR

LOAD FROM: B-B7-LSD CBL-0306 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LS2 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.23
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 3.3 KW 2.5 KVAR

LOAD FROM: B-B7-LSD CBL-0307 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LS4 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.28
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 3.3 KW 2.5 KVAR

LOAD FROM: B-B7-LSD CBL-0305 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LS5 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.24
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 3.3 KW 2.5 KVAR

LOAD FROM: B-B7-LSD CBL-0304 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B7-LSD DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.19
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES

LOAD FROM: B-B7-LSD-M CBL-0303 FEEDER AMPS: 46.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LS5 CBL-0304 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LS4 CBL-0305 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LS1 CBL-0306 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LS2 CBL-0307 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LSD-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.19
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES

LOAD FROM: B-B7-ATS-LS CBL-0302 FEEDER AMPS: 46.9 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LSD CBL-0303 FEEDER AMPS: 46.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-MCC-1 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.28
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 1.6 KW 1.2 KVAR

LOAD FROM: B-B7-EQD CBL-0291 FEEDER AMPS: 5.7 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B7-MCC-2 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.19
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 8.7 KW 6.5 KVAR

LOAD FROM: B-B7-MDP CBL-0317 FEEDER AMPS: 31.2 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 8.7 KW 6.5 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-MDP DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.08
========== PU BUS VOLTAGE: 0.969 ANGLE: -0.9 DEGREES

LOAD FROM: B-B7-MDP-M CBL-0284 FEEDER AMPS: 396.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 110.8 KW 83.1 KVAR 138.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0327 CBL-0285 FEEDER AMPS: 83.5 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 23.3 KW 17.5 KVAR 29.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LP3-M CBL-0293 FEEDER AMPS: 47.0 VOLTAGE DROP: 1. %VD: 0.29
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LP5-M CBL-0297 FEEDER AMPS: 47.0 VOLTAGE DROP: 1. %VD: 0.29
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0344 CBL-0301 FEEDER AMPS: 46.9 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LP4-M CBL-0308 FEEDER AMPS: 46.9 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-SRTLGHT-M CBL-0312 FEEDER AMPS: 31.3 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 8.8 KW 6.6 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LP2-M CBL-0314 FEEDER AMPS: 31.2 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 8.7 KW 6.6 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: BUS-0360 CBL-0316 FEEDER AMPS: 31.3 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 8.8 KW 6.6 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-MCC-2 CBL-0317 FEEDER AMPS: 31.2 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 8.7 KW 6.5 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.07
========== PU BUS VOLTAGE: 0.969 ANGLE: -0.9 DEGREES

LOAD FROM: B-T-B7-SEC CBL-0283 FEEDER AMPS: 396.6 VOLTAGE DROP: 3. %VD: 1.40
PROJECTED POWER FLOW: 110.8 KW 83.1 KVAR 138.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 1.1 KW 1.9 KVAR 2.2 KVA

LOAD TO: B-B7-MDP CBL-0284 FEEDER AMPS: 396.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 110.8 KW 83.1 KVAR 138.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-SRTLGHT-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.31
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.8 DEGREES

LOAD FROM: B-B7-MDP CBL-0312 FEEDER AMPS: 31.3 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 8.7 KW 6.5 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-STRT LGHT CBL-0313 FEEDER AMPS: 31.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 8.7 KW 6.5 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-STRT LGHT DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.31
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 8.7 KW 6.5 KVAR

LOAD FROM: B-B7-SRTLGHT-M CBL-0313 FEEDER AMPS: 31.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 8.7 KW 6.5 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70 -BLDG-71 DESIGN VOLTS: 208 BUS VOLTS: 195 %VD: 6.03$
========== PU BUS VOLTAGE: 0.940 ANGLE: -1.3 DEGREES
NET BRANCH DIVERSITY LOAD: 5.0 KW 3.8 KVAR

LOAD FROM: B-B70-MDP CBL-0518 FEEDER AMPS: 18.5 VOLTAGE DROP: 3. %VD: 1.52
PROJECTED POWER FLOW: 5.0 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B70 GEN-M DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-B70-A DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.65
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.7 DEGREES
NET BRANCH DIVERSITY LOAD: 7.5 KW 5.6 KVAR

LOAD FROM: B-B70-MDP CBL-0513 FEEDER AMPS: 27.3 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 7.5 KW 5.6 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-ATS-EQD DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.56
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.7 DEGREES

LOAD FROM: BUS-0582 ATS-B70-EQD FEEDER AMPS: 54.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 15.1 KW 11.3 KVAR 18.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-EQD-M CBL-0526 FEEDER AMPS: 54.9 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 15.1 KW 11.3 KVAR 18.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-ATS-LSD DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.57
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.7 DEGREES

LOAD FROM: BUS-0581 ATS-B70-LSD FEEDER AMPS: 41.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B70-LSD-M CBL-0540 FEEDER AMPS: 41.1 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-ATTIC DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.70
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 7.5 KW 5.6 KVAR

LOAD FROM: B-B70-MDP CBL-0512 FEEDER AMPS: 27.4 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 7.5 KW 5.6 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-B DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.65
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.7 DEGREES
NET BRANCH DIVERSITY LOAD: 7.5 KW 5.6 KVAR

LOAD FROM: B-B70-MDP CBL-0521 FEEDER AMPS: 27.3 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 7.5 KW 5.6 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-CHLLR DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.15$
========== PU BUS VOLTAGE: 0.948 ANGLE: -1.8 DEGREES
NET BRANCH DIVERSITY LOAD: 17.6 KW 13.2 KVAR

LOAD FROM: B-B70-MDP CBL-0524 FEEDER AMPS: 64.2 VOLTAGE DROP: 1. %VD: 0.64
PROJECTED POWER FLOW: 17.6 KW 13.2 KVAR 22.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B70-EM-TAP DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-EQ1 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.78
========== PU BUS VOLTAGE: 0.952 ANGLE: -1.7 DEGREES

LOAD FROM: B-B70-EQD CBL-0528 FEEDER AMPS: 25.3 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 7.0 KW 5.2 KVAR 8.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-EQ3 CBL-0529 FEEDER AMPS: 25.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 7.0 KW 5.2 KVAR 8.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-EQ2 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.94
========== PU BUS VOLTAGE: 0.951 ANGLE: -1.7 DEGREES

LOAD FROM: B-B70-EQD CBL-0531 FEEDER AMPS: 29.6 VOLTAGE DROP: 1. %VD: 0.36
PROJECTED POWER FLOW: 8.1 KW 6.1 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-EQ4 CBL-0532 FEEDER AMPS: 29.6 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 8.1 KW 6.1 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-EQ3 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.82
========== PU BUS VOLTAGE: 0.952 ANGLE: -1.7 DEGREES

LOAD FROM: B-B70-EQ1 CBL-0529 FEEDER AMPS: 25.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 7.0 KW 5.2 KVAR 8.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-EQ5 CBL-0530 FEEDER AMPS: 25.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 7.0 KW 5.2 KVAR 8.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-EQ4 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.99
========== PU BUS VOLTAGE: 0.950 ANGLE: -1.6 DEGREES

LOAD FROM: B-B70-EQ2 CBL-0532 FEEDER AMPS: 29.6 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 8.1 KW 6.1 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B70-EQ6 CBL-0533 FEEDER AMPS: 29.6 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 8.1 KW 6.1 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-EQ5 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.85
========== PU BUS VOLTAGE: 0.951 ANGLE: -1.7 DEGREES
NET BRANCH DIVERSITY LOAD: 7.0 KW 5.2 KVAR

LOAD FROM: B-B70-EQ3 CBL-0530 FEEDER AMPS: 25.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 7.0 KW 5.2 KVAR 8.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-EQ6 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 5.03$
========== PU BUS VOLTAGE: 0.950 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 8.1 KW 6.1 KVAR

LOAD FROM: B-B70-EQ4 CBL-0533 FEEDER AMPS: 29.6 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 8.1 KW 6.1 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-EQD DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.58
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.7 DEGREES

LOAD FROM: B-B70-EQD-M CBL-0527 FEEDER AMPS: 54.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 15.1 KW 11.3 KVAR 18.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-EQ1 CBL-0528 FEEDER AMPS: 25.3 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 7.0 KW 5.2 KVAR 8.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-EQ2 CBL-0531 FEEDER AMPS: 29.6 VOLTAGE DROP: 1. %VD: 0.36
PROJECTED POWER FLOW: 8.2 KW 6.1 KVAR 10.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-EQD-M DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.58
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.7 DEGREES

LOAD FROM: B-B70-ATS-EQD CBL-0526 FEEDER AMPS: 54.9 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 15.1 KW 11.3 KVAR 18.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-EQD CBL-0527 FEEDER AMPS: 54.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 15.1 KW 11.3 KVAR 18.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-FIRE PMP DESIGN VOLTS: 208 BUS VOLTS: 187 %VD: 9.95$
========== PU BUS VOLTAGE: 0.900 ANGLE: 0.2 DEGREES
NET BRANCH DIVERSITY LOAD: 64.0 KW 48.0 KVAR

LOAD FROM: B-B70-FPMP M CBL-0508 FEEDER AMPS: 246.6 VOLTAGE DROP: 12. %VD: 5.58$
PROJECTED POWER FLOW: 64.0 KW 48.0 KVAR 80.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 5.6 KW 0.7 KVAR 5.6 KVA

==== BUS: B-B70-FP-TAP DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.21
========== PU BUS VOLTAGE: 0.958 ANGLE: -1.6 DEGREES

LOAD FROM: B-T-B70-SEC CBL-0506 FEEDER AMPS: 246.6 VOLTAGE DROP: 1. %VD: 0.34
PROJECTED POWER FLOW: 69.7 KW 48.9 KVAR 85.1 KVA PF:0.82 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.3 KVAR 0.3 KVA

LOAD TO: B-B70-FPMP M CBL-0507 FEEDER AMPS: 246.6 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 69.7 KW 48.9 KVAR 85.1 KVA PF:0.82 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B70-FPMP M DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.37
========== PU BUS VOLTAGE: 0.956 ANGLE: -1.6 DEGREES

LOAD FROM: B-B70-FP-TAP CBL-0507 FEEDER AMPS: 246.6 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 69.6 KW 48.7 KVAR 85.0 KVA PF:0.82 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B70-FIRE PMP CBL-0508 FEEDER AMPS: 246.6 VOLTAGE DROP: 12. %VD: 5.58$
PROJECTED POWER FLOW: 69.6 KW 48.7 KVAR 85.0 KVA PF:0.82 LAGGING
LOSSES THRU FEEDER: 5.6 KW 0.7 KVAR 5.6 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-GEN DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
*** SWING GENERATOR: B70-GEN 0.0 KW 0.0 KVAR
**** NO LOAD SPECIFIED ****

==== BUS: B-B70-K DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.63
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.8 KVAR

LOAD FROM: B-B70-MDP CBL-0514 FEEDER AMPS: 13.7 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-LP-4 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.91
========== PU BUS VOLTAGE: 0.951 ANGLE: -1.7 DEGREES
NET BRANCH DIVERSITY LOAD: 10.0 KW 7.5 KVAR

LOAD FROM: B-B70-MDP CBL-0522 FEEDER AMPS: 36.6 VOLTAGE DROP: 1. %VD: 0.40
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B70-LP1 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.91
========== PU BUS VOLTAGE: 0.951 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 11.3 KW 8.5 KVAR

LOAD FROM: B-B70-MDP CBL-0519 FEEDER AMPS: 41.2 VOLTAGE DROP: 1. %VD: 0.39
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B70-LP3 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.73
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.7 DEGREES
NET BRANCH DIVERSITY LOAD: 7.5 KW 5.6 KVAR

LOAD FROM: B-B70-MDP CBL-0520 FEEDER AMPS: 27.4 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 7.5 KW 5.6 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-LS1 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.69
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.7 DEGREES
NET BRANCH DIVERSITY LOAD: 2.2 KW 1.6 KVAR

LOAD FROM: B-B70-LSD CBL-0542 FEEDER AMPS: 7.8 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 2.2 KW 1.6 KVAR 2.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-LS2 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.73
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 2.2 KW 1.6 KVAR

LOAD FROM: B-B70-LSD CBL-0543 FEEDER AMPS: 7.8 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 2.2 KW 1.6 KVAR 2.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-LS3 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.72
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.7 DEGREES

LOAD FROM: B-B70-LSD CBL-0534 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-LS5 CBL-0535 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-LS4 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.81
========== PU BUS VOLTAGE: 0.952 ANGLE: -1.6 DEGREES

LOAD FROM: B-B70-LSD CBL-0537 FEEDER AMPS: 13.7 VOLTAGE DROP: 0. %VD: 0.22
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-LS6 CBL-0538 FEEDER AMPS: 13.7 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-LS5 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.74
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.7 DEGREES
NET BRANCH DIVERSITY LOAD: 3.2 KW 2.4 KVAR

LOAD FROM: B-B70-LS3 CBL-0535 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-LS6 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.83
========== PU BUS VOLTAGE: 0.952 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.8 KVAR

LOAD FROM: B-B70-LS4 CBL-0538 FEEDER AMPS: 13.7 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-LSD DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.58
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.7 DEGREES

LOAD TO: B-B70-LS3 CBL-0534 FEEDER AMPS: 11.7 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-LS4 CBL-0537 FEEDER AMPS: 13.7 VOLTAGE DROP: 0. %VD: 0.22
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: B-B70-LSD-M CBL-0541 FEEDER AMPS: 41.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-LS1 CBL-0542 FEEDER AMPS: 7.8 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 2.2 KW 1.6 KVAR 2.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-LS2 CBL-0543 FEEDER AMPS: 7.8 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 2.2 KW 1.6 KVAR 2.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-LSD-M DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.58
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.7 DEGREES

LOAD FROM: B-B70-ATS-LSD CBL-0540 FEEDER AMPS: 41.1 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-LSD CBL-0541 FEEDER AMPS: 41.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-MDP DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.52
========== PU BUS VOLTAGE: 0.955 ANGLE: -1.7 DEGREES

LOAD FROM: B-B70-MDP-M CBL-0509 FEEDER AMPS: 489.8 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 134.8 KW 101.1 KVAR 168.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-STRTLGHT CBL-0510 FEEDER AMPS: 13.7 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B0B70-LP2 CBL-0511 FEEDER AMPS: 18.2 VOLTAGE DROP: 0. %VD: 0.24
PROJECTED POWER FLOW: 5.0 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-ATTIC CBL-0512 FEEDER AMPS: 27.4 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 7.5 KW 5.7 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-A CBL-0513 FEEDER AMPS: 27.3 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 7.5 KW 5.7 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-K CBL-0514 FEEDER AMPS: 13.7 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-PP2 CBL-0516 FEEDER AMPS: 41.1 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: BUS-0581 CBL-0515 FEEDER AMPS: 41.1 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0582 CBL-0517 FEEDER AMPS: 54.9 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 15.1 KW 11.3 KVAR 18.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70 -BLDG-71 CBL-0518 FEEDER AMPS: 18.5 VOLTAGE DROP: 3. %VD: 1.52
PROJECTED POWER FLOW: 5.1 KW 3.8 KVAR 6.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B70-LP1 CBL-0519 FEEDER AMPS: 41.2 VOLTAGE DROP: 1. %VD: 0.39
PROJECTED POWER FLOW: 11.4 KW 8.5 KVAR 14.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B70-LP3 CBL-0520 FEEDER AMPS: 27.4 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 7.5 KW 5.7 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-B CBL-0521 FEEDER AMPS: 27.3 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 7.5 KW 5.7 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-LP-4 CBL-0522 FEEDER AMPS: 36.6 VOLTAGE DROP: 1. %VD: 0.40
PROJECTED POWER FLOW: 10.1 KW 7.6 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B70-CHLLR CBL-0524 FEEDER AMPS: 64.2 VOLTAGE DROP: 1. %VD: 0.64
PROJECTED POWER FLOW: 17.7 KW 13.3 KVAR 22.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B70-PP220 CBL-0525 FEEDER AMPS: 36.6 VOLTAGE DROP: 1. %VD: 0.36
PROJECTED POWER FLOW: 10.1 KW 7.6 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.51
========== PU BUS VOLTAGE: 0.955 ANGLE: -1.7 DEGREES

LOAD FROM: B-T-B70-SEC CBL-0505 FEEDER AMPS: 489.8 VOLTAGE DROP: 1. %VD: 0.64
PROJECTED POWER FLOW: 134.8 KW 101.1 KVAR 168.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.6 KW 1.1 KVAR 1.2 KVA

LOAD TO: B-B70-MDP CBL-0509 FEEDER AMPS: 489.8 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 134.8 KW 101.1 KVAR 168.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-PP2 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.72
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.7 DEGREES
NET BRANCH DIVERSITY LOAD: 11.3 KW 8.5 KVAR

LOAD FROM: B-B70-MDP CBL-0516 FEEDER AMPS: 41.1 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-PP220 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.88
========== PU BUS VOLTAGE: 0.951 ANGLE: -1.7 DEGREES
NET BRANCH DIVERSITY LOAD: 10.0 KW 7.5 KVAR

LOAD FROM: B-B70-MDP CBL-0525 FEEDER AMPS: 36.6 VOLTAGE DROP: 1. %VD: 0.36
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-STRTLGHT DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.62
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.8 KVAR

LOAD FROM: B-B70-MDP CBL-0510 FEEDER AMPS: 13.7 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B78-1P DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.65$
========== PU BUS VOLTAGE: 0.943 ANGLE: -2.1 DEGREES
NET BRANCH DIVERSITY LOAD: 22.5 KW 16.8 KVAR

LOAD FROM: B-B78-MDP CBL-0576 FEEDER AMPS: 82.5 VOLTAGE DROP: 3. %VD: 1.27
PROJECTED POWER FLOW: 22.5 KW 16.8 KVAR 28.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.2 KVAR 0.4 KVA

==== BUS: B-B78-78AE1 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.91
========== PU BUS VOLTAGE: 0.951 ANGLE: -2.2 DEGREES
NET BRANCH DIVERSITY LOAD: 19.6 KW 14.7 KVAR

LOAD FROM: B-B78-ATSG9578 CBL-0555 FEEDER AMPS: 71.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 19.6 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B78-A/C DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.91$
========== PU BUS VOLTAGE: 0.941 ANGLE: -1.9 DEGREES
NET BRANCH DIVERSITY LOAD: 16.8 KW 12.6 KVAR

LOAD FROM: B-B78-MDP CBL-0551 FEEDER AMPS: 62.1 VOLTAGE DROP: 3. %VD: 1.54
PROJECTED POWER FLOW: 16.8 KW 12.6 KVAR 21.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.1 KVAR 0.4 KVA

==== BUS: B-B78-ATS TAP DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.83
========== PU BUS VOLTAGE: 0.952 ANGLE: -2.2 DEGREES

LOAD FROM: B-B78-MDP CBL-0552 FEEDER AMPS: 143.4 VOLTAGE DROP: 1. %VD: 0.45
PROJECTED POWER FLOW: 39.3 KW 29.5 KVAR 49.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.2 KVA

LOAD TO: BUS-0618 CBL-0553 FEEDER AMPS: 71.6 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 19.7 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0620 CBL-0554 FEEDER AMPS: 71.7 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 19.7 KW 14.8 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B78-ATS-CRD DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.44$
========== PU BUS VOLTAGE: 0.946 ANGLE: -2.1 DEGREES

LOAD FROM: BUS-0652 ATS-B78-CRD FEEDER AMPS: 62.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 17.0 KW 12.7 KVAR 21.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B78-CRD CBL-0586 FEEDER AMPS: 62.4 VOLTAGE DROP: 2. %VD: 0.96
PROJECTED POWER FLOW: 17.0 KW 12.7 KVAR 21.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B78-ATS-E1 DESIGN VOLTS: 208 BUS VOLTS: 195 %VD: 6.07$
========== PU BUS VOLTAGE: 0.939 ANGLE: -2.4 DEGREES

LOAD FROM: BUS-0730 ATS-B78-E1 FEEDER AMPS: 165.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 44.9 KW 33.7 KVAR 56.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B78-E1 CBL-0651 FEEDER AMPS: 165.9 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 44.9 KW 33.7 KVAR 56.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B78-ATS-LS1 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.94
========== PU BUS VOLTAGE: 0.951 ANGLE: -2.2 DEGREES

LOAD FROM: BUS-0620 ATS-B78-LS1 FEEDER AMPS: 71.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 19.7 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B78-LSD CBL-0556 FEEDER AMPS: 71.7 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 19.7 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B78-ATSG9578 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.89
========== PU BUS VOLTAGE: 0.951 ANGLE: -2.2 DEGREES

LOAD FROM: BUS-0618 ATS-B78-G95-78 FEEDER AMPS: 71.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 19.7 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B78-78AE1 CBL-0555 FEEDER AMPS: 71.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 19.7 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B78-BARBER DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.51$
========== PU BUS VOLTAGE: 0.945 ANGLE: -1.8 DEGREES
NET BRANCH DIVERSITY LOAD: 11.2 KW 8.4 KVAR

LOAD FROM: B-B78-MDP CBL-0567 FEEDER AMPS: 41.2 VOLTAGE DROP: 2. %VD: 1.13
PROJECTED POWER FLOW: 11.2 KW 8.4 KVAR 14.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.0 KVAR 0.2 KVA

==== BUS: B-B78-CONRM-AC DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.90$
========== PU BUS VOLTAGE: 0.941 ANGLE: -1.8 DEGREES
NET BRANCH DIVERSITY LOAD: 10.1 KW 7.6 KVAR

LOAD FROM: B-B78-MDP CBL-0587 FEEDER AMPS: 37.2 VOLTAGE DROP: 3. %VD: 1.52
PROJECTED POWER FLOW: 10.1 KW 7.6 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.0 KVAR 0.2 KVA

==== BUS: B-B78-CRD DESIGN VOLTS: 208 BUS VOLTS: 195 %VD: 6.40$
========== PU BUS VOLTAGE: 0.936 ANGLE: -2.1 DEGREES
NET BRANCH DIVERSITY LOAD: 16.8 KW 12.6 KVAR

LOAD FROM: B-B78-ATS-CRD CBL-0586 FEEDER AMPS: 62.4 VOLTAGE DROP: 2. %VD: 0.96
PROJECTED POWER FLOW: 16.8 KW 12.6 KVAR 21.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B78-E1 DESIGN VOLTS: 208 BUS VOLTS: 195 %VD: 6.11$
========== PU BUS VOLTAGE: 0.939 ANGLE: -2.4 DEGREES
NET BRANCH DIVERSITY LOAD: 44.9 KW 33.7 KVAR

LOAD FROM: B-B78-ATS-E1 CBL-0651 FEEDER AMPS: 165.9 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 44.9 KW 33.7 KVAR 56.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B78-ELEV-1 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.80
========== PU BUS VOLTAGE: 0.952 ANGLE: -2.2 DEGREES
NET BRANCH DIVERSITY LOAD: 25.3 KW 18.9 KVAR

LOAD FROM: B-B78-MDP CBL-0564 FEEDER AMPS: 92.0 VOLTAGE DROP: 1. %VD: 0.43
PROJECTED POWER FLOW: 25.3 KW 18.9 KVAR 31.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B78-ELEV-2 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.80
========== PU BUS VOLTAGE: 0.952 ANGLE: -2.2 DEGREES
NET BRANCH DIVERSITY LOAD: 25.3 KW 18.9 KVAR

LOAD FROM: B-B78-MDP CBL-0565 FEEDER AMPS: 92.0 VOLTAGE DROP: 1. %VD: 0.43
PROJECTED POWER FLOW: 25.3 KW 18.9 KVAR 31.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B78-FLPNL DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.90$
========== PU BUS VOLTAGE: 0.941 ANGLE: -2.0 DEGREES
NET BRANCH DIVERSITY LOAD: 22.5 KW 16.8 KVAR

LOAD FROM: B-B78-MDP CBL-0577 FEEDER AMPS: 82.7 VOLTAGE DROP: 3. %VD: 1.52
PROJECTED POWER FLOW: 22.5 KW 16.8 KVAR 28.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.2 KVAR 0.5 KVA

==== BUS: B-B78-KK DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.57$
========== PU BUS VOLTAGE: 0.944 ANGLE: -2.1 DEGREES
NET BRANCH DIVERSITY LOAD: 25.3 KW 18.9 KVAR

LOAD FROM: B-B78-MDP CBL-0575 FEEDER AMPS: 92.8 VOLTAGE DROP: 2. %VD: 1.19
PROJECTED POWER FLOW: 25.3 KW 18.9 KVAR 31.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.2 KVAR 0.4 KVA

==== BUS: B-B78-L10 DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.69$
========== PU BUS VOLTAGE: 0.943 ANGLE: -2.3 DEGREES

LOAD FROM: B-B78-MDP CBL-0569 FEEDER AMPS: 103.7 VOLTAGE DROP: 3. %VD: 1.32
PROJECTED POWER FLOW: 28.2 KW 21.2 KVAR 35.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.4 KVAR 0.5 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B78-LP-13 CBL-0652 FEEDER AMPS: 103.7 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 28.2 KW 21.2 KVAR 35.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B78-LP-1 DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.84$
========== PU BUS VOLTAGE: 0.942 ANGLE: -2.2 DEGREES

LOAD FROM: B-B78-MDP CBL-0574 FEEDER AMPS: 104.7 VOLTAGE DROP: 3. %VD: 1.46
PROJECTED POWER FLOW: 28.5 KW 21.2 KVAR 35.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.3 KVAR 0.6 KVA

LOAD TO: B-B78-LP-4 CBL-0655 FEEDER AMPS: 104.7 VOLTAGE DROP: 2. %VD: 1.16
PROJECTED POWER FLOW: 28.5 KW 21.2 KVAR 35.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.2 KVAR 0.5 KVA

==== BUS: B-B78-LP-13 DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.82$
========== PU BUS VOLTAGE: 0.942 ANGLE: -2.3 DEGREES

LOAD FROM: B-B78-L10 CBL-0652 FEEDER AMPS: 103.7 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 28.1 KW 21.1 KVAR 35.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B78-LP-14 CBL-0653 FEEDER AMPS: 103.7 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 28.1 KW 21.1 KVAR 35.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B78-LP-14 DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.96$
========== PU BUS VOLTAGE: 0.940 ANGLE: -2.4 DEGREES

LOAD FROM: B-B78-LP-13 CBL-0653 FEEDER AMPS: 103.7 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 28.1 KW 21.1 KVAR 35.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B78-LP-15 CBL-0654 FEEDER AMPS: 103.7 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 28.1 KW 21.1 KVAR 35.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B78-LP-15 DESIGN VOLTS: 208 BUS VOLTS: 195 %VD: 6.09$
========== PU BUS VOLTAGE: 0.939 ANGLE: -2.4 DEGREES
NET BRANCH DIVERSITY LOAD: 28.1 KW 21.1 KVAR

LOAD FROM: B-B78-LP-14 CBL-0654 FEEDER AMPS: 103.7 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 28.1 KW 21.1 KVAR 35.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B78-LP-2 DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.09$
========== PU BUS VOLTAGE: 0.949 ANGLE: -2.2 DEGREES
NET BRANCH DIVERSITY LOAD: 28.1 KW 21.1 KVAR

LOAD FROM: B-B78-MDP CBL-0582 FEEDER AMPS: 102.6 VOLTAGE DROP: 1. %VD: 0.71
PROJECTED POWER FLOW: 28.1 KW 21.1 KVAR 35.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.3 KVA

==== BUS: B-B78-LP-4 DESIGN VOLTS: 208 BUS VOLTS: 193 %VD: 6.99$
========== PU BUS VOLTAGE: 0.930 ANGLE: -2.0 DEGREES
NET BRANCH DIVERSITY LOAD: 28.1 KW 21.1 KVAR

LOAD FROM: B-B78-LP-1 CBL-0655 FEEDER AMPS: 104.7 VOLTAGE DROP: 2. %VD: 1.16
PROJECTED POWER FLOW: 28.1 KW 21.1 KVAR 35.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.2 KVAR 0.5 KVA

==== BUS: B-B78-LP-8 DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.05$
========== PU BUS VOLTAGE: 0.949 ANGLE: -2.3 DEGREES
NET BRANCH DIVERSITY LOAD: 33.7 KW 25.3 KVAR

LOAD FROM: B-B78-MDP CBL-0580 FEEDER AMPS: 123.1 VOLTAGE DROP: 1. %VD: 0.67
PROJECTED POWER FLOW: 33.7 KW 25.3 KVAR 42.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.3 KVA

==== BUS: B-B78-LP10 DESIGN VOLTS: 208 BUS VOLTS: 195 %VD: 6.21$
========== PU BUS VOLTAGE: 0.938 ANGLE: -2.4 DEGREES

LOAD FROM: B-B78-LP7 CBL-0558 FEEDER AMPS: 124.8 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 33.7 KW 25.3 KVAR 42.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B78-LP13 CBL-0559 FEEDER AMPS: 124.8 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 33.7 KW 25.3 KVAR 42.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B78-LP13 DESIGN VOLTS: 208 BUS VOLTS: 195 %VD: 6.39$
========== PU BUS VOLTAGE: 0.936 ANGLE: -2.4 DEGREES
NET BRANCH DIVERSITY LOAD: 33.7 KW 25.3 KVAR

LOAD FROM: B-B78-LP10 CBL-0559 FEEDER AMPS: 124.8 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 33.7 KW 25.3 KVAR 42.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B78-LP3 DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.24$
========== PU BUS VOLTAGE: 0.948 ANGLE: -2.2 DEGREES

LOAD FROM: B-B78-MDP CBL-0562 FEEDER AMPS: 123.6 VOLTAGE DROP: 2. %VD: 0.86
PROJECTED POWER FLOW: 33.8 KW 25.3 KVAR 42.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.2 KVAR 0.4 KVA

LOAD TO: B-B78-LP6 CBL-0563 FEEDER AMPS: 123.6 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 33.8 KW 25.3 KVAR 42.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B78-LP6 DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.47$
========== PU BUS VOLTAGE: 0.945 ANGLE: -2.2 DEGREES
NET BRANCH DIVERSITY LOAD: 33.7 KW 25.3 KVAR

LOAD FROM: B-B78-LP3 CBL-0563 FEEDER AMPS: 123.6 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 33.7 KW 25.3 KVAR 42.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B78-LP7 DESIGN VOLTS: 208 BUS VOLTS: 195 %VD: 6.02$
========== PU BUS VOLTAGE: 0.940 ANGLE: -2.3 DEGREES

LOAD FROM: B-B78-MDP CBL-0557 FEEDER AMPS: 124.8 VOLTAGE DROP: 3. %VD: 1.64
PROJECTED POWER FLOW: 33.8 KW 25.4 KVAR 42.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.5 KVAR 0.7 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B78-LP10 CBL-0558 FEEDER AMPS: 124.8 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 33.8 KW 25.4 KVAR 42.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B78-LSD DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.97
========== PU BUS VOLTAGE: 0.950 ANGLE: -2.2 DEGREES
NET BRANCH DIVERSITY LOAD: 19.6 KW 14.7 KVAR

LOAD FROM: B-B78-ATS-LS1 CBL-0556 FEEDER AMPS: 71.7 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 19.6 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B78-MDP DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.38
========== PU BUS VOLTAGE: 0.956 ANGLE: -2.2 DEGREES

LOAD FROM: B-B78-MDP-M CBL-0549 FEEDER AMPS:2450.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 675.4 KW 506.4 KVAR 844.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B78-A/C CBL-0551 FEEDER AMPS: 62.1 VOLTAGE DROP: 3. %VD: 1.54
PROJECTED POWER FLOW: 17.2 KW 12.8 KVAR 21.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.1 KVAR 0.4 KVA

LOAD TO: B-B78-ATS TAP CBL-0552 FEEDER AMPS: 143.4 VOLTAGE DROP: 1. %VD: 0.45
PROJECTED POWER FLOW: 39.5 KW 29.7 KVAR 49.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.2 KVA

LOAD TO: B-B78-LP7 CBL-0557 FEEDER AMPS: 124.8 VOLTAGE DROP: 3. %VD: 1.64
PROJECTED POWER FLOW: 34.3 KW 25.9 KVAR 43.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.5 KVAR 0.7 KVA

LOAD TO: B-B78-PULM 78B CBL-0561 FEEDER AMPS: 81.7 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 22.5 KW 16.9 KVAR 28.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B78-LP3 CBL-0562 FEEDER AMPS: 123.6 VOLTAGE DROP: 2. %VD: 0.86
PROJECTED POWER FLOW: 34.1 KW 25.6 KVAR 42.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.2 KVAR 0.4 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B78-ELEV-1 CBL-0564 FEEDER AMPS: 92.0 VOLTAGE DROP: 1. %VD: 0.43
PROJECTED POWER FLOW: 25.4 KW 19.0 KVAR 31.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B78-ELEV-2 CBL-0565 FEEDER AMPS: 92.0 VOLTAGE DROP: 1. %VD: 0.43
PROJECTED POWER FLOW: 25.4 KW 19.0 KVAR 31.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B78-QP CBL-0566 FEEDER AMPS: 81.9 VOLTAGE DROP: 1. %VD: 0.54
PROJECTED POWER FLOW: 22.6 KW 16.9 KVAR 28.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B78-BARBER CBL-0567 FEEDER AMPS: 41.2 VOLTAGE DROP: 2. %VD: 1.13
PROJECTED POWER FLOW: 11.4 KW 8.4 KVAR 14.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.0 KVAR 0.2 KVA

LOAD TO: B-B78-PHARM AC CBL-0568 FEEDER AMPS: 41.2 VOLTAGE DROP: 2. %VD: 1.13
PROJECTED POWER FLOW: 11.4 KW 8.4 KVAR 14.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.0 KVAR 0.2 KVA

LOAD TO: B-B78-L10 CBL-0569 FEEDER AMPS: 103.7 VOLTAGE DROP: 3. %VD: 1.32
PROJECTED POWER FLOW: 28.5 KW 21.5 KVAR 35.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.4 KVAR 0.5 KVA

LOAD TO: B-B78-MEC-1 AC CBL-0573 FEEDER AMPS: 166.1 VOLTAGE DROP: 4. %VD: 1.85
PROJECTED POWER FLOW: 45.6 KW 34.6 KVAR 57.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 0.9 KVAR 1.1 KVA

LOAD TO: B-B78-LP-1 CBL-0574 FEEDER AMPS: 104.7 VOLTAGE DROP: 3. %VD: 1.46
PROJECTED POWER FLOW: 28.9 KW 21.5 KVAR 36.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.3 KVAR 0.6 KVA

LOAD TO: B-B78-KK CBL-0575 FEEDER AMPS: 92.8 VOLTAGE DROP: 2. %VD: 1.19
PROJECTED POWER FLOW: 25.6 KW 19.1 KVAR 32.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.2 KVAR 0.4 KVA

LOAD TO: B-B78-1P CBL-0576 FEEDER AMPS: 82.5 VOLTAGE DROP: 3. %VD: 1.27
PROJECTED POWER FLOW: 22.8 KW 17.0 KVAR 28.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.2 KVAR 0.4 KVA

LOAD TO: B-B78-FLPNL CBL-0577 FEEDER AMPS: 82.7 VOLTAGE DROP: 3. %VD: 1.52
PROJECTED POWER FLOW: 22.9 KW 17.0 KVAR 28.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.2 KVAR 0.5 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B78-PHV CBL-0578 FEEDER AMPS: 41.3 VOLTAGE DROP: 3. %VD: 1.33
PROJECTED POWER FLOW: 11.4 KW 8.5 KVAR 14.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B78A-PNL-2 CBL-0579 FEEDER AMPS: 51.0 VOLTAGE DROP: 0. %VD: 0.24
PROJECTED POWER FLOW: 14.1 KW 10.5 KVAR 17.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B78-MEC2-A/C CBL-0581 FEEDER AMPS: 164.0 VOLTAGE DROP: 1. %VD: 0.61
PROJECTED POWER FLOW: 45.2 KW 33.9 KVAR 56.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.2 KVAR 0.4 KVA

LOAD TO: B-B78-LP-2 CBL-0582 FEEDER AMPS: 102.6 VOLTAGE DROP: 1. %VD: 0.71
PROJECTED POWER FLOW: 28.3 KW 21.2 KVAR 35.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.3 KVA

LOAD TO: B-B78-PNL-330A CBL-0583 FEEDER AMPS: 92.3 VOLTAGE DROP: 1. %VD: 0.69
PROJECTED POWER FLOW: 25.4 KW 19.1 KVAR 31.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B78-LP-8 CBL-0580 FEEDER AMPS: 123.1 VOLTAGE DROP: 1. %VD: 0.67
PROJECTED POWER FLOW: 33.9 KW 25.5 KVAR 42.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.3 KVA

LOAD TO: B-B78-PK CBL-0584 FEEDER AMPS: 93.0 VOLTAGE DROP: 3. %VD: 1.43
PROJECTED POWER FLOW: 25.7 KW 19.2 KVAR 32.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.3 KVAR 0.5 KVA

LOAD TO: BUS-0652 CBL-0585 FEEDER AMPS: 62.4 VOLTAGE DROP: 2. %VD: 1.06
PROJECTED POWER FLOW: 17.2 KW 12.9 KVAR 21.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B78-CONRM-AC CBL-0587 FEEDER AMPS: 37.2 VOLTAGE DROP: 3. %VD: 1.52
PROJECTED POWER FLOW: 10.3 KW 7.6 KVAR 12.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.0 KVAR 0.2 KVA

LOAD TO: BUS-0730 CBL-0571 FEEDER AMPS: 165.9 VOLTAGE DROP: 4. %VD: 1.69
PROJECTED POWER FLOW: 45.6 KW 34.5 KVAR 57.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 0.8 KVAR 1.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B78-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.37
========== PU BUS VOLTAGE: 0.956 ANGLE: -2.2 DEGREES

LOAD FROM: B-T-B78-SEC CBL-0550 FEEDER AMPS:2450.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 675.4 KW 506.4 KVAR 844.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.2 KVAR 0.3 KVA

LOAD TO: B-B78-MDP CBL-0549 FEEDER AMPS:2450.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 675.4 KW 506.4 KVAR 844.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B78-MEC-1 AC DESIGN VOLTS: 208 BUS VOLTS: 195 %VD: 6.22$
========== PU BUS VOLTAGE: 0.938 ANGLE: -2.5 DEGREES
NET BRANCH DIVERSITY LOAD: 44.9 KW 33.7 KVAR

LOAD FROM: B-B78-MDP CBL-0573 FEEDER AMPS: 166.1 VOLTAGE DROP: 4. %VD: 1.85
PROJECTED POWER FLOW: 44.9 KW 33.7 KVAR 56.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 0.9 KVAR 1.1 KVA

==== BUS: B-B78-MEC2-A/C DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.99
========== PU BUS VOLTAGE: 0.950 ANGLE: -2.2 DEGREES
NET BRANCH DIVERSITY LOAD: 44.9 KW 33.7 KVAR

LOAD FROM: B-B78-MDP CBL-0581 FEEDER AMPS: 164.0 VOLTAGE DROP: 1. %VD: 0.61
PROJECTED POWER FLOW: 44.9 KW 33.7 KVAR 56.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.2 KVAR 0.4 KVA

==== BUS: B-B78-PHARM AC DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.51$
========== PU BUS VOLTAGE: 0.945 ANGLE: -1.8 DEGREES
NET BRANCH DIVERSITY LOAD: 11.2 KW 8.4 KVAR

LOAD FROM: B-B78-MDP CBL-0568 FEEDER AMPS: 41.2 VOLTAGE DROP: 2. %VD: 1.13
PROJECTED POWER FLOW: 11.2 KW 8.4 KVAR 14.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.0 KVAR 0.2 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B78-PHV DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.71$
========== PU BUS VOLTAGE: 0.943 ANGLE: -1.9 DEGREES
NET BRANCH DIVERSITY LOAD: 11.2 KW 8.4 KVAR

LOAD FROM: B-B78-MDP CBL-0578 FEEDER AMPS: 41.3 VOLTAGE DROP: 3. %VD: 1.33
PROJECTED POWER FLOW: 11.2 KW 8.4 KVAR 14.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B78-PK DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.80$
========== PU BUS VOLTAGE: 0.942 ANGLE: -2.2 DEGREES
NET BRANCH DIVERSITY LOAD: 25.3 KW 18.9 KVAR

LOAD FROM: B-B78-MDP CBL-0584 FEEDER AMPS: 93.0 VOLTAGE DROP: 3. %VD: 1.43
PROJECTED POWER FLOW: 25.3 KW 18.9 KVAR 31.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.3 KVAR 0.5 KVA

==== BUS: B-B78-PNL-330A DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.07$
========== PU BUS VOLTAGE: 0.949 ANGLE: -2.2 DEGREES
NET BRANCH DIVERSITY LOAD: 25.3 KW 18.9 KVAR

LOAD FROM: B-B78-MDP CBL-0583 FEEDER AMPS: 92.3 VOLTAGE DROP: 1. %VD: 0.69
PROJECTED POWER FLOW: 25.3 KW 18.9 KVAR 31.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B78-PULM 78B DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.64
========== PU BUS VOLTAGE: 0.954 ANGLE: -2.2 DEGREES
NET BRANCH DIVERSITY LOAD: 22.5 KW 16.8 KVAR

LOAD FROM: B-B78-MDP CBL-0561 FEEDER AMPS: 81.7 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 22.5 KW 16.8 KVAR 28.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B78-QP DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.92
========== PU BUS VOLTAGE: 0.951 ANGLE: -2.1 DEGREES
NET BRANCH DIVERSITY LOAD: 22.5 KW 16.8 KVAR

LOAD FROM: B-B78-MDP CBL-0566 FEEDER AMPS: 81.9 VOLTAGE DROP: 1. %VD: 0.54
PROJECTED POWER FLOW: 22.5 KW 16.8 KVAR 28.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B78A-PNL-2 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.61
========== PU BUS VOLTAGE: 0.954 ANGLE: -2.2 DEGREES
NET BRANCH DIVERSITY LOAD: 14.0 KW 10.5 KVAR

LOAD FROM: B-B78-MDP CBL-0579 FEEDER AMPS: 51.0 VOLTAGE DROP: 0. %VD: 0.24
PROJECTED POWER FLOW: 14.0 KW 10.5 KVAR 17.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B8 2ND FLR DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.66
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 32.2 KW 24.1 KVAR

LOAD FROM: B-B8-MDP-8 CBL-0322 FEEDER AMPS: 114.6 VOLTAGE DROP: 1. %VD: 0.25
PROJECTED POWER FLOW: 32.2 KW 24.1 KVAR 40.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B8 HYDRO ELV DESIGN VOLTS: 480 BUS VOLTS: 463 %VD: 3.45
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.5 DEGREES
NET BRANCH DIVERSITY LOAD: 42.3 KW 31.8 KVAR

LOAD FROM: B-B8-480V PNL CBL-0336 FEEDER AMPS: 65.9 VOLTAGE DROP: 5. %VD: 1.05
PROJECTED POWER FLOW: 42.3 KW 31.8 KVAR 52.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.6 KW 0.1 KVAR 0.6 KVA

==== BUS: B-B8-208V-MAIN DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.32
========== PU BUS VOLTAGE: 0.977 ANGLE: -0.8 DEGREES

LOAD FROM: B-T-B8-SEC CBL-0318 FEEDER AMPS: 514.6 VOLTAGE DROP: 1. %VD: 0.28
PROJECTED POWER FLOW: 144.8 KW 108.7 KVAR 181.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.5 KVAR 0.6 KVA

LOAD TO: B-B8-MAIN BUS CBL-0319 FEEDER AMPS: 514.6 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 144.8 KW 108.7 KVAR 181.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B8-480V ATS DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.34
========== PU BUS VOLTAGE: 0.977 ANGLE: -0.8 DEGREES

LOAD FROM: BUS-0380 ATS-B8-480V FEEDER AMPS: 226.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 146.9 KW 110.8 KVAR 184.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B8-480V PNL CBL-0334 FEEDER AMPS: 226.6 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 146.9 KW 110.8 KVAR 184.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B8-480V PNL DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.39
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.8 DEGREES

LOAD FROM: B-B8-480V ATS CBL-0334 FEEDER AMPS: 226.6 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 146.8 KW 110.7 KVAR 183.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B8-FLEXPMACH CBL-0335 FEEDER AMPS: 19.6 VOLTAGE DROP: 2. %VD: 0.42
PROJECTED POWER FLOW: 12.8 KW 9.5 KVAR 15.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B8 HYDRO ELV CBL-0336 FEEDER AMPS: 65.9 VOLTAGE DROP: 5. %VD: 1.05
PROJECTED POWER FLOW: 43.0 KW 31.9 KVAR 53.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.6 KW 0.1 KVAR 0.6 KVA

LOAD TO: B-B8-TXMR PRI CBL-0337 FEEDER AMPS: 101.4 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 65.2 KW 50.2 KVAR 82.3 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B8-COMP CBL-0341 FEEDER AMPS: 39.6 VOLTAGE DROP: 6. %VD: 1.19
PROJECTED POWER FLOW: 25.9 KW 19.1 KVAR 32.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.0 KVAR 0.5 KVA

==== BUS: B-B8-ATS DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.53
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 27.6 KW 20.7 KVAR

LOAD FROM: BUS-0375 ATS-B8 FEEDER AMPS: 98.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 27.6 KW 20.7 KVAR 34.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B8-BS DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.08
========== PU BUS VOLTAGE: 0.969 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 8.0 KW 6.0 KVAR

LOAD FROM: B-B8-MDP-8 CBL-0323 FEEDER AMPS: 28.7 VOLTAGE DROP: 1. %VD: 0.66
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B8-CMOP DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.99$
========== PU BUS VOLTAGE: 0.940 ANGLE: -1.5 DEGREES
NET BRANCH DIVERSITY LOAD: 24.9 KW 18.6 KVAR

LOAD FROM: B-B8-TXMR SEC CBL-0338 FEEDER AMPS: 91.7 VOLTAGE DROP: 1. %VD: 0.37
PROJECTED POWER FLOW: 24.9 KW 18.6 KVAR 31.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B8-COMP DESIGN VOLTS: 480 BUS VOLTS: 463 %VD: 3.59
========== PU BUS VOLTAGE: 0.964 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 25.4 KW 19.1 KVAR

LOAD FROM: B-B8-480V PNL CBL-0341 FEEDER AMPS: 39.6 VOLTAGE DROP: 6. %VD: 1.19
PROJECTED POWER FLOW: 25.4 KW 19.1 KVAR 31.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.0 KVAR 0.5 KVA

==== BUS: B-B8-FDR DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.80$
========== PU BUS VOLTAGE: 0.942 ANGLE: -1.5 DEGREES

LOAD FROM: B-B8-TXMR SEC CBL-0339 FEEDER AMPS: 142.2 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 38.6 KW 29.0 KVAR 48.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B8-J-BOX CBL-0340 FEEDER AMPS: 142.2 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 38.6 KW 29.0 KVAR 48.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B8-FLEXPMACH DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.81
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 12.7 KW 9.5 KVAR

LOAD FROM: B-B8-480V PNL CBL-0335 FEEDER AMPS: 19.6 VOLTAGE DROP: 2. %VD: 0.42
PROJECTED POWER FLOW: 12.7 KW 9.5 KVAR 15.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B8-GE BKR DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.29
========== PU BUS VOLTAGE: 0.977 ANGLE: -0.8 DEGREES

LOAD FROM: BUS-0378 CBL-0332 FEEDER AMPS: 226.6 VOLTAGE DROP: 1. %VD: 0.22
PROJECTED POWER FLOW: 146.9 KW 110.9 KVAR 184.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.3 KVAR 0.4 KVA

LOAD TO: BUS-0380 CBL-0333 FEEDER AMPS: 226.6 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 146.9 KW 110.9 KVAR 184.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B8-GEN DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
*** SWING GENERATOR: G-B8 GEN 0.0 KW 0.0 KVAR
**** NO LOAD SPECIFIED ****

==== BUS: B-B8-J-BOX DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 6.01$
========== PU BUS VOLTAGE: 0.940 ANGLE: -1.5 DEGREES
NET BRANCH DIVERSITY LOAD: 38.5 KW 28.9 KVAR

LOAD FROM: B-B8-FDR CBL-0340 FEEDER AMPS: 142.2 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 38.5 KW 28.9 KVAR 48.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B8-L8B DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.77
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 8.0 KW 6.0 KVAR

LOAD FROM: B-B8-MDP-8 CBL-0321 FEEDER AMPS: 28.6 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B8-LB1 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.98
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES

LOAD FROM: B-B8-MDP-8 CBL-0325 FEEDER AMPS: 64.7 VOLTAGE DROP: 1. %VD: 0.57
PROJECTED POWER FLOW: 18.1 KW 13.6 KVAR 22.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B8-LB2 CBL-0326 FEEDER AMPS: 64.7 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 18.1 KW 13.6 KVAR 22.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B8-LB2 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.05
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 18.1 KW 13.6 KVAR

LOAD FROM: B-B8-LB1 CBL-0326 FEEDER AMPS: 64.7 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 18.1 KW 13.6 KVAR 22.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B8-MAIN BUS DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.39
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.8 DEGREES

LOAD FROM: B-B8-208V-MAIN CBL-0319 FEEDER AMPS: 514.6 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 144.8 KW 108.6 KVAR 181.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B8-MDP-8 CBL-0320 FEEDER AMPS: 279.7 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 78.7 KW 59.0 KVAR 98.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B8-PP1-M CBL-0327 FEEDER AMPS: 136.4 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 38.4 KW 28.8 KVAR 48.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B8-SYLV CBL-0329 FEEDER AMPS: 98.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 27.7 KW 20.8 KVAR 34.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B8-MDP-8 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.42
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.8 DEGREES

LOAD FROM: B-B8-MAIN BUS CBL-0320 FEEDER AMPS: 279.7 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 78.7 KW 59.0 KVAR 98.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B8-L8B CBL-0321 FEEDER AMPS: 28.6 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 8.1 KW 6.0 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B8 2ND FLR CBL-0322 FEEDER AMPS: 114.6 VOLTAGE DROP: 1. %VD: 0.25
PROJECTED POWER FLOW: 32.2 KW 24.2 KVAR 40.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B8-BS CBL-0323 FEEDER AMPS: 28.7 VOLTAGE DROP: 1. %VD: 0.66
PROJECTED POWER FLOW: 8.1 KW 6.1 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B8-PNL-PK CBL-0324 FEEDER AMPS: 42.9 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 12.1 KW 9.1 KVAR 15.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B8-LB1 CBL-0325 FEEDER AMPS: 64.7 VOLTAGE DROP: 1. %VD: 0.57
PROJECTED POWER FLOW: 18.2 KW 13.7 KVAR 22.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B8-PNL-PK DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.50
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 12.1 KW 9.0 KVAR

LOAD FROM: B-B8-MDP-8 CBL-0324 FEEDER AMPS: 42.9 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 12.1 KW 9.0 KVAR 15.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B8-PP1 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.46
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 38.4 KW 28.8 KVAR

LOAD FROM: B-B8-PP1-M CBL-0328 FEEDER AMPS: 136.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 38.4 KW 28.8 KVAR 48.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B8-PP1-M DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.46
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES

LOAD FROM: B-B8-MAIN BUS CBL-0327 FEEDER AMPS: 136.4 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 38.4 KW 28.8 KVAR 48.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B8-PP1 CBL-0328 FEEDER AMPS: 136.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 38.4 KW 28.8 KVAR 48.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B8-SYLV DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.48
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES

LOAD FROM: B-B8-MAIN BUS CBL-0329 FEEDER AMPS: 98.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 27.7 KW 20.7 KVAR 34.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0375 CBL-0330 FEEDER AMPS: 98.4 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 27.7 KW 20.7 KVAR 34.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0376 CBL-0331 FEEDER AMPS: 0.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B8-TXMR PRI DESIGN VOLTS: 480 BUS VOLTS: 468 %VD: 2.42
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.8 DEGREES

LOAD FROM: B-B8-480V PNL CBL-0337 FEEDER AMPS: 101.4 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 65.2 KW 50.2 KVAR 82.3 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B8-TXMR SEC XF2-0032 TRANSF AMPS: 101.4 VOLTAGE DROP: 15. %VD: 3.21$
PROJECTED POWER FLOW: 65.2 KW 50.2 KVAR 82.3 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.5 KW 2.4 KVAR 2.9 KVA

==== BUS: B-B8-TXMR SEC DESIGN VOLTS: 208 BUS VOLTS: 196 %VD: 5.62$
========== PU BUS VOLTAGE: 0.944 ANGLE: -1.5 DEGREES

LOAD FROM: B-B8-TXMR PRI XF2-0032 TRANSF AMPS: 234.0 VOLTAGE DROP: 7. %VD: 3.21$
PROJECTED POWER FLOW: 63.6 KW 47.8 KVAR 79.6 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.5 KW 2.4 KVAR 2.9 KVA

LOAD TO: B-B8-CMOP CBL-0338 FEEDER AMPS: 91.7 VOLTAGE DROP: 1. %VD: 0.37
PROJECTED POWER FLOW: 25.0 KW 18.7 KVAR 31.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B8-FDR CBL-0339 FEEDER AMPS: 142.2 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 38.7 KW 29.1 KVAR 48.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B80-ATS-EQ DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.19
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.7 DEGREES

LOAD FROM: BUS-0664 ATS-B80-EQ FEEDER AMPS: 71.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.1 KW 15.0 KVAR 25.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B80-E1 CBL-0597 FEEDER AMPS: 71.9 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 20.1 KW 15.0 KVAR 25.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B80-E1 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.37
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.6 DEGREES

LOAD FROM: B-B80-ATS-EQ CBL-0597 FEEDER AMPS: 71.9 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 20.1 KW 15.0 KVAR 25.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B80-LB-E CBL-0598 FEEDER AMPS: 36.0 VOLTAGE DROP: 1. %VD: 0.30
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B80-PB-2 CBL-0599 FEEDER AMPS: 35.9 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B80-L1-1 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.59
========== PU BUS VOLTAGE: 0.964 ANGLE: -0.5 DEGREES
NET BRANCH DIVERSITY LOAD: 10.0 KW 7.5 KVAR

LOAD FROM: B-B80-MDP CBL-0590 FEEDER AMPS: 35.9 VOLTAGE DROP: 2. %VD: 0.88
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B80-L1-3 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.30
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 8.0 KW 6.0 KVAR

LOAD FROM: B-B80-MDP CBL-0593 FEEDER AMPS: 28.7 VOLTAGE DROP: 1. %VD: 0.58
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B80-LB-1 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.04
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 20.0 KW 15.0 KVAR

LOAD FROM: B-B80-MDP CBL-0595 FEEDER AMPS: 71.5 VOLTAGE DROP: 1. %VD: 0.32
PROJECTED POWER FLOW: 20.0 KW 15.0 KVAR 25.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B80-LB-E DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.66
========== PU BUS VOLTAGE: 0.963 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 10.0 KW 7.5 KVAR

LOAD FROM: B-B80-E1 CBL-0598 FEEDER AMPS: 36.0 VOLTAGE DROP: 1. %VD: 0.30
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B80-MDP DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.71
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.8 DEGREES

LOAD FROM: B-B80-MDP-M CBL-0589 FEEDER AMPS: 344.8 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 96.9 KW 72.2 KVAR 120.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.2 KVA

LOAD TO: B-B80-L1-1 CBL-0590 FEEDER AMPS: 35.9 VOLTAGE DROP: 2. %VD: 0.88
PROJECTED POWER FLOW: 10.1 KW 7.5 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B80-P1 CBL-0591 FEEDER AMPS: 71.5 VOLTAGE DROP: 1. %VD: 0.28
PROJECTED POWER FLOW: 20.1 KW 15.0 KVAR 25.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B80-L1-3 CBL-0593 FEEDER AMPS: 28.7 VOLTAGE DROP: 1. %VD: 0.58
PROJECTED POWER FLOW: 8.1 KW 6.0 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B80-P5 CBL-0592 FEEDER AMPS: 36.2 VOLTAGE DROP: 4. %VD: 1.70
PROJECTED POWER FLOW: 10.3 KW 7.5 KVAR 12.7 KVA PF:0.81 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.0 KVAR 0.3 KVA

LOAD TO: B-B80-LB-1 CBL-0595 FEEDER AMPS: 71.5 VOLTAGE DROP: 1. %VD: 0.32
PROJECTED POWER FLOW: 20.1 KW 15.0 KVAR 25.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B80-PB-1 CBL-0594 FEEDER AMPS: 28.7 VOLTAGE DROP: 1. %VD: 0.66
PROJECTED POWER FLOW: 8.1 KW 6.0 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: BUS-0664 CBL-0596 FEEDER AMPS: 71.9 VOLTAGE DROP: 1. %VD: 0.47
PROJECTED POWER FLOW: 20.2 KW 15.1 KVAR 25.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B80-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.52
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES

LOAD FROM: B-T-B80-SEC CBL-0588 FEEDER AMPS: 344.8 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 97.1 KW 72.4 KVAR 121.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.2 KVA

LOAD TO: B-B80-MDP CBL-0589 FEEDER AMPS: 344.8 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 97.1 KW 72.4 KVAR 121.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.2 KVA

==== BUS: B-B80-P1 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.00
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 20.0 KW 15.0 KVAR

LOAD FROM: B-B80-MDP CBL-0591 FEEDER AMPS: 71.5 VOLTAGE DROP: 1. %VD: 0.28
PROJECTED POWER FLOW: 20.0 KW 15.0 KVAR 25.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B80-P5 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.42
========== PU BUS VOLTAGE: 0.956 ANGLE: -0.2 DEGREES
NET BRANCH DIVERSITY LOAD: 10.0 KW 7.5 KVAR

LOAD FROM: B-B80-MDP CBL-0592 FEEDER AMPS: 36.2 VOLTAGE DROP: 4. %VD: 1.70
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.0 KVAR 0.3 KVA

==== BUS: B-B80-PB-1 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.38
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.5 DEGREES
NET BRANCH DIVERSITY LOAD: 8.0 KW 6.0 KVAR

LOAD FROM: B-B80-MDP CBL-0594 FEEDER AMPS: 28.7 VOLTAGE DROP: 1. %VD: 0.66
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B80-PB-2 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.54
========== PU BUS VOLTAGE: 0.965 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 10.0 KW 7.5 KVAR

LOAD FROM: B-B80-E1 CBL-0599 FEEDER AMPS: 35.9 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B81-MDP DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 4.01
========== PU BUS VOLTAGE: 0.960 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 48.0 KW 36.0 KVAR

LOAD FROM: B-B81-MDP-M CBL-0601 FEEDER AMPS: 173.4 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B81-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 4.00
========== PU BUS VOLTAGE: 0.960 ANGLE: -0.9 DEGREES

LOAD FROM: B-T-B81-SEC CBL-0600 FEEDER AMPS: 173.4 VOLTAGE DROP: 1. %VD: 0.43
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.3 KVA

LOAD TO: B-B81-MDP CBL-0601 FEEDER AMPS: 173.4 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B82-MDP DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.15
========== PU BUS VOLTAGE: 0.968 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 72.0 KW 54.0 KVAR

LOAD FROM: B-B82-MDP-M CBL-0603 FEEDER AMPS: 257.9 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 72.0 KW 54.0 KVAR 90.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B82-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.15
========== PU BUS VOLTAGE: 0.969 ANGLE: -1.0 DEGREES

LOAD FROM: B-T-B82-SEC CBL-0602 FEEDER AMPS: 257.9 VOLTAGE DROP: 1. %VD: 0.31
PROJECTED POWER FLOW: 72.0 KW 54.0 KVAR 90.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.3 KVA

LOAD TO: B-B82-MDP CBL-0603 FEEDER AMPS: 257.9 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 72.0 KW 54.0 KVAR 90.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B9-*PNLXX DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.29
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 10.1 KW 7.6 KVAR

LOAD FROM: B-B9-MDP CBL-0346 FEEDER AMPS: 36.2 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 10.1 KW 7.6 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B9-*PNLYY DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.42
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 12.6 KW 9.5 KVAR

LOAD FROM: B-B9-MDP CBL-0345 FEEDER AMPS: 45.3 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 12.6 KW 9.5 KVAR 15.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B9-*PNLZZ DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.23
========== PU BUS VOLTAGE: 0.968 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 22.7 KW 17.1 KVAR

LOAD FROM: B-B9-MDP CBL-0344 FEEDER AMPS: 81.5 VOLTAGE DROP: 0. %VD: 0.17
PROJECTED POWER FLOW: 22.7 KW 17.1 KVAR 28.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B9-ATS BKR DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.12
========== PU BUS VOLTAGE: 0.969 ANGLE: -1.0 DEGREES

LOAD FROM: B-B9-MDP CBL-0357 FEEDER AMPS: 90.4 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 25.3 KW 19.0 KVAR 31.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B9-EM CBL-0358 FEEDER AMPS: 90.4 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 25.3 KW 19.0 KVAR 31.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B9-EM DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.14
========== PU BUS VOLTAGE: 0.969 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 25.3 KW 18.9 KVAR

LOAD FROM: B-B9-ATS BKR CBL-0358 FEEDER AMPS: 90.4 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 25.3 KW 18.9 KVAR 31.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B9-L91A DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.84
========== PU BUS VOLTAGE: 0.962 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 10.1 KW 7.6 KVAR

LOAD FROM: B-B9-L91A-M CBL-0348 FEEDER AMPS: 36.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 10.1 KW 7.6 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B9-L91A-M DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.84
========== PU BUS VOLTAGE: 0.962 ANGLE: -0.9 DEGREES

LOAD FROM: B-B9-MDP CBL-0347 FEEDER AMPS: 36.4 VOLTAGE DROP: 2. %VD: 0.78
PROJECTED POWER FLOW: 10.1 KW 7.6 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B9-L91A CBL-0348 FEEDER AMPS: 36.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 10.1 KW 7.6 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B9-L92 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.60
========== PU BUS VOLTAGE: 0.964 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 10.1 KW 7.6 KVAR

LOAD FROM: B-B9-MDP CBL-0352 FEEDER AMPS: 36.3 VOLTAGE DROP: 1. %VD: 0.54
PROJECTED POWER FLOW: 10.1 KW 7.6 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B9-L9A DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.46
========== PU BUS VOLTAGE: 0.965 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 12.6 KW 9.5 KVAR

LOAD FROM: B-B9-MDP CBL-0349 FEEDER AMPS: 45.4 VOLTAGE DROP: 1. %VD: 0.40
PROJECTED POWER FLOW: 12.6 KW 9.5 KVAR 15.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B9-L9B DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.18
========== PU BUS VOLTAGE: 0.968 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 12.6 KW 9.5 KVAR

LOAD FROM: B-B9-MDP CBL-0351 FEEDER AMPS: 45.2 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 12.6 KW 9.5 KVAR 15.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B9-LPN DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.47
========== PU BUS VOLTAGE: 0.955 ANGLE: -0.7 DEGREES
NET BRANCH DIVERSITY LOAD: 11.4 KW 8.5 KVAR

LOAD FROM: B-B9-TAP CBL-0356 FEEDER AMPS: 41.2 VOLTAGE DROP: 3. %VD: 1.26
PROJECTED POWER FLOW: 11.4 KW 8.5 KVAR 14.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B9-LPS DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.61
========== PU BUS VOLTAGE: 0.964 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 11.4 KW 8.5 KVAR

LOAD FROM: B-B9-TAP CBL-0355 FEEDER AMPS: 40.9 VOLTAGE DROP: 1. %VD: 0.40
PROJECTED POWER FLOW: 11.4 KW 8.5 KVAR 14.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B9-MAIN DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.84
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.9 DEGREES

LOAD FROM: B-T-B9-SEC CBL-0342 FEEDER AMPS: 517.4 VOLTAGE DROP: 1. %VD: 0.44
PROJECTED POWER FLOW: 144.9 KW 108.7 KVAR 181.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.7 KVAR 0.9 KVA

LOAD TO: B-B9-MDP CBL-0343 FEEDER AMPS: 517.4 VOLTAGE DROP: 0. %VD: 0.22
PROJECTED POWER FLOW: 144.9 KW 108.7 KVAR 181.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.4 KVAR 0.4 KVA

==== BUS: B-B9-MDP DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.07
========== PU BUS VOLTAGE: 0.969 ANGLE: -1.0 DEGREES

LOAD FROM: B-B9-MAIN CBL-0343 FEEDER AMPS: 517.4 VOLTAGE DROP: 0. %VD: 0.22
PROJECTED POWER FLOW: 144.7 KW 108.3 KVAR 180.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.4 KVAR 0.4 KVA

LOAD TO: B-B9-*PNLZZ CBL-0344 FEEDER AMPS: 81.5 VOLTAGE DROP: 0. %VD: 0.17
PROJECTED POWER FLOW: 22.8 KW 17.1 KVAR 28.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B9-*PNLYY CBL-0345 FEEDER AMPS: 45.3 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 12.7 KW 9.5 KVAR 15.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B9-*PNLXX CBL-0346 FEEDER AMPS: 36.2 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 10.1 KW 7.6 KVAR 12.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B9-L91A-M CBL-0347 FEEDER AMPS: 36.4 VOLTAGE DROP: 2. %VD: 0.78
PROJECTED POWER FLOW: 10.2 KW 7.6 KVAR 12.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B9-L9A CBL-0349 FEEDER AMPS: 45.4 VOLTAGE DROP: 1. %VD: 0.40
PROJECTED POWER FLOW: 12.7 KW 9.5 KVAR 15.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B9-L9B CBL-0351 FEEDER AMPS: 45.2 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 12.7 KW 9.5 KVAR 15.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B9-L92 CBL-0352 FEEDER AMPS: 36.3 VOLTAGE DROP: 1. %VD: 0.54
PROJECTED POWER FLOW: 10.2 KW 7.6 KVAR 12.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B9-STRT LGHT CBL-0353 FEEDER AMPS: 18.1 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 5.1 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B9-TAP CBL-0354 FEEDER AMPS: 82.2 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 23.0 KW 17.2 KVAR 28.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B9-ATS BKR CBL-0357 FEEDER AMPS: 90.4 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 25.3 KW 19.0 KVAR 31.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B9-STRT LGHT DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.27
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 5.1 KW 3.8 KVAR

LOAD FROM: B-B9-MDP CBL-0353 FEEDER AMPS: 18.1 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 5.1 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B9-TAP DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.21
========== PU BUS VOLTAGE: 0.968 ANGLE: -1.0 DEGREES

LOAD FROM: B-B9-MDP CBL-0354 FEEDER AMPS: 82.2 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 23.0 KW 17.1 KVAR 28.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B9-LPS CBL-0355 FEEDER AMPS: 40.9 VOLTAGE DROP: 1. %VD: 0.40
PROJECTED POWER FLOW: 11.4 KW 8.5 KVAR 14.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B9-LPN CBL-0356 FEEDER AMPS: 41.2 VOLTAGE DROP: 3. %VD: 1.26
PROJECTED POWER FLOW: 11.6 KW 8.6 KVAR 14.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B92 GEN DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
*** SWING GENERATOR: GEN-B92 36.7 KW 27.9 KVAR

LOAD TO: B-B92-EMDP-M CBL-0604 FEEDER AMPS: 128.0 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 36.7 KW 27.9 KVAR 46.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B92-ATS DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.66
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.6 DEGREES

LOAD FROM: BUS-0091 ATS-B92 FEEDER AMPS: 69.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 19.2 KW 14.4 KVAR 24.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B92-PNL-E1 CBL-0060 FEEDER AMPS: 69.9 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 19.2 KW 14.4 KVAR 24.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B92-EMDP DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.02
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES

LOAD TO: BUS-0117 CBL-0610 FEEDER AMPS: 128.0 VOLTAGE DROP: 5. %VD: 2.55
PROJECTED POWER FLOW: 36.7 KW 27.9 KVAR 46.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 1.0 KVAR 1.2 KVA

LOAD FROM: B-B92-EMDP-M CBL-0605 FEEDER AMPS: 128.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 36.7 KW 27.9 KVAR 46.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0676 CBL-0606 FEEDER AMPS: VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0677 CBL-0607 FEEDER AMPS: VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0678 CBL-0608 FEEDER AMPS: VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: BUS-0680 CBL-0609 FEEDER AMPS: 0.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: B-B2-EPNL-B-M CBL-0611 FEEDER AMPS: 0.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LEADING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B92-EMDP-M DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.02
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES

LOAD FROM: B-B92 GEN CBL-0604 FEEDER AMPS: 128.0 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 36.7 KW 27.9 KVAR 46.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B92-EMDP CBL-0605 FEEDER AMPS: 128.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 36.7 KW 27.9 KVAR 46.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B92-PNL-E1 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.78
========== PU BUS VOLTAGE: 0.952 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 19.2 KW 14.4 KVAR

LOAD FROM: B-B92-ATS CBL-0060 FEEDER AMPS: 69.9 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 19.2 KW 14.4 KVAR 24.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B93-EMDP DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-B93-EMDP-M DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B93-EMDP1 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-B93-GEN DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
*** SWING GENERATOR: GEN-B93 0.0 KW 0.0 KVAR
**** NO LOAD SPECIFIED ****

==== BUS: B-B94-ATS DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.43
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 8.7 KW 6.5 KVAR

LOAD FROM: BUS-0360 ATS-B94 FEEDER AMPS: 31.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 8.7 KW 6.5 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B94-EMDP DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-B94-EMDP-M DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-B94-GEN DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
*** SWING GENERATOR: B94-GEN 0.0 KW 0.0 KVAR
**** NO LOAD SPECIFIED ****

==== BUS: B-B95-EMDP DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B95-EMDP-M DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-B95-GEN DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
*** SWING GENERATOR: B-95 GEN 0.0 KW 0.0 KVAR
**** NO LOAD SPECIFIED ****

==== BUS: B-SW-MV-1 DESIGN VOLTS: 13800 BUS VOLTS: 13766 %VD: 0.25
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-SW-MV-2 DESIGN VOLTS: 13800 BUS VOLTS: 13781 %VD: 0.14
========== PU BUS VOLTAGE: 0.999 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-SWGR27 TAP DESIGN VOLTS: 13800 BUS VOLTS: 13800 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES

LOAD FROM: B-B27-SWGR-M1 CBL-0002 FEEDER AMPS: 248.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 4672.2 KW 3672.4 KVAR 5942.8 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B27-SWGR CBL-0003 FEEDER AMPS: 248.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 4672.2 KW 3672.4 KVAR 5942.8 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-T-13-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13752 %VD: 0.35
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES

LOAD FROM: B-T-B9-PRI CBL-0028 FEEDER AMPS: 14.1 VOLTAGE DROP: 1. %VD: 0.01
PROJECTED POWER FLOW: 264.4 KW 208.9 KVAR 337.0 KVA PF:0.78 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-T-B12-PRI CBL-0030 FEEDER AMPS: 5.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 98.4 KW 76.3 KVAR 124.5 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B13-TXMR SEC T-B13 TRANSF AMPS: 8.9 VOLTAGE DROP: 489. %VD: 3.54$
PROJECTED POWER FLOW: 166.0 KW 132.6 KVAR 212.4 KVA PF:0.78 LAGGING
LOSSES THRU TRANSF: 2.9 KW 8.6 KVAR 9.1 KVA

==== BUS: B-T-B1-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13773 %VD: 0.20
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD TO: B-T-B70-PRI CBL-0016 FEEDER AMPS: 25.4 VOLTAGE DROP: 3. %VD: 0.02
PROJECTED POWER FLOW: 479.5 KW 371.9 KVAR 606.9 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-T-B1-SEC T-B1 TRANSF AMPS: 2.6 VOLTAGE DROP: 425. %VD: 3.08$
PROJECTED POWER FLOW: 49.2 KW 38.1 KVAR 62.2 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.0 KW 1.9 KVAR 2.1 KVA

LOAD FROM: B-T-B2-PRI CBL-0017 FEEDER AMPS: 28.0 VOLTAGE DROP: 2. %VD: 0.01
PROJECTED POWER FLOW: 528.7 KW 410.0 KVAR 669.1 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-T-B1-SEC DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.28
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.9 DEGREES

LOAD FROM: B-T-B1-PRI T-B1 TRANSF AMPS: 173.0 VOLTAGE DROP: 6. %VD: 3.08$
PROJECTED POWER FLOW: 48.2 KW 36.2 KVAR 60.3 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.0 KW 1.9 KVAR 2.1 KVA

LOAD TO: B-B1-MDP-M CBL-0037 FEEDER AMPS: 173.0 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 48.2 KW 36.2 KVAR 60.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-T-B10-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13755 %VD: 0.33
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES

LOAD FROM: B-T-B78-PRI CBL-0027 FEEDER AMPS: 24.5 VOLTAGE DROP: 2. %VD: 0.01
PROJECTED POWER FLOW: 460.4 KW 360.4 KVAR 584.7 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-T-B10-SEC T-B10 TRANSF AMPS: 2.5 VOLTAGE DROP: 337. %VD: 2.44
PROJECTED POWER FLOW: 49.0 KW 37.7 KVAR 61.8 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 0.8 KW 1.5 KVAR 1.7 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-T-B9-PRI CBL-0029 FEEDER AMPS: 21.9 VOLTAGE DROP: 2. %VD: 0.01
PROJECTED POWER FLOW: 411.4 KW 322.7 KVAR 522.9 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-T-B10-SEC DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.77
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.7 DEGREES

LOAD FROM: B-T-B10-PRI T-B10 TRANSF AMPS: 172.1 VOLTAGE DROP: 5. %VD: 2.44
PROJECTED POWER FLOW: 48.2 KW 36.2 KVAR 60.3 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.8 KW 1.5 KVAR 1.7 KVA

LOAD TO: B-B10 DISC CBL-0359 FEEDER AMPS: 172.1 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 48.2 KW 36.2 KVAR 60.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-T-B12-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13751 %VD: 0.35
========== PU BUS VOLTAGE: 0.996 ANGLE: 0.0 DEGREES

LOAD FROM: B-T-13-PRI CBL-0030 FEEDER AMPS: 5.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 98.4 KW 76.3 KVAR 124.5 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-T-B12-SEC T-B12 TRANSF AMPS: 2.6 VOLTAGE DROP: 446. %VD: 3.24$
PROJECTED POWER FLOW: 49.2 KW 38.2 KVAR 62.3 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.0 KW 2.0 KVAR 2.2 KVA

LOAD TO: B-T-B81-PRI CBL-0031 FEEDER AMPS: 2.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 49.2 KW 38.1 KVAR 62.3 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-T-B12-SEC DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.59
========== PU BUS VOLTAGE: 0.964 ANGLE: -0.9 DEGREES

LOAD FROM: B-T-B12-PRI T-B12 TRANSF AMPS: 173.4 VOLTAGE DROP: 7. %VD: 3.24$
PROJECTED POWER FLOW: 48.1 KW 36.2 KVAR 60.2 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.0 KW 2.0 KVAR 2.2 KVA

LOAD TO: B-B12-MAP-M CBL-0361 FEEDER AMPS: 173.4 VOLTAGE DROP: 1. %VD: 0.38
PROJECTED POWER FLOW: 48.1 KW 36.2 KVAR 60.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.2 KVAR 0.2 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-T-B17-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13762 %VD: 0.27
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES

LOAD TO: B-T-B17-SEC T-B17 TRANSF AMPS: 5.2 VOLTAGE DROP: 309. %VD: 2.24
PROJECTED POWER FLOW: 99.3 KW 77.0 KVAR 125.6 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.2 KW 3.0 KVAR 3.3 KVA

LOAD FROM: B-T-B60-PRI CBL-0013 FEEDER AMPS: 10.4 VOLTAGE DROP: 1. %VD: 0.01
PROJECTED POWER FLOW: 196.9 KW 152.5 KVAR 249.1 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-T-B18-PRI CBL-0019 FEEDER AMPS: 5.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 97.7 KW 75.5 KVAR 123.4 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-T-B17-SEC DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.51
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES

LOAD FROM: B-T-B17-PRI T-B17 TRANSF AMPS: 349.6 VOLTAGE DROP: 5. %VD: 2.24
PROJECTED POWER FLOW: 98.0 KW 74.0 KVAR 122.8 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.2 KW 3.0 KVAR 3.3 KVA

LOAD TO: B-B17-MAIN CBL-0371 FEEDER AMPS: 349.6 VOLTAGE DROP: 2. %VD: 0.78
PROJECTED POWER FLOW: 98.0 KW 74.0 KVAR 122.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 0.7 KVAR 1.0 KVA

==== BUS: B-T-B18-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13762 %VD: 0.28
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES

LOAD FROM: B-T-B17-PRI CBL-0019 FEEDER AMPS: 5.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 97.7 KW 75.5 KVAR 123.4 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-T-B18-SEC T-B18 TRANSF AMPS: 5.1 VOLTAGE DROP: 318. %VD: 2.31
PROJECTED POWER FLOW: 97.7 KW 75.5 KVAR 123.4 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.2 KW 3.1 KVAR 3.3 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-T-B18-SEC DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.58
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.8 DEGREES

LOAD FROM: B-T-B18-PRI T-B18 TRANSF AMPS: 343.5 VOLTAGE DROP: 5. %VD: 2.31
PROJECTED POWER FLOW: 96.4 KW 72.4 KVAR 120.6 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.2 KW 3.1 KVAR 3.3 KVA

LOAD TO: B-B18-NMDP-M CBL-0390 FEEDER AMPS: 343.5 VOLTAGE DROP: 1. %VD: 0.29
PROJECTED POWER FLOW: 96.4 KW 72.4 KVAR 120.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.3 KVAR 0.4 KVA

==== BUS: B-T-B19-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13786 %VD: 0.10
========== PU BUS VOLTAGE: 0.999 ANGLE: 0.0 DEGREES

LOAD TO: B-T-B82-PRI CBL-0021 FEEDER AMPS: 26.4 VOLTAGE DROP: 3. %VD: 0.03
PROJECTED POWER FLOW: 498.2 KW 389.4 KVAR 632.3 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-T-B19-SEC T-B19 TRANSF AMPS: 17.8 VOLTAGE DROP: 494. %VD: 3.58$
PROJECTED POWER FLOW: 334.7 KW 264.7 KVAR 426.7 KVA PF:0.78 LAGGING
LOSSES THRU TRANSF: 4.7 KW 18.9 KVAR 19.5 KVA

LOAD FROM: B-T-B22-PRI CBL-0023 FEEDER AMPS: 44.3 VOLTAGE DROP: 5. %VD: 0.04
PROJECTED POWER FLOW: 832.9 KW 654.1 KVAR 1059.0 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.1 KVAR 0.4 KVA

==== BUS: B-T-B19-SEC DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.68
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.6 DEGREES

LOAD FROM: B-T-B19-PRI T-B19 TRANSF AMPS:1185.5 VOLTAGE DROP: 7. %VD: 3.58$
PROJECTED POWER FLOW: 329.9 KW 245.8 KVAR 411.4 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 4.7 KW 18.9 KVAR 19.5 KVA

LOAD TO: B-B19-MDP1-M CBL-0410 FEEDER AMPS: 787.9 VOLTAGE DROP: 1. %VD: 0.45
PROJECTED POWER FLOW: 219.1 KW 163.5 KVAR 273.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 1.2 KVAR 1.4 KVA

LOAD TO: B-B19-MDP2-M CBL-0421 FEEDER AMPS: 397.6 VOLTAGE DROP: 1. %VD: 0.30
PROJECTED POWER FLOW: 110.8 KW 82.2 KVAR 138.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.4 KVAR 0.5 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-T-B2-LED-PRI DESIGN VOLTS: 480 BUS VOLTS: 462 %VD: 3.68
========== PU BUS VOLTAGE: 0.963 ANGLE: -1.5 DEGREES

LOAD FROM: B-B2-MDP CBL-0041 FEEDER AMPS: 78.4 VOLTAGE DROP: 2. %VD: 0.44
PROJECTED POWER FLOW: 49.7 KW 38.4 KVAR 62.8 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.1 KVAR 0.3 KVA

LOAD TO: B-T-B2-LED-SEC T-B2 LED-3 TRANSF AMPS: 78.4 VOLTAGE DROP: 19. %VD: 4.03$
PROJECTED POWER FLOW: 49.7 KW 38.4 KVAR 62.8 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.5 KW 2.3 KVAR 2.8 KVA

==== BUS: B-T-B2-LED-SEC DESIGN VOLTS: 208 BUS VOLTS: 192 %VD: 7.71$
========== PU BUS VOLTAGE: 0.923 ANGLE: -2.4 DEGREES

LOAD FROM: B-T-B2-LED-PRI T-B2 LED-3 TRANSF AMPS: 181.0 VOLTAGE DROP: 8. %VD: 4.03$
PROJECTED POWER FLOW: 48.2 KW 36.1 KVAR 60.2 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.5 KW 2.3 KVAR 2.8 KVA

LOAD TO: B-B2-LED-3 CBL-0042 FEEDER AMPS: 181.0 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 48.2 KW 36.1 KVAR 60.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-T-B2-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13774 %VD: 0.19
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD FROM: BUS-0019 CBL-0012 FEEDER AMPS: 61.3 VOLTAGE DROP: 3. %VD: 0.02
PROJECTED POWER FLOW: 1151.2 KW 904.8 KVAR 1464.2 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.1 KVAR 0.3 KVA

LOAD TO: B-T-B1-PRI CBL-0017 FEEDER AMPS: 28.0 VOLTAGE DROP: 2. %VD: 0.01
PROJECTED POWER FLOW: 528.8 KW 410.0 KVAR 669.1 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-T-B2-SEC4 XF2-0040 TRANSF AMPS: 19.5 VOLTAGE DROP: 415. %VD: 3.01$
PROJECTED POWER FLOW: 364.2 KW 290.4 KVAR 465.8 KVA PF:0.78 LAGGING
LOSSES THRU TRANSF: 3.4 KW 18.6 KVAR 18.9 KVA

LOAD TO: B-T-B2-SEC2 XF2-0041 TRANSF AMPS: 5.2 VOLTAGE DROP: 448. %VD: 3.24$
PROJECTED POWER FLOW: 97.8 KW 78.4 KVAR 125.4 KVA PF:0.78 LAGGING
LOSSES THRU TRANSF: 1.0 KW 5.4 KVAR 5.5 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-T-B2-SEC3 T-B2A TRANSF AMPS: 8.5 VOLTAGE DROP: 442. %VD: 3.21$
PROJECTED POWER FLOW: 160.5 KW 126.0 KVAR 204.0 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 2.5 KW 7.5 KVAR 7.9 KVA

==== BUS: B-T-B2-SEC2 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.43
========== PU BUS VOLTAGE: 0.966 ANGLE: -1.7 DEGREES

LOAD FROM: B-T-B2-PRI XF2-0041 TRANSF AMPS: 348.6 VOLTAGE DROP: 7. %VD: 3.24$
PROJECTED POWER FLOW: 96.9 KW 73.0 KVAR 121.3 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.0 KW 5.4 KVAR 5.5 KVA

LOAD TO: B-B2-MDPA-M CBL-0085 FEEDER AMPS: 348.6 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 96.9 KW 73.0 KVAR 121.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-T-B2-SEC3 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.39
========== PU BUS VOLTAGE: 0.966 ANGLE: -1.3 DEGREES

LOAD FROM: B-T-B2-PRI T-B2A TRANSF AMPS: 567.3 VOLTAGE DROP: 7. %VD: 3.21$
PROJECTED POWER FLOW: 158.0 KW 118.5 KVAR 197.5 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 2.5 KW 7.5 KVAR 7.9 KVA

LOAD TO: B-B2-MDPB-M CBL-0087 FEEDER AMPS: 567.3 VOLTAGE DROP: 1. %VD: 0.57
PROJECTED POWER FLOW: 158.0 KW 118.5 KVAR 197.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 1.0 KVAR 1.2 KVA

==== BUS: B-T-B2-SEC4 DESIGN VOLTS: 480 BUS VOLTS: 465 %VD: 3.20
========== PU BUS VOLTAGE: 0.968 ANGLE: -1.6 DEGREES

LOAD FROM: B-T-B2-PRI XF2-0040 TRANSF AMPS: 561.2 VOLTAGE DROP: 14. %VD: 3.01$
PROJECTED POWER FLOW: 360.8 KW 271.8 KVAR 451.7 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 3.4 KW 18.6 KVAR 18.9 KVA

LOAD TO: B-B2-MDP-M CBL-0084 FEEDER AMPS: 561.2 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 360.8 KW 271.8 KVAR 451.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-T-B22-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13791 %VD: 0.06
========== PU BUS VOLTAGE: 0.999 ANGLE: 0.0 DEGREES

LOAD TO: B-T-B19-PRI CBL-0023 FEEDER AMPS: 44.3 VOLTAGE DROP: 5. %VD: 0.04
PROJECTED POWER FLOW: 833.3 KW 654.2 KVAR 1059.4 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.1 KVAR 0.4 KVA

LOAD TO: B-T-B22-SEC T-B22 TRANSF AMPS: 7.8 VOLTAGE DROP: 264. %VD: 1.91
PROJECTED POWER FLOW: 148.1 KW 116.3 KVAR 188.3 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.4 KW 4.1 KVAR 4.3 KVA

LOAD FROM: B-T-B33-PRI CBL-0024 FEEDER AMPS: 52.2 VOLTAGE DROP: 4. %VD: 0.03
PROJECTED POWER FLOW: 981.4 KW 770.5 KVAR 1247.7 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.1 KVAR 0.4 KVA

==== BUS: B-T-B22-SEC DESIGN VOLTS: 480 BUS VOLTS: 471 %VD: 1.98
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.7 DEGREES

LOAD FROM: B-T-B22-PRI T-B22 TRANSF AMPS: 226.6 VOLTAGE DROP: 9. %VD: 1.91
PROJECTED POWER FLOW: 146.7 KW 112.2 KVAR 184.7 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.4 KW 4.1 KVAR 4.3 KVA

LOAD TO: B-B22-MDP-M CBL-0426 FEEDER AMPS: 226.6 VOLTAGE DROP: 3. %VD: 0.63
PROJECTED POWER FLOW: 146.7 KW 112.2 KVAR 184.7 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.7 KW 1.1 KVAR 1.3 KVA

==== BUS: B-T-B3-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13760 %VD: 0.29
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES

LOAD TO: B-T-B78-PRI CBL-0032 FEEDER AMPS: 61.4 VOLTAGE DROP: 3. %VD: 0.02
PROJECTED POWER FLOW: 1144.5 KW 914.6 KVAR 1465.0 KVA PF:0.78 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.1 KVAR 0.4 KVA

LOAD TO: B-T-B3-SEC T-B3 TRANSF AMPS: 10.4 VOLTAGE DROP: 369. %VD: 2.67
PROJECTED POWER FLOW: 196.9 KW 153.0 KVAR 249.3 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 2.6 KW 7.7 KVAR 8.1 KVA

LOAD FROM: BUS-0065 CBL-0033 FEEDER AMPS: 71.9 VOLTAGE DROP: 3. %VD: 0.03
PROJECTED POWER FLOW: 1341.3 KW 1067.7 KVAR 1714.4 KVA PF:0.78 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.1 KVAR 0.5 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-T-B3-SEC DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.96
========== PU BUS VOLTAGE: 0.970 ANGLE: -1.1 DEGREES

LOAD FROM: B-T-B3-PRI T-B3 TRANSF AMPS: 694.1 VOLTAGE DROP: 6. %VD: 2.67
PROJECTED POWER FLOW: 194.3 KW 145.4 KVAR 242.7 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 2.6 KW 7.7 KVAR 8.1 KVA

LOAD TO: B-B3-MDP-M CBL-0094 FEEDER AMPS: 694.1 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 194.3 KW 145.4 KVAR 242.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.8 KVAR 0.9 KVA

==== BUS: B-T-B30-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13767 %VD: 0.24
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD TO: B-T-B60-PRI CBL-0015 FEEDER AMPS: 14.3 VOLTAGE DROP: 4. %VD: 0.03
PROJECTED POWER FLOW: 270.3 KW 209.4 KVAR 341.9 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FROM: B-T-B30-SEC T-B30 TRANSF AMPS: VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LAGGING
LOSSES THRU TRANSF: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: B-T-B70-PRI CBL-0014 FEEDER AMPS: 14.3 VOLTAGE DROP: 3. %VD: 0.02
PROJECTED POWER FLOW: 270.3 KW 209.4 KVAR 341.9 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-T-B30-SEC DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.24
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-T-B33-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13795 %VD: 0.03
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES

LOAD FROM: B-B27-SWGR CBL-0036 FEEDER AMPS: 54.8 VOLTAGE DROP: 5. %VD: 0.03
PROJECTED POWER FLOW: 1030.9 KW 808.4 KVAR 1310.1 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.1 KVAR 0.5 KVA

LOAD TO: B-T-B22-PRI CBL-0024 FEEDER AMPS: 52.2 VOLTAGE DROP: 4. %VD: 0.03
PROJECTED POWER FLOW: 981.7 KW 770.6 KVAR 1248.1 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.1 KVAR 0.4 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-T-B33-SEC T-B33 TRANSF AMPS: 2.5 VOLTAGE DROP: 331. %VD: 2.40
PROJECTED POWER FLOW: 49.2 KW 37.8 KVAR 62.0 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 0.8 KW 1.5 KVAR 1.6 KVA

==== BUS: B-T-B33-SEC DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.43
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.6 DEGREES

LOAD FROM: B-T-B33-PRI T-B33 TRANSF AMPS: 172.2 VOLTAGE DROP: 5. %VD: 2.40
PROJECTED POWER FLOW: 48.4 KW 36.4 KVAR 60.5 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.8 KW 1.5 KVAR 1.6 KVA

LOAD TO: B-B33-MDP-M CBL-0445 FEEDER AMPS: 172.2 VOLTAGE DROP: 2. %VD: 0.85
PROJECTED POWER FLOW: 48.4 KW 36.4 KVAR 60.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.4 KVAR 0.5 KVA

==== BUS: B-T-B4-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13781 %VD: 0.14
========== PU BUS VOLTAGE: 0.999 ANGLE: 0.0 DEGREES

LOAD TO: B-T-B80-PRI CBL-0020 FEEDER AMPS: 5.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 98.4 KW 75.5 KVAR 124.0 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-T-B4-SEC T-B4 TRANSF AMPS: 17.3 VOLTAGE DROP: 382. %VD: 2.77
PROJECTED POWER FLOW: 326.3 KW 256.8 KVAR 415.2 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 3.6 KW 14.3 KVAR 14.7 KVA

LOAD FROM: B-T-B82-PRI CBL-0022 FEEDER AMPS: 22.5 VOLTAGE DROP: 2. %VD: 0.01
PROJECTED POWER FLOW: 424.7 KW 332.3 KVAR 539.3 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-T-B4-SEC DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.91
========== PU BUS VOLTAGE: 0.971 ANGLE: -1.2 DEGREES

LOAD FROM: B-T-B4-PRI T-B4 TRANSF AMPS:1154.1 VOLTAGE DROP: 6. %VD: 2.77
PROJECTED POWER FLOW: 322.7 KW 242.6 KVAR 403.7 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 3.6 KW 14.3 KVAR 14.7 KVA

LOAD TO: B-B4-BUS CBL-0120 FEEDER AMPS:1154.1 VOLTAGE DROP: 1. %VD: 0.25
PROJECTED POWER FLOW: 322.7 KW 242.6 KVAR 403.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.6 KW 0.9 KVAR 1.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-T-B5-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13766 %VD: 0.25
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD FROM: B-T-B6-PRI CBL-0010 FEEDER AMPS: 10.3 VOLTAGE DROP: 1. %VD: 0.01
PROJECTED POWER FLOW: 196.2 KW 151.6 KVAR 247.9 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-T-B5-SEC T-B5 TRANSF AMPS: 10.3 VOLTAGE DROP: 256. %VD: 1.86
PROJECTED POWER FLOW: 196.2 KW 151.6 KVAR 247.9 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.8 KW 5.3 KVAR 5.6 KVA

LOAD FROM: B-SW-MV-1 CBL-0011 FEEDER AMPS: 0.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LEADING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-T-B5-SEC DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.11
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.7 DEGREES

LOAD FROM: B-T-B5-PRI T-B5 TRANSF AMPS: 689.8 VOLTAGE DROP: 4. %VD: 1.86
PROJECTED POWER FLOW: 194.4 KW 146.3 KVAR 243.3 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.8 KW 5.3 KVAR 5.6 KVA

LOAD TO: B-B5-MDP-M CBL-0210 FEEDER AMPS: 689.8 VOLTAGE DROP: 2. %VD: 0.96
PROJECTED POWER FLOW: 194.4 KW 146.3 KVAR 243.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 1.7 KW 1.8 KVAR 2.4 KVA

==== BUS: B-T-B6-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13766 %VD: 0.24
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD FROM: B-T-B7-PRI CBL-0009 FEEDER AMPS: 20.7 VOLTAGE DROP: 2. %VD: 0.02
PROJECTED POWER FLOW: 391.3 KW 302.4 KVAR 494.5 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-T-B6-SEC T-B6 TRANSF AMPS: 10.3 VOLTAGE DROP: 256. %VD: 1.85
PROJECTED POWER FLOW: 195.1 KW 150.8 KVAR 246.6 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.8 KW 5.3 KVAR 5.5 KVA

LOAD TO: B-T-B5-PRI CBL-0010 FEEDER AMPS: 10.3 VOLTAGE DROP: 1. %VD: 0.01
PROJECTED POWER FLOW: 196.2 KW 151.6 KVAR 247.9 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-T-B6-SEC DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.10
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.7 DEGREES

LOAD FROM: B-T-B6-PRI T-B6 TRANSF AMPS: 686.2 VOLTAGE DROP: 4. %VD: 1.85
PROJECTED POWER FLOW: 193.4 KW 145.5 KVAR 242.0 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.8 KW 5.3 KVAR 5.5 KVA

LOAD TO: B-B6-MDP-M CBL-0244 FEEDER AMPS: 686.2 VOLTAGE DROP: 1. %VD: 0.55
PROJECTED POWER FLOW: 193.4 KW 145.5 KVAR 242.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.8 KW 1.2 KVAR 1.4 KVA

==== BUS: B-T-B60-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13763 %VD: 0.27
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES

LOAD TO: B-T-B17-PRI CBL-0013 FEEDER AMPS: 10.4 VOLTAGE DROP: 1. %VD: 0.01
PROJECTED POWER FLOW: 197.0 KW 152.5 KVAR 249.1 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-T-B60-SEC T-B60 TRANSF AMPS: 3.8 VOLTAGE DROP: 372. %VD: 2.70
PROJECTED POWER FLOW: 73.2 KW 57.0 KVAR 92.8 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.1 KW 2.7 KVAR 2.9 KVA

LOAD FROM: B-T-B30-PRI CBL-0015 FEEDER AMPS: 14.3 VOLTAGE DROP: 4. %VD: 0.03
PROJECTED POWER FLOW: 270.2 KW 209.4 KVAR 341.9 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-T-B60-SEC DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.97
========== PU BUS VOLTAGE: 0.970 ANGLE: -1.0 DEGREES

LOAD FROM: B-T-B60-PRI T-B60 TRANSF AMPS: 258.2 VOLTAGE DROP: 6. %VD: 2.70
PROJECTED POWER FLOW: 72.2 KW 54.2 KVAR 90.3 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.1 KW 2.7 KVAR 2.9 KVA

LOAD TO: B-B60-MDP-M CBL-0448 FEEDER AMPS: 258.2 VOLTAGE DROP: 1. %VD: 0.28
PROJECTED POWER FLOW: 72.2 KW 54.2 KVAR 90.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.2 KVAR 0.3 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-T-B61-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13772 %VD: 0.20
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD FROM: B-T-B62-PRI CBL-0008 FEEDER AMPS: 34.5 VOLTAGE DROP: 3. %VD: 0.02
PROJECTED POWER FLOW: 651.4 KW 505.0 KVAR 824.3 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-T-B61-SEC T-B61 TRANSF AMPS: 7.8 VOLTAGE DROP: 400. %VD: 2.90
PROJECTED POWER FLOW: 147.2 KW 115.2 KVAR 186.9 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 2.1 KW 6.2 KVAR 6.5 KVA

LOAD TO: B-T-B7-PRI CBL-0007 FEEDER AMPS: 26.7 VOLTAGE DROP: 4. %VD: 0.03
PROJECTED POWER FLOW: 504.2 KW 389.8 KVAR 637.3 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

==== BUS: B-T-B61-SEC DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.10
========== PU BUS VOLTAGE: 0.969 ANGLE: -1.1 DEGREES

LOAD FROM: B-T-B61-PRI T-B61 TRANSF AMPS: 519.9 VOLTAGE DROP: 6. %VD: 2.90
PROJECTED POWER FLOW: 145.1 KW 109.0 KVAR 181.5 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 2.1 KW 6.2 KVAR 6.5 KVA

LOAD TO: B-B61-MDP-M CBL-0450 FEEDER AMPS: 519.9 VOLTAGE DROP: 1. %VD: 0.37
PROJECTED POWER FLOW: 145.1 KW 109.0 KVAR 181.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.7 KVAR 0.8 KVA

==== BUS: B-T-B62-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13775 %VD: 0.18
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD FROM: B-T-B8-PRI CBL-0006 FEEDER AMPS: 44.8 VOLTAGE DROP: 2. %VD: 0.01
PROJECTED POWER FLOW: 846.2 KW 655.3 KVAR 1070.3 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.2 KVA

LOAD TO: B-T-B62-SEC T-B62 TRANSF AMPS: 10.3 VOLTAGE DROP: 257. %VD: 1.87
PROJECTED POWER FLOW: 194.6 KW 150.2 KVAR 245.8 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.8 KW 5.3 KVAR 5.6 KVA

LOAD TO: B-T-B61-PRI CBL-0008 FEEDER AMPS: 34.5 VOLTAGE DROP: 3. %VD: 0.02
PROJECTED POWER FLOW: 651.6 KW 505.1 KVAR 824.5 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-T-B62-SEC DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.05
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.7 DEGREES

LOAD FROM: B-T-B62-PRI T-B62 TRANSF AMPS: 683.5 VOLTAGE DROP: 4. %VD: 1.87
PROJECTED POWER FLOW: 192.8 KW 144.9 KVAR 241.2 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.8 KW 5.3 KVAR 5.6 KVA

LOAD TO: B-B62-MDP-M CBL-0478 FEEDER AMPS: 683.5 VOLTAGE DROP: 1. %VD: 0.29
PROJECTED POWER FLOW: 192.8 KW 144.9 KVAR 241.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.7 KVAR 0.8 KVA

==== BUS: B-T-B7-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13769 %VD: 0.23
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD FROM: B-T-B61-PRI CBL-0007 FEEDER AMPS: 26.7 VOLTAGE DROP: 4. %VD: 0.03
PROJECTED POWER FLOW: 504.1 KW 389.8 KVAR 637.2 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-T-B7-SEC T-B7 TRANSF AMPS: 5.9 VOLTAGE DROP: 200. %VD: 1.45
PROJECTED POWER FLOW: 112.7 KW 87.4 KVAR 142.6 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 0.8 KW 2.4 KVAR 2.5 KVA

LOAD TO: B-T-B6-PRI CBL-0009 FEEDER AMPS: 20.7 VOLTAGE DROP: 2. %VD: 0.02
PROJECTED POWER FLOW: 391.4 KW 302.4 KVAR 494.6 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-T-B7-SEC DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.67
========== PU BUS VOLTAGE: 0.983 ANGLE: -0.5 DEGREES

LOAD FROM: B-T-B7-PRI T-B7 TRANSF AMPS: 396.6 VOLTAGE DROP: 3. %VD: 1.45
PROJECTED POWER FLOW: 111.9 KW 85.0 KVAR 140.5 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.8 KW 2.4 KVAR 2.5 KVA

LOAD TO: B-B7-MDP-M CBL-0283 FEEDER AMPS: 396.6 VOLTAGE DROP: 3. %VD: 1.40
PROJECTED POWER FLOW: 111.9 KW 85.0 KVAR 140.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 1.1 KW 1.9 KVAR 2.2 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-T-B70-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13770 %VD: 0.22
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD TO: B-T-B30-PRI CBL-0014 FEEDER AMPS: 14.3 VOLTAGE DROP: 3. %VD: 0.02
PROJECTED POWER FLOW: 270.4 KW 209.5 KVAR 342.0 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-T-B70-SEC T-B70 TRANSF AMPS: 11.0 VOLTAGE DROP: 503. %VD: 3.65$
PROJECTED POWER FLOW: 209.0 KW 162.4 KVAR 264.7 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 3.7 KW 11.1 KVAR 11.7 KVA

LOAD FROM: B-T-B1-PRI CBL-0016 FEEDER AMPS: 25.4 VOLTAGE DROP: 3. %VD: 0.02
PROJECTED POWER FLOW: 479.4 KW 371.9 KVAR 606.7 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-T-B70-SEC DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.87
========== PU BUS VOLTAGE: 0.961 ANGLE: -1.5 DEGREES

LOAD FROM: B-T-B70-PRI T-B70 TRANSF AMPS: 736.3 VOLTAGE DROP: 8. %VD: 3.65$
PROJECTED POWER FLOW: 205.3 KW 151.3 KVAR 255.0 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 3.7 KW 11.1 KVAR 11.7 KVA

LOAD TO: B-B70-MDP-M CBL-0505 FEEDER AMPS: 489.8 VOLTAGE DROP: 1. %VD: 0.64
PROJECTED POWER FLOW: 135.4 KW 102.2 KVAR 169.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.6 KW 1.1 KVAR 1.2 KVA

LOAD TO: B-B70-FP-TAP CBL-0506 FEEDER AMPS: 246.6 VOLTAGE DROP: 1. %VD: 0.34
PROJECTED POWER FLOW: 69.8 KW 49.1 KVAR 85.4 KVA PF:0.82 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.3 KVAR 0.3 KVA

==== BUS: B-T-B78-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13757 %VD: 0.31
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES

LOAD TO: B-T-B78-SEC T-B78 TRANSF AMPS: 36.9 VOLTAGE DROP: 554. %VD: 4.02$
PROJECTED POWER FLOW: 683.6 KW 554.1 KVAR 880.0 KVA PF:0.78 LAGGING
LOSSES THRU TRANSF: 7.9 KW 47.5 KVAR 48.2 KVA

LOAD TO: B-T-B10-PRI CBL-0027 FEEDER AMPS: 24.5 VOLTAGE DROP: 2. %VD: 0.01
PROJECTED POWER FLOW: 460.5 KW 360.4 KVAR 584.7 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: B-T-B3-PRI CBL-0032 FEEDER AMPS: 61.4 VOLTAGE DROP: 3. %VD: 0.02
PROJECTED POWER FLOW: 1144.1 KW 914.5 KVAR 1464.7 KVA PF:0.78 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.1 KVAR 0.4 KVA

==== BUS: B-T-B78-SEC DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.33
========== PU BUS VOLTAGE: 0.957 ANGLE: -2.2 DEGREES

LOAD FROM: B-T-B78-PRI T-B78 TRANSF AMPS:2450.3 VOLTAGE DROP: 8. %VD: 4.02$
PROJECTED POWER FLOW: 675.7 KW 506.6 KVAR 844.5 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 7.9 KW 47.5 KVAR 48.2 KVA

LOAD TO: B-B78-MDP-M CBL-0550 FEEDER AMPS:2450.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 675.7 KW 506.6 KVAR 844.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.2 KVAR 0.3 KVA

==== BUS: B-T-B8-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13777 %VD: 0.17
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD FROM: B-B27-SWGR CBL-0005 FEEDER AMPS: 60.4 VOLTAGE DROP: 23. %VD: 0.17
PROJECTED POWER FLOW: 1141.3 KW 883.9 KVAR 1443.6 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 2.4 KW 0.8 KVAR 2.5 KVA

LOAD TO: B-T-B8-SEC T-B8 TRANSF AMPS: 7.7 VOLTAGE DROP: 259. %VD: 1.87
PROJECTED POWER FLOW: 146.4 KW 113.2 KVAR 185.1 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.3 KW 4.0 KVAR 4.2 KVA

LOAD TO: B-T-B62-PRI CBL-0006 FEEDER AMPS: 44.8 VOLTAGE DROP: 2. %VD: 0.01
PROJECTED POWER FLOW: 846.4 KW 655.3 KVAR 1070.4 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.2 KVA

LOAD TO: BUS-0378 XF2-0031 TRANSF AMPS: 7.8 VOLTAGE DROP: 263. %VD: 1.91
PROJECTED POWER FLOW: 148.6 KW 115.4 KVAR 188.1 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.4 KW 4.1 KVAR 4.3 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-T-B8-SEC DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.04
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.7 DEGREES

LOAD FROM: B-T-B8-PRI T-B8 TRANSF AMPS: 514.6 VOLTAGE DROP: 4. %VD: 1.87
PROJECTED POWER FLOW: 145.1 KW 109.3 KVAR 181.6 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.3 KW 4.0 KVAR 4.2 KVA

LOAD TO: B-B8-208V-MAIN CBL-0318 FEEDER AMPS: 514.6 VOLTAGE DROP: 1. %VD: 0.28
PROJECTED POWER FLOW: 145.1 KW 109.3 KVAR 181.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.5 KVAR 0.6 KVA

==== BUS: B-T-B80-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13781 %VD: 0.14
========== PU BUS VOLTAGE: 0.999 ANGLE: 0.0 DEGREES

LOAD TO: B-T-B80-SEC T-B80 TRANSF AMPS: 5.1 VOLTAGE DROP: 302. %VD: 2.19
PROJECTED POWER FLOW: 98.4 KW 75.5 KVAR 124.0 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.2 KW 3.0 KVAR 3.2 KVA

LOAD FROM: B-T-B4-PRI CBL-0020 FEEDER AMPS: 5.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 98.4 KW 75.5 KVAR 124.0 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: B-SW-MV-2 CBL-0034 FEEDER AMPS: 0.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LEADING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-T-B80-SEC DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.33
========== PU BUS VOLTAGE: 0.977 ANGLE: -0.7 DEGREES

LOAD FROM: B-T-B80-PRI T-B80 TRANSF AMPS: 344.8 VOLTAGE DROP: 5. %VD: 2.19
PROJECTED POWER FLOW: 97.2 KW 72.5 KVAR 121.3 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.2 KW 3.0 KVAR 3.2 KVA

LOAD TO: B-B80-MDP-M CBL-0588 FEEDER AMPS: 344.8 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 97.2 KW 72.5 KVAR 121.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.2 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-T-B81-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13751 %VD: 0.35
========== PU BUS VOLTAGE: 0.996 ANGLE: 0.0 DEGREES

LOAD FROM: B-T-B12-PRI CBL-0031 FEEDER AMPS: 2.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 49.2 KW 38.1 KVAR 62.3 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-T-B81-SEC T-B81 TRANSF AMPS: 2.6 VOLTAGE DROP: 444. %VD: 3.22$
PROJECTED POWER FLOW: 49.2 KW 38.1 KVAR 62.3 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.0 KW 2.0 KVAR 2.2 KVA

==== BUS: B-T-B81-SEC DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.57
========== PU BUS VOLTAGE: 0.964 ANGLE: -0.9 DEGREES

LOAD FROM: B-T-B81-PRI T-B81 TRANSF AMPS: 173.4 VOLTAGE DROP: 7. %VD: 3.22$
PROJECTED POWER FLOW: 48.2 KW 36.2 KVAR 60.3 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.0 KW 2.0 KVAR 2.2 KVA

LOAD TO: B-B81-MDP-M CBL-0600 FEEDER AMPS: 173.4 VOLTAGE DROP: 1. %VD: 0.43
PROJECTED POWER FLOW: 48.2 KW 36.2 KVAR 60.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.3 KVA

==== BUS: B-T-B82-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13783 %VD: 0.13
========== PU BUS VOLTAGE: 0.999 ANGLE: 0.0 DEGREES

LOAD TO: B-T-B4-PRI CBL-0022 FEEDER AMPS: 22.5 VOLTAGE DROP: 2. %VD: 0.01
PROJECTED POWER FLOW: 424.8 KW 332.3 KVAR 539.3 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-T-B82-SEC T-B82 TRANSF AMPS: 3.8 VOLTAGE DROP: 374. %VD: 2.71
PROJECTED POWER FLOW: 73.3 KW 57.0 KVAR 92.8 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.1 KW 2.7 KVAR 2.9 KVA

LOAD FROM: B-T-B19-PRI CBL-0021 FEEDER AMPS: 26.4 VOLTAGE DROP: 3. %VD: 0.03
PROJECTED POWER FLOW: 498.0 KW 389.3 KVAR 632.1 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-T-B82-SEC DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.84
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.9 DEGREES

LOAD FROM: B-T-B82-PRI T-B82 TRANSF AMPS: 257.9 VOLTAGE DROP: 6. %VD: 2.71
PROJECTED POWER FLOW: 72.2 KW 54.2 KVAR 90.3 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.1 KW 2.7 KVAR 2.9 KVA

LOAD TO: B-B82-MDP-M CBL-0602 FEEDER AMPS: 257.9 VOLTAGE DROP: 1. %VD: 0.31
PROJECTED POWER FLOW: 72.2 KW 54.2 KVAR 90.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.3 KVA

==== BUS: B-T-B9-PRI DESIGN VOLTS: 13800 BUS VOLTS: 13753 %VD: 0.34
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES

LOAD FROM: B-T-B10-PRI CBL-0029 FEEDER AMPS: 21.9 VOLTAGE DROP: 2. %VD: 0.01
PROJECTED POWER FLOW: 411.3 KW 322.7 KVAR 522.8 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-T-B9-SEC T-B9 TRANSF AMPS: 7.7 VOLTAGE DROP: 284. %VD: 2.06
PROJECTED POWER FLOW: 146.9 KW 113.8 KVAR 185.8 KVA PF:0.79 LAGGING
LOSSES THRU TRANSF: 1.5 KW 4.4 KVAR 4.6 KVA

LOAD TO: B-T-13-PRI CBL-0028 FEEDER AMPS: 14.1 VOLTAGE DROP: 1. %VD: 0.01
PROJECTED POWER FLOW: 264.4 KW 208.9 KVAR 337.0 KVA PF:0.78 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-T-B9-SEC DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.40
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.8 DEGREES

LOAD FROM: B-T-B9-PRI T-B9 TRANSF AMPS: 517.4 VOLTAGE DROP: 4. %VD: 2.06
PROJECTED POWER FLOW: 145.4 KW 109.4 KVAR 182.0 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.5 KW 4.4 KVAR 4.6 KVA

LOAD TO: B-B9-MAIN CBL-0342 FEEDER AMPS: 517.4 VOLTAGE DROP: 1. %VD: 0.44
PROJECTED POWER FLOW: 145.4 KW 109.4 KVAR 182.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.7 KVAR 0.9 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B0B70-LP2 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.75
========== PU BUS VOLTAGE: 0.952 ANGLE: -1.6 DEGREES
NET BRANCH DIVERSITY LOAD: 5.0 KW 3.8 KVAR

LOAD FROM: B-B70-MDP CBL-0511 FEEDER AMPS: 18.2 VOLTAGE DROP: 0. %VD: 0.24
PROJECTED POWER FLOW: 5.0 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0017 DESIGN VOLTS: 13800 BUS VOLTS: 13790 %VD: 0.07
========== PU BUS VOLTAGE: 0.999 ANGLE: 0.0 DEGREES

LOAD FROM: B-B27-SWGR CBL-0004 FEEDER AMPS: 61.3 VOLTAGE DROP: 10. %VD: 0.07
PROJECTED POWER FLOW: 1151.6 KW 907.1 KVAR 1465.9 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 1.1 KW 0.4 KVAR 1.1 KVA

LOAD TO: BUS-0019 SW-MV-1 FEEDER AMPS: 61.3 VOLTAGE DROP: 13. %VD: 0.09
PROJECTED POWER FLOW: 1151.6 KW 907.1 KVAR 1465.9 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 2.2 KVAR 2.2 KVA

==== BUS: BUS-0019 DESIGN VOLTS: 13800 BUS VOLTS: 13777 %VD: 0.16
========== PU BUS VOLTAGE: 0.998 ANGLE: -0.1 DEGREES

LOAD FROM: BUS-0017 SW-MV-1 FEEDER AMPS: 61.3 VOLTAGE DROP: 13. %VD: 0.09
PROJECTED POWER FLOW: 1151.6 KW 904.9 KVAR 1464.6 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 2.2 KVAR 2.2 KVA

LOAD TO: B-T-B2-PRI CBL-0012 FEEDER AMPS: 61.3 VOLTAGE DROP: 3. %VD: 0.02
PROJECTED POWER FLOW: 1151.6 KW 904.9 KVAR 1464.6 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.1 KVAR 0.3 KVA

==== BUS: BUS-0063 DESIGN VOLTS: 13800 BUS VOLTS: 13778 %VD: 0.16
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD FROM: B-B27-SWGR CBL-0035 FEEDER AMPS: 71.9 VOLTAGE DROP: 22. %VD: 0.16
PROJECTED POWER FLOW: 1341.8 KW 1070.8 KVAR 1716.6 KVA PF:0.78 LAGGING
LOSSES THRU FEEDER: 2.7 KW 0.9 KVAR 2.9 KVA

LOAD TO: BUS-0065 AUTO-0003 FEEDER AMPS: 71.9 VOLTAGE DROP: 15. %VD: 0.11
PROJECTED POWER FLOW: 1341.8 KW 1070.8 KVAR 1716.6 KVA PF:0.78 LAGGING
LOSSES THRU FEEDER: 0.0 KW 3.0 KVAR 3.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-0065 DESIGN VOLTS: 13800 BUS VOLTS: 13763 %VD: 0.27
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES

LOAD TO: B-T-B3-PRI CBL-0033 FEEDER AMPS: 71.9 VOLTAGE DROP: 3. %VD: 0.03
PROJECTED POWER FLOW: 1341.8 KW 1067.8 KVAR 1714.8 KVA PF:0.78 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.1 KVAR 0.5 KVA

LOAD FROM: BUS-0063 AUTO-0003 FEEDER AMPS: 71.9 VOLTAGE DROP: 15. %VD: 0.11
PROJECTED POWER FLOW: 1341.8 KW 1067.8 KVAR 1714.8 KVA PF:0.78 LAGGING
LOSSES THRU FEEDER: 0.0 KW 3.0 KVAR 3.0 KVA

==== BUS: BUS-0076 DESIGN VOLTS: 208 BUS VOLTS: 191 %VD: 8.00$
========== PU BUS VOLTAGE: 0.920 ANGLE: -2.3 DEGREES

LOAD FROM: B-B2-LED-3 CBL-0043 FEEDER AMPS: 181.0 VOLTAGE DROP: 0. %VD: 0.17
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B2-ATS-LED3 ATS-B2-LED3 FEEDER AMPS: 181.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0091 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.66
========== PU BUS VOLTAGE: 0.953 ANGLE: -1.6 DEGREES

LOAD FROM: B-B2-MDPA CBL-0058 FEEDER AMPS: 69.9 VOLTAGE DROP: 2. %VD: 1.18
PROJECTED POWER FLOW: 19.2 KW 14.4 KVAR 24.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.1 KVAR 0.3 KVA

LOAD TO: B-B92-ATS ATS-B92 FEEDER AMPS: 69.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 19.2 KW 14.4 KVAR 24.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0097* DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 4.00
========== PU BUS VOLTAGE: 0.960 ANGLE: -1.4 DEGREES
**** NO LOAD SPECIFIED ****

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-0106* DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 4.05
========== PU BUS VOLTAGE: 0.959 ANGLE: -1.4 DEGREES

LOAD FROM: B-B2-MDPB CBL-0071 FEEDER AMPS: 129.9 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 35.9 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-ATS-LS ATS-B2-LS FEEDER AMPS: 129.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 35.9 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0117 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.57
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.4 DEGREES

LOAD TO: B-B2-ATS-CRIT ATS-B2-CRIT FEEDER AMPS: 128.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 36.0 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: B-B92-EMDP CBL-0610 FEEDER AMPS: 128.0 VOLTAGE DROP: 5. %VD: 2.55
PROJECTED POWER FLOW: 36.0 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 1.0 KVAR 1.2 KVA

==== BUS: BUS-0131 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.54
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.2 DEGREES

LOAD FROM: B-B3-MDP CBL-0097 FEEDER AMPS: 153.7 VOLTAGE DROP: 0. %VD: 0.22
PROJECTED POWER FLOW: 42.7 KW 32.1 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B3-ATSTEL RM ATS-B3-TEL RM FEEDER AMPS: 153.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 42.7 KW 32.1 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0140 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.52
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.2 DEGREES

LOAD FROM: B-B3-MDP CBL-0105 FEEDER AMPS: 153.6 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 42.7 KW 32.1 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B3-ATS-COMP ATS-B3-COMP FEEDER AMPS: 153.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 42.7 KW 32.1 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0172* DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.48
========== PU BUS VOLTAGE: 0.965 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-MDP CBL-0137 FEEDER AMPS: 115.3 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-ATS-LS ATS-B4-LS FEEDER AMPS: 115.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0227 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.41
========== PU BUS VOLTAGE: 0.966 ANGLE: -1.3 DEGREES

LOAD FROM: B-B4-MDP CBL-0193 FEEDER AMPS: 115.1 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-ATS-EQ ATS-B4-EQ FEEDER AMPS: 115.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0258* DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.31
========== PU BUS VOLTAGE: 0.967 ANGLE: -0.8 DEGREES

LOAD FROM: B-B5-MDP CBL-0222 FEEDER AMPS: 136.6 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 38.1 KW 28.6 KVAR 47.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B5-ATS-EQ ATS-B5-EQ FEEDER AMPS: 136.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 38.1 KW 28.6 KVAR 47.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-0269 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.35
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.8 DEGREES

LOAD FROM: B-B5-MDP CBL-0232 FEEDER AMPS: 137.2 VOLTAGE DROP: 1. %VD: 0.28
PROJECTED POWER FLOW: 38.3 KW 28.6 KVAR 47.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B5-ATS-LS ATS-B5-LS FEEDER AMPS: 137.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 38.3 KW 28.6 KVAR 47.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0290 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.83
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-MDP CBL-0252 FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.17
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B6-ATS-LS ATS-B6-LS FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0302 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.84
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.8 DEGREES

LOAD FROM: B-B6-MDP CBL-0263 FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B6-ATS-EQ ATS-B6-EQ FEEDER AMPS: 85.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0327 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.17
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES

LOAD FROM: B-B7-MDP CBL-0285 FEEDER AMPS: 83.5 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 23.3 KW 17.5 KVAR 29.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B7-ATS-EQ ATS-B7-EQ FEEDER AMPS: 83.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 23.3 KW 17.5 KVAR 29.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0344 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.17
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.9 DEGREES

LOAD FROM: B-B7-MDP CBL-0301 FEEDER AMPS: 46.9 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-ATS-LS ATS-B7-LS FEEDER AMPS: 46.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0360 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.43
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.8 DEGREES

LOAD FROM: B-B7-MDP CBL-0316 FEEDER AMPS: 31.3 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 8.7 KW 6.5 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B94-ATS ATS-B94 FEEDER AMPS: 31.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 8.7 KW 6.5 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0375 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.52
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES

LOAD FROM: B-B8-SYLV CBL-0330 FEEDER AMPS: 98.4 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 27.6 KW 20.7 KVAR 34.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B8-ATS ATS-B8 FEEDER AMPS: 98.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 27.6 KW 20.7 KVAR 34.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-0376 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.48
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.8 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0378 DESIGN VOLTS: 480 BUS VOLTS: 470 %VD: 2.07
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.7 DEGREES

LOAD FROM: B-T-B8-PRI XF2-0031 TRANSF AMPS: 226.6 VOLTAGE DROP: 9. %VD: 1.91
PROJECTED POWER FLOW: 147.2 KW 111.2 KVAR 184.5 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 1.4 KW 4.1 KVAR 4.3 KVA

LOAD TO: B-B8-GE BKR CBL-0332 FEEDER AMPS: 226.6 VOLTAGE DROP: 1. %VD: 0.22
PROJECTED POWER FLOW: 147.2 KW 111.2 KVAR 184.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.3 KVAR 0.4 KVA

==== BUS: BUS-0380 DESIGN VOLTS: 480 BUS VOLTS: 469 %VD: 2.33
========== PU BUS VOLTAGE: 0.977 ANGLE: -0.8 DEGREES

LOAD FROM: B-B8-GE BKR CBL-0333 FEEDER AMPS: 226.6 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 146.9 KW 110.8 KVAR 184.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B8-480V ATS ATS-B8-480V FEEDER AMPS: 226.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 146.9 KW 110.8 KVAR 184.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0423 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.41
========== PU BUS VOLTAGE: 0.966 ANGLE: -0.9 DEGREES

LOAD FROM: B-B17-MAIN CBL-0372 FEEDER AMPS: 73.8 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-ATS ATS-B-17 FEEDER AMPS: 73.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-0452 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 3.05
========== PU BUS VOLTAGE: 0.970 ANGLE: -0.8 DEGREES

LOAD FROM: B-B18-NMDP CBL-0399 FEEDER AMPS: 40.9 VOLTAGE DROP: 0. %VD: 0.17
PROJECTED POWER FLOW: 11.4 KW 8.6 KVAR 14.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-ATS-EMRG ATS-B18-EMERG FEEDER AMPS: 40.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 11.4 KW 8.6 KVAR 14.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0481 DESIGN VOLTS: 480 BUS VOLTS: 467 %VD: 2.75
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.9 DEGREES

LOAD FROM: B-B22-MDP CBL-0428 FEEDER AMPS: 142.3 VOLTAGE DROP: 1. %VD: 0.13
PROJECTED POWER FLOW: 91.8 KW 69.5 KVAR 115.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B22-ATS-EMER ATS-B22-EMERG FEEDER AMPS: 142.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 91.8 KW 69.5 KVAR 115.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0518 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.57
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES

LOAD FROM: B-B61-MDP CBL-0460 FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-ATS-LSD ATS-B61-LSD FEEDER AMPS: 57.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0520 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.60
========== PU BUS VOLTAGE: 0.964 ANGLE: -1.2 DEGREES

LOAD FROM: B-B61-MDP CBL-0461 FEEDER AMPS: 102.5 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 28.5 KW 21.4 KVAR 35.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B61-ATS-EQD ATS-B61-EQD FEEDER AMPS: 102.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 28.5 KW 21.4 KVAR 35.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0546 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.44
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.8 DEGREES

LOAD FROM: B-B62-MDP CBL-0485 FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-ATS-EQD ATS-B62-EQD FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0554 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.44
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.8 DEGREES

LOAD FROM: B-B62-MDP CBL-0492 FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-ATS-LSD ATS-B62-LSD FEEDER AMPS: 73.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0581 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.57
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.7 DEGREES

LOAD FROM: B-B70-MDP CBL-0515 FEEDER AMPS: 41.1 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-ATS-LSD ATS-B70-LSD FEEDER AMPS: 41.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-0582 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.55
========== PU BUS VOLTAGE: 0.954 ANGLE: -1.7 DEGREES

LOAD FROM: B-B70-MDP CBL-0517 FEEDER AMPS: 54.9 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 15.1 KW 11.3 KVAR 18.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-ATS-EQD ATS-B70-EQD FEEDER AMPS: 54.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 15.1 KW 11.3 KVAR 18.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0612 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0613 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0618 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.89
========== PU BUS VOLTAGE: 0.951 ANGLE: -2.2 DEGREES

LOAD FROM: B-B78-ATS TAP CBL-0553 FEEDER AMPS: 71.6 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 19.7 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B78-ATSG9578 ATS-B78-G95-78 FEEDER AMPS: 71.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 19.7 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0620 DESIGN VOLTS: 208 BUS VOLTS: 198 %VD: 4.94
========== PU BUS VOLTAGE: 0.951 ANGLE: -2.2 DEGREES

LOAD FROM: B-B78-ATS TAP CBL-0554 FEEDER AMPS: 71.7 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 19.7 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B78-ATS-LS1 ATS-B78-LS1 FEEDER AMPS: 71.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 19.7 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0652 DESIGN VOLTS: 208 BUS VOLTS: 197 %VD: 5.44$
========== PU BUS VOLTAGE: 0.946 ANGLE: -2.1 DEGREES

LOAD FROM: B-B78-MDP CBL-0585 FEEDER AMPS: 62.4 VOLTAGE DROP: 2. %VD: 1.06
PROJECTED POWER FLOW: 17.0 KW 12.7 KVAR 21.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B78-ATS-CRD ATS-B78-CRD FEEDER AMPS: 62.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 17.0 KW 12.7 KVAR 21.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0664 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.19
========== PU BUS VOLTAGE: 0.968 ANGLE: -0.7 DEGREES

LOAD FROM: B-B80-MDP CBL-0596 FEEDER AMPS: 71.9 VOLTAGE DROP: 1. %VD: 0.47
PROJECTED POWER FLOW: 20.1 KW 15.0 KVAR 25.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B80-ATS-EQ ATS-B80-EQ FEEDER AMPS: 71.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.1 KW 15.0 KVAR 25.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: BUS-0676 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.02
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0677 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.02
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-0678 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.02
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0680 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.02
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0685 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0688 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0689 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0691 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0692 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0694 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-0695 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0700 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0701 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0702 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0703 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0704 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0705 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0706 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-0707 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0708 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0712 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0713 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0714 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0715 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0718 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0719 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-1 UTILITY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: BUS-0722 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.02
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0723 DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.02
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0725 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0727 DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: BUS-0730 DESIGN VOLTS: 208 BUS VOLTS: 195 %VD: 6.07$
========== PU BUS VOLTAGE: 0.939 ANGLE: -2.4 DEGREES

LOAD FROM: B-B78-MDP CBL-0571 FEEDER AMPS: 165.9 VOLTAGE DROP: 4. %VD: 1.69
PROJECTED POWER FLOW: 44.9 KW 33.7 KVAR 56.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 0.8 KVAR 1.0 KVA

LOAD TO: B-B78-ATS-E1 ATS-B78-E1 FEEDER AMPS: 165.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 44.9 KW 33.7 KVAR 56.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: bB-B7-MC1 DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.51
========== PU BUS VOLTAGE: 0.965 ANGLE: -0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 4.6 KW 3.4 KVAR

LOAD FROM: B-B7-EQD CBL-0288 FEEDER AMPS: 16.3 VOLTAGE DROP: 1. %VD: 0.25
PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
B-B1-MDP	208.00	0.9627	B-B1-MDP-M	208.00	0.9651
B-B10 DISC	208.00	0.9702	B-B10 EMRG TAP	208.00	1.0000
B-B10-MDP	208.00	0.9675	B-B12-MAP-M	208.00	0.9604
B-B12-MDP	208.00	0.9603	B-B13-APT-13	240.00	0.9460
B-B13-APT-14	240.00	0.9411	B-B13-APT-15	240.00	0.9348
B-B13-GARAGE	240.00	0.9409	B-B13-MDP	240.00	0.9482
B-B13-MDP-M	240.00	0.9482	B-B13-MGR H16	240.00	0.9274
B-B13-TXMR SEC	240.00	0.9611	B-B13-UNKNOWN	240.00	0.9460
B-B17-A/C	208.00	0.9534	B-B17-A/C-2	208.00	0.9534
B-B17-AC1	208.00	0.9534	B-B17-ACB	208.00	0.9530
B-B17-ANIMALRM	208.00	0.9620	B-B17-ATS	208.00	0.9659
B-B17-DP	208.00	0.9541	B-B17-EMERG	208.00	0.9655
B-B17-MAIN	208.00	0.9671	B-B17-NEB1	208.00	0.9613
B-B17-NEB2	208.00	0.9643	B-B17-NP11	208.00	0.9531
B-B17-NP12	208.00	0.9533	B-B17-NP21	208.00	0.9541
B-B17-NP22	208.00	0.9534	B-B17-NPA1	208.00	0.9537
B-B17-NPB1	208.00	0.9534	B-B17-NPB2	208.00	0.9534
B-B18-1STFL	208.00	0.9686	B-B18-1STFL-M	208.00	0.9691
B-B18-2ND-FL-M	208.00	0.9691	B-B18-2NDFL	208.00	0.9682
B-B18-AC1	208.00	0.9697	B-B18-AC2	208.00	0.9699
B-B18-ATS-EMRG	208.00	0.9695	B-B18-EMERG	208.00	0.9690
B-B18-EMERG-M	208.00	0.9691	B-B18-NCP	208.00	0.9708
B-B18-NMDP	208.00	0.9712	B-B18-NMDP-M	208.00	0.9713
B-B18-NP11	208.00	0.9697	B-B18-NP12	208.00	0.9697
B-B18-NP21	208.00	0.9699	B-B18-NP22	208.00	0.9698
B-B18-NP23	208.00	0.9678	B-B18-STRT LHT	208.00	0.9697
B-B18-TAP BOX	208.00	0.9691	B-B19-200A PNL	208.00	0.9588
B-B19-B1	208.00	0.9579	B-B19-L1	208.00	0.9433
B-B19-L2	208.00	0.9520	B-B19-MDP1	208.00	0.9586
B-B19-MDP1-M	208.00	0.9587	B-B19-MDP2	208.00	0.9595
B-B19-MDP2-M	208.00	0.9602	B-B19-MDPA	208.00	0.9503
B-B19-P1	208.00	0.9507	B-B19-P2	208.00	0.9497
B-B19-P4	208.00	0.9569	B-B19-P6	208.00	0.9020
B-B19-PS	208.00	0.9510	B-B2-ATS-CRIT	208.00	0.9743
B-B2-ATS-LED3	208.00	0.9200	B-B2-ATS-LS	208.00	0.9594
B-B2-BATTERYCH	208.00	0.9557	B-B2-CATSCAN	480.00	0.9616
B-B2-CRIT PNL	208.00	0.9740	B-B2-DENTAL LB	208.00	0.9731
B-B2-DENTSUCPM	208.00	0.9582	B-B2-ELEV	208.00	0.9584
B-B2-ELEV-P1	208.00	0.9721	B-B2-EMERG-M	208.00	0.9197
B-B2-EMERG-PNL	208.00	0.9197	B-B2-EPNL-B	208.00	0.9998

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
B-B2-EPNL-B-M	208.00	0.9998	B-B2-L12	208.00	0.9582
B-B2-L2A	208.00	0.9717	B-B2-L2E	208.00	0.9580
B-B2-L4	208.00	0.9574	B-B2-L6	208.00	0.9574
B-B2-L7	208.00	0.9574	B-B2-L8	208.00	0.9574
B-B2-L9E	208.00	0.9580	B-B2-LB1E	208.00	0.9580
B-B2-LB2	208.00	0.9574	B-B2-LB2E	208.00	0.9728
B-B2-LED-3	208.00	0.9218	B-B2-MDP	480.00	0.9676
B-B2-MDP-M	480.00	0.9677	B-B2-MDPA	208.00	0.9652
B-B2-MDPA-M	208.00	0.9654	B-B2-MDPB	208.00	0.9600
B-B2-MDPB-M	208.00	0.9604	B-B2-MEDAIRCOM	208.00	0.9728
B-B2-NEWLAB	208.00	0.9196	B-B2-NEWLAB-M	208.00	0.9196
B-B2-PNL 1	208.00	0.9197	B-B2-PNL LS	208.00	0.9589
B-B2-PNL-2	208.00	0.9199	B-B2-PNL-3-M	208.00	0.9197
B-B2-PNL-D2	208.00	0.9562	B-B2-PNL-L11	208.00	0.9729
B-B2-PNL-M1	208.00	0.9194	B-B2-PNL-P	480.00	0.9614
B-B2-POD2PP	208.00	0.9583	B-B2-TEL COMM	208.00	0.9591
B-B2-UNIT-1	480.00	0.9597	B-B2-UNIT-2	480.00	0.9605
B-B2-XRAY	208.00	0.9321	B-B2-XRAY-124	480.00	0.9570
B-B2-XRAY124	208.00	0.9584	B-B21-P1	208.00	0.9042
B-B21-P2	208.00	0.9310	B-B22-ATS-EMER	480.00	0.9725
B-B22-EMERG	480.00	0.9714	B-B22-EMERG-M	480.00	0.9714
B-B22-GEN	480.00	1.0000	B-B22-L1	208.00	0.9533
B-B22-L1-M	208.00	0.9534	B-B22-L2	208.00	0.9533
B-B22-L2-M	208.00	0.9534	B-B22-L3	208.00	0.9534
B-B22-L3-M	208.00	0.9534	B-B22-MDP	480.00	0.9739
B-B22-MDP-M	480.00	0.9739	B-B22-N1	208.00	0.9470
B-B22-N1-M	208.00	0.9470	B-B22-P1	480.00	0.9712
B-B22-P2	480.00	0.9712	B-B22-T1-PRI	480.00	0.9736
B-B22-T1-SEC	208.00	0.9491	B-B22-T2-PRI	480.00	0.9712
B-B22-T2-SEC	208.00	0.9541	B-B22-T22-SEC	208.00	0.9540
B-B22-T3 PRI	480.00	0.9712	B-B22-T4-PRI	480.00	0.9712
B-B22-T4-SEC	208.00	0.9540	B-B27-SWGR	13800.00	1.0000
B-B27-SWGR-M1	13800.00	1.0000	B-B3-1ST FL	208.00	0.9635
B-B3-ALDN KIT	208.00	0.9632	B-B3-ATS-COMP	208.00	0.9648
B-B3-ATSTEL RM	208.00	0.9646	B-B3-COMP	208.00	0.9634
B-B3-COMP AC	208.00	0.9632	B-B3-COMP MF	208.00	0.9635
B-B3-DBL GRILL	208.00	0.9622	B-B3-ELEV	208.00	0.9632
B-B3-EP1	208.00	0.9641	B-B3-EP1-M	208.00	0.9642
B-B3-EP2	208.00	0.9640	B-B3-EP2-M	208.00	0.9641
B-B3-FRZN FOOD	208.00	0.9552	B-B3-HYDRO ELV	208.00	0.9622

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
B-B3-KP1	208.00	0.9626	B-B3-MDP	208.00	0.9668
B-B3-MDP-M	208.00	0.9669	B-B3-MECH HVAC	208.00	0.9635
B-B3-MECH RM	208.00	0.9635	B-B3-P3	208.00	0.9644
B-B3-P7	208.00	0.9632	B-B3-STRT LTS	208.00	0.9552
B-B3-STRT PNL	208.00	0.9637	B-B3-TELE PNL	208.00	0.9633
B-B3-TRAY LINE	208.00	0.9634	B-B33-MDP	208.00	0.9671
B-B33-MDP-M	208.00	0.9672	B-B4-4EQD	208.00	0.9652
B-B4-4EQD-M	208.00	0.9652	B-B4-ATS-EQ	208.00	0.9659
B-B4-ATS-LS	208.00	0.9651	B-B4-BUS	208.00	0.9684
B-B4-ELEV#4	208.00	0.9643	B-B4-EQ1	208.00	0.9647
B-B4-EQ10	208.00	0.9642	B-B4-EQ11	208.00	0.9645
B-B4-EQ12	208.00	0.9641	B-B4-EQ15	208.00	0.9641
B-B4-EQ2	208.00	0.9650	B-B4-EQ3	208.00	0.9645
B-B4-EQ5	208.00	0.9645	B-B4-EQ6	208.00	0.9647
B-B4-EQ7	208.00	0.9643	B-B4-EQ9	208.00	0.9636
B-B4-HYDROELEV	208.00	0.9636	B-B4-JBOX	208.00	0.9670
B-B4-LP1	208.00	0.9630	B-B4-LP1-M	208.00	0.9630
B-B4-LP10	208.00	0.9601	B-B4-LP10-M	208.00	0.9601
B-B4-LP11	208.00	0.9620	B-B4-LP11-M	208.00	0.9620
B-B4-LP12	208.00	0.9620	B-B4-LP12-M	208.00	0.9620
B-B4-LP13	208.00	0.9601	B-B4-LP13-M	208.00	0.9601
B-B4-LP14	208.00	0.9585	B-B4-LP14-M	208.00	0.9585
B-B4-LP15	208.00	0.9635	B-B4-LP15-M	208.00	0.9636
B-B4-LP2	208.00	0.9644	B-B4-LP2-M	208.00	0.9644
B-B4-LP3	208.00	0.9644	B-B4-LP3-M	208.00	0.9644
B-B4-LP4	208.00	0.9628	B-B4-LP4-M	208.00	0.9628
B-B4-LP5	208.00	0.9608	B-B4-LP5-M	208.00	0.9609
B-B4-LP6	208.00	0.9628	B-B4-LP6-M	208.00	0.9628
B-B4-LP7	208.00	0.9628	B-B4-LP7-M	208.00	0.9628
B-B4-LP8	208.00	0.9608	B-B4-LP8-M	208.00	0.9609
B-B4-LP9	208.00	0.9593	B-B4-LP9-M	208.00	0.9593
B-B4-LS1	208.00	0.9640	B-B4-LS1-M	208.00	0.9640
B-B4-LS10	208.00	0.9630	B-B4-LS10-M	208.00	0.9630
B-B4-LS11	208.00	0.9633	B-B4-LS11-M	208.00	0.9633
B-B4-LS12	208.00	0.9635	B-B4-LS12-M	208.00	0.9636
B-B4-LS13	208.00	0.9636	B-B4-LS13-M	208.00	0.9636
B-B4-LS14	208.00	0.9638	B-B4-LS14-M	208.00	0.9638
B-B4-LS2	208.00	0.9642	B-B4-LS2-M	208.00	0.9642
B-B4-LS3	208.00	0.9645	B-B4-LS3-M	208.00	0.9645
B-B4-LS4	208.00	0.9642	B-B4-LS4-M	208.00	0.9642

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
B-B4-LS5	208.00	0.9631	B-B4-LS5-M	208.00	0.9631
B-B4-LS6	208.00	0.9634	B-B4-LS6-M	208.00	0.9634
B-B4-LS7	208.00	0.9637	B-B4-LS7-M	208.00	0.9637
B-B4-LS8	208.00	0.9637	B-B4-LS8-M	208.00	0.9638
B-B4-LS9	208.00	0.9639	B-B4-LS9-M	208.00	0.9639
B-B4-LSD	208.00	0.9647	B-B4-LSD-M	208.00	0.9647
B-B4-MDP	208.00	0.9663	B-B4-MDP-M	208.00	0.9664
B-B4-PP1	208.00	0.9648	B-B4-PP2	208.00	0.9635
B-B4-PP2-M	208.00	0.9636	B-B5-ATS-EQ	208.00	0.9669
B-B5-ATS-LS	208.00	0.9665	B-B5-EQ1	208.00	0.9654
B-B5-EQ2	208.00	0.9653	B-B5-EQ5	208.00	0.9654
B-B5-EQ6	208.00	0.9650	B-B5-EQD	208.00	0.9666
B-B5-HYDR ELEV	208.00	0.9657	B-B5-LP1	208.00	0.9678
B-B5-LP1-M	208.00	0.9679	B-B5-LP2	208.00	0.9669
B-B5-LP2-M	208.00	0.9669	B-B5-LP3	208.00	0.9674
B-B5-LP3-M	208.00	0.9674	B-B5-LP4	208.00	0.9664
B-B5-LP4-M	208.00	0.9664	B-B5-LP5	208.00	0.9678
B-B5-LP5-M	208.00	0.9678	B-B5-LS1	208.00	0.9643
B-B5-LS2	208.00	0.9605	B-B5-LS4	208.00	0.9589
B-B5-LSD	208.00	0.9660	B-B5-LSD-M	208.00	0.9660
B-B5-MDP	208.00	0.9693	B-B5-MDP-M	208.00	0.9694
B-B5-NEXTEL	208.00	0.9671	B-B5-PNL-H	208.00	0.9680
B-B5-PNL-H-M	208.00	0.9680	B-B5-STRT LGHT	208.00	0.9678
B-B5-TEMP TRAI	208.00	0.9666	B-B55-LS3	208.00	0.9627
B-B6-ATS-EQ	208.00	0.9716	B-B6-ATS-LS	208.00	0.9717
B-B6-EQ1	208.00	0.9706	B-B6-EQ2	208.00	0.9702
B-B6-EQ3	208.00	0.9704	B-B6-EQ4	208.00	0.9699
B-B6-EQ5	208.00	0.9700	B-B6-EQ8	208.00	0.9699
B-B6-EQD	208.00	0.9709	B-B6-EQD-M	208.00	0.9710
B-B6-EQMACH	208.00	0.9707	B-B6-LP1	208.00	0.9705
B-B6-LP1-M	208.00	0.9705	B-B6-LP2	208.00	0.9711
B-B6-LP2-M	208.00	0.9711	B-B6-LP3	208.00	0.9708
B-B6-LP3-M	208.00	0.9708	B-B6-LP4	208.00	0.9710
B-B6-LP4-M	208.00	0.9710	B-B6-LP5	208.00	0.9702
B-B6-LP5-M	208.00	0.9703	B-B6-LP6	208.00	0.9704
B-B6-LP6-M	208.00	0.9704	B-B6-LP7	208.00	0.9725
B-B6-LP7-M	208.00	0.9725	B-B6-LS1	208.00	0.9703
B-B6-LS2	208.00	0.9709	B-B6-LS3	208.00	0.9703
B-B6-LS4	208.00	0.9703	B-B6-LS5	208.00	0.9698
B-B6-LS6	208.00	0.9698	B-B6-LSD	208.00	0.9712

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
B-B6-LSD-M	208.00	0.9712	B-B6-MACH SHOP	208.00	0.9700
B-B6-MDP	208.00	0.9734	B-B6-MDP-M	208.00	0.9735
B-B6-P6-CS	208.00	0.9714	B-B60-MDP	208.00	0.9675
B-B60-MDP-M	208.00	0.9676	B-B61 STRT LGH	208.00	0.9639
B-B61-ATS-EQD	208.00	0.9639	B-B61-ATS-LSD	208.00	0.9643
B-B61-COMP RM	208.00	0.9629	B-B61-DP	208.00	0.9577
B-B61-ELEV	208.00	0.9621	B-B61-EQ1	208.00	0.9621
B-B61-EQ2	208.00	0.9630	B-B61-EQ4	208.00	0.9628
B-B61-EQA	208.00	0.9632	B-B61-EQD	208.00	0.9633
B-B61-KITCHEN	208.00	0.9636	B-B61-LP1	208.00	0.9583
B-B61-LP2	208.00	0.9583	B-B61-LP3	208.00	0.9618
B-B61-LP4	208.00	0.9627	B-B61-LP5	208.00	0.9634
B-B61-LS1	208.00	0.9635	B-B61-LS2	208.00	0.9637
B-B61-LS3	208.00	0.9630	B-B61-LS4	208.00	0.9632
B-B61-LS5	208.00	0.9630	B-B61-LSD	208.00	0.9640
B-B61-LSD-M	208.00	0.9640	B-B61-MCC	208.00	0.9639
B-B61-MDP	208.00	0.9653	B-B61-MDP-M	208.00	0.9654
B-B62-A	208.00	0.9750	B-B62-ATS-EQD	208.00	0.9755
B-B62-ATS-LSD	208.00	0.9755	B-B62-ATTC PNL	208.00	0.9742
B-B62-B	208.00	0.9750	B-B62-BL	208.00	0.9746
B-B62-BP	208.00	0.9742	B-B62-ELEV-1	208.00	0.9732
B-B62-ELEV-2	208.00	0.9742	B-B62-EQ	208.00	0.9747
B-B62-EQD	208.00	0.9748	B-B62-KP	208.00	0.9747
B-B62-LP1	208.00	0.9748	B-B62-LP2	208.00	0.9744
B-B62-LP3	208.00	0.9740	B-B62-LP4	208.00	0.9746
B-B62-LS1	208.00	0.9735	B-B62-LS2	208.00	0.9742
B-B62-LS3	208.00	0.9733	B-B62-LS4	208.00	0.9740
B-B62-LSD	208.00	0.9748	B-B62-LSD-M	208.00	0.9748
B-B62-MDP	208.00	0.9765	B-B62-MDP-M	208.00	0.9766
B-B62-OT	208.00	0.9754	B-B62-PAD RM	208.00	0.9745
B-B62-STRT LGT	208.00	0.9750	B-B7-ATS-EQ	208.00	0.9683
B-B7-ATS-LS	208.00	0.9682	B-B7-ELEV	208.00	0.9667
B-B7-EQ1	208.00	0.9668	B-B7-EQ2	208.00	0.9672
B-B7-EQ4	208.00	0.9668	B-B7-EQD	208.00	0.9674
B-B7-LP2	208.00	0.9684	B-B7-LP2-M	208.00	0.9684
B-B7-LP3	208.00	0.9663	B-B7-LP3-M	208.00	0.9663
B-B7-LP4	208.00	0.9680	B-B7-LP4-M	208.00	0.9680
B-B7-LP5	208.00	0.9663	B-B7-LP5-M	208.00	0.9663
B-B7-LP6	208.00	0.9660	B-B7-LP6-M	208.00	0.9660
B-B7-LP7	208.00	0.9677	B-B7-LP7-M	208.00	0.9677

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
B-B7-LP8	208.00	0.9660	B-B7-LP8-M	208.00	0.9660
B-B7-LS1	208.00	0.9673	B-B7-LS2	208.00	0.9677
B-B7-LS4	208.00	0.9672	B-B7-LS5	208.00	0.9676
B-B7-LSD	208.00	0.9681	B-B7-LSD-M	208.00	0.9681
B-B7-MCC-1	208.00	0.9672	B-B7-MCC-2	208.00	0.9681
B-B7-MDP	208.00	0.9692	B-B7-MDP-M	208.00	0.9693
B-B7-SRTLGHT-M	208.00	0.9669	B-B7-STRT LGHT	208.00	0.9669
B-B70 -BLDG-71	208.00	0.9397	B-B70 GEN-M	208.00	1.0000
B-B70-A	208.00	0.9535	B-B70-ATS-EQD	208.00	0.9544
B-B70-ATS-LSD	208.00	0.9543	B-B70-ATTIC	208.00	0.9530
B-B70-B	208.00	0.9535	B-B70-CHLLR	208.00	0.9485
B-B70-EM-TAP	208.00	1.0000	B-B70-EQ1	208.00	0.9522
B-B70-EQ2	208.00	0.9506	B-B70-EQ3	208.00	0.9518
B-B70-EQ4	208.00	0.9501	B-B70-EQ5	208.00	0.9515
B-B70-EQ6	208.00	0.9497	B-B70-EQD	208.00	0.9542
B-B70-EQD-M	208.00	0.9542	B-B70-FIRE PMP	208.00	0.9005
B-B70-FP-TAP	208.00	0.9579	B-B70-FPMP M	208.00	0.9563
B-B70-GEN	208.00	1.0000	B-B70-K	208.00	0.9537
B-B70-LP-4	208.00	0.9509	B-B70-LP1	208.00	0.9509
B-B70-LP3	208.00	0.9527	B-B70-LS1	208.00	0.9531
B-B70-LS2	208.00	0.9527	B-B70-LS3	208.00	0.9528
B-B70-LS4	208.00	0.9519	B-B70-LS5	208.00	0.9526
B-B70-LS6	208.00	0.9517	B-B70-LSD	208.00	0.9542
B-B70-LSD-M	208.00	0.9542	B-B70-MDP	208.00	0.9548
B-B70-MDP-M	208.00	0.9549	B-B70-PP2	208.00	0.9528
B-B70-PP220	208.00	0.9512	B-B70-STRTLGHT	208.00	0.9538
B-B78-1P	208.00	0.9435	B-B78-78AE1	208.00	0.9509
B-B78-A/C	208.00	0.9409	B-B78-ATS TAP	208.00	0.9517
B-B78-ATS-CRD	208.00	0.9456	B-B78-ATS-E1	208.00	0.9393
B-B78-ATS-LS1	208.00	0.9506	B-B78-ATSG9578	208.00	0.9511
B-B78-BARBER	208.00	0.9449	B-B78-CONRM-AC	208.00	0.9410
B-B78-CRD	208.00	0.9360	B-B78-E1	208.00	0.9389
B-B78-ELEV-1	208.00	0.9520	B-B78-ELEV-2	208.00	0.9520
B-B78-FLPNL	208.00	0.9410	B-B78-KK	208.00	0.9443
B-B78-L10	208.00	0.9431	B-B78-LP-1	208.00	0.9416
B-B78-LP-13	208.00	0.9418	B-B78-LP-14	208.00	0.9404
B-B78-LP-15	208.00	0.9391	B-B78-LP-2	208.00	0.9491
B-B78-LP-4	208.00	0.9301	B-B78-LP-8	208.00	0.9495
B-B78-LP10	208.00	0.9379	B-B78-LP13	208.00	0.9361
B-B78-LP3	208.00	0.9476	B-B78-LP6	208.00	0.9453

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
B-B78-LP7	208.00	0.9398	B-B78-LSD	208.00	0.9503
B-B78-MDP	208.00	0.9562	B-B78-MDP-M	208.00	0.9563
B-B78-MEC-1 AC	208.00	0.9378	B-B78-MEC2-A/C	208.00	0.9501
B-B78-PHARM AC	208.00	0.9449	B-B78-PHV	208.00	0.9429
B-B78-PK	208.00	0.9420	B-B78-PNL-330A	208.00	0.9493
B-B78-PULM 78B	208.00	0.9536	B-B78-QP	208.00	0.9508
B-B78A-PNL-2	208.00	0.9539	B-B8 2ND FLR	208.00	0.9734
B-B8 HYDRO ELV	480.00	0.9655	B-B8-208V-MAIN	208.00	0.9768
B-B8-480V ATS	480.00	0.9766	B-B8-480V PNL	480.00	0.9761
B-B8-ATS	208.00	0.9747	B-B8-BS	208.00	0.9692
B-B8-CMOP	208.00	0.9401	B-B8-COMP	480.00	0.9641
B-B8-FDR	208.00	0.9420	B-B8-FLEXPMACH	480.00	0.9719
B-B8-GE BKR	480.00	0.9771	B-B8-GEN	480.00	1.0000
B-B8-J-BOX	208.00	0.9399	B-B8-L8B	208.00	0.9723
B-B8-LB1	208.00	0.9702	B-B8-LB2	208.00	0.9695
B-B8-MAIN BUS	208.00	0.9761	B-B8-MDP-8	208.00	0.9758
B-B8-PNL-PK	208.00	0.9750	B-B8-PP1	208.00	0.9754
B-B8-PP1-M	208.00	0.9754	B-B8-SYLV	208.00	0.9752
B-B8-TXMR PRI	480.00	0.9758	B-B8-TXMR SEC	208.00	0.9438
B-B80-ATS-EQ	208.00	0.9681	B-B80-E1	208.00	0.9663
B-B80-L1-1	208.00	0.9641	B-B80-L1-3	208.00	0.9670
B-B80-LB-1	208.00	0.9696	B-B80-LB-E	208.00	0.9634
B-B80-MDP	208.00	0.9729	B-B80-MDP-M	208.00	0.9748
B-B80-P1	208.00	0.9700	B-B80-P5	208.00	0.9558
B-B80-PB-1	208.00	0.9662	B-B80-PB-2	208.00	0.9646
B-B81-MDP	208.00	0.9599	B-B81-MDP-M	208.00	0.9600
B-B82-EMER	208.00	0.9629	B-B82-EMERG-M	208.00	0.9630
B-B82-MDP	208.00	0.9683	B-B82-MDP-M	208.00	0.9684
B-B9-*PNLXX	208.00	0.9671	B-B9-*PNLYY	208.00	0.9658
B-B9-*PNLZZ	208.00	0.9677	B-B9-ATS BKR	208.00	0.9688
B-B9-EM	208.00	0.9686	B-B9-L91A	208.00	0.9616
B-B9-L91A-M	208.00	0.9616	B-B9-L92	208.00	0.9640
B-B9-L9A	208.00	0.9654	B-B9-L9B	208.00	0.9682
B-B9-LPN	208.00	0.9553	B-B9-LPS	208.00	0.9639
B-B9-MAIN	208.00	0.9716	B-B9-MDP	208.00	0.9693
B-B9-STRT LGHT	208.00	0.9673	B-B9-TAP	208.00	0.9679
B-B92 GEN	208.00	1.0000	B-B92-ATS	208.00	0.9534
B-B92-EMDP	208.00	0.9998	B-B92-EMDP-M	208.00	0.9998
B-B92-PNL-E1	208.00	0.9522	B-B93-EMDP	208.00	1.0000
B-B93-EMDP-M	208.00	1.0000	B-B93-EMDP1	208.00	1.0000
B-B93-GEN	208.00	1.0000	B-B94-ATS	208.00	0.9657

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
B-B94-EMDP	208.00	1.0000	B-B94-EMDP-M	208.00	1.0000
B-B94-GEN	208.00	1.0000	B-B95-EMDP	208.00	1.0000
B-B95-EMDP-M	208.00	1.0000	B-B95-GEN	208.00	1.0000
B-SW-MV-1	13800.00	0.9975	B-SW-MV-2	13800.00	0.9986
B-SWGR27 TAP	13800.00	1.0000	B-T-13-PRI	13800.00	0.9965
B-T-B1-PRI	13800.00	0.9980	B-T-B1-SEC	208.00	0.9672
B-T-B10-PRI	13800.00	0.9967	B-T-B10-SEC	208.00	0.9723
B-T-B12-PRI	13800.00	0.9965	B-T-B12-SEC	208.00	0.9641
B-T-B17-PRI	13800.00	0.9973	B-T-B17-SEC	208.00	0.9749
B-T-B18-PRI	13800.00	0.9972	B-T-B18-SEC	208.00	0.9742
B-T-B19-PRI	13800.00	0.9990	B-T-B19-SEC	208.00	0.9632
B-T-B2-LED-PRI	480.00	0.9632	B-T-B2-LED-SEC	208.00	0.9229
B-T-B2-PRI	13800.00	0.9981	B-T-B2-SEC2	208.00	0.9657
B-T-B2-SEC3	208.00	0.9661	B-T-B2-SEC4	480.00	0.9680
B-T-B22-PRI	13800.00	0.9994	B-T-B22-SEC	480.00	0.9802
B-T-B3-PRI	13800.00	0.9971	B-T-B3-SEC	208.00	0.9704
B-T-B30-PRI	13800.00	0.9976	B-T-B30-SEC	208.00	0.9976
B-T-B33-PRI	13800.00	0.9997	B-T-B33-SEC	208.00	0.9757
B-T-B4-PRI	13800.00	0.9986	B-T-B4-SEC	208.00	0.9709
B-T-B5-PRI	13800.00	0.9975	B-T-B5-SEC	208.00	0.9789
B-T-B6-PRI	13800.00	0.9976	B-T-B6-SEC	208.00	0.9790
B-T-B60-PRI	13800.00	0.9973	B-T-B60-SEC	208.00	0.9703
B-T-B61-PRI	13800.00	0.9980	B-T-B61-SEC	208.00	0.9690
B-T-B62-PRI	13800.00	0.9982	B-T-B62-SEC	208.00	0.9795
B-T-B7-PRI	13800.00	0.9977	B-T-B7-SEC	208.00	0.9833
B-T-B70-PRI	13800.00	0.9978	B-T-B70-SEC	208.00	0.9613
B-T-B78-PRI	13800.00	0.9969	B-T-B78-SEC	208.00	0.9567
B-T-B8-PRI	13800.00	0.9983	B-T-B8-SEC	208.00	0.9796
B-T-B80-PRI	13800.00	0.9986	B-T-B80-SEC	208.00	0.9767
B-T-B81-PRI	13800.00	0.9965	B-T-B81-SEC	208.00	0.9643
B-T-B82-PRI	13800.00	0.9987	B-T-B82-SEC	208.00	0.9716
B-T-B9-PRI	13800.00	0.9966	B-T-B9-SEC	208.00	0.9760
B0B70-LP2	208.00	0.9525	BUS-0017	13800.00	0.9993
BUS-0019	13800.00	0.9984	BUS-0063	13800.00	0.9984
BUS-0065	13800.00	0.9973	BUS-0076	208.00	0.9200
BUS-0091	208.00	0.9534	BUS-0097*	208.00	0.9600
BUS-0106*	208.00	0.9595	BUS-0117	208.00	0.9743
BUS-0131	208.00	0.9646	BUS-0140	208.00	0.9648
BUS-0172*	208.00	0.9652	BUS-0227	208.00	0.9659
BUS-0258*	208.00	0.9669	BUS-0269	208.00	0.9665

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
BUS-0290	208.00	0.9717	BUS-0302	208.00	0.9716
BUS-0327	208.00	0.9683	BUS-0344	208.00	0.9683
BUS-0360	208.00	0.9657	BUS-0375	208.00	0.9748
BUS-0376	208.00	0.9752	BUS-0378	480.00	0.9793
BUS-0380	480.00	0.9767	BUS-0423	208.00	0.9659
BUS-0452	208.00	0.9695	BUS-0481	480.00	0.9725
BUS-0518	208.00	0.9643	BUS-0520	208.00	0.9640
BUS-0546	208.00	0.9756	BUS-0554	208.00	0.9756
BUS-0581	208.00	0.9543	BUS-0582	208.00	0.9545
BUS-0612	208.00	1.0000	BUS-0613	208.00	1.0000
BUS-0618	208.00	0.9511	BUS-0620	208.00	0.9506
BUS-0652	208.00	0.9456	BUS-0664	208.00	0.9681
BUS-0676	208.00	0.9998	BUS-0677	208.00	0.9998
BUS-0678	208.00	0.9998	BUS-0680	208.00	0.9998
BUS-0685	208.00	1.0000	BUS-0688	208.00	1.0000
BUS-0689	208.00	1.0000	BUS-0691	208.00	1.0000
BUS-0692	208.00	1.0000	BUS-0694	208.00	1.0000
BUS-0695	208.00	1.0000	BUS-0700	208.00	1.0000
BUS-0701	208.00	1.0000	BUS-0702	208.00	1.0000
BUS-0703	208.00	1.0000	BUS-0704	208.00	1.0000
BUS-0705	208.00	1.0000	BUS-0706	208.00	1.0000
BUS-0707	208.00	1.0000	BUS-0708	208.00	1.0000
BUS-0712	208.00	1.0000	BUS-0713	208.00	1.0000
BUS-0714	208.00	1.0000	BUS-0715	208.00	1.0000
BUS-0718	208.00	1.0000	BUS-0719	208.00	1.0000
BUS-0722	208.00	0.9998	BUS-0723	208.00	0.9998
BUS-0725	480.00	1.0000	BUS-0727	480.00	1.0000
BUS-0730	208.00	0.9393	bB-B7-MC1	208.00	0.9649

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B1-MDP-M	B-B1-MDP	FDR	0.24	173.00	60.15	54.06
B-B10 DISC	B-B10-MDP	FDR	0.26	172.14	60.16	59.36
B-B12-MAP-M	B-B12-MDP	FDR	0.01	173.43	60.00	43.36
B-B13-MDP	B-B13-GARAGE	FDR	0.73	70.54	27.80	31.35
B-B13-MDP	B-B13-MGR H16	FDR	2.07	71.56	28.21	31.81
B-B13-MDP	B-B13-APT-15	FDR	1.34	141.98	55.96	29.89
B-B13-MDP	B-B13-APT-14	FDR	0.71	141.03	55.58	32.80
B-B13-MDP	B-B13-APT-13	FDR	0.21	43.84	17.28	25.79

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B13-MDP	B-B13-UNKNOWN	FDR	0.21	43.84	17.28	25.79
B-B13-MDP-M	B-B13-MDP	FDR	0.01	512.79	202.12	51.28
B-B13-TXMR SEC	B-B13-MDP-M	FDR	1.29	512.79	204.87	134.94
B-B17-ATS	BUS-0423		0.00	73.87	25.71	UNKNOWN
B-B17-ATS	B-B17-EMERG	FDR	0.03	73.87	25.71	43.45
B-B17-DP	B-B17-NP11	FDR	0.10	13.40	4.60	17.86
B-B17-DP	B-B17-NP21	FDR	0.00	0.00	0.00	0.00
B-B17-DP	B-B17-ACB	FDR	0.11	22.34	7.68	23.52
B-B17-DP	B-B17-AC1	FDR	0.07	22.33	7.68	17.18
B-B17-DP	B-B17-NPA1	FDR	0.04	13.39	4.60	10.30
B-B17-DP	B-B17-NP12	FDR	0.08	50.26	17.27	22.34
B-B17-DP	B-B17-A/C	FDR	0.07	50.25	17.27	19.33
B-B17-DP	B-B17-NPB2	FDR	0.07	20.09	6.90	15.45
B-B17-DP	B-B17-A/C-2	FDR	0.07	22.33	7.68	17.18
B-B17-DP	B-B17-NP22	FDR	0.07	22.33	7.68	17.18
B-B17-DP	B-B17-NPB1	FDR	0.07	39.07	13.43	20.04
B-B17-EMERG	B-B17-NEB2	FDR	0.13	17.01	5.92	17.91
B-B17-EMERG	B-B17-NEB1	FDR	0.42	28.44	9.89	21.88
B-B17-EMERG	B-B17-ANIMALRM	FDR	0.35	28.42	9.89	21.86
B-B17-MAIN	BUS-0423	FDR	0.12	73.87	25.74	43.45
B-B17-MAIN	B-B17-DP	FDR	1.30	275.78	96.09	86.18
B-B18-1STFL-M	B-B18-1STFL	FDR	0.04	13.64	4.76	10.49
B-B18-2ND-FL-M	B-B18-2NDFL	FDR	0.09	13.65	4.76	10.50
B-B18-ATS-EMRG	BUS-0452		0.00	40.92	14.29	UNKNOWN
B-B18-ATS-EMRG	B-B18-TAP BOX	FDR	0.04	40.92	14.29	24.07
B-B18-EMERG-M	B-B18-EMERG	FDR	0.00	13.63	4.76	6.06
B-B18-NMDP	B-B18-NP11	FDR	0.15	24.53	8.58	25.82
B-B18-NMDP	B-B18-AC1	FDR	0.15	24.53	8.58	25.82
B-B18-NMDP	B-B18-NCP	FDR	0.04	27.22	9.52	20.94
B-B18-NMDP	B-B18-NP22	FDR	0.14	40.90	14.31	24.06
B-B18-NMDP	B-B18-NP23	FDR	0.34	54.63	19.12	57.51
B-B18-NMDP	B-B18-NP12	FDR	0.15	24.53	8.58	25.82
B-B18-NMDP	B-B18-NP21	FDR	0.13	27.25	9.53	28.68
B-B18-NMDP	BUS-0452	FDR	0.17	40.92	14.32	31.48
B-B18-NMDP	B-B18-AC2	FDR	0.13	54.52	19.08	27.96
B-B18-NMDP	B-B18-STRT LHT	FDR	0.15	24.53	8.58	25.82
B-B18-NMDP-M	B-B18-NMDP	FDR	0.01	343.56	120.22	57.26
B-B18-TAP BOX	B-B18-2ND-FL-M	FDR	0.01	13.65	4.76	10.50
B-B18-TAP BOX	B-B18-1STFL-M	FDR	0.01	13.64	4.76	10.49
B-B18-TAP BOX	B-B18-EMERG-M	FDR	0.01	13.63	4.76	10.49

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B19-MDP1	B-B19-PS	FDR	0.76	46.47	16.05	35.74
B-B19-MDP1	B-B19-L1	FDR	1.54	46.85	16.18	36.04
B-B19-MDP1	B-B19-B1	FDR	0.08	46.13	15.93	27.14
B-B19-MDP1	B-B19-L2	FDR	0.66	69.63	24.05	40.96
B-B19-MDP1	B-B19-MDPA	FDR	0.83	195.97	67.68	45.57
B-B19-MDP1	B-B19-P1	FDR	0.80	185.93	64.21	43.24
B-B19-MDP1	B-B19-P4	FDR	0.17	103.91	35.89	61.12
B-B19-MDP1	B-B19-P2	FDR	0.89	93.06	32.14	54.74
B-B19-MDP1-M	B-B19-MDP1	FDR	0.01	787.92	272.14	65.66
B-B19-MDP2	B-B21-P2	FDR	2.85	204.67	70.75	90.97
B-B19-MDP2	B-B19-200A PNL	FDR	0.08	193.01	66.72	85.78
B-B19-MDP2-M	B-B19-MDP2	FDR	0.07	397.68	137.57	92.48
B-B19-MDPA	B-B19-P6	FDR	4.83	195.97	67.09	150.75
B-B2-ATS-CRIT	B-B2-CRIT PNL	FDR	0.03	128.02	44.93	28.45
B-B2-ATS-CRIT	BUS-0117		0.00	128.02	44.93	UNKNOWN
B-B2-ATS-LED3	BUS-0076		0.00	181.06	60.01	UNKNOWN
B-B2-ATS-LED3	B-B2-EMERG-M	FDR	0.03	46.72	15.48	20.76
B-B2-ATS-LED3	B-B2-PNL 1	FDR	0.03	46.72	15.48	20.76
B-B2-ATS-LED3	B-B2-NEWLAB-M	FDR	0.04	40.90	13.56	20.97
B-B2-ATS-LED3	B-B2-PNL-2	FDR	0.01	19.85	6.58	20.90
B-B2-ATS-LED3	B-B2-PNL-3-M	FDR	0.03	26.87	8.91	20.67
B-B2-ATS-LS	BUS-0106*		0.00	129.94	44.91	UNKNOWN
B-B2-ATS-LS	B-B2-PNL LS	FDR	0.05	129.94	44.91	28.88
B-B2-CRIT PNL	B-B2-LB2E	FDR	0.12	14.21	4.99	10.93
B-B2-CRIT PNL	B-B2-L2A	FDR	0.23	28.48	9.99	21.91
B-B2-CRIT PNL	B-B2-MEDAIRCOM	FDR	0.12	14.21	4.99	10.93
B-B2-CRIT PNL	B-B2-ELEV-P1	FDR	0.19	28.47	9.99	10.95
B-B2-CRIT PNL	B-B2-DENTAL LB	FDR	0.09	14.21	4.98	10.93
B-B2-CRIT PNL	B-B2-PNL-L11	FDR	0.11	28.45	9.98	12.64
B-B2-EMERG-M	B-B2-EMERG-PNL	FDR	0.00	46.72	15.48	20.76
B-B2-EPNL-B	BUS-0722	FDR	0.00	0.00	0.00	0.00
B-B2-EPNL-B	BUS-0723	FDR	0.00	0.00	0.00	0.00
B-B2-EPNL-B-M	B-B2-EPNL-B	FDR	0.00	0.00	0.00	0.00
B-B2-LED-3	BUS-0076	FDR	0.17	181.06	60.13	92.85
B-B2-MDP	B-B2-CATSCAN	FDR	0.61	155.96	125.47	91.74
B-B2-MDP	B-T-B2-LED-PRI	FDR	0.44	78.46	63.12	60.35
B-B2-MDP	B-B2-PNL-P	FDR	0.62	209.99	168.94	48.84
B-B2-MDP	B-B2-XRAY-124	FDR	1.06	116.88	94.03	44.95
B-B2-MDP-M	B-B2-MDP	FDR	0.00	561.29	451.56	46.77
B-B2-MDPA	BUS-0091	FDR	1.18	69.96	24.33	41.15

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B2-MDPA	B-B2-PNL-D2	FDR	0.90	278.67	96.90	64.81
B-B2-MDPA-M	B-B2-MDPA	FDR	0.03	348.63	121.26	49.80
B-B2-MDPB	BUS-0097*	FDR	0.00	0.00	0.00	0.00
B-B2-MDPB	BUS-0106*	FDR	0.05	129.94	44.94	28.88
B-B2-MDPB	B-B2-LB2	FDR	0.26	65.03	22.49	28.90
B-B2-MDPB	B-B2-L6	FDR	0.26	65.03	22.49	28.90
B-B2-MDPB	B-B2-L7	FDR	0.26	65.03	22.49	28.90
B-B2-MDPB	B-B2-L8	FDR	0.26	65.03	22.49	28.90
B-B2-MDPB	B-B2-L4	FDR	0.26	65.03	22.49	28.90
B-B2-MDPB	B-B2-XRAY	FDR	2.78	66.79	23.10	222.64
B-B2-MDPB	B-B2-XRAY124	FDR	0.15	22.73	7.86	15.16
B-B2-MDPB	B-B2-TEL COMM	FDR	0.09	22.72	7.86	10.10
B-B2-MDPB-M	B-B2-MDPB	FDR	0.04	567.33	196.30	81.05
B-B2-NEWLAB-M	B-B2-NEWLAB	FDR	0.00	40.90	13.55	18.18
B-B2-PNL LS	B-B2-L2E	FDR	0.10	17.04	5.89	10.02
B-B2-PNL LS	B-B2-L12	FDR	0.07	17.03	5.88	7.57
B-B2-PNL LS	B-B2-DENTSUCPM	FDR	0.07	8.52	2.94	6.55
B-B2-PNL LS	B-B2-L9E	FDR	0.10	17.04	5.89	10.02
B-B2-PNL LS	B-B2-LB1E	FDR	0.10	17.04	5.89	10.02
B-B2-PNL LS	B-B2-ELEV	FDR	0.05	19.17	6.62	7.37
B-B2-PNL LS	B-B2-POD2PP	FDR	0.06	17.03	5.88	6.55
B-B2-PNL LS	B-B2-BATTERYCH	FDR	0.32	17.08	5.90	22.77
B-B2-PNL-3-M	B-B2-PNL-M1	FDR	0.03	26.87	8.90	20.67
B-B2-PNL-P	B-B2-UNIT-1	FDR	0.17	105.04	83.96	53.87
B-B2-PNL-P	B-B2-UNIT-2	FDR	0.09	104.95	83.89	53.82
B-B21-P2	B-B21-P1	FDR	2.69	204.67	68.65	157.44
B-B22-ATS-EMER	BUS-0481		0.01	142.40	115.13	UNKNOWN
B-B22-ATS-EMER	B-B22-EMERG-M	FDR	0.11	142.40	115.13	33.12
B-B22-EMERG	B-B22-P1	FDR	0.02	28.16	22.74	10.83
B-B22-EMERG	B-B22-P2	FDR	0.02	28.16	22.74	10.83
B-B22-EMERG	B-B22-T2-PRI	FDR	0.01	28.69	23.17	16.88
B-B22-EMERG	B-B22-T3 PRI	FDR	0.02	28.69	23.17	16.88
B-B22-EMERG	B-B22-T4-PRI	FDR	0.02	28.69	23.17	16.88
B-B22-EMERG-M	B-B22-EMERG	FDR	0.00	142.40	115.00	63.29
B-B22-GEN	BUS-0727	FDR	0.00	0.00	0.00	0.00
B-B22-L1-M	B-B22-L1	FDR	0.00	66.21	22.74	29.43
B-B22-L2-M	B-B22-L2	FDR	0.00	66.21	22.74	29.43
B-B22-L3-M	B-B22-L3	FDR	0.00	66.20	22.74	29.42
B-B22-MDP	BUS-0481	FDR	0.13	142.40	115.29	33.12
B-B22-MDP	B-B22-T1-PRI	FDR	0.02	84.24	68.20	32.40

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B22-MDP-M	B-B22-MDP	FDR	0.00	226.63	183.50	28.33
B-B22-N1-M	B-B22-N1	FDR	0.01	194.40	66.32	48.60
B-B22-T1-PRI	B-B22-T1-SEC	TX2	2.45	84.24	68.19	60.61
B-B22-T1-SEC	B-B22-N1-M	FDR	0.21	194.40	66.47	45.21
B-B22-T2-PRI	B-B22-T2-SEC	TX2	1.71	28.69	23.17	30.89
B-B22-T2-SEC	B-B22-L3-M	FDR	0.07	66.20	22.76	25.46
B-B22-T22-SEC	B-B22-L2-M	FDR	0.07	66.21	22.76	25.47
B-B22-T3 PRI	B-B22-T22-SEC	TX2	1.71	28.69	23.17	30.89
B-B22-T4-PRI	B-B22-T4-SEC	TX2	1.71	28.69	23.17	30.89
B-B22-T4-SEC	B-B22-L1-M	FDR	0.07	66.21	22.76	25.47
B-B27-SWGR	B-T-B8-PRI	FDR	0.17	60.50	1445.99	25.21
B-B27-SWGR	BUS-0017	FDR	0.07	61.37	1466.97	25.57
B-B27-SWGR	B-T-B33-PRI	FDR	0.03	54.83	1310.51	22.84
B-B27-SWGR	BUS-0063	FDR	0.16	71.93	1719.35	29.97
B-B27-SWGR-M1	B-SWGR27 TAP	FDR	0.00	248.63	5942.76	20.72
B-B3-ATS-COMP	BUS-0140		0.00	153.68	53.42	UNKNOWN
B-B3-ATS-COMP	B-B3-EP2-M	FDR	0.07	153.68	53.42	35.74
B-B3-ATSTEL RM	BUS-0131		0.00	153.74	53.43	UNKNOWN
B-B3-ATSTEL RM	B-B3-EP1-M	FDR	0.04	153.74	53.43	32.37
B-B3-EP1	B-B3-TELE PNL	FDR	0.08	40.69	14.13	15.65
B-B3-EP1	B-B3-KP1	FDR	0.15	40.72	14.14	15.66
B-B3-EP1	B-B3-P7	FDR	0.09	18.07	6.28	13.90
B-B3-EP1	B-B3-DBL GRILL	FDR	0.19	36.20	12.57	18.57
B-B3-EP1	B-B3-1ST FL	FDR	0.06	18.06	6.27	10.63
B-B3-EP1-M	B-B3-EP1	FDR	0.01	153.74	53.40	38.43
B-B3-EP2	B-B3-TRAY LINE	FDR	0.06	14.43	5.01	9.62
B-B3-EP2	B-B3-COMP	FDR	0.06	11.55	4.01	7.70
B-B3-EP2	B-B3-HYDRO ELV	FDR	0.18	23.14	8.04	13.61
B-B3-EP2	B-B3-MECH HVAC	FDR	0.05	11.55	4.01	7.70
B-B3-EP2	B-B3-COMP AC	FDR	0.09	3.46	1.20	11.53
B-B3-EP2	B-B3-ELEV	FDR	0.08	20.23	7.03	13.49
B-B3-EP2	B-B3-STRT PNL	FDR	0.03	11.55	4.01	7.70
B-B3-EP2	B-B3-ALDN KIT	FDR	0.09	11.56	4.01	12.16
B-B3-EP2	B-B3-MECH RM	FDR	0.05	23.10	8.02	8.89
B-B3-EP2	B-B3-COMP MF	FDR	0.06	23.11	8.02	10.27
B-B3-EP2-M	B-B3-EP2	FDR	0.01	153.68	53.38	38.42
B-B3-MDP	B-B3-P3	FDR	0.24	76.76	26.74	34.12
B-B3-MDP	BUS-0131	FDR	0.22	153.74	53.55	32.37
B-B3-MDP	BUS-0140	FDR	0.20	153.68	53.53	35.74
B-B3-MDP	B-B3-STRT LTS	FDR	1.16	154.97	53.98	206.63

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B3-MDP	B-B3-FRZN FOOD	FDR	1.16	154.97	53.98	206.63
B-B3-MDP-M	B-B3-MDP	FDR	0.01	694.12	241.79	69.41
B-B33-MDP-M	B-B33-MDP	FDR	0.01	172.20	60.00	43.05
B-B4-4EQD	B-B4-EQ9	FDR	0.16	15.61	5.43	8.01
B-B4-4EQD	B-B4-EQ2	FDR	0.02	13.67	4.75	7.01
B-B4-4EQD	B-B4-EQ15	FDR	0.10	13.68	4.76	7.01
B-B4-4EQD	B-B4-EQ3	FDR	0.06	11.72	4.07	6.01
B-B4-4EQD	B-B4-EQ1	FDR	0.05	13.67	4.75	7.01
B-B4-4EQD	B-B4-ELEV#4	FDR	0.09	11.72	4.07	6.01
B-B4-4EQD	B-B4-HYDROELEV	FDR	0.16	17.57	6.11	10.34
B-B4-4EQD	B-B4-PP1	FDR	0.04	17.55	6.10	6.75
B-B4-4EQD-M	B-B4-4EQD	FDR	0.00	115.19	40.05	28.80
B-B4-ATS-EQ	BUS-0227		0.00	115.19	40.08	UNKNOWN
B-B4-ATS-EQ	B-B4-4EQD-M	FDR	0.06	115.19	40.08	26.79
B-B4-ATS-LS	BUS-0172*		0.00	115.39	40.12	UNKNOWN
B-B4-ATS-LS	B-B4-LSD-M	FDR	0.04	115.39	40.12	44.38
B-B4-BUS	B-B4-JBOX	FDR	0.14	1154.10	402.66	57.71
B-B4-EQ1	B-B4-EQ5	FDR	0.03	13.67	4.75	7.01
B-B4-EQ2	B-B4-EQ6	FDR	0.03	13.67	4.75	7.01
B-B4-EQ3	B-B4-EQ7	FDR	0.02	11.72	4.07	6.01
B-B4-EQ5	B-B4-EQ10	FDR	0.02	13.67	4.75	7.01
B-B4-EQ6	B-B4-EQ11	FDR	0.02	13.67	4.75	7.01
B-B4-EQ7	B-B4-EQ12	FDR	0.02	11.72	4.07	6.01
B-B4-JBOX	B-B4-MDP-M	FDR	0.06	1154.10	402.07	67.10
B-B4-LP1-M	B-B4-LP1	FDR	0.00	57.65	20.00	25.62
B-B4-LP10-M	B-B4-LP10	FDR	0.00	57.82	20.00	25.70
B-B4-LP11-M	B-B4-LP11	FDR	0.00	57.71	20.00	25.65
B-B4-LP12-M	B-B4-LP12	FDR	0.01	115.42	40.00	51.30
B-B4-LP13-M	B-B4-LP13	FDR	0.00	57.82	20.00	25.70
B-B4-LP14-M	B-B4-LP14	FDR	0.00	57.92	20.00	25.74
B-B4-LP15-M	B-B4-LP15	FDR	0.00	11.29	3.92	5.02
B-B4-LP2-M	B-B4-LP2	FDR	0.00	57.57	20.00	25.58
B-B4-LP2-M	B-B4-LP1-M	FDR	0.14	57.65	20.03	22.17
B-B4-LP3-M	B-B4-LP3	FDR	0.00	57.57	20.00	25.58
B-B4-LP3-M	B-B4-LP4-M	FDR	0.16	57.66	20.03	22.18
B-B4-LP4-M	B-B4-LP4	FDR	0.00	57.66	20.00	25.63
B-B4-LP5-M	B-B4-LP5	FDR	0.00	57.78	20.00	25.68
B-B4-LP5-M	B-B4-LP10-M	FDR	0.08	57.82	20.02	22.24
B-B4-LP6-M	B-B4-LP6	FDR	0.00	57.66	20.00	25.63
B-B4-LP6-M	B-B4-LP11-M	FDR	0.08	57.71	20.02	22.19

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B4-LP7-M	B-B4-LP7	FDR	0.01	115.32	40.00	51.25
B-B4-LP8-M	B-B4-LP8	FDR	0.00	57.78	20.00	25.68
B-B4-LP8-M	B-B4-LP13-M	FDR	0.08	57.82	20.02	22.24
B-B4-LP9-M	B-B4-LP9	FDR	0.00	57.87	20.00	25.72
B-B4-LP9-M	B-B4-LP14-M	FDR	0.08	57.92	20.02	22.28
B-B4-LS1-M	B-B4-LS1	FDR	0.00	6.80	2.36	3.02
B-B4-LS10-M	B-B4-LS10	FDR	0.00	6.80	2.36	3.02
B-B4-LS11-M	B-B4-LS11	FDR	0.00	6.80	2.36	3.02
B-B4-LS12-M	B-B4-LS12	FDR	0.00	6.80	2.36	3.02
B-B4-LS13-M	B-B4-LS13	FDR	0.00	6.80	2.36	3.02
B-B4-LS14-M	B-B4-LS14	FDR	0.00	5.62	1.95	2.50
B-B4-LS2-M	B-B4-LS2	FDR	0.00	6.79	2.36	3.02
B-B4-LS2-M	B-B4-LS1-M	FDR	0.03	6.80	2.36	4.00
B-B4-LS3-M	B-B4-LS3	FDR	0.00	6.79	2.36	3.02
B-B4-LS3-M	B-B4-LS4-M	FDR	0.03	6.79	2.36	4.00
B-B4-LS4-M	B-B4-LS4	FDR	0.00	6.79	2.36	3.02
B-B4-LS5-M	B-B4-LS5	FDR	0.00	6.80	2.36	3.02
B-B4-LS5-M	B-B4-LS10-M	FDR	0.02	6.80	2.36	4.00
B-B4-LS6-M	B-B4-LS6	FDR	0.00	6.80	2.36	3.02
B-B4-LS6-M	B-B4-LS11-M	FDR	0.02	6.80	2.36	4.00
B-B4-LS7-M	B-B4-LS7	FDR	0.00	6.80	2.36	3.02
B-B4-LS7-M	B-B4-LS12-M	FDR	0.02	6.80	2.36	4.00
B-B4-LS8-M	B-B4-LS8	FDR	0.00	6.80	2.36	3.02
B-B4-LS8-M	B-B4-LS13-M	FDR	0.02	6.80	2.36	4.00
B-B4-LS9-M	B-B4-LS9	FDR	0.00	5.62	1.95	2.50
B-B4-LS9-M	B-B4-LS14-M	FDR	0.01	5.62	1.95	3.30
B-B4-LSD	B-B4-LS2-M	FDR	0.05	13.59	4.72	7.99
B-B4-LSD	B-B4-LS3-M	FDR	0.02	13.59	4.72	7.99
B-B4-LSD	B-B4-LS5-M	FDR	0.16	13.60	4.73	8.00
B-B4-LSD	B-B4-LS6-M	FDR	0.13	13.60	4.73	8.00
B-B4-LSD	B-B4-LS7-M	FDR	0.10	13.60	4.73	8.00
B-B4-LSD	B-B4-LP15-M	FDR	0.11	11.29	3.92	7.53
B-B4-LSD	B-B4-PP2-M	FDR	0.11	11.29	3.92	7.53
B-B4-LSD	B-B4-LS8-M	FDR	0.09	13.60	4.73	8.00
B-B4-LSD	B-B4-LS9-M	FDR	0.08	11.23	3.90	6.61
B-B4-LSD-M	B-B4-LSD	FDR	0.01	115.39	40.10	51.28
B-B4-MDP	B-B4-LP3-M	FDR	0.19	115.23	40.11	44.32
B-B4-MDP	B-B4-LP9-M	FDR	0.70	115.79	40.31	44.53
B-B4-MDP	B-B4-LP7-M	FDR	0.35	115.32	40.15	44.35
B-B4-MDP	B-B4-LP12-M	FDR	0.43	115.42	40.18	44.39

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B4-MDP	BUS-0172*	FDR	0.12	115.39	40.17	44.38
B-B4-MDP	B-B4-LP2-M	FDR	0.19	115.21	40.11	44.31
B-B4-MDP	B-B4-LP5-M	FDR	0.55	115.60	40.24	44.46
B-B4-MDP	B-B4-LP6-M	FDR	0.35	115.37	40.16	44.37
B-B4-MDP	B-B4-LP8-M	FDR	0.55	115.60	40.24	44.46
B-B4-MDP	BUS-0227	FDR	0.04	115.19	40.10	30.31
B-B4-MDP-M	B-B4-MDP	FDR	0.01	1154.10	401.81	57.71
B-B4-PP2-M	B-B4-PP2	FDR	0.00	11.29	3.92	5.02
B-B5-ATS-EQ	BUS-0258*		0.00	136.63	47.60	UNKNOWN
B-B5-ATS-EQ	B-B5-EQD	FDR	0.03	136.63	47.60	31.77
B-B5-ATS-LS	BUS-0269		0.00	137.28	47.80	UNKNOWN
B-B5-ATS-LS	B-B5-LSD-M	FDR	0.05	137.28	47.80	52.80
B-B5-EQD	B-B5-EQ1	FDR	0.12	25.62	8.92	15.07
B-B5-EQD	B-B5-EQ5	FDR	0.12	25.62	8.92	15.07
B-B5-EQD	B-B5-EQ2	FDR	0.13	25.62	8.92	15.07
B-B5-EQD	B-B5-EQ6	FDR	0.16	25.63	8.92	15.08
B-B5-EQD	B-B5-HYDR ELEV	FDR	0.10	34.15	11.89	20.09
B-B5-LP1-M	B-B5-LP1	FDR	0.00	34.07	11.88	8.52
B-B5-LP1-M	B-B5-LP3-M	FDR	0.05	34.09	11.89	13.11
B-B5-LP2-M	B-B5-LP2	FDR	0.00	34.11	11.88	8.53
B-B5-LP2-M	B-B5-LP4-M	FDR	0.05	34.12	11.89	13.12
B-B5-LP3-M	B-B5-LP3	FDR	0.00	34.09	11.88	8.52
B-B5-LP4-M	B-B5-LP4	FDR	0.00	34.12	11.88	8.53
B-B5-LP5-M	B-B5-LP5	FDR	0.00	42.59	14.85	10.65
B-B5-LS1	B-B55-LS3	FDR	0.15	68.50	23.80	40.30
B-B5-LS2	B-B5-LS4	FDR	0.15	68.78	23.80	40.46
B-B5-LSD	B-B5-LS2	FDR	0.55	68.78	23.93	40.46
B-B5-LSD	B-B5-LS1	FDR	0.17	68.50	23.84	40.30
B-B5-LSD-M	B-B5-LSD	FDR	0.00	137.28	47.78	34.32
B-B5-MDP	B-B5-PNL-H-M	FDR	0.13	76.65	26.77	29.48
B-B5-MDP	B-B5-LP1-M	FDR	0.14	68.16	23.80	26.21
B-B5-MDP	B-B5-STRT LGHT	FDR	0.15	23.86	8.33	25.12
B-B5-MDP	B-B5-NEXTEL	FDR	0.22	68.19	23.81	30.31
B-B5-MDP	BUS-0258*	FDR	0.23	136.63	47.71	31.77
B-B5-MDP	B-B5-LP5-M	FDR	0.14	42.59	14.87	28.39
B-B5-MDP	BUS-0269	FDR	0.28	137.28	47.94	52.80
B-B5-MDP	B-B5-LP2-M	FDR	0.24	68.23	23.82	26.24
B-B5-MDP	B-B5-TEMP TRAI	FDR	0.27	68.23	23.83	30.33
B-B5-MDP-M	B-B5-MDP	FDR	0.01	689.83	240.91	68.98
B-B5-PNL-H-M	B-B5-PNL-H	FDR	0.00	76.65	26.73	19.16

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B6-ATS-EQ	BUS-0302		0.00	85.80	30.03	UNKNOWN
B-B6-ATS-EQ	B-B6-EQD-M	FDR	0.06	85.80	30.03	22.58
B-B6-ATS-LS	BUS-0290		0.00	85.81	30.04	UNKNOWN
B-B6-ATS-LS	B-B6-LSD-M	FDR	0.05	85.81	30.04	33.00
B-B6-EQ2	B-B6-EQ4	FDR	0.03	15.14	5.29	7.76
B-B6-EQ3	B-B6-EQ5	FDR	0.04	22.72	7.94	11.65
B-B6-EQD	B-B6-EQ8	FDR	0.10	22.72	7.95	8.74
B-B6-EQD	B-B6-EQ1	FDR	0.03	15.13	5.29	10.09
B-B6-EQD	B-B6-EQ3	FDR	0.06	22.72	7.95	11.65
B-B6-EQD	B-B6-EQ2	FDR	0.07	15.14	5.30	7.76
B-B6-EQD	B-B6-EQMACH	FDR	0.02	10.09	3.53	6.73
B-B6-EQD-M	B-B6-EQD	FDR	0.00	85.80	30.01	8.58
B-B6-LP1-M	B-B6-LP1	FDR	0.00	57.20	20.00	5.72
B-B6-LP2-M	B-B6-LP2	FDR	0.00	57.17	20.00	5.72
B-B6-LP3-M	B-B6-LP3	FDR	0.00	42.89	15.00	4.29
B-B6-LP3-M	B-B6-LP5-M	FDR	0.06	42.91	15.01	16.50
B-B6-LP4-M	B-B6-LP4	FDR	0.00	42.88	15.00	4.29
B-B6-LP4-M	B-B6-LP6-M	FDR	0.06	42.90	15.01	16.50
B-B6-LP5-M	B-B6-LP5	FDR	0.00	42.91	15.00	4.29
B-B6-LP6-M	B-B6-LP6	FDR	0.00	42.90	15.00	4.29
B-B6-LP7-M	B-B6-LP7	FDR	0.00	57.09	20.00	5.71
B-B6-LS3	B-B6-LS5	FDR	0.05	23.41	8.18	13.77
B-B6-LS4	B-B6-LS6	FDR	0.05	23.41	8.18	13.77
B-B6-LSD	B-B6-LS4	FDR	0.09	23.41	8.19	13.77
B-B6-LSD	B-B6-LS3	FDR	0.09	23.41	8.19	13.77
B-B6-LSD	B-B6-LS1	FDR	0.09	23.40	8.19	13.77
B-B6-LSD	B-B6-LS2	FDR	0.03	15.58	5.45	11.99
B-B6-LSD-M	B-B6-LSD	FDR	0.00	85.81	30.02	8.58
B-B6-MDP	B-B6-LP1-M	FDR	0.29	57.20	20.06	33.65
B-B6-MDP	B-B6-LP3-M	FDR	0.26	85.80	30.09	33.00
B-B6-MDP	BUS-0290	FDR	0.17	85.81	30.09	33.00
B-B6-MDP	BUS-0302	FDR	0.18	85.80	30.09	19.95
B-B6-MDP	B-B6-LP2-M	FDR	0.23	57.17	20.05	33.63
B-B6-MDP	B-B6-LP7-M	FDR	0.10	57.09	20.02	33.58
B-B6-MDP	B-B6-LP4-M	FDR	0.24	85.78	30.08	32.99
B-B6-MDP	B-B6-MACH SHOP	FDR	0.34	85.85	30.11	38.15
B-B6-MDP	B-B6-P6-CS	FDR	0.20	85.72	30.06	38.10
B-B6-MDP-M	B-B6-MDP	FDR	0.01	686.22	240.68	68.62
B-B60-MDP-M	B-B60-MDP	FDR	0.01	258.21	90.01	64.55
B-B61-ATS-EQD	BUS-0520		0.00	102.58	35.62	UNKNOWN

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B61-ATS-EQD	B-B61-EQD	FDR	0.07	102.58	35.62	23.85
B-B61-ATS-LSD	BUS-0518		0.00	57.66	20.03	UNKNOWN
B-B61-ATS-LSD	B-B61-LSD-M	FDR	0.03	57.66	20.03	22.18
B-B61-EQA	B-B61-COMP RM	FDR	0.03	24.27	8.42	9.34
B-B61-EQD	B-B61-ELEV	FDR	0.11	24.29	8.43	9.34
B-B61-EQD	B-B61-EQ1	FDR	0.11	24.29	8.43	12.46
B-B61-EQD	B-B61-EQ4	FDR	0.04	8.50	2.95	5.00
B-B61-EQD	B-B61-EQ2	FDR	0.03	21.21	7.36	10.88
B-B61-EQD	B-B61-EQA	FDR	0.01	24.27	8.42	9.34
B-B61-LSD	B-B61-LS3	FDR	0.10	9.89	3.43	5.82
B-B61-LSD	B-B61-LS4	FDR	0.08	9.88	3.43	5.81
B-B61-LSD	B-B61-LS5	FDR	0.10	9.89	3.43	5.82
B-B61-LSD	B-B61-KITCHEN	FDR	0.04	14.81	5.14	5.69
B-B61-LSD	B-B61-LS1	FDR	0.05	6.60	2.29	3.88
B-B61-LSD	B-B61-LS2	FDR	0.03	6.60	2.29	5.07
B-B61-LSD-M	B-B61-LSD	FDR	0.00	57.66	20.02	25.63
B-B61-MDP	B-B61-MCC	FDR	0.14	19.21	6.68	20.22
B-B61-MDP	B-B61 STRT LGH	FDR	0.14	19.21	6.68	20.22
B-B61-MDP	B-B61-LP1	FDR	0.69	38.61	13.43	22.71
B-B61-MDP	B-B61-LP3	FDR	0.35	57.72	20.07	22.20
B-B61-MDP	B-B61-LP5	FDR	0.19	19.22	6.68	20.23
B-B61-MDP	B-B61-DP	FDR	0.76	103.07	35.84	108.49
B-B61-MDP	B-B61-LP2	FDR	0.69	38.61	13.43	22.71
B-B61-MDP	B-B61-LP4	FDR	0.26	64.07	22.28	24.64
B-B61-MDP	BUS-0518	FDR	0.10	57.66	20.05	22.18
B-B61-MDP	BUS-0520	FDR	0.13	102.58	35.67	23.85
B-B61-MDP-M	B-B61-MDP	FDR	0.01	519.94	180.83	64.99
B-B62-ATS-EQD	BUS-0546		0.00	73.26	25.75	UNKNOWN
B-B62-ATS-EQD	B-B62-EQD	FDR	0.07	73.26	25.75	28.18
B-B62-ATS-LSD	BUS-0554		0.00	73.26	25.75	UNKNOWN
B-B62-ATS-LSD	B-B62-LSD-M	FDR	0.07	73.26	25.75	28.18
B-B62-EQD	B-B62-ELEV-1	FDR	0.16	14.26	5.01	15.01
B-B62-EQD	B-B62-ATTC PNL	FDR	0.06	14.25	5.00	7.31
B-B62-EQD	B-B62-EQ	FDR	0.01	14.24	5.00	10.95
B-B62-EQD	B-B62-ELEV-2	FDR	0.06	14.25	5.00	7.31
B-B62-EQD	B-B62-PAD RM	FDR	0.03	16.26	5.71	9.57
B-B62-LSD	B-B62-LS3	FDR	0.14	21.99	7.72	12.93
B-B62-LSD	B-B62-LS4	FDR	0.08	21.97	7.72	12.93
B-B62-LSD	B-B62-LS2	FDR	0.06	14.65	5.14	11.27
B-B62-LSD	B-B62-LS1	FDR	0.13	14.66	5.15	11.27

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B62-LSD-M	B-B62-LSD	FDR	0.00	73.26	25.73	32.56
B-B62-MDP	B-B62-OT	FDR	0.12	24.39	8.58	16.26
B-B62-MDP	B-B62-BP	FDR	0.23	48.83	17.18	32.56
B-B62-MDP	B-B62-STRT LGT	FDR	0.15	24.40	8.58	25.68
B-B62-MDP	B-B62-A	FDR	0.16	48.80	17.17	21.69
B-B62-MDP	B-B62-LP3	FDR	0.26	73.27	25.78	32.56
B-B62-MDP	BUS-0546	FDR	0.10	73.26	25.77	28.18
B-B62-MDP	B-B62-BL	FDR	0.20	32.55	11.45	21.70
B-B62-MDP	B-B62-KP	FDR	0.18	48.81	17.17	25.03
B-B62-MDP	B-B62-LP1	FDR	0.18	48.81	17.17	28.71
B-B62-MDP	B-B62-LP2	FDR	0.22	56.97	20.04	29.22
B-B62-MDP	B-B62-B	FDR	0.16	56.94	20.03	25.31
B-B62-MDP	B-B62-LP4	FDR	0.20	73.23	25.76	28.16
B-B62-MDP	BUS-0554	FDR	0.10	73.26	25.77	28.18
B-B62-MDP-M	B-B62-MDP	FDR	0.01	683.51	240.49	56.96
B-B7-ATS-EQ	BUS-0327		0.00	83.51	29.13	UNKNOWN
B-B7-ATS-EQ	B-B7-EQD	FDR	0.09	83.51	29.13	19.42
B-B7-ATS-LS	BUS-0344		0.00	46.94	16.37	UNKNOWN
B-B7-ATS-LS	B-B7-LSD-M	FDR	0.02	46.94	16.37	18.05
B-B7-EQD	B-B7-ELEV	FDR	0.07	16.37	5.70	6.29
B-B7-EQD	bB-B7-MC1	FDR	0.25	16.40	5.71	21.86
B-B7-EQD	B-B7-EQ2	FDR	0.02	14.32	4.99	7.34
B-B7-EQD	B-B7-EQ1	FDR	0.06	14.33	4.99	7.35
B-B7-EQD	B-B7-MCC-1	FDR	0.02	5.74	2.00	6.04
B-B7-EQD	B-B7-EQ4	FDR	0.06	16.36	5.70	9.63
B-B7-LP2-M	B-B7-LP2	FDR	0.00	31.27	10.91	13.90
B-B7-LP3-M	B-B7-LP3	FDR	0.00	23.50	8.18	10.44
B-B7-LP3-M	B-B7-LP6-M	FDR	0.03	23.50	8.18	9.04
B-B7-LP4-M	B-B7-LP4	FDR	0.00	23.46	8.18	10.43
B-B7-LP4-M	B-B7-LP7-M	FDR	0.03	23.46	8.18	8.09
B-B7-LP5-M	B-B7-LP5	FDR	0.00	23.50	8.18	10.44
B-B7-LP5-M	B-B7-LP8-M	FDR	0.03	23.50	8.18	9.04
B-B7-LP6-M	B-B7-LP6	FDR	0.00	23.50	8.18	10.45
B-B7-LP7-M	B-B7-LP7	FDR	0.00	23.46	8.18	10.43
B-B7-LP8-M	B-B7-LP8	FDR	0.00	23.50	8.18	10.45
B-B7-LSD	B-B7-LS5	FDR	0.04	11.73	4.09	6.90
B-B7-LSD	B-B7-LS4	FDR	0.09	11.74	4.09	6.90
B-B7-LSD	B-B7-LS1	FDR	0.08	11.74	4.09	6.90
B-B7-LSD	B-B7-LS2	FDR	0.04	11.73	4.09	9.02
B-B7-LSD-M	B-B7-LSD	FDR	0.00	46.94	16.37	20.86

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B7-MDP	BUS-0327	FDR	0.09	83.51	29.16	19.42
B-B7-MDP	B-B7-LP3-M	FDR	0.29	47.00	16.41	18.08
B-B7-MDP	B-B7-LP5-M	FDR	0.29	47.00	16.41	18.08
B-B7-MDP	BUS-0344	FDR	0.10	46.94	16.39	18.05
B-B7-MDP	B-B7-LP4-M	FDR	0.12	46.92	16.38	16.18
B-B7-MDP	B-B7-SRTLGHT-M	FDR	0.23	31.32	10.94	32.97
B-B7-MDP	B-B7-LP2-M	FDR	0.08	31.27	10.92	10.78
B-B7-MDP	BUS-0360	FDR	0.35	31.36	10.95	18.45
B-B7-MDP	B-B7-MCC-2	FDR	0.12	31.28	10.92	32.93
B-B7-MDP-M	B-B7-MDP	FDR	0.01	396.61	138.50	49.58
B-B7-SRTLGHT-M	B-B7-STRT LGHT	FDR	0.00	31.32	10.91	13.92
B-B70 GEN-M	B-B70-EM-TAP	FDR	0.00	0.00	0.00	0.00
B-B70-ATS-EQD	BUS-0582		0.00	54.99	18.91	UNKNOWN
B-B70-ATS-EQD	B-B70-EQD-M	FDR	0.02	54.99	18.91	14.47
B-B70-ATS-LSD	BUS-0581		0.00	41.15	14.15	UNKNOWN
B-B70-ATS-LSD	B-B70-LSD-M	FDR	0.02	41.15	14.15	10.83
B-B70-EM-TAP	BUS-0612	FDR	0.00	0.00	0.00	0.00
B-B70-EM-TAP	BUS-0613	FDR	0.00	0.00	0.00	0.00
B-B70-EQ1	B-B70-EQ3	FDR	0.04	25.35	8.70	13.00
B-B70-EQ2	B-B70-EQ4	FDR	0.04	29.64	10.15	15.20
B-B70-EQ3	B-B70-EQ5	FDR	0.04	25.35	8.69	13.00
B-B70-EQ4	B-B70-EQ6	FDR	0.04	29.64	10.14	15.20
B-B70-EQD	B-B70-EQ1	FDR	0.20	25.35	8.72	13.00
B-B70-EQD	B-B70-EQ2	FDR	0.36	29.64	10.19	15.20
B-B70-EQD-M	B-B70-EQD	FDR	0.00	54.99	18.90	13.75
B-B70-FP-TAP	B-B70-FPMP M	FDR	0.16	246.60	85.10	70.46
B-B70-FPMP M	B-B70-FIRE PMP	FDR	5.58	246.60	84.96	328.80
B-B70-GEN	B-B70 GEN-M	FDR	0.00	0.00	0.00	0.00
B-B70-LS3	B-B70-LS5	FDR	0.02	11.74	4.03	6.91
B-B70-LS4	B-B70-LS6	FDR	0.02	13.74	4.71	8.08
B-B70-LSD	B-B70-LS3	FDR	0.13	11.74	4.04	6.91
B-B70-LSD	B-B70-LS4	FDR	0.22	13.74	4.72	8.08
B-B70-LSD	B-B70-LS1	FDR	0.11	7.83	2.69	6.03
B-B70-LSD	B-B70-LS2	FDR	0.15	7.84	2.69	6.03
B-B70-LSD-M	B-B70-LSD	FDR	0.00	41.15	14.15	10.29
B-B70-MDP	B-B70-STRTLGHT	FDR	0.10	13.71	4.71	14.43
B-B70-MDP	B0B70-LP2	FDR	0.24	18.27	6.29	10.75
B-B70-MDP	B-B70-ATTIC	FDR	0.18	27.41	9.43	16.12
B-B70-MDP	B-B70-A	FDR	0.14	27.39	9.42	16.11
B-B70-MDP	B-B70-K	FDR	0.12	13.71	4.72	14.43

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B70-MDP	B-B70-PP2	FDR	0.21	41.14	14.15	15.82
B-B70-MDP	BUS-0581	FDR	0.05	41.15	14.16	14.19
B-B70-MDP	BUS-0582	FDR	0.04	54.99	18.92	14.47
B-B70-MDP	B-B70 -BLDG-71	FDR	1.52	18.52	6.37	14.25
B-B70-MDP	B-B70-LP1	FDR	0.39	41.22	14.18	24.24
B-B70-MDP	B-B70-LP3	FDR	0.21	27.42	9.43	10.54
B-B70-MDP	B-B70-B	FDR	0.14	27.39	9.42	16.11
B-B70-MDP	B-B70-LP-4	FDR	0.40	36.63	12.60	14.09
B-B70-MDP	B-B70-CHLLR	FDR	0.64	64.27	22.11	18.36
B-B70-MDP	B-B70-PP220	FDR	0.36	36.62	12.60	16.28
B-B70-MDP-M	B-B70-MDP	FDR	0.01	489.84	168.52	61.23
B-B78-ATS TAP	BUS-0618	FDR	0.06	71.69	24.58	31.86
B-B78-ATS TAP	BUS-0620	FDR	0.11	71.74	24.60	24.74
B-B78-ATS-CRD	BUS-0652		0.00	62.42	21.27	UNKNOWN
B-B78-ATS-CRD	B-B78-CRD	FDR	0.96	62.42	21.27	24.01
B-B78-ATS-E1	BUS-0730		0.00	165.97	56.16	UNKNOWN
B-B78-ATS-E1	B-B78-E1	FDR	0.04	165.97	56.16	43.68
B-B78-ATS-LS1	BUS-0620		0.00	71.74	24.57	UNKNOWN
B-B78-ATS-LS1	B-B78-LSD	FDR	0.02	71.74	24.57	27.59
B-B78-ATSG9578	BUS-0618		0.00	71.69	24.56	UNKNOWN
B-B78-ATSG9578	B-B78-78AE1	FDR	0.02	71.69	24.56	16.67
B-B78-L10	B-B78-LP-13	FDR	0.13	103.71	35.24	27.29
B-B78-LP-1	B-B78-LP-4	FDR	1.16	104.72	35.53	53.70
B-B78-LP-13	B-B78-LP-14	FDR	0.13	103.71	35.19	27.29
B-B78-LP-14	B-B78-LP-15	FDR	0.13	103.71	35.14	27.29
B-B78-LP10	B-B78-LP13	FDR	0.19	124.87	42.19	35.68
B-B78-LP3	B-B78-LP6	FDR	0.23	123.65	42.21	42.64
B-B78-LP7	B-B78-LP10	FDR	0.19	124.87	42.28	35.68
B-B78-MDP	B-B78-A/C	FDR	1.54	62.10	21.39	31.85
B-B78-MDP	B-B78-ATS TAP	FDR	0.45	143.42	49.41	37.74
B-B78-MDP	B-B78-LP7	FDR	1.64	124.87	43.02	35.68
B-B78-MDP	B-B78-PULM 78B	FDR	0.26	81.70	28.15	21.50
B-B78-MDP	B-B78-LP3	FDR	0.86	123.65	42.60	42.64
B-B78-MDP	B-B78-ELEV-1	FDR	0.43	92.08	31.72	35.42
B-B78-MDP	B-B78-ELEV-2	FDR	0.43	92.08	31.72	35.42
B-B78-MDP	B-B78-QP	FDR	0.54	81.95	28.23	42.02
B-B78-MDP	B-B78-BARBER	FDR	1.13	41.24	14.21	54.99
B-B78-MDP	B-B78-PHARM AC	FDR	1.13	41.24	14.21	54.99
B-B78-MDP	B-B78-L10	FDR	1.32	103.71	35.73	27.29
B-B78-MDP	B-B78-MEC-1 AC	FDR	1.85	166.17	57.25	38.64

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B78-MDP	B-B78-LP-1	FDR	1.46	104.72	36.08	36.11
B-B78-MDP	B-B78-KK	FDR	1.19	92.83	31.98	41.26
B-B78-MDP	B-B78-1P	FDR	1.27	82.58	28.45	31.76
B-B78-MDP	B-B78-FLPNL	FDR	1.52	82.80	28.52	36.80
B-B78-MDP	B-B78-PHV	FDR	1.33	41.33	14.24	27.55
B-B78-MDP	B-B78A-PNL-2	FDR	0.24	51.04	17.58	19.63
B-B78-MDP	B-B78-MEC2-A/C	FDR	0.61	164.01	56.50	51.25
B-B78-MDP	B-B78-LP-2	FDR	0.71	102.63	35.35	35.39
B-B78-MDP	B-B78-PNL-330A	FDR	0.69	92.34	31.81	28.85
B-B78-MDP	B-B78-LP-8	FDR	0.67	123.11	42.41	35.17
B-B78-MDP	B-B78-PK	FDR	1.43	93.06	32.06	32.09
B-B78-MDP	BUS-0652	FDR	1.06	62.42	21.50	24.01
B-B78-MDP	B-B78-CONRM-AC	FDR	1.52	37.26	12.83	28.66
B-B78-MDP	BUS-0730	FDR	1.69	165.97	57.17	38.60
B-B78-MDP-M	B-B78-MDP	FDR	0.01	2450.30	844.18	61.26
B-B8-208V-MAIN	B-B8-MAIN BUS	FDR	0.07	514.64	181.10	48.10
B-B8-480V ATS	BUS-0380		0.01	226.61	183.98	UNKNOWN
B-B8-480V ATS	B-B8-480V PNL	FDR	0.05	226.61	183.98	64.75
B-B8-480V PNL	B-B8-FLEXPMACH	FDR	0.42	19.65	15.95	35.73
B-B8-480V PNL	B-B8 HYDRO ELV	FDR	1.05	65.92	53.50	69.39
B-B8-480V PNL	B-B8-TXMR PRI	FDR	0.02	101.42	82.30	45.08
B-B8-480V PNL	B-B8-COMP	FDR	1.19	39.62	32.15	72.04
B-B8-ATS	BUS-0375		0.00	98.41	34.56	UNKNOWN
B-B8-FDR	B-B8-J-BOX	FDR	0.21	142.29	48.29	40.65
B-B8-GE BKR	BUS-0380	FDR	0.04	226.61	184.08	64.75
B-B8-GEN	BUS-0725	FDR	0.00	0.00	0.00	0.00
B-B8-LB1	B-B8-LB2	FDR	0.07	64.73	22.63	24.90
B-B8-MAIN BUS	B-B8-MDP-8	FDR	0.03	279.77	98.38	26.15
B-B8-MAIN BUS	B-B8-PP1-M	FDR	0.07	136.46	47.99	26.24
B-B8-MAIN BUS	B-B8-SYLV	FDR	0.09	98.41	34.61	25.90
B-B8-MDP-8	B-B8-L8B	FDR	0.35	28.69	10.09	22.07
B-B8-MDP-8	B-B8 2ND FLR	FDR	0.25	114.63	40.30	26.66
B-B8-MDP-8	B-B8-BS	FDR	0.66	28.78	10.12	22.14
B-B8-MDP-8	B-B8-PNL-PK	FDR	0.09	42.93	15.09	19.08
B-B8-MDP-8	B-B8-LB1	FDR	0.57	64.73	22.76	24.90
B-B8-PP1-M	B-B8-PP1	FDR	0.00	136.46	47.95	22.74
B-B8-SYLV	BUS-0375	FDR	0.04	98.41	34.57	43.74
B-B8-SYLV	BUS-0376	FDR	0.00	0.00	0.00	0.00
B-B8-TXMR PRI	B-B8-TXMR SEC	TX2	3.21	101.42	82.28	73.14
B-B8-TXMR SEC	B-B8-CMOP	FDR	0.37	91.76	31.20	40.78

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B8-TXMR SEC	B-B8-FDR	FDR	0.18	142.29	48.38	40.65
B-B80-ATS-EQ	BUS-0664		0.00	71.99	25.11	UNKNOWN
B-B80-ATS-EQ	B-B80-E1	FDR	0.18	71.99	25.11	55.37
B-B80-E1	B-B80-LB-E	FDR	0.30	36.01	12.54	27.70
B-B80-E1	B-B80-PB-2	FDR	0.18	35.97	12.52	27.67
B-B80-MDP	B-B80-L1-1	FDR	0.88	35.99	12.61	47.98
B-B80-MDP	B-B80-P1	FDR	0.28	71.54	25.07	42.08
B-B80-MDP	B-B80-L1-3	FDR	0.58	28.70	10.06	52.19
B-B80-MDP	B-B80-P5	FDR	1.70	36.30	12.72	48.40
B-B80-MDP	B-B80-LB-1	FDR	0.32	71.57	25.08	42.10
B-B80-MDP	B-B80-PB-1	FDR	0.66	28.73	10.07	52.23
B-B80-MDP	BUS-0664	FDR	0.47	71.99	25.23	55.37
B-B80-MDP-M	B-B80-MDP	FDR	0.19	344.81	121.09	60.49
B-B81-MDP-M	B-B81-MDP	FDR	0.01	173.49	60.00	43.37
B-B82-ATS-EMER	BUS-0744		0.01	259.44	90.17	UNKNOWN
B-B82-ATS-EMER	B-B82-EMERG-M	FDR	0.18	259.44	90.17	99.78
B-B82-EMERG-M	B-B82-EMER	FDR	0.01	259.44	90.01	64.86
B-B82-MDP	BUS-0744	FDR	0.35	259.44	90.50	99.78
B-B82-MDP-M	B-B82-MDP	FDR	0.01	259.44	90.51	43.24
B-B9-ATS BKR	B-B9-EM	FDR	0.02	90.50	31.59	31.21
B-B9-L91A-M	B-B9-L91A	FDR	0.00	36.46	12.63	16.20
B-B9-MAIN	B-B9-MDP	FDR	0.22	517.49	181.13	60.17
B-B9-MDP	B-B9-*PNLZZ	FDR	0.17	81.52	28.47	21.17
B-B9-MDP	B-B9-*PNLYY	FDR	0.35	45.38	15.85	37.82
B-B9-MDP	B-B9-*PNLXX	FDR	0.23	36.25	12.66	26.85
B-B9-MDP	B-B9-L91A-M	FDR	0.78	36.46	12.73	18.70
B-B9-MDP	B-B9-L9A	FDR	0.40	45.40	15.86	25.22
B-B9-MDP	B-B9-L9B	FDR	0.12	45.27	15.81	25.15
B-B9-MDP	B-B9-L92	FDR	0.54	36.37	12.70	30.31
B-B9-MDP	B-B9-STRT LGHT	FDR	0.20	18.14	6.33	24.18
B-B9-MDP	B-B9-TAP	FDR	0.14	82.21	28.71	45.67
B-B9-MDP	B-B9-ATS BKR	FDR	0.05	90.50	31.60	23.82
B-B9-TAP	B-B9-LPS	FDR	0.40	40.92	14.27	31.48
B-B9-TAP	B-B9-LPN	FDR	1.26	41.29	14.40	27.52
B-B92 GEN	B-B92-EMDP-M	FDR	0.02	128.02	46.12	9.92
B-B92-ATS	BUS-0091		0.00	69.96	24.03	UNKNOWN
B-B92-ATS	B-B92-PNL-E1	FDR	0.11	69.96	24.03	53.81
B-B92-EMDP	BUS-0117	FDR	2.55	128.02	46.11	36.58
B-B92-EMDP	BUS-0676	FDR	0.00	0.00	0.00	0.00
B-B92-EMDP	BUS-0677	FDR	0.00	0.00	0.00	0.00
B-B92-EMDP	BUS-0678	FDR	0.00	0.00	0.00	0.00
B-B92-EMDP	BUS-0680	FDR	0.00	0.00	0.00	0.00
B-B92-EMDP	B-B2-EPNL-B-M	FDR	0.00	0.00	0.00	0.00
B-B92-EMDP-M	B-B92-EMDP	FDR	0.00	128.02	46.11	10.67

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B93-EMDP	BUS-0685	FDR	0.00	0.00	0.00	0.00
B-B93-EMDP	BUS-0688	FDR	0.00	0.00	0.00	0.00
B-B93-EMDP	BUS-0689	FDR	0.00	0.00	0.00	0.00
B-B93-EMDP	BUS-0691	FDR	0.00	0.00	0.00	0.00
B-B93-EMDP	BUS-0692	FDR	0.00	0.00	0.00	0.00
B-B93-EMDP	B-B93-EMDP1	FDR	0.00	0.00	0.00	0.00
B-B93-EMDP-M	B-B93-EMDP	FDR	0.00	0.00	0.00	0.00
B-B93-EMDP1	BUS-0694	FDR	0.00	0.00	0.00	0.00
B-B93-EMDP1	BUS-0695	FDR	0.00	0.00	0.00	0.00
B-B93-GEN	B-B93-EMDP-M	FDR	0.00	0.00	0.00	0.00
B-B94-ATS	BUS-0360		0.00	31.36	10.91	UNKNOWN
B-B94-EMDP	BUS-0700	FDR	0.00	0.00	0.00	0.00
B-B94-EMDP	BUS-0701	FDR	0.00	0.00	0.00	0.00
B-B94-EMDP	BUS-0702	FDR	0.00	0.00	0.00	0.00
B-B94-EMDP	BUS-0703	FDR	0.00	0.00	0.00	0.00
B-B94-EMDP	BUS-0704	FDR	0.00	0.00	0.00	0.00
B-B94-EMDP	BUS-0705	FDR	0.00	0.00	0.00	0.00
B-B94-EMDP	BUS-0706	FDR	0.00	0.00	0.00	0.00
B-B94-EMDP	BUS-0707	FDR	0.00	0.00	0.00	0.00
B-B94-EMDP	BUS-0708	FDR	0.00	0.00	0.00	0.00
B-B94-EMDP-M	B-B94-EMDP	FDR	0.00	0.00	0.00	0.00
B-B94-GEN	B-B94-EMDP-M	FDR	0.00	0.00	0.00	0.00
B-B95-EMDP	BUS-0712	FDR	0.00	0.00	0.00	0.00
B-B95-EMDP	BUS-0713	FDR	0.00	0.00	0.00	0.00
B-B95-EMDP	BUS-0714	FDR	0.00	0.00	0.00	0.00
B-B95-EMDP	BUS-0715	FDR	0.00	0.00	0.00	0.00
B-B95-EMDP	B-B10 EMRG TAP	FDR	0.00	0.00	0.00	0.00
B-B95-EMDP	BUS-0718	FDR	0.00	0.00	0.00	0.00
B-B95-EMDP	BUS-0719	FDR	0.00	0.00	0.00	0.00
B-B95-EMDP-M	B-B95-EMDP	FDR	0.00	0.00	0.00	0.00
B-B95-GEN	B-B95-EMDP-M	FDR	0.00	0.00	0.00	0.00
B-SW-MV-1	B-T-B5-PRI	FDR	0.00	0.00	0.00	0.00
B-SW-MV-2	B-T-B80-PRI	FDR	0.00	0.00	0.00	0.00
B-SWGR27 TAP	B-B27-SWGR	FDR	0.00	248.63	5942.75	20.72
B-T-13-PRI	B-T-B9-PRI	FDR	0.01	14.15	336.97	5.89
B-T-13-PRI	B-B13-TXMR SEC	TX2	3.54	8.92	212.43	84.97
B-T-B1-PRI	B-T-B70-PRI	FDR	0.02	25.44	606.85	10.60
B-T-B1-PRI	B-T-B1-SEC	TX2	3.08	2.61	62.20	82.94
B-T-B1-SEC	B-B1-MDP-M	FDR	0.21	173.00	60.28	59.66
B-T-B10-PRI	B-T-B78-PRI	FDR	0.01	24.54	584.66	10.23

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-T-B10-PRI	B-T-B10-SEC	TX2	2.44	2.59	61.81	82.41
B-T-B10-SEC	B-B10 DISC	FDR	0.21	172.14	60.30	59.36
B-T-B12-PRI	B-T-13-PRI	FDR	0.00	5.23	124.54	2.18
B-T-B12-PRI	B-T-B12-SEC	TX2	3.24	2.61	62.26	83.01
B-T-B12-SEC	B-B12-MAP-M	FDR	0.38	173.43	60.24	45.64
B-T-B17-PRI	B-T-B17-SEC	TX2	2.24	5.27	125.62	83.75
B-T-B17-PRI	B-T-B18-PRI	FDR	0.00	5.18	123.44	2.16
B-T-B17-SEC	B-B17-MAIN	FDR	0.78	349.66	122.81	109.27
B-T-B18-PRI	B-T-B18-SEC	TX2	2.31	5.18	123.43	82.29
B-T-B18-SEC	B-B18-NMDP-M	FDR	0.29	343.56	120.58	45.21
B-T-B19-PRI	B-T-B82-PRI	FDR	0.03	26.48	632.30	11.03
B-T-B19-PRI	B-T-B19-SEC	TX2	3.58	17.87	426.70	85.34
B-T-B19-SEC	B-B19-MDP1-M	FDR	0.45	787.92	273.42	61.08
B-T-B19-SEC	B-B19-MDP2-M	FDR	0.30	397.68	138.00	46.24
B-T-B2-LED-PRI	B-T-B2-LED-SEC	TX2	4.03	78.46	62.83	83.77
B-T-B2-LED-SEC	B-B2-LED-3	FDR	0.11	181.06	60.20	62.43
B-T-B2-PRI	B-T-B1-PRI	FDR	0.01	28.05	669.13	11.69
B-T-B2-PRI	B-T-B2-SEC4	TX2	3.01	19.52	465.78	77.63
B-T-B2-PRI	B-T-B2-SEC2	TX2	3.24	5.25	125.37	83.58
B-T-B2-PRI	B-T-B2-SEC3	TX2	3.21	8.55	204.01	68.00
B-T-B2-SEC2	B-B2-MDPA-M	FDR	0.03	348.63	121.29	49.80
B-T-B2-SEC3	B-B2-MDPB-M	FDR	0.57	567.33	197.46	43.98
B-T-B2-SEC4	B-B2-MDP-M	FDR	0.04	561.29	451.73	48.39
B-T-B22-PRI	B-T-B19-PRI	FDR	0.04	44.35	1059.37	18.48
B-T-B22-PRI	B-T-B22-SEC	TX2	1.91	7.88	188.30	83.69
B-T-B22-SEC	B-B22-MDP-M	FDR	0.63	226.63	184.69	52.71
B-T-B3-PRI	B-T-B3-SEC	TX2	2.67	10.46	249.34	83.11
B-T-B3-SEC	B-B3-MDP-M	FDR	0.35	694.12	242.66	53.81
B-T-B30-PRI	B-T-B60-PRI	FDR	0.03	14.34	341.95	5.98
B-T-B30-PRI	B-T-B30-SEC	TX2	0.00	0.00	0.00	0.00
B-T-B33-PRI	B-T-B22-PRI	FDR	0.03	52.23	1248.06	21.76
B-T-B33-PRI	B-T-B33-SEC	TX2	2.40	2.60	62.02	82.69
B-T-B33-SEC	B-B33-MDP-M	FDR	0.85	172.20	60.53	59.38
B-T-B4-PRI	B-T-B80-PRI	FDR	0.00	5.20	124.05	2.17
B-T-B4-PRI	B-T-B4-SEC	TX2	2.77	17.40	415.21	83.04
B-T-B4-SEC	B-B4-BUS	FDR	0.25	1154.10	403.69	67.10
B-T-B5-PRI	B-T-B6-PRI	FDR	0.01	10.40	247.90	4.33
B-T-B5-PRI	B-T-B5-SEC	TX2	1.86	10.40	247.90	82.63
B-T-B5-SEC	B-B5-MDP-M	FDR	0.96	689.83	243.29	215.57
B-T-B6-PRI	B-T-B7-PRI	FDR	0.02	20.74	494.54	8.64

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-T-B6-PRI	B-T-B6-SEC	TX2	1.85	10.34	246.62	82.21
B-T-B6-SEC	B-B6-MDP-M	FDR	0.55	686.22	242.04	60.19
B-T-B60-PRI	B-T-B17-PRI	FDR	0.01	10.45	249.08	4.35
B-T-B60-PRI	B-T-B60-SEC	TX2	2.70	3.89	92.78	82.47
B-T-B60-SEC	B-B60-MDP-M	FDR	0.28	258.21	90.27	60.05
B-T-B61-PRI	B-T-B62-PRI	FDR	0.02	34.55	824.28	14.40
B-T-B61-PRI	B-T-B61-SEC	TX2	2.90	7.84	186.94	83.08
B-T-B61-SEC	B-B61-MDP-M	FDR	0.37	519.94	181.51	54.73
B-T-B62-PRI	B-T-B8-PRI	FDR	0.01	44.86	1070.26	18.69
B-T-B62-PRI	B-T-B62-SEC	TX2	1.87	10.30	245.80	81.93
B-T-B62-SEC	B-B62-MDP-M	FDR	0.29	683.51	241.21	52.99
B-T-B7-PRI	B-T-B61-PRI	FDR	0.03	26.72	637.18	11.13
B-T-B7-PRI	B-T-B7-SEC	TX2	1.45	5.98	142.56	63.36
B-T-B7-SEC	B-B7-MDP-M	FDR	1.40	396.61	140.49	41.75
B-T-B70-PRI	B-T-B30-PRI	FDR	0.02	14.34	342.02	5.98
B-T-B70-PRI	B-T-B70-SEC	TX2	3.65	11.10	264.70	88.23
B-T-B70-SEC	B-B70-MDP-M	FDR	0.64	489.84	169.65	51.56
B-T-B70-SEC	B-B70-FP-TAP	FDR	0.34	246.60	85.41	51.92
B-T-B78-PRI	B-T-B78-SEC	TX2	4.02	36.93	879.98	66.02
B-T-B78-PRI	B-T-B3-PRI	FDR	0.02	61.47	1464.68	25.61
B-T-B78-SEC	B-B78-MDP-M	FDR	0.04	2450.30	844.52	61.26
B-T-B8-PRI	B-T-B8-SEC	TX2	1.87	7.76	185.10	82.27
B-T-B8-PRI	BUS-0378	TX2	1.91	7.88	188.09	83.59
B-T-B8-SEC	B-B8-208V-MAIN	FDR	0.28	514.64	181.62	48.10
B-T-B80-PRI	B-T-B80-SEC	TX2	2.19	5.20	124.05	82.70
B-T-B80-SEC	B-B80-MDP-M	FDR	0.19	344.81	121.33	60.49
B-T-B81-PRI	B-T-B12-PRI	FDR	0.00	2.61	62.28	1.09
B-T-B81-PRI	B-T-B81-SEC	TX2	3.22	2.61	62.28	83.04
B-T-B81-SEC	B-B81-MDP-M	FDR	0.43	173.49	60.27	59.83
B-T-B82-PRI	B-T-B4-PRI	FDR	0.01	22.59	539.32	9.41
B-T-B82-PRI	B-T-B82-SEC	TX2	2.71	3.89	92.81	82.50
B-T-B82-SEC	B-B82-MDP-M	FDR	0.31	257.95	90.29	33.94
B-T-B9-PRI	B-T-B10-PRI	FDR	0.01	21.95	522.78	9.14
B-T-B9-PRI	B-T-B9-SEC	TX2	2.06	7.80	185.79	82.57
B-T-B9-SEC	B-B9-MAIN	FDR	0.44	517.49	181.96	60.17
BUS-0017	BUS-0019		0.09	61.37	1465.90	UNKNOWN
BUS-0019	BUS-0017		0.09	61.37	1464.56	UNKNOWN
BUS-0019	B-T-B2-PRI	FDR	0.02	61.37	1464.56	25.57
BUS-0063	BUS-0065		0.11	71.93	1716.64	UNKNOWN
BUS-0065	B-T-B3-PRI	FDR	0.03	71.93	1714.80	29.97

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
BUS-0065	BUS-0063		0.11	71.93	1714.80	UNKNOWN
BUS-0076	B-B2-ATS-LED3		0.00	181.06	60.01	UNKNOWN
BUS-0091	B-B92-ATS		0.00	69.96	24.03	UNKNOWN
BUS-0106*	B-B2-ATS-LS		0.00	129.94	44.92	UNKNOWN
BUS-0117	B-B2-ATS-CRIT		0.00	128.02	44.93	UNKNOWN
BUS-0131	B-B3-ATSTEL RM		0.00	153.74	53.43	UNKNOWN
BUS-0140	B-B3-ATS-COMP		0.00	153.68	53.42	UNKNOWN
BUS-0172*	B-B4-ATS-LS		0.00	115.39	40.12	UNKNOWN
BUS-0227	B-B4-ATS-EQ		0.00	115.19	40.08	UNKNOWN
BUS-0258*	B-B5-ATS-EQ		0.00	136.63	47.60	UNKNOWN
BUS-0269	B-B5-ATS-LS		0.00	137.28	47.80	UNKNOWN
BUS-0290	B-B6-ATS-LS		0.00	85.81	30.04	UNKNOWN
BUS-0302	B-B6-ATS-EQ		0.00	85.80	30.03	UNKNOWN
BUS-0327	B-B7-ATS-EQ		0.00	83.51	29.13	UNKNOWN
BUS-0344	B-B7-ATS-LS		0.00	46.94	16.37	UNKNOWN
BUS-0360	B-B94-ATS		0.00	31.36	10.91	UNKNOWN
BUS-0375	B-B8-ATS		0.00	98.41	34.56	UNKNOWN
BUS-0378	B-B8-GE BKR	FDR	0.22	226.61	184.49	64.75
BUS-0380	B-B8-480V ATS		0.01	226.61	184.01	UNKNOWN
BUS-0423	B-B17-ATS		0.00	73.87	25.71	UNKNOWN
BUS-0452	B-B18-ATS-EMRG		0.00	40.92	14.29	UNKNOWN
BUS-0481	B-B22-ATS-EMER		0.01	142.40	115.14	UNKNOWN
BUS-0518	B-B61-ATS-LSD		0.00	57.66	20.03	UNKNOWN
BUS-0520	B-B61-ATS-EQD		0.00	102.58	35.62	UNKNOWN
BUS-0546	B-B62-ATS-EQD		0.00	73.26	25.75	UNKNOWN
BUS-0554	B-B62-ATS-LSD		0.00	73.26	25.75	UNKNOWN
BUS-0581	B-B70-ATS-LSD		0.00	41.15	14.15	UNKNOWN
BUS-0582	B-B70-ATS-EQD		0.00	54.99	18.91	UNKNOWN
BUS-0618	B-B78-ATSG9578		0.00	71.69	24.56	UNKNOWN
BUS-0620	B-B78-ATS-LS1		0.00	71.74	24.57	UNKNOWN
BUS-0652	B-B78-ATS-CRD		0.00	62.42	21.27	UNKNOWN
BUS-0664	B-B80-ATS-EQ		0.00	71.99	25.11	UNKNOWN
BUS-0730	B-B78-ATS-E1		0.00	165.97	56.16	UNKNOWN

NOTE: FDR RATING% = % AMPS RATING BASED ON LIBRARY FLA OR BRANCH INPUT FLA
TX2 RATING% = % KVA RATING BASED ON TRANSFORMER FL KVA

696 BUSES

*** T O T A L S Y S T E M L O S S E S ***
128. KW 265. KVAR

WARNING STUDY CONTAINS 95 VOLTAGE CRITERIA VIOLATIONS
VIOLATIONS DENOTED BY ($) AT BUS AND BRANCH %VD LOCATIONS

4.6.2 Voltage Drop Computer Data – Emergency Generator Case

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY
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LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE
CBL-0044	B-B2-ATS-LED3	B-B2-EMERG-M	1	208	7.0	FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft		1.30 + J 0.8397 PU					
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft		4.10 + J 2.07 PU					
CBL-0045	B-B2-EMERG-M	B-B2-EMERG-PNL	1	208	1.000	FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class: Class B		
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU					
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU					
CBL-0046	B-B2-ATS-LED3	B-B2-PNL 1	1	208	7.0	FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft		1.30 + J 0.8397 PU					
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft		4.10 + J 2.07 PU					
CBL-0048	B-B2-ATS-LED3	B-B2-NEWLAB-M	1	208	10.0	FEET	2/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft		2.36 + J 1.23 PU					
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft		7.43 + J 3.03 PU					
CBL-0049	B-B2-NEWLAB-M	B-B2-NEWLAB	1	208	1.000	FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class: Class B		
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU					
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU					
CBL-0050	B-B2-ATS-LED3	B-B2-PNL-2	1	208	2.0	FEET	4	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft		1.48 + J 0.2922 PU					
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft		4.68 + J 0.7193 PU					
CBL-0051	B-B2-ATS-LED3	B-B2-PNL-3-M	1	208	7.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		3.27 + J 0.9465 PU					
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		10.30 + J 2.33 PU					
CBL-0060	B-B92-ATS	B-B92-PNL-E1	1	208	10.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		4.67 + J 1.35 PU					
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		14.71 + J 3.33 PU					
CBL-0062	B-B2-PNL-3-M	B-B2-PNL-M1	1	208	7.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		3.27 + J 0.9465 PU					
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		10.30 + J 2.33 PU					

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE
CBL-0064	B-B2-ATS-CRIT	B-B2-CRIT PNL	2	208	5.0	FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN			
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft		0.4652 + J 0.2999 PU					
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft		1.47 + J 0.7385 PU					
CBL-0065	B-B2-CRIT PNL	B-B2-LB2E	1	208	50.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN			
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		23.35 + J 6.76 PU					
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		73.57 + J 16.64 PU					
CBL-0066	B-B2-CRIT PNL	B-B2-L2A	1	208	50.0	FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN			
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft		9.30 + J 6.00 PU					
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft		29.32 + J 14.77 PU					
CBL-0067	B-B2-CRIT PNL	B-B2-MEDAIRCOM	1	208	50.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN			
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		23.35 + J 6.76 PU					
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		73.57 + J 16.64 PU					
CBL-0068	B-B2-CRIT PNL	B-B2-ELEV-P1	1	208	100.0	FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN			
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft		14.79 + J 11.49 PU					
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft		46.62 + J 28.29 PU					
CBL-0069	B-B2-CRIT PNL	B-B2-DENTAL LB	1	208	40.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN			
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		18.68 + J 5.41 PU					
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		58.86 + J 13.31 PU					
CBL-0070	B-B2-CRIT PNL	B-B2-PNL-L11	1	208	50.0	FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN			
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft		9.30 + J 6.00 PU					
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft		29.32 + J 14.77 PU					
CBL-0072	B-B2-ATS-LS	B-B2-PNL LS	2	208	10.0	FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN			
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft		0.9303 + J 0.5998 PU					
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft		2.93 + J 1.48 PU					
CBL-0073	B-B2-PNL LS	B-B2-ELEV	1	208	40.0	FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN			
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft		5.92 + J 4.60 PU					
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft		18.65 + J 11.32 PU					

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE
CBL-0074	B-B2-PNL LS	B-B2-L2E	1	208	50.0	FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft		9.30 + J 6.00 PU					
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft		29.32 + J 14.77 PU					
CBL-0075	B-B2-PNL LS	B-B2-L12	1	208	50.0	FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft		9.30 + J 6.00 PU					
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft		29.32 + J 14.77 PU					
CBL-0076	B-B2-PNL LS	B-B2-DENTSUCPM	1	208	50.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		23.35 + J 6.76 PU					
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		73.57 + J 16.64 PU					
CBL-0077	B-B2-PNL LS	B-B2-L9E	1	208	50.0	FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		14.79 + J 6.24 PU					
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		46.62 + J 15.36 PU					
CBL-0078	B-B2-PNL LS	B-B2-LB1E	1	208	50.0	FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		14.79 + J 6.24 PU					
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		46.62 + J 15.36 PU					
CBL-0079	B-B2-PNL LS	B-B2-POD2PP	1	208	50.0	FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft		7.40 + J 5.74 PU					
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft		23.31 + J 14.15 PU					
CBL-0080	B-B2-PNL LS	B-B2-BATTERYCH	1	208	50.0	FEET	6	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.5100 + J 0.0685 Ohms/1000 ft		58.94 + J 7.92 PU					
	Z0 Impedance: 1.61 + J 0.1687 Ohms/1000 ft		185.74 + J 19.50 PU					
CBL-0098	B-B3-ATSTEL RM	B-B3-EP1-M	1	208	7.0	FEET	600	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0257 + J 0.0463 Ohms/1000 ft		0.4158 + J 0.7491 PU					
	Z0 Impedance: 0.0809 + J 0.1140 Ohms/1000 ft		1.31 + J 1.84 PU					
CBL-0099	B-B3-EP1-M	B-B3-EP1	1	208	1.000	FEET	400	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class: Class B		
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft		0.0673 + J 0.0696 PU					
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft		0.3999 + J 0.3724 PU					

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0100	B-B3-EP1	B-B3-TELE PNL	1	208	30.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		4.44 + J 3.45	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		13.99 + J 8.49	PU				
CBL-0101	B-B3-EP1	B-B3-KP1	1	208	55.0	FEET	4/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		8.14 + J 6.32	PU				
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		25.64 + J 15.56	PU				
CBL-0102	B-B3-EP1	B-B3-P7	1	208	30.0	FEET	2	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		14.01 + J 4.06	PU				
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		44.14 + J 9.99	PU				
CBL-0103	B-B3-EP1	B-B3-DBL GRILL	1	208	55.0	FEET	2/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		12.97 + J 6.78	PU				
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		40.86 + J 16.68	PU				
CBL-0104	B-B3-EP1	B-B3-1ST FL	1	208	30.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		8.88 + J 3.74	PU				
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		27.97 + J 9.22	PU				
CBL-0106	B-B3-ATS-COMP	B-B3-EP2-M	1	208	11.0	FEET	500	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		0.7475 + J 1.18	PU				
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		2.35 + J 2.92	PU				
CBL-0107	B-B3-EP2-M	B-B3-EP2	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B		
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft		0.0673 + J 0.0696	PU				
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft		0.3999 + J 0.3724	PU				
CBL-0108	B-B3-EP2	B-B3-TRAY LINE	1	208	30.0	FEET	1	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft		11.09 + J 3.95	PU				
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft		34.96 + J 9.73	PU				
CBL-0109	B-B3-EP2	B-B3-COMP	1	208	40.0	FEET	1	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN		
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft		14.79 + J 5.27	PU				
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft		46.62 + J 12.97	PU				

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0110	B-B3-EP2	B-B3-HYDRO ELV	1	208	70.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		20.71 + J 8.74	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		65.27 + J 21.50	PU			
CBL-0111	B-B3-EP2	B-B3-MECH HVAC	1	208	30.0	FEET	1	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft		11.09 + J 3.95	PU			
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft		34.96 + J 9.73	PU			
CBL-0112	B-B3-EP2	B-B3-COMP AC	1	208	30.0	FEET	10	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	1.18 + J 0.0854	Ohms/1000 ft		81.82 + J 5.92	PU			
	Z0 Impedance:	3.72 + J 0.2103	Ohms/1000 ft		257.87 + J 14.58	PU			
CBL-0113	B-B3-EP2	B-B3-ELEV	1	208	30.0	FEET	1	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft		11.09 + J 3.95	PU			
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft		34.96 + J 9.73	PU			
CBL-0114	B-B3-EP2	B-B3-STRT PNL	1	208	20.0	FEET	1	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft		7.40 + J 2.63	PU			
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft		23.31 + J 6.49	PU			
CBL-0115	B-B3-EP2	B-B3-ALDN KIT	1	208	30.0	FEET	4	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.3210 + J 0.0632	Ohms/1000 ft		22.26 + J 4.38	PU			
	Z0 Impedance:	1.01 + J 0.1556	Ohms/1000 ft		70.15 + J 10.79	PU			
CBL-0116	B-B3-EP2	B-B3-MECH RM	1	208	30.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		4.44 + J 3.45	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		13.99 + J 8.49	PU			
CBL-0117	B-B3-EP2	B-B3-COMP MF	1	208	30.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft		5.58 + J 3.60	PU			
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft		17.59 + J 8.86	PU			
CBL-0138	B-B4-ATS-LS	B-B4-LSD-M	1	208	5.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		0.7396 + J 0.5744	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		2.33 + J 1.41	PU			

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0139	B-B4-LSD-M	B-B4-LSD	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy		Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0140	B-B4-LSD	B-B4-LS2-M	1	208	30.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		8.88 + J 3.74	PU				
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		27.97 + J 9.22	PU				
CBL-0141	B-B4-LS2-M	B-B4-LS2	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy		Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0142	B-B4-LS2-M	B-B4-LS1-M	1	208	35.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		10.36 + J 4.37	PU				
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		32.63 + J 10.75	PU				
CBL-0143	B-B4-LS1-M	B-B4-LS1	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy		Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0144	B-B4-LSD	B-B4-LS3-M	1	208	15.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		4.44 + J 1.87	PU				
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		13.99 + J 4.61	PU				
CBL-0145	B-B4-LS3-M	B-B4-LS3	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy		Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				
CBL-0146	B-B4-LS3-M	B-B4-LS4-M	1	208	35.0	FEET	1/0	Copper		
	Duct Material:	Magnetic	Insulation Type:		PVC		Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		10.36 + J 4.37	PU				
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		32.63 + J 10.75	PU				
CBL-0147	B-B4-LS4-M	B-B4-LS4	1	208	1.000	FEET	225	Copper		
	Duct Material:	Busway	Insulation Type:		Epoxy		Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU				
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU				

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0148	B-B4-LSD	B-B4-LS5-M	1	208	104.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN		
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		30.77 + J 12.98 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		96.97 + J 31.95 PU				
CBL-0149	B-B4-LS5-M	B-B4-LS5	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy		Insulation Class: Class B		
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0150	B-B4-LS5-M	B-B4-LS10-M	1	208	20.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN		
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		5.92 + J 2.50 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		18.65 + J 6.14 PU				
CBL-0151	B-B4-LS10-M	B-B4-LS10	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy		Insulation Class: Class B		
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0152	B-B4-LSD	B-B4-LS6-M	1	208	82.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN		
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		24.26 + J 10.23 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		76.46 + J 25.19 PU				
CBL-0153	B-B4-LS6-M	B-B4-LS6	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy		Insulation Class: Class B		
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0154	B-B4-LS6-M	B-B4-LS11-M	1	208	20.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN		
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		5.92 + J 2.50 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		18.65 + J 6.14 PU				
CBL-0155	B-B4-LS11-M	B-B4-LS11	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy		Insulation Class: Class B		
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0156	B-B4-LSD	B-B4-LS7-M	1	208	65.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN		
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		19.23 + J 8.11 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		60.61 + J 19.97 PU				

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0157	B-B4-LS7-M	B-B4-LS7	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			
CBL-0158	B-B4-LS7-M	B-B4-LS12-M	1	208	20.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		5.92 + J 2.50	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		18.65 + J 6.14	PU			
CBL-0159	B-B4-LS12-M	B-B4-LS12	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			
CBL-0160	B-B4-LSD	B-B4-LP15-M	1	208	75.0	FEET	1	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft		27.74 + J 9.88	PU			
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft		87.41 + J 24.32	PU			
CBL-0161	B-B4-LP15-M	B-B4-LP15	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			
CBL-0163	B-B4-LSD	B-B4-PP2-M	1	208	75.0	FEET	1	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft		27.74 + J 9.88	PU			
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft		87.41 + J 24.32	PU			
CBL-0164	B-B4-PP2-M	B-B4-PP2	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			
CBL-0165	B-B4-LSD	B-B4-LS8-M	1	208	62.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		18.34 + J 7.74	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		57.81 + J 19.05	PU			
CBL-0166	B-B4-LS8-M	B-B4-LS8	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0167	B-B4-LS8-M	B-B4-LS13-M	1	208	20.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		5.92 + J 2.50	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		18.65 + J 6.14	PU			
CBL-0168	B-B4-LS13-M	B-B4-LS13	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:			Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			
CBL-0169	B-B4-LSD	B-B4-LS9-M	1	208	62.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		18.34 + J 7.74	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		57.81 + J 19.05	PU			
CBL-0170	B-B4-LS9-M	B-B4-LS9	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:			Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			
CBL-0171	B-B4-LS9-M	B-B4-LS14-M	1	208	20.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		5.92 + J 2.50	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		18.65 + J 6.14	PU			
CBL-0172	B-B4-LS14-M	B-B4-LS14	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:			Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			
CBL-0194	B-B4-ATS-EQ	B-B4-4EQD-M	1	208	13.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		0.8834 + J 1.40	PU			
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		2.78 + J 3.45	PU			
CBL-0195	B-B4-4EQD-M	B-B4-4EQD	1	208	1.000	FEET	400	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:			Class B
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft		0.0673 + J 0.0696	PU			
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft		0.3999 + J 0.3724	PU			
CBL-0196	B-B4-4EQD	B-B4-EQ9	1	208	110.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		25.93 + J 13.55	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		81.72 + J 33.36	PU			

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0197	B-B4-4EQD	B-B4-EQ2	1	208	14.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		3.30 + J 1.72	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		10.40 + J 4.25	PU			
CBL-0198	B-B4-4EQD	B-B4-EQ15	1	208	80.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		18.86 + J 9.86	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		59.43 + J 24.26	PU			
CBL-0199	B-B4-4EQD	B-B4-EQ3	1	208	58.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		13.67 + J 7.15	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		43.09 + J 17.59	PU			
CBL-0200	B-B4-4EQD	B-B4-EQ1	1	208	35.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		8.25 + J 4.31	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		26.00 + J 10.61	PU			
CBL-0201	B-B4-4EQD	B-B4-ELEV#4	1	208	80.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		18.86 + J 9.86	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		59.43 + J 24.26	PU			
CBL-0202	B-B4-4EQD	B-B4-HYDROELEV	1	208	80.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		23.67 + J 9.99	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		74.59 + J 24.57	PU			
CBL-0203	B-B4-4EQD	B-B4-PP1	1	208	30.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		4.44 + J 3.45	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		13.99 + J 8.49	PU			
CBL-0204	B-B4-EQ1	B-B4-EQ5	1	208	20.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		4.72 + J 2.46	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		14.86 + J 6.07	PU			
CBL-0205	B-B4-EQ5	B-B4-EQ10	1	208	18.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		4.24 + J 2.22	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		13.37 + J 5.46	PU			

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0206	B-B4-EQ3	B-B4-EQ7	1	208	20.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		4.72 + J	2.46	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		14.86 + J	6.07	PU		
CBL-0207	B-B4-EQ7	B-B4-EQ12	1	208	18.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		4.24 + J	2.22	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		13.37 + J	5.46	PU		
CBL-0208	B-B4-EQ2	B-B4-EQ6	1	208	20.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		4.72 + J	2.46	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		14.86 + J	6.07	PU		
CBL-0209	B-B4-EQ6	B-B4-EQ11	1	208	18.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		4.24 + J	2.22	PU		
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		13.37 + J	5.46	PU		
CBL-0223	B-B5-ATS-EQ	B-B5-EQD	1	208	5.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		0.3398 + J	0.5386	PU		
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		1.07 + J	1.33	PU		
CBL-0224	B-B5-EQD	B-B5-EQ1	1	208	42.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		12.43 + J	5.24	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		39.16 + J	12.90	PU		
CBL-0225	B-B5-EQD	B-B5-EQ5	1	208	42.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		12.43 + J	5.24	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		39.16 + J	12.90	PU		
CBL-0226	B-B5-EQD	B-B5-EQ2	1	208	45.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		13.31 + J	5.62	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		41.96 + J	13.82	PU		
CBL-0227	B-B5-EQD	B-B5-EQ6	1	208	55.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		16.27 + J	6.86	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		51.28 + J	16.90	PU		

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE		
CBL-0228	B-B5-EQD	B-B5-HYDR ELEV	1	208	25.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				7.40 + J 3.12	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				23.31 + J 7.68	PU		
CBL-0233	B-B5-ATS-LS	B-B5-LSD-M	1	208	5.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				0.7396 + J 0.5744	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				2.33 + J 1.41	PU		
CBL-0234	B-B5-LSD-M	B-B5-LSD	1	208	1.000	FEET	400	Copper		
	Duct Material:	Busway		Insulation Type:			Epoxy	Insulation Class:		Class B
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft				0.0673 + J 0.0696	PU		
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft				0.3999 + J 0.3724	PU		
CBL-0235	B-B5-LSD	B-B5-LS2	1	208	71.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				21.01 + J 8.86	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				66.20 + J 21.81	PU		
CBL-0236	B-B5-LS2	B-B5-LS4	1	208	20.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				5.92 + J 2.50	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				18.65 + J 6.14	PU		
CBL-0237	B-B5-LSD	B-B5-LS1	1	208	22.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				6.51 + J 2.75	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				20.51 + J 6.76	PU		
CBL-0238	B-B5-LS1	B-B55-LS3	1	208	20.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				5.92 + J 2.50	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				18.65 + J 6.14	PU		
CBL-0253	B-B6-ATS-LS	B-B6-LSD-M	1	208	8.0	FEET	4/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				1.18 + J 0.9190	PU		
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				3.73 + J 2.26	PU		
CBL-0255	B-B6-LS4	B-B6-LS6	1	208	20.0	FEET	1/0	Copper		
	Duct Material:	Magnetic		Insulation Type:			PVC	Insulation Class:		THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				5.92 + J 2.50	PU		
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				18.65 + J 6.14	PU		

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0257	B-B6-LSD-M	B-B6-LSD	1	208	1.000	FEET	1000	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0142 + J 0.0066 Ohms/1000 ft				0.0328 + J 0.0153 PU				
	Z0 Impedance: 0.0844 + J 0.0353 Ohms/1000 ft				0.1951 + J 0.0816 PU				
CBL-0258	B-B6-LSD	B-B6-LS4	1	208	35.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				10.36 + J 4.37 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				32.63 + J 10.75 PU				
CBL-0259	B-B6-LS3	B-B6-LS5	1	208	20.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				5.92 + J 2.50 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				18.65 + J 6.14 PU				
CBL-0260	B-B6-LSD	B-B6-LS3	1	208	35.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				10.36 + J 4.37 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				32.63 + J 10.75 PU				
CBL-0261	B-B6-LSD	B-B6-LS1	1	208	35.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				10.36 + J 4.37 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				32.63 + J 10.75 PU				
CBL-0262	B-B6-LSD	B-B6-LS2	1	208	12.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				5.60 + J 1.62 PU				
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				17.66 + J 3.99 PU				
CBL-0264	B-B6-ATS-EQ	B-B6-EQD-M	1	208	15.0	FEET	400	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0356 + J 0.0490 Ohms/1000 ft				1.23 + J 1.70 PU				
	Z0 Impedance: 0.1122 + J 0.1206 Ohms/1000 ft				3.89 + J 4.18 PU				
CBL-0265	B-B6-EQD-M	B-B6-EQD	1	208	1.000	FEET	1000	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0142 + J 0.0066 Ohms/1000 ft				0.0328 + J 0.0153 PU				
	Z0 Impedance: 0.0844 + J 0.0353 Ohms/1000 ft				0.1951 + J 0.0816 PU				
CBL-0266	B-B6-EQD	B-B6-EQ8	1	208	66.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				9.76 + J 7.58 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				30.77 + J 18.67 PU				

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0267	B-B6-EQD	B-B6-EQ1	1	208	15.0	FEET	1	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				5.55 + J 1.98	PU	
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				17.48 + J 4.86	PU	
CBL-0268	B-B6-EQD	B-B6-EQ3	1	208	26.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				6.13 + J 3.20	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				19.31 + J 7.88	PU	
CBL-0269	B-B6-EQD	B-B6-EQ2	1	208	50.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				11.79 + J 6.16	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				37.14 + J 15.16	PU	
CBL-0270	B-B6-EQ3	B-B6-EQ5	1	208	20.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.72 + J 2.46	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				14.86 + J 6.07	PU	
CBL-0271	B-B6-EQ2	B-B6-EQ4	1	208	20.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft				4.72 + J 2.46	PU	
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft				14.86 + J 6.07	PU	
CBL-0272	B-B6-EQD	B-B6-EQMACH	1	208	15.0	FEET	1	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1600 + J 0.0570	Ohms/1000 ft				5.55 + J 1.98	PU	
	Z0 Impedance:	0.5042 + J 0.1403	Ohms/1000 ft				17.48 + J 4.86	PU	
CBL-0286	B-B7-ATS-EQ	B-B7-EQD	1	208	25.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				1.70 + J 2.69	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				5.35 + J 6.63	PU	
CBL-0287	B-B7-EQD	B-B7-ELEV	1	208	62.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				9.17 + J 7.12	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				28.90 + J 17.54	PU	
CBL-0288	B-B7-EQD	bB-B7-MC1	1	208	40.0	FEET	6	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.5100 + J 0.0685	Ohms/1000 ft				47.15 + J 6.33	PU	
	Z0 Impedance:	1.61 + J 0.1687	Ohms/1000 ft				148.59 + J 15.60	PU	

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0289	B-B7-EQD	B-B7-EQ2	1	208	15.0 FEET	2/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft				3.54 + J 1.85 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft				11.14 + J 4.55 PU		
CBL-0290	B-B7-EQD	B-B7-EQ1	1	208	45.0 FEET	2/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft				10.61 + J 5.54 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft				33.43 + J 13.65 PU		
CBL-0291	B-B7-EQD	B-B7-MCC-1	1	208	15.0 FEET	4	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft				11.13 + J 2.19 PU		
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft				35.07 + J 5.39 PU		
CBL-0292	B-B7-EQD	B-B7-EQ4	1	208	32.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				9.47 + J 3.99 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				29.84 + J 9.83 PU		
CBL-0302	B-B7-ATS-LS	B-B7-LSD-M	1	208	5.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				0.7396 + J 0.5744 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				2.33 + J 1.41 PU		
CBL-0303	B-B7-LSD-M	B-B7-LSD	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft				0.0982 + J 0.0747 PU		
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft				0.5841 + J 0.3996 PU		
CBL-0304	B-B7-LSD	B-B7-LS5	1	208	34.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				10.06 + J 4.24 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				31.70 + J 10.44 PU		
CBL-0305	B-B7-LSD	B-B7-LS4	1	208	67.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				19.82 + J 8.36 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				62.47 + J 20.58 PU		
CBL-0306	B-B7-LSD	B-B7-LS1	1	208	60.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				17.75 + J 7.49 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				55.94 + J 18.43 PU		

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE
CBL-0307	B-B7-LSD	B-B7-LS2	1	208	20.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft					9.34 + J 2.70 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft					29.43 + J 6.66 PU		
CBL-0334	B-B8-480V ATS	B-B8-480V PNL	1	480	10.0	FEET	350	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft					0.1641 + J 0.2131 PU		
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft					0.5169 + J 0.5247 PU		
CBL-0335	B-B8-480V PNL	B-B8-FLEXPMACH	1	480	85.0	FEET	8	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.8110 + J 0.0754 Ohms/1000 ft					29.92 + J 2.78 PU		
	Z0 Impedance: 2.56 + J 0.1856 Ohms/1000 ft					94.29 + J 6.85 PU		
CBL-0336	B-B8-480V PNL	B-B8 HYDRO ELV	1	480	150.0	FEET	4	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft					20.90 + J 4.11 PU		
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft					65.86 + J 10.13 PU		
CBL-0337	B-B8-480V PNL	B-B8-TXMR PRI	1	480	7.0	FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0805 + J 0.0397 Ohms/1000 ft					0.2446 + J 0.1206 PU		
	Z0 Impedance: 0.2537 + J 0.0978 Ohms/1000 ft					0.7708 + J 0.2971 PU		
CBL-0338	B-B8-TXMR SEC	B-B8-CMOP	1	208	50.0	FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft					9.30 + J 6.00 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft					29.32 + J 14.77 PU		
CBL-0339	B-B8-TXMR SEC	B-B8-FDR	1	208	25.0	FEET	350	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft					2.18 + J 2.84 PU		
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft					6.88 + J 6.99 PU		
CBL-0340	B-B8-FDR	B-B8-J-BOX	1	208	30.0	FEET	350	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft					2.62 + J 3.40 PU		
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft					8.26 + J 8.38 PU		
CBL-0341	B-B8-480V PNL	B-B8-COMP	1	480	120.0	FEET	8	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.8110 + J 0.0754 Ohms/1000 ft					42.24 + J 3.93 PU		
	Z0 Impedance: 2.56 + J 0.1856 Ohms/1000 ft					133.12 + J 9.67 PU		

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE
CBL-0374	B-B17-ATS	B-B17-EMERG	1	208	4.0	FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		1.18 + J 0.4993 PU					
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		3.73 + J 1.23 PU					
CBL-0375	B-B17-EMERG	B-B17-NEB2	1	208	30.0	FEET	4	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft		22.26 + J 4.38 PU					
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft		70.15 + J 10.79 PU					
CBL-0376	B-B17-EMERG	B-B17-NEB1	1	208	90.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		42.02 + J 12.17 PU					
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		132.43 + J 29.96 PU					
CBL-0377	B-B17-EMERG	B-B17-ANIMALRM	1	208	75.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		35.02 + J 10.14 PU					
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		110.36 + J 24.96 PU					
CBL-0400	B-B18-ATS-EMRG	B-B18-TAP BOX	1	208	8.0	FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		2.37 + J 0.9985 PU					
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		7.46 + J 2.46 PU					
CBL-0401	B-B18-TAP BOX	B-B18-2ND-FL-M	1	208	3.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		1.40 + J 0.4056 PU					
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		4.41 + J 0.9985 PU					
CBL-0402	B-B18-2ND-FL-M	B-B18-2NDFL	1	208	40.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		18.68 + J 5.41 PU					
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		58.86 + J 13.31 PU					
CBL-0403	B-B18-TAP BOX	B-B18-1STFL-M	1	208	3.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		1.40 + J 0.4056 PU					
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		4.41 + J 0.9985 PU					
CBL-0404	B-B18-1STFL-M	B-B18-1STFL	1	208	20.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		9.34 + J 2.70 PU					
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		29.43 + J 6.66 PU					

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE
CBL-0405	B-B18-TAP BOX	B-B18-EMERG-M	1	208	4.0	FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		1.87 + J 0.5409 PU					
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		5.89 + J 1.33 PU					
CBL-0406	B-B18-EMERG-M	B-B18-EMERG	1	208	1.000	FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class: Class B		
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU					
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU					
CBL-0429	B-B22-ATS-EMER	B-B22-EMERG-M	1	480	40.0	FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft		0.5104 + J 0.8090 PU					
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft		1.61 + J 1.99 PU					
CBL-0430	B-B22-EMERG-M	B-B22-EMERG	1	480	1.000	FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class: Class B		
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0184 + J 0.0140 PU					
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.1097 + J 0.0750 PU					
CBL-0431	B-B22-EMERG	B-B22-P1	1	480	25.0	FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft		0.6944 + J 0.5393 PU					
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft		2.19 + J 1.33 PU					
CBL-0432	B-B22-EMERG	B-B22-P2	1	480	25.0	FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft		0.6944 + J 0.5393 PU					
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft		2.19 + J 1.33 PU					
CBL-0433	B-B22-EMERG	B-B22-T2-PRI	1	480	10.0	FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		0.5556 + J 0.2344 PU					
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		1.75 + J 0.5768 PU					
CBL-0434	B-B22-T2-SEC	B-B22-L3-M	1	208	15.0	FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN		
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft		2.22 + J 1.72 PU					
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft		6.99 + J 4.24 PU					
CBL-0435	B-B22-L3-M	B-B22-L3	1	208	1.000	FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class: Class B		
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU					
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU					

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0436	B-B22-EMERG	B-B22-T3 PRI	1	480	15.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		0.8333 + J 0.3516	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		2.63 + J 0.8652	PU			
CBL-0437	B-B22-T22-SEC	B-B22-L2-M	1	208	15.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		2.22 + J 1.72	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		6.99 + J 4.24	PU			
CBL-0438	B-B22-L2-M	B-B22-L2	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:			Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			
CBL-0439	B-B22-EMERG	B-B22-T4-PRI	1	480	15.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		0.8333 + J 0.3516	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		2.63 + J 0.8652	PU			
CBL-0440	B-B22-T4-SEC	B-B22-L1-M	1	208	15.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		2.22 + J 1.72	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		6.99 + J 4.24	PU			
CBL-0441	B-B22-L1-M	B-B22-L1	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:			Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			
CBL-0462	B-B61-ATS-LSD	B-B61-LSD-M	1	208	7.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		1.04 + J 0.8041	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		3.26 + J 1.98	PU			
CBL-0463	B-B61-LSD-M	B-B61-LSD	1	208	1.000	FEET	225	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:			Class B
	+/- Impedance:	0.0425 + J 0.0323	Ohms/1000 ft		0.0982 + J 0.0747	PU			
	Z0 Impedance:	0.2527 + J 0.1729	Ohms/1000 ft		0.5841 + J 0.3996	PU			
CBL-0464	B-B61-LSD	B-B61-LS3	1	208	90.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		26.63 + J 11.23	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		83.92 + J 27.65	PU			

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0465	B-B61-LSD	B-B61-LS4	1	208	70.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		20.71 + J 8.74	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		65.27 + J 21.50	PU			
CBL-0466	B-B61-LSD	B-B61-LS5	1	208	90.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		26.63 + J 11.23	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		83.92 + J 27.65	PU			
CBL-0467	B-B61-LSD	B-B61-KITCHEN	1	208	40.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		5.92 + J 4.60	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		18.65 + J 11.32	PU			
CBL-0468	B-B61-LSD	B-B61-LS1	1	208	70.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		20.71 + J 8.74	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		65.27 + J 21.50	PU			
CBL-0469	B-B61-LSD	B-B61-LS2	1	208	26.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		12.14 + J 3.52	PU			
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		38.26 + J 8.65	PU			
CBL-0470	B-B61-ATS-EQD	B-B61-EQD	1	208	15.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		1.02 + J 1.62	PU			
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		3.21 + J 3.98	PU			
CBL-0472	B-B61-EQD	B-B61-ELEV	1	208	70.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		10.36 + J 8.04	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		32.63 + J 19.80	PU			
CBL-0473	B-B61-EQD	B-B61-EQ1	1	208	50.0	FEET	2/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1020 + J 0.0533	Ohms/1000 ft		11.79 + J 6.16	PU			
	Z0 Impedance:	0.3214 + J 0.1312	Ohms/1000 ft		37.14 + J 15.16	PU			
CBL-0474	B-B61-EQD	B-B61-EQ4	1	208	45.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft		13.31 + J 5.62	PU			
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft		41.96 + J 13.82	PU			

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0475	B-B61-EQD	B-B61-EQ2	1	208	15.0 FEET	2/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft				3.54 + J 1.85 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft				11.14 + J 4.55 PU		
CBL-0476	B-B61-EQD	B-B61-EQA	1	208	4.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				0.5917 + J 0.4595 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				1.86 + J 1.13 PU		
CBL-0477	B-B61-EQA	B-B61-COMP RM	1	208	20.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				2.96 + J 2.30 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				9.32 + J 5.66 PU		
CBL-0493	B-B62-ATS-EQD	B-B62-EQD	1	208	15.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				2.22 + J 1.72 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				6.99 + J 4.24 PU		
CBL-0494	B-B62-EQD	B-B62-ELEV-1	1	208	45.0 FEET	2/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft				10.61 + J 5.54 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft				33.43 + J 13.65 PU		
CBL-0495	B-B62-EQD	B-B62-ATTC PNL	1	208	45.0 FEET	2/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft				10.61 + J 5.54 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft				33.43 + J 13.65 PU		
CBL-0496	B-B62-EQD	B-B62-EQ	1	208	5.0 FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				2.33 + J 0.6761 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				7.36 + J 1.66 PU		
CBL-0497	B-B62-EQD	B-B62-ELEV-2	1	208	45.0 FEET	2/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft				10.61 + J 5.54 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft				33.43 + J 13.65 PU		
CBL-0498	B-B62-EQD	B-B62-PAD RM	1	208	16.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				4.73 + J 2.00 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				14.92 + J 4.91 PU		

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0499	B-B62-ATS-LSD	B-B62-LSD-M	1	208	15.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN	
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft		2.22 + J 1.72 PU				
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft		6.99 + J 4.24 PU				
CBL-0500	B-B62-LSD-M	B-B62-LSD	1	208	1.000 FEET	225	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class: Class B	
	+/- Impedance: 0.0425 + J 0.0323 Ohms/1000 ft		0.0982 + J 0.0747 PU				
	Z0 Impedance: 0.2527 + J 0.1729 Ohms/1000 ft		0.5841 + J 0.3996 PU				
CBL-0501	B-B62-LSD	B-B62-LS3	1	208	58.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN	
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		17.16 + J 7.24 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		54.08 + J 17.82 PU				
CBL-0502	B-B62-LSD	B-B62-LS4	1	208	32.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN	
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft		9.47 + J 3.99 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft		29.84 + J 9.83 PU				
CBL-0503	B-B62-LSD	B-B62-LS1	1	208	54.0 FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN	
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		25.21 + J 7.30 PU				
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		79.46 + J 17.97 PU				
CBL-0504	B-B62-LSD	B-B62-LS2	1	208	24.0 FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN	
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft		11.21 + J 3.25 PU				
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft		35.31 + J 7.99 PU				
CBL-0505	B-T-B70-SEC	B-B70-MDP-M	2	208	65.0 FEET	600	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN	
	+/- Impedance: 0.0257 + J 0.0463 Ohms/1000 ft		1.93 + J 3.48 PU				
	Z0 Impedance: 0.0809 + J 0.1140 Ohms/1000 ft		6.08 + J 8.56 PU				
CBL-0506	B-T-B70-SEC	B-B70-FP-TAP	1	208	35.0 FEET	600	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN	
	+/- Impedance: 0.0257 + J 0.0463 Ohms/1000 ft		2.08 + J 3.75 PU				
	Z0 Impedance: 0.0809 + J 0.1140 Ohms/1000 ft		6.54 + J 9.22 PU				
CBL-0507	B-B70-FP-TAP	B-B70-FPMP M	1	208	15.0 FEET	350	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class: THHN	
	+/- Impedance: 0.0378 + J 0.0373 Ohms/1000 ft		1.31 + J 1.29 PU				
	Z0 Impedance: 0.1191 + J 0.0918 Ohms/1000 ft		4.13 + J 3.18 PU				

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0508	B-B70-FPMP M	B-B70-FIRE PMP	1	208	60.0 FEET	6	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.5100 + J 0.0685 Ohms/1000 ft					70.73 + J 9.50 PU	
	Z0 Impedance: 1.61 + J 0.1687 Ohms/1000 ft					222.89 + J 23.40 PU	
CBL-0509	B-B70-MDP-M	B-B70-MDP	1	208	1.000 FEET	800	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0167 + J 0.0127 Ohms/1000 ft					0.0386 + J 0.0294 PU	
	Z0 Impedance: 0.0992 + J 0.0679 Ohms/1000 ft					0.2293 + J 0.1569 PU	
CBL-0510	B-B70-MDP	B-B70-STRTLGHT	1	208	30.0 FEET	4	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft					22.26 + J 4.38 PU	
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft					70.15 + J 10.79 PU	
CBL-0511	B-B70-MDP	B0B70-LP2	1	208	115.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft					34.02 + J 14.35 PU	
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft					107.23 + J 35.33 PU	
CBL-0512	B-B70-MDP	B-B70-ATTIC	1	208	60.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft					17.75 + J 7.49 PU	
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft					55.94 + J 18.43 PU	
CBL-0513	B-B70-MDP	B-B70-A	1	208	45.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft					13.31 + J 5.62 PU	
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft					41.96 + J 13.82 PU	
CBL-0514	B-B70-MDP	B-B70-K	1	208	35.0 FEET	4	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.3210 + J 0.0632 Ohms/1000 ft					25.97 + J 5.11 PU	
	Z0 Impedance: 1.01 + J 0.1556 Ohms/1000 ft					81.84 + J 12.59 PU	
CBL-0515	B-B70-MDP	BUS-0581	1	208	20.0 FEET	250	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft					2.55 + J 2.29 PU	
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft					8.04 + J 5.64 PU	
CBL-0516	B-B70-MDP	B-B70-PP2	1	208	75.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft					11.09 + J 8.62 PU	
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft					34.97 + J 21.22 PU	

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0517	B-B70-MDP	BUS-0582	1	208	15.0	FEET	400	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				1.23 + J 1.70	PU	
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				3.89 + J 4.18	PU	
CBL-0518	B-B70-MDP	B-B70 -BLDG-71	1	208	500.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				233.45 + J 67.61	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				735.72 + J 166.42	PU	
CBL-0519	B-B70-MDP	B-B70-LP1	1	208	85.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				25.15 + J 10.61	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				79.26 + J 26.11	PU	
CBL-0520	B-B70-MDP	B-B70-LP3	1	208	115.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				17.01 + J 13.21	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				53.61 + J 32.54	PU	
CBL-0521	B-B70-MDP	B-B70-B	1	208	45.0	FEET	1/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.1280 + J 0.0540	Ohms/1000 ft				13.31 + J 5.62	PU	
	Z0 Impedance:	0.4034 + J 0.1329	Ohms/1000 ft				41.96 + J 13.82	PU	
CBL-0522	B-B70-MDP	B-B70-LP-4	1	208	160.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				23.67 + J 18.38	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				74.59 + J 45.27	PU	
CBL-0524	B-B70-MDP	B-B70-CHLLR	1	208	200.0	FEET	350	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0378 + J 0.0491	Ohms/1000 ft				17.47 + J 22.70	PU	
	Z0 Impedance:	0.1191 + J 0.1209	Ohms/1000 ft				55.06 + J 55.89	PU	
CBL-0525	B-B70-MDP	B-B70-PP220	1	208	125.0	FEET	3/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0805 + J 0.0519	Ohms/1000 ft				23.26 + J 15.00	PU	
	Z0 Impedance:	0.2537 + J 0.1278	Ohms/1000 ft				73.30 + J 36.92	PU	
CBL-0526	B-B70-ATS-EQD	B-B70-EQD-M	1	208	8.0	FEET	400	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0356 + J 0.0490	Ohms/1000 ft				0.6583 + J 0.9061	PU	
	Z0 Impedance:	0.1122 + J 0.1206	Ohms/1000 ft				2.07 + J 2.23	PU	

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0527	B-B70-EQD-M	B-B70-EQD	1	208	1.000	FEET	400	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft						0.0673 + J 0.0696 PU		
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft						0.3999 + J 0.3724 PU		
CBL-0528	B-B70-EQD	B-B70-EQ1	1	208	85.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						20.04 + J 10.47 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						63.14 + J 25.78 PU		
CBL-0529	B-B70-EQ1	B-B70-EQ3	1	208	15.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						3.54 + J 1.85 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						11.14 + J 4.55 PU		
CBL-0530	B-B70-EQ3	B-B70-EQ5	1	208	15.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						3.54 + J 1.85 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						11.14 + J 4.55 PU		
CBL-0531	B-B70-EQD	B-B70-EQ2	1	208	130.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						30.65 + J 16.02 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						96.57 + J 39.42 PU		
CBL-0532	B-B70-EQ2	B-B70-EQ4	1	208	15.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						3.54 + J 1.85 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						11.14 + J 4.55 PU		
CBL-0533	B-B70-EQ4	B-B70-EQ6	1	208	15.0	FEET	2/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1020 + J 0.0533 Ohms/1000 ft						3.54 + J 1.85 PU		
	Z0 Impedance: 0.3214 + J 0.1312 Ohms/1000 ft						11.14 + J 4.55 PU		
CBL-0534	B-B70-LSD	B-B70-LS3	1	208	100.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						29.59 + J 12.48 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						93.24 + J 30.72 PU		
CBL-0535	B-B70-LS3	B-B70-LS5	1	208	15.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft						4.44 + J 1.87 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft						13.99 + J 4.61 PU		

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0537	B-B70-LSD	B-B70-LS4	1	208	145.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				42.90 + J 18.10 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				135.20 + J 44.54 PU		
CBL-0538	B-B70-LS4	B-B70-LS6	1	208	15.0 FEET	1/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				4.44 + J 1.87 PU		
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				13.99 + J 4.61 PU		
CBL-0540	B-B70-ATS-LSD	B-B70-LSD-M	1	208	8.0 FEET	400	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0356 + J 0.0490 Ohms/1000 ft				0.6583 + J 0.9061 PU		
	Z0 Impedance: 0.1122 + J 0.1206 Ohms/1000 ft				2.07 + J 2.23 PU		
CBL-0541	B-B70-LSD-M	B-B70-LSD	1	208	1.000 FEET	400	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft				0.0673 + J 0.0696 PU		
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft				0.3999 + J 0.3724 PU		
CBL-0542	B-B70-LSD	B-B70-LS1	1	208	85.0 FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				39.69 + J 11.49 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				125.07 + J 28.29 PU		
CBL-0543	B-B70-LSD	B-B70-LS2	1	208	115.0 FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				53.69 + J 15.55 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				169.21 + J 38.28 PU		
CBL-0544	B-B70 GEN-M	B-B70-EM-TAP	1	208	1.000 FEET	400	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0291 + J 0.0301 Ohms/1000 ft				0.0673 + J 0.0696 PU		
	Z0 Impedance: 0.1730 + J 0.1611 Ohms/1000 ft				0.3999 + J 0.3724 PU		
CBL-0545	B-B70-GEN	B-B70 GEN-M	1	208	7.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				0.4757 + J 0.7540 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				1.50 + J 1.86 PU		
CBL-0546	B-B70-EM-TAP	BUS-0612	1	208	30.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				2.04 + J 3.23 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				6.42 + J 7.95 PU		

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0547	B-B70-EM-TAP	BUS-0613	1	208	30.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				4.44 + J 3.45	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				13.99 + J 8.49	PU	
CBL-0548	B-B70-EM-TAP	B-B70-FPMP M	1	208	25.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				1.70 + J 2.69	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				5.35 + J 6.63	PU	
CBL-0555	B-B78-ATSG9578	B-B78-78AE1	1	208	5.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.3398 + J 0.5386	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				1.07 + J 1.33	PU	
CBL-0556	B-B78-ATS-LS1	B-B78-LSD	1	208	5.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft				0.7396 + J 0.5744	PU	
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft				2.33 + J 1.41	PU	
CBL-0586	B-B78-ATS-CRD	B-B78-CRD	1	208	250.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0640 + J 0.0381	Ohms/1000 ft				36.98 + J 22.02	PU	
	Z0 Impedance:	0.2017 + J 0.0938	Ohms/1000 ft				116.55 + J 54.20	PU	
CBL-0597	B-B80-ATS-EQ	B-B80-E1	1	208	15.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				7.00 + J 2.03	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				22.07 + J 4.99	PU	
CBL-0598	B-B80-E1	B-B80-LB-E	1	208	50.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				23.35 + J 6.76	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				73.57 + J 16.64	PU	
CBL-0599	B-B80-E1	B-B80-PB-2	1	208	30.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft				14.01 + J 4.06	PU	
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft				44.14 + J 9.99	PU	
CBL-0604	B-B92 GEN	B-B92-EMDP-M	3	208	12.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:				PVC	Insulation Class:	THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft				0.2718 + J 0.4308	PU	
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft				0.8561 + J 1.06	PU	

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0605	B-B92-EMDP-M	B-B92-EMDP	1	208	1.000	FEET	1200	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0111 + J 0.0052 Ohms/1000 ft				0.0257 + J 0.0120 PU				
	Z0 Impedance: 0.0660 + J 0.0278 Ohms/1000 ft				0.1526 + J 0.0643 PU				
CBL-0606	B-B92-EMDP	BUS-0676	1	208	25.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				11.67 + J 3.38 PU				
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				36.79 + J 8.32 PU				
CBL-0607	B-B92-EMDP	BUS-0677	1	208	375.0	FEET	3/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft				69.78 + J 44.99 PU				
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft				219.90 + J 110.77 PU				
CBL-0608	B-B92-EMDP	BUS-0678	1	208	150.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				70.04 + J 20.28 PU				
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				220.71 + J 49.93 PU				
CBL-0609	B-B92-EMDP	BUS-0680	1	208	325.0	FEET	1/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.1280 + J 0.0540 Ohms/1000 ft				96.15 + J 40.56 PU				
	Z0 Impedance: 0.4034 + J 0.1329 Ohms/1000 ft				303.03 + J 99.83 PU				
CBL-0610	B-B92-EMDP	BUS-0736	1	208	400.0	FEET	350	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft				34.95 + J 45.40 PU				
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft				110.11 + J 111.78 PU				
CBL-0611	B-B92-EMDP	B-B2-EPNL-B-M	1	208	400.0	FEET	350	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft				34.95 + J 45.40 PU				
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft				110.11 + J 111.78 PU				
CBL-0612	B-B93-GEN	B-B93-EMDP-M	3	208	20.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				0.4530 + J 0.7181 PU				
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				1.43 + J 1.77 PU				
CBL-0613	B-B93-EMDP-M	B-B93-EMDP	1	208	1.000	FEET	1200	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0111 + J 0.0052 Ohms/1000 ft				0.0257 + J 0.0120 PU				
	Z0 Impedance: 0.0660 + J 0.0278 Ohms/1000 ft				0.1526 + J 0.0643 PU				

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0614	B-B93-EMDP	BUS-0685	1	208	25.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		11.67 + J 3.38	PU			
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		36.79 + J 8.32	PU			
CBL-0615	B-B93-EMDP	BUS-0688	1	208	300.0	FEET	2	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.2020 + J 0.0585	Ohms/1000 ft		140.07 + J 40.56	PU			
	Z0 Impedance:	0.6366 + J 0.1440	Ohms/1000 ft		441.43 + J 99.85	PU			
CBL-0616	B-B93-EMDP	BUS-0689	1	208	225.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		33.28 + J 25.85	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		104.90 + J 63.66	PU			
CBL-0617	B-B93-EMDP	BUS-0691	1	208	225.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		15.29 + J 24.23	PU			
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		48.16 + J 59.65	PU			
CBL-0618	B-B93-EMDP	BUS-0692	1	208	675.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		45.87 + J 72.70	PU			
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		144.47 + J 178.95	PU			
CBL-0619	B-B93-EMDP	B-B93-EMDP1	3	208	5.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		0.1133 + J 0.1795	PU			
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		0.3567 + J 0.4419	PU			
CBL-0620	B-B93-EMDP1	BUS-0694	1	208	225.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		33.28 + J 25.85	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		104.90 + J 63.66	PU			
CBL-0621	B-B93-EMDP1	BUS-0695	1	208	675.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		99.85 + J 77.54	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		314.69 + J 190.97	PU			
CBL-0624	B-B94-GEN	B-B94-EMDP-M	3	208	20.0	FEET	500	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:			THHN
	+/- Impedance:	0.0294 + J 0.0466	Ohms/1000 ft		0.4530 + J 0.7181	PU			
	Z0 Impedance:	0.0926 + J 0.1147	Ohms/1000 ft		1.43 + J 1.77	PU			

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	TYPE	
CBL-0625	B-B94-EMDP-M	B-B94-EMDP	1	208	1.000	FEET	1200	Copper	
	Duct Material: Busway		Insulation Type: Epoxy				Insulation Class:		Class B
	+/- Impedance: 0.0111 + J 0.0052 Ohms/1000 ft					0.0257 + J 0.0120 PU			
	Z0 Impedance: 0.0660 + J 0.0278 Ohms/1000 ft					0.1526 + J 0.0643 PU			
CBL-0626	B-B94-EMDP	BUS-0700	1	208	775.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft					52.67 + J 83.48 PU			
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft					165.88 + J 205.47 PU			
CBL-0627	B-B94-EMDP	BUS-0701	1	208	500.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft					33.98 + J 53.86 PU			
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft					107.02 + J 132.56 PU			
CBL-0628	B-B94-EMDP	BUS-0702	1	208	250.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft					16.99 + J 26.93 PU			
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft					53.51 + J 66.28 PU			
CBL-0629	B-B94-EMDP	BUS-0703	1	208	575.0	FEET	500	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft					39.07 + J 61.93 PU			
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft					123.07 + J 152.44 PU			
CBL-0630	B-B94-EMDP	BUS-0704	1	208	20.0	FEET	2	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft					9.34 + J 2.70 PU			
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft					29.43 + J 6.66 PU			
CBL-0631	B-B94-EMDP	BUS-0705	1	208	575.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft					85.06 + J 66.05 PU			
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft					268.07 + J 162.68 PU			
CBL-0632	B-B94-EMDP	BUS-0706	1	208	775.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft					114.64 + J 89.03 PU			
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft					361.31 + J 219.26 PU			
CBL-0633	B-B94-EMDP	BUS-0707	1	208	450.0	FEET	4/0	Copper	
	Duct Material: Magnetic		Insulation Type: PVC				Insulation Class:		THHN
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft					66.57 + J 51.69 PU			
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft					209.79 + J 127.31 PU			

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0634	B-B94-EMDP	BUS-0708	1	208	250.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN		
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				36.98 + J 28.72 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				116.55 + J 70.73 PU		
CBL-0635	B-B95-GEN	B-B95-EMDP-M	3	208	20.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN		
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				0.4530 + J 0.7181 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				1.43 + J 1.77 PU		
CBL-0636	B-B95-EMDP-M	B-B95-EMDP	1	208	1.000 FEET	1200	Copper
	Duct Material: Busway		Insulation Type: Epoxy		Insulation Class: Class B		
	+/- Impedance: 0.0111 + J 0.0052 Ohms/1000 ft				0.0257 + J 0.0120 PU		
	Z0 Impedance: 0.0660 + J 0.0278 Ohms/1000 ft				0.1526 + J 0.0643 PU		
CBL-0637	B-B95-EMDP	BUS-0712	1	208	150.0 FEET	4/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN		
	+/- Impedance: 0.0640 + J 0.0497 Ohms/1000 ft				22.19 + J 17.23 PU		
	Z0 Impedance: 0.2017 + J 0.1224 Ohms/1000 ft				69.93 + J 42.44 PU		
CBL-0638	B-B95-EMDP	BUS-0713	1	208	375.0 FEET	3/0	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN		
	+/- Impedance: 0.0805 + J 0.0519 Ohms/1000 ft				69.78 + J 44.99 PU		
	Z0 Impedance: 0.2537 + J 0.1278 Ohms/1000 ft				219.90 + J 110.77 PU		
CBL-0639	B-B95-EMDP	BUS-0714	1	208	150.0 FEET	250	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN		
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft				19.14 + J 17.16 PU		
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft				60.29 + J 42.26 PU		
CBL-0640	B-B95-EMDP	BUS-0715	1	208	150.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN		
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				10.19 + J 16.16 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				32.11 + J 39.77 PU		
CBL-0641	B-B95-EMDP	B-B10 EMRG TAP	1	208	425.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN		
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				28.88 + J 45.78 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				90.96 + J 112.67 PU		
CBL-0642	B-B95-EMDP	BUS-0718	1	208	150.0 FEET	600	Copper
	Duct Material: Magnetic		Insulation Type: PVC		Insulation Class: THHN		
	+/- Impedance: 0.0257 + J 0.0463 Ohms/1000 ft				8.91 + J 16.05 PU		
	Z0 Impedance: 0.0809 + J 0.1140 Ohms/1000 ft				28.05 + J 39.52 PU		

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH	FEEDER SIZE	FEEDER TYPE
CBL-0643	B-B95-EMDP	BUS-0719	1	208	150.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				10.19 + J 16.16 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				32.11 + J 39.77 PU		
CBL-0645	B-B2-EPNL-B-M	B-B2-EPNL-B	1	208	1.000 FEET	800	Copper
	Duct Material: Busway		Insulation Type: Epoxy			Insulation Class:	Class B
	+/- Impedance: 0.0167 + J 0.0127 Ohms/1000 ft				0.0386 + J 0.0294 PU		
	Z0 Impedance: 0.0992 + J 0.0679 Ohms/1000 ft				0.2293 + J 0.1569 PU		
CBL-0646	B-B2-EPNL-B	BUS-0722	1	208	56.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				3.81 + J 6.03 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				11.99 + J 14.85 PU		
CBL-0647	B-B2-EPNL-B	BUS-0723	1	208	225.0 FEET	250	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0552 + J 0.0495 Ohms/1000 ft				28.71 + J 25.74 PU		
	Z0 Impedance: 0.1739 + J 0.1219 Ohms/1000 ft				90.44 + J 63.40 PU		
CBL-0648	B-B8-GEN	BUS-0725	1	480	60.0 FEET	350	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft				0.9844 + J 1.28 PU		
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft				3.10 + J 3.15 PU		
CBL-0649	B-B22-GEN	BUS-0727	1	480	50.0 FEET	300	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0464 + J 0.0493 Ohms/1000 ft				1.01 + J 1.07 PU		
	Z0 Impedance: 0.1462 + J 0.1214 Ohms/1000 ft				3.17 + J 2.63 PU		
CBL-0651	B-B78-ATS-E1	B-B78-E1	1	208	5.0 FEET	500	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THWN
	+/- Impedance: 0.0294 + J 0.0466 Ohms/1000 ft				0.3398 + J 0.5386 PU		
	Z0 Impedance: 0.0926 + J 0.1147 Ohms/1000 ft				1.07 + J 1.33 PU		
CBL-0658	B-B8-J-BOX	B-B8-ELEV	1	208	20.0 FEET	350	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.0378 + J 0.0491 Ohms/1000 ft				1.75 + J 2.27 PU		
	Z0 Impedance: 0.1191 + J 0.1209 Ohms/1000 ft				5.51 + J 5.59 PU		
CBL-0662	B-B94-ATS	B-B94-E1	1	208	20.0 FEET	2	Copper
	Duct Material: Magnetic		Insulation Type: PVC			Insulation Class:	THHN
	+/- Impedance: 0.2020 + J 0.0585 Ohms/1000 ft				9.34 + J 2.70 PU		
	Z0 Impedance: 0.6366 + J 0.1440 Ohms/1000 ft				29.43 + J 6.66 PU		

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

FEEDER INPUT DATA

CABLE NAME	FEEDER FROM NAME	FEEDER TO NAME	QTY /PH	VOLTS L-L	LENGTH		FEEDER SIZE	FEEDER TYPE	
CBL-0664	B-B82-ATS-EMER	B-B82-EMERG-M	1	208	10.0	FEET	4/0	Copper	
	Duct Material:	Magnetic	Insulation Type:		PVC	Insulation Class:		THHN	
	+/- Impedance:	0.0640 + J 0.0497	Ohms/1000 ft		1.48 + J 1.15	PU			
	Z0 Impedance:	0.2017 + J 0.1224	Ohms/1000 ft		4.66 + J 2.83	PU			
CBL-0665	B-B82-EMERG-M	B-B82-EMER	1	208	1.000	FEET	400	Copper	
	Duct Material:	Busway	Insulation Type:		Epoxy	Insulation Class:		Class B	
	+/- Impedance:	0.0291 + J 0.0301	Ohms/1000 ft		0.0673 + J 0.0696	PU			
	Z0 Impedance:	0.1730 + J 0.1611	Ohms/1000 ft		0.3999 + J 0.3724	PU			

STUDY CASE-2 EMERGENCY

TRANSFORMER INPUT DATA

TRANSFORMER NAME	PRIMARY RECORD NO	NAME	VOLTS L-L	* SECONDARY RECORD NO	NAME	VOLTS L-L	FULL-LOAD KVA	NOMINAL KVA
XF2-0032	B-B8-TXMR PRI	D 480.00		B-B8-TXMR SEC	YG	208.00	112.50	112.50
	Pos. Seq. Z%:	2.44 + J 3.85	21.73 + j 34.22 PU					
	Zero Seq. Z%:	2.44 + J 3.85	21.73 + j 34.22 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
XF2-0033	B-B22-T2-PRI	D 480.00		B-B22-T2-SEC	YG	208.00	75.00	75.00
	Pos. Seq. Z%:	3.18 + J 4.73	42.38 + j 63.09 PU					
	Zero Seq. Z%:	3.18 + J 4.73	42.38 + j 63.09 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
XF2-0034	B-B22-T3 PRI	D 480.00		B-B22-T22-SEC	YG	208.00	75.00	75.00
	Pos. Seq. Z%:	3.18 + J 4.73	42.38 + j 63.09 PU					
	Zero Seq. Z%:	3.18 + J 4.73	42.38 + j 63.09 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					
XF2-0035	B-B22-T4-PRI	D 480.00		B-B22-T4-SEC	YG	208.00	75.00	75.00
	Pos. Seq. Z%:	3.18 + J 4.73	42.38 + j 63.09 PU					
	Zero Seq. Z%:	3.18 + J 4.73	42.38 + j 63.09 PU					
	Taps Pri. 0.000 %	Sec. 0.000 %	Phase Shift (Pri. Leading Sec.): 30.00 Deg.					

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

GENERATION DATA

BUS NAME	GENERATION	VOLT	SIZE	InitKW	MaxKVAR	TYPE
B-B70-GEN	B70-GEN	1 pu	156.00 kVA	0.00000	0.00000	SB
B-B92 GEN	GEN-B92	1 pu	375.00 kVA	0.00000	0.00000	SB
B-B93-GEN	GEN-B93	1 pu	375.00 kVA	0.00000	0.00000	SB
B-B94-GEN	B94-GEN	1 pu	375.00 kVA	0.00000	0.00000	SB
B-B95-GEN	B-95 GEN	1 pu	375.00 kVA	0.00000	0.00000	SB
B-B8-GEN	G-B8 GEN	1 pu	225.00 kVA	0.00000	0.00000	SB
B-B22-GEN	G-B22-GEN	1 pu	225.00 kVA	0.00000	0.00000	SB

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

ENERGY AUDIT LOADS

BUS NAME	LOAD NAME	VOLTS	SIZE	LOADTYPE	PF	LAG/LEAD
B-B17-ANIMALRM	LOAD-0011	208	9.9*1.00kVA	KVA	0.80	LAG
B-B17-NEB1	LOAD-0012	208	9.9*1.00kVA	KVA	0.80	LAG
B-B17-NEB2	LOAD-0010	208	5.9*1.00kVA	KVA	0.80	LAG
B-B18-1STFL	LOAD-0034	208	4.8*1.00kVA	KVA	0.80	LAG
B-B18-2NDFL	LOAD-0033	208	4.8*1.00kVA	KVA	0.80	LAG
B-B18-EMERG	LOAD-0035	208	4.8*1.00kVA	KVA	0.80	LAG
B-B2-BATTERYCH	LOAD-0314	208	5.9*1.00kVA	KVA	0.80	LAG
B-B2-DENTAL LB	LOAD-0307	208	5.0*1.00kVA	KVA	0.80	LAG
B-B2-DENTSUCPM	LOAD-0315	208	2.9*1.00kVA	KVA	0.80	LAG
B-B2-ELEV	LOAD-0308	208	6.6*1.00kVA	KVA	0.80	LAG
B-B2-ELEV-P1	LOAD-0304	208	10.0*1.00kVA	KVA	0.80	LAG
B-B2-EMERG-PNL	LOAD-0288	208	15.5*1.00kVA	KVA	0.80	LAG
B-B2-L12	LOAD-0310	208	5.9*1.00kVA	KVA	0.80	LAG
B-B2-L2A	LOAD-0303	208	10.0*1.00kVA	KVA	0.80	LAG
B-B2-L2E	LOAD-0309	208	5.9*1.00kVA	KVA	0.80	LAG
B-B2-L9E	LOAD-0311	208	5.9*1.00kVA	KVA	0.80	LAG
B-B2-LB1E	LOAD-0312	208	5.9*1.00kVA	KVA	0.80	LAG
B-B2-LB2E	LOAD-0302	208	5.0*1.00kVA	KVA	0.80	LAG
B-B2-MEDAIRCOM	LOAD-0305	208	5.0*1.00kVA	KVA	0.80	LAG
B-B2-NEWLAB	LOAD-0290	208	13.6*1.00kVA	KVA	0.80	LAG
B-B2-PNL 1	LOAD-0289	208	15.5*1.00kVA	KVA	0.80	LAG
B-B2-PNL-2	LOAD-0291	208	6.6*1.00kVA	KVA	0.80	LAG
B-B2-PNL-L11	LOAD-0306	208	10.0*1.00kVA	KVA	0.80	LAG
B-B2-PNL-M1	LOAD-0287	208	8.9*1.00kVA	KVA	0.80	LAG
B-B2-POD2PP	LOAD-0313	208	5.9*1.00kVA	KVA	0.80	LAG
B-B22-L1	LOAD-0051	480	22.7*1.00kVA	KVA	0.80	LAG
B-B22-L2	LOAD-0050	480	22.7*1.00kVA	KVA	0.80	LAG
B-B22-L3	LOAD-0049	480	22.7*1.00kVA	KVA	0.80	LAG
B-B22-P1	LOAD-0047	480	22.7*1.00kVA	KVA	0.80	LAG
B-B22-P2	LOAD-0048	480	22.7*1.00kVA	KVA	0.80	LAG
B-B3-1ST FL	LOAD-0059	208	6.3*1.00kVA	KVA	0.80	LAG
B-B3-ALDN KIT	LOAD-0065	208	4.0*1.00kVA	KVA	0.80	LAG
B-B3-COMP	LOAD-0061	208	4.0*1.00kVA	KVA	0.80	LAG
B-B3-COMP AC	LOAD-0066	208	1.2*1.00kVA	KVA	0.80	LAG
B-B3-COMP MF	LOAD-0069	208	8.0*1.00kVA	KVA	0.80	LAG
B-B3-DBL GRILL	LOAD-0058	208	12.6*1.00kVA	KVA	0.80	LAG
B-B3-ELEV	LOAD-0067	208	7.0*1.00kVA	KVA	0.80	LAG
B-B3-HYDRO ELV	LOAD-0062	208	8.0*1.00kVA	KVA	0.80	LAG
B-B3-KP1	LOAD-0056	208	14.1*1.00kVA	KVA	0.80	LAG
B-B3-MECH HVAC	LOAD-0063	208	4.0*1.00kVA	KVA	0.80	LAG
B-B3-MECH RM	LOAD-0068	208	8.0*1.00kVA	KVA	0.80	LAG
B-B3-P7	LOAD-0057	208	6.3*1.00kVA	KVA	0.80	LAG
B-B3-STRT PNL	LOAD-0064	208	4.0*1.00kVA	KVA	0.80	LAG

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

ENERGY AUDIT LOADS

BUS NAME	LOAD NAME	VOLTS	SIZE	LOADTYPE	PF	LAG/LEAD
B-B3-TELE PNL	LOAD-0055	208	14.1*1.00kVA	KVA	0.80	LAG
B-B3-TRAY LINE	LOAD-0060	208	5.0*1.00kVA	KVA	0.80	LAG
B-B4-ELEV#4	LOAD-0073	208	4.1*1.00kVA	KVA	0.80	LAG
B-B4-EQ10	LOAD-0075	208	4.8*1.00kVA	KVA	0.80	LAG
B-B4-EQ11	LOAD-0108	208	4.8*1.00kVA	KVA	0.80	LAG
B-B4-EQ12	LOAD-0074	208	4.1*1.00kVA	KVA	0.80	LAG
B-B4-EQ15	LOAD-0076	208	4.8*1.00kVA	KVA	0.80	LAG
B-B4-EQ9	LOAD-0077	208	5.4*1.00kVA	KVA	0.80	LAG
B-B4-HYDROELEV	LOAD-0072	208	6.1*1.00kVA	KVA	0.80	LAG
B-B4-LP15	LOAD-0102	208	3.9*1.00kVA	KVA	0.80	LAG
B-B4-LS1	LOAD-0092	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS10	LOAD-0096	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS11	LOAD-0098	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS12	LOAD-0100	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS13	LOAD-0104	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS14	LOAD-0106	208	2.0*1.00kVA	KVA	0.80	LAG
B-B4-LS2	LOAD-0093	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS3	LOAD-0095	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS4	LOAD-0094	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS5	LOAD-0097	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS6	LOAD-0099	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS7	LOAD-0101	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS8	LOAD-0105	208	2.4*1.00kVA	KVA	0.80	LAG
B-B4-LS9	LOAD-0107	208	2.0*1.00kVA	KVA	0.80	LAG
B-B4-PP1	LOAD-0071	208	6.1*1.00kVA	KVA	0.80	LAG
B-B4-PP2	LOAD-0103	208	3.9*1.00kVA	KVA	0.80	LAG
B-B5-EQ1	LOAD-0115	208	8.9*1.00kVA	KVA	0.80	LAG
B-B5-EQ2	LOAD-0117	208	8.9*1.00kVA	KVA	0.80	LAG
B-B5-EQ5	LOAD-0116	208	8.9*1.00kVA	KVA	0.80	LAG
B-B5-EQ6	LOAD-0118	208	8.9*1.00kVA	KVA	0.80	LAG
B-B5-HYDR ELEV	LOAD-0119	208	11.9*1.00kVA	KVA	0.80	LAG
B-B5-LS4	LOAD-0112	208	23.8*1.00kVA	KVA	0.80	LAG
B-B55-LS3	LOAD-0113	208	23.8*1.00kVA	KVA	0.80	LAG
B-B6-EQ1	LOAD-0132	208	5.3*1.00kVA	KVA	0.80	LAG
B-B6-EQ4	LOAD-0134	208	5.3*1.00kVA	KVA	0.80	LAG
B-B6-EQ5	LOAD-0135	208	7.9*1.00kVA	KVA	0.80	LAG
B-B6-EQ8	LOAD-0131	208	7.9*1.00kVA	KVA	0.80	LAG
B-B6-EQMACH	LOAD-0133	208	3.5*1.00kVA	KVA	0.80	LAG
B-B6-LS1	LOAD-0138	208	8.2*1.00kVA	KVA	0.80	LAG
B-B6-LS2	LOAD-0139	208	5.4*1.00kVA	KVA	0.80	LAG
B-B6-LS5	LOAD-0137	208	8.2*1.00kVA	KVA	0.80	LAG
B-B6-LS6	LOAD-0136	208	8.2*1.00kVA	KVA	0.80	LAG
B-B61-COMP RM	LOAD-0160	208	8.4*1.00kVA	KVA	0.80	LAG

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

ENERGY AUDIT LOADS

BUS NAME	LOAD NAME	VOLTS	SIZE	LOADTYPE	PF	LAG/LEAD
B-B61-ELEV	LOAD-0158	208	8.4*1.00kVA	KVA	0.80	LAG
B-B61-EQ1	LOAD-0159	208	8.4*1.00kVA	KVA	0.80	LAG
B-B61-EQ2	LOAD-0162	208	7.4*1.00kVA	KVA	0.80	LAG
B-B61-EQ4	LOAD-0161	208	3.0*1.00kVA	KVA	0.80	LAG
B-B61-KITCHEN	LOAD-0155	208	5.1*1.00kVA	KVA	0.80	LAG
B-B61-LS1	LOAD-0156	208	2.3*1.00kVA	KVA	0.80	LAG
B-B61-LS2	LOAD-0157	208	2.3*1.00kVA	KVA	0.80	LAG
B-B61-LS3	LOAD-0152	208	3.4*1.00kVA	KVA	0.80	LAG
B-B61-LS4	LOAD-0153	208	3.4*1.00kVA	KVA	0.80	LAG
B-B61-LS5	LOAD-0154	208	3.4*1.00kVA	KVA	0.80	LAG
B-B62-ATTC PNL	LOAD-0179	208	5.0*1.00kVA	KVA	0.80	LAG
B-B62-ELEV-1	LOAD-0178	208	5.0*1.00kVA	KVA	0.80	LAG
B-B62-ELEV-2	LOAD-0181	208	5.0*1.00kVA	KVA	0.80	LAG
B-B62-EQ	LOAD-0180	208	5.0*1.00kVA	KVA	0.80	LAG
B-B62-LS1	LOAD-0176	208	5.1*1.00kVA	KVA	0.80	LAG
B-B62-LS2	LOAD-0177	208	5.1*1.00kVA	KVA	0.80	LAG
B-B62-LS3	LOAD-0174	208	7.7*1.00kVA	KVA	0.80	LAG
B-B62-LS4	LOAD-0175	208	7.7*1.00kVA	KVA	0.80	LAG
B-B62-PAD RM	LOAD-0182	208	5.7*1.00kVA	KVA	0.80	LAG
B-B7-ELEV	LOAD-0196	208	5.7*1.00kVA	KVA	0.80	LAG
B-B7-EQ1	LOAD-0192	208	5.0*1.00kVA	KVA	0.80	LAG
B-B7-EQ2	LOAD-0194	208	5.0*1.00kVA	KVA	0.80	LAG
B-B7-EQ4	LOAD-0197	208	5.7*1.00kVA	KVA	0.80	LAG
B-B7-LS1	LOAD-0201	208	4.1*1.00kVA	KVA	0.80	LAG
B-B7-LS2	LOAD-0202	208	4.1*1.00kVA	KVA	0.80	LAG
B-B7-LS4	LOAD-0200	208	4.1*1.00kVA	KVA	0.80	LAG
B-B7-LS5	LOAD-0199	208	4.1*1.00kVA	KVA	0.80	LAG
B-B7-MCC-1	LOAD-0198	208	2.0*1.00kVA	KVA	0.80	LAG
B-B70 -BLDG-71	LOAD-0209	208	6.3*1.00kVA	KVA	0.80	LAG
B-B70-A	LOAD-0207	208	9.4*1.00kVA	KVA	0.80	LAG
B-B70-ATTIC	LOAD-0206	208	9.4*1.00kVA	KVA	0.80	LAG
B-B70-B	LOAD-0213	208	9.4*1.00kVA	KVA	0.80	LAG
B-B70-CHLLR	LOAD-0216	208	22.0*1.00kVA	KVA	0.80	LAG
B-B70-EQ5	LOAD-0221	208	8.7*1.00kVA	KVA	0.80	LAG
B-B70-EQ6	LOAD-0222	208	10.1*1.00kVA	KVA	0.80	LAG
B-B70-FIRE PMP	LOAD-0203	208	80.0*1.00kVA	KVA	0.80	LAG
B-B70-K	LOAD-0208	208	4.7*1.00kVA	KVA	0.80	LAG
B-B70-LP-4	LOAD-0214	208	12.6*1.00kVA	KVA	0.80	LAG
B-B70-LP1	LOAD-0211	208	14.1*1.00kVA	KVA	0.80	LAG
B-B70-LP3	LOAD-0212	208	9.4*1.00kVA	KVA	0.80	LAG
B-B70-LS1	LOAD-0217	208	2.7*1.00kVA	KVA	0.80	LAG
B-B70-LS2	LOAD-0219	208	2.7*1.00kVA	KVA	0.80	LAG
B-B70-LS5	LOAD-0218	208	4.0*1.00kVA	KVA	0.80	LAG

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

ENERGY AUDIT LOADS

BUS NAME	LOAD NAME	VOLTS	SIZE	LOADTYPE	PF	LAG/LEAD
B-B70-LS6	LOAD-0220	208	4.7*1.00kVA	KVA	0.80	LAG
B-B70-PP2	LOAD-0210	208	14.1*1.00kVA	KVA	0.80	LAG
B-B70-PP220	LOAD-0215	208	12.6*1.00kVA	KVA	0.80	LAG
B-B70-STRTLGHT	LOAD-0204	208	4.7*1.00kVA	KVA	0.80	LAG
B-B78-78AE1	LOAD-0258	208	24.6*1.00kVA	KVA	0.80	LAG
B-B78-CRD	LOAD-0281	208	21.0*1.00kVA	KVA	0.80	LAG
B-B78-E1	LOAD-0266	208	56.1*1.00kVA	KVA	0.80	LAG
B-B78-LSD	LOAD-0257	208	24.6*1.00kVA	KVA	0.80	LAG
B-B8 HYDRO ELV	LOAD-0224	480	52.9*1.00kVA	KVA	0.80	LAG
B-B8-CMOP	LOAD-0225	208	31.1*1.00kVA	KVA	0.80	LAG
B-B8-COMP	LOAD-0227	480	31.8*1.00kVA	KVA	0.80	LAG
B-B8-FLEXPMACH	LOAD-0223	480	15.9*1.00kVA	KVA	0.80	LAG
B-B8-J-BOX	LOAD-0226	208	48.2*1.00kVA	KVA	0.80	LAG
B-B80-LB-E	LOAD-0239	208	12.5*1.00kVA	KVA	0.80	LAG
B-B80-PB-2	LOAD-0240	208	12.5*1.00kVA	KVA	0.80	LAG
B-B82-EMER	LOAD-0244	208	90.0*1.00kVA	KVA	0.80	LAG
B-B92-PNL-E1	LOAD-0292	208	24.0*1.00kVA	KVA	0.80	LAG
B-B94-ATS	LOAD-0193	208	10.9*1.00kVA	KVA	0.80	LAG
B0B70-LP2	LOAD-0205	208	6.3*1.00kVA	KVA	0.80	LAG
bB-B7-MC1	LOAD-0195	208	5.7*1.00kVA	KVA	0.80	LAG

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY
Dec 28, 2004 15:17:28

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LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

*** SOLUTION COMMENTS ***
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SOLUTION PARAMETERS

BRANCH VOLTAGE CRITERIA	:	3.00 %
BUS VOLTAGE CRITERIA	:	5.00 %
ACCELERATION FACTOR FOR 'PV' GENERATORS	:	1.00
ACCELERATION FACTOR FOR CONSTANT KVA LOADS	:	1.00
EXACT(ITERATIVE) SOLUTION	:	YES
UTILITY IMPEDANCE	:	NO
TRANSFORMER PHASE SHIFT	:	NO

ALL PU VALUES ARE EXPRESSED ON A 100 MVA BASE

LOAD FLOW IS BASED ON DIRECTLY CONNECTED LOADS.
LOAD ANALYSIS INCLUDES ALL LOADS.

<<PERCENT VOLTAGE DROPS ARE BASED ON NOMINAL DESIGN VOLTAGES>>

SWING GENERATORS

SOURCE NAME	VOLTAGE	ANGLE
B70-GEN	1.000	0.00
GEN-B92	1.000	0.00
GEN-B93	1.000	0.00
B94-GEN	1.000	0.00
B-95 GEN	1.000	0.00
G-B8 GEN	1.000	0.00
G-B22-GEN	1.000	0.00

LARGEST LOAD: 90.00 KVA
CONVERGENCE CRITERIA: 0.004 KVA

LARGEST BUS MISMATCH	B-B8-ELEV	12.749 KVA
LARGEST BUS MISMATCH	B-B8-ELEV	1.230 KVA
LARGEST BUS MISMATCH	B-B8-ELEV	0.121 KVA
LARGEST BUS MISMATCH	B-B8-ELEV	0.012 KVA
LARGEST BUS MISMATCH	B-B8-ELEV	0.001 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS (SWING GENERATORS)

****

SOURCE	VOLTAGE	ANGLE	KW	KVAR	VD% (UTILITY IMPEDANCE)
B70-GEN	1.000	0.00	206.20	153.28	Gen Z Ignored
GEN-B92	1.000	0.00	178.82	137.03	Gen Z Ignored
GEN-B93	1.000	0.00	241.71	182.38	Gen Z Ignored
B94-GEN	1.000	0.00	182.45	138.20	Gen Z Ignored
B-95 GEN	1.000	0.00	188.51	142.37	Gen Z Ignored
G-B8 GEN	1.000	0.00	224.50	174.90	Gen Z Ignored
G-B22-GEN	1.000	0.00	91.91	69.54	Gen Z Ignored

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B1-ATS-EMERG DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.11
========== PU BUS VOLTAGE: 0.999 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-B10 EMRG TAP DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.19
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-B17-ANIMALRM DESIGN VOLTS: 208 BUS VOLTS: 201 %VD: 3.18
========== PU BUS VOLTAGE: 0.968 ANGLE: 0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 7.9 KW 5.9 KVAR

LOAD FROM: B-B17-EMERG CBL-0377 FEEDER AMPS: 28.2 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 7.9 KW 5.9 KVAR 9.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-ATS DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.80
========== PU BUS VOLTAGE: 0.972 ANGLE: 0.4 DEGREES

LOAD TO: B-B17-EMERG CBL-0374 FEEDER AMPS: 73.3 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0680 ATS-B17 FEEDER AMPS: 73.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B17-EMERG DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.83
========== PU BUS VOLTAGE: 0.972 ANGLE: 0.4 DEGREES

LOAD FROM: B-B17-ATS CBL-0374 FEEDER AMPS: 73.3 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B17-NEB2 CBL-0375 FEEDER AMPS: 16.9 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

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 LOAD FLOW STUDY FOR THE BEDFORD VAMC

 STUDY CASE-2 EMERGENCY

                BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS
 ************************************************************************
 VOLTAGE EFFECT ON LOADS MODELED
 VOLTAGE DROP CRITERIA: BRANCH =  3.00 %   BUS =  5.00


 LOAD   TO:  B-B17-NEB1     CBL-0376        FEEDER AMPS:  28.2 VOLTAGE DROP:     1. %VD:
0.42
 PROJECTED POWER FLOW:      7.9 KW       5.9 KVAR       9.9 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.0 KW       0.0 KVAR       0.0 KVA

 LOAD   TO:  B-B17-ANIMALRM CBL-0377        FEEDER AMPS:  28.2 VOLTAGE DROP:     1. %VD:
0.35
 PROJECTED POWER FLOW:      7.9 KW       5.9 KVAR       9.9 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.0 KW       0.0 KVAR       0.0 KVA


 ==== BUS:  B-B17-NEB1     DESIGN VOLTS:     208 BUS VOLTS:     201 %VD:  3.25
 ========================== PU BUS VOLTAGE:  0.968       ANGLE:   0.5 DEGREES
               NET BRANCH DIVERSITY LOAD:     7.9 KW     5.9 KVAR

 LOAD FROM:  B-B17-EMERG    CBL-0376        FEEDER AMPS:  28.2 VOLTAGE DROP:     1. %VD:
0.42
 PROJECTED POWER FLOW:      7.9 KW       5.9 KVAR       9.9 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.0 KW       0.0 KVAR       0.0 KVA


 ==== BUS:  B-B17-NEB2     DESIGN VOLTS:     208 BUS VOLTS:     202 %VD:  2.95
 ========================== PU BUS VOLTAGE:  0.970       ANGLE:   0.4 DEGREES
               NET BRANCH DIVERSITY LOAD:     4.7 KW     3.5 KVAR

 LOAD FROM:  B-B17-EMERG    CBL-0375        FEEDER AMPS:  16.9 VOLTAGE DROP:     0. %VD:
0.12
 PROJECTED POWER FLOW:      4.7 KW       3.5 KVAR       5.9 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.0 KW       0.0 KVAR       0.0 KVA


 ==== BUS:  B-B18-1STFL    DESIGN VOLTS:     208 BUS VOLTS:     205 %VD:  1.40
 ========================== PU BUS VOLTAGE:  0.986       ANGLE:   0.0 DEGREES
               NET BRANCH DIVERSITY LOAD:     3.8 KW     2.9 KVAR

 LOAD FROM:  B-B18-1STFL-M  CBL-0404        FEEDER AMPS:  13.4 VOLTAGE DROP:     0. %VD:
0.04
 PROJECTED POWER FLOW:      3.8 KW       2.9 KVAR       4.8 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.0 KW       0.0 KVAR       0.0 KVA


 ==== BUS:  B-B18-1STFL-M  DESIGN VOLTS:     208 BUS VOLTS:     205 %VD:  1.36
 ========================== PU BUS VOLTAGE:  0.986       ANGLE:   0.0 DEGREES

 LOAD FROM:  B-B18-TAP BOX  CBL-0403        FEEDER AMPS:  13.4 VOLTAGE DROP:     0. %VD:
0.01
 PROJECTED POWER FLOW:      3.8 KW       2.9 KVAR       4.8 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.0 KW       0.0 KVAR       0.0 KVA
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LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B18-1STFL CBL-0404 FEEDER AMPS: 13.4 VOLTAGE DROP: 0. %VD: 0.04

PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-2ND-FL-M DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.36

========== PU BUS VOLTAGE: 0.986 ANGLE: 0.0 DEGREES

LOAD FROM: B-B18-TAP BOX CBL-0401 FEEDER AMPS: 13.4 VOLTAGE DROP: 0. %VD: 0.01

PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-2NDFL CBL-0402 FEEDER AMPS: 13.4 VOLTAGE DROP: 0. %VD: 0.09

PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-2NDFL DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.44

========== PU BUS VOLTAGE: 0.986 ANGLE: 0.1 DEGREES

NET BRANCH DIVERSITY LOAD: 3.8 KW 2.9 KVAR

LOAD FROM: B-B18-2ND-FL-M CBL-0402 FEEDER AMPS: 13.4 VOLTAGE DROP: 0. %VD: 0.09

PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-ATS-EMRG DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.31

========== PU BUS VOLTAGE: 0.987 ANGLE: 0.0 DEGREES

LOAD TO: B-B18-TAP BOX CBL-0400 FEEDER AMPS: 40.2 VOLTAGE DROP: 0. %VD: 0.04

PROJECTED POWER FLOW: 11.4 KW 8.6 KVAR 14.3 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0677 ATS-B18-EMERG FEEDER AMPS: 40.2 VOLTAGE DROP: 0. %VD: 0.00

PROJECTED POWER FLOW: 11.4 KW 8.6 KVAR 14.3 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B18-EMERG DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.36
========== PU BUS VOLTAGE: 0.986 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.9 KVAR

LOAD FROM: B-B18-EMERG-M CBL-0406 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-EMERG-M DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.36
========== PU BUS VOLTAGE: 0.986 ANGLE: 0.0 DEGREES

LOAD FROM: B-B18-TAP BOX CBL-0405 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-EMERG CBL-0406 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B18-TAP BOX DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.35
========== PU BUS VOLTAGE: 0.986 ANGLE: 0.0 DEGREES

LOAD FROM: B-B18-ATS-EMRG CBL-0400 FEEDER AMPS: 40.2 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 11.4 KW 8.6 KVAR 14.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-2ND-FL-M CBL-0401 FEEDER AMPS: 13.4 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-1STFL-M CBL-0403 FEEDER AMPS: 13.4 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B18-EMERG-M CBL-0405 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-ATS-CRIT DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.67
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.4 DEGREES

LOAD TO: B-B2-CRIT PNL CBL-0064 FEEDER AMPS: 128.1 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 35.9 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0736 ATS-B2-CRIT FEEDER AMPS: 128.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 35.9 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-ATS-LED3 DESIGN VOLTS: 208 BUS VOLTS: 189 %VD: 8.97$
========== PU BUS VOLTAGE: 0.910 ANGLE: -1.2 DEGREES

LOAD TO: B-B2-EMERG-M CBL-0044 FEEDER AMPS: 47.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 12.4 KW 9.3 KVAR 15.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-PNL 1 CBL-0046 FEEDER AMPS: 47.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 12.4 KW 9.3 KVAR 15.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-NEWLAB-M CBL-0048 FEEDER AMPS: 41.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 10.8 KW 8.1 KVAR 13.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-PNL-2 CBL-0050 FEEDER AMPS: 20.0 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 5.3 KW 3.9 KVAR 6.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-PNL-3-M CBL-0051 FEEDER AMPS: 27.1 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0723 ATS-B2-LED3 FEEDER AMPS: 182.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 48.0 KW 36.0 KVAR 60.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-ATS-LS DESIGN VOLTS: 208 BUS VOLTS: 194 %VD: 6.76$
========== PU BUS VOLTAGE: 0.932 ANGLE: -1.1 DEGREES

LOAD TO: B-B2-PNL LS CBL-0072 FEEDER AMPS: 133.7 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 35.9 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0722 ATS-B2-LS FEEDER AMPS: 133.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 35.9 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-BATTERYCH DESIGN VOLTS: 208 BUS VOLTS: 193 %VD: 7.14$
========== PU BUS VOLTAGE: 0.929 ANGLE: -1.0 DEGREES
NET BRANCH DIVERSITY LOAD: 4.7 KW 3.5 KVAR

LOAD FROM: B-B2-PNL LS CBL-0080 FEEDER AMPS: 17.5 VOLTAGE DROP: 1. %VD: 0.33
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-CRIT PNL DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.69
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.4 DEGREES

LOAD FROM: B-B2-ATS-CRIT CBL-0064 FEEDER AMPS: 128.1 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 35.9 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-LB2E CBL-0065 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-L2A CBL-0066 FEEDER AMPS: 28.4 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-MEDAIRCOM CBL-0067 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-ELEV-P1 CBL-0068 FEEDER AMPS: 28.4 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B2-DENTAL LB CBL-0069 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-PNL-L11 CBL-0070 FEEDER AMPS: 28.4 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-DENTAL LB DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.79
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B2-CRIT PNL CBL-0069 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-DENTSUCPM DESIGN VOLTS: 208 BUS VOLTS: 194 %VD: 6.88$
========== PU BUS VOLTAGE: 0.931 ANGLE: -1.1 DEGREES
NET BRANCH DIVERSITY LOAD: 2.4 KW 1.8 KVAR

LOAD FROM: B-B2-PNL LS CBL-0076 FEEDER AMPS: 8.7 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 2.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-ELEV DESIGN VOLTS: 208 BUS VOLTS: 194 %VD: 6.87$
========== PU BUS VOLTAGE: 0.931 ANGLE: -1.1 DEGREES
NET BRANCH DIVERSITY LOAD: 5.3 KW 4.0 KVAR

LOAD FROM: B-B2-PNL LS CBL-0073 FEEDER AMPS: 19.7 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 5.3 KW 4.0 KVAR 6.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-ELEV-P1 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.88
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 8.0 KW 6.0 KVAR

LOAD FROM: B-B2-CRIT PNL CBL-0068 FEEDER AMPS: 28.4 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-EMERG-M DESIGN VOLTS: 208 BUS VOLTS: 189 %VD: 9.00$
========== PU BUS VOLTAGE: 0.910 ANGLE: -1.2 DEGREES

LOAD FROM: B-B2-ATS-LED3 CBL-0044 FEEDER AMPS: 47.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 12.4 KW 9.3 KVAR 15.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-EMERG-PNL CBL-0045 FEEDER AMPS: 47.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 12.4 KW 9.3 KVAR 15.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-EMERG-PNL DESIGN VOLTS: 208 BUS VOLTS: 189 %VD: 9.00$
========== PU BUS VOLTAGE: 0.910 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 12.4 KW 9.3 KVAR

LOAD FROM: B-B2-EMERG-M CBL-0045 FEEDER AMPS: 47.2 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 12.4 KW 9.3 KVAR 15.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-EPNL-B DESIGN VOLTS: 208 BUS VOLTS: 195 %VD: 6.44$
========== PU BUS VOLTAGE: 0.936 ANGLE: -1.0 DEGREES

LOAD FROM: B-B2-EPNL-B-M CBL-0645 FEEDER AMPS: 316.7 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 85.3 KW 64.2 KVAR 106.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0722 CBL-0646 FEEDER AMPS: 133.7 VOLTAGE DROP: 1. %VD: 0.32
PROJECTED POWER FLOW: 36.0 KW 27.1 KVAR 45.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD TO: BUS-0723 CBL-0647 FEEDER AMPS: 182.9 VOLTAGE DROP: 5. %VD: 2.53
PROJECTED POWER FLOW: 49.3 KW 37.1 KVAR 61.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 1.2 KW 1.1 KVAR 1.7 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-EPNL-B-M DESIGN VOLTS: 208 BUS VOLTS: 195 %VD: 6.43$
========== PU BUS VOLTAGE: 0.936 ANGLE: -1.0 DEGREES

LOAD FROM: B-B92-EMDP CBL-0611 FEEDER AMPS: 316.7 VOLTAGE DROP: 13. %VD: 6.32$
PROJECTED POWER FLOW: 85.3 KW 64.2 KVAR 106.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 4.5 KW 5.9 KVAR 7.5 KVA

LOAD TO: B-B2-EPNL-B CBL-0645 FEEDER AMPS: 316.7 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 85.3 KW 64.2 KVAR 106.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-L12 DESIGN VOLTS: 208 BUS VOLTS: 194 %VD: 6.88$
========== PU BUS VOLTAGE: 0.931 ANGLE: -1.1 DEGREES
NET BRANCH DIVERSITY LOAD: 4.7 KW 3.5 KVAR

LOAD FROM: B-B2-PNL LS CBL-0075 FEEDER AMPS: 17.5 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-L2A DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.81
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 8.0 KW 6.0 KVAR

LOAD FROM: B-B2-CRIT PNL CBL-0066 FEEDER AMPS: 28.4 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-L2E DESIGN VOLTS: 208 BUS VOLTS: 194 %VD: 6.88$
========== PU BUS VOLTAGE: 0.931 ANGLE: -1.1 DEGREES
NET BRANCH DIVERSITY LOAD: 4.7 KW 3.5 KVAR

LOAD FROM: B-B2-PNL LS CBL-0074 FEEDER AMPS: 17.5 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-L9E DESIGN VOLTS: 208 BUS VOLTS: 194 %VD: 6.91$
========== PU BUS VOLTAGE: 0.931 ANGLE: -1.1 DEGREES
NET BRANCH DIVERSITY LOAD: 4.7 KW 3.5 KVAR

LOAD FROM: B-B2-PNL LS CBL-0077 FEEDER AMPS: 17.5 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-LB1E DESIGN VOLTS: 208 BUS VOLTS: 194 %VD: 6.91$
========== PU BUS VOLTAGE: 0.931 ANGLE: -1.1 DEGREES
NET BRANCH DIVERSITY LOAD: 4.7 KW 3.5 KVAR

LOAD FROM: B-B2-PNL LS CBL-0078 FEEDER AMPS: 17.5 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-LB2E DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.81
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B2-CRIT PNL CBL-0065 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-MEDAIRCOM DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.81
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B2-CRIT PNL CBL-0067 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-NEWLAB DESIGN VOLTS: 208 BUS VOLTS: 189 %VD: 9.01$
========== PU BUS VOLTAGE: 0.910 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 10.8 KW 8.1 KVAR

LOAD FROM: B-B2-NEWLAB-M CBL-0049 FEEDER AMPS: 41.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 10.8 KW 8.1 KVAR 13.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-NEWLAB-M DESIGN VOLTS: 208 BUS VOLTS: 189 %VD: 9.01$
========== PU BUS VOLTAGE: 0.910 ANGLE: -1.2 DEGREES

LOAD FROM: B-B2-ATS-LED3 CBL-0048 FEEDER AMPS: 41.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 10.8 KW 8.1 KVAR 13.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-NEWLAB CBL-0049 FEEDER AMPS: 41.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 10.8 KW 8.1 KVAR 13.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-PNL 1 DESIGN VOLTS: 208 BUS VOLTS: 189 %VD: 9.00$
========== PU BUS VOLTAGE: 0.910 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 12.4 KW 9.3 KVAR

LOAD FROM: B-B2-ATS-LED3 CBL-0046 FEEDER AMPS: 47.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 12.4 KW 9.3 KVAR 15.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-PNL LS DESIGN VOLTS: 208 BUS VOLTS: 194 %VD: 6.81$
========== PU BUS VOLTAGE: 0.932 ANGLE: -1.1 DEGREES

LOAD FROM: B-B2-ATS-LS CBL-0072 FEEDER AMPS: 133.7 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 35.9 KW 26.9 KVAR 44.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-L2E CBL-0074 FEEDER AMPS: 17.5 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-L12 CBL-0075 FEEDER AMPS: 17.5 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-DENTSUCPM CBL-0076 FEEDER AMPS: 8.7 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 2.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-L9E CBL-0077 FEEDER AMPS: 17.5 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B2-LB1E CBL-0078 FEEDER AMPS: 17.5 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-ELEV CBL-0073 FEEDER AMPS: 19.7 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 5.3 KW 4.0 KVAR 6.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-POD2PP CBL-0079 FEEDER AMPS: 17.5 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-BATTERYCH CBL-0080 FEEDER AMPS: 17.5 VOLTAGE DROP: 1. %VD: 0.33
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-PNL-2 DESIGN VOLTS: 208 BUS VOLTS: 189 %VD: 8.98$
========== PU BUS VOLTAGE: 0.910 ANGLE: -1.2 DEGREES
NET BRANCH DIVERSITY LOAD: 5.3 KW 3.9 KVAR

LOAD FROM: B-B2-ATS-LED3 CBL-0050 FEEDER AMPS: 20.0 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 5.3 KW 3.9 KVAR 6.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-PNL-3-M DESIGN VOLTS: 208 BUS VOLTS: 189 %VD: 9.00$
========== PU BUS VOLTAGE: 0.910 ANGLE: -1.2 DEGREES

LOAD FROM: B-B2-ATS-LED3 CBL-0051 FEEDER AMPS: 27.1 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B2-PNL-M1 CBL-0062 FEEDER AMPS: 27.1 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B2-PNL-L11 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.81
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 8.0 KW 6.0 KVAR

LOAD FROM: B-B2-CRIT PNL CBL-0070 FEEDER AMPS: 28.4 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 8.0 KW 6.0 KVAR 10.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-PNL-M1 DESIGN VOLTS: 208 BUS VOLTS: 189 %VD: 9.03$
========== PU BUS VOLTAGE: 0.910 ANGLE: -1.1 DEGREES
NET BRANCH DIVERSITY LOAD: 7.1 KW 5.3 KVAR

LOAD FROM: B-B2-PNL-3-M CBL-0062 FEEDER AMPS: 27.1 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B2-POD2PP DESIGN VOLTS: 208 BUS VOLTS: 194 %VD: 6.87$
========== PU BUS VOLTAGE: 0.931 ANGLE: -1.1 DEGREES
NET BRANCH DIVERSITY LOAD: 4.7 KW 3.5 KVAR

LOAD FROM: B-B2-PNL LS CBL-0079 FEEDER AMPS: 17.5 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.7 KW 3.5 KVAR 5.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-ATS-EMER DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: 0.17
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD TO: B-B22-EMERG-M CBL-0429 FEEDER AMPS: 138.6 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 91.8 KW 69.4 KVAR 115.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD FROM: BUS-0727 ATS-B22-EMERG FEEDER AMPS: 138.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 91.8 KW 69.4 KVAR 115.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B22-EMERG DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: 0.28
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES

LOAD FROM: B-B22-EMERG-M CBL-0430 FEEDER AMPS: 138.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 91.7 KW 69.3 KVAR 114.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-P1 CBL-0431 FEEDER AMPS: 27.4 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-P2 CBL-0432 FEEDER AMPS: 27.4 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-T2-PRI CBL-0433 FEEDER AMPS: 27.9 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-T3 PRI CBL-0436 FEEDER AMPS: 27.9 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-T4-PRI CBL-0439 FEEDER AMPS: 27.9 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-EMERG-M DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: 0.28
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES

LOAD FROM: B-B22-ATS-EMER CBL-0429 FEEDER AMPS: 138.6 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 91.7 KW 69.3 KVAR 114.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B22-EMERG CBL-0430 FEEDER AMPS: 138.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 91.7 KW 69.3 KVAR 114.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B22-GEN DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
*** SWING GENERATOR: G-B22-GEN 91.9 KW 69.5 KVAR

LOAD TO: BUS-0727 CBL-0649 FEEDER AMPS: 138.6 VOLTAGE DROP: 1. %VD: 0.17
PROJECTED POWER FLOW: 91.9 KW 69.5 KVAR 115.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B22-L1 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.04
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 18.2 KW 13.6 KVAR

LOAD FROM: B-B22-L1-M CBL-0441 FEEDER AMPS: 64.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-L1-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.03
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.4 DEGREES

LOAD FROM: B-B22-T4-SEC CBL-0440 FEEDER AMPS: 64.4 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-L1 CBL-0441 FEEDER AMPS: 64.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-L2 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.04
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 18.2 KW 13.6 KVAR

LOAD FROM: B-B22-L2-M CBL-0438 FEEDER AMPS: 64.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B22-L2-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.03
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.4 DEGREES

LOAD FROM: B-B22-T22-SEC CBL-0437 FEEDER AMPS: 64.4 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-L2 CBL-0438 FEEDER AMPS: 64.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-L3 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.03
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 18.2 KW 13.6 KVAR

LOAD FROM: B-B22-L3-M CBL-0435 FEEDER AMPS: 64.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-L3-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.03
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.4 DEGREES

LOAD FROM: B-B22-T2-SEC CBL-0434 FEEDER AMPS: 64.4 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-L3 CBL-0435 FEEDER AMPS: 64.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-P1 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: 0.30
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 18.2 KW 13.6 KVAR

LOAD FROM: B-B22-EMERG CBL-0431 FEEDER AMPS: 27.4 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B22-P2 DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: 0.30
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 18.2 KW 13.6 KVAR

LOAD FROM: B-B22-EMERG CBL-0432 FEEDER AMPS: 27.4 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.2 KW 13.6 KVAR 22.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-T2-PRI DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: 0.29
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES

LOAD FROM: B-B22-EMERG CBL-0433 FEEDER AMPS: 27.9 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-T2-SEC XF2-0033 TRANSF AMPS: 27.9 VOLTAGE DROP: 8. %VD: 1.67
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.1 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.2 KW 0.3 KVAR 0.4 KVA

==== BUS: B-B22-T2-SEC DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 1.96
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.4 DEGREES

LOAD FROM: B-B22-T2-PRI XF2-0033 TRANSF AMPS: 64.4 VOLTAGE DROP: 3. %VD: 1.67
PROJECTED POWER FLOW: 18.2 KW 13.7 KVAR 22.8 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.2 KW 0.3 KVAR 0.4 KVA

LOAD TO: B-B22-L3-M CBL-0434 FEEDER AMPS: 64.4 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 18.2 KW 13.7 KVAR 22.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B22-T22-SEC DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 1.97
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.4 DEGREES

LOAD FROM: B-B22-T3 PRI XF2-0034 TRANSF AMPS: 64.4 VOLTAGE DROP: 3. %VD: 1.67
PROJECTED POWER FLOW: 18.2 KW 13.7 KVAR 22.8 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.2 KW 0.3 KVAR 0.4 KVA

LOAD TO: B-B22-L2-M CBL-0437 FEEDER AMPS: 64.4 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 18.2 KW 13.7 KVAR 22.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B22-T3 PRI DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: 0.30
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES

LOAD FROM: B-B22-EMERG CBL-0436 FEEDER AMPS: 27.9 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-T22-SEC XF2-0034 TRANSF AMPS: 27.9 VOLTAGE DROP: 8. %VD: 1.67
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.1 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.2 KW 0.3 KVAR 0.4 KVA

==== BUS: B-B22-T4-PRI DESIGN VOLTS: 480 BUS VOLTS: 479 %VD: 0.30
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES

LOAD FROM: B-B22-EMERG CBL-0439 FEEDER AMPS: 27.9 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B22-T4-SEC XF2-0035 TRANSF AMPS: 27.9 VOLTAGE DROP: 8. %VD: 1.67
PROJECTED POWER FLOW: 18.4 KW 14.0 KVAR 23.1 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.2 KW 0.3 KVAR 0.4 KVA

==== BUS: B-B22-T4-SEC DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 1.97
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.4 DEGREES

LOAD FROM: B-B22-T4-PRI XF2-0035 TRANSF AMPS: 64.4 VOLTAGE DROP: 3. %VD: 1.67
PROJECTED POWER FLOW: 18.2 KW 13.7 KVAR 22.8 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 0.2 KW 0.3 KVAR 0.4 KVA

LOAD TO: B-B22-L1-M CBL-0440 FEEDER AMPS: 64.4 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 18.2 KW 13.7 KVAR 22.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-1ST FL DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.21
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 5.0 KW 3.8 KVAR

LOAD FROM: B-B3-EP1 CBL-0104 FEEDER AMPS: 17.6 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 5.0 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B3-ALDN KIT DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.32
========== PU BUS VOLTAGE: 0.987 ANGLE: -0.2 DEGREES
NET BRANCH DIVERSITY LOAD: 3.2 KW 2.4 KVAR

LOAD FROM: B-B3-EP2 CBL-0115 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-ATS-COMP DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 1.16
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.3 DEGREES

LOAD TO: B-B3-EP2-M CBL-0106 FEEDER AMPS: 150.0 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 42.7 KW 32.1 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0719 ATS-B3-COMP FEEDER AMPS: 150.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 42.7 KW 32.1 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-ATSTEL RM DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 1.10
========== PU BUS VOLTAGE: 0.989 ANGLE: -0.3 DEGREES

LOAD TO: B-B3-EP1-M CBL-0098 FEEDER AMPS: 149.9 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 42.7 KW 32.1 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0718 ATS-B3-TEL RM FEEDER AMPS: 149.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 42.7 KW 32.1 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-COMP DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.30
========== PU BUS VOLTAGE: 0.987 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 3.2 KW 2.4 KVAR

LOAD FROM: B-B3-EP2 CBL-0109 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B3-COMP AC DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.32
========== PU BUS VOLTAGE: 0.987 ANGLE: -0.2 DEGREES
NET BRANCH DIVERSITY LOAD: 1.0 KW 0.7 KVAR

LOAD FROM: B-B3-EP2 CBL-0112 FEEDER AMPS: 3.3 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 1.0 KW 0.7 KVAR 1.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-COMP MF DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.29
========== PU BUS VOLTAGE: 0.987 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 6.4 KW 4.8 KVAR

LOAD FROM: B-B3-EP2 CBL-0117 FEEDER AMPS: 22.5 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 8.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-DBL GRILL DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.33
========== PU BUS VOLTAGE: 0.987 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 10.0 KW 7.5 KVAR

LOAD FROM: B-B3-EP1 CBL-0103 FEEDER AMPS: 35.3 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-ELEV DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.32
========== PU BUS VOLTAGE: 0.987 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 5.6 KW 4.2 KVAR

LOAD FROM: B-B3-EP2 CBL-0113 FEEDER AMPS: 19.7 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 5.6 KW 4.2 KVAR 7.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-EP1 DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 1.15
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.3 DEGREES

LOAD FROM: B-B3-EP1-M CBL-0099 FEEDER AMPS: 149.9 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 42.7 KW 32.0 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B3-TELE PNL CBL-0100 FEEDER AMPS: 39.6 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-KP1 CBL-0101 FEEDER AMPS: 39.7 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-P7 CBL-0102 FEEDER AMPS: 17.6 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 5.0 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-DBL GRILL CBL-0103 FEEDER AMPS: 35.3 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 10.1 KW 7.5 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-1ST FL CBL-0104 FEEDER AMPS: 17.6 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 5.0 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-EP1-M DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 1.15
========== PU BUS VOLTAGE: 0.989 ANGLE: -0.3 DEGREES

LOAD FROM: B-B3-ATSTEL RM CBL-0098 FEEDER AMPS: 149.9 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 42.7 KW 32.0 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-EP1 CBL-0099 FEEDER AMPS: 149.9 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 42.7 KW 32.0 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-EP2 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.24
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.3 DEGREES

LOAD FROM: B-B3-EP2-M CBL-0107 FEEDER AMPS: 150.0 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 42.7 KW 32.0 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-TRAY LINE CBL-0108 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B3-COMP CBL-0109 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-HYDRO ELV CBL-0110 FEEDER AMPS: 22.5 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 8.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-MECH HVAC CBL-0111 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-COMP AC CBL-0112 FEEDER AMPS: 3.3 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 1.0 KW 0.7 KVAR 1.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-ELEV CBL-0113 FEEDER AMPS: 19.7 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 5.6 KW 4.2 KVAR 7.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-STRT PNL CBL-0114 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-ALDN KIT CBL-0115 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-MECH RM CBL-0116 FEEDER AMPS: 22.5 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 8.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-COMP MF CBL-0117 FEEDER AMPS: 22.5 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 8.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B3-EP2-M DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.23
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.3 DEGREES

LOAD FROM: B-B3-ATS-COMP CBL-0106 FEEDER AMPS: 150.0 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 42.7 KW 32.0 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B3-EP2 CBL-0107 FEEDER AMPS: 150.0 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 42.7 KW 32.0 KVAR 53.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-HYDRO ELV DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.42
========== PU BUS VOLTAGE: 0.986 ANGLE: -0.2 DEGREES
NET BRANCH DIVERSITY LOAD: 6.4 KW 4.8 KVAR

LOAD FROM: B-B3-EP2 CBL-0110 FEEDER AMPS: 22.5 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 8.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-KP1 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.30
========== PU BUS VOLTAGE: 0.987 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 11.3 KW 8.5 KVAR

LOAD FROM: B-B3-EP1 CBL-0101 FEEDER AMPS: 39.7 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-MECH HVAC DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.28
========== PU BUS VOLTAGE: 0.987 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 3.2 KW 2.4 KVAR

LOAD FROM: B-B3-EP2 CBL-0111 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B3-MECH RM DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.28
========== PU BUS VOLTAGE: 0.987 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 6.4 KW 4.8 KVAR

LOAD FROM: B-B3-EP2 CBL-0116 FEEDER AMPS: 22.5 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 8.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-P7 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.24
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 5.0 KW 3.8 KVAR

LOAD FROM: B-B3-EP1 CBL-0102 FEEDER AMPS: 17.6 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 5.0 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-STRT PNL DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.27
========== PU BUS VOLTAGE: 0.987 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 3.2 KW 2.4 KVAR

LOAD FROM: B-B3-EP2 CBL-0114 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-TELE PNL DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.23
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 11.3 KW 8.5 KVAR

LOAD FROM: B-B3-EP1 CBL-0100 FEEDER AMPS: 39.6 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B3-TRAY LINE DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.30
========== PU BUS VOLTAGE: 0.987 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B3-EP2 CBL-0108 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-4EQD DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.41
========== PU BUS VOLTAGE: 0.986 ANGLE: -0.3 DEGREES

LOAD FROM: B-B4-4EQD-M CBL-0195 FEEDER AMPS: 112.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ9 CBL-0196 FEEDER AMPS: 15.2 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 4.3 KW 3.3 KVAR 5.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ2 CBL-0197 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ15 CBL-0198 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ3 CBL-0199 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ1 CBL-0200 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-ELEV#4 CBL-0201 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-HYDROELEV CBL-0202 FEEDER AMPS: 17.2 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 4.9 KW 3.7 KVAR 6.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-PP1 CBL-0203 FEEDER AMPS: 17.1 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.9 KW 3.7 KVAR 6.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-4EQD-M DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.40
========== PU BUS VOLTAGE: 0.986 ANGLE: -0.3 DEGREES

LOAD FROM: B-B4-ATS-EQ CBL-0194 FEEDER AMPS: 112.7 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-4EQD CBL-0195 FEEDER AMPS: 112.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 32.0 KW 24.0 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-ATS-EQ DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.34
========== PU BUS VOLTAGE: 0.987 ANGLE: -0.3 DEGREES

LOAD TO: B-B4-4EQD-M CBL-0194 FEEDER AMPS: 112.7 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 32.1 KW 24.0 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0691 ATS-B4-EQ FEEDER AMPS: 112.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 32.1 KW 24.0 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-ATS-LS DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 1.99
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.1 DEGREES

LOAD TO: B-B4-LSD-M CBL-0138 FEEDER AMPS: 113.6 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0694 ATS-B4-LS FEEDER AMPS: 113.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-ELEV#4 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.49
========== PU BUS VOLTAGE: 0.985 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 3.3 KW 2.4 KVAR

LOAD FROM: B-B4-4EQD CBL-0201 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-EQ1 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.45
========== PU BUS VOLTAGE: 0.985 ANGLE: -0.3 DEGREES

LOAD FROM: B-B4-4EQD CBL-0200 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ5 CBL-0204 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ10 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.50
========== PU BUS VOLTAGE: 0.985 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.9 KVAR

LOAD FROM: B-B4-EQ5 CBL-0205 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ11 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.47
========== PU BUS VOLTAGE: 0.985 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.9 KVAR

LOAD FROM: B-B4-EQ6 CBL-0209 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ12 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.51
========== PU BUS VOLTAGE: 0.985 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 3.3 KW 2.4 KVAR

LOAD FROM: B-B4-EQ7 CBL-0207 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-EQ15 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.51
========== PU BUS VOLTAGE: 0.985 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.9 KVAR

LOAD FROM: B-B4-4EQD CBL-0198 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ2 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.42
========== PU BUS VOLTAGE: 0.986 ANGLE: -0.3 DEGREES

LOAD FROM: B-B4-4EQD CBL-0197 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ6 CBL-0208 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ3 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.47
========== PU BUS VOLTAGE: 0.985 ANGLE: -0.3 DEGREES

LOAD FROM: B-B4-4EQD CBL-0199 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ7 CBL-0206 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ5 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.48
========== PU BUS VOLTAGE: 0.985 ANGLE: -0.3 DEGREES

LOAD FROM: B-B4-EQ1 CBL-0204 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ10 CBL-0205 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-EQ6 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.45
========== PU BUS VOLTAGE: 0.986 ANGLE: -0.3 DEGREES

LOAD FROM: B-B4-EQ2 CBL-0208 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ11 CBL-0209 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.9 KVAR 4.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ7 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.49
========== PU BUS VOLTAGE: 0.985 ANGLE: -0.3 DEGREES

LOAD FROM: B-B4-EQ3 CBL-0206 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-EQ12 CBL-0207 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.3 KW 2.4 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-EQ9 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.57
========== PU BUS VOLTAGE: 0.984 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 4.3 KW 3.3 KVAR

LOAD FROM: B-B4-4EQD CBL-0196 FEEDER AMPS: 15.2 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 4.3 KW 3.3 KVAR 5.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-HYDROELEV DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.56
========== PU BUS VOLTAGE: 0.984 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 4.9 KW 3.7 KVAR

LOAD FROM: B-B4-4EQD CBL-0202 FEEDER AMPS: 17.2 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 4.9 KW 3.7 KVAR 6.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LP15 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.15
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 3.1 KW 2.4 KVAR

LOAD FROM: B-B4-LP15-M CBL-0161 FEEDER AMPS: 11.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LP15-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.15
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LSD CBL-0160 FEEDER AMPS: 11.1 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LP15 CBL-0161 FEEDER AMPS: 11.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS1 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.11
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS1-M CBL-0143 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS1-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.11
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LS2-M CBL-0142 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS1 CBL-0143 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LS10 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.21
========== PU BUS VOLTAGE: 0.978 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS10-M CBL-0151 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS10-M DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.21
========== PU BUS VOLTAGE: 0.978 ANGLE: 0.0 DEGREES

LOAD FROM: B-B4-LS5-M CBL-0150 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS10 CBL-0151 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS11 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.18
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS11-M CBL-0155 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS11-M DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.18
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LS6-M CBL-0154 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS11 CBL-0155 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LS12 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.15
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS12-M CBL-0159 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS12-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.15
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LS7-M CBL-0158 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS12 CBL-0159 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS13 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.15
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS13-M CBL-0168 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS13-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.15
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LS8-M CBL-0167 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS13 CBL-0168 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LS14 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.13
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.6 KW 1.2 KVAR

LOAD FROM: B-B4-LS14-M CBL-0172 FEEDER AMPS: 5.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS14-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.13
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LS9-M CBL-0171 FEEDER AMPS: 5.5 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS14 CBL-0172 FEEDER AMPS: 5.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS2 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.08
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS2-M CBL-0141 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS2-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.08
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LSD CBL-0140 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS2 CBL-0141 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B4-LS1-M CBL-0142 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS3 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.06
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS3-M CBL-0145 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS3-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.06
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LSD CBL-0144 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS3 CBL-0145 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS4-M CBL-0146 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS4 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.09
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS4-M CBL-0147 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LS4-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.09
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LS3-M CBL-0146 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS4 CBL-0147 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS5 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.19
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS5-M CBL-0149 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS5-M DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.19
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LSD CBL-0148 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS5 CBL-0149 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS10-M CBL-0150 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LS6 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.16
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS6-M CBL-0153 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS6-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.16
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LSD CBL-0152 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS6 CBL-0153 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS11-M CBL-0154 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS7 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.14
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS7-M CBL-0157 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS7-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.14
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LSD CBL-0156 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B4-LS7 CBL-0157 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS12-M CBL-0158 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS8 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.13
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.9 KW 1.4 KVAR

LOAD FROM: B-B4-LS8-M CBL-0166 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS8-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.13
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LSD CBL-0165 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS8 CBL-0166 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS13-M CBL-0167 FEEDER AMPS: 6.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.9 KW 1.4 KVAR 2.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LS9 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.11
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.6 KW 1.2 KVAR

LOAD FROM: B-B4-LS9-M CBL-0170 FEEDER AMPS: 5.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-LS9-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.11
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LSD CBL-0169 FEEDER AMPS: 11.0 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 3.1 KW 2.3 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS9 CBL-0170 FEEDER AMPS: 5.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS14-M CBL-0171 FEEDER AMPS: 5.5 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LSD DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.04
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LSD-M CBL-0139 FEEDER AMPS: 113.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS2-M CBL-0140 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS3-M CBL-0144 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS5-M CBL-0148 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS6-M CBL-0152 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS7-M CBL-0156 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B4-LP15-M CBL-0160 FEEDER AMPS: 11.1 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-PP2-M CBL-0163 FEEDER AMPS: 11.1 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS8-M CBL-0165 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LS9-M CBL-0169 FEEDER AMPS: 11.0 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 3.1 KW 2.3 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-LSD-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.03
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-ATS-LS CBL-0138 FEEDER AMPS: 113.6 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-LSD CBL-0139 FEEDER AMPS: 113.6 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 32.1 KW 24.1 KVAR 40.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-PP1 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.44
========== PU BUS VOLTAGE: 0.986 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 4.9 KW 3.7 KVAR

LOAD FROM: B-B4-4EQD CBL-0203 FEEDER AMPS: 17.1 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.9 KW 3.7 KVAR 6.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B4-PP2 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.15
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 3.1 KW 2.4 KVAR

LOAD FROM: B-B4-PP2-M CBL-0164 FEEDER AMPS: 11.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B4-PP2-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.15
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.1 DEGREES

LOAD FROM: B-B4-LSD CBL-0163 FEEDER AMPS: 11.1 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B4-PP2 CBL-0164 FEEDER AMPS: 11.1 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 3.1 KW 2.4 KVAR 3.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-ATS-EQ DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.26
========== PU BUS VOLTAGE: 0.957 ANGLE: -0.9 DEGREES

LOAD TO: B-B5-EQD CBL-0223 FEEDER AMPS: 137.9 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 38.1 KW 28.6 KVAR 47.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0692 ATS-B5-EQ FEEDER AMPS: 137.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 38.1 KW 28.6 KVAR 47.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-ATS-LS DESIGN VOLTS: 208 BUS VOLTS: 194 %VD: 6.75$
========== PU BUS VOLTAGE: 0.932 ANGLE: -0.1 DEGREES

LOAD TO: B-B5-LSD-M CBL-0233 FEEDER AMPS: 142.3 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 38.3 KW 28.6 KVAR 47.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0695 ATS-B5-LS FEEDER AMPS: 142.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 38.3 KW 28.6 KVAR 47.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B5-EQ1 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.41
========== PU BUS VOLTAGE: 0.956 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 7.1 KW 5.3 KVAR

LOAD FROM: B-B5-EQD CBL-0224 FEEDER AMPS: 25.8 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-EQ2 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.42
========== PU BUS VOLTAGE: 0.956 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 7.1 KW 5.3 KVAR

LOAD FROM: B-B5-EQD CBL-0226 FEEDER AMPS: 25.8 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-EQ5 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.41
========== PU BUS VOLTAGE: 0.956 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 7.1 KW 5.3 KVAR

LOAD FROM: B-B5-EQD CBL-0225 FEEDER AMPS: 25.8 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-EQ6 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.45
========== PU BUS VOLTAGE: 0.956 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 7.1 KW 5.3 KVAR

LOAD FROM: B-B5-EQD CBL-0227 FEEDER AMPS: 25.8 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 7.1 KW 5.3 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-EQD DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.29
========== PU BUS VOLTAGE: 0.957 ANGLE: -0.9 DEGREES

LOAD FROM: B-B5-ATS-EQ CBL-0223 FEEDER AMPS: 137.9 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 38.1 KW 28.5 KVAR 47.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B5-EQ1 CBL-0224 FEEDER AMPS: 25.8 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 7.1 KW 5.4 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-EQ5 CBL-0225 FEEDER AMPS: 25.8 VOLTAGE DROP: 0. %VD: 0.12
PROJECTED POWER FLOW: 7.1 KW 5.4 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-EQ2 CBL-0226 FEEDER AMPS: 25.8 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 7.1 KW 5.4 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-EQ6 CBL-0227 FEEDER AMPS: 25.8 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 7.1 KW 5.4 KVAR 8.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-HYDR ELEV CBL-0228 FEEDER AMPS: 34.4 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-HYDR ELEV DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.38
========== PU BUS VOLTAGE: 0.956 ANGLE: -0.9 DEGREES
NET BRANCH DIVERSITY LOAD: 9.5 KW 7.1 KVAR

LOAD FROM: B-B5-EQD CBL-0228 FEEDER AMPS: 34.4 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 9.5 KW 7.1 KVAR 11.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LS1 DESIGN VOLTS: 208 BUS VOLTS: 193 %VD: 6.98$
========== PU BUS VOLTAGE: 0.930 ANGLE: -0.1 DEGREES

LOAD FROM: B-B5-LSD CBL-0237 FEEDER AMPS: 71.0 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B55-LS3 CBL-0238 FEEDER AMPS: 71.0 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B5-LS2 DESIGN VOLTS: 208 BUS VOLTS: 193 %VD: 7.37$
========== PU BUS VOLTAGE: 0.926 ANGLE: 0.0 DEGREES

LOAD FROM: B-B5-LSD CBL-0235 FEEDER AMPS: 71.3 VOLTAGE DROP: 1. %VD: 0.57
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B5-LS4 CBL-0236 FEEDER AMPS: 71.3 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LS4 DESIGN VOLTS: 208 BUS VOLTS: 192 %VD: 7.53$
========== PU BUS VOLTAGE: 0.925 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 19.0 KW 14.3 KVAR

LOAD FROM: B-B5-LS2 CBL-0236 FEEDER AMPS: 71.3 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B5-LSD DESIGN VOLTS: 208 BUS VOLTS: 194 %VD: 6.81$
========== PU BUS VOLTAGE: 0.932 ANGLE: -0.1 DEGREES

LOAD FROM: B-B5-LSD-M CBL-0234 FEEDER AMPS: 142.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 38.3 KW 28.6 KVAR 47.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-LS2 CBL-0235 FEEDER AMPS: 71.3 VOLTAGE DROP: 1. %VD: 0.57
PROJECTED POWER FLOW: 19.2 KW 14.3 KVAR 23.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B5-LS1 CBL-0237 FEEDER AMPS: 71.0 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 19.1 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B5-LSD-M DESIGN VOLTS: 208 BUS VOLTS: 194 %VD: 6.80$
========== PU BUS VOLTAGE: 0.932 ANGLE: -0.1 DEGREES

LOAD FROM: B-B5-ATS-LS CBL-0233 FEEDER AMPS: 142.3 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 38.3 KW 28.6 KVAR 47.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B5-LSD CBL-0234 FEEDER AMPS: 142.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 38.3 KW 28.6 KVAR 47.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B55-LS3 DESIGN VOLTS: 208 BUS VOLTS: 193 %VD: 7.14$
========== PU BUS VOLTAGE: 0.929 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 19.0 KW 14.3 KVAR

LOAD FROM: B-B5-LS1 CBL-0238 FEEDER AMPS: 71.0 VOLTAGE DROP: 0. %VD: 0.16
PROJECTED POWER FLOW: 19.0 KW 14.3 KVAR 23.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-ATS-EQ DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.02
========== PU BUS VOLTAGE: 0.980 ANGLE: -0.4 DEGREES

LOAD TO: B-B6-EQD-M CBL-0264 FEEDER AMPS: 85.0 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0701 ATS-B6-EQ FEEDER AMPS: 85.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-ATS-LS DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.79
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.1 DEGREES

LOAD TO: B-B6-LSD-M CBL-0253 FEEDER AMPS: 85.7 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0707 ATS-B6-LS FEEDER AMPS: 85.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B6-EQ1 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.11
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.2 KW 3.2 KVAR

LOAD FROM: B-B6-EQD CBL-0267 FEEDER AMPS: 14.9 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.2 KW 3.2 KVAR 5.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-EQ2 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.15
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.4 DEGREES

LOAD FROM: B-B6-EQD CBL-0269 FEEDER AMPS: 15.0 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 4.2 KW 3.2 KVAR 5.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQ4 CBL-0271 FEEDER AMPS: 15.0 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.2 KW 3.2 KVAR 5.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-EQ3 DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.13
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.4 DEGREES

LOAD FROM: B-B6-EQD CBL-0268 FEEDER AMPS: 22.5 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 7.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQ5 CBL-0270 FEEDER AMPS: 22.5 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 7.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-EQ4 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.18
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 4.2 KW 3.2 KVAR

LOAD FROM: B-B6-EQ2 CBL-0271 FEEDER AMPS: 15.0 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.2 KW 3.2 KVAR 5.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B6-EQ5 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.18
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 6.4 KW 4.8 KVAR

LOAD FROM: B-B6-EQ3 CBL-0270 FEEDER AMPS: 22.5 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 7.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-EQ8 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.18
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.5 DEGREES
NET BRANCH DIVERSITY LOAD: 6.4 KW 4.8 KVAR

LOAD FROM: B-B6-EQD CBL-0266 FEEDER AMPS: 22.5 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 7.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-EQD DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.08
========== PU BUS VOLTAGE: 0.979 ANGLE: -0.5 DEGREES

LOAD FROM: B-B6-EQD-M CBL-0265 FEEDER AMPS: 85.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQ8 CBL-0266 FEEDER AMPS: 22.5 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 7.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQ1 CBL-0267 FEEDER AMPS: 14.9 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.2 KW 3.2 KVAR 5.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQ3 CBL-0268 FEEDER AMPS: 22.5 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 6.4 KW 4.8 KVAR 7.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQ2 CBL-0269 FEEDER AMPS: 15.0 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 4.2 KW 3.2 KVAR 5.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B6-EQMACH CBL-0272 FEEDER AMPS: 10.0 VOLTAGE DROP: 0. %VD: 0.02

PROJECTED POWER FLOW: 2.8 KW 2.1 KVAR 3.5 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-EQD-M DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.08

========== PU BUS VOLTAGE: 0.979 ANGLE: -0.5 DEGREES

LOAD FROM: B-B6-ATS-EQ CBL-0264 FEEDER AMPS: 85.0 VOLTAGE DROP: 0. %VD: 0.06

PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-EQD CBL-0265 FEEDER AMPS: 85.0 VOLTAGE DROP: 0. %VD: 0.00

PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-EQMACH DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 2.10

========== PU BUS VOLTAGE: 0.979 ANGLE: -0.4 DEGREES

NET BRANCH DIVERSITY LOAD: 2.8 KW 2.1 KVAR

LOAD FROM: B-B6-EQD CBL-0272 FEEDER AMPS: 10.0 VOLTAGE DROP: 0. %VD: 0.02

PROJECTED POWER FLOW: 2.8 KW 2.1 KVAR 3.5 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LS1 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.93

========== PU BUS VOLTAGE: 0.971 ANGLE: -0.1 DEGREES

NET BRANCH DIVERSITY LOAD: 6.5 KW 4.9 KVAR

LOAD FROM: B-B6-LSD CBL-0261 FEEDER AMPS: 23.3 VOLTAGE DROP: 0. %VD: 0.09

PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LS2 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.87

========== PU BUS VOLTAGE: 0.971 ANGLE: -0.1 DEGREES

NET BRANCH DIVERSITY LOAD: 4.4 KW 3.3 KVAR

LOAD FROM: B-B6-LSD CBL-0262 FEEDER AMPS: 15.5 VOLTAGE DROP: 0. %VD: 0.03

PROJECTED POWER FLOW: 4.4 KW 3.3 KVAR 5.5 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B6-LS3 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.93
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.1 DEGREES

LOAD FROM: B-B6-LSD CBL-0260 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LS5 CBL-0259 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LS4 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.93
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.1 DEGREES

LOAD TO: B-B6-LS6 CBL-0255 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: B-B6-LSD CBL-0258 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LS5 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.99
========== PU BUS VOLTAGE: 0.970 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 6.5 KW 4.9 KVAR

LOAD FROM: B-B6-LS3 CBL-0259 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LS6 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.99
========== PU BUS VOLTAGE: 0.970 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 6.5 KW 4.9 KVAR

LOAD FROM: B-B6-LS4 CBL-0255 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 6.5 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B6-LSD DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.84
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.1 DEGREES

LOAD FROM: B-B6-LSD-M CBL-0257 FEEDER AMPS: 85.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LS4 CBL-0258 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 6.6 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LS3 CBL-0260 FEEDER AMPS: 23.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 6.6 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LS1 CBL-0261 FEEDER AMPS: 23.3 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 6.6 KW 4.9 KVAR 8.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LS2 CBL-0262 FEEDER AMPS: 15.5 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.4 KW 3.3 KVAR 5.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B6-LSD-M DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.84
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.1 DEGREES

LOAD FROM: B-B6-ATS-LS CBL-0253 FEEDER AMPS: 85.7 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B6-LSD CBL-0257 FEEDER AMPS: 85.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 24.0 KW 18.0 KVAR 30.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-ATS-EQD DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.70
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.6 DEGREES

LOAD TO: B-B61-EQD CBL-0470 FEEDER AMPS: 101.6 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 28.5 KW 21.4 KVAR 35.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: BUS-0703 ATS-B61-EQD FEEDER AMPS: 101.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 28.5 KW 21.4 KVAR 35.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-ATS-LSD DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.40
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.1 DEGREES

LOAD TO: B-B61-LSD-M CBL-0462 FEEDER AMPS: 56.9 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0705 ATS-B61-LSD FEEDER AMPS: 56.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-COMP RM DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.80
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 6.7 KW 5.1 KVAR

LOAD FROM: B-B61-EQA CBL-0477 FEEDER AMPS: 24.0 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-ELEV DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.88
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 6.7 KW 5.1 KVAR

LOAD FROM: B-B61-EQD CBL-0472 FEEDER AMPS: 24.0 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-EQ1 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.88
========== PU BUS VOLTAGE: 0.971 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 6.7 KW 5.1 KVAR

LOAD FROM: B-B61-EQD CBL-0473 FEEDER AMPS: 24.0 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B61-EQ2 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.80
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 5.9 KW 4.4 KVAR

LOAD FROM: B-B61-EQD CBL-0475 FEEDER AMPS: 21.0 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 5.9 KW 4.4 KVAR 7.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-EQ4 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.81
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 2.4 KW 1.8 KVAR

LOAD FROM: B-B61-EQD CBL-0474 FEEDER AMPS: 8.4 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-EQA DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.77
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.6 DEGREES

LOAD FROM: B-B61-EQD CBL-0476 FEEDER AMPS: 24.0 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-COMP RM CBL-0477 FEEDER AMPS: 24.0 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-EQD DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.77
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.6 DEGREES

LOAD FROM: B-B61-ATS-EQD CBL-0470 FEEDER AMPS: 101.6 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 28.5 KW 21.4 KVAR 35.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-ELEV CBL-0472 FEEDER AMPS: 24.0 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B61-EQ1 CBL-0473 FEEDER AMPS: 24.0 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-EQ4 CBL-0474 FEEDER AMPS: 8.4 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 2.4 KW 1.8 KVAR 3.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-EQ2 CBL-0475 FEEDER AMPS: 21.0 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 5.9 KW 4.4 KVAR 7.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-EQA CBL-0476 FEEDER AMPS: 24.0 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 6.7 KW 5.1 KVAR 8.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-KITCHEN DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.47
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 4.1 KW 3.1 KVAR

LOAD FROM: B-B61-LSD CBL-0467 FEEDER AMPS: 14.6 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 4.1 KW 3.1 KVAR 5.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-LS1 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.48
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.8 KW 1.4 KVAR

LOAD FROM: B-B61-LSD CBL-0468 FEEDER AMPS: 6.5 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 1.8 KW 1.4 KVAR 2.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-LS2 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.46
========== PU BUS VOLTAGE: 0.975 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 1.8 KW 1.4 KVAR

LOAD FROM: B-B61-LSD CBL-0469 FEEDER AMPS: 6.5 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 1.8 KW 1.4 KVAR 2.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B61-LS3 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.53
========== PU BUS VOLTAGE: 0.975 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 2.7 KW 2.1 KVAR

LOAD FROM: B-B61-LSD CBL-0464 FEEDER AMPS: 9.7 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 2.7 KW 2.1 KVAR 3.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-LS4 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.51
========== PU BUS VOLTAGE: 0.975 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 2.7 KW 2.1 KVAR

LOAD FROM: B-B61-LSD CBL-0465 FEEDER AMPS: 9.7 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 2.7 KW 2.1 KVAR 3.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-LS5 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.53
========== PU BUS VOLTAGE: 0.975 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 2.7 KW 2.1 KVAR

LOAD FROM: B-B61-LSD CBL-0466 FEEDER AMPS: 9.7 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 2.7 KW 2.1 KVAR 3.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-LSD DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.43
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.1 DEGREES

LOAD FROM: B-B61-LSD-M CBL-0463 FEEDER AMPS: 56.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-LS3 CBL-0464 FEEDER AMPS: 9.7 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 2.7 KW 2.1 KVAR 3.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-LS4 CBL-0465 FEEDER AMPS: 9.7 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 2.7 KW 2.1 KVAR 3.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B61-LS5 CBL-0466 FEEDER AMPS: 9.7 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 2.7 KW 2.1 KVAR 3.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-KITCHEN CBL-0467 FEEDER AMPS: 14.6 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 4.1 KW 3.1 KVAR 5.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-LS1 CBL-0468 FEEDER AMPS: 6.5 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 1.8 KW 1.4 KVAR 2.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-LS2 CBL-0469 FEEDER AMPS: 6.5 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 1.8 KW 1.4 KVAR 2.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B61-LSD-M DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.43
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.1 DEGREES

LOAD FROM: B-B61-ATS-LSD CBL-0462 FEEDER AMPS: 56.9 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B61-LSD CBL-0463 FEEDER AMPS: 56.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 16.0 KW 12.0 KVAR 20.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-ATS-EQD DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.63
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.6 DEGREES

LOAD TO: B-B62-EQD CBL-0493 FEEDER AMPS: 73.3 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0700 ATS-B62-EQD FEEDER AMPS: 73.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B62-ATS-LSD DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 4.09
========== PU BUS VOLTAGE: 0.959 ANGLE: -0.1 DEGREES

LOAD TO: B-B62-LSD-M CBL-0499 FEEDER AMPS: 74.5 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0706 ATS-B62-LSD FEEDER AMPS: 74.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-ATTC PNL DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.77
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B62-EQD CBL-0495 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-ELEV-1 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.77
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B62-EQD CBL-0494 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-ELEV-2 DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.77
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B62-EQD CBL-0497 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B62-EQ DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.72
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B62-EQD CBL-0496 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-EQD DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.71
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.6 DEGREES

LOAD FROM: B-B62-ATS-EQD CBL-0493 FEEDER AMPS: 73.3 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-ELEV-1 CBL-0494 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-ATTC PNL CBL-0495 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-EQ CBL-0496 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-ELEV-2 CBL-0497 FEEDER AMPS: 14.2 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-PAD RM CBL-0498 FEEDER AMPS: 16.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B62-LS1 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.30
========== PU BUS VOLTAGE: 0.957 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 4.1 KW 3.1 KVAR

LOAD FROM: B-B62-LSD CBL-0503 FEEDER AMPS: 14.9 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 4.1 KW 3.1 KVAR 5.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-LS2 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.22
========== PU BUS VOLTAGE: 0.958 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 4.1 KW 3.1 KVAR

LOAD FROM: B-B62-LSD CBL-0504 FEEDER AMPS: 14.8 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.1 KW 3.1 KVAR 5.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-LS3 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.31
========== PU BUS VOLTAGE: 0.957 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 6.2 KW 4.6 KVAR

LOAD FROM: B-B62-LSD CBL-0501 FEEDER AMPS: 22.3 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 6.2 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-LS4 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.25
========== PU BUS VOLTAGE: 0.958 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 6.2 KW 4.6 KVAR

LOAD FROM: B-B62-LSD CBL-0502 FEEDER AMPS: 22.3 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 6.2 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-LSD DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.16
========== PU BUS VOLTAGE: 0.958 ANGLE: -0.1 DEGREES

LOAD FROM: B-B62-LSD-M CBL-0500 FEEDER AMPS: 74.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B62-LS3 CBL-0501 FEEDER AMPS: 22.3 VOLTAGE DROP: 0. %VD: 0.15
PROJECTED POWER FLOW: 6.2 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-LS4 CBL-0502 FEEDER AMPS: 22.3 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 6.2 KW 4.6 KVAR 7.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-LS2 CBL-0504 FEEDER AMPS: 14.8 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.1 KW 3.1 KVAR 5.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-LS1 CBL-0503 FEEDER AMPS: 14.9 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 4.1 KW 3.1 KVAR 5.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-LSD-M DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.16
========== PU BUS VOLTAGE: 0.958 ANGLE: -0.1 DEGREES

LOAD FROM: B-B62-ATS-LSD CBL-0499 FEEDER AMPS: 74.5 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B62-LSD CBL-0500 FEEDER AMPS: 74.5 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.6 KW 15.4 KVAR 25.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B62-PAD RM DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.74
========== PU BUS VOLTAGE: 0.973 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 4.6 KW 3.4 KVAR

LOAD FROM: B-B62-EQD CBL-0498 FEEDER AMPS: 16.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B7-ATS-EQ DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 1.07
========== PU BUS VOLTAGE: 0.989 ANGLE: -0.2 DEGREES

LOAD TO: B-B7-EQD CBL-0286 FEEDER AMPS: 81.7 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 23.3 KW 17.5 KVAR 29.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0702 ATS-B7-EQ FEEDER AMPS: 81.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 23.3 KW 17.5 KVAR 29.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-ATS-LS DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 0.96
========== PU BUS VOLTAGE: 0.990 ANGLE: 0.0 DEGREES

LOAD TO: B-B7-LSD-M CBL-0302 FEEDER AMPS: 45.8 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0708 ATS-B7-LS FEEDER AMPS: 45.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-ELEV DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.22
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 4.6 KW 3.4 KVAR

LOAD FROM: B-B7-EQD CBL-0287 FEEDER AMPS: 16.0 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-EQ1 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.21
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.2 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B7-EQD CBL-0290 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B7-EQ2 DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 1.17
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.2 DEGREES
NET BRANCH DIVERSITY LOAD: 4.0 KW 3.0 KVAR

LOAD FROM: B-B7-EQD CBL-0289 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-EQ4 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.21
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.2 DEGREES
NET BRANCH DIVERSITY LOAD: 4.6 KW 3.4 KVAR

LOAD FROM: B-B7-EQD CBL-0292 FEEDER AMPS: 16.0 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-EQD DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 1.15
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.3 DEGREES

LOAD FROM: B-B7-ATS-EQ CBL-0286 FEEDER AMPS: 81.7 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 23.3 KW 17.5 KVAR 29.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-ELEV CBL-0287 FEEDER AMPS: 16.0 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: bB-B7-MC1 CBL-0288 FEEDER AMPS: 16.0 VOLTAGE DROP: 0. %VD: 0.24
PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-EQ2 CBL-0289 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-EQ1 CBL-0290 FEEDER AMPS: 14.0 VOLTAGE DROP: 0. %VD: 0.06
PROJECTED POWER FLOW: 4.0 KW 3.0 KVAR 5.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B7-MCC-1 CBL-0291 FEEDER AMPS: 5.6 VOLTAGE DROP: 0. %VD: 0.02

PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-EQ4 CBL-0292 FEEDER AMPS: 16.0 VOLTAGE DROP: 0. %VD: 0.06

PROJECTED POWER FLOW: 4.6 KW 3.4 KVAR 5.7 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LS1 DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 1.06

========== PU BUS VOLTAGE: 0.989 ANGLE: 0.0 DEGREES

NET BRANCH DIVERSITY LOAD: 3.3 KW 2.5 KVAR

LOAD FROM: B-B7-LSD CBL-0306 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.08

PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LS2 DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 1.02

========== PU BUS VOLTAGE: 0.990 ANGLE: 0.0 DEGREES

NET BRANCH DIVERSITY LOAD: 3.3 KW 2.5 KVAR

LOAD FROM: B-B7-LSD CBL-0307 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.04

PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LS4 DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 1.07

========== PU BUS VOLTAGE: 0.989 ANGLE: 0.0 DEGREES

NET BRANCH DIVERSITY LOAD: 3.3 KW 2.5 KVAR

LOAD FROM: B-B7-LSD CBL-0305 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.09

PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LS5 DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 1.02

========== PU BUS VOLTAGE: 0.990 ANGLE: 0.0 DEGREES

NET BRANCH DIVERSITY LOAD: 3.3 KW 2.5 KVAR

LOAD FROM: B-B7-LSD CBL-0304 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.04

PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B7-LSD DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 0.98
========== PU BUS VOLTAGE: 0.990 ANGLE: 0.0 DEGREES

LOAD FROM: B-B7-LSD-M CBL-0303 FEEDER AMPS: 45.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LS5 CBL-0304 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LS4 CBL-0305 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.09
PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LS1 CBL-0306 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LS2 CBL-0307 FEEDER AMPS: 11.4 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 3.3 KW 2.5 KVAR 4.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-LSD-M DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 0.98
========== PU BUS VOLTAGE: 0.990 ANGLE: 0.0 DEGREES

LOAD FROM: B-B7-ATS-LS CBL-0302 FEEDER AMPS: 45.8 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B7-LSD CBL-0303 FEEDER AMPS: 45.8 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 13.1 KW 9.8 KVAR 16.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B7-MCC-1 DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 1.17
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.2 DEGREES
NET BRANCH DIVERSITY LOAD: 1.6 KW 1.2 KVAR

LOAD FROM: B-B7-EQD CBL-0291 FEEDER AMPS: 5.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 1.6 KW 1.2 KVAR 2.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70 -BLDG-71 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.69
========== PU BUS VOLTAGE: 0.963 ANGLE: -0.2 DEGREES
NET BRANCH DIVERSITY LOAD: 5.0 KW 3.8 KVAR

LOAD FROM: B-B70-MDP CBL-0518 FEEDER AMPS: 18.0 VOLTAGE DROP: 3. %VD: 1.48
PROJECTED POWER FLOW: 5.0 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B70 GEN-M DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.21
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD FROM: B-B70-GEN CBL-0545 FEEDER AMPS: 713.1 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 205.9 KW 152.8 KVAR 256.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.5 KVAR 0.6 KVA

LOAD TO: B-B70-EM-TAP CBL-0544 FEEDER AMPS: 713.1 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 205.9 KW 152.8 KVAR 256.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B70-A DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.34
========== PU BUS VOLTAGE: 0.977 ANGLE: -0.5 DEGREES
NET BRANCH DIVERSITY LOAD: 7.5 KW 5.6 KVAR

LOAD FROM: B-B70-MDP CBL-0513 FEEDER AMPS: 26.7 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 7.5 KW 5.6 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-ATS-EQD DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.31
========== PU BUS VOLTAGE: 0.997 ANGLE: -0.1 DEGREES

LOAD TO: B-B70-EQD-M CBL-0526 FEEDER AMPS: 52.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 15.1 KW 11.3 KVAR 18.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0612 ATS-B70-EQD FEEDER AMPS: 52.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 15.1 KW 11.3 KVAR 18.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-ATS-LSD DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.32
========== PU BUS VOLTAGE: 0.997 ANGLE: -0.1 DEGREES

LOAD TO: B-B70-LSD-M CBL-0540 FEEDER AMPS: 39.3 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0613 ATS-B70-LSD FEEDER AMPS: 39.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-ATTIC DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.39
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.5 DEGREES
NET BRANCH DIVERSITY LOAD: 7.5 KW 5.6 KVAR

LOAD FROM: B-B70-MDP CBL-0512 FEEDER AMPS: 26.7 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 7.5 KW 5.6 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-B DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.34
========== PU BUS VOLTAGE: 0.977 ANGLE: -0.5 DEGREES
NET BRANCH DIVERSITY LOAD: 7.5 KW 5.6 KVAR

LOAD FROM: B-B70-MDP CBL-0521 FEEDER AMPS: 26.7 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 7.5 KW 5.6 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-CHLLR DESIGN VOLTS: 208 BUS VOLTS: 202 %VD: 2.83
========== PU BUS VOLTAGE: 0.972 ANGLE: -0.6 DEGREES
NET BRANCH DIVERSITY LOAD: 17.6 KW 13.2 KVAR

LOAD FROM: B-B70-MDP CBL-0524 FEEDER AMPS: 62.7 VOLTAGE DROP: 1. %VD: 0.62
PROJECTED POWER FLOW: 17.6 KW 13.2 KVAR 22.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-EM-TAP DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.24
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD TO: B-B70-FPMP M CBL-0548 FEEDER AMPS: 621.1 VOLTAGE DROP: 1. %VD: 0.66
PROJECTED POWER FLOW: 179.4 KW 132.9 KVAR 223.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.9 KW 1.3 KVAR 1.6 KVA

LOAD FROM: B-B70 GEN-M CBL-0544 FEEDER AMPS: 713.1 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 205.8 KW 152.7 KVAR 256.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.1 KVA

LOAD TO: BUS-0612 CBL-0546 FEEDER AMPS: 52.6 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 15.1 KW 11.3 KVAR 18.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0613 CBL-0547 FEEDER AMPS: 39.3 VOLTAGE DROP: 0. %VD: 0.08
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-EQ1 DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.52
========== PU BUS VOLTAGE: 0.995 ANGLE: -0.1 DEGREES

LOAD FROM: B-B70-EQD CBL-0528 FEEDER AMPS: 24.2 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 7.0 KW 5.2 KVAR 8.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-EQ3 CBL-0529 FEEDER AMPS: 24.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 7.0 KW 5.2 KVAR 8.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-EQ2 DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.68
========== PU BUS VOLTAGE: 0.993 ANGLE: 0.0 DEGREES

LOAD FROM: B-B70-EQD CBL-0531 FEEDER AMPS: 28.3 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 8.1 KW 6.1 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-EQ4 CBL-0532 FEEDER AMPS: 28.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 8.1 KW 6.1 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-EQ3 DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.56
========== PU BUS VOLTAGE: 0.994 ANGLE: 0.0 DEGREES

LOAD FROM: B-B70-EQ1 CBL-0529 FEEDER AMPS: 24.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 7.0 KW 5.2 KVAR 8.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-EQ5 CBL-0530 FEEDER AMPS: 24.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 7.0 KW 5.2 KVAR 8.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-EQ4 DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.72
========== PU BUS VOLTAGE: 0.993 ANGLE: 0.0 DEGREES

LOAD FROM: B-B70-EQ2 CBL-0532 FEEDER AMPS: 28.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 8.1 KW 6.1 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-EQ6 CBL-0533 FEEDER AMPS: 28.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 8.1 KW 6.1 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-EQ5 DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.59
========== PU BUS VOLTAGE: 0.994 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 7.0 KW 5.2 KVAR

LOAD FROM: B-B70-EQ3 CBL-0530 FEEDER AMPS: 24.2 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 7.0 KW 5.2 KVAR 8.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-EQ6 DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 0.76
========== PU BUS VOLTAGE: 0.992 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 8.1 KW 6.1 KVAR

LOAD FROM: B-B70-EQ4 CBL-0533 FEEDER AMPS: 28.3 VOLTAGE DROP: 0. %VD: 0.04
PROJECTED POWER FLOW: 8.1 KW 6.1 KVAR 10.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-EQD DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.33
========== PU BUS VOLTAGE: 0.997 ANGLE: -0.1 DEGREES

LOAD FROM: B-B70-EQD-M CBL-0527 FEEDER AMPS: 52.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 15.1 KW 11.3 KVAR 18.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-EQ1 CBL-0528 FEEDER AMPS: 24.2 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 7.0 KW 5.2 KVAR 8.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-EQ2 CBL-0531 FEEDER AMPS: 28.3 VOLTAGE DROP: 1. %VD: 0.35
PROJECTED POWER FLOW: 8.2 KW 6.1 KVAR 10.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-EQD-M DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.33
========== PU BUS VOLTAGE: 0.997 ANGLE: -0.1 DEGREES

LOAD FROM: B-B70-ATS-EQD CBL-0526 FEEDER AMPS: 52.6 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 15.1 KW 11.3 KVAR 18.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-EQD CBL-0527 FEEDER AMPS: 52.6 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 15.1 KW 11.3 KVAR 18.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-FIRE PMP DESIGN VOLTS: 208 BUS VOLTS: 195 %VD: 6.26$
========== PU BUS VOLTAGE: 0.937 ANGLE: 1.5 DEGREES
NET BRANCH DIVERSITY LOAD: 64.0 KW 48.0 KVAR

LOAD FROM: B-B70-FPMP M CBL-0508 FEEDER AMPS: 236.8 VOLTAGE DROP: 11. %VD: 5.36$
PROJECTED POWER FLOW: 64.0 KW 48.0 KVAR 80.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 5.2 KW 0.7 KVAR 5.2 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-FP-TAP DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 1.15
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.2 DEGREES

LOAD TO: B-T-B70-SEC CBL-0506 FEEDER AMPS: 384.3 VOLTAGE DROP: 1. %VD: 0.54
PROJECTED POWER FLOW: 109.1 KW 82.6 KVAR 136.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.7 KVAR 0.8 KVA

LOAD FROM: B-B70-FPMP M CBL-0507 FEEDER AMPS: 384.3 VOLTAGE DROP: 1. %VD: 0.25
PROJECTED POWER FLOW: 109.1 KW 82.6 KVAR 136.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.2 KVAR 0.4 KVA

==== BUS: B-B70-FPMP M DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 0.90
========== PU BUS VOLTAGE: 0.991 ANGLE: -0.2 DEGREES

LOAD TO: B-B70-FP-TAP CBL-0507 FEEDER AMPS: 384.3 VOLTAGE DROP: 1. %VD: 0.25
PROJECTED POWER FLOW: 109.4 KW 82.9 KVAR 137.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.2 KVAR 0.4 KVA

LOAD TO: B-B70-FIRE PMP CBL-0508 FEEDER AMPS: 236.8 VOLTAGE DROP: 11. %VD: 5.36$
PROJECTED POWER FLOW: 69.2 KW 48.7 KVAR 84.6 KVA PF:0.82 LAGGING
LOSSES THRU FEEDER: 5.2 KW 0.7 KVAR 5.2 KVA

LOAD FROM: B-B70-EM-TAP CBL-0548 FEEDER AMPS: 621.1 VOLTAGE DROP: 1. %VD: 0.66
PROJECTED POWER FLOW: 178.5 KW 131.5 KVAR 221.8 KVA PF:0.81 LAGGING
LOSSES THRU FEEDER: 0.9 KW 1.3 KVAR 1.6 KVA

==== BUS: B-B70-GEN DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
*** SWING GENERATOR: B70-GEN 206.2 KW 153.3 KVAR

LOAD TO: B-B70 GEN-M CBL-0545 FEEDER AMPS: 713.1 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 206.2 KW 153.3 KVAR 256.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.5 KVAR 0.6 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-K DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.32
========== PU BUS VOLTAGE: 0.977 ANGLE: -0.5 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.8 KVAR

LOAD FROM: B-B70-MDP CBL-0514 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-LP-4 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.59
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.5 DEGREES
NET BRANCH DIVERSITY LOAD: 10.0 KW 7.5 KVAR

LOAD FROM: B-B70-MDP CBL-0522 FEEDER AMPS: 35.7 VOLTAGE DROP: 1. %VD: 0.39
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-LP1 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.59
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.4 DEGREES
NET BRANCH DIVERSITY LOAD: 11.3 KW 8.5 KVAR

LOAD FROM: B-B70-MDP CBL-0519 FEEDER AMPS: 40.2 VOLTAGE DROP: 1. %VD: 0.38
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

==== BUS: B-B70-LP3 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.41
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.5 DEGREES
NET BRANCH DIVERSITY LOAD: 7.5 KW 5.6 KVAR

LOAD FROM: B-B70-MDP CBL-0520 FEEDER AMPS: 26.7 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 7.5 KW 5.6 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-LS1 DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.44
========== PU BUS VOLTAGE: 0.996 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 2.2 KW 1.6 KVAR

LOAD FROM: B-B70-LSD CBL-0542 FEEDER AMPS: 7.4 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 2.2 KW 1.6 KVAR 2.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-LS2 DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.48
========== PU BUS VOLTAGE: 0.995 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 2.2 KW 1.6 KVAR

LOAD FROM: B-B70-LSD CBL-0543 FEEDER AMPS: 7.5 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 2.2 KW 1.6 KVAR 2.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-LS3 DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.46
========== PU BUS VOLTAGE: 0.995 ANGLE: 0.0 DEGREES

LOAD FROM: B-B70-LSD CBL-0534 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-LS5 CBL-0535 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-LS4 DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.55
========== PU BUS VOLTAGE: 0.995 ANGLE: 0.0 DEGREES

LOAD FROM: B-B70-LSD CBL-0537 FEEDER AMPS: 13.1 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-LS6 CBL-0538 FEEDER AMPS: 13.1 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-LS5 DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.48
========== PU BUS VOLTAGE: 0.995 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 3.2 KW 2.4 KVAR

LOAD FROM: B-B70-LS3 CBL-0535 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-LS6 DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.57
========== PU BUS VOLTAGE: 0.994 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.8 KVAR

LOAD FROM: B-B70-LS4 CBL-0538 FEEDER AMPS: 13.1 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-LSD DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.34
========== PU BUS VOLTAGE: 0.997 ANGLE: -0.1 DEGREES

LOAD TO: B-B70-LS3 CBL-0534 FEEDER AMPS: 11.2 VOLTAGE DROP: 0. %VD: 0.13
PROJECTED POWER FLOW: 3.2 KW 2.4 KVAR 4.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-LS4 CBL-0537 FEEDER AMPS: 13.1 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: B-B70-LSD-M CBL-0541 FEEDER AMPS: 39.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-LS1 CBL-0542 FEEDER AMPS: 7.4 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 2.2 KW 1.6 KVAR 2.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-LS2 CBL-0543 FEEDER AMPS: 7.5 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 2.2 KW 1.6 KVAR 2.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-LSD-M DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.33
========== PU BUS VOLTAGE: 0.997 ANGLE: -0.1 DEGREES

LOAD FROM: B-B70-ATS-LSD CBL-0540 FEEDER AMPS: 39.3 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-LSD CBL-0541 FEEDER AMPS: 39.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-MDP DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.21
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.5 DEGREES

LOAD FROM: B-B70-MDP-M CBL-0509 FEEDER AMPS: 384.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 108.3 KW 81.2 KVAR 135.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-STRTLGHT CBL-0510 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B0B70-LP2 CBL-0511 FEEDER AMPS: 17.8 VOLTAGE DROP: 0. %VD: 0.23
PROJECTED POWER FLOW: 5.0 KW 3.8 KVAR 6.3 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-ATTIC CBL-0512 FEEDER AMPS: 26.7 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 7.5 KW 5.7 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-A CBL-0513 FEEDER AMPS: 26.7 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 7.5 KW 5.7 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-K CBL-0514 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-PP2 CBL-0516 FEEDER AMPS: 40.1 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0581 CBL-0515 FEEDER AMPS: VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0582 CBL-0517 FEEDER AMPS: VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70 -BLDG-71 CBL-0518 FEEDER AMPS: 18.0 VOLTAGE DROP: 3. %VD: 1.48
PROJECTED POWER FLOW: 5.1 KW 3.8 KVAR 6.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B70-LP1 CBL-0519 FEEDER AMPS: 40.2 VOLTAGE DROP: 1. %VD: 0.38
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B70-LP3 CBL-0520 FEEDER AMPS: 26.7 VOLTAGE DROP: 0. %VD: 0.21
PROJECTED POWER FLOW: 7.5 KW 5.7 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-B CBL-0521 FEEDER AMPS: 26.7 VOLTAGE DROP: 0. %VD: 0.14
PROJECTED POWER FLOW: 7.5 KW 5.7 KVAR 9.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-LP-4 CBL-0522 FEEDER AMPS: 35.7 VOLTAGE DROP: 1. %VD: 0.39
PROJECTED POWER FLOW: 10.1 KW 7.6 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B70-CHLLR CBL-0524 FEEDER AMPS: 62.7 VOLTAGE DROP: 1. %VD: 0.62
PROJECTED POWER FLOW: 17.7 KW 13.3 KVAR 22.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B70-PP220 CBL-0525 FEEDER AMPS: 35.7 VOLTAGE DROP: 1. %VD: 0.36
PROJECTED POWER FLOW: 10.1 KW 7.6 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-MDP-M DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.20
========== PU BUS VOLTAGE: 0.978 ANGLE: -0.5 DEGREES

LOAD FROM: B-T-B70-SEC CBL-0505 FEEDER AMPS: 384.3 VOLTAGE DROP: 1. %VD: 0.50
PROJECTED POWER FLOW: 108.4 KW 81.2 KVAR 135.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.7 KVAR 0.8 KVA

LOAD TO: B-B70-MDP CBL-0509 FEEDER AMPS: 384.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 108.4 KW 81.2 KVAR 135.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B70-PP2 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.41
========== PU BUS VOLTAGE: 0.976 ANGLE: -0.5 DEGREES
NET BRANCH DIVERSITY LOAD: 11.3 KW 8.5 KVAR

LOAD FROM: B-B70-MDP CBL-0516 FEEDER AMPS: 40.1 VOLTAGE DROP: 0. %VD: 0.20
PROJECTED POWER FLOW: 11.3 KW 8.5 KVAR 14.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-PP220 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.56
========== PU BUS VOLTAGE: 0.974 ANGLE: -0.5 DEGREES
NET BRANCH DIVERSITY LOAD: 10.0 KW 7.5 KVAR

LOAD FROM: B-B70-MDP CBL-0525 FEEDER AMPS: 35.7 VOLTAGE DROP: 1. %VD: 0.36
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B70-STRTLGHT DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.31
========== PU BUS VOLTAGE: 0.977 ANGLE: -0.5 DEGREES
NET BRANCH DIVERSITY LOAD: 3.8 KW 2.8 KVAR

LOAD FROM: B-B70-MDP CBL-0510 FEEDER AMPS: 13.3 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 3.8 KW 2.8 KVAR 4.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B78-78AE1 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.29
========== PU BUS VOLTAGE: 0.977 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 19.6 KW 14.7 KVAR

LOAD FROM: B-B78-ATSG9578 CBL-0555 FEEDER AMPS: 69.7 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 19.6 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B78-ATS-CRD DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 0.80
========== PU BUS VOLTAGE: 0.992 ANGLE: 0.0 DEGREES

LOAD TO: B-B78-CRD CBL-0586 FEEDER AMPS: 59.4 VOLTAGE DROP: 2. %VD: 0.92
PROJECTED POWER FLOW: 17.0 KW 12.7 KVAR 21.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: BUS-0712 ATS-B78-CRD FEEDER AMPS: 59.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 17.0 KW 12.7 KVAR 21.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B78-ATS-E1 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.21
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.3 DEGREES

LOAD FROM: BUS-0715 ATS-B78-E1 FEEDER AMPS: 157.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 44.9 KW 33.7 KVAR 56.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B78-E1 CBL-0651 FEEDER AMPS: 157.7 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 44.9 KW 33.7 KVAR 56.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B78-ATS-LS1 DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 0.83
========== PU BUS VOLTAGE: 0.992 ANGLE: -0.1 DEGREES

LOAD TO: B-B78-LSD CBL-0556 FEEDER AMPS: 68.7 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 19.7 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0714 ATS-B78-LS1 FEEDER AMPS: 68.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 19.7 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B78-ATSG9578 DESIGN VOLTS: 208 BUS VOLTS: 203 %VD: 2.28
========== PU BUS VOLTAGE: 0.977 ANGLE: 0.0 DEGREES

LOAD TO: B-B78-78AE1 CBL-0555 FEEDER AMPS: 69.7 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 19.7 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0713 ATS-B78-G95-78 FEEDER AMPS: 69.7 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 19.7 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B78-CRD DESIGN VOLTS: 208 BUS VOLTS: 204 %VD: 1.71
========== PU BUS VOLTAGE: 0.983 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 16.8 KW 12.6 KVAR

LOAD FROM: B-B78-ATS-CRD CBL-0586 FEEDER AMPS: 59.4 VOLTAGE DROP: 2. %VD: 0.92
PROJECTED POWER FLOW: 16.8 KW 12.6 KVAR 21.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B78-E1 DESIGN VOLTS: 208 BUS VOLTS: 205 %VD: 1.25
========== PU BUS VOLTAGE: 0.988 ANGLE: -0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 44.9 KW 33.7 KVAR

LOAD FROM: B-B78-ATS-E1 CBL-0651 FEEDER AMPS: 157.7 VOLTAGE DROP: 0. %VD: 0.03
PROJECTED POWER FLOW: 44.9 KW 33.7 KVAR 56.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B78-LSD DESIGN VOLTS: 208 BUS VOLTS: 206 %VD: 0.85
========== PU BUS VOLTAGE: 0.991 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 19.6 KW 14.7 KVAR

LOAD FROM: B-B78-ATS-LS1 CBL-0556 FEEDER AMPS: 68.7 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 19.6 KW 14.7 KVAR 24.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B8 HYDRO ELV DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.57
========== PU BUS VOLTAGE: 0.984 ANGLE: 0.2 DEGREES
NET BRANCH DIVERSITY LOAD: 42.3 KW 31.8 KVAR

LOAD FROM: B-B8-480V PNL CBL-0336 FEEDER AMPS: 64.6 VOLTAGE DROP: 5. %VD: 1.03
PROJECTED POWER FLOW: 42.3 KW 31.8 KVAR 52.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.6 KW 0.1 KVAR 0.6 KVA

==== BUS: B-B8-480V ATS DESIGN VOLTS: 480 BUS VOLTS: 478 %VD: 0.46
========== PU BUS VOLTAGE: 0.995 ANGLE: -0.1 DEGREES

LOAD TO: B-B8-480V PNL CBL-0334 FEEDER AMPS: 342.3 VOLTAGE DROP: 0. %VD: 0.07
PROJECTED POWER FLOW: 223.7 KW 173.8 KVAR 283.3 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.2 KVAR 0.2 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD FROM: BUS-0725 ATS-B8-480V FEEDER AMPS: 342.3 VOLTAGE DROP: 0. %VD: 0.02

PROJECTED POWER FLOW: 223.7 KW 173.8 KVAR 283.3 KVA PF:0.79 LAGGING

LOSSES THRU FEEDER: 0.0 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B8-480V PNL DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: 0.54

========== PU BUS VOLTAGE: 0.995 ANGLE: -0.1 DEGREES

LOAD FROM: B-B8-480V ATS CBL-0334 FEEDER AMPS: 342.3 VOLTAGE DROP: 0. %VD: 0.07

PROJECTED POWER FLOW: 223.6 KW 173.6 KVAR 283.1 KVA PF:0.79 LAGGING

LOSSES THRU FEEDER: 0.1 KW 0.2 KVAR 0.2 KVA

LOAD TO: B-B8-FLEXPMACH CBL-0335 FEEDER AMPS: 19.2 VOLTAGE DROP: 2. %VD: 0.41

PROJECTED POWER FLOW: 12.8 KW 9.5 KVAR 15.9 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B8 HYDRO ELV CBL-0336 FEEDER AMPS: 64.6 VOLTAGE DROP: 5. %VD: 1.03

PROJECTED POWER FLOW: 42.9 KW 31.9 KVAR 53.5 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.6 KW 0.1 KVAR 0.6 KVA

LOAD TO: B-B8-TXMR PRI CBL-0337 FEEDER AMPS: 219.5 VOLTAGE DROP: 0. %VD: 0.05

PROJECTED POWER FLOW: 142.0 KW 113.1 KVAR 181.5 KVA PF:0.78 LAGGING

LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B8-COMP CBL-0341 FEEDER AMPS: 38.8 VOLTAGE DROP: 6. %VD: 1.17

PROJECTED POWER FLOW: 25.8 KW 19.1 KVAR 32.1 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.4 KW 0.0 KVAR 0.4 KVA

LOAD BUS: B-B8-ATS *** ISOLATED BUS ***

==== BUS: B-B8-CMOP DESIGN VOLTS: 208 BUS VOLTS: 192 %VD: 7.92$

========== PU BUS VOLTAGE: 0.921 ANGLE: -1.6 DEGREES

NET BRANCH DIVERSITY LOAD: 24.9 KW 18.6 KVAR

LOAD FROM: B-B8-TXMR SEC CBL-0338 FEEDER AMPS: 93.6 VOLTAGE DROP: 1. %VD: 0.37

PROJECTED POWER FLOW: 24.9 KW 18.6 KVAR 31.1 KVA PF:0.80 LAGGING

LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B8-COMP DESIGN VOLTS: 480 BUS VOLTS: 472 %VD: 1.71
========== PU BUS VOLTAGE: 0.983 ANGLE: 0.3 DEGREES
NET BRANCH DIVERSITY LOAD: 25.4 KW 19.1 KVAR

LOAD FROM: B-B8-480V PNL CBL-0341 FEEDER AMPS: 38.8 VOLTAGE DROP: 6. %VD: 1.17
PROJECTED POWER FLOW: 25.4 KW 19.1 KVAR 31.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.0 KVAR 0.4 KVA

==== BUS: B-B8-ELEV DESIGN VOLTS: 208 BUS VOLTS: 189 %VD: 8.94$
========== PU BUS VOLTAGE: 0.911 ANGLE: -1.8 DEGREES
NET BRANCH DIVERSITY LOAD: 69.9 KW 52.5 KVAR

LOAD FROM: B-B8-J-BOX CBL-0658 FEEDER AMPS: 266.4 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 69.9 KW 52.5 KVAR 87.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.3 KVA

==== BUS: B-B8-FDR DESIGN VOLTS: 208 BUS VOLTS: 191 %VD: 8.06$
========== PU BUS VOLTAGE: 0.919 ANGLE: -1.7 DEGREES

LOAD FROM: B-B8-TXMR SEC CBL-0339 FEEDER AMPS: 412.9 VOLTAGE DROP: 1. %VD: 0.51
PROJECTED POWER FLOW: 109.2 KW 82.3 KVAR 136.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.6 KVAR 0.8 KVA

LOAD TO: B-B8-J-BOX CBL-0340 FEEDER AMPS: 412.9 VOLTAGE DROP: 1. %VD: 0.62
PROJECTED POWER FLOW: 109.2 KW 82.3 KVAR 136.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.6 KW 0.8 KVAR 1.0 KVA

==== BUS: B-B8-FLEXPMACH DESIGN VOLTS: 480 BUS VOLTS: 475 %VD: 0.95
========== PU BUS VOLTAGE: 0.991 ANGLE: 0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 12.7 KW 9.5 KVAR

LOAD FROM: B-B8-480V PNL CBL-0335 FEEDER AMPS: 19.2 VOLTAGE DROP: 2. %VD: 0.41
PROJECTED POWER FLOW: 12.7 KW 9.5 KVAR 15.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B8-GEN DESIGN VOLTS: 480 BUS VOLTS: 480 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
*** SWING GENERATOR: G-B8 GEN 224.5 KW 174.9 KVAR

LOAD TO: BUS-0725 CBL-0648 FEEDER AMPS: 342.3 VOLTAGE DROP: 2. %VD: 0.44
PROJECTED POWER FLOW: 224.5 KW 174.9 KVAR 284.6 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.8 KW 1.0 KVAR 1.3 KVA

==== BUS: B-B8-J-BOX DESIGN VOLTS: 208 BUS VOLTS: 190 %VD: 8.68$
========== PU BUS VOLTAGE: 0.913 ANGLE: -1.8 DEGREES
NET BRANCH DIVERSITY LOAD: 38.5 KW 28.9 KVAR

LOAD FROM: B-B8-FDR CBL-0340 FEEDER AMPS: 412.9 VOLTAGE DROP: 1. %VD: 0.62
PROJECTED POWER FLOW: 108.6 KW 81.6 KVAR 135.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.6 KW 0.8 KVAR 1.0 KVA

LOAD TO: B-B8-ELEV CBL-0658 FEEDER AMPS: 266.4 VOLTAGE DROP: 1. %VD: 0.26
PROJECTED POWER FLOW: 70.1 KW 52.7 KVAR 87.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.2 KVAR 0.3 KVA

==== BUS: B-B8-TXMR PRI DESIGN VOLTS: 480 BUS VOLTS: 477 %VD: 0.58
========== PU BUS VOLTAGE: 0.994 ANGLE: -0.1 DEGREES

LOAD FROM: B-B8-480V PNL CBL-0337 FEEDER AMPS: 219.5 VOLTAGE DROP: 0. %VD: 0.05
PROJECTED POWER FLOW: 141.9 KW 113.1 KVAR 181.4 KVA PF:0.78 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD TO: B-B8-TXMR SEC XF2-0032 TRANSF AMPS: 219.5 VOLTAGE DROP: 33. %VD: 6.96$
PROJECTED POWER FLOW: 141.9 KW 113.1 KVAR 181.4 KVA PF:0.78 LAGGING
LOSSES THRU TRANSF: 7.2 KW 11.4 KVAR 13.5 KVA

==== BUS: B-B8-TXMR SEC DESIGN VOLTS: 208 BUS VOLTS: 192 %VD: 7.55$
========== PU BUS VOLTAGE: 0.925 ANGLE: -1.6 DEGREES

LOAD FROM: B-B8-TXMR PRI XF2-0032 TRANSF AMPS: 506.6 VOLTAGE DROP: 14. %VD: 6.96$
PROJECTED POWER FLOW: 134.7 KW 101.7 KVAR 168.7 KVA PF:0.80 LAGGING
LOSSES THRU TRANSF: 7.2 KW 11.4 KVAR 13.5 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED

VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: B-B8-CMOP CBL-0338 FEEDER AMPS: 93.6 VOLTAGE DROP: 1. %VD: 0.37
PROJECTED POWER FLOW: 25.0 KW 18.7 KVAR 31.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: B-B8-FDR CBL-0339 FEEDER AMPS: 412.9 VOLTAGE DROP: 1. %VD: 0.51
PROJECTED POWER FLOW: 109.7 KW 83.0 KVAR 137.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.6 KVAR 0.8 KVA

==== BUS: B-B80-ATS-EQ DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 3.82
========== PU BUS VOLTAGE: 0.962 ANGLE: 0.7 DEGREES

LOAD TO: B-B80-E1 CBL-0597 FEEDER AMPS: 72.4 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 20.1 KW 15.0 KVAR 25.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0688 ATS-B80-EQ FEEDER AMPS: 72.4 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 20.1 KW 15.0 KVAR 25.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B80-E1 DESIGN VOLTS: 208 BUS VOLTS: 200 %VD: 4.00
========== PU BUS VOLTAGE: 0.960 ANGLE: 0.8 DEGREES

LOAD FROM: B-B80-ATS-EQ CBL-0597 FEEDER AMPS: 72.4 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 20.1 KW 15.0 KVAR 25.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B80-LB-E CBL-0598 FEEDER AMPS: 36.2 VOLTAGE DROP: 1. %VD: 0.30
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B80-PB-2 CBL-0599 FEEDER AMPS: 36.2 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B80-LB-E DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.30
========== PU BUS VOLTAGE: 0.957 ANGLE: 0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 10.0 KW 7.5 KVAR

LOAD FROM: B-B80-E1 CBL-0598 FEEDER AMPS: 36.2 VOLTAGE DROP: 1. %VD: 0.30
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B80-PB-2 DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.18
========== PU BUS VOLTAGE: 0.958 ANGLE: 0.8 DEGREES
NET BRANCH DIVERSITY LOAD: 10.0 KW 7.5 KVAR

LOAD FROM: B-B80-E1 CBL-0599 FEEDER AMPS: 36.2 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 10.0 KW 7.5 KVAR 12.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B82-ATS-EMER DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.22
========== PU BUS VOLTAGE: 0.958 ANGLE: -0.1 DEGREES

LOAD FROM: BUS-0689 ATS-B82-EMERG FEEDER AMPS: 261.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 72.1 KW 54.1 KVAR 90.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: B-B82-EMERG-M CBL-0664 FEEDER AMPS: 261.3 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 72.1 KW 54.1 KVAR 90.2 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

==== BUS: B-B82-EMER DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.41
========== PU BUS VOLTAGE: 0.956 ANGLE: -0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 72.0 KW 54.0 KVAR

LOAD FROM: B-B82-EMERG-M CBL-0665 FEEDER AMPS: 261.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 72.0 KW 54.0 KVAR 90.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B82-EMERG-M DESIGN VOLTS: 208 BUS VOLTS: 199 %VD: 4.40
========== PU BUS VOLTAGE: 0.956 ANGLE: -0.1 DEGREES

LOAD FROM: B-B82-ATS-EMER CBL-0664 FEEDER AMPS: 261.3 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 72.0 KW 54.0 KVAR 90.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD TO: B-B82-EMER CBL-0665 FEEDER AMPS: 261.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 72.0 KW 54.0 KVAR 90.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B92 GEN DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
*** SWING GENERATOR: GEN-B92 178.8 KW 137.0 KVAR

LOAD TO: B-B92-EMDP-M CBL-0604 FEEDER AMPS: 625.3 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 178.8 KW 137.0 KVAR 225.3 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.2 KVAR 0.3 KVA

==== BUS: B-B92-ATS DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.39
========== PU BUS VOLTAGE: 0.996 ANGLE: 0.0 DEGREES

LOAD TO: B-B92-PNL-E1 CBL-0060 FEEDER AMPS: 66.9 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 19.2 KW 14.4 KVAR 24.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0676 ATS-B92 FEEDER AMPS: 66.9 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 19.2 KW 14.4 KVAR 24.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B92-EMDP DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.11
========== PU BUS VOLTAGE: 0.999 ANGLE: 0.0 DEGREES

LOAD FROM: B-B92-EMDP-M CBL-0605 FEEDER AMPS: 625.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 178.7 KW 136.8 KVAR 225.0 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0676 CBL-0606 FEEDER AMPS: 66.9 VOLTAGE DROP: 1. %VD: 0.27
PROJECTED POWER FLOW: 19.3 KW 14.4 KVAR 24.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.0 KVAR 0.1 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: BUS-0677 CBL-0607 FEEDER AMPS: 40.2 VOLTAGE DROP: 2. %VD: 1.20
PROJECTED POWER FLOW: 11.6 KW 8.7 KVAR 14.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD FROM: BUS-0678 CBL-0608 FEEDER AMPS: VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0680 CBL-0609 FEEDER AMPS: 73.3 VOLTAGE DROP: 6. %VD: 2.68
PROJECTED POWER FLOW: 21.3 KW 15.7 KVAR 26.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 0.3 KVAR 0.7 KVA

LOAD TO: B-B2-EPNL-B-M CBL-0611 FEEDER AMPS: 316.7 VOLTAGE DROP: 13. %VD: 6.32$
PROJECTED POWER FLOW: 89.8 KW 70.1 KVAR 114.0 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 4.5 KW 5.9 KVAR 7.5 KVA

LOAD TO: BUS-0736 CBL-0610 FEEDER AMPS: 128.1 VOLTAGE DROP: 5. %VD: 2.55
PROJECTED POWER FLOW: 36.7 KW 27.9 KVAR 46.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.7 KW 1.0 KVAR 1.2 KVA

==== BUS: B-B92-EMDP-M DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.11
========== PU BUS VOLTAGE: 0.999 ANGLE: 0.0 DEGREES

LOAD FROM: B-B92 GEN CBL-0604 FEEDER AMPS: 625.3 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 178.7 KW 136.8 KVAR 225.0 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.2 KVAR 0.3 KVA

LOAD TO: B-B92-EMDP CBL-0605 FEEDER AMPS: 625.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 178.7 KW 136.8 KVAR 225.0 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B92-PNL-E1 DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.50
========== PU BUS VOLTAGE: 0.995 ANGLE: 0.1 DEGREES
NET BRANCH DIVERSITY LOAD: 19.2 KW 14.4 KVAR

LOAD FROM: B-B92-ATS CBL-0060 FEEDER AMPS: 66.9 VOLTAGE DROP: 0. %VD: 0.11
PROJECTED POWER FLOW: 19.2 KW 14.4 KVAR 24.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B93-ATS-EMER DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.25
========== PU BUS VOLTAGE: 0.998 ANGLE: -0.1 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-B93-EMDP DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.25
========== PU BUS VOLTAGE: 0.998 ANGLE: -0.1 DEGREES

LOAD FROM: B-B93-EMDP-M CBL-0613 FEEDER AMPS: 840.4 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 241.3 KW 181.7 KVAR 302.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: BUS-0685 CBL-0614 FEEDER AMPS: VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0688 CBL-0615 FEEDER AMPS: 72.4 VOLTAGE DROP: 7. %VD: 3.57$
PROJECTED POWER FLOW: 21.1 KW 15.3 KVAR 26.0 KVA PF:0.81 LAGGING
LOSSES THRU FEEDER: 1.0 KW 0.3 KVAR 1.0 KVA

LOAD TO: BUS-0689 CBL-0616 FEEDER AMPS: 261.3 VOLTAGE DROP: 8. %VD: 3.97$
PROJECTED POWER FLOW: 75.1 KW 56.4 KVAR 93.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 3.0 KW 2.3 KVAR 3.7 KVA

LOAD TO: BUS-0691 CBL-0617 FEEDER AMPS: 112.7 VOLTAGE DROP: 2. %VD: 1.09
PROJECTED POWER FLOW: 32.3 KW 24.5 KVAR 40.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.4 KVAR 0.5 KVA

LOAD TO: BUS-0692 CBL-0618 FEEDER AMPS: 137.9 VOLTAGE DROP: 8. %VD: 4.00$
PROJECTED POWER FLOW: 39.2 KW 30.3 KVAR 49.6 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 1.1 KW 1.8 KVAR 2.1 KVA

LOAD TO: B-B93-EMDP1 CBL-0619 FEEDER AMPS: 255.9 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 73.6 KW 55.2 KVAR 92.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B93-EMDP-M DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.24
========== PU BUS VOLTAGE: 0.998 ANGLE: -0.1 DEGREES

LOAD FROM: B-B93-GEN CBL-0612 FEEDER AMPS: 840.4 VOLTAGE DROP: 1. %VD: 0.24
PROJECTED POWER FLOW: 241.3 KW 181.7 KVAR 302.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.7 KVAR 0.8 KVA

LOAD TO: B-B93-EMDP CBL-0613 FEEDER AMPS: 840.4 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 241.3 KW 181.7 KVAR 302.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B93-EMDP1 DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.27
========== PU BUS VOLTAGE: 0.997 ANGLE: -0.1 DEGREES

LOAD FROM: B-B93-EMDP CBL-0619 FEEDER AMPS: 255.9 VOLTAGE DROP: 0. %VD: 0.02
PROJECTED POWER FLOW: 73.6 KW 55.2 KVAR 92.0 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0694 CBL-0620 FEEDER AMPS: 113.6 VOLTAGE DROP: 4. %VD: 1.72
PROJECTED POWER FLOW: 32.7 KW 24.5 KVAR 40.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.6 KW 0.4 KVAR 0.7 KVA

LOAD TO: BUS-0695 CBL-0621 FEEDER AMPS: 142.3 VOLTAGE DROP: 13. %VD: 6.48$
PROJECTED POWER FLOW: 40.9 KW 30.7 KVAR 51.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 2.6 KW 2.0 KVAR 3.3 KVA

==== BUS: B-B93-GEN DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
*** SWING GENERATOR: GEN-B93 241.7 KW 182.4 KVAR

LOAD TO: B-B93-EMDP-M CBL-0612 FEEDER AMPS: 840.4 VOLTAGE DROP: 1. %VD: 0.24
PROJECTED POWER FLOW: 241.7 KW 182.4 KVAR 302.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.7 KVAR 0.8 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

****

VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B94-ATS DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.29
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES
NET BRANCH DIVERSITY LOAD: 8.7 KW 6.5 KVAR

LOAD FROM: BUS-0704 ATS-B94 FEEDER AMPS: 30.3 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 8.7 KW 6.5 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD FROM: B-B94-E1 CBL-0662 FEEDER AMPS: 0.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B94-E1 DESIGN VOLTS: 208 BUS VOLTS: 207 %VD: 0.29
========== PU BUS VOLTAGE: 0.997 ANGLE: 0.0 DEGREES
**** NO LOAD SPECIFIED ****

==== BUS: B-B94-EMDP DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.19
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD FROM: B-B94-EMDP-M CBL-0625 FEEDER AMPS: 635.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 182.2 KW 137.8 KVAR 228.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0700 CBL-0626 FEEDER AMPS: 73.3 VOLTAGE DROP: 5. %VD: 2.44
PROJECTED POWER FLOW: 21.0 KW 16.0 KVAR 26.4 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.6 KVAR 0.7 KVA

LOAD TO: BUS-0701 CBL-0627 FEEDER AMPS: 85.0 VOLTAGE DROP: 4. %VD: 1.83
PROJECTED POWER FLOW: 24.3 KW 18.5 KVAR 30.6 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.5 KVAR 0.6 KVA

LOAD TO: BUS-0702 CBL-0628 FEEDER AMPS: 81.7 VOLTAGE DROP: 2. %VD: 0.88
PROJECTED POWER FLOW: 23.5 KW 17.7 KVAR 29.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.2 KVAR 0.3 KVA

LOAD TO: BUS-0703 CBL-0629 FEEDER AMPS: 101.6 VOLTAGE DROP: 5. %VD: 2.51
PROJECTED POWER FLOW: 29.0 KW 22.2 KVAR 36.5 KVA PF:0.79 LAGGING
LOSSES THRU FEEDER: 0.5 KW 0.8 KVAR 1.0 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

LOAD TO: BUS-0704 CBL-0630 FEEDER AMPS: 30.3 VOLTAGE DROP: 0. %VD: 0.10
PROJECTED POWER FLOW: 8.7 KW 6.5 KVAR 10.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0705 CBL-0631 FEEDER AMPS: 56.9 VOLTAGE DROP: 5. %VD: 2.21
PROJECTED POWER FLOW: 16.4 KW 12.3 KVAR 20.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.3 KVAR 0.5 KVA

LOAD TO: BUS-0706 CBL-0632 FEEDER AMPS: 74.5 VOLTAGE DROP: 8. %VD: 3.90$
PROJECTED POWER FLOW: 21.4 KW 16.1 KVAR 26.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.8 KW 0.6 KVAR 1.0 KVA

LOAD TO: BUS-0707 CBL-0633 FEEDER AMPS: 85.7 VOLTAGE DROP: 5. %VD: 2.60
PROJECTED POWER FLOW: 24.7 KW 18.5 KVAR 30.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.6 KW 0.5 KVAR 0.8 KVA

LOAD TO: BUS-0708 CBL-0634 FEEDER AMPS: 45.8 VOLTAGE DROP: 2. %VD: 0.77
PROJECTED POWER FLOW: 13.2 KW 9.9 KVAR 16.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

==== BUS: B-B94-EMDP-M DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.18
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD FROM: B-B94-GEN CBL-0624 FEEDER AMPS: 635.3 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 182.2 KW 137.8 KVAR 228.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.4 KVAR 0.4 KVA

LOAD TO: B-B94-EMDP CBL-0625 FEEDER AMPS: 635.3 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 182.2 KW 137.8 KVAR 228.5 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

==== BUS: B-B94-GEN DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.00
========== PU BUS VOLTAGE: 1.000 ANGLE: 0.0 DEGREES
*** SWING GENERATOR: B94-GEN 182.5 KW 138.2 KVAR

LOAD TO: B-B94-EMDP-M CBL-0624 FEEDER AMPS: 635.3 VOLTAGE DROP: 0. %VD: 0.18
PROJECTED POWER FLOW: 182.5 KW 138.2 KVAR 228.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.2 KW 0.4 KVAR 0.4 KVA

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS

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VOLTAGE EFFECT ON LOADS MODELED
VOLTAGE DROP CRITERIA: BRANCH = 3.00 % BUS = 5.00

==== BUS: B-B95-EMDP DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.19
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD FROM: B-B95-EMDP-M CBL-0636 FEEDER AMPS: 655.7 VOLTAGE DROP: 0. %VD: 0.01
PROJECTED POWER FLOW: 188.2 KW 142.0 KVAR 235.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0712 CBL-0637 FEEDER AMPS: 59.4 VOLTAGE DROP: 1. %VD: 0.60
PROJECTED POWER FLOW: 17.1 KW 12.8 KVAR 21.4 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.1 KVA

LOAD TO: BUS-0713 CBL-0638 FEEDER AMPS: 69.7 VOLTAGE DROP: 4. %VD: 2.08
PROJECTED POWER FLOW: 20.1 KW 15.0 KVAR 25.1 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.4 KW 0.3 KVAR 0.5 KVA

LOAD TO: BUS-0714 CBL-0639 FEEDER AMPS: 68.7 VOLTAGE DROP: 1. %VD: 0.63
PROJECTED POWER FLOW: 19.8 KW 14.8 KVAR 24.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.1 KW 0.1 KVAR 0.2 KVA

LOAD TO: BUS-0715 CBL-0640 FEEDER AMPS: 157.7 VOLTAGE DROP: 2. %VD: 1.02
PROJECTED POWER FLOW: 45.3 KW 34.2 KVAR 56.7 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.5 KVAR 0.6 KVA

LOAD FROM: B-B10 EMRG TAP CBL-0641 FEEDER AMPS: 0.0 VOLTAGE DROP: 0. %VD: 0.00
PROJECTED POWER FLOW: 0.0 KW 0.0 KVAR 0.0 KVA PF:0.00 LEADING
LOSSES THRU FEEDER: 0.0 KW 0.0 KVAR 0.0 KVA

LOAD TO: BUS-0718 CBL-0642 FEEDER AMPS: 149.9 VOLTAGE DROP: 2. %VD: 0.91
PROJECTED POWER FLOW: 43.0 KW 32.5 KVAR 53.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.5 KVAR 0.5 KVA

LOAD TO: BUS-0719 CBL-0643 FEEDER AMPS: 150.0 VOLTAGE DROP: 2. %VD: 0.97
PROJECTED POWER FLOW: 43.0 KW 32.5 KVAR 53.9 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.5 KVAR 0.6 KVA

==== BUS: B-B95-EMDP-M DESIGN VOLTS: 208 BUS VOLTS: 208 %VD: 0.19
========== PU BUS VOLTAGE: 0.998 ANGLE: 0.0 DEGREES

LOAD FROM: B-B95-GEN CBL-0635 FEEDER AMPS: 655.7 VOLTAGE DROP: 0. %VD: 0.19
PROJECTED POWER FLOW: 188.3 KW 142.0 KVAR 235.8 KVA PF:0.80 LAGGING
LOSSES THRU FEEDER: 0.3 KW 0.4 KVAR 0.5 KVA

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 LOAD FLOW STUDY FOR THE BEDFORD VAMC

 STUDY CASE-2 EMERGENCY

                BALANCED VOLTAGE DROP AND LOAD FLOW ANALYSIS
 ************************************************************************
 VOLTAGE EFFECT ON LOADS MODELED
 VOLTAGE DROP CRITERIA: BRANCH =  3.00 %   BUS =  5.00


 LOAD   TO:  B-B95-EMDP     CBL-0636        FEEDER AMPS: 655.7 VOLTAGE DROP:     0. %VD:
0.01
 PROJECTED POWER FLOW:    188.3 KW     142.0 KVAR     235.8 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.0 KW       0.0 KVAR       0.0 KVA


 ==== BUS:  B-B95-GEN      DESIGN VOLTS:     208 BUS VOLTS:     208 %VD:  0.00
 ========================= PU BUS VOLTAGE:  1.000       ANGLE:   0.0 DEGREES
              *** SWING  GENERATOR: B-95 GEN          188.5 KW   142.4 KVAR

 LOAD   TO:  B-B95-EMDP-M   CBL-0635        FEEDER AMPS: 655.7 VOLTAGE DROP:     0. %VD:
0.19
 PROJECTED POWER FLOW:    188.5 KW     142.4 KVAR     236.2 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.3 KW       0.4 KVAR       0.5 KVA


 ==== BUS:  B-T-B70-SEC    DESIGN VOLTS:     208 BUS VOLTS:     204 %VD:  1.70
 ========================= PU BUS VOLTAGE:  0.983       ANGLE:  -0.4 DEGREES

 LOAD   TO:  B-B70-MDP-M    CBL-0505        FEEDER AMPS: 384.3 VOLTAGE DROP:     1. %VD:
0.50
 PROJECTED POWER FLOW:    108.7 KW      81.9 KVAR     136.1 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.4 KW       0.7 KVAR       0.8 KVA

 LOAD FROM:  B-B70-FP-TAP   CBL-0506        FEEDER AMPS: 384.3 VOLTAGE DROP:     1. %VD:
0.54
 PROJECTED POWER FLOW:    108.7 KW      81.9 KVAR     136.1 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.4 KW       0.7 KVAR       0.8 KVA


 ==== BUS:  B0B70-LP2      DESIGN VOLTS:     208 BUS VOLTS:     203 %VD:  2.44
 ========================= PU BUS VOLTAGE:  0.976       ANGLE:  -0.5 DEGREES
               NET BRANCH DIVERSITY LOAD:     5.0 KW     3.8 KVAR

 LOAD FROM:  B-B70-MDP      CBL-0511        FEEDER AMPS:  17.8 VOLTAGE DROP:     0. %VD:
0.23
 PROJECTED POWER FLOW:      5.0 KW       3.8 KVAR       6.3 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.0 KW       0.0 KVAR       0.0 KVA


 ==== BUS:  bB-B7-MC1      DESIGN VOLTS:     208 BUS VOLTS:     205 %VD:  1.39
 ========================= PU BUS VOLTAGE:  0.986       ANGLE:  -0.2 DEGREES
               NET BRANCH DIVERSITY LOAD:     4.6 KW     3.4 KVAR

 LOAD FROM:  B-B7-EQD       CBL-0288        FEEDER AMPS:  16.0 VOLTAGE DROP:     0. %VD:
0.24
 PROJECTED POWER FLOW:      4.6 KW       3.4 KVAR       5.7 KVA  PF:0.80 LAGGING
 LOSSES THRU FEEDER:      0.0 KW       0.0 KVAR       0.0 KVA
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BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
B-B1-ATS-EMERG	208.00	0.9989	B-B10 EMRG TAP	208.00	0.9981
B-B17-ANIMALRM	208.00	0.9682	B-B17-ATS	208.00	0.9720
B-B17-EMERG	208.00	0.9717	B-B17-NEB1	208.00	0.9675
B-B17-NEB2	208.00	0.9705	B-B18-1STFL	208.00	0.9860
B-B18-1STFL-M	208.00	0.9864	B-B18-2ND-FL-M	208.00	0.9864
B-B18-2NDFL	208.00	0.9856	B-B18-ATS-EMRG	208.00	0.9869
B-B18-EMERG	208.00	0.9864	B-B18-EMERG-M	208.00	0.9864
B-B18-TAP BOX	208.00	0.9865	B-B2-ATS-CRIT	208.00	0.9733
B-B2-ATS-LED3	208.00	0.9103	B-B2-ATS-LS	208.00	0.9324
B-B2-BATTERYCH	208.00	0.9286	B-B2-CRIT PNL	208.00	0.9731
B-B2-DENTAL LB	208.00	0.9721	B-B2-DENTSUCPM	208.00	0.9312
B-B2-ELEV	208.00	0.9313	B-B2-ELEV-P1	208.00	0.9712
B-B2-EMERG-M	208.00	0.9100	B-B2-EMERG-PNL	208.00	0.9100
B-B2-EPNL-B	208.00	0.9356	B-B2-EPNL-B-M	208.00	0.9357
B-B2-L12	208.00	0.9312	B-B2-L2A	208.00	0.9719
B-B2-L2E	208.00	0.9312	B-B2-L9E	208.00	0.9309
B-B2-LB1E	208.00	0.9309	B-B2-LB2E	208.00	0.9719
B-B2-MEDAIRCOM	208.00	0.9719	B-B2-NEWLAB	208.00	0.9099
B-B2-NEWLAB-M	208.00	0.9099	B-B2-PNL 1	208.00	0.9100
B-B2-PNL LS	208.00	0.9319	B-B2-PNL-2	208.00	0.9102
B-B2-PNL-3-M	208.00	0.9100	B-B2-PNL-L11	208.00	0.9719
B-B2-PNL-M1	208.00	0.9097	B-B2-POD2PP	208.00	0.9313
B-B22-ATS-EMER	480.00	0.9983	B-B22-EMERG	480.00	0.9972
B-B22-EMERG-M	480.00	0.9972	B-B22-GEN	480.00	1.0000
B-B22-L1	208.00	0.9796	B-B22-L1-M	208.00	0.9797
B-B22-L2	208.00	0.9796	B-B22-L2-M	208.00	0.9797
B-B22-L3	208.00	0.9797	B-B22-L3-M	208.00	0.9797
B-B22-P1	480.00	0.9970	B-B22-P2	480.00	0.9970
B-B22-T2-PRI	480.00	0.9971	B-B22-T2-SEC	208.00	0.9804
B-B22-T22-SEC	208.00	0.9803	B-B22-T3 PRI	480.00	0.9970
B-B22-T4-PRI	480.00	0.9970	B-B22-T4-SEC	208.00	0.9803
B-B3-1ST FL	208.00	0.9879	B-B3-ALDN KIT	208.00	0.9868
B-B3-ATS-COMP	208.00	0.9884	B-B3-ATSTEL RM	208.00	0.9890
B-B3-COMP	208.00	0.9870	B-B3-COMP AC	208.00	0.9868
B-B3-COMP MF	208.00	0.9871	B-B3-DBL GRILL	208.00	0.9867
B-B3-ELEV	208.00	0.9868	B-B3-EP1	208.00	0.9885
B-B3-EP1-M	208.00	0.9885	B-B3-EP2	208.00	0.9876
B-B3-EP2-M	208.00	0.9877	B-B3-HYDRO ELV	208.00	0.9858
B-B3-KP1	208.00	0.9870	B-B3-MECH HVAC	208.00	0.9872
B-B3-MECH RM	208.00	0.9872	B-B3-P7	208.00	0.9876

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
B-B3-STRT PNL	208.00	0.9873	B-B3-TELE PNL	208.00	0.9877
B-B3-TRAY LINE	208.00	0.9870	B-B4-4EQD	208.00	0.9859
B-B4-4EQD-M	208.00	0.9860	B-B4-ATS-EQ	208.00	0.9866
B-B4-ATS-LS	208.00	0.9801	B-B4-ELEV#4	208.00	0.9851
B-B4-EQ1	208.00	0.9855	B-B4-EQ10	208.00	0.9850
B-B4-EQ11	208.00	0.9853	B-B4-EQ12	208.00	0.9849
B-B4-EQ15	208.00	0.9849	B-B4-EQ2	208.00	0.9858
B-B4-EQ3	208.00	0.9853	B-B4-EQ5	208.00	0.9852
B-B4-EQ6	208.00	0.9855	B-B4-EQ7	208.00	0.9851
B-B4-EQ9	208.00	0.9843	B-B4-HYDROELEV	208.00	0.9844
B-B4-LP15	208.00	0.9785	B-B4-LP15-M	208.00	0.9785
B-B4-LS1	208.00	0.9789	B-B4-LS1-M	208.00	0.9789
B-B4-LS10	208.00	0.9779	B-B4-LS10-M	208.00	0.9779
B-B4-LS11	208.00	0.9782	B-B4-LS11-M	208.00	0.9782
B-B4-LS12	208.00	0.9785	B-B4-LS12-M	208.00	0.9785
B-B4-LS13	208.00	0.9785	B-B4-LS13-M	208.00	0.9785
B-B4-LS14	208.00	0.9787	B-B4-LS14-M	208.00	0.9787
B-B4-LS2	208.00	0.9792	B-B4-LS2-M	208.00	0.9792
B-B4-LS3	208.00	0.9794	B-B4-LS3-M	208.00	0.9794
B-B4-LS4	208.00	0.9791	B-B4-LS4-M	208.00	0.9791
B-B4-LS5	208.00	0.9781	B-B4-LS5-M	208.00	0.9781
B-B4-LS6	208.00	0.9784	B-B4-LS6-M	208.00	0.9784
B-B4-LS7	208.00	0.9786	B-B4-LS7-M	208.00	0.9786
B-B4-LS8	208.00	0.9787	B-B4-LS8-M	208.00	0.9787
B-B4-LS9	208.00	0.9789	B-B4-LS9-M	208.00	0.9789
B-B4-LSD	208.00	0.9796	B-B4-LSD-M	208.00	0.9797
B-B4-PP1	208.00	0.9856	B-B4-PP2	208.00	0.9785
B-B4-PP2-M	208.00	0.9785	B-B5-ATS-EQ	208.00	0.9574
B-B5-ATS-LS	208.00	0.9325	B-B5-EQ1	208.00	0.9559
B-B5-EQ2	208.00	0.9558	B-B5-EQ5	208.00	0.9559
B-B5-EQ6	208.00	0.9555	B-B5-EQD	208.00	0.9571
B-B5-HYDR ELEV	208.00	0.9562	B-B5-LS1	208.00	0.9302
B-B5-LS2	208.00	0.9263	B-B5-LS4	208.00	0.9247
B-B5-LSD	208.00	0.9319	B-B5-LSD-M	208.00	0.9320
B-B55-LS3	208.00	0.9286	B-B6-ATS-EQ	208.00	0.9798
B-B6-ATS-LS	208.00	0.9721	B-B6-EQ1	208.00	0.9789
B-B6-EQ2	208.00	0.9785	B-B6-EQ3	208.00	0.9787
B-B6-EQ4	208.00	0.9782	B-B6-EQ5	208.00	0.9782
B-B6-EQ8	208.00	0.9782	B-B6-EQD	208.00	0.9792
B-B6-EQD-M	208.00	0.9792	B-B6-EQMACH	208.00	0.9790

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
B-B6-LS1	208.00	0.9707	B-B6-LS2	208.00	0.9713
B-B6-LS3	208.00	0.9707	B-B6-LS4	208.00	0.9707
B-B6-LS5	208.00	0.9701	B-B6-LS6	208.00	0.9701
B-B6-LSD	208.00	0.9716	B-B6-LSD-M	208.00	0.9716
B-B61-ATS-EQD	208.00	0.9730	B-B61-ATS-LSD	208.00	0.9760
B-B61-COMP RM	208.00	0.9720	B-B61-ELEV	208.00	0.9712
B-B61-EQ1	208.00	0.9712	B-B61-EQ2	208.00	0.9720
B-B61-EQ4	208.00	0.9719	B-B61-EQA	208.00	0.9723
B-B61-EQD	208.00	0.9723	B-B61-KITCHEN	208.00	0.9753
B-B61-LS1	208.00	0.9752	B-B61-LS2	208.00	0.9754
B-B61-LS3	208.00	0.9747	B-B61-LS4	208.00	0.9749
B-B61-LS5	208.00	0.9747	B-B61-LSD	208.00	0.9757
B-B61-LSD-M	208.00	0.9757	B-B62-ATS-EQD	208.00	0.9737
B-B62-ATS-LSD	208.00	0.9591	B-B62-ATTC PNL	208.00	0.9723
B-B62-ELEV-1	208.00	0.9723	B-B62-ELEV-2	208.00	0.9723
B-B62-EQ	208.00	0.9728	B-B62-EQD	208.00	0.9729
B-B62-LS1	208.00	0.9570	B-B62-LS2	208.00	0.9578
B-B62-LS3	208.00	0.9569	B-B62-LS4	208.00	0.9575
B-B62-LSD	208.00	0.9584	B-B62-LSD-M	208.00	0.9584
B-B62-PAD RM	208.00	0.9726	B-B7-ATS-EQ	208.00	0.9893
B-B7-ATS-LS	208.00	0.9904	B-B7-ELEV	208.00	0.9878
B-B7-EQ1	208.00	0.9879	B-B7-EQ2	208.00	0.9883
B-B7-EQ4	208.00	0.9879	B-B7-EQD	208.00	0.9885
B-B7-LS1	208.00	0.9894	B-B7-LS2	208.00	0.9898
B-B7-LS4	208.00	0.9893	B-B7-LS5	208.00	0.9898
B-B7-LSD	208.00	0.9902	B-B7-LSD-M	208.00	0.9902
B-B7-MCC-1	208.00	0.9883	B-B70 -BLDG-71	208.00	0.9631
B-B70 GEN-M	208.00	0.9979	B-B70-A	208.00	0.9766
B-B70-ATS-EQD	208.00	0.9969	B-B70-ATS-LSD	208.00	0.9968
B-B70-ATTIC	208.00	0.9761	B-B70-B	208.00	0.9766
B-B70-CHLLR	208.00	0.9717	B-B70-EM-TAP	208.00	0.9976
B-B70-EQ1	208.00	0.9948	B-B70-EQ2	208.00	0.9932
B-B70-EQ3	208.00	0.9944	B-B70-EQ4	208.00	0.9928
B-B70-EQ5	208.00	0.9941	B-B70-EQ6	208.00	0.9924
B-B70-EQD	208.00	0.9967	B-B70-EQD-M	208.00	0.9967
B-B70-FIRE PMP	208.00	0.9374	B-B70-FP-TAP	208.00	0.9885
B-B70-FPMP M	208.00	0.9910	B-B70-GEN	208.00	1.0000
B-B70-K	208.00	0.9768	B-B70-LP-4	208.00	0.9741
B-B70-LP1	208.00	0.9741	B-B70-LP3	208.00	0.9759
B-B70-LS1	208.00	0.9956	B-B70-LS2	208.00	0.9952

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
B-B70-LS3	208.00	0.9954	B-B70-LS4	208.00	0.9945
B-B70-LS5	208.00	0.9952	B-B70-LS6	208.00	0.9943
B-B70-LSD	208.00	0.9966	B-B70-LSD-M	208.00	0.9967
B-B70-MDP	208.00	0.9779	B-B70-MDP-M	208.00	0.9780
B-B70-PP2	208.00	0.9759	B-B70-PP220	208.00	0.9744
B-B70-STRTLGHT	208.00	0.9769	B-B78-78AE1	208.00	0.9771
B-B78-ATS-CRD	208.00	0.9920	B-B78-ATS-E1	208.00	0.9879
B-B78-ATS-LS1	208.00	0.9917	B-B78-ATSG9578	208.00	0.9772
B-B78-CRD	208.00	0.9829	B-B78-E1	208.00	0.9875
B-B78-LSD	208.00	0.9915	B-B8 HYDRO ELV	480.00	0.9843
B-B8-480V ATS	480.00	0.9954	B-B8-480V PNL	480.00	0.9946
B-B8-ATS	208.00	0.0000	B-B8-CMOP	208.00	0.9208
B-B8-COMP	480.00	0.9829	B-B8-ELEV	208.00	0.9106
B-B8-FDR	208.00	0.9194	B-B8-FLEXPMACH	480.00	0.9905
B-B8-GEN	480.00	1.0000	B-B8-J-BOX	208.00	0.9132
B-B8-TXMR PRI	480.00	0.9942	B-B8-TXMR SEC	208.00	0.9245
B-B80-ATS-EQ	208.00	0.9618	B-B80-E1	208.00	0.9600
B-B80-LB-E	208.00	0.9570	B-B80-PB-2	208.00	0.9582
B-B82-ATS-EMER	208.00	0.9578	B-B82-EMER	208.00	0.9559
B-B82-EMERG-M	208.00	0.9560	B-B92 GEN	208.00	1.0000
B-B92-ATS	208.00	0.9961	B-B92-EMDP	208.00	0.9989
B-B92-EMDP-M	208.00	0.9989	B-B92-PNL-E1	208.00	0.9950
B-B93-ATS-EMER	208.00	0.9975	B-B93-EMDP	208.00	0.9975
B-B93-EMDP-M	208.00	0.9976	B-B93-EMDP1	208.00	0.9973
B-B93-GEN	208.00	1.0000	B-B94-ATS	208.00	0.9971
B-B94-E1	208.00	0.9971	B-B94-EMDP	208.00	0.9981
B-B94-EMDP-M	208.00	0.9982	B-B94-GEN	208.00	1.0000
B-B95-EMDP	208.00	0.9981	B-B95-EMDP-M	208.00	0.9981
B-B95-GEN	208.00	1.0000	B-T-B70-SEC	208.00	0.9830
B0B70-LP2	208.00	0.9756	BUS-0376	208.00	0.0000
BUS-0581	208.00	0.9779	BUS-0582	208.00	0.9779
BUS-0612	208.00	0.9969	BUS-0613	208.00	0.9968
BUS-0676	208.00	0.9961	BUS-0677	208.00	0.9869
BUS-0678	208.00	0.9989	BUS-0680	208.00	0.9721
BUS-0685	208.00	0.9975	BUS-0688	208.00	0.9618
BUS-0689	208.00	0.9578	BUS-0691	208.00	0.9866
BUS-0692	208.00	0.9575	BUS-0694	208.00	0.9801
BUS-0695	208.00	0.9325	BUS-0700	208.00	0.9737
BUS-0701	208.00	0.9799	BUS-0702	208.00	0.9894
BUS-0703	208.00	0.9730	BUS-0704	208.00	0.9971

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW BUS DATA SUMMARY

BUS NAME	BASE VOLT	PU VOLT	BUS NAME	BASE VOLT	PU VOLT
BUS-0705	208.00	0.9760	BUS-0706	208.00	0.9592
BUS-0707	208.00	0.9721	BUS-0708	208.00	0.9904
BUS-0712	208.00	0.9920	BUS-0713	208.00	0.9772
BUS-0714	208.00	0.9917	BUS-0715	208.00	0.9879
BUS-0718	208.00	0.9890	BUS-0719	208.00	0.9884
BUS-0722	208.00	0.9324	BUS-0723	208.00	0.9103
BUS-0725	480.00	0.9956	BUS-0727	480.00	0.9983
BUS-0736	208.00	0.9734	bB-B7-MC1	208.00	0.9861

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B1-ATS-EMERG	BUS-0678		0.00	0.00	0.00	UNKNOWN
B-B17-ATS	B-B17-EMERG	FDR	0.03	73.40	25.70	43.18
B-B17-ATS	BUS-0680		0.00	73.40	25.70	UNKNOWN
B-B17-EMERG	B-B17-NEB2	FDR	0.12	16.90	5.92	17.79
B-B17-EMERG	B-B17-NEB1	FDR	0.42	28.26	9.89	21.74
B-B17-EMERG	B-B17-ANIMALRM	FDR	0.35	28.24	9.89	21.72
B-B18-1STFL-M	B-B18-1STFL	FDR	0.04	13.40	4.76	10.31
B-B18-2ND-FL-M	B-B18-2NDFL	FDR	0.09	13.41	4.76	10.31
B-B18-ATS-EMRG	B-B18-TAP BOX	FDR	0.04	40.20	14.29	23.65
B-B18-ATS-EMRG	BUS-0677		0.00	40.20	14.29	UNKNOWN
B-B18-EMERG-M	B-B18-EMERG	FDR	0.00	13.39	4.76	5.95
B-B18-TAP BOX	B-B18-2ND-FL-M	FDR	0.01	13.41	4.76	10.31
B-B18-TAP BOX	B-B18-1STFL-M	FDR	0.01	13.40	4.76	10.31
B-B18-TAP BOX	B-B18-EMERG-M	FDR	0.01	13.39	4.76	10.30
B-B2-ATS-CRIT	B-B2-CRIT PNL	FDR	0.03	128.11	44.92	28.47
B-B2-ATS-CRIT	BUS-0736		0.00	128.11	44.92	UNKNOWN
B-B2-ATS-LED3	B-B2-EMERG-M	FDR	0.03	47.22	15.48	20.99
B-B2-ATS-LED3	B-B2-PNL 1	FDR	0.03	47.22	15.48	20.99
B-B2-ATS-LED3	B-B2-NEWLAB-M	FDR	0.04	41.34	13.56	21.20
B-B2-ATS-LED3	B-B2-PNL-2	FDR	0.01	20.07	6.58	21.12
B-B2-ATS-LED3	B-B2-PNL-3-M	FDR	0.03	27.16	8.91	20.89
B-B2-ATS-LED3	BUS-0723		0.00	183.00	60.01	UNKNOWN
B-B2-ATS-LS	B-B2-PNL LS	FDR	0.05	133.72	44.92	29.71
B-B2-ATS-LS	BUS-0722		0.00	133.72	44.92	UNKNOWN
B-B2-CRIT PNL	B-B2-LB2E	FDR	0.12	14.22	4.99	10.94
B-B2-CRIT PNL	B-B2-L2A	FDR	0.11	28.47	9.98	12.65
B-B2-CRIT PNL	B-B2-MEDAIRCOM	FDR	0.12	14.22	4.99	10.94
B-B2-CRIT PNL	B-B2-ELEV-P1	FDR	0.19	28.50	9.99	10.96

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B2-CRIT PNL	B-B2-DENTAL LB	FDR	0.09	14.22	4.98	10.94
B-B2-CRIT PNL	B-B2-PNL-L11	FDR	0.11	28.47	9.98	12.65
B-B2-EMERG-M	B-B2-EMERG-PNL	FDR	0.00	47.22	15.48	20.99
B-B2-EPNL-B	BUS-0722	FDR	0.32	133.72	45.07	31.10
B-B2-EPNL-B	BUS-0723	FDR	2.53	183.00	61.68	63.10
B-B2-EPNL-B-M	B-B2-EPNL-B	FDR	0.01	316.71	106.76	39.59
B-B2-NEWLAB-M	B-B2-NEWLAB	FDR	0.00	41.34	13.55	18.37
B-B2-PNL LS	B-B2-L2E	FDR	0.07	17.53	5.88	7.79
B-B2-PNL LS	B-B2-L12	FDR	0.07	17.53	5.88	7.79
B-B2-PNL LS	B-B2-DENTSUCPM	FDR	0.07	8.76	2.94	6.74
B-B2-PNL LS	B-B2-L9E	FDR	0.10	17.53	5.89	10.31
B-B2-PNL LS	B-B2-LB1E	FDR	0.10	17.53	5.89	10.31
B-B2-PNL LS	B-B2-ELEV	FDR	0.05	19.73	6.62	7.59
B-B2-PNL LS	B-B2-POD2PP	FDR	0.06	17.53	5.88	6.74
B-B2-PNL LS	B-B2-BATTERYCH	FDR	0.33	17.58	5.90	23.44
B-B2-PNL-3-M	B-B2-PNL-M1	FDR	0.03	27.16	8.90	20.89
B-B22-ATS-EMER	B-B22-EMERG-M	FDR	0.10	138.63	115.05	32.24
B-B22-ATS-EMER	BUS-0727		0.01	138.63	115.05	UNKNOWN
B-B22-EMERG	B-B22-P1	FDR	0.02	27.43	22.74	10.55
B-B22-EMERG	B-B22-P2	FDR	0.02	27.43	22.74	10.55
B-B22-EMERG	B-B22-T2-PRI	FDR	0.01	27.92	23.15	16.42
B-B22-EMERG	B-B22-T3 PRI	FDR	0.02	27.92	23.15	16.42
B-B22-EMERG	B-B22-T4-PRI	FDR	0.02	27.92	23.15	16.42
B-B22-EMERG-M	B-B22-EMERG	FDR	0.00	138.63	114.93	61.61
B-B22-GEN	BUS-0727	FDR	0.17	138.63	115.25	43.32
B-B22-L1-M	B-B22-L1	FDR	0.00	64.43	22.74	28.64
B-B22-L2-M	B-B22-L2	FDR	0.00	64.43	22.74	28.64
B-B22-L3-M	B-B22-L3	FDR	0.00	64.43	22.74	28.63
B-B22-T2-PRI	B-B22-T2-SEC	TX2	1.67	27.92	23.14	30.86
B-B22-T2-SEC	B-B22-L3-M	FDR	0.07	64.43	22.76	24.78
B-B22-T22-SEC	B-B22-L2-M	FDR	0.07	64.43	22.76	24.78
B-B22-T3 PRI	B-B22-T22-SEC	TX2	1.67	27.92	23.14	30.86
B-B22-T4-PRI	B-B22-T4-SEC	TX2	1.67	27.92	23.14	30.86
B-B22-T4-SEC	B-B22-L1-M	FDR	0.07	64.43	22.76	24.78
B-B3-ATS-COMP	B-B3-EP2-M	FDR	0.07	150.00	53.41	34.88
B-B3-ATS-COMP	BUS-0719		0.00	150.00	53.41	UNKNOWN
B-B3-ATSTEL RM	B-B3-EP1-M	FDR	0.04	149.94	53.42	31.57
B-B3-ATSTEL RM	BUS-0718		0.00	149.94	53.42	UNKNOWN
B-B3-EP1	B-B3-TELE PNL	FDR	0.08	39.68	14.13	15.26
B-B3-EP1	B-B3-KP1	FDR	0.15	39.71	14.14	15.27

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B3-EP1	B-B3-P7	FDR	0.09	17.62	6.28	13.56
B-B3-EP1	B-B3-DBL GRILL	FDR	0.18	35.31	12.57	18.11
B-B3-EP1	B-B3-1ST FL	FDR	0.06	17.62	6.27	10.36
B-B3-EP1-M	B-B3-EP1	FDR	0.01	149.94	53.40	37.48
B-B3-EP2	B-B3-TRAY LINE	FDR	0.06	14.09	5.01	9.39
B-B3-EP2	B-B3-COMP	FDR	0.06	11.28	4.01	7.52
B-B3-EP2	B-B3-HYDRO ELV	FDR	0.18	22.58	8.03	13.28
B-B3-EP2	B-B3-MECH HVAC	FDR	0.05	11.28	4.01	7.52
B-B3-EP2	B-B3-COMP AC	FDR	0.08	3.38	1.20	11.25
B-B3-EP2	B-B3-ELEV	FDR	0.08	19.75	7.03	13.16
B-B3-EP2	B-B3-STRT PNL	FDR	0.03	11.27	4.01	7.52
B-B3-EP2	B-B3-ALDN KIT	FDR	0.08	11.28	4.01	11.87
B-B3-EP2	B-B3-MECH RM	FDR	0.05	22.55	8.02	8.67
B-B3-EP2	B-B3-COMP MF	FDR	0.05	22.55	8.02	10.02
B-B3-EP2-M	B-B3-EP2	FDR	0.01	150.00	53.37	37.50
B-B4-4EQD	B-B4-EQ9	FDR	0.16	15.28	5.43	7.84
B-B4-4EQD	B-B4-EQ2	FDR	0.02	13.38	4.75	6.86
B-B4-4EQD	B-B4-EQ15	FDR	0.10	13.39	4.75	6.86
B-B4-4EQD	B-B4-EQ3	FDR	0.06	11.47	4.07	5.88
B-B4-4EQD	B-B4-EQ1	FDR	0.04	13.39	4.75	6.86
B-B4-4EQD	B-B4-ELEV#4	FDR	0.09	11.47	4.07	5.88
B-B4-4EQD	B-B4-HYDROELEV	FDR	0.15	17.20	6.11	10.12
B-B4-4EQD	B-B4-PP1	FDR	0.03	17.18	6.10	6.61
B-B4-4EQD-M	B-B4-4EQD	FDR	0.00	112.76	40.05	28.19
B-B4-ATS-EQ	B-B4-4EQD-M	FDR	0.06	112.76	40.08	26.22
B-B4-ATS-EQ	BUS-0691		0.00	112.76	40.08	UNKNOWN
B-B4-ATS-LS	B-B4-LSD-M	FDR	0.04	113.63	40.12	43.70
B-B4-ATS-LS	BUS-0694		0.00	113.63	40.12	UNKNOWN
B-B4-EQ1	B-B4-EQ5	FDR	0.03	13.39	4.75	6.86
B-B4-EQ2	B-B4-EQ6	FDR	0.03	13.38	4.75	6.86
B-B4-EQ3	B-B4-EQ7	FDR	0.02	11.47	4.07	5.88
B-B4-EQ5	B-B4-EQ10	FDR	0.02	13.39	4.75	6.86
B-B4-EQ6	B-B4-EQ11	FDR	0.02	13.38	4.75	6.86
B-B4-EQ7	B-B4-EQ12	FDR	0.02	11.47	4.07	5.88
B-B4-LP15-M	B-B4-LP15	FDR	0.00	11.12	3.92	4.94
B-B4-LS1-M	B-B4-LS1	FDR	0.00	6.69	2.36	2.97
B-B4-LS10-M	B-B4-LS10	FDR	0.00	6.70	2.36	2.98
B-B4-LS11-M	B-B4-LS11	FDR	0.00	6.70	2.36	2.98
B-B4-LS12-M	B-B4-LS12	FDR	0.00	6.69	2.36	2.98
B-B4-LS13-M	B-B4-LS13	FDR	0.00	6.69	2.36	2.98

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B4-LS14-M	B-B4-LS14	FDR	0.00	5.53	1.95	2.46
B-B4-LS2-M	B-B4-LS2	FDR	0.00	6.69	2.36	2.97
B-B4-LS2-M	B-B4-LS1-M	FDR	0.03	6.69	2.36	3.94
B-B4-LS3-M	B-B4-LS3	FDR	0.00	6.69	2.36	2.97
B-B4-LS3-M	B-B4-LS4-M	FDR	0.03	6.69	2.36	3.94
B-B4-LS4-M	B-B4-LS4	FDR	0.00	6.69	2.36	2.97
B-B4-LS5-M	B-B4-LS5	FDR	0.00	6.70	2.36	2.98
B-B4-LS5-M	B-B4-LS10-M	FDR	0.02	6.70	2.36	3.94
B-B4-LS6-M	B-B4-LS6	FDR	0.00	6.70	2.36	2.98
B-B4-LS6-M	B-B4-LS11-M	FDR	0.02	6.70	2.36	3.94
B-B4-LS7-M	B-B4-LS7	FDR	0.00	6.69	2.36	2.97
B-B4-LS7-M	B-B4-LS12-M	FDR	0.02	6.69	2.36	3.94
B-B4-LS8-M	B-B4-LS8	FDR	0.00	6.69	2.36	2.97
B-B4-LS8-M	B-B4-LS13-M	FDR	0.02	6.69	2.36	3.94
B-B4-LS9-M	B-B4-LS9	FDR	0.00	5.53	1.95	2.46
B-B4-LS9-M	B-B4-LS14-M	FDR	0.01	5.53	1.95	3.25
B-B4-LSD	B-B4-LS2-M	FDR	0.05	13.38	4.72	7.87
B-B4-LSD	B-B4-LS3-M	FDR	0.02	13.38	4.72	7.87
B-B4-LSD	B-B4-LS5-M	FDR	0.16	13.40	4.73	7.88
B-B4-LSD	B-B4-LS6-M	FDR	0.12	13.39	4.73	7.88
B-B4-LSD	B-B4-LS7-M	FDR	0.10	13.39	4.73	7.88
B-B4-LSD	B-B4-LP15-M	FDR	0.11	11.12	3.92	7.41
B-B4-LSD	B-B4-PP2-M	FDR	0.11	11.12	3.92	7.41
B-B4-LSD	B-B4-LS8-M	FDR	0.09	13.39	4.72	7.88
B-B4-LSD	B-B4-LS9-M	FDR	0.08	11.06	3.90	6.51
B-B4-LSD-M	B-B4-LSD	FDR	0.01	113.63	40.10	50.50
B-B4-PP2-M	B-B4-PP2	FDR	0.00	11.12	3.92	4.94
B-B5-ATS-EQ	B-B5-EQD	FDR	0.03	137.99	47.60	32.09
B-B5-ATS-EQ	BUS-0692		0.00	137.99	47.60	UNKNOWN
B-B5-ATS-LS	B-B5-LSD-M	FDR	0.05	142.35	47.82	54.75
B-B5-ATS-LS	BUS-0695		0.00	142.35	47.82	UNKNOWN
B-B5-EQD	B-B5-EQ1	FDR	0.12	25.87	8.92	15.22
B-B5-EQD	B-B5-EQ5	FDR	0.12	25.87	8.92	15.22
B-B5-EQD	B-B5-EQ2	FDR	0.13	25.87	8.92	15.22
B-B5-EQD	B-B5-EQ6	FDR	0.16	25.88	8.92	15.22
B-B5-EQD	B-B5-HYDR ELEV	FDR	0.10	34.49	11.89	20.29
B-B5-LS1	B-B55-LS3	FDR	0.16	71.02	23.80	41.78
B-B5-LS2	B-B5-LS4	FDR	0.16	71.32	23.80	41.96
B-B5-LSD	B-B5-LS2	FDR	0.57	71.32	23.95	41.96
B-B5-LSD	B-B5-LS1	FDR	0.18	71.02	23.85	41.78

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B5-LSD-M	B-B5-LSD	FDR	0.00	142.35	47.80	35.59
B-B6-ATS-EQ	B-B6-EQD-M	FDR	0.06	85.08	30.03	22.39
B-B6-ATS-EQ	BUS-0701		0.00	85.08	30.03	UNKNOWN
B-B6-ATS-LS	B-B6-LSD-M	FDR	0.05	85.78	30.04	32.99
B-B6-ATS-LS	BUS-0707		0.00	85.78	30.04	UNKNOWN
B-B6-EQ2	B-B6-EQ4	FDR	0.03	15.01	5.29	7.70
B-B6-EQ3	B-B6-EQ5	FDR	0.04	22.53	7.94	11.55
B-B6-EQD	B-B6-EQ8	FDR	0.10	22.53	7.95	8.67
B-B6-EQD	B-B6-EQ1	FDR	0.03	15.00	5.29	10.00
B-B6-EQD	B-B6-EQ3	FDR	0.06	22.53	7.95	11.55
B-B6-EQD	B-B6-EQ2	FDR	0.07	15.01	5.30	7.70
B-B6-EQD	B-B6-EQMACH	FDR	0.02	10.01	3.53	6.67
B-B6-EQD-M	B-B6-EQD	FDR	0.00	85.08	30.01	8.51
B-B6-LS3	B-B6-LS5	FDR	0.05	23.40	8.18	13.77
B-B6-LS4	B-B6-LS6	FDR	0.05	23.40	8.18	13.77
B-B6-LSD	B-B6-LS4	FDR	0.09	23.40	8.19	13.77
B-B6-LSD	B-B6-LS3	FDR	0.09	23.40	8.19	13.77
B-B6-LSD	B-B6-LS1	FDR	0.09	23.39	8.19	13.76
B-B6-LSD	B-B6-LS2	FDR	0.03	15.58	5.45	11.98
B-B6-LSD-M	B-B6-LSD	FDR	0.00	85.78	30.02	8.58
B-B61-ATS-EQD	B-B61-EQD	FDR	0.07	101.62	35.62	23.63
B-B61-ATS-EQD	BUS-0703		0.00	101.62	35.62	UNKNOWN
B-B61-ATS-LSD	B-B61-LSD-M	FDR	0.03	56.96	20.03	21.91
B-B61-ATS-LSD	BUS-0705		0.00	56.96	20.03	UNKNOWN
B-B61-EQA	B-B61-COMP RM	FDR	0.03	24.05	8.42	9.25
B-B61-EQD	B-B61-ELEV	FDR	0.11	24.06	8.43	9.26
B-B61-EQD	B-B61-EQ1	FDR	0.11	24.06	8.43	12.34
B-B61-EQD	B-B61-EQ4	FDR	0.04	8.42	2.95	4.96
B-B61-EQD	B-B61-EQ2	FDR	0.03	21.02	7.36	10.78
B-B61-EQD	B-B61-EQA	FDR	0.01	24.05	8.42	9.25
B-B61-LSD	B-B61-LS3	FDR	0.10	9.77	3.43	5.75
B-B61-LSD	B-B61-LS4	FDR	0.08	9.77	3.43	5.74
B-B61-LSD	B-B61-LS5	FDR	0.10	9.77	3.43	5.75
B-B61-LSD	B-B61-KITCHEN	FDR	0.04	14.63	5.14	5.63
B-B61-LSD	B-B61-LS1	FDR	0.05	6.52	2.29	3.83
B-B61-LSD	B-B61-LS2	FDR	0.03	6.52	2.29	5.01
B-B61-LSD-M	B-B61-LSD	FDR	0.00	56.96	20.02	25.32
B-B62-ATS-EQD	B-B62-EQD	FDR	0.07	73.38	25.74	28.22
B-B62-ATS-EQD	BUS-0700		0.00	73.38	25.74	UNKNOWN
B-B62-ATS-LSD	B-B62-LSD-M	FDR	0.08	74.52	25.75	28.66

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B62-ATS-LSD	BUS-0706		0.00	74.52	25.75	UNKNOWN
B-B62-EQD	B-B62-ELEV-1	FDR	0.06	14.27	5.00	7.32
B-B62-EQD	B-B62-ATTC PNL	FDR	0.06	14.27	5.00	7.32
B-B62-EQD	B-B62-EQ	FDR	0.01	14.27	5.00	10.97
B-B62-EQD	B-B62-ELEV-2	FDR	0.06	14.27	5.00	7.32
B-B62-EQD	B-B62-PAD RM	FDR	0.03	16.30	5.71	9.59
B-B62-LSD	B-B62-LS3	FDR	0.15	22.36	7.72	13.16
B-B62-LSD	B-B62-LS4	FDR	0.08	22.35	7.72	13.15
B-B62-LSD	B-B62-LS2	FDR	0.06	14.90	5.14	11.46
B-B62-LSD	B-B62-LS1	FDR	0.13	14.91	5.15	11.47
B-B62-LSD-M	B-B62-LSD	FDR	0.00	74.52	25.73	33.12
B-B7-ATS-EQ	B-B7-EQD	FDR	0.09	81.73	29.13	19.01
B-B7-ATS-EQ	BUS-0702		0.00	81.73	29.13	UNKNOWN
B-B7-ATS-LS	B-B7-LSD-M	FDR	0.02	45.89	16.37	17.65
B-B7-ATS-LS	BUS-0708		0.00	45.89	16.37	UNKNOWN
B-B7-EQD	B-B7-ELEV	FDR	0.07	16.02	5.70	6.16
B-B7-EQD	bB-B7-MC1	FDR	0.24	16.05	5.71	21.39
B-B7-EQD	B-B7-EQ2	FDR	0.02	14.02	4.99	7.19
B-B7-EQD	B-B7-EQ1	FDR	0.06	14.02	4.99	7.19
B-B7-EQD	B-B7-MCC-1	FDR	0.02	5.62	2.00	5.91
B-B7-EQD	B-B7-EQ4	FDR	0.06	16.02	5.70	9.42
B-B7-LSD	B-B7-LS5	FDR	0.04	11.47	4.09	6.75
B-B7-LSD	B-B7-LS4	FDR	0.09	11.48	4.09	6.75
B-B7-LSD	B-B7-LS1	FDR	0.08	11.47	4.09	6.75
B-B7-LSD	B-B7-LS2	FDR	0.04	11.47	4.09	8.82
B-B7-LSD-M	B-B7-LSD	FDR	0.00	45.89	16.37	20.40
B-B70 GEN-M	B-B70-EM-TAP	FDR	0.02	713.15	256.38	178.29
B-B70-ATS-EQD	B-B70-EQD-M	FDR	0.02	52.63	18.90	13.85
B-B70-ATS-EQD	BUS-0612		0.00	52.63	18.90	UNKNOWN
B-B70-ATS-LSD	B-B70-LSD-M	FDR	0.02	39.39	14.15	10.37
B-B70-ATS-LSD	BUS-0613		0.00	39.39	14.15	UNKNOWN
B-B70-EM-TAP	B-B70-FPMP M	FDR	0.66	621.14	223.24	144.45
B-B70-EM-TAP	BUS-0612	FDR	0.07	52.63	18.91	12.24
B-B70-EM-TAP	BUS-0613	FDR	0.08	39.39	14.16	15.15
B-B70-EQ1	B-B70-EQ3	FDR	0.03	24.26	8.70	12.44
B-B70-EQ2	B-B70-EQ4	FDR	0.04	28.36	10.15	14.54
B-B70-EQ3	B-B70-EQ5	FDR	0.03	24.26	8.69	12.44
B-B70-EQ4	B-B70-EQ6	FDR	0.04	28.36	10.14	14.54
B-B70-EQD	B-B70-EQ1	FDR	0.20	24.26	8.71	12.44
B-B70-EQD	B-B70-EQ2	FDR	0.35	28.36	10.18	14.54

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B70-EQD-M	B-B70-EQD	FDR	0.00	52.63	18.90	13.16
B-B70-FP-TAP	B-B70-FPMP M	FDR	0.25	384.33	136.86	109.81
B-B70-FPMP M	B-B70-FIRE PMP	FDR	5.36	236.89	84.57	315.86
B-B70-GEN	B-B70 GEN-M	FDR	0.21	713.15	256.92	165.85
B-B70-LS3	B-B70-LS5	FDR	0.02	11.24	4.03	6.61
B-B70-LS4	B-B70-LS6	FDR	0.02	13.15	4.71	7.73
B-B70-LSD	B-B70-LS3	FDR	0.13	11.24	4.04	6.61
B-B70-LSD	B-B70-LS4	FDR	0.21	13.15	4.72	7.73
B-B70-LSD	B-B70-LS1	FDR	0.10	7.50	2.69	5.77
B-B70-LSD	B-B70-LS2	FDR	0.14	7.50	2.69	5.77
B-B70-LSD-M	B-B70-LSD	FDR	0.00	39.39	14.14	9.85
B-B70-MDP	B-B70-STRTLGHT	FDR	0.10	13.38	4.71	14.09
B-B70-MDP	B0B70-LP2	FDR	0.23	17.84	6.28	10.49
B-B70-MDP	B-B70-ATTIC	FDR	0.18	26.76	9.43	15.74
B-B70-MDP	B-B70-A	FDR	0.14	26.75	9.42	15.73
B-B70-MDP	B-B70-K	FDR	0.11	13.38	4.72	14.09
B-B70-MDP	B-B70-PP2	FDR	0.20	40.16	14.15	15.45
B-B70-MDP	BUS-0581	FDR	0.00	0.00	0.00	0.00
B-B70-MDP	BUS-0582	FDR	0.00	0.00	0.00	0.00
B-B70-MDP	B-B70 -BLDG-71	FDR	1.48	18.07	6.37	13.90
B-B70-MDP	B-B70-LP1	FDR	0.38	40.24	14.18	23.67
B-B70-MDP	B-B70-LP3	FDR	0.21	26.77	9.43	10.29
B-B70-MDP	B-B70-B	FDR	0.14	26.75	9.42	15.73
B-B70-MDP	B-B70-LP-4	FDR	0.39	35.76	12.60	13.75
B-B70-MDP	B-B70-CHLLR	FDR	0.62	62.73	22.10	17.92
B-B70-MDP	B-B70-PP220	FDR	0.36	35.75	12.60	15.89
B-B70-MDP-M	B-B70-MDP	FDR	0.01	384.33	135.42	48.04
B-B78-ATS-CRD	B-B78-CRD	FDR	0.92	59.45	21.25	22.86
B-B78-ATS-CRD	BUS-0712		0.00	59.45	21.25	UNKNOWN
B-B78-ATS-E1	BUS-0715		0.00	157.80	56.16	UNKNOWN
B-B78-ATS-E1	B-B78-E1	FDR	0.03	157.80	56.16	41.53
B-B78-ATS-LS1	B-B78-LSD	FDR	0.02	68.76	24.57	26.45
B-B78-ATS-LS1	BUS-0714		0.00	68.76	24.57	UNKNOWN
B-B78-ATSG9578	B-B78-78AE1	FDR	0.01	69.77	24.56	16.23
B-B78-ATSG9578	BUS-0713		0.00	69.77	24.56	UNKNOWN
B-B8-480V ATS	B-B8-480V PNL	FDR	0.07	342.30	283.27	97.80
B-B8-480V ATS	BUS-0725		0.02	342.30	283.27	UNKNOWN
B-B8-480V PNL	B-B8-FLEXPMACH	FDR	0.41	19.28	15.95	35.06
B-B8-480V PNL	B-B8 HYDRO ELV	FDR	1.03	64.67	53.48	68.07
B-B8-480V PNL	B-B8-TXMR PRI	FDR	0.05	219.53	181.54	97.57

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B8-480V PNL	B-B8-COMP	FDR	1.17	38.86	32.14	70.66
B-B8-ATS	BUS-0376		0.00	0.00	0.00	UNKNOWN
B-B8-FDR	B-B8-J-BOX	FDR	0.62	412.93	136.77	117.98
B-B8-GEN	BUS-0725	FDR	0.44	342.30	284.58	97.80
B-B8-J-BOX	B-B8-ELEV	FDR	0.26	266.49	87.68	76.14
B-B8-TXMR PRI	B-B8-TXMR SEC	TX2	6.96	219.53	181.45	161.29
B-B8-TXMR SEC	B-B8-CMOP	FDR	0.37	93.69	31.21	41.64
B-B8-TXMR SEC	B-B8-FDR	FDR	0.51	412.93	137.54	117.98
B-B80-ATS-EQ	B-B80-E1	FDR	0.18	72.46	25.11	55.74
B-B80-ATS-EQ	BUS-0688		0.00	72.46	25.11	UNKNOWN
B-B80-E1	B-B80-LB-E	FDR	0.30	36.25	12.54	27.89
B-B80-E1	B-B80-PB-2	FDR	0.18	36.21	12.52	27.85
B-B82-ATS-EMER	BUS-0689		0.01	261.33	90.17	UNKNOWN
B-B82-ATS-EMER	B-B82-EMERG-M	FDR	0.18	261.33	90.17	100.51
B-B82-EMERG-M	B-B82-EMER	FDR	0.01	261.33	90.01	65.33
B-B92 GEN	B-B92-EMDP-M	FDR	0.11	625.34	225.29	48.48
B-B92-ATS	B-B92-PNL-E1	FDR	0.11	66.95	24.03	51.50
B-B92-ATS	BUS-0676		0.00	66.95	24.03	UNKNOWN
B-B92-EMDP	BUS-0676	FDR	0.27	66.95	24.09	51.50
B-B92-EMDP	BUS-0677	FDR	1.20	40.20	14.47	17.87
B-B92-EMDP	BUS-0678	FDR	0.00	0.00	0.00	0.00
B-B92-EMDP	BUS-0680	FDR	2.68	73.40	26.41	43.18
B-B92-EMDP	B-B2-EPNL-B-M	FDR	6.32	316.71	113.97	90.49
B-B92-EMDP	BUS-0736	FDR	2.55	128.11	46.10	36.60
B-B92-EMDP-M	B-B92-EMDP	FDR	0.01	625.34	225.05	52.11
B-B93-ATS-EMER	BUS-0685		0.00	0.00	0.00	UNKNOWN
B-B93-EMDP	BUS-0685	FDR	0.00	0.00	0.00	0.00
B-B93-EMDP	BUS-0688	FDR	3.57	72.46	26.04	55.74
B-B93-EMDP	BUS-0689	FDR	3.97	261.33	93.91	100.51
B-B93-EMDP	BUS-0691	FDR	1.09	112.76	40.52	26.22
B-B93-EMDP	BUS-0692	FDR	4.00	137.99	49.59	32.09
B-B93-EMDP	B-B93-EMDP1	FDR	0.02	255.97	91.99	19.84
B-B93-EMDP-M	B-B93-EMDP	FDR	0.01	840.49	302.07	70.04
B-B93-EMDP1	BUS-0694	FDR	1.72	113.63	40.83	43.70
B-B93-EMDP1	BUS-0695	FDR	6.48	142.35	51.15	54.75
B-B93-GEN	B-B93-EMDP-M	FDR	0.24	840.49	302.80	65.15
B-B94-ATS	BUS-0704		0.00	30.37	10.91	UNKNOWN
B-B94-ATS	B-B94-E1	FDR	0.00	0.00	0.00	0.00
B-B94-EMDP	BUS-0700	FDR	2.44	73.38	26.39	17.07
B-B94-EMDP	BUS-0701	FDR	1.83	85.08	30.59	19.79

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
B-B94-EMDP	BUS-0702	FDR	0.88	81.73	29.39	19.01
B-B94-EMDP	BUS-0703	FDR	2.51	101.62	36.54	23.63
B-B94-EMDP	BUS-0704	FDR	0.10	30.37	10.92	23.36
B-B94-EMDP	BUS-0705	FDR	2.21	56.96	20.48	21.91
B-B94-EMDP	BUS-0706	FDR	3.90	74.52	26.80	28.66
B-B94-EMDP	BUS-0707	FDR	2.60	85.78	30.84	32.99
B-B94-EMDP	BUS-0708	FDR	0.77	45.89	16.50	17.65
B-B94-EMDP-M	B-B94-EMDP	FDR	0.01	635.32	228.47	52.94
B-B94-GEN	B-B94-EMDP-M	FDR	0.18	635.32	228.88	49.25
B-B95-EMDP	BUS-0712	FDR	0.60	59.45	21.38	22.86
B-B95-EMDP	BUS-0713	FDR	2.08	69.77	25.09	31.01
B-B95-EMDP	BUS-0714	FDR	0.63	68.76	24.72	23.71
B-B95-EMDP	BUS-0715	FDR	1.02	157.80	56.74	36.70
B-B95-EMDP	B-B10 EMRG TAP	FDR	0.00	0.00	0.00	0.00
B-B95-EMDP	BUS-0718	FDR	0.91	149.94	53.91	31.57
B-B95-EMDP	BUS-0719	FDR	0.97	150.00	53.94	34.88
B-B95-EMDP-M	B-B95-EMDP	FDR	0.01	655.71	235.79	54.64
B-B95-GEN	B-B95-EMDP-M	FDR	0.19	655.71	236.23	50.83
B-T-B70-SEC	B-B70-MDP-M	FDR	0.50	384.33	136.11	40.46
B-T-B70-SEC	B-B70-FP-TAP	FDR	0.54	384.33	136.11	80.91
BUS-0376	B-B8-ATS		0.00	0.00	0.00	UNKNOWN
BUS-0612	B-B70-ATS-EQD		0.00	52.63	18.90	UNKNOWN
BUS-0613	B-B70-ATS-LSD		0.00	39.39	14.15	UNKNOWN
BUS-0676	B-B92-ATS		0.00	66.95	24.03	UNKNOWN
BUS-0677	B-B18-ATS-EMRG		0.00	40.20	14.29	UNKNOWN
BUS-0678	B-B1-ATS-EMERG		0.00	0.00	0.00	UNKNOWN
BUS-0680	B-B17-ATS		0.00	73.40	25.70	UNKNOWN
BUS-0685	B-B93-ATS-EMER		0.00	0.00	0.00	UNKNOWN
BUS-0688	B-B80-ATS-EQ		0.00	72.46	25.11	UNKNOWN
BUS-0689	B-B82-ATS-EMER		0.01	261.33	90.18	UNKNOWN
BUS-0691	B-B4-ATS-EQ		0.00	112.76	40.08	UNKNOWN
BUS-0692	B-B5-ATS-EQ		0.00	137.99	47.60	UNKNOWN
BUS-0694	B-B4-ATS-LS		0.00	113.63	40.12	UNKNOWN
BUS-0695	B-B5-ATS-LS		0.00	142.35	47.82	UNKNOWN
BUS-0700	B-B62-ATS-EQD		0.00	73.38	25.74	UNKNOWN
BUS-0701	B-B6-ATS-EQ		0.00	85.08	30.03	UNKNOWN
BUS-0702	B-B7-ATS-EQ		0.00	81.73	29.13	UNKNOWN
BUS-0703	B-B61-ATS-EQD		0.00	101.62	35.62	UNKNOWN
BUS-0704	B-B94-ATS		0.00	30.37	10.91	UNKNOWN
BUS-0705	B-B61-ATS-LSD		0.00	56.96	20.03	UNKNOWN

LOAD FLOW STUDY FOR THE BEDFORD VAMC

STUDY CASE-2 EMERGENCY

BALANCED VOLTAGE DROP AND LOAD FLOW BRANCH DATA SUMMARY

FROM NAME	TO NAME	TYPE	VD%	AMPS	KVA	RATING%
BUS-0706	B-B62-ATS-LSD		0.00	74.52	25.75	UNKNOWN
BUS-0707	B-B6-ATS-LS		0.00	85.78	30.04	UNKNOWN
BUS-0708	B-B7-ATS-LS		0.00	45.89	16.37	UNKNOWN
BUS-0712	B-B78-ATS-CRD		0.00	59.45	21.25	UNKNOWN
BUS-0713	B-B78-ATSG9578		0.00	69.77	24.56	UNKNOWN
BUS-0714	B-B78-ATS-LS1		0.00	68.76	24.57	UNKNOWN
BUS-0715	B-B78-ATS-E1		0.00	157.80	56.16	UNKNOWN
BUS-0718	B-B3-ATSTEL RM		0.00	149.94	53.42	UNKNOWN
BUS-0719	B-B3-ATS-COMP		0.00	150.00	53.41	UNKNOWN
BUS-0722	B-B2-ATS-LS		0.00	133.72	44.92	UNKNOWN
BUS-0723	B-B2-ATS-LED3		0.00	183.00	60.01	UNKNOWN
BUS-0725	B-B8-480V ATS		0.02	342.30	283.32	UNKNOWN
BUS-0727	B-B22-ATS-EMER		0.01	138.63	115.06	UNKNOWN
BUS-0736	B-B2-ATS-CRIT		0.00	128.11	44.92	UNKNOWN

NOTE: FDR RATING% = % AMPS RATING BASED ON LIBRARY FLA OR BRANCH INPUT FLA
TX2 RATING% = % KVA RATING BASED ON TRANSFORMER FL KVA

336 BUSES

*** T O T A L S Y S T E M L O S S E S ***
34. KW 36. KVAR

WARNING STUDY CONTAINS 45 VOLTAGE CRITERIA VIOLATIONS
VIOLATIONS DENOTED BY ($) AT BUS AND BRANCH %VD LOCATIONS

5.0 ARC-FLASH HAZARD ANALYSIS

5.1 Introduction

NFPA 70E Standard, Section 2-3.1.5 states that an electrical safety program shall identify a hazard/risk evaluation procedure to be used before work is started on or near live parts. Section 3-1 states that employees working in areas where there are electric hazards shall be provided with, and shall use, personal protective equipment (PPE) that is designed and constructed for the specific part of the body to be protected and for the work to be performed.

NFPA 70E and IEEE Std 1584 provide equations and methods to accurately calculate the arc flash boundary and incident energy at specific locations within a facility's electrical system. These results are used to determine the safe approach distance, hazard risk category, and personal protective equipment requirements for each location. Any location where work may be performed on live parts or near energized equipment is subject to the arc flash standards. Personal protective equipment used to guard against arc flash hazard should be considered the last line of defense. It is also important to note that the use of PPE is not intended to prevent all injuries from an arc flash. The goal of determining PPE levels using the arc flash hazard approach is to identify the level of protection required to prevent a second degree burn in the event of an arc flash while avoiding the use of more protection than is needed so as to minimize hazards of heat stress, reduced visibility and limited body movement.

Although the arc flash calculation procedure is based upon NFPA 70E and IEEE Std 1584 equations and methods, it is a relatively new approach to determining degree of required PPE. The calculations are derived from theory and research involving arc current incident energy measurements conducted under a specific set of controlled test conditions. Therefore, calculation results may be more severe or less severe than the hazard presented by an actual arc flash exposure. Also, the arc flash calculations do not take into account hazards associated with the splattering of molten metal, explosively propelled pieces of equipment and air pressure shock waves.

The results of this arc flash hazard analysis are not intended to imply that personnel be permitted to work on exposed energize equipment or circuits. OSHA 1910.333 restricts the situations in which work is to be performed near or on energized equipment or circuits by stating, "Live parts to which an employee may be exposed shall be de-energized before the employee works on or near them, unless the employer can demonstrate that de-energizing introduces additional or increased hazards or is infeasible due to equipment design or operational limitations."

Even if work is not being preformed directly on energized equipment, it is important that the proper PPE be used during some load interruption actions,

during visual verification of the state of disconnecting devices, and during lockout/tagout procedures.

Before the arc flash equations can be applied, a comprehensive short circuit and protective device coordination study must be completed to include all locations where work may be performed on or near energized components; e.g. motor control centers and power distribution panels. Since the short circuit current must be calculated at every pertinent location and the clearing time of each location's upstream protective device is required, the arc flash circuit model is more detailed and extends deeper into the facility electrical distribution system than is typical of a basic short circuit and protective device coordination study. Accurate fault currents and device clearing times are extremely important in deriving reliable results. A conservative (high) fault current value could yield a faster clearing time of a protective device, depending upon its curve shape, and the calculated incident energy may actually be less than the incident energy calculated for a lower magnitude of fault current and a longer clearing time.

For this Arc Flash Hazard Analysis Study of the VA Bedford facility, the circuit model included the incoming 13.8,V service and distribution system, approximately twenty seven distribution substations, and respective loads, pursuant to Drawing No. PSE-3800. The analysis required energy and boundary calculations for approximately 700 locations.

5.2 Study Procedure

NFPA 70 E, Part II, Appendix B-5 ©NFPA, Calculation of Incident Energy Exposure for a Flash Hazard Analysis states: The following equations can be used to predict the incident energy produced by a three-phase arc on systems rated 600 volts and below. The parameters required to make the calculation are:

1) The maximum "bolted fault" three-phase short circuit current available at the equipment.
2) The total protective device clearing time (upstream of the prospective arc location) at the maximum short circuit current.
3) The distance of the worker from the prospective arc for the task to be performed.

The equations used in NFPA 70 E, Part II, Appendix B-5 ©NFPA were derived from the IEEE paper by R. L. Doughty, T. E. Neal, and H. L. Floyd, II, "Predicting Incident Energy to Better Manage the Electric Arc Hazard on 600 V Power Distribution Systems," Record of Conference Papers IEEE IAS 45th Annual Petroleum and Chemical Industry Conference, September 28-30, 1998. The test results shown in this paper indicated that incident energy is approximately inversely proportional to distance squared for an arc in open air. The exponent for distance in open air is (–1.96). However the incident energy from the arc in a box decreases at a slower rate as distance increases resulting in an exponent for distance of (–1.47).

The equations used to calculate the arc flash boundary and incident energy require the results of the short circuit and protective device coordination studies. A short circuit study will show the first cycle of a three-phase "bolted" rms symmetrical fault current, *F*, in amperes for all locations in the power system. These values are input to the incident energy equation for an arc in a box :

$$E_{MB} = 1038.7 D_B^{-1.4738} t_A \left[0.0093F^2 - 0.3453F + 5.9675\right] \qquad (1)$$

where:

F = bolted fault short circuit current, in kA (for the range of 16 to 50 kA)

E_{MB} = maximum 20 in. cubic box incident energy, in cal/cm^2

D_B = distance from arc electrodes, in inches (for distances 18 in. and greater)

t_A = arc duration, in seconds

The coordination study time current curves show the settings and ratings of the fuses, circuit breakers and overcurrent relays used in VA Bedford power system. The settings chosen for coordination determine the total clearing time for faults which are a factor in the arc flash calculations. The time duration of the arc is determined by calculating the arcing fault current through the protective device that will clear the fault. It is important to calculate the arcing current as

accurately as possible to determine the protective device total clearing time correctly. The bolted short circuit calculations should not be conservative (high magnitude). Actual values for utility fault levels, conductor lengths and motor contribution were determined as accurately as possible. Conservative fault levels may indicate that the operating time of a protective device is faster than it would be if the actual fault level were used. The clearing time of the upstream protective device from the potential arc location is input to the incident energy equation as t_A.

The SKM arc flash software used in this study calculated the arc flash boundary and incident energy using the equation from NFPA 70E.

1) To calculate incident energy, E_{MB} : D_B, t_A , and F are substituted into Equation (1).
2) To calculate arc flash boundary, D_B : t_A , and F are substituted into Equation (1) and E_{MB} is set at 1.2 cal/cm^2.

See Table 5.1 Arc Flash Hazard Analysis Summary Table shown below.

5.3 Arc-Flash Hazard Analysis Results

The incident energy associated with an arc flash is dependent upon the following:

- Magnitude of fault current at the arc location,
- Clearing time of the upstream device required to interrupt the fault current,
- Distance of the worker to the arc.

The fault current cannot easily be reduced nor can the working distance be increased to lessen the incident energy. In many locations the protective device setting can be adjusted or the trip unit upgraded to decrease the device interrupting time that will in turn decrease the incident energy. For a mission critical electrical distribution system, such as for VA Bedford Medical Center, it is essential that the system reliability not be compromised. Settings for protective devices cannot be adjusted if the chance of nuisance trips within critical care circuits is introduced. *Each location where the hazard risk level is unacceptable must be individually evaluated to determine the most effective means of reducing the incident energy while maintaining the highest degree of reliability.*

Table 5.1 shows results of the SKM PowerTools Arc Flash Analysis. The following column headings describe the results.

Column #1 - Bus Name: The names in this column correlate to the names implemented in the software system model (reference the onelines included in Section 8.) These locations correspond to plant locations such as main switchboards, panelboards, enclosed breakers, etc.

Column #2 - Protective Device Name: This column lists the name of the device primarily responsible for clearing a potential fault as the associated bus. Again, these device names correlate to the system model.

Column #3 - kV: The values in this column show the nominal voltage of the bus location noted in Column #1.

Column #4 - Bus Bolted Fault (kA): This column shows the bolted fault current available for the bus location referenced in Column #1. This current value corresponds to the system operating conditions that will result in the worst-case calculated value for incident energy. (See Column # 13.)

Column #5 - Prot Dev Bolted Fault Current: This column displays the portion of calculated bolted fault currents (See Column #4) that is contributed through the protective device referenced in Column #2.

Column #6 - Arcing Fault (kA): These values show the results of the Arcing fault calculations performed in the SKM PowerTools software. These values demonstrate a reduction in available fault current due to the arc resistance.

Column #7 - Trip/Delay Time (sec): This column displays the length of time required by the protective device (See Column #2) to trip in the presence of the the arcing fault current calculated in Column #6. For low voltage breakers and fuses, this time represents the total clearing time of the device.

Column #8 - Breaker Opening Time (sec): For circuit breakers tripped by a relay, this column shows the opening time of the breaker. This time is added to the Trip time (See Column #7) to determine the total clearing time used in the calculation of incident energy. (See Column #13.)

Column #9 - Duration of the Arc: This column shows the total clearing time as the sum of the values in Columns #7 and #8.

Column #10 - Arc Type: For all enclosed equipment locations, this column indicates that the potential arc flash hazard will take place within a “Box”, i.e. an enclosure.

Column #11 - Arc Flash Boundary (in): This column displays (in inches) the distance within which a person must be clothed in the appropriate PPE (Personal Protection Equipment.) (See Column #14.)

Column #12 - Working Distance (in): This distance (in inches) indicates the typical working distance associated with the system location referenced in Column #1.

Column #13 - *Incident Energy (cal/cm2)*: Based on the arcing fault current, the total clearing time of the protective device, the type of enclosure, and the typical working distance, the column displays the results of the arc flash calculations at the reference location. This energy level directly corresponds to the appropriate PPE described in the final column.

Column #14 - *Required Protective FR Clothing Class*: These clothing classes are

specified in NFPA-70E and correspond directly to the potential incident energy calculated for each location. *The shaded rows in the table denote locations where this column reads "***Dangerous!!! No FR Class Found".*

Table 5.1 is only intended to provide general guidance in selecting the appropriate personal protective equipment.

Table 5.1 – Arc-Flash Analysis Summary Table

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B1-MDP	B1-MDP-M	0.21	4.38	4.38	4.38	0.1	0	0.1	In Box	17	24	0.74	Class 0, Untreated Cotton
B-B1-MDP-M	F-B1	0.21	4.66	4.66	4.66	0.07	0	0.07	In Box	14	24	0.56	Class 0, Untreated Cotton
B-B2-ATS-CRIT	B2-MDPB-2	0.21	10.97	10.97	9.05	0.022	0	0.022	In Box	12	24	0.41	Class 0, Untreated Cotton
B-B2-ATS-CRIT	B92-EMDP-5	0.21	2.97	2.97	2.97	0.025	0	0.025	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B2-ATS-LED3	B2-MDP-2	0.21	3.45	3.45	3.45	0.047	0	0.047	In Box	9	24	0.28	Class 0, Untreated Cotton
B-B2-ATS-LED3	B92-EMDP-6	0.21	2.14	2.14	2.14	0.025	0	0.025	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B2-ATS-LS	B2-MDPB-6	0.21	11.25	11.25	9.24	0.022	0	0.022	In Box	12	24	0.42	Class 0, Untreated Cotton
B-B2-ATS-LS	B92-EMDP-6	0.21	2.76	2.76	2.76	0.025	0	0.025	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B2-BATTERYCH	B2-LS-8	0.21	1.95	1.95	1.95	0.013	0	0.013	In Box	2	24	0.04	Class 0, Untreated Cotton
B-B2-CATSCAN	B2-MDP-1	0.48	12.78	12.78	10.24	0.011	0	0.011	In Box	8	24	0.24	Class 0, Untreated Cotton
B-B2-CRIT PNL	B2-MDPB-2	0.21	10.77	10.77	8.91	0.022	0	0.022	In Box	12	24	0.41	Class 0, Untreated Cotton
B-B2-CRIT PNL	B92-EMDP-5	0.21	2.95	2.95	2.95	0.025	0	0.025	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B2-DENTAL LB	B2-CRIT-5	0.21	2.58	2.58	2.58	0.014	0	0.014	In Box	3	24	0.06	Class 0, Untreated Cotton
B-B2-DENTSUCPM	B2-LS-4	0.21	2.34	2.34	2.34	0.014	0	0.014	In Box	3	24	0.06	Class 0, Untreated Cotton
B-B2-ELEV	B2-LS-1	0.21	2.56	2.56	2.56	0.027	0	0.027	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B2-ELEV-P1	B2-CRIT-4	0.21	2.5	2.50	2.5	0.026	0	0.026	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B2-EMERG-M	B2-MDP-2	0.21	3.39	3.39	3.39	0.049	0	0.049	In Box	9	24	0.28	Class 0, Untreated Cotton
B-B2-EMERG-M	B92-EMDP-6	0.21	2.12	2.12	2.12	0.025	0	0.025	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B2-EMERG-PNL	B2-EMERG-M	0.21	2.12	2.12	2.12	7.562	0	7.562	In Box	199	24	27.1	Class 4, Cotton Underwear + FR Shirt & Pant + Double Layer Switching Coat
B-B2-EPNL-B	B92-EMDP-6	0.21	2.97	2.97	2.97	0.025	0	0.025	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B2-EPNL-B-M	B92-EMDP-6	0.21	2.97	2.97	2.97	0.025	0	0.025	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B2-L12	B2-LS-3	0.21	2.5	2.50	2.5	0.026	0	0.026	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B2-L2A	B2-CRIT-2	0.21	2.68	2.68	2.68	0.026	0	0.026	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B2-L2E	B2-LS-2	0.21	2.5	2.50	2.5	0.026	0	0.026	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B2-L4	B2-MDPB-8	0.21	8.33	8.33	7.26	0.02	0	0.02	In Box	9	24	0.28	Class 0, Untreated Cotton
B-B2-L6	B2-MDPB-4	0.21	8.33	8.33	7.26	0.02	0	0.02	In Box	9	24	0.28	Class 0, Untreated Cotton
B-B2-L7	B2-MDPB-5	0.21	8.33	8.33	7.26	0.02	0	0.02	In Box	9	24	0.28	Class 0, Untreated Cotton
B-B2-L8	B2-MDPB-7	0.21	8.33	8.33	7.26	0.02	0	0.02	In Box	9	24	0.28	Class 0, Untreated Cotton
B-B2-L9E	B2-LS-5	0.21	2.44	2.44	2.44	0.026	0	0.026	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B2-LB1E	B2-LS-6	0.21	2.44	2.44	2.44	0.026	0	0.026	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B2-LB2	B2-MDPB-3	0.21	8.33	8.33	7.26	0.02	0	0.02	In Box	9	24	0.28	Class 0, Untreated Cotton
B-B2-LB2E	B2-CRIT-1	0.21	2.5	2.50	2.5	0.014	0	0.014	In Box	3	24	0.06	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B2-LED-3	B2-MDP-2	0.21	3.56	3.56	3.56	0.044	0	0.044	In Box	9	24	0.26	Class 0, Untreated Cotton
B-B2-MDP	B2-MDP-M	0.48	12.67	11.85	7.51	0.2	0	0.2	In Box	44	24	3.27	Class 1, FR Shirt & Pants
B-B2-MDPA	B2-MDPA-M	0.21	7.62	7.62	3.59	0.011	0	0.2	In Box	26	24	1.37	Class 1, FR Shirt & Pants
B-B2-MDPA-M	F-B2	0.21	7.66	7.66	3.61	1000	0	0.945	In Box	4692	24	6873	**** Dangerous!!! No FR Class Found
B-B2-MDPB	B2-MDPB-M	0.21	11.68	11.68	9.52	0.011	0	0.011	In Box	8	24	0.22	Class 0, Untreated Cotton
B-B2-MDPB-M	F-B2A	0.21	14.97	11.86	9.25	0.749	0	0.749	In Box	156	24	19.0	Class 3, Cotton Underwear + FR Shirt & Pant + FR Coverall
B-B2-MDP-M	R-B27-SWGR B7	0.48	12.68	11.58	7.33	148.52	0.05	3.735	In Box	2235	24	2036	**** Dangerous!!! No FR Class Found
B-B2-MEDAIRCOM	B2-CRIT-3	0.21	2.5	2.50	2.5	0.023	0	0.023	In Box	4	24	0.10	Class 0, Untreated Cotton
B-B2-NEWLAB	B2-NEWLAB-M	0.21	2.1	2.10	2.1	4.671	0	4.671	In Box	143	24	16.6	Class 3, Cotton Underwear + FR Shirt & Pant + FR Coverall
B-B2-NEWLAB-M	B2-MDP-2	0.21	3.35	3.35	3.35	0.051	0	0.051	In Box	9	24	0.29	Class 0, Untreated Cotton
B-B2-NEWLAB-M	B92-EMDP-6	0.21	2.1	2.10	2.1	0.025	0	0.025	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B2-PNL 1	B2-MDP-2	0.21	3.39	3.39	3.39	0.049	0	0.049	In Box	9	24	0.28	Class 0, Untreated Cotton
B-B2-PNL 1	B92-EMDP-6	0.21	2.12	2.12	2.12	0.025	0	0.025	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B2-PNL LS	B2-MDPB-6	0.21	10.85	10.85	8.97	0.022	0	0.022	In Box	12	24	0.41	Class 0, Untreated Cotton
B-B2-PNL LS	B92-EMDP-6	0.21	2.73	2.73	2.73	0.025	0	0.025	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B2-PNL-2	B2-MDP-2	0.21	3.4	3.40	3.4	0.049	0	0.049	In Box	9	24	0.28	Class 0, Untreated Cotton
B-B2-PNL-2	B92-EMDP-6	0.21	2.12	2.12	2.12	0.025	0	0.025	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B2-PNL-3-M	B2-MDP-2	0.21	3.34	3.34	3.34	0.051	0	0.051	In Box	9	24	0.29	Class 0, Untreated Cotton
B-B2-PNL-3-M	B92-EMDP-6	0.21	2.1	2.10	2.1	0.025	0	0.025	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B2-PNL-D2	B2-MDPA-2	0.21	18.62	18.62	13.98	0.02	0	0.02	In Box	14	24	0.53	Class 0, Untreated Cotton
B-B2-PNL-L11	B2-CRIT-6	0.21	2.68	2.68	2.68	0.026	0	0.026	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B2-PNL-M1	B2-PNL-3-M	0.21	2.06	2.06	2.06	0.024	0	0.024	In Box	4	24	0.08	Class 0, Untreated Cotton
B-B2-PNL-P	B2-MDP-3	0.48	12.87	12.87	10.3	0.021	0	0.021	In Box	12	24	0.45	Class 0, Untreated Cotton
B-B2-POD2PP	B2-LS-7	0.21	2.52	2.52	2.52	0.026	0	0.026	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B2-TEL COMM	B2-MDPB-11	0.21	8.33	8.33	7.26	0.01	0	0.01	In Box	6	24	0.14	Class 0, Untreated Cotton
B-B2-UNIT-1	B2-P-3	0.48	10.98	10.98	9.05	0.025	0	0.025	In Box	13	24	0.46	Class 0, Untreated Cotton
B-B2-UNIT-2	B2-P-4	0.48	11.87	11.87	9.64	0.025	0	0.025	In Box	13	24	0.50	Class 0, Untreated Cotton
B-B2-XRAY	B2-MDPB-9	0.21	1.87	1.87	1.87	0.013	0	0.013	In Box	2	24	0.04	Class 0, Untreated Cotton
B-B2-XRAY124	B2-MDPB-10	0.21	7.04	7.04	6.37	0.01	0	0.01	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B2-XRAY-124	B2-MDP-4	0.48	7.62	7.62	6.78	0.025	0	0.025	In Box	10	24	0.32	Class 0, Untreated Cotton
B-B3-1ST FL	B3-EP1-5	0.21	4.29	4.29	4.29	0.017	0	0.017	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B3-ALDN KIT	B3-EP2-8	0.21	3.85	3.85	3.85	0.018	0	0.018	In Box	5	24	0.12	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B3-ATS-COMP	B3-MDP-3	0.21	14.03	14.03	11.07	0.021	0	0.021	In Box	13	24	0.50	Class 0, Untreated Cotton
B-B3-ATS-COMP	B95-EMDP-7	0.21	4.76	4.76	4.76	0.025	0	0.025	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B3-ATSTEL RM	B3-MDP-2	0.21	13.69	13.69	10.85	0.021	0	0.021	In Box	13	24	0.49	Class 0, Untreated Cotton
B-B3-ATSTEL RM	B95-EMDP-6	0.21	4.79	4.79	4.79	0.025	0	0.025	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B3-COMP	B3-EP2-2	0.21	4	4.00	4	0.018	0	0.018	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B3-COMP AC	B3-EP2-5	0.21	2.42	2.42	2.42	0.018	0	0.018	In Box	4	24	0.07	Class 0, Untreated Cotton
B-B3-COMP MF	B3-EP2-10	0.21	4.3	4.30	4.3	0.022	0	0.022	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B3-DBL GRILL	B3-EP1-4	0.21	4.02	4.02	4.02	0.017	0	0.017	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B3-ELEV	B3-EP2-6	0.21	4.16	4.16	4.16	0.02	0	0.02	In Box	6	24	0.14	Class 0, Untreated Cotton
B-B3-EP1	BE-EP1-M	0.21	4.72	4.72	4.72	0.021	0	0.021	In Box	6	24	0.17	Class 0, Untreated Cotton
B-B3-EP1-M	B3-MDP-2	0.21	13.14	13.14	10.48	0.021	0	0.021	In Box	13	24	0.47	Class 0, Untreated Cotton
B-B3-EP1-M	B95-EMDP-6	0.21	4.73	4.73	4.73	0.025	0	0.025	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B3-EP2	B3-EP2-M	0.21	4.65	4.65	4.65	0.021	0	0.021	In Box	6	24	0.17	Class 0, Untreated Cotton
B-B3-EP2-M	B3-MDP-3	0.21	13.12	13.12	10.47	0.021	0	0.021	In Box	13	24	0.47	Class 0, Untreated Cotton
B-B3-EP2-M	B95-EMDP-7	0.21	4.66	4.66	4.66	0.025	0	0.025	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B3-FRZN FOOD	B3-MDP-5	0.21	8.09	8.09	7.1	0.017	0	0.017	In Box	8	24	0.23	Class 0, Untreated Cotton
B-B3-HYDRO ELV	B3-EP2-3	0.21	3.7	3.70	3.7	0.026	0	0.026	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B3-KP1	B3-EP1-2	0.21	4.14	4.14	4.14	0.017	0	0.017	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B3-MDP	B3-MDP-M	0.21	17.32	17.32	13.17	0.04	0	0.04	In Box	22	24	1.07	Class 0, Untreated Cotton
B-B3-MDP-M	F-B3	0.21	17.35	17.35	13.19	0.239	0	0.239	In Box	74	24	6.36	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B3-MECH HVAC	B3-EP2-4	0.21	4.16	4.16	4.16	0.018	0	0.018	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B3-MECH RM	B3-EP2-9	0.21	4.33	4.33	4.33	0.02	0	0.02	In Box	6	24	0.15	Class 0, Untreated Cotton
B-B3-P3	B3-MDP-1	0.21	11.71	11.71	9.54	0.017	0	0.017	In Box	10	24	0.33	Class 0, Untreated Cotton
B-B3-P7	B3-EP1-3	0.21	4.15	4.15	4.15	0.017	0	0.017	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B3-STRT LTS	B3-MDP-4	0.21	8.09	8.09	7.1	0.017	0	0.017	In Box	8	24	0.23	Class 0, Untreated Cotton
B-B3-STRT PNL	B3-EP2-7	0.21	4.32	4.32	4.32	0.018	0	0.018	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B3-TELE PNL	B3-EP1-1	0.21	4.39	4.39	4.39	0.017	0	0.017	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B3-TRAY LINE	B3-EP2-1	0.21	4.16	4.16	4.16	0.019	0	0.019	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B4-4EQD	B4-4EQD-M	0.21	4.02	4.02	4.02	0.028	0	0.028	In Box	7	24	0.19	Class 0, Untreated Cotton
B-B4-4EQD-M	B4-MDP-10	0.21	20.05	20.05	14.87	0.033	0	0.033	In Box	19	24	0.88	Class 0, Untreated Cotton
B-B4-4EQD-M	B93-EMDP-4	0.21	4.03	4.03	4.03	0.025	0	0.025	In Box	6	24	0.17	Class 0, Untreated Cotton
B-B4-ATS-EQ	B4-MDP-10	0.21	22.7	22.70	16.47	0.033	0	0.033	In Box	20	24	0.93	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B4-ATS-EQ	B93-EMDP-4	0.21	4.12	4.12	4.12	0.025	0	0.025	In Box	6	24	0.17	Class 0, Untreated Cotton
B-B4-ATS-LS	B4-MDP-5	0.21	20.45	20.45	15.11	0.033	0	0.033	In Box	20	24	0.89	Class 0, Untreated Cotton
B-B4-ATS-LS	B93-EMDP1-1	0.21	3.66	3.66	3.66	0.105	0	0.105	In Box	16	24	0.65	Class 0, Untreated Cotton
B-B4-BUS	F-B4	0.21	25.83	25.83	18.32	26.812	0	26.812	In Box	2039	24	837	**** Dangerous!!! No FR Class Found
B-B4-ELEV#4	B4-4EQD-6	0.21	3.26	3.26	3.26	0.02	0	0.02	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B4-EQ1	B4-4EQD-5	0.21	3.67	3.67	3.67	0.021	0	0.021	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B4-EQ10	B4-4EQD-5	0.21	3.32	3.32	3.32	0.023	0	0.023	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B4-EQ11	B4-4EQD-2	0.21	3.51	3.51	3.51	0.022	0	0.022	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B4-EQ12	B4-4EQD-4	0.21	3.14	3.14	3.14	0.021	0	0.021	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B4-EQ15	B4-4EQD-3	0.21	3.26	3.26	3.26	0.023	0	0.023	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B4-EQ2	B4-4EQD-2	0.21	3.88	3.88	3.88	0.02	0	0.02	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B4-EQ3	B4-4EQD-4	0.21	3.45	3.45	3.45	0.019	0	0.019	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B4-EQ5	B4-4EQD-5	0.21	3.48	3.48	3.48	0.022	0	0.022	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B4-EQ6	B4-4EQD-2	0.21	3.68	3.68	3.68	0.021	0	0.021	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B4-EQ7	B4-4EQD-4	0.21	3.28	3.28	3.28	0.02	0	0.02	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B4-EQ9	B4-4EQD-1	0.21	3.03	3.03	3.03	0.028	0	0.028	In Box	6	24	0.14	Class 0, Untreated Cotton
B-B4-HYDROELEV	B4-4EQD-7	0.21	3.18	3.18	3.18	1.718	0	1.718	In Box	96	24	9.24	Class 2B, FR Underwear + FR Shirt & Pants
B-B4-JBOX	F-B4	0.21	25.26	25.26	17.98	28.788	0	28.788	In Box	2106	24	878	**** Dangerous!!! No FR Class Found
B-B4-LP1	B4-LP1-M	0.21	12.9	12.90	10.32	0.01	0	0.01	In Box	8	24	0.22	Class 0, Untreated Cotton
B-B4-LP10	B4-LP10-M	0.21	10.3	10.30	8.6	0.017	0	0.017	In Box	9	24	0.30	Class 0, Untreated Cotton
B-B4-LP10-M	B4-MDP-7	0.21	10.35	10.35	8.63	0.033	0	0.033	In Box	15	24	0.58	Class 0, Untreated Cotton
B-B4-LP11	B4-LP11-M	0.21	12.38	12.38	9.98	0.017	0	0.017	In Box	11	24	0.36	Class 0, Untreated Cotton
B-B4-LP11-M	B4-MDP-8	0.21	12.45	12.45	10.03	0.033	0	0.033	In Box	17	24	0.70	Class 0, Untreated Cotton
B-B4-LP12	B4-LP12-M	0.21	13.46	13.46	10.69	0.01	0	0.01	In Box	8	24	0.23	Class 0, Untreated Cotton
B-B4-LP12-M	B4-MDP-4	0.21	13.53	13.53	10.74	0.033	0	0.033	In Box	18	24	0.76	Class 0, Untreated Cotton
B-B4-LP13	B4-LP13-M	0.21	10.3	10.30	8.6	0.017	0	0.017	In Box	9	24	0.30	Class 0, Untreated Cotton
B-B4-LP13-M	B4-MDP-9	0.21	10.35	10.35	8.63	0.033	0	0.033	In Box	15	24	0.58	Class 0, Untreated Cotton
B-B4-LP14	B4-LP14-M	0.21	9.07	9.07	7.77	0.017	0	0.017	In Box	9	24	0.26	Class 0, Untreated Cotton
B-B4-LP14-M	B4-MDP-2	0.21	9.11	9.11	7.79	0.033	0	0.033	In Box	13	24	0.51	Class 0, Untreated Cotton
B-B4-LP15	B4-LP15-M	0.21	2.75	2.75	2.75	0.034	0	0.034	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B4-LP15-M	B4-LSD-6	0.21	2.76	2.76	2.76	0.02	0	0.02	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B4-LP1-M	B4-MDP-6	0.21	12.97	12.97	10.37	0.033	0	0.033	In Box	17	24	0.72	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B4-LP2	B4-LP2-M	0.21	18.06	18.06	13.63	0.01	0	0.01	In Box	9	24	0.27	Class 0, Untreated Cotton
B-B4-LP2-M	B4-MDP-6	0.21	18.19	18.19	13.72	0.033	0	0.033	In Box	19	24	0.88	Class 0, Untreated Cotton
B-B4-LP3	B4-LP3-M	0.21	18.06	18.06	13.63	0.01	0	0.01	In Box	9	24	0.27	Class 0, Untreated Cotton
B-B4-LP3-M	B4-MDP-1	0.21	18.19	18.19	13.72	0.033	0	0.033	In Box	19	24	0.88	Class 0, Untreated Cotton
B-B4-LP4	B4-LP4-M	0.21	12.38	12.38	9.98	0.017	0	0.017	In Box	11	24	0.36	Class 0, Untreated Cotton
B-B4-LP4-M	B4-MDP-1	0.21	12.45	12.45	10.03	0.033	0	0.033	In Box	17	24	0.70	Class 0, Untreated Cotton
B-B4-LP5	B4-LP5-M	0.21	11.9	11.90	9.67	0.017	0	0.017	In Box	10	24	0.34	Class 0, Untreated Cotton
B-B4-LP5-M	B4-MDP-7	0.21	11.96	11.96	9.71	0.033	0	0.033	In Box	16	24	0.67	Class 0, Untreated Cotton
B-B4-LP6	B4-LP6-M	0.21	14.72	14.72	11.51	0.01	0	0.01	In Box	8	24	0.25	Class 0, Untreated Cotton
B-B4-LP6-M	B4-MDP-8	0.21	14.81	14.81	11.57	0.033	0	0.033	In Box	19	24	0.83	Class 0, Untreated Cotton
B-B4-LP7	B4-LP7-M	0.21	14.72	14.72	11.51	0.01	0	0.01	In Box	8	24	0.25	Class 0, Untreated Cotton
B-B4-LP7-M	B4-MDP-3	0.21	14.81	14.81	11.57	0.033	0	0.033	In Box	19	24	0.83	Class 0, Untreated Cotton
B-B4-LP8	B4-LP8-M	0.21	11.9	11.90	9.67	0.017	0	0.017	In Box	10	24	0.34	Class 0, Untreated Cotton
B-B4-LP8-M	B4-MDP-9	0.21	11.96	11.96	9.71	0.033	0	0.033	In Box	16	24	0.67	Class 0, Untreated Cotton
B-B4-LP9	B4-LP9-M	0.21	10.3	10.30	8.6	0.017	0	0.017	In Box	9	24	0.30	Class 0, Untreated Cotton
B-B4-LP9-M	B4-MDP-2	0.21	10.35	10.35	8.63	0.033	0	0.033	In Box	15	24	0.58	Class 0, Untreated Cotton
B-B4-LS1	B4-LS1-M	0.21	2.95	2.95	2.95	0.032	0	0.032	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B4-LS10	B4-LS10-M	0.21	2.5	2.50	2.5	1.39	0	1.39	In Box	71	24	5.90	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B4-LS10-M	B4-LSD-3	0.21	2.51	2.51	2.51	0.028	0	0.028	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B4-LS11	B4-LS11-M	0.21	2.66	2.66	2.66	1.158	0	1.158	In Box	65	24	5.21	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B4-LS11-M	B4-LSD-4	0.21	2.66	2.66	2.66	0.024	0	0.024	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B4-LS12	B4-LS12-M	0.21	2.78	2.78	2.78	0.034	0	0.034	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B4-LS12-M	B4-LSD-5	0.21	2.79	2.79	2.79	0.023	0	0.023	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B4-LS13	B4-LS13-M	0.21	2.81	2.81	2.81	0.034	0	0.034	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B4-LS13-M	B4-LSD-8	0.21	2.81	2.81	2.81	0.023	0	0.023	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B4-LS14	B4-LS14-M	0.21	2.81	2.81	2.81	0.034	0	0.034	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B4-LS14-M	B4-LSD-9	0.21	2.81	2.81	2.81	0.019	0	0.019	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B4-LS1-M	B4-LSD-1	0.21	2.95	2.95	2.95	0.022	0	0.022	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B4-LS2	B4-LS2-M	0.21	3.28	3.28	3.28	0.028	0	0.028	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B4-LS2-M	B4-LSD-1	0.21	3.28	3.28	3.28	0.02	0	0.02	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B4-LS3	B4-LS3-M	0.21	3.44	3.44	3.44	0.027	0	0.027	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B4-LS3-M	B4-LSD-2	0.21	3.44	3.44	3.44	0.019	0	0.019	In Box	5	24	0.11	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B4-LS4	B4-LS4-M	0.21	3.08	3.08	3.08	0.03	0	0.03	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B4-LS4-M	B4-LSD-2	0.21	3.09	3.09	3.09	0.021	0	0.021	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B4-LS5	B4-LS5-M	0.21	2.64	2.64	2.64	1.177	0	1.177	In Box	65	24	5.27	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B4-LS5-M	B4-LSD-3	0.21	2.64	2.64	2.64	0.024	0	0.024	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B4-LS6	B4-LS6-M	0.21	2.81	2.81	2.81	0.034	0	0.034	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B4-LS6-M	B4-LSD-4	0.21	2.81	2.81	2.81	0.023	0	0.023	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B4-LS7	B4-LS7-M	0.21	2.95	2.95	2.95	0.032	0	0.032	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B4-LS7-M	B4-LSD-5	0.21	2.95	2.95	2.95	0.022	0	0.022	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B4-LS8	B4-LS8-M	0.21	2.98	2.98	2.98	0.031	0	0.031	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B4-LS8-M	B4-LSD-8	0.21	2.98	2.98	2.98	0.022	0	0.022	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B4-LS9	B4-LS9-M	0.21	2.98	2.98	2.98	0.031	0	0.031	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B4-LS9-M	B4-LSD-9	0.21	2.98	2.98	2.98	0.019	0	0.019	In Box	4	24	0.10	Class 0, Untreated Cotton
B-B4-LSD	B4-LSD-M	0.21	3.62	3.62	3.62	0.037	0	0.037	In Box	8	24	0.23	Class 0, Untreated Cotton
B-B4-LSD-M	B4-MDP-5	0.21	19.26	19.26	14.38	0.033	0	0.033	In Box	19	24	0.88	Class 0, Untreated Cotton
B-B4-LSD-M	B93-EMDP1-1	0.21	3.62	3.62	3.62	0.105	0	0.105	In Box	16	24	0.64	Class 0, Untreated Cotton
B-B4-MDP	B4-MDP-M	0.21	24.88	24.88	17.76	0.051	0	0.051	In Box	28	24	1.53	Class 0, Untreated Cotton
B-B4-MDP-M	F-B4	0.21	24.91	24.91	17.78	30.087	0	30.087	In Box	2151	24	906	**** Dangerous!!! No FR Class Found
B-B4-PP1	B4-4EQD-8	0.21	3.77	3.77	3.77	0.028	0	0.028	In Box	7	24	0.18	Class 0, Untreated Cotton
B-B4-PP2	B4-PP2-M	0.21	2.75	2.75	2.75	0.034	0	0.034	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B4-PP2-M	B4-LSD-7	0.21	2.76	2.76	2.76	0.02	0	0.02	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B5-LS3	B5-LSD-2	0.21	1.63	1.63	1.63	3.064	0	3.064	In Box	90	24	8.48	Class 2B, FR Underwear + FR Shirt & Pants
B-B5-ATS-EQ	B5-MDP-5	0.21	14.22	14.22	11.19	0.024	0	0.024	In Box	15	24	0.57	Class 0, Untreated Cotton
B-B5-ATS-EQ	B93-EMDP-5	0.21	2.25	2.25	2.25	27.629	0	27.629	In Box	500	24	105	**** Dangerous!!! No FR Class Found
B-B5-ATS-LS	B5-MDP-7	0.21	14.13	14.13	11.13	0.023	0	0.023	In Box	14	24	0.56	Class 0, Untreated Cotton
B-B5-ATS-LS	B93-EMDP1-2	0.21	1.77	1.77	1.77	0.125	0	0.125	In Box	11	24	0.37	Class 0, Untreated Cotton
B-B5-EQ1	B5-EQD-1	0.21	2.07	2.07	2.07	0.025	0	0.025	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B5-EQ2	B5-EQD-3	0.21	2.06	2.06	2.06	0.025	0	0.025	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B5-EQ5	B5-EQD-2	0.21	2.07	2.07	2.07	0.025	0	0.025	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B5-EQ6	B5-EQD-4	0.21	2.02	2.02	2.02	0.026	0	0.026	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B5-EQD	B5-MDP-5	0.21	13.78	13.78	10.9	0.024	0	0.024	In Box	14	24	0.56	Class 0, Untreated Cotton
B-B5-EQD	B93-EMDP-5	0.21	2.24	2.24	2.24	27.911	0	27.911	In Box	501	24	106	**** Dangerous!!! No FR Class Found
B-B5-HYDR ELEV	B5-EQD-5	0.21	2.14	2.14	2.14	0.027	0	0.027	In Box	4	24	0.10	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B5-LP1	B5-LP1-M	0.21	13.94	13.94	11.01	0.01	0	0.01	In Box	8	24	0.24	Class 0, Untreated Cotton
B-B5-LP1-M	B5-MDP-2	0.21	14.01	14.01	11.05	0.023	0	0.023	In Box	14	24	0.55	Class 0, Untreated Cotton
B-B5-LP2	B5-LP2-M	0.21	11.73	11.73	9.55	0.01	0	0.01	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B5-LP2-M	B5-MDP-8	0.21	11.77	11.77	9.58	0.024	0	0.024	In Box	13	24	0.48	Class 0, Untreated Cotton
B-B5-LP3	B5-LP3-M	0.21	11.82	11.82	9.61	0.01	0	0.01	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B5-LP3-M	B5-MDP-2	0.21	11.87	11.87	9.64	0.024	0	0.024	In Box	13	24	0.49	Class 0, Untreated Cotton
B-B5-LP4	B5-LP4-M	0.21	10.17	10.17	8.51	0.01	0	0.01	In Box	6	24	0.17	Class 0, Untreated Cotton
B-B5-LP4-M	B5-MDP-8	0.21	10.21	10.21	8.53	0.025	0	0.025	In Box	12	24	0.43	Class 0, Untreated Cotton
B-B5-LP5	B5-LP5-M	0.21	12.27	12.27	9.91	0.01	0	0.01	In Box	7	24	0.21	Class 0, Untreated Cotton
B-B5-LP5-M	B5-MDP-6	0.21	12.33	12.33	9.95	0.021	0	0.021	In Box	12	24	0.44	Class 0, Untreated Cotton
B-B5-LS1	B5-LSD-2	0.21	1.69	1.69	1.69	2.834	0	2.834	In Box	88	24	8.12	Class 2B, FR Underwear + FR Shirt & Pants
B-B5-LS2	B5-LSD-1	0.21	1.56	1.56	1.56	3.419	0	3.419	In Box	94	24	9.01	Class 2B, FR Underwear + FR Shirt & Pants
B-B5-LS4	B5-LSD-1	0.21	1.51	1.51	1.51	3.677	0	3.677	In Box	97	24	9.38	Class 2B, FR Underwear + FR Shirt & Pants
B-B5-LSD	B5-LSD-M	0.21	1.76	1.76	1.76	6.413	0	6.413	In Box	157	24	19.1	Class 3, Cotton Underwear + FR Shirt & Pant + FR Coverall
B-B5-LSD-M	B5-MDP-7	0.21	13.52	13.52	10.73	0.024	0	0.024	In Box	14	24	0.54	Class 0, Untreated Cotton
B-B5-LSD-M	B93-EMDP1-2	0.21	1.76	1.76	1.76	0.126	0	0.126	In Box	11	24	0.38	Class 0, Untreated Cotton
B-B5-MDP	B5-MDP-M	0.21	19.22	19.22	14.36	0.1	0	0.1	In Box	41	24	2.65	Class 1, FR Shirt & Pants
B-B5-MDP-M	F-B5	0.21	21.06	19.50	14.33	0.941	0	0.941	In Box	191	24	25.5	Class 4, Cotton Underwear + FR Shirt & Pant + Double Layer Switching Coat
B-B5-NEXTEL	B5-MDP-4	0.21	12.34	12.34	9.96	0.024	0	0.024	In Box	13	24	0.50	Class 0, Untreated Cotton
B-B5-PNL-H	B5-PNL-H-M	0.21	14.72	14.72	11.51	0.021	0	0.021	In Box	14	24	0.52	Class 0, Untreated Cotton
B-B5-PNL-H-M	B5-MDP-1	0.21	14.8	14.80	11.56	0.024	0	0.024	In Box	15	24	0.60	Class 0, Untreated Cotton
B-B5-STRT LGHT	B5-MDP-3	0.21	9.28	9.28	7.91	0.01	0	0.01	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B5-TEMP TRAI	B5-MDP-9	0.21	11.29	11.29	9.26	0.024	0	0.024	In Box	13	24	0.47	Class 0, Untreated Cotton
B-B6-ATS-EQ	B6-MDP-4	0.21	14.35	14.35	11.27	0.033	0	0.033	In Box	18	24	0.80	Class 0, Untreated Cotton
B-B6-ATS-EQ	B94-EMDP-2	0.21	2.74	2.74	2.74	0.025	0	0.025	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B6-ATS-LS	B6-MDP-3	0.21	15.3	15.30	11.89	0.033	0	0.033	In Box	19	24	0.86	Class 0, Untreated Cotton
B-B6-ATS-LS	B94-EMDP-9	0.21	2.41	2.41	2.41	0.106	0	0.106	In Box	12	24	0.43	Class 0, Untreated Cotton
B-B6-EQ1	B6-EQD-2	0.21	2.58	2.58	2.58	0.025	0	0.025	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B6-EQ2	B6-EQD-4	0.21	2.44	2.44	2.44	0.034	0	0.034	In Box	6	24	0.14	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B6-EQ3	B6-EQD-3	0.21	2.55	2.55	2.55	2.8	0	2.8	In Box	115	24	12.1	Class 2B, FR Underwear + FR Shirt & Pants
B-B6-EQ4	B6-EQD-4	0.21	2.35	2.35	2.35	0.126	0	0.126	In Box	13	24	0.50	Class 0, Untreated Cotton
B-B6-EQ5	B6-EQD-3	0.21	2.46	2.46	2.46	3.048	0	3.048	In Box	119	24	12.7	Class 2B, FR Underwear + FR Shirt & Pants
B-B6-EQ8	B6-EQD-1	0.21	2.43	2.43	2.43	3.125	0	3.125	In Box	120	24	12.9	Class 2B, FR Underwear + FR Shirt & Pants
B-B6-EQD	B6-EQD-M	0.21	12.94	12.94	10.35	0.018	0	0.018	In Box	11	24	0.40	Class 0, Untreated Cotton
B-B6-EQD-M	B6-MDP-4	0.21	12.96	12.96	10.36	0.033	0	0.033	In Box	17	24	0.72	Class 0, Untreated Cotton
B-B6-EQD-M	B94-EMDP-2	0.21	2.68	2.68	2.68	0.025	0	0.025	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B6-EQMACH	B6-EQD-5	0.21	2.58	2.58	2.58	0.019	0	0.019	In Box	4	24	0.08	Class 0, Untreated Cotton
B-B6-LP1	B6-LP1-M	0.21	10.9	10.90	9	0.017	0	0.017	In Box	10	24	0.31	Class 0, Untreated Cotton
B-B6-LP1-M	B6-MDP-1	0.21	10.91	10.91	9.01	0.033	0	0.033	In Box	15	24	0.61	Class 0, Untreated Cotton
B-B6-LP2	B6-LP2-M	0.21	12.17	12.17	9.85	0.017	0	0.017	In Box	10	24	0.35	Class 0, Untreated Cotton
B-B6-LP2-M	B6-MDP-5	0.21	12.19	12.19	9.86	0.033	0	0.033	In Box	16	24	0.68	Class 0, Untreated Cotton
B-B6-LP3	B6-LP3-M	0.21	13.33	13.33	10.61	0.017	0	0.017	In Box	11	24	0.38	Class 0, Untreated Cotton
B-B6-LP3-M	B6-MDP-2	0.21	13.35	13.35	10.62	0.033	0	0.033	In Box	17	24	0.75	Class 0, Untreated Cotton
B-B6-LP4	B6-LP4-M	0.21	13.68	13.68	10.84	0.017	0	0.017	In Box	11	24	0.39	Class 0, Untreated Cotton
B-B6-LP4-M	B6-MDP-7	0.21	13.7	13.70	10.85	0.033	0	0.033	In Box	18	24	0.77	Class 0, Untreated Cotton
B-B6-LP5	B6-LP5-M	0.21	11.37	11.37	9.32	0.017	0	0.017	In Box	10	24	0.33	Class 0, Untreated Cotton
B-B6-LP5-M	B6-MDP-2	0.21	11.39	11.39	9.32	0.033	0	0.033	In Box	16	24	0.64	Class 0, Untreated Cotton
B-B6-LP6	B6-LP6-M	0.21	11.63	11.63	9.49	0.017	0	0.017	In Box	10	24	0.33	Class 0, Untreated Cotton
B-B6-LP6-M	B6-MDP-7	0.21	11.65	11.65	9.5	0.033	0	0.033	In Box	16	24	0.65	Class 0, Untreated Cotton
B-B6-LP7	B6-LP7-M	0.21	16.48	16.48	12.64	0.016	0	0.016	In Box	12	24	0.44	Class 0, Untreated Cotton
B-B6-LP7-M	B6-MDP-6	0.21	16.51	16.51	12.66	0.033	0	0.033	In Box	20	24	0.89	Class 0, Untreated Cotton
B-B6-LS1	B6-LSD-3	0.21	2.19	2.19	2.19	1.592	0	1.592	In Box	71	24	5.91	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B6-LS2	B6-LSD-4	0.21	2.28	2.28	2.28	0.619	0	0.619	In Box	38	24	2.39	Class 1, FR Shirt & Pants
B-B6-LS3	B6-LSD-2	0.21	2.19	2.19	2.19	1.592	0	1.592	In Box	71	24	5.91	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B6-LS4	B6-LSD-1	0.21	2.19	2.19	2.19	1.592	0	1.592	In Box	71	24	5.91	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B6-LS5	B6-LSD-2	0.21	2.1	2.10	2.1	1.757	0	1.757	In Box	73	24	6.24	Class 2A, Cotton Underwear + FR Shirt & Pants

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B6-LS6	B6-LSD-1	0.21	2.1	2.10	2.1	1.757	0	1.757	In Box	73	24	6.24	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B6-LSD	B6-LSD-M	0.21	2.38	2.38	2.38	3.288	0	3.288	In Box	122	24	13.2	Class 2B, FR Underwear + FR Shirt & Pants
B-B6-LSD-M	B6-MDP-3	0.21	14.2	14.20	11.17	0.033	0	0.033	In Box	18	24	0.79	Class 0, Untreated Cotton
B-B6-LSD-M	B94-EMDP-9	0.21	2.38	2.38	2.38	0.108	0	0.108	In Box	12	24	0.44	Class 0, Untreated Cotton
B-B6-MACH SHOP	B6-MDP-8	0.21	12.06	12.06	9.77	0.033	0	0.033	In Box	16	24	0.67	Class 0, Untreated Cotton
B-B6-MDP	B6-MDP-M	0.21	21.28	21.28	15.62	0.07	0	0.07	In Box	33	24	1.90	Class 0, Untreated Cotton
B-B6-MDP-M	F-B6	0.21	21.33	21.33	15.64	0.12	0	0.12	In Box	47	24	3.26	Class 1, FR Shirt & Pants
B-B6-P6-CS	B6-MDP-9	0.21	14.7	14.70	11.5	0.033	0	0.033	In Box	19	24	0.82	Class 0, Untreated Cotton
B-B7-ATS-EQ	B7-MDP-3	0.21	10.02	10.02	8.41	0.033	0	0.033	In Box	14	24	0.56	Class 0, Untreated Cotton
B-B7-ATS-EQ	B94-EMDP-3	0.21	3.94	3.94	3.94	0.025	0	0.025	In Box	6	24	0.17	Class 0, Untreated Cotton
B-B7-ATS-LS	B7-MDP-6	0.21	9.37	9.37	7.97	0.033	0	0.033	In Box	14	24	0.52	Class 0, Untreated Cotton
B-B7-ATS-LS	B94-EMDP-10	0.21	3.47	3.47	3.47	0.105	0	0.105	In Box	15	24	0.62	Class 0, Untreated Cotton
B-B7-ELEV	B7-EQD-1	0.21	3.34	3.34	3.34	0.024	0	0.024	In Box	5	24	0.14	Class 0, Untreated Cotton
B-B7-EQ1	B7-EQD-4	0.21	3.37	3.37	3.37	0.023	0	0.023	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B7-EQ2	B7-EQD-3	0.21	3.64	3.64	3.64	0.023	0	0.023	In Box	6	24	0.14	Class 0, Untreated Cotton
B-B7-EQ4	B7-EQD-6	0.21	3.45	3.45	3.45	0.024	0	0.024	In Box	6	24	0.14	Class 0, Untreated Cotton
B-B7-EQD	B7-MDP-3	0.21	8.99	8.99	7.71	0.065	0	0.065	In Box	21	24	0.99	Class 0, Untreated Cotton
B-B7-EQD	B94-EMDP-3	0.21	3.78	3.78	3.78	0.025	0	0.025	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B7-LP2	B7-LP2-M	0.21	8.85	8.85	7.62	0.017	0	0.017	In Box	9	24	0.26	Class 0, Untreated Cotton
B-B7-LP2-M	B7-MDP-9	0.21	8.88	8.88	7.64	0.033	0	0.033	In Box	13	24	0.50	Class 0, Untreated Cotton
B-B7-LP3	B7-LP3-M	0.21	6.86	6.86	6.25	0.018	0	0.018	In Box	7	24	0.21	Class 0, Untreated Cotton
B-B7-LP3-M	B7-MDP-1	0.21	6.88	6.88	6.26	0.065	0	0.065	In Box	18	24	0.76	Class 0, Untreated Cotton
B-B7-LP4	B7-LP4-M	0.21	8.85	8.85	7.62	0.017	0	0.017	In Box	9	24	0.26	Class 0, Untreated Cotton
B-B7-LP4-M	B7-MDP-4	0.21	8.88	8.88	7.64	0.033	0	0.033	In Box	13	24	0.50	Class 0, Untreated Cotton
B-B7-LP5	B7-LP5-M	0.21	6.86	6.86	6.25	0.018	0	0.018	In Box	7	24	0.21	Class 0, Untreated Cotton
B-B7-LP5-M	B7-MDP-2	0.21	6.88	6.88	6.26	0.065	0	0.065	In Box	18	24	0.76	Class 0, Untreated Cotton
B-B7-LP6	B7-LP6-M	0.21	6.3	6.30	5.86	0.018	0	0.018	In Box	7	24	0.19	Class 0, Untreated Cotton
B-B7-LP6-M	B7-MDP-1	0.21	6.32	6.32	5.87	0.065	0	0.065	In Box	17	24	0.70	Class 0, Untreated Cotton
B-B7-LP7	B7-LP7-M	0.21	8.02	8.02	7.05	0.018	0	0.018	In Box	8	24	0.24	Class 0, Untreated Cotton
B-B7-LP7-M	B7-MDP-4	0.21	8.05	8.05	7.07	0.033	0	0.033	In Box	12	24	0.45	Class 0, Untreated Cotton
B-B7-LP8	B7-LP8-M	0.21	6.3	6.30	5.86	0.018	0	0.018	In Box	7	24	0.19	Class 0, Untreated Cotton
B-B7-LP8-M	B7-MDP-2	0.21	6.32	6.32	5.87	0.065	0	0.065	In Box	17	24	0.70	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B7-LS1	B7-LSD-3	0.21	2.86	2.86	2.86	0.022	0	0.022	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B7-LS2	B7-LSD-4	0.21	3.15	3.15	3.15	0.324	0	0.324	In Box	31	24	1.73	Class 0, Untreated Cotton
B-B7-LS4	B7-LSD-2	0.21	2.81	2.81	2.81	0.023	0	0.023	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B7-LS5	B7-LSD-1	0.21	3.09	3.09	3.09	0.021	0	0.021	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B7-LSD	B7-LSD-M	0.21	3.43	3.43	3.43	0.569	0	0.569	In Box	48	24	3.31	Class 1, FR Shirt & Pants
B-B7-LSD-M	B7-MDP-6	0.21	9.11	9.11	7.79	0.033	0	0.033	In Box	13	24	0.51	Class 0, Untreated Cotton
B-B7-LSD-M	B94-EMDP-10	0.21	3.44	3.44	3.44	0.105	0	0.105	In Box	15	24	0.61	Class 0, Untreated Cotton
bB-B7-MC1	B7-EQD-2	0.21	2.7	2.70	2.7	0.022	0	0.022	In Box	4	24	0.10	Class 0, Untreated Cotton
B-B7-MCC-1	B7-EQD-5	0.21	3.5	3.50	3.5	0.02	0	0.02	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B7-MCC-2	B7-MDP-10	0.21	8.57	8.57	7.43	0.033	0	0.033	In Box	13	24	0.48	Class 0, Untreated Cotton
B-B7-MDP	B7-MDP-M	0.21	11.3	11.30	9.27	0.07	0	0.07	In Box	26	24	1.34	Class 0, Untreated Cotton
B-B7-MDP-M	F-B7	0.21	11.32	11.32	9.28	1.758	0	1.758	In Box	231	24	33.7	Class 4, Cotton Underwear + FR Shirt & Pant + Double Layer Switching Coat
B-B7-SRTLGHT-M	B7-MDP-8	0.21	6.63	6.63	6.09	0.032	0	0.032	In Box	11	24	0.36	Class 0, Untreated Cotton
B-B7-STRT LGHT	B7-STRT-M	0.21	6.61	6.61	6.08	0.017	0	0.017	In Box	7	24	0.19	Class 0, Untreated Cotton
B-B8 2ND FLR	B8-MDP8-1	0.21	12.34	12.34	9.96	0.012	0	0.012	In Box	8	24	0.25	Class 0, Untreated Cotton
B-B8 HYDRO ELV	B8 480V PNL-2	0.48	0.93	0.93	0.93	2.306	0	2.306	In Box	51	24	3.65	Class 1, FR Shirt & Pants
B-B8-208V-MAIN	F-B8	0.21	17.85	17.85	13.5	0.209	0	0.209	In Box	68	24	5.56	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B82-MDP	B82-MDP-M	0.21	7.11	7.11	6.42	0.011	0	0.011	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B82-MDP-M	F-B82	0.21	7.12	7.12	6.43	0.035	0	0.035	In Box	12	24	0.42	Class 0, Untreated Cotton
B-B8-480V ATS	B8 GE BKR	0.48	7.91	7.91	6.98	0.026	0	0.026	In Box	10	24	0.35	Class 0, Untreated Cotton
B-B8-480V PNL	B8 GE BKR	0.48	7.78	7.78	6.89	0.026	0	0.026	In Box	10	24	0.35	Class 0, Untreated Cotton
B-B8-ATS	B8-ATS-N	0.21	14.18	14.18	11.16	0.022	0	0.022	In Box	14	24	0.52	Class 0, Untreated Cotton
B-B8-BS	B8-MDP8-3	0.21	3.53	3.53	3.53	0.02	0	0.02	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B8-CMOP	B8 480V PNL-3	0.21	1.67	1.67	1.67	40.093	0	40.093	In Box	525	24	113	**** Dangerous!!! No FR Class Found
B-B8-COMP	B8 480V PNL-4	0.48	0.89	0.89	0.89	0.863	0	0.863	In Box	25	24	1.30	Class 0, Untreated Cotton
B-B8-FDR	B8 480V PNL-3	0.21	1.72	1.72	1.72	37.737	0	37.737	In Box	514	24	110	**** Dangerous!!! No FR Class Found
B-B8-FLEXPMACH	B8 480V PNL-1	0.48	0.93	0.93	0.93	0.233	0	0.233	In Box	11	24	0.37	Class 0, Untreated Cotton
B-B8-GE BKR	PD-0270	0.48	8.02	8.02	7.05	0.108	0	0.108	In Box	28	24	1.47	Class 0, Untreated Cotton
B-B8-J-BOX	B8 JBOX BKR	0.21	4.35	4.35	4.35	0.022	0	0.022	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B8-L8B	B8-MDP8-2	0.21	5.8	5.80	5.51	0.02	0	0.02	In Box	7	24	0.19	Class 0, Untreated Cotton
B-B8-LB1	B8-MDP8-5	0.21	7.11	7.11	6.42	0.019	0	0.019	In Box	8	24	0.22	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B8-LB2	B8-MDP8-5	0.21	6.64	6.64	6.1	0.019	0	0.019	In Box	7	24	0.21	Class 0, Untreated Cotton
B-B8-MAIN BUS	B8-208V-M	0.21	17.41	17.41	13.22	0.2	0	0.2	In Box	66	24	5.33	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B8-MDP-8	B8-208V-M	0.21	17.1	17.10	13.03	0.2	0	0.2	In Box	66	24	5.34	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B8-PNL-PK	B8-MDP8-4	0.21	13.16	13.16	10.49	0.017	0	0.017	In Box	11	24	0.37	Class 0, Untreated Cotton
B-B8-PP1	B8-PP1-M	0.21	16.13	16.13	12.42	0.025	0	0.025	In Box	16	24	0.68	Class 0, Untreated Cotton
B-B8-PP1-M	B8-208V-M	0.21	16.19	16.19	12.45	0.2	0	0.2	In Box	67	24	5.40	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B8-SYLV	B8-208V-M	0.21	14.88	14.88	11.61	0.2	0	0.2	In Box	64	24	5.04	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B8-TXMR PRI	B8 480V PNL-3	0.48	0.99	0.99	0.99	20.747	0	20.747	In Box	235	24	34.7	Class 4, Cotton Underwear + FR Shirt & Pant + Double Layer Switching Coat
B-B8-TXMR SEC	B8 480V PNL-3	0.21	4.96	4.96	4.96	4.625	0	4.625	In Box	254	24	38.8	Class 4, Cotton Underwear + FR Shirt & Pant + Double Layer Switching Coat
B-B9-*PNLXX	B9-MDP-3	0.21	8.25	8.25	7.2	0.019	0	0.019	In Box	9	24	0.26	Class 0, Untreated Cotton
B-B9-*PNLYY	B9-MDP-2	0.21	7.4	7.40	6.63	0.01	0	0.01	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B9-*PNLZZ	B9-MDP-1	0.21	11.44	11.44	9.36	0.019	0	0.019	In Box	11	24	0.37	Class 0, Untreated Cotton
B-B9-ATS BKR	B9-MDP-M	0.21	13.63	13.63	10.8	0.1	0	0.1	In Box	37	24	2.31	Class 1, FR Shirt & Pants
B-B9-EM	B9-ATS-BKR	0.21	13.22	13.22	10.54	0.021	0	0.021	In Box	13	24	0.48	Class 0, Untreated Cotton
B-B9-L91A	PD-0283	0.21	3.69	3.69	3.69	0.018	0	0.018	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B9-L91A-M	B9-MDP-4	0.21	3.7	3.70	3.7	0.019	0	0.019	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B9-L92	B9-MDP-7	0.21	4.82	4.82	4.82	0.019	0	0.019	In Box	6	24	0.15	Class 0, Untreated Cotton
B-B9-L9A	B9-MDP-5	0.21	6.86	6.86	6.25	0.01	0	0.01	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B9-L9B	B9-MDP-6	0.21	11.31	11.31	9.27	0.01	0	0.01	In Box	7	24	0.19	Class 0, Untreated Cotton
B-B9-LPN	B9-LPN	0.21	2.6	2.60	2.6	0.014	0	0.014	In Box	3	24	0.06	Class 0, Untreated Cotton
B-B9-LPS	B9-LPS	0.21	5.76	5.76	5.49	0.014	0	0.014	In Box	5	24	0.14	Class 0, Untreated Cotton
B-B9-MAIN	F-B9	0.21	15.87	15.87	12.25	0.36	0	0.36	In Box	99	24	9.69	Class 2B, FR Underwear + FR Shirt & Pants
B-B9-MDP	B9-MDP-M	0.21	14.82	14.82	11.57	0.1	0	0.1	In Box	40	24	2.51	Class 1, FR Shirt & Pants
B-B9-STRT LGHT	B9-MDP-8	0.21	5.81	5.81	5.52	0.019	0	0.019	In Box	7	24	0.18	Class 0, Untreated Cotton
B-B9-TAP	B9-MDP-9	0.21	12.34	12.34	9.96	0.019	0	0.019	In Box	11	24	0.40	Class 0, Untreated Cotton
B-B10 DISC	F-B10	0.21	5.74	5.74	5.47	0.1	0	0.1	In Box	21	24	0.98	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B10 EMRG TAP	B95-EMDP-5	0.21	3.02	3.02	3.02	15.385	0	15.385	In Box	410	24	78.6	**** Dangerous!!! No FR Class Found
B-B10-MDP	B10-DISC	0.21	5.3	5.30	5.16	0.01	0	0.01	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B12-MAP-M	F-B12	0.21	4.28	4.28	4.28	0.086	0	0.086	In Box	15	24	0.63	Class 0, Untreated Cotton
B-B12-MDP	B12-MDP-M	0.21	4.26	4.26	4.26	0.027	0	0.027	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B13-APT-13	B13-MDP-5	0.24	6.44	6.44	5.96	0.025	0	0.025	In Box	9	24	0.27	Class 0, Untreated Cotton
B-B13-APT-14	B13-MDP-4	0.24	5.93	5.93	5.6	0.025	0	0.025	In Box	8	24	0.25	Class 0, Untreated Cotton
B-B13-APT-15	B13-MDP-3	0.24	4.58	4.58	4.58	0.026	0	0.026	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B13-GARAGE	B13-MDP-1	0.24	4.78	4.78	4.78	0.023	0	0.023	In Box	7	24	0.18	Class 0, Untreated Cotton
B-B13-MDP	B13-MDP-M	0.24	8.66	8.66	7.49	0.1	0	0.1	In Box	27	24	1.47	Class 0, Untreated Cotton
B-B13-MDP-M	F-B13	0.24	8.66	8.67	7.49	66.587	0	66.587	In Box	2264	24	977	**** Dangerous!!! No FR Class Found
B-B13-MGR H16	B13-MDP-2	0.24	2.56	2.56	2.56	0.023	0	0.023	In Box	4	24	0.10	Class 0, Untreated Cotton
B-B13-TXMR SEC	F-B13	0.24	11.1	11.10	9.13	27.728	0	27.728	In Box	1478	24	521	**** Dangerous!!! No FR Class Found
B-B13-UNKNOWN	B13-MDP-6	0.24	6.44	6.44	5.96	0.025	0	0.025	In Box	9	24	0.27	Class 0, Untreated Cotton
B-B17-A/C	B17-DP-7	0.21	7.85	7.85	6.93	0.017	0	0.017	In Box	8	24	0.23	Class 0, Untreated Cotton
B-B17-A/C-2	B17-DP-9	0.21	7.05	7.05	6.38	0.017	0	0.017	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B17-AC1	B17-DP-4	0.21	7.05	7.05	6.38	0.017	0	0.017	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B17-ACB	B17-DP-3	0.21	6.43	6.43	5.95	0.017	0	0.017	In Box	7	24	0.18	Class 0, Untreated Cotton
B-B17-ANIMALRM	B17-EMERG	0.21	1.7	1.70	1.7	0.018	0	0.018	In Box	3	24	0.05	Class 0, Untreated Cotton
B-B17-ATS	B92-EMDP-4	0.21	2.18	2.18	2.18	0.025	0	0.025	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B17-ATS	F-B17	0.21	9.49	9.49	8.05	0.196	0	0.196	In Box	46	24	3.15	Class 1, FR Shirt & Pants
B-B17-DP	B17-MAIN	0.21	8.7	8.70	7.52	0.011	0	0.011	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B17-EMERG	B92-EMDP-4	0.21	2.16	2.16	2.16	0.025	0	0.025	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B17-EMERG	F-B17	0.21	9.16	9.16	7.83	0.213	0	0.213	In Box	48	24	3.30	Class 1, FR Shirt & Pants
B-B17-MAIN	F-B17	0.21	10.88	10.88	8.99	0.145	0	0.145	In Box	41	24	2.68	Class 1, FR Shirt & Pants
B-B17-NEB1	PD-0305	0.21	1.63	1.63	1.63	0.019	0	0.019	In Box	3	24	0.05	Class 0, Untreated Cotton
B-B17-NEB2	PD-0304	0.21	1.86	1.86	1.86	0.016	0	0.016	In Box	3	24	0.05	Class 0, Untreated Cotton
B-B17-NP11	B17-DP-1	0.21	5.57	5.57	5.35	0.017	0	0.017	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B17-NP12	B17-DP-6	0.21	7.74	7.74	6.86	0.017	0	0.017	In Box	8	24	0.22	Class 0, Untreated Cotton
B-B17-NP21	B17-DP-2	0.21	7.05	7.05	6.38	0.017	0	0.017	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B17-NP22	B17-DP-10	0.21	7.05	7.05	6.38	0.017	0	0.017	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B17-NPA1	B17-DP-5	0.21	7.05	7.05	6.38	0.017	0	0.017	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B17-NPB1	B17-DP-11	0.21	7.62	7.62	6.77	0.017	0	0.017	In Box	8	24	0.22	Class 0, Untreated Cotton
B-B17-NPB2	B17-DP-8	0.21	7.05	7.05	6.38	0.017	0	0.017	In Box	7	24	0.20	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B18-1STFL	B18 1STFL-M	0.21	2.25	2.25	2.25	0.014	0	0.014	In Box	3	24	0.05	Class 0, Untreated Cotton
B-B18-1STFL-M	B18-NMDP-8	0.21	7.18	7.18	6.47	0.017	0	0.017	In Box	7	24	0.21	Class 0, Untreated Cotton
B-B18-1STFL-M	B92-EMDP-2	0.21	2.41	2.41	2.41	0.025	0	0.025	In Box	5	24	0.10	Class 0, Untreated Cotton
B-B18-2NDFL	B18-2NDFL-M	0.21	2.1	2.10	2.1	0.014	0	0.014	In Box	3	24	0.05	Class 0, Untreated Cotton
B-B18-2ND-FL-M	B18-NMDP-8	0.21	7.18	7.18	6.47	0.017	0	0.017	In Box	7	24	0.21	Class 0, Untreated Cotton
B-B18-2ND-FL-M	B92-EMDP-2	0.21	2.41	2.41	2.41	0.025	0	0.025	In Box	5	24	0.10	Class 0, Untreated Cotton
B-B18-AC1	B18-NMDP-2	0.21	6.93	6.93	6.3	0.017	0	0.017	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B18-AC2	B18-NMDP-9	0.21	8.8	8.80	7.58	0.017	0	0.017	In Box	8	24	0.25	Class 0, Untreated Cotton
B-B18-ATS-EMRG	B18-NMDP-8	0.21	7.9	7.90	6.97	0.017	0	0.017	In Box	8	24	0.23	Class 0, Untreated Cotton
B-B18-ATS-EMRG	B92-EMDP-2	0.21	2.48	2.48	2.48	0.025	0	0.025	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B18-EMERG	B18-EMERG-M	0.21	2.4	2.40	2.4	0.017	0	0.017	In Box	3	24	0.07	Class 0, Untreated Cotton
B-B18-EMERG-M	B18-NMDP-8	0.21	7.1	7.10	6.42	0.017	0	0.017	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B18-EMERG-M	B92-EMDP-2	0.21	2.4	2.40	2.4	0.025	0	0.025	In Box	4	24	0.10	Class 0, Untreated Cotton
B-B18-NCP	B18-NMDP-3	0.21	9.66	9.66	8.17	0.017	0	0.017	In Box	9	24	0.27	Class 0, Untreated Cotton
B-B18-NMDP	B18-NMDP-M	0.21	10.65	10.65	8.83	0.011	0	0.011	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B18-NMDP-M	F-B18	0.21	10.67	10.67	8.85	0.149	0	0.149	In Box	42	24	2.70	Class 1, FR Shirt & Pants
B-B18-NP11	B18-NMDP-1	0.21	6.93	6.93	6.3	0.017	0	0.017	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B18-NP12	B18-NMDP-6	0.21	6.93	6.93	6.3	0.017	0	0.017	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B18-NP21	B18-NMDP-7	0.21	7.52	7.52	6.71	0.017	0	0.017	In Box	7	24	0.21	Class 0, Untreated Cotton
B-B18-NP22	B18-NMDP-4	0.21	8.23	8.23	7.19	0.017	0	0.017	In Box	8	24	0.24	Class 0, Untreated Cotton
B-B18-NP23	B18-NMDP-5	0.21	9	9.00	7.72	0.017	0	0.017	In Box	8	24	0.26	Class 0, Untreated Cotton
B-B18-STRT LHT	B18-NMDP-10	0.21	4.66	4.66	4.66	0.017	0	0.017	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B18-TAP BOX	B18-NMDP-8	0.21	7.42	7.42	6.63	0.017	0	0.017	In Box	7	24	0.21	Class 0, Untreated Cotton
B-B18-TAP BOX	B92-EMDP-2	0.21	2.43	2.43	2.43	0.025	0	0.025	In Box	5	24	0.10	Class 0, Untreated Cotton
B-B19-200A PNL	B19-MDP2-2	0.21	17.84	17.84	13.5	0.017	0	0.017	In Box	12	24	0.44	Class 0, Untreated Cotton
B-B19-B1	B19-MDP1-3	0.21	15.92	15.92	12.28	0.017	0	0.017	In Box	12	24	0.45	Class 0, Untreated Cotton
B-B19-L1	B19-MDP1-2	0.21	2.63	2.63	2.63	0.019	0	0.019	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B19-L2	B19-MDP1-4	0.21	7.34	7.34	6.58	0.017	0	0.017	In Box	7	24	0.21	Class 0, Untreated Cotton
B-B19-MDP1	B19-MDP1-M	0.21	19.91	19.91	14.78	0.04	0	0.04	In Box	22	24	1.07	Class 0, Untreated Cotton
B-B19-MDP1-M	F-B19	0.21	19.93	19.93	14.8	21.38	0	21.38	In Box	1571	24	570	**** Dangerous!!! No FR Class Found
B-B19-MDP2	B19-MDP2-M	0.21	18.9	18.90	14.16	0.1	0	0.1	In Box	41	24	2.65	Class 1, FR Shirt & Pants
B-B19-MDP2-M	F-B19	0.21	19.23	19.23	14.36	24.872	0	24.872	In Box	1736	24	660	**** Dangerous!!! No FR Class Found
B-B19-MDPA	B19-MDP1-5	0.21	10.5	10.50	8.73	0.021	0	0.021	In Box	11	24	0.37	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B19-P1	B19-MDP1-6	0.21	10.5	10.50	8.73	0.021	0	0.021	In Box	11	24	0.37	Class 0, Untreated Cotton
B-B19-P2	B19-MDP1-8	0.21	9.01	9.01	7.72	0.017	0	0.017	In Box	8	24	0.25	Class 0, Untreated Cotton
B-B19-P4	B19-MDP1-7	0.21	16.7	16.70	12.78	0.017	0	0.017	In Box	12	24	0.45	Class 0, Untreated Cotton
B-B19-P6	B19-MDPA-1	0.21	3.01	3.01	3.01	0.017	0	0.017	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B19-PS	B19-MDP1-1	0.21	4.83	4.83	4.83	0.017	0	0.017	In Box	5	24	0.14	Class 0, Untreated Cotton
B-B21-P1	PD-0347	0.21	3.18	3.18	3.18	0.017	0	0.017	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B21-P2	B19-MDP2-1	0.21	5.45	5.45	5.27	0.017	0	0.017	In Box	6	24	0.15	Class 0, Untreated Cotton
B-B22-ATS-EMER	B22-GEN	0.48	1.77	1.77	1.77	55.834	0	55.834	In Box	685	24	168	**** Dangerous!!! No FR Class Found
B-B22-ATS-EMER	B22-MDP-1	0.48	6.5	6.50	6	0.025	0	0.025	In Box	9	24	0.28	Class 0, Untreated Cotton
B-B22-EMERG	B22-EMERG-M	0.48	1.75	1.75	1.75	0.021	0	0.021	In Box	3	24	0.06	Class 0, Untreated Cotton
B-B22-EMERG-M	B22-GEN	0.48	1.75	1.75	1.75	57.763	0	57.763	In Box	695	24	171	**** Dangerous!!! No FR Class Found
B-B22-EMERG-M	B22-MDP-1	0.48	6.19	6.19	5.78	0.025	0	0.025	In Box	9	24	0.26	Class 0, Untreated Cotton
B-B22-GEN	B22-GEN	0.48	1.8	1.80	1.8	53.319	0	53.319	In Box	671	24	163	**** Dangerous!!! No FR Class Found
B-B22-L1	B22-L1-M	0.21	1.94	1.94	1.94	11.667	0	11.667	In Box	252	24	38.4	Class 4, Cotton Underwear + FR Shirt & Pant + Double Layer Switching Coat
B-B22-L1-M	B22-EMERG-5	0.21	1.94	1.94	1.94	112.74	0	112.74	In Box	1174	24	371	**** Dangerous!!! No FR Class Found
B-B22-L2	B22-L2-M	0.21	1.94	1.94	1.94	11.667	0	11.667	In Box	252	24	38.4	Class 4, Cotton Underwear + FR Shirt & Pant + Double Layer Switching Coat
B-B22-L2-M	B22-EMERG-4	0.21	1.94	1.94	1.94	112.74	0	112.74	In Box	1174	24	371	**** Dangerous!!! No FR Class Found
B-B22-L3	B22-L3-M	0.21	1.94	1.94	1.94	11.634	0	11.634	In Box	252	24	38.3	Class 4, Cotton Underwear + FR Shirt & Pant + Double Layer Switching Coat
B-B22-L3-M	B22-EMERG-3	0.21	1.95	1.95	1.95	0.031	0	0.031	In Box	5	24	0.10	Class 0, Untreated Cotton
B-B22-MDP	B22-MDP-M	0.48	6.95	6.95	6.31	0.1	0	0.1	In Box	24	24	1.18	Class 0, Untreated Cotton
B-B22-MDP-M	F-B22	0.48	6.95	6.95	6.31	0.247	0	0.247	In Box	44	24	2.91	Class 1, FR Shirt & Pants
B-B22-N1	B22-N1-M	0.21	4.78	4.78	4.78	0.017	0	0.017	In Box	6	24	0.14	Class 0, Untreated Cotton
B-B22-N1-M	B22-MDP-2	0.21	4.79	4.79	4.79	0.042	0	0.042	In Box	10	24	0.34	Class 0, Untreated Cotton
B-B22-P1	B22-EMERG-1	0.48	1.74	1.74	1.74	0.021	0	0.021	In Box	3	24	0.06	Class 0, Untreated Cotton
B-B22-P2	B22-EMERG-2	0.48	1.74	1.74	1.74	0.021	0	0.021	In Box	3	24	0.06	Class 0, Untreated Cotton
B-B22-T1-PRI	B22-MDP-2	0.48	6.83	6.83	6.23	0.025	0	0.025	In Box	9	24	0.29	Class 0, Untreated Cotton
B-B22-T1-SEC	B22-MDP-2	0.21	5.07	5.07	5	0.039	0	0.039	In Box	10	24	0.33	Class 0, Untreated Cotton
B-B22-T22-SEC	B22-EMERG-4	0.21	1.98	1.98	1.98	109.26	0	109.26	In Box	1162	24	366	**** Dangerous!!! No FR Class Found

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B22-T2-PRI	B22-EMERG-3	0.48	1.74	1.74	1.74	0.017	0	0.017	In Box	3	24	0.05	Class 0, Untreated Cotton
B-B22-T2-SEC	B22-EMERG-3	0.21	1.98	1.98	1.98	0.031	0	0.031	In Box	5	24	0.10	Class 0, Untreated Cotton
B-B22-T3 PRI	B22-EMERG-4	0.48	1.74	1.74	1.74	0.021	0	0.021	In Box	3	24	0.06	Class 0, Untreated Cotton
B-B22-T4-PRI	B22-EMERG-5	0.48	1.74	1.74	1.74	0.021	0	0.021	In Box	3	24	0.06	Class 0, Untreated Cotton
B-B22-T4-SEC	B22-EMERG-5	0.21	1.98	1.98	1.98	109.26	0	109.26	In Box	1162	24	366	**** Dangerous!!! No FR Class Found
B-B27-SWGR	R-B27-MAIN-1	13.8	2.7	2.70	2.7	0.34	0.083	0.423	In Box	102	36	9.64	Class 2B, FR Underwear + FR Shirt & Pants
B-B27-SWGR-M1	R-B27-MAIN-1	13.8	2.7	0.00	0	1000	0.083	1000.08	In Box		36		**** Dangerous!!! No FR Class Found (*2)
B-B33-MDP	B33-MDP-M	0.21	4.84	4.84	4.84	0.017	0	0.017	In Box	6	24	0.14	Class 0, Untreated Cotton
B-B33-MDP-M	F-B33	0.21	4.85	4.85	4.85	0.064	0	0.064	In Box	14	24	0.53	Class 0, Untreated Cotton
B-B60-MDP	B60-MDP-M	0.21	7.14	7.14	6.44	0.024	0	0.024	In Box	9	24	0.29	Class 0, Untreated Cotton
B-B60-MDP-M	F-B60	0.21	7.16	7.16	6.46	0.22	0	0.22	In Box	41	24	2.66	Class 1, FR Shirt & Pants
B-B61 STRT LGH	B61-MDP-2	0.21	7.06	7.06	6.39	0.033	0	0.033	In Box	11	24	0.39	Class 0, Untreated Cotton
B-B61-ATS-EQD	B61-MDP-10	0.21	10.59	10.59	8.79	0.033	0	0.033	In Box	15	24	0.59	Class 0, Untreated Cotton
B-B61-ATS-EQD	B94-EMDP-5	0.21	2.51	2.51	2.51	0.025	0	0.025	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B61-ATS-LSD	B61-MDP-9	0.21	10.46	10.46	8.7	0.033	0	0.033	In Box	15	24	0.58	Class 0, Untreated Cotton
B-B61-ATS-LSD	B94-EMDP-7	0.21	2.01	2.01	2.01	0.145	0	0.145	In Box	13	24	0.49	Class 0, Untreated Cotton
B-B61-COMP RM	B61-EQA-1	0.21	2.38	2.38	2.38	0.014	0	0.014	In Box	3	24	0.06	Class 0, Untreated Cotton
B-B61-DP	B61-MDP-6	0.21	10.59	10.59	8.79	0.017	0	0.017	In Box	10	24	0.31	Class 0, Untreated Cotton
B-B61-ELEV	B61-EQD-1	0.21	2.24	2.24	2.24	0.023	0	0.023	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B61-EQ1	B61-EQD-2	0.21	2.25	2.25	2.25	0.023	0	0.023	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B61-EQ2	B61-EQD-4	0.21	2.4	2.40	2.4	0.027	0	0.027	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B61-EQ4	B61-EQD-3	0.21	2.25	2.25	2.25	1.537	0	1.537	In Box	70	24	5.86	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B61-EQA	B61-MDP-10	0.21	9.66	9.66	8.16	0.066	0	0.066	In Box	22	24	1.08	Class 0, Untreated Cotton
B-B61-EQA	B94-EMDP-5	0.21	2.45	2.45	2.45	0.025	0	0.025	In Box	5	24	0.10	Class 0, Untreated Cotton
B-B61-EQD	B61-MDP-10	0.21	9.88	9.88	8.32	0.066	0	0.066	In Box	23	24	1.10	Class 0, Untreated Cotton
B-B61-EQD	B94-EMDP-5	0.21	2.46	2.46	2.46	0.025	0	0.025	In Box	5	24	0.10	Class 0, Untreated Cotton
B-B61-KITCHEN	B61-LSD-4	0.21	1.89	1.89	1.89	5.471	0	5.471	In Box	148	24	17.5	Class 3, Cotton Underwear + FR Shirt & Pant + FR Coverall
B-B61-LP1	B61-MDP-3	0.21	4.04	4.04	4.04	0.066	0	0.066	In Box	12	24	0.45	Class 0, Untreated Cotton
B-B61-LP2	B61-MDP-7	0.21	4.04	4.04	4.04	0.066	0	0.066	In Box	12	24	0.45	Class 0, Untreated Cotton
B-B61-LP3	B61-MDP-4	0.21	7.34	7.34	6.58	0.066	0	0.066	In Box	19	24	0.82	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B61-LP4	B61-MDP-8	0.21	8.53	8.53	7.4	0.033	0	0.033	In Box	13	24	0.48	Class 0, Untreated Cotton
B-B61-LP5	B61-MDP-5	0.21	6.03	6.03	5.67	0.033	0	0.033	In Box	10	24	0.34	Class 0, Untreated Cotton
B-B61-LS1	B61-LSD-5	0.21	1.74	1.74	1.74	1.06	0	1.06	In Box	46	24	3.12	Class 1, FR Shirt & Pants
B-B61-LS2	B61-LSD-6	0.21	1.85	1.85	1.85	0.947	0	0.947	In Box	44	24	2.97	Class 1, FR Shirt & Pants
B-B61-LS3	B61-LSD-1	0.21	1.68	1.68	1.68	2.897	0	2.897	In Box	89	24	8.22	Class 2B, FR Underwear + FR Shirt & Pants
B-B61-LS4	B61-LSD-2	0.21	1.74	1.74	1.74	2.672	0	2.672	In Box	86	24	7.86	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B61-LS5	B61-LSD-3	0.21	1.68	1.68	1.68	2.897	0	2.897	In Box	89	24	8.22	Class 2B, FR Underwear + FR Shirt & Pants
B-B61-LSD	B61-LSD-M	0.21	1.99	1.99	1.99	4.443	0	4.443	In Box	133	24	15.0	Class 2B, FR Underwear + FR Shirt & Pants
B-B61-LSD-M	B61-MDP-9	0.21	10.01	10.01	8.41	0.033	0	0.033	In Box	14	24	0.56	Class 0, Untreated Cotton
B-B61-LSD-M	B94-EMDP-7	0.21	1.99	1.99	1.99	0.147	0	0.147	In Box	13	24	0.50	Class 0, Untreated Cotton
B-B61-MCC	B61-MDP-1	0.21	7.06	7.06	6.39	0.033	0	0.033	In Box	11	24	0.39	Class 0, Untreated Cotton
B-B61-MDP	B61-MDP-M	0.21	12.36	12.36	9.97	0.07	0	0.07	In Box	27	24	1.46	Class 0, Untreated Cotton
B-B61-MDP-M	F-B61	0.21	12.38	12.38	9.98	2.187	0	2.187	In Box	284	24	45.8	**** Dangerous!!! No FR Class Found
B-B62-A	B62-MDP-4	0.21	13.96	13.96	11.02	0.033	0	0.033	In Box	18	24	0.78	Class 0, Untreated Cotton
B-B62-ATS-EQD	B62-MDP-6	0.21	18.05	18.05	13.63	0.033	0	0.033	In Box	19	24	0.88	Class 0, Untreated Cotton
B-B62-ATS-EQD	B94-EMDP-1	0.21	2.04	2.04	2.04	17.258	0	17.258	In Box	340	24	59.7	**** Dangerous!!! No FR Class Found
B-B62-ATS-LSD	B62-MDP-12	0.21	18.05	18.05	13.63	0.033	0	0.033	In Box	19	24	0.88	Class 0, Untreated Cotton
B-B62-ATS-LSD	B94-EMDP-8	0.21	1.59	1.59	1.59	10.546	0	10.546	In Box	205	24	28.4	Class 4, Cotton Underwear + FR Shirt & Pant + Double Layer Switching Coat
B-B62-ATTC PNL	B62-EQD-2	0.21	1.88	1.88	1.88	0.027	0	0.027	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B62-B	B62-MDP-11	0.21	14.72	14.72	11.51	0.033	0	0.033	In Box	19	24	0.82	Class 0, Untreated Cotton
B-B62-BL	B62-MDP-7	0.21	10.26	10.26	8.57	0.033	0	0.033	In Box	15	24	0.57	Class 0, Untreated Cotton
B-B62-BP	B62-MDP-2	0.21	12.97	12.97	10.37	0.033	0	0.033	In Box	17	24	0.72	Class 0, Untreated Cotton
B-B62-ELEV-1	B62-EQD-1	0.21	1.88	1.88	1.88	0.027	0	0.027	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B62-ELEV-2	B62-EQD-4	0.21	1.88	1.88	1.88	0.027	0	0.027	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B62-EQ	B62-EQD-3	0.21	1.98	1.98	1.98	0.015	0	0.015	In Box	3	24	0.05	Class 0, Untreated Cotton
B-B62-EQD	B62-MDP-6	0.21	15.44	15.44	11.98	0.033	0	0.033	In Box	19	24	0.86	Class 0, Untreated Cotton
B-B62-EQD	B94-EMDP-1	0.21	2.01	2.01	2.01	17.894	0	17.894	In Box	344	24	60.8	**** Dangerous!!! No FR Class Found
B-B62-KP	B62-MDP-8	0.21	13.09	13.09	10.45	0.033	0	0.033	In Box	17	24	0.73	Class 0, Untreated Cotton
B-B62-LP1	B62-MDP-9	0.21	13.52	13.52	10.73	0.033	0	0.033	In Box	18	24	0.76	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B62-LP2	B62-MDP-10	0.21	13.09	13.09	10.45	0.033	0	0.033	In Box	17	24	0.73	Class 0, Untreated Cotton
B-B62-LP3	B62-MDP-5	0.21	14.19	14.19	11.17	0.033	0	0.033	In Box	18	24	0.79	Class 0, Untreated Cotton
B-B62-LP4	B62-MDP-13	0.21	14.72	14.72	11.51	0.033	0	0.033	In Box	19	24	0.82	Class 0, Untreated Cotton
B-B62-LS1	B62-LSD-3	0.21	1.38	1.38	1.38	1.547	0	1.547	In Box	51	24	3.63	Class 1, FR Shirt & Pants
B-B62-LS2	B62-LSD-4	0.21	1.48	1.48	1.48	1.386	0	1.386	In Box	49	24	3.47	Class 1, FR Shirt & Pants
B-B62-LS3	B62-LSD-1	0.21	1.43	1.43	1.43	3.8	0	3.8	In Box	95	24	9.17	Class 2B, FR Underwear + FR Shirt & Pants
B-B62-LS4	B62-LSD-2	0.21	1.48	1.48	1.48	3.481	0	3.481	In Box	92	24	8.75	Class 2B, FR Underwear + FR Shirt & Pants
B-B62-LSD	B62-LSD-M	0.21	1.56	1.56	1.56	7.553	0	7.553	In Box	162	24	20.0	Class 3, Cotton Underwear + FR Shirt & Pant + FR Coverall
B-B62-LSD-M	B62-MDP-12	0.21	15.44	15.44	11.98	0.033	0	0.033	In Box	19	24	0.86	Class 0, Untreated Cotton
B-B62-LSD-M	B94-EMDP-8	0.21	1.56	1.56	1.56	10.876	0	10.876	In Box	207	24	28.8	Class 4, Cotton Underwear + FR Shirt & Pant + Double Layer Switching Coat
B-B62-MDP	B62-MDP-M	0.21	24.24	23.35	16.75	0.07	0	0.07	In Box	35	24	2.06	Class 1, FR Shirt & Pants
B-B62-MDP-M	F-B62	0.21	23.05	23.05	16.68	0.403	0	0.403	In Box	111	24	11.4	Class 2B, FR Underwear + FR Shirt & Pants
B-B62-OT	B62-MDP-1	0.21	11.86	11.86	9.64	0.033	0	0.033	In Box	16	24	0.66	Class 0, Untreated Cotton
B-B62-PAD RM	B62-EQD-5	0.21	1.95	1.95	1.95	0.983	0	0.983	In Box	47	24	3.25	Class 1, FR Shirt & Pants
B-B62-STRT LGT	B62-MDP-3	0.21	10.19	10.19	8.52	0.033	0	0.033	In Box	14	24	0.57	Class 0, Untreated Cotton
B-B70 -BLDG-71	B70-MDP-9	0.21	1.08	1.08	1.08	0.072	0	0.072	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B70 GEN-M	B70-GEN-M	0.21	2.86	0.00	0	1000	0	1000	In Box		24		**** Dangerous!!! No FR Class Found (*2)
B-B70-A	B70-MDP-4	0.21	8.15	8.15	7.14	0.033	0	0.033	In Box	12	24	0.46	Class 0, Untreated Cotton
B-B70-ATS-EQD	B70-GEN-M	0.21	2.76	2.76	2.76	0.027	0	0.027	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B70-ATS-EQD	B70-MDP-8	0.21	11.36	11.36	9.31	0.033	0	0.033	In Box	16	24	0.63	Class 0, Untreated Cotton
B-B70-ATS-LSD	B70-GEN-M	0.21	2.75	2.75	2.75	0.027	0	0.027	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B70-ATS-LSD	B70-MDP-6	0.21	10.89	10.89	8.99	0.033	0	0.033	In Box	15	24	0.61	Class 0, Untreated Cotton
B-B70-ATTIC	B70-MDP-3	0.21	7.23	7.23	6.51	0.033	0	0.033	In Box	11	24	0.40	Class 0, Untreated Cotton
B-B70-B	B70-MDP-12	0.21	8.15	8.15	7.14	0.033	0	0.033	In Box	12	24	0.46	Class 0, Untreated Cotton
B-B70-CHLLR	B70-MDP-14	0.21	5.49	5.49	5.3	0.066	0	0.066	In Box	15	24	0.61	Class 0, Untreated Cotton
B-B70-EM-TAP	B70-GEN-M	0.21	2.86	2.86	2.86	0.026	0	0.026	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B70-EQ1	B70-EQD-1	0.21	2.41	2.41	2.41	0.037	0	0.037	In Box	6	24	0.15	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B70-EQ2	B70-EQD-2	0.21	2.25	2.25	2.25	2.12	0	2.12	In Box	87	24	8.07	Class 2B, FR Underwear + FR Shirt & Pants
B-B70-EQ3	B70-EQD-1	0.21	2.36	2.36	2.36	0.111	0	0.111	In Box	12	24	0.44	Class 0, Untreated Cotton
B-B70-EQ4	B70-EQD-2	0.21	2.2	2.20	2.2	2.233	0	2.233	In Box	89	24	8.31	Class 2B, FR Underwear + FR Shirt & Pants
B-B70-EQ5	B70-EQD-1	0.21	2.3	2.30	2.3	0.415	0	0.415	In Box	29	24	1.62	Class 0, Untreated Cotton
B-B70-EQ6	B70-EQD-2	0.21	2.15	2.15	2.15	2.351	0	2.351	In Box	91	24	8.55	Class 2B, FR Underwear + FR Shirt & Pants
B-B70-EQD	B70-EQD-M	0.21	10.84	10.84	8.96	0.019	0	0.019	In Box	10	24	0.34	Class 0, Untreated Cotton
B-B70-EQD-M	B70-GEN-M	0.21	2.74	2.74	2.74	0.027	0	0.027	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B70-EQD-M	B70-MDP-8	0.21	10.88	10.88	8.98	0.033	0	0.033	In Box	15	24	0.61	Class 0, Untreated Cotton
B-B70-FIRE PMP	B70-FIREPMP-N	0.21	3.22	3.22	3.22	15.665	0	15.665	In Box	433	24	85.3	**** Dangerous!!! No FR Class Found
B-B70-FPMP M	B70-FIREPMP-N	0.21	11.4	11.40	9.33	0.027	0	0.027	In Box	13	24	0.51	Class 0, Untreated Cotton
B-B70-FP-TAP	F-B70	0.21	12.25	12.25	9.9	2.316	0	2.316	In Box	293	24	48.0	**** Dangerous!!! No FR Class Found
B-B70-GEN	B70-GEN-M	0.21	2.88	0.00	0	1000	0	1000	In Box		24		**** Dangerous!!! No FR Class Found (*2)
B-B70-K	B70-MDP-5	0.21	6.48	6.48	5.99	0.033	0	0.033	In Box	11	24	0.36	Class 0, Untreated Cotton
B-B70-LP1	B70-MDP-10	0.21	6.06	6.06	5.7	0.033	0	0.033	In Box	10	24	0.34	Class 0, Untreated Cotton
B0B70-LP2	B70-MDP-2	0.21	5.06	5.06	4.99	0.066	0	0.066	In Box	14	24	0.57	Class 0, Untreated Cotton
B-B70-LP3	B70-MDP-11	0.21	6.56	6.56	6.04	0.033	0	0.033	In Box	11	24	0.37	Class 0, Untreated Cotton
B-B70-LP-4	B70-MDP-13	0.21	5.5	5.50	5.3	0.066	0	0.066	In Box	15	24	0.61	Class 0, Untreated Cotton
B-B70-LS1	B70-LSD-1	0.21	2.25	2.25	2.25	0.64	0	0.64	In Box	39	24	2.43	Class 1, FR Shirt & Pants
B-B70-LS2	B70-LSD-3	0.21	2.08	2.08	2.08	0.747	0	0.747	In Box	41	24	2.63	Class 1, FR Shirt & Pants
B-B70-LS3	B70-LSD-2	0.21	2.3	2.30	2.3	0.439	0	0.439	In Box	31	24	1.71	Class 0, Untreated Cotton
B-B70-LS4	B70-LSD-4	0.21	2.12	2.12	2.12	2.416	0	2.416	In Box	92	24	8.68	Class 2B, FR Underwear + FR Shirt & Pants
B-B70-LS5	B70-LSD-2	0.21	2.24	2.24	2.24	1.518	0	1.518	In Box	70	24	5.75	Class 2A, Cotton Underwear + FR Shirt & Pants
B-B70-LS6	B70-LSD-4	0.21	2.06	2.06	2.06	2.566	0	2.566	In Box	94	24	8.97	Class 2B, FR Underwear + FR Shirt & Pants
B-B70-LSD	B70-LSD-M	0.21	2.72	2.72	2.72	2.424	0	2.424	In Box	109	24	11.2	Class 2B, FR Underwear + FR Shirt & Pants
B-B70-LSD-M	B70-GEN-M	0.21	2.72	2.72	2.72	0.027	0	0.027	In Box	5	24	0.13	Class 0, Untreated Cotton
B-B70-LSD-M	B70-MDP-6	0.21	10.44	10.44	8.69	0.033	0	0.033	In Box	15	24	0.58	Class 0, Untreated Cotton
B-B70-MDP	B70-MDP-M	0.21	12.39	12.39	9.99	0.07	0	0.07	In Box	28	24	1.47	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B70-MDP-M	F-B70	0.21	12.42	12.42	10.01	2.151	0	2.151	In Box	282	24	45.2	**** Dangerous!!! No FR Class Found
B-B70-PP2	B70-MDP-7	0.21	7.89	7.89	6.96	0.033	0	0.033	In Box	12	24	0.44	Class 0, Untreated Cotton
B-B70-PP220	B70-MDP-15	0.21	5.83	5.83	5.53	0.066	0	0.066	In Box	16	24	0.65	Class 0, Untreated Cotton
B-B70-STRTLGHT	B70-MDP-1	0.21	7.03	7.03	6.37	0.033	0	0.033	In Box	11	24	0.39	Class 0, Untreated Cotton
B-B78-1P	B78-MDP-310A	0.21	5.7	5.70	5.44	0.025	0	0.025	In Box	8	24	0.24	Class 0, Untreated Cotton
B-B78-78AE1	B95-EMDP-2	0.21	2.46	2.46	2.46	0.025	0	0.025	In Box	5	24	0.10	Class 0, Untreated Cotton
B-B78-78AE1	PD-0445	0.21	14.82	14.82	11.58	0.023	0	0.023	In Box	14	24	0.56	Class 0, Untreated Cotton
B-B78-A/C	B78-MDP-22B	0.21	3.66	3.66	3.66	0.025	0	0.025	In Box	6	24	0.16	Class 0, Untreated Cotton
B-B78A-PNL-2	B78-MDP-41A	0.21	14.51	14.51	11.38	0.025	0	0.025	In Box	15	24	0.61	Class 0, Untreated Cotton
B-B78-ATS TAP	B78-MDP-24	0.21	17.23	17.23	13.11	0.025	0	0.025	In Box	16	24	0.67	Class 0, Untreated Cotton
B-B78-ATS-CRD	B78-MDP-49B	0.21	5.24	5.24	5.12	0.025	0	0.025	In Box	8	24	0.22	Class 0, Untreated Cotton
B-B78-ATS-CRD	B95-EMDP-1	0.21	4.41	4.41	4.41	0.025	0	0.025	In Box	7	24	0.19	Class 0, Untreated Cotton
B-B78-ATS-E1	B78-MDP-34	0.21	7.69	7.69	6.82	0.025	0	0.025	In Box	10	24	0.33	Class 0, Untreated Cotton
B-B78-ATS-E1	B95-EMDP-4	0.21	4.76	4.76	4.76	0.025	0	0.025	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B78-ATSG9578	B95-EMDP-2	0.21	2.48	2.48	2.48	0.025	0	0.025	In Box	5	24	0.10	Class 0, Untreated Cotton
B-B78-ATSG9578	PD-0445	0.21	15.34	15.34	11.91	0.023	0	0.023	In Box	15	24	0.58	Class 0, Untreated Cotton
B-B78-ATS-LS1	B95-EMDP-3	0.21	4.49	4.49	4.49	0.025	0	0.025	In Box	7	24	0.19	Class 0, Untreated Cotton
B-B78-ATS-LS1	PD-0446	0.21	13.74	13.74	10.87	0.023	0	0.023	In Box	14	24	0.52	Class 0, Untreated Cotton
B-B78-BARBER	B78-MDP-211B	0.21	3.03	3.03	3.03	0.016	0	0.016	In Box	4	24	0.08	Class 0, Untreated Cotton
B-B78-CONRM-AC	B78-MDP-410B	0.21	2.17	2.17	2.17	0.022	0	0.022	In Box	4	24	0.08	Class 0, Untreated Cotton
B-B78-CRD	B78-MDP-49B	0.21	2.89	2.89	2.89	0.025	0	0.025	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B78-CRD	B95-EMDP-1	0.21	2.75	2.75	2.75	0.025	0	0.025	In Box	5	24	0.12	Class 0, Untreated Cotton
B-B78-E1	B78-MDP-34	0.21	7.55	7.55	6.73	0.025	0	0.025	In Box	10	24	0.32	Class 0, Untreated Cotton
B-B78-E1	B95-EMDP-4	0.21	4.71	4.71	4.71	0.025	0	0.025	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B78-ELEV-1	B78-MDP-29A	0.21	14.51	14.51	11.38	0.025	0	0.025	In Box	15	24	0.61	Class 0, Untreated Cotton
B-B78-ELEV-2	B780MDP-29B	0.21	14.51	14.51	11.38	0.025	0	0.025	In Box	15	24	0.61	Class 0, Untreated Cotton
B-B78-FLPNL	B78-MDP-310B	0.21	4.86	4.86	4.86	0.025	0	0.025	In Box	7	24	0.21	Class 0, Untreated Cotton
B-B78-KK	B78-MDP-39A	0.21	6.67	6.67	6.12	0.025	0	0.025	In Box	9	24	0.28	Class 0, Untreated Cotton
B-B78-L10	B78-MDP-35	0.21	6.53	6.53	6.02	0.025	0	0.025	In Box	9	24	0.28	Class 0, Untreated Cotton
B-B78-LP-1	B78-MDP-38	0.21	6.21	6.21	5.8	0.025	0	0.025	In Box	9	24	0.26	Class 0, Untreated Cotton
B-B78-LP10	B78-MDP-25	0.21	5.8	5.80	5.51	0.025	0	0.025	In Box	8	24	0.25	Class 0, Untreated Cotton
B-B78-LP13	B78-MDP-25	0.21	5.32	5.32	5.18	0.025	0	0.025	In Box	8	24	0.23	Class 0, Untreated Cotton
B-B78-LP-13	B78-MDP-35	0.21	6.03	6.03	5.67	0.025	0	0.025	In Box	8	24	0.26	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B78-LP-14	B78-MDP-35	0.21	5.59	5.59	5.37	0.025	0	0.025	In Box	8	24	0.24	Class 0, Untreated Cotton
B-B78-LP-15	B78-MDP-35	0.21	5.22	5.22	5.11	0.025	0	0.025	In Box	8	24	0.22	Class 0, Untreated Cotton
B-B78-LP-2	B78-MDP-47	0.21	10.84	10.84	8.96	0.025	0	0.025	In Box	12	24	0.46	Class 0, Untreated Cotton
B-B78-LP3	B78-MDP-28	0.21	10.84	10.84	8.96	0.025	0	0.025	In Box	12	24	0.46	Class 0, Untreated Cotton
B-B78-LP-4	B78-MDP-38	0.21	3.68	3.68	3.68	0.027	0	0.027	In Box	6	24	0.17	Class 0, Untreated Cotton
B-B78-LP6	B78-MDP-28	0.21	9.03	9.03	7.74	0.025	0	0.025	In Box	11	24	0.38	Class 0, Untreated Cotton
B-B78-LP7	B78-MDP-25	0.21	6.37	6.37	5.91	0.025	0	0.025	In Box	9	24	0.27	Class 0, Untreated Cotton
B-B78-LP-8	B78-MDP-44	0.21	12.44	12.44	10.02	0.025	0	0.025	In Box	14	24	0.53	Class 0, Untreated Cotton
B-B78-LSD	B95-EMDP-3	0.21	4.43	4.43	4.43	0.025	0	0.025	In Box	7	24	0.19	Class 0, Untreated Cotton
B-B78-LSD	PD-0446	0.21	13.16	13.16	10.5	0.023	0	0.023	In Box	13	24	0.50	Class 0, Untreated Cotton
B-B78-MDP	B78-MDP-M	0.21	35.51	35.51	23.64	0.025	0	0.025	In Box	26	24	1.32	Class 0, Untreated Cotton
B-B78-MDP-M	F-B78	0.21	35.54	35.54	23.65	27.509	0	27.509	In Box	2941	24	1437	**** Dangerous!!! No FR Class Found
B-B78-MEC-1 AC	B78-MDP-36	0.21	7.17	7.17	6.46	0.026	0	0.026	In Box	10	24	0.31	Class 0, Untreated Cotton
B-B78-MEC2-A/C	B78-MDP-45	0.21	16.15	16.15	12.43	0.025	0	0.025	In Box	16	24	0.68	Class 0, Untreated Cotton
B-B78-PHARM AC	B78-MDP-31A	0.21	3.03	3.03	3.03	0.016	0	0.016	In Box	4	24	0.08	Class 0, Untreated Cotton
B-B78-PHV	B78-MDP-311B	0.21	2.78	2.78	2.78	0.017	0	0.017	In Box	4	24	0.08	Class 0, Untreated Cotton
B-B78-PK	B78-MDP-49A	0.21	5.72	5.72	5.45	0.025	0	0.025	In Box	8	24	0.24	Class 0, Untreated Cotton
B-B78-PNL-330A	B78-MDP-48A	0.21	10.17	10.17	8.51	0.025	0	0.025	In Box	12	24	0.43	Class 0, Untreated Cotton
B-B78-PULM 78B	B78-MDP-27	0.21	17.23	17.23	13.11	0.025	0	0.025	In Box	16	24	0.67	Class 0, Untreated Cotton
B-B78-QP	B78-MDP-210A	0.21	11.42	11.42	9.35	0.025	0	0.025	In Box	13	24	0.48	Class 0, Untreated Cotton
B-B80-ATS-EQ	B80-MDP-7	0.21	6.83	6.83	6.23	0.017	0	0.017	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B80-ATS-EQ	B93-EMDP-2	0.21	1.69	1.69	1.69	0.025	0	0.025	In Box	4	24	0.07	Class 0, Untreated Cotton
B-B80-E1	B80-MDP-7	0.21	5.88	5.88	5.57	0.018	0	0.018	In Box	6	24	0.17	Class 0, Untreated Cotton
B-B80-E1	B93-EMDP-2	0.21	1.62	1.62	1.62	0.025	0	0.025	In Box	3	24	0.07	Class 0, Untreated Cotton
B-B80-L1-1	B80-MDP-1	0.21	2.98	2.98	2.98	0.018	0	0.018	In Box	4	24	0.09	Class 0, Untreated Cotton
B-B80-L1-3	B80-MDP-4	0.21	3.41	3.41	3.41	0.019	0	0.019	In Box	5	24	0.11	Class 0, Untreated Cotton
B-B80-LB-1	B80-MDP-6	0.21	7.77	7.77	6.88	0.017	0	0.017	In Box	8	24	0.23	Class 0, Untreated Cotton
B-B80-LB-E	B80-E1-1	0.21	1.42	1.42	1.42	4.677	0	4.677	In Box	110	24	11.3	Class 2B, FR Underwear + FR Shirt & Pants
B-B80-MDP	B80-MDP-M	0.21	11.02	11.02	9.08	0.02	0	0.02	In Box	11	24	0.37	Class 0, Untreated Cotton
B-B80-MDP-M	F-B80	0.21	11.7	11.70	9.53	0.131	0	0.131	In Box	41	24	2.60	Class 1, FR Shirt & Pants
B-B80-P1	B80-MDP-2	0.21	8.09	8.09	7.1	0.017	0	0.017	In Box	8	24	0.24	Class 0, Untreated Cotton
B-B80-P5	B80-MDP-3	0.21	1.7	1.70	1.7	0.019	0	0.019	In Box	3	24	0.06	Class 0, Untreated Cotton

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-B80-PB-1	B80-MDP-5	0.21	3.07	3.07	3.07	0.02	0	0.02	In Box	5	24	0.10	Class 0, Untreated Cotton
B-B80-PB-2	B80-E1-2	0.21	1.5	1.50	1.5	4.252	0	4.252	In Box	106	24	10.8	Class 2B, FR Underwear + FR Shirt & Pants
B-B81-MDP	B81-MDP-M	0.21	4.27	4.27	4.27	0.027	0	0.027	In Box	7	24	0.20	Class 0, Untreated Cotton
B-B81-MDP-M	F-B81	0.21	4.27	4.27	4.27	0.087	0	0.087	In Box	15	24	0.63	Class 0, Untreated Cotton
B-B92 GEN	B92-EMDP-M	0.21	6.93	0.00	0	1000	0	1000	In Box		24		**** Dangerous!!! No FR Class Found (*2)
B-B92-ATS	B2-MDPA-1	0.21	5.63	5.63	5.39	0.011	0	0.011	In Box	5	24	0.10	Class 0, Untreated Cotton
B-B92-ATS	B92-EMDP-1	0.21	6.03	6.03	5.68	0.025	0	0.025	In Box	8	24	0.26	Class 0, Untreated Cotton
B-B92-EMDP	B92-EMDP-M	0.21	6.85	6.85	6.24	0.128	0	0.128	In Box	28	24	1.49	Class 0, Untreated Cotton
B-B92-EMDP-M	B92-EMDP-M	0.21	6.85	0.00	0	1000	0	1000	In Box		24		**** Dangerous!!! No FR Class Found (*2)
B-B92-PNL-E1	B2-MDPA-1	0.21	5.14	5.14	5.05	0.011	0	0.011	In Box	4	24	0.10	Class 0, Untreated Cotton
B-B92-PNL-E1	B92-EMDP-1	0.21	5.68	5.68	5.43	0.025	0	0.025	In Box	8	24	0.24	Class 0, Untreated Cotton
B-B93-EMDP	B93-EMDP-M	0.21	6.8	6.80	6.21	0.128	0	0.128	In Box	28	24	1.47	Class 0, Untreated Cotton
B-B93-EMDP1	B93-EMDP-M	0.21	6.77	6.77	6.19	0.128	0	0.128	In Box	28	24	1.47	Class 0, Untreated Cotton
B-B93-EMDP-M	B93-EMDP-M	0.21	6.8	0.00	0	1000	0	1000	In Box		24		**** Dangerous!!! No FR Class Found (*2)
B-B93-GEN	B93-EMDP-M	0.21	6.93	0.00	0	1000	0	1000	In Box		24		**** Dangerous!!! No FR Class Found (*2)
B-B94-ATS	B7-MDP-5	0.21	5.27	5.27	5.14	0.032	0	0.032	In Box	9	24	0.29	Class 0, Untreated Cotton
B-B94-ATS	B94-EMDP-6	0.21	6.17	6.17	5.77	0.025	0	0.025	In Box	9	24	0.26	Class 0, Untreated Cotton
B-B94-EMDP	B94-EMDP-M	0.21	6.8	6.80	6.21	0.235	0	0.235	In Box	42	24	2.71	Class 1, FR Shirt & Pants
B-B94-EMDP-M	B94-EMDP-M	0.21	6.8	0.00	0	1000	0	1000	In Box		24		**** Dangerous!!! No FR Class Found (*2)
B-B94-GEN	B94-EMDP-M	0.21	6.93	0.00	0	1000	0	1000	In Box		24		**** Dangerous!!! No FR Class Found (*2)
B-B95-EMDP	B95-EMDP-M	0.21	6.8	6.80	6.21	0.128	0	0.128	In Box	28	24	1.47	Class 0, Untreated Cotton
B-B95-EMDP-M	B95-EMDP-M	0.21	6.8	0.00	0	1000	0	1000	In Box		24		**** Dangerous!!! No FR Class Found (*2)
B-B95-GEN	B95-EMDP-M	0.21	6.93	0.00	0	1000	0	1000	In Box		24		**** Dangerous!!! No FR Class Found (*2)
B-SWGR27 TAP	R-B27-MAIN-1	13.8	2.7	2.70	2.7	0.34	0.083	0.423	In Box	102	36	9.64	Class 2B, FR Underwear + FR Shirt & Pants
B-SW-MV-1	R-B27-SWGR B7	13.8	2.42	2.42	2.42	0.1	0.083	0.183	In Box	64	36	3.74	Class 1, FR Shirt & Pants
B-SW-MV-2	R-B27-SWGR B5	13.8	2.51	2.51	2.51	0.1	0.083	0.183	In Box	65	36	3.88	Class 1, FR Shirt & Pants

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-T-13-PRI	B-27-SWGR B8	13.8	2.49	2.49	2.49	0.016	0.083	0.099	In Box	47	36	2.09	Class 1, FR Shirt & Pants
B-T-B10-PRI	B-27-SWGR B8	13.8	2.54	2.54	2.54	0.016	0.083	0.099	In Box	48	36	2.13	Class 1, FR Shirt & Pants
B-T-B10-SEC	F-B10	0.21	6.15	6.15	5.76	0.089	0	0.089	In Box	20	24	0.93	Class 0, Untreated Cotton
B-T-B12-PRI	B-27-SWGR B8	13.8	2.46	2.46	2.46	0.016	0.083	0.099	In Box	47	36	2.07	Class 1, FR Shirt & Pants
B-T-B12-SEC	F-B12	0.21	4.72	4.72	4.72	0.068	0	0.068	In Box	14	24	0.55	Class 0, Untreated Cotton
B-T-B17-PRI	R-B27-SWGR B7	13.8	2.19	2.19	2.19	0.1	0.083	0.183	In Box	60	36	3.39	Class 1, FR Shirt & Pants
B-T-B17-SEC	F-B17	0.21	12.31	12.31	9.93	0.123	0	0.123	In Box	40	24	2.55	Class 1, FR Shirt & Pants
B-T-B18-PRI	R-B27-SWGR B7	13.8	2.18	2.18	2.18	0.1	0.083	0.183	In Box	60	36	3.38	Class 1, FR Shirt & Pants
B-T-B18-SEC	F-B18	0.21	11.75	11.75	9.56	0.131	0	0.131	In Box	41	24	2.60	Class 1, FR Shirt & Pants
B-T-B19-PRI	R-B27-SWGR B5	13.8	2.61	2.61	2.61	0.1	0.083	0.183	In Box	66	36	4.04	Class 1, FR Shirt & Pants
B-T-B19-SEC	F-B19	0.21	22.58	22.58	16.4	12.712	0	12.712	In Box	1140	24	355	**** Dangerous!!! No FR Class Found
B-T-B1-PRI	R-B27-SWGR B7	13.8	2.39	2.39	2.39	0.1	0.083	0.183	In Box	63	36	3.69	Class 1, FR Shirt & Pants
B-T-B1-SEC	F-B1	0.21	4.93	4.93	4.93	0.062	0	0.062	In Box	14	24	0.51	Class 0, Untreated Cotton
B-T-B22-PRI	R-B27-SWGR B5	13.8	2.64	2.64	2.64	0.1	0.083	0.183	In Box	66	36	4.09	Class 1, FR Shirt & Pants
B-T-B22-SEC	F-B22	0.48	8.71	8.71	7.52	0.12	0	0.12	In Box	31	24	1.77	Class 0, Untreated Cotton
B-T-B2-LED-PRI	B2-MDP-2	0.48	10.62	10.62	8.82	0.022	0	0.022	In Box	11	24	0.39	Class 0, Untreated Cotton
B-T-B2-LED-SEC	B2-MDP-2	0.21	3.64	3.64	3.64	0.041	0	0.041	In Box	8	24	0.25	Class 0, Untreated Cotton
B-T-B2-PRI	R-B27-SWGR B7	13.8	2.4	2.40	2.4	0.1	0.083	0.183	In Box	63	36	3.72	Class 1, FR Shirt & Pants
B-T-B2-SEC2	F-B2	0.21	42.19	67.67	43.28	0.896	0	0.896	In Box	373	24	68.4	**** Dangerous!!! No FR Class Found
B-T-B2-SEC3	F-B2A	0.21	13.44	13.44	10.68	0.434	0	0.434	In Box	100	24	9.88	Class 2B, FR Underwear + FR Shirt & Pants
B-T-B2-SEC4	R-B27-SWGR B7	0.48	21.68	21.68	15.86	3.54	0.05	3.59	In Box	477	24	98.3	**** Dangerous!!! No FR Class Found
B-T-B30-PRI	R-B27-SWGR B7	13.8	2.29	2.29	2.29	0.1	0.083	0.183	In Box	62	36	3.55	Class 1, FR Shirt & Pants
B-T-B30-SEC	F-B30	0.21	4.93	4.93	4.93	0.025	0	0.025	In Box	7	24	0.21	Class 0, Untreated Cotton
B-T-B33-PRI	R-B27-SWGR B5	13.8	2.67	2.67	2.67	0.1	0.083	0.183	In Box	67	36	4.14	Class 1, FR Shirt & Pants
B-T-B33-SEC	F-B33	0.21	6.28	6.28	5.85	0.041	0	0.041	In Box	12	24	0.44	Class 0, Untreated Cotton
B-T-B3-PRI	B-27-SWGR B8	13.8	2.58	2.58	2.58	0.016	0.083	0.099	In Box	48	36	2.17	Class 1, FR Shirt & Pants
B-T-B3-SEC	F-B3	0.21	19.08	19.08	14.27	0.154	0	0.154	In Box	55	24	4.08	Class 1, FR Shirt & Pants
B-T-B4-PRI	R-B27-SWGR B5	13.8	2.54	2.54	2.54	0.1	0.083	0.183	In Box	65	36	3.93	Class 1, FR Shirt & Pants
B-T-B4-SEC	F-B4	0.21	27.39	27.39	19.21	22.293	0	22.293	In Box	1885	24	746	**** Dangerous!!! No FR Class Found
B-T-B5-PRI	R-B27-SWGR B7	13.8	2.43	2.43	2.43	0.1	0.083	0.183	In Box	64	36	3.76	Class 1, FR Shirt & Pants
B-T-B5-SEC	F-B5	0.21	27.81	26.26	18.36	0.235	0	0.235	In Box	87	24	8.04	Class 2B, FR Underwear + FR Shirt & Pants
B-T-B60-PRI	R-B27-SWGR B7	13.8	2.21	2.21	2.21	0.1	0.083	0.183	In Box	61	36	3.42	Class 1, FR Shirt & Pants

Bus Name	Protective Device Name	kV	Bus Bolted Fault (kA)	Prot Dev Bolted Fault (kA)	Arcing Fault (kA)	Trip/ Delay Time (sec.)	Breaker Opening Time (sec.)	Duration of Arc (sec.)	Arc Type	Arc Flash Boundary (in)	Working Distance (in)	Incident Energy (cal/cm2)	Required Protective FR Clothing Class
B-T-B60-SEC	F-B60	0.21	7.79	7.79	6.89	0.181	0	0.181	In Box	38	24	2.39	Class 1, FR Shirt & Pants
B-T-B61-PRI	R-B27-SWGR B7	13.8	2.53	2.53	2.53	0.1	0.083	0.183	In Box	65	36	3.92	Class 1, FR Shirt & Pants
B-T-B61-SEC	F-B61	0.21	13.66	13.66	10.83	1.3	0	1.3	In Box	213	24	30.1	Class 4, Cotton Underwear + FR Shirt & Pant + Double Layer Switching Coat
B-T-B62-PRI	R-B27-SWGR B7	13.8	2.56	2.56	2.56	0.1	0.083	0.183	In Box	65	36	3.96	Class 1, FR Shirt & Pants
B-T-B62-SEC	F-B62	0.21	25.7	25.70	18.24	0.244	0	0.244	In Box	84	24	7.59	Class 2A, Cotton Underwear + FR Shirt & Pants
B-T-B6-PRI	R-B27-SWGR B7	13.8	2.45	2.45	2.45	0.1	0.083	0.183	In Box	64	36	3.80	Class 1, FR Shirt & Pants
B-T-B6-SEC	F-B6	0.21	25.79	25.79	18.29	0.08	0	0.08	In Box	40	24	2.50	Class 1, FR Shirt & Pants
B-T-B70-PRI	R-B27-SWGR B7	13.8	2.35	2.35	2.35	0.1	0.083	0.183	In Box	63	36	3.64	Class 1, FR Shirt & Pants
B-T-B70-SEC	F-B70	0.21	15.06	15.06	11.73	0.829	0	0.829	In Box	168	24	21.1	Class 3, Cotton Underwear + FR Shirt & Pant + FR Coverall
B-T-B78-PRI	B-27-SWGR B8	13.8	2.56	2.56	2.56	0.016	0.083	0.099	In Box	48	36	2.15	Class 1, FR Shirt & Pants
B-T-B78-SEC	F-B78	0.21	35.68	35.68	23.72	27.195	0	27.195	In Box	2934	24	1431	**** Dangerous!!! No FR Class Found
B-T-B7-PRI	R-B27-SWGR B7	13.8	2.49	2.49	2.49	0.1	0.083	0.183	In Box	65	36	3.85	Class 1, FR Shirt & Pants
B-T-B7-SEC	F-B7	0.21	19.97	19.97	14.82	0.138	0	0.138	In Box	51	24	3.67	Class 1, FR Shirt & Pants
B-T-B80-PRI	R-B27-SWGR B5	13.8	2.52	2.52	2.52	0.1	0.083	0.183	In Box	65	36	3.91	Class 1, FR Shirt & Pants
B-T-B80-SEC	F-B80	0.21	12.47	12.47	10.04	0.12	0	0.12	In Box	40	24	2.54	Class 1, FR Shirt & Pants
B-T-B81-PRI	B-27-SWGR B8	13.8	2.45	2.45	2.45	0.016	0.083	0.099	In Box	47	36	2.06	Class 1, FR Shirt & Pants
B-T-B81-SEC	F-B81	0.21	4.74	4.74	4.74	0.068	0	0.068	In Box	14	24	0.54	Class 0, Untreated Cotton
B-T-B82-PRI	R-B27-SWGR B5	13.8	2.56	2.56	2.56	0.1	0.083	0.183	In Box	65	36	3.97	Class 1, FR Shirt & Pants
B-T-B82-SEC	F-B82	0.21	7.8	7.80	6.9	0.031	0	0.031	In Box	12	24	0.41	Class 0, Untreated Cotton
B-T-B8-PRI	R-B27-SWGR B7	13.8	2.57	2.57	2.57	0.1	0.083	0.183	In Box	66	36	3.98	Class 1, FR Shirt & Pants
B-T-B8-SEC	F-B8	0.21	20.05	20.05	14.87	0.137	0	0.137	In Box	51	24	3.65	Class 1, FR Shirt & Pants
B-T-B9-PRI	B-27-SWGR B8	13.8	2.51	2.51	2.51	0.016	0.083	0.099	In Box	48	36	2.10	Class 1, FR Shirt & Pants
B-T-B9-SEC	F-B9	0.21	18.51	18.51	13.91	0.177	0	0.177	In Box	61	24	4.69	Class 1, FR Shirt & Pants

5.4 Approach Boundaries to Live Parts for Shock Protection

For all of the electrical equipment evaluated in the Arc-Flash Hazard Analysis, the following Table 5.2 is provided for the “Approach Boundaries To Live Parts for Shock Protection”, which is defined by the NFPA 70E, 2000 Edition, Table 2-1.3.4.

NFPA-70E defines these boundaries as shown below:

Limited Approach Boundary: An approach limit at a distance from an exposed live part within which a shock hazard exists

Restricted Approach Boundary: A shock protection boundary to be crossed only by qualified persons (at a distance from a live part) which, due to its proximity to a shock hazard, requires the use of shock protection techniques and equipment when crossed.

Prohibited Approach Boundary: An approach limit at a distance from and exposed live part within which work is considered the same as making contact with the live part.

Table 5.2 – Approach Boundaries to Live Parts for Shock Protection

Bus Name	Protective Device Name	Line-Line Voltage kV	Limited Approach Boundary: Exposed Movable Conductor	Limited Approach Boundary: Exposed Fixed Circuit Part	Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
B-B1-MDP	B1-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B1-MDP-M	F-B1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-ATS-CRIT	B2-MDPB-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-ATS-CRIT	B92-EMDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-ATS-LED3	B2-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-ATS-LED3	B92-EMDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-ATS-LS	B2-MDPB-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-ATS-LS	B92-EMDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-BATTERYCH	B2-LS-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-CATSCAN	B2-MDP-1	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B2-CRIT PNL	B2-MDPB-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-CRIT PNL	B92-EMDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-DENTAL LB	B2-CRIT-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-DENTSUCPM	B2-LS-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-ELEV	B2-LS-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-ELEV-P1	B2-CRIT-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-EMERG-M	B2-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-EMERG-M	B92-EMDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-EMERG-PNL	B2-EMERG-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-EPNL-B	B92-EMDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-EPNL-B-M	B92-EMDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-L12	B2-LS-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-L2A	B2-CRIT-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-L2E	B2-LS-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-L4	B2-MDPB-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-L6	B2-MDPB-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-L7	B2-MDPB-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-L8	B2-MDPB-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-L9E	B2-LS-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-LB1E	B2-LS-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-LB2	B2-MDPB-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-LB2E	B2-CRIT-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-LED-3	B2-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-MDP	B2-MDP-M	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B2-MDPA	B2-MDPA-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-MDPA-M	F-B2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-MDPB	B2-MDPB-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-MDPB-M	F-B2A	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-MDP-M	R-B27-SWGR B7	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B2-MEDAIRCOM	B2-CRIT-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-NEWLAB	B2-NEWLAB-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-NEWLAB-M	B2-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-NEWLAB-M	B92-EMDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-PNL 1	B2-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

Bus Name	Protective Device Name	Line-Line Voltage kV	Limited Approach Boundary: Exposed Movable Conductor	Limited Approach Boundary: Exposed Fixed Circuit Part	Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
B-B2-PNL 1	B92-EMDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-PNL LS	B2-MDPB-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-PNL LS	B92-EMDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-PNL-2	B2-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-PNL-2	B92-EMDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-PNL-3-M	B2-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-PNL-3-M	B92-EMDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-PNL-D2	B2-MDPA-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-PNL-L11	B2-CRIT-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-PNL-M1	B2-PNL-3-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-PNL-P	B2-MDP-3	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B2-POD2PP	B2-LS-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-TEL COMM	B2-MDPB-11	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-UNIT-1	B2-P-3	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B2-UNIT-2	B2-P-4	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B2-XRAY	B2-MDPB-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-XRAY124	B2-MDPB-10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B2-XRAY-124	B2-MDP-4	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B3-1ST FL	B3-EP1-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-ALDN KIT	B3-EP2-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-ATS-COMP	B3-MDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-ATS-COMP	B95-EMDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-ATSTEL RM	B3-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-ATSTEL RM	B95-EMDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-COMP	B3-EP2-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-COMP AC	B3-EP2-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-COMP MF	B3-EP2-10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-DBL GRILL	B3-EP1-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-ELEV	B3-EP2-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-EP1	BE-EP1-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-EP1-M	B3-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-EP1-M	B95-EMDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-EP2	B3-EP2-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-EP2-M	B3-MDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-EP2-M	B95-EMDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-FRZN FOOD	B3-MDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-HYDRO ELV	B3-EP2-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-KP1	B3-EP1-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-MDP	B3-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-MDP-M	F-B3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-MECH HVAC	B3-EP2-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-MECH RM	B3-EP2-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-P3	B3-MDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-P7	B3-EP1-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

Bus Name	Protective Device Name	Line-Line Voltage kV	Limited Approach Boundary: Exposed Movable Conductor	Limited Approach Boundary: Exposed Fixed Circuit Part	Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
B-B3-STRT LTS	B3-MDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-STRT PNL	B3-EP2-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-TELE PNL	B3-EP1-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B3-TRAY LINE	B3-EP2-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-4EQD	B4-4EQD-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-4EQD-M	B4-MDP-10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-4EQD-M	B93-EMDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-ATS-EQ	B4-MDP-10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-ATS-EQ	B93-EMDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-ATS-LS	B4-MDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-ATS-LS	B93-EMDP1-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-BUS	F-B4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-ELEV#4	B4-4EQD-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-EQ1	B4-4EQD-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-EQ10	B4-4EQD-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-EQ11	B4-4EQD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-EQ12	B4-4EQD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-EQ15	B4-4EQD-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-EQ2	B4-4EQD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-EQ3	B4-4EQD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-EQ5	B4-4EQD-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-EQ6	B4-4EQD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-EQ7	B4-4EQD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-EQ9	B4-4EQD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-HYDROELEV	B4-4EQD-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-JBOX	F-B4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP1	B4-LP1-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP10	B4-LP10-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP10-M	B4-MDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP11	B4-LP11-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP11-M	B4-MDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP12	B4-LP12-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP12-M	B4-MDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP13	B4-LP13-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP13-M	B4-MDP-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP14	B4-LP14-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP14-M	B4-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP15	B4-LP15-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP15-M	B4-LSD-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP1-M	B4-MDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP2	B4-LP2-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP2-M	B4-MDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP3	B4-LP3-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP3-M	B4-MDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

Bus Name	Protective Device Name	Line-Line Voltage kV	Limited Approach Boundary: Exposed Movable Conductor	Limited Approach Boundary: Exposed Fixed Circuit Part	Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
B-B4-LP4	B4-LP4-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP4-M	B4-MDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP5	B4-LP5-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP5-M	B4-MDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP6	B4-LP6-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP6-M	B4-MDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP7	B4-LP7-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP7-M	B4-MDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP8	B4-LP8-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP8-M	B4-MDP-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP9	B4-LP9-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LP9-M	B4-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS1	B4-LS1-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS10	B4-LS10-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS10-M	B4-LSD-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS11	B4-LS11-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS11-M	B4-LSD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS12	B4-LS12-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS12-M	B4-LSD-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS13	B4-LS13-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS13-M	B4-LSD-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS14	B4-LS14-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS14-M	B4-LSD-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS1-M	B4-LSD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS2	B4-LS2-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS2-M	B4-LSD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS3	B4-LS3-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS3-M	B4-LSD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS4	B4-LS4-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS4-M	B4-LSD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS5	B4-LS5-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS5-M	B4-LSD-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS6	B4-LS6-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS6-M	B4-LSD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS7	B4-LS7-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS7-M	B4-LSD-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS8	B4-LS8-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS8-M	B4-LSD-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS9	B4-LS9-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LS9-M	B4-LSD-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LSD	B4-LSD-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LSD-M	B4-MDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-LSD-M	B93-EMDP1-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-MDP	B4-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

Bus Name	Protective Device Name	Line-Line Voltage kV	Limited Approach Boundary: Exposed Movable Conductor	Limited Approach Boundary: Exposed Fixed Circuit Part	Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
B-B4-MDP-M	F-B4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-PP1	B4-4EQD-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-PP2	B4-PP2-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B4-PP2-M	B4-LSD-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LS3	B5-LSD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-ATS-EQ	B5-MDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-ATS-EQ	B93-EMDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-ATS-LS	B5-MDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-ATS-LS	B93-EMDP1-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-EQ1	B5-EQD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-EQ2	B5-EQD-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-EQ5	B5-EQD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-EQ6	B5-EQD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-EQD	B5-MDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-EQD	B93-EMDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-HYDR ELEV	B5-EQD-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LP1	B5-LP1-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LP1-M	B5-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LP2	B5-LP2-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LP2-M	B5-MDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LP3	B5-LP3-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LP3-M	B5-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LP4	B5-LP4-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LP4-M	B5-MDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LP5	B5-LP5-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LP5-M	B5-MDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LS1	B5-LSD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LS2	B5-LSD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LS4	B5-LSD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LSD	B5-LSD-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LSD-M	B5-MDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-LSD-M	B93-EMDP1-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-MDP	B5-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-MDP-M	F-B5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-NEXTEL	B5-MDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-PNL-H	B5-PNL-H-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-PNL-H-M	B5-MDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-STRT LGHT	B5-MDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B5-TEMP TRAI	B5-MDP-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-ATS-EQ	B6-MDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-ATS-EQ	B94-EMDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-ATS-LS	B6-MDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-ATS-LS	B94-EMDP-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-EQ1	B6-EQD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

Bus Name	Protective Device Name	Line-Line Voltage kV	Limited Approach Boundary: Exposed Movable Conductor	Limited Approach Boundary: Exposed Fixed Circuit Part	Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
B-B6-EQ2	B6-EQD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-EQ3	B6-EQD-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-EQ4	B6-EQD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-EQ5	B6-EQD-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-EQ8	B6-EQD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-EQD	B6-EQD-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-EQD-M	B6-MDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-EQD-M	B94-EMDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-EQMACH	B6-EQD-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LP1	B6-LP1-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LP1-M	B6-MDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LP2	B6-LP2-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LP2-M	B6-MDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LP3	B6-LP3-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LP3-M	B6-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LP4	B6-LP4-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LP4-M	B6-MDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LP5	B6-LP5-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LP5-M	B6-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LP6	B6-LP6-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LP6-M	B6-MDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LP7	B6-LP7-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LP7-M	B6-MDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LS1	B6-LSD-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LS2	B6-LSD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LS3	B6-LSD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LS4	B6-LSD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LS5	B6-LSD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LS6	B6-LSD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LSD	B6-LSD-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LSD-M	B6-MDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-LSD-M	B94-EMDP-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-MACH SHOP	B6-MDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-MDP	B6-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-MDP-M	F-B6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B6-P6-CS	B6-MDP-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-ATS-EQ	B7-MDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-ATS-EQ	B94-EMDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-ATS-LS	B7-MDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-ATS-LS	B94-EMDP-10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-ELEV	B7-EQD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-EQ1	B7-EQD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-EQ2	B7-EQD-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-EQ4	B7-EQD-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

	Protective	Line-Line	Limited Approach Boundary		Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
Bus Name	Device	Voltage	Exposed Movable Conductor	Exposed Fixed Circuit Part		
	Name	kV				
B-B7-EQD	B7-MDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-EQD	B94-EMDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LP2	B7-LP2-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LP2-M	B7-MDP-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LP3	B7-LP3-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LP3-M	B7-MDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LP4	B7-LP4-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LP4-M	B7-MDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LP5	B7-LP5-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LP5-M	B7-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LP6	B7-LP6-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LP6-M	B7-MDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LP7	B7-LP7-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LP7-M	B7-MDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LP8	B7-LP8-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LP8-M	B7-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LS1	B7-LSD-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LS2	B7-LSD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LS4	B7-LSD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LS5	B7-LSD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LSD	B7-LSD-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LSD-M	B7-MDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-LSD-M	B94-EMDP-10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
bB-B7-MC1	B7-EQD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-MCC-1	B7-EQD-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-MCC-2	B7-MDP-10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-MDP	B7-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-MDP-M	F-B7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-SRTLGHT-M	B7-MDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B7-STRT LGHT	B7-STRT-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8 2ND FLR	B8-MDP8-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8 HYDRO ELV	B8 480V PNL-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-208V-MAIN	F-B8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B82-MDP	B82-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B82-MDP-M	F-B82	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-480V ATS	B8 GE BKR	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B8-480V PNL	B8 GE BKR	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B8-ATS	B8-ATS-N	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-BS	B8-MDP8-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-CMOP	B8 480V PNL-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-COMP	B8 480V PNL-4	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B8-FDR	B8 480V PNL-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-FLEXPMACH	B8 480V PNL-1	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B8-GE BKR	PD-0270	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.

Bus Name	Protective Device Name	Line-Line Voltage kV	Limited Approach Boundary: Exposed Movable Conductor	Limited Approach Boundary: Exposed Fixed Circuit Part	Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
B-B8-J-BOX	B8 JBOX BKR	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-L8B	B8-MDP8-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-LB1	B8-MDP8-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-LB2	B8-MDP8-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-MAIN BUS	B8-208V-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-MDP-8	B8-208V-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-PNL-PK	B8-MDP8-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-PP1	B8-PP1-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-PP1-M	B8-208V-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-SYLV	B8-208V-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B8-TXMR PRI	B8 480V PNL-3	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B8-TXMR SEC	B8 480V PNL-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-*PNLXX	B9-MDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-*PNLYY	B9-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-*PNLZZ	B9-MDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-ATS BKR	B9-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-EM	B9-ATS-BKR	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-L91A	PD-0283	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-L91A-M	B9-MDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-L92	B9-MDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-L9A	B9-MDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-L9B	B9-MDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-LPN	B9-LPN	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-LPS	B9-LPS	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-MAIN	F-B9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-MDP	B9-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-STRT LGHT	B9-MDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B9-TAP	B9-MDP-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B10 DISC	F-B10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B10 EMRG TAP	B95-EMDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B10-MDP	B10-DISC	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B12-MAP-M	F-B12	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B12-MDP	B12-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B13-APT-13	B13-MDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B13-APT-14	B13-MDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B13-APT-15	B13-MDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B13-GARAGE	B13-MDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B13-MDP	B13-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B13-MDP-M	F-B13	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B13-MGR H16	B13-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B13-TXMR SEC	F-B13	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B13-UNKNOWN	B13-MDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-A/C	B17-DP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-A/C-2	B17-DP-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

Bus Name	Protective Device Name	Line-Line Voltage kV	Limited Approach Boundary: Exposed Movable Conductor	Limited Approach Boundary: Exposed Fixed Circuit Part	Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
B-B17-AC1	B17-DP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-ACB	B17-DP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-ANIMALRM	B17-EMERG	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-ATS	B92-EMDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-ATS	F-B17	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-DP	B17-MAIN	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-EMERG	B92-EMDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-EMERG	F-B17	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-MAIN	F-B17	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-NEB1	PD-0305	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-NEB2	PD-0304	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-NP11	B17-DP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-NP12	B17-DP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-NP21	B17-DP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-NP22	B17-DP-10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-NPA1	B17-DP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-NPB1	B17-DP-11	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B17-NPB2	B17-DP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-1STFL	B18 1STFL-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-1STFL-M	B18-NMDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-1STFL-M	B92-EMDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-2NDFL	B18-2NDFL-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-2ND-FL-M	B18-NMDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-2ND-FL-M	B92-EMDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-AC1	B18-NMDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-AC2	B18-NMDP-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-ATS-EMRG	B18-NMDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-ATS-EMRG	B92-EMDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-EMERG	B18-EMERG-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-EMERG-M	B18-NMDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-EMERG-M	B92-EMDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-NCP	B18-NMDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-NMDP	B18-NMDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-NMDP-M	F-B18	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-NP11	B18-NMDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-NP12	B18-NMDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-NP21	B18-NMDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-NP22	B18-NMDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-NP23	B18-NMDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-STRT LHT	B18-NMDP-10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-TAP BOX	B18-NMDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B18-TAP BOX	B92-EMDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B19-200A PNL	B19-MDP2-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B19-B1	B19-MDP1-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

Bus Name	Protective Device Name	Line-Line Voltage kV	Limited Approach Boundary: Exposed Movable Conductor	Limited Approach Boundary: Exposed Fixed Circuit Part	Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
B-B19-L1	B19-MDP1-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B19-L2	B19-MDP1-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B19-MDP1	B19-MDP1-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B19-MDP1-M	F-B19	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B19-MDP2	B19-MDP2-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B19-MDP2-M	F-B19	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B19-MDPA	B19-MDP1-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B19-P1	B19-MDP1-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B19-P2	B19-MDP1-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B19-P4	B19-MDP1-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B19-P6	B19-MDPA-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B19-PS	B19-MDP1-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B21-P1	PD-0347	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B21-P2	B19-MDP2-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B22-ATS-EMER	B22-GEN	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B22-ATS-EMER	B22-MDP-1	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B22-EMERG	B22-EMERG-M	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B22-EMERG-M	B22-GEN	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B22-EMERG-M	B22-MDP-1	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B22-GEN	B22-GEN	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B22-L1	B22-L1-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B22-L1-M	B22-EMERG-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B22-L2	B22-L2-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B22-L2-M	B22-EMERG-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B22-L3	B22-L3-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B22-L3-M	B22-EMERG-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B22-MDP	B22-MDP-M	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B22-MDP-M	F-B22	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B22-N1	B22-N1-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B22-N1-M	B22-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B22-P1	B22-EMERG-1	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B22-P2	B22-EMERG-2	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B22-T1-PRI	B22-MDP-2	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B22-T1-SEC	B22-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B22-T22-SEC	B22-EMERG-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B22-T2-PRI	B22-EMERG-3	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B22-T2-SEC	B22-EMERG-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B22-T3 PRI	B22-EMERG-4	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B22-T4-PRI	B22-EMERG-5	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-B22-T4-SEC	B22-EMERG-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B27-SWGR	R-B27-MAIN-1	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-B27-SWGR-M1	R-B27-MAIN-1	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-B33-MDP	B33-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B33-MDP-M	F-B33	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

Bus Name	Protective Device Name	Line-Line Voltage kV	Limited Approach Boundary: Exposed Movable Conductor	Limited Approach Boundary: Exposed Fixed Circuit Part	Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
B-B60-MDP	B60-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B60-MDP-M	F-B60	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61 STRT LGH	B61-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-ATS-EQD	B61-MDP-10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-ATS-EQD	B94-EMDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-ATS-LSD	B61-MDP-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-ATS-LSD	B94-EMDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-COMP RM	B61-EQA-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-DP	B61-MDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-ELEV	B61-EQD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-EQ1	B61-EQD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-EQ2	B61-EQD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-EQ4	B61-EQD-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-EQA	B61-MDP-10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-EQA	B94-EMDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-EQD	B61-MDP-10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-EQD	B94-EMDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-KITCHEN	B61-LSD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-LP1	B61-MDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-LP2	B61-MDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-LP3	B61-MDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-LP4	B61-MDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-LP5	B61-MDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-LS1	B61-LSD-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-LS2	B61-LSD-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-LS3	B61-LSD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-LS4	B61-LSD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-LS5	B61-LSD-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-LSD	B61-LSD-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-LSD-M	B61-MDP-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-LSD-M	B94-EMDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-MCC	B61-MDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-MDP	B61-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B61-MDP-M	F-B61	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-A	B62-MDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-ATS-EQD	B62-MDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-ATS-EQD	B94-EMDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-ATS-LSD	B62-MDP-12	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-ATS-LSD	B94-EMDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-ATTC PNL	B62-EQD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-B	B62-MDP-11	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-BL	B62-MDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-BP	B62-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-ELEV-1	B62-EQD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

Bus Name	Protective Device Name	Line-Line Voltage kV	Limited Approach Boundary: Exposed Movable Conductor	Limited Approach Boundary: Exposed Fixed Circuit Part	Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
B-B62-ELEV-2	B62-EQD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-EQ	B62-EQD-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-EQD	B62-MDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-EQD	B94-EMDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-KP	B62-MDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-LP1	B62-MDP-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-LP2	B62-MDP-10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-LP3	B62-MDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-LP4	B62-MDP-13	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-LS1	B62-LSD-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-LS2	B62-LSD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-LS3	B62-LSD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-LS4	B62-LSD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-LSD	B62-LSD-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-LSD-M	B62-MDP-12	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-LSD-M	B94-EMDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-MDP	B62-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-MDP-M	F-B62	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-OT	B62-MDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-PAD RM	B62-EQD-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B62-STRT LGT	B62-MDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70 -BLDG-71	B70-MDP-9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70 GEN-M	B70-GEN-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-A	B70-MDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-ATS-EQD	B70-GEN-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-ATS-EQD	B70-MDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-ATS-LSD	B70-GEN-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-ATS-LSD	B70-MDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-ATTIC	B70-MDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-B	B70-MDP-12	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-CHLLR	B70-MDP-14	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-EM-TAP	B70-GEN-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-EQ1	B70-EQD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-EQ2	B70-EQD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-EQ3	B70-EQD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-EQ4	B70-EQD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-EQ5	B70-EQD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-EQ6	B70-EQD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-EQD	B70-EQD-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-EQD-M	B70-GEN-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-EQD-M	B70-MDP-8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-FIRE PMP	B70-FIREPMP-N	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-FPMP M	B70-FIREPMP-N	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-FP-TAP	F-B70	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

Bus Name	Protective Device Name	Line-Line Voltage kV	Limited Approach Boundary: Exposed Movable Conductor	Limited Approach Boundary: Exposed Fixed Circuit Part	Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
B-B70-GEN	B70-GEN-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-K	B70-MDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-LP1	B70-MDP-10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B0B70-LP2	B70-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-LP3	B70-MDP-11	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-LP-4	B70-MDP-13	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-LS1	B70-LSD-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-LS2	B70-LSD-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-LS3	B70-LSD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-LS4	B70-LSD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-LS5	B70-LSD-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-LS6	B70-LSD-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-LSD	B70-LSD-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-LSD-M	B70-GEN-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-LSD-M	B70-MDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-MDP	B70-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-MDP-M	F-B70	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-PP2	B70-MDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-PP220	B70-MDP-15	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B70-STRTLGHT	B70-MDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-1P	B78-MDP-310A	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-78AE1	B95-EMDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-78AE1	PD-0445	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-A/C	B78-MDP-22B	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78A-PNL-2	B78-MDP-41A	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-ATS TAP	B78-MDP-24	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-ATS-CRD	B78-MDP-49B	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-ATS-CRD	B95-EMDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-ATS-E1	B78-MDP-34	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-ATS-E1	B95-EMDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-ATSG9578	B95-EMDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-ATSG9578	PD-0445	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-ATS-LS1	B95-EMDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-ATS-LS1	PD-0446	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-BARBER	B78-MDP-211B	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-CONRM-AC	B78-MDP-410B	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-CRD	B78-MDP-49B	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-CRD	B95-EMDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-E1	B78-MDP-34	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-E1	B95-EMDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-ELEV-1	B78-MDP-29A	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-ELEV-2	B780MDP-29B	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-FLPNL	B78-MDP-310B	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-KK	B78-MDP-39A	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

	Protective	Line-Line	Limited Approach Boundary		Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
Bus Name	Device	Voltage	Exposed Movable Conductor	Exposed Fixed Circuit Part		
	Name	kV				
B-B78-L10	B78-MDP-35	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-LP-1	B78-MDP-38	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-LP10	B78-MDP-25	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-LP13	B78-MDP-25	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-LP-13	B78-MDP-35	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-LP-14	B78-MDP-35	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-LP-15	B78-MDP-35	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-LP-2	B78-MDP-47	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-LP3	B78-MDP-28	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-LP-4	B78-MDP-38	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-LP6	B78-MDP-28	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-LP7	B78-MDP-25	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-LP-8	B78-MDP-44	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-LSD	B95-EMDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-LSD	PD-0446	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-MDP	B78-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-MDP-M	F-B78	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-MEC-1 AC	B78-MDP-36	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-MEC2-A/C	B78-MDP-45	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-PHARM AC	B78-MDP-31A	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-PHV	B78-MDP-311B	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-PK	B78-MDP-49A	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-PNL-330A	B78-MDP-48A	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-PULM 78B	B78-MDP-27	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B78-QP	B78-MDP-210A	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B80-ATS-EQ	B80-MDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B80-ATS-EQ	B93-EMDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B80-E1	B80-MDP-7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B80-E1	B93-EMDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B80-L1-1	B80-MDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B80-L1-3	B80-MDP-4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B80-LB-1	B80-MDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B80-LB-E	B80-E1-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B80-MDP	B80-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B80-MDP-M	F-B80	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B80-P1	B80-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B80-P5	B80-MDP-3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B80-PB-1	B80-MDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B80-PB-2	B80-E1-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B81-MDP	B81-MDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B81-MDP-M	F-B81	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B92 GEN	B92-EMDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B92-ATS	B2-MDPA-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B92-ATS	B92-EMDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

Bus Name	Protective Device Name	Line-Line Voltage kV	Limited Approach Boundary: Exposed Movable Conductor	Limited Approach Boundary: Exposed Fixed Circuit Part	Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
B-B92-EMDP	B92-EMDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B92-EMDP-M	B92-EMDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B92-PNL-E1	B2-MDPA-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B92-PNL-E1	B92-EMDP-1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B93-EMDP	B93-EMDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B93-EMDP1	B93-EMDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B93-EMDP-M	B93-EMDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B93-GEN	B93-EMDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B94-ATS	B7-MDP-5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B94-ATS	B94-EMDP-6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B94-EMDP	B94-EMDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B94-EMDP-M	B94-EMDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B94-GEN	B94-EMDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B95-EMDP	B95-EMDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B95-EMDP-M	B95-EMDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-B95-GEN	B95-EMDP-M	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-SWGR27 TAP	R-B27-MAIN-1	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-SW-MV-1	R-B27-SWGR B7	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-SW-MV-2	R-B27-SWGR B5	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-13-PRI	B-27-SWGR B8	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B10-PRI	B-27-SWGR B8	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B10-SEC	F-B10	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B12-PRI	B-27-SWGR B8	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B12-SEC	F-B12	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B17-PRI	R-B27-SWGR B7	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B17-SEC	F-B17	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B18-PRI	R-B27-SWGR B7	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B18-SEC	F-B18	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B19-PRI	R-B27-SWGR B5	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B19-SEC	F-B19	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B1-PRI	R-B27-SWGR B7	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B1-SEC	F-B1	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B22-PRI	R-B27-SWGR B5	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B22-SEC	F-B22	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-T-B2-LED-PRI	B2-MDP-2	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-T-B2-LED-SEC	B2-MDP-2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B2-PRI	R-B27-SWGR B7	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B2-SEC2	F-B2	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B2-SEC3	F-B2A	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B2-SEC4	R-B27-SWGR B7	0.48	10ft. 0 in.	3ft. 6 in.	1ft. 0in.	0ft. 1in.
B-T-B30-PRI	R-B27-SWGR B7	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B30-SEC	F-B30	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B33-PRI	R-B27-SWGR B5	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B33-SEC	F-B33	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

	Protective	Line-Line	Limited Approach Boundary		Restricted Approach Boundary; Includes Inadvertent Movement Adder	Prohibited Approach Boundary
Bus Name	Device	Voltage	Exposed Movable Conductor	Exposed Fixed Circuit Part		
	Name	kV				
B-T-B3-PRI	B-27-SWGR B8	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B3-SEC	F-B3	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B4-PRI	R-B27-SWGR B5	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B4-SEC	F-B4	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B5-PRI	R-B27-SWGR B7	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B5-SEC	F-B5	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B60-PRI	R-B27-SWGR B7	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B60-SEC	F-B60	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B61-PRI	R-B27-SWGR B7	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B61-SEC	F-B61	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B62-PRI	R-B27-SWGR B7	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B62-SEC	F-B62	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B6-PRI	R-B27-SWGR B7	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B6-SEC	F-B6	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B70-PRI	R-B27-SWGR B7	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B70-SEC	F-B70	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B78-PRI	B-27-SWGR B8	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B78-SEC	F-B78	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B7-PRI	R-B27-SWGR B7	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B7-SEC	F-B7	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B80-PRI	R-B27-SWGR B5	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B80-SEC	F-B80	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B81-PRI	B-27-SWGR B8	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B81-SEC	F-B81	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B82-PRI	R-B27-SWGR B5	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B82-SEC	F-B82	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B8-PRI	R-B27-SWGR B7	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B8-SEC	F-B8	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact
B-T-B9-PRI	B-27-SWGR B8	13.8	10ft. 0in.	5ft. 0in.	2ft. 2in.	0ft. 7in.
B-T-B9-SEC	F-B9	0.21	10ft. 0in.	3ft 6in.	Avoid Contact	Avoid Contact

6.0 SITE ASSESSMENT

6.1 Objectives

A Site Assessment was performed at the VA Bedford Division to assess the electrical equipment per the items listed below.

- Determine if adequate NEC clearances exist for electrical panelboards and equipment. Note non-compliances to the NEC in table format.
- Determine if ground fault protection exists where required by NEC articles 215 and 517. Note non-compliances to the NEC in table format.
- Determine if Automatic Transfer Switches (ATS's) are 3-pole or 4-pole and determine if they are wired correctly. Provide information in table format.
- Note if any cable limiters are used in the power system and provide recommendations to avoid possible single-phasing conditions. Note the location and conditions.
- Determine where undervoltage relays (device 27) are used and if two or three phases are monitored.
- The emergency generators were reviewed for neutral bonding and ground fault protection.

6.2 Procedure

The site assessment was performed by an Engineer who took the previous power system study one-lines and physically walked-down the power system from the incoming utility service down to the building substations, then to all of the low voltage power distribution panels. He inspected the equipment and took notes on the equipment conditions and on the items listed above.

6.3 Results/Recommendations

The site assessment resulted in several electrical equipment NEC clearance violations, which are easily corrected. In Buildings 6, 17 and 62 have clearance issues with storage equipment. The most severe and time-consuming correction is in Building 17 panelboards DP, NPB2 and NEB1. They have clearance issues with the ceiling tile.

It is recommended that ground fault protection be added to all feeder breakers in Building 2 MDP switchboard. Healthcare facilites are required to have two levels of ground fault protection.

See Tables 6.1 through 6.5 for the Site Assessments summary.

Table 6.1 – NEC Clearances Assessment

Electrical Equipment Code Clearance Violations Per NEC			
Equipment Location	**Equipment ID**	**Violation Description**	**Recommended Corrective Action**
BLDG-6	ATS-6-EQ	ATS has belt sander that is with-in 3 foot of the ATS. Also buckets of stuff stored in front of ATS	Relocate belt sander and buckets so there is a 3 foot clearance in front of the ATS.
Bldg-6	Panel EQ1	Belt sander is with-in 3 foot of the panelboard. Also Buckets of stuff stored in front of panelboard.	Relocate belt sander and buckets so there is a 3 foot clearance in front of the panelboard
Bldg-17	Panel DP	Storage table in front of panelboard. Also ceiling tiles in the way of panelboard.	Move storage table and modify the ceiling so the panels can be removed without hitting the ceiling tiles.
Bldg-17	Panel NPB2	Ceiling tiles in way when removing panel cover	Modify the ceiling so the panels can be removed without hitting the ceiling tiles.
Bldg-17	Panel NEB1	Ceiling tiles in way when removing panel cover	Modify the ceiling so the panels can be removed without hitting the ceiling tiles.
Bldg-62	Panel EQ2	Panel was blocked by vacuum cleaner and plastic covers for overhead lights	Move vacuum cleaner and plastic covers.

Table 6.2 – Ground Fault Protection Assessment

Ground Fault Protection Assessment per NEC Articles 215 and 517.				
Locations (Main Bldg. SWBD's)	**Ground Fault Protection**	**Ground Fault Required per NEC**	**Ground Fault Device Type**	**Comments**
Bldg. 1	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 2	Yes	Yes	Digitrip	Refer to protective device coordination study for ground fault coordination and settings.
Bldg. 3	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 4	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 5	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 6	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 7	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 8	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 9	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 12	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg.13	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg.17	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg.18	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 19	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 22	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 33	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg.61	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 62	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 70	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 78	No	No	N/A	Ground fault is not recommended on 208V power systems

Ground Fault Protection Assessment per NEC Articles 215 and 517.				
Locations (Main Bldg. SWBD's)	**Ground Fault Protection**	**Ground Fault Required per NEC**	**Ground Fault Device Type**	**Comments**
Bldg. 80	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 81	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 82	No	No	N/A	Ground fault is not recommended on 208V power systems
Bldg. 92	No	No	N/A	Ground fault is not allowed by the NEC in Healthcare between onsite generation and the emergency load.
Bldg. 93	No	No	N/A	Ground fault is not allowed by the NEC in Healthcare between onsite generation and the emergency load.
Bldg. 94	No	No	N/A	Ground fault is not allowed by the NEC in Healthcare between onsite generation and the emergency load.
Bldg. 95	No	No	N/A	Ground fault is not allowed by the NEC in Healthcare between onsite generation and the emergency load.

Table 6.3 – ATS's Assessment

Automatic Transfer Switches Assessment			
ATS Locations	**3-Pole / 4-Pole**	**Wired Correctly**	**Comments**
Gen-92-1	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-2-LS	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-2-LED3	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-2-CRIT	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-3-1	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-3-2	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-4-EQ	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-4-LS	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-5-LS	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-5-EQ	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-6-LS	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-6-EQ	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-7-EQ	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-7-LS	3-Pole	yes	Generator neutral should NOT be grounded at generator.

ATS-8-480V	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-8	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-10-LS	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-10-EQ	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-B92	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-92-17	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-18-EMERG	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-22-EMERG	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-61-EQ	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-61-LS	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-62-EQ	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-62-LS	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-70-EQ	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-70-LS	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-78-CRD	3-Pole	yes	Generator neutral should NOT be grounded at generator.

Automatic Transfer Switches Assessment			
ATS Locations	**3-Pole / 4-Pole**	**Wired Correctly**	**Comments**
ATS-78-E1	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-78-LS1	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-78-G95-78	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-82-G93	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-92-GEN	3-Pole	yes	Generator neutral should NOT be grounded at generator.
ATS-93-GEN	3-Pole	yes	Check for possible burned up coil
ATS-94-GEN	3-Pole	yes	Generator neutral should NOT be grounded at generator.

Table 6.4 – Cable limiter Assessment

Cable Limiter Assessment
There were no cable limiters found in the Bedford VA power system.

Table 6.5 – MV Undervoltage Relay (Device 27) Assessment

Medium Voltage Switchgear Under-voltage Relay (device 27) Assessment
All three phases are monitored for voltage using the "open-delta" PT method. With the recommended installation of the Cutler-Hammer FP5000 relays on the mains to Building 27 switchgear, there will be undervoltage protection(27) and voltage unbalance(47) protection.

7.0 CORRECTIVE ACTION COST ESTIMATE

Corrective action and cost estimates are provided below per the power system study recommendations. The pricing below is based on straight time working hours.

1. The forty-three over-dutied panelboards shown in Table 1.0 should be reviewed for panelboard/breaker replacement to comply with the short circuit current ratings required.

   Budgetary Estimate: $149,800.00

2. It is recommended to add protection at the emergency generators in Buildings 92, 93, 94 and 95. The lack of protection was field varified. Therefore, four 1200 Ampere ND Cutler-Hammer breakers with thermal magnetic trip should be added. One at each generator. The setting should be at min.

   Budgetary Estimate: $ 40,500.00

3. It is recommended to replace the General Electric type IFC-53 relays located on the main incoming breakers located at the 15kV switchgear with Cutler-Hammer type FP-5000. The recommended settings can be found in Section 3.5.

   Budgetary Estimate: $15,500.00

4. It is recommended to replace the General Electric type IFC-53 relays located on the feeder breakers at the 15kV switchgear with Cutler-Hammer type DT3001. The recommended settings can be found in Section 3.5.

   Budgetary Estimate: $15,500.00

5. It is recommended to replace the main breaker located in Building 1 MDP with a Cutler-Hammer KD breaker with RMS310LSI trip unit and a rating plug of 250 Amperes. The breaker settings can be found in Section 3.5 of this report. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

   Budgetary Estimate: $11,100.00

6. It is recommended to replace the feeder breakers located in Building 1 MDP with Cutler-Hammer type JD breakers with thermal trip. There should be six 125-Ampere breakers and two 100-Ampere breakers. The settings can be found in Section 3.5.

   Budgetary Estimate: $11,100.00

7. It is recommended to replace the 480V main breaker in Building 2 MDP with a Cutler-Hammer type ND with RMS310 LSIG trip units with a tripping rating of 1200 Amperes. The settings can be found in Section 3.5. Note LSIG means Long Time Delay, Short Time Delay, Instantaneous and Ground.

   Budgetary Estimate: $13,100.00

8. Since two levels of ground protection are required, it is recommended to replace the 480V feeder breakers in Building 2 MDP with Cutler-Hammer type KD breakers with RMS-310-LSIG trip units with trip ratings of 200 Amperes. The settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

   Budgetary Estimate: $33,100.00

9. In Building 2 Panelboard MDP, it is recommended to change the trip rating of B2-MDP-1 type FPE NJL breaker from 200 Amperes to 150 Amperes in order to protect the 1/0 cable.

   Budgetary Estimate: $3,900.00

10. In Building 2 Panelboard MDP, it is recommended to change the trip rating of B2-MDP-2 type FPE NJL breaker from 225 Amperes to 110 Amperes in order to protect the #2 cable.

    Budgetary Estimate: $3,900.00

11. It is recommended to change out the calbe that feeds Building 2 ATS LED3 normal side from 2/0 to 250 MCM. This consists of approximately 10 Feet of cable.

    Budgetary Estimate: $3,100.00

12. It is recommended to install an emergency panelboard in Building 2 on the load side of ATS LED3. Presently there isn't any protection for the five feeders. The panelboard should be rated for 250 Amperes and have five feeders. The feeders should consist of 1-85 Ampere breaker, 2-200 Ampere breakers, 1-175 Ampere breaker and 1-100 Ampere breaker. All breakers should be thermal magnetic. The short circuit rating can be 10kA.

    Budgetary Estimate: $7,100.00

13. It is recommended to replace the 208V main breaker in Building 2 MDPA with Cutler-Hammer type LD with RMS310 LSI trip unit and a trip rating of 600 Amperes. The settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $11,100.00

14. It is recommended to replace the tiebreaker in Building 2 MDPA and MDPB with a Cutler-Hammer type KD with RMS310 LSI and a trip rating of 400 Amperes. The settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $11,000.00

15. It is recommended to replace the 208V main breaker in Building 2 MDPB with Cutler-Hammer type LD with RMS310 LSI trip units and a trip rating of 600 Amperes. The settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $11,100.00

16. In Building 2 Panelboard Critical, it is recommended to replace the FPE NJL breaker B2-CRIT-2 from 200A to a 100A trip rating. This will protect the #2 size cable.

    Budgetary Estimate: $3,900.00

17. In Building 3 Panelboard EP1, it is recommended to replace the Sq-D KA breaker B3-EP1-4 from 200 Amperes to 175 Amperes, This will protect the 2/0 cable.

    Budgetary Estimate: $4,100.00

18. In Building 3 Panelboard EP2, it is recommended to replace the GE TQD breaker B3-EP2-3 from 200 Amperes to a GE type THQD 150 Amperes, This will protect the 1/0 cable and increase the short circuit rating to 22kA.

    Budgetary Estimate: $9,400.00

19. In Building 3 Panelboard EP2, it is recommended to replace the GE THQD breaker B3-EP2-6 from 175 Amperes to 125 Amperes, This will protect the #1 cable.

    Budgetary Estimate: $9,400.00

20. In Building 3 Panelboard EP2, it is recommended to replace the GE THED breaker B3-EP2-8 from 100 Amperes to 70 Amperes, This will protect the #4 cable.

    Budgetary Estimate: $8,500.00

21. In Building 3 Panelboard EP2, it is recommended to replace the GE TQD breaker B3-EP2-10 200 Ampere with a GE THQD 200 Ampere breaker. This will increase the short circuit rating for B-B3-EP2 to 22kA.

    Budgetary Estimate: $11,100.00

22. It is recommended to replace the main breaker in Building 4 MDP with a Cutler-Hammer RD breaker with RMS310-LSI trip unit and a 1600 Ampere rating plug. The settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $17,500.00

23. In Building 4 Panelboard EQD, it is recommended to replace the Westinghouse CAH breaker B4-4EQD-7 from a 225 Amp trip to a 150 Amp trip. This will protect the 1/0 cable.

    Budgetary Estimate: $9,400.00

24. It is recommended to replace the main breaker in Building 5 MDP with a Cutler-Hammer ND breaker with RMS310 LSI trip unit and a 1000-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $11,100.00

25. In Building 5 panelboard EQD, it is recommended to replace the FPE NJL breaker BE-EQD-5 from 200 Amp trip to 150 Amp trip. This will protect the 1/0 cable.

    Budgetary Estimate: $3,900.00

26. It is recommended to retrofit the existing Westinghouse SPB-100 in Building 6 MDP with a Cutler-Hammer Digitrip RMS-510 trip unit with LSI trip characteristics. The rating plug should be 1200 Ampers. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $7,500.00

27. In Building 6 Panelboard MDP, it is recommended to replace the Westinghouse LC Seltronic breakers B6-MDP-8 and B6-MDP-9 from 225 Amp trip to 200 Amp trip. This will protect the 3/0 cable.

    Budgetary Estimate: $1,500.00

28. In Building 6 Panelboard EQD, it is recommended to replace the Westinghouse CAH breaker B6-EQD-2 from 150 Amp trip to 130 Amp trip. This will protect the #1 cable.

    Budgetary Estimate: $1,500.00

29. In Building 6 Panelboard EQD, it is recommended to replace the Westinghouse CAH breaker B6-EQD-3 from 225 Amp trip to 175Amp trip. This will protect the 2/0 cable.

    Budgetary Estimate: $4,100.00

30. In Building 6 Panelboard LSD, it is recommended to replace breaker B6-LSD-4 from 100 Amp trip type Westinghouse BA to 100 Amp trip type C-H GHD. This will correct the overduttied situation for Panelboard LSD.

    Budgetary Estimate: $5,500.00

31. It is recommended to retrofit the existing Westinghouse SPB-100 in Building 7 MDP with a Cutler-Hammer Digitrip RMS-510 trip unit with LSI trip characteristics. The rating plug should be 800 Amperes. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $7,500.00

32. It is recommended to determine the load for Building 94 ATS which is supplied normal power from Building 7. The cables go into an unmarked conduit and then the conduit goes into the floor. Onsite personnel did not know what the transfer switch feeds.

    Budgetary Estimate: $5,750.00

33. In Building 7 Panelboard EQD, it is recommended to replace the GE TFJ breaker B7-EQD-6 from a 200 Amp trip to a 150 Amp trip. This will protect the 1/0 cable.

    Budgetary Estimate: $5,500.00

34. In Building 7 Switchboard MDP, it is recommended to replace Breaker B7-MDP-10 from a Westinghouse type LC seltronic with a 150 Amp trip to a Cutler-Hammer type LD Digitrip RMS310 LS with adjustable trip and set for 85 Ampere trip rating. This will protect the #4 cable.

    Budgetary Estimate: $5,750.00

35. In Building 8, it is recommended to install a panelboard on the 208V secondary of the 225kVA transformer. Presently there is only one 700-Ampere breaker protecting multiple size cables. The panelboard will need at a minimum, one 400-Ampere breaker and one 300-Ampere breaker.

    Budgetary Estimate: $15,500.00

36. In Building 8 480V panelboard, it is recommended to replace breaker B8 480V PNL-2 from a 100-Ampere trip to a 70-Ampere trip.

    Budgetary Estimate: $3,900.00

37. In Building 8 480V panelboard, it is recommended to replace breaker B8 480V PNL-4 from a 60-Ampere trip to a 40-Ampere trip.

    Budgetary Estimate: $3,900.00

38. In Building 8, 208V ATS has it's normal and emergency source from the same panelboard but different circuit breakers. There should be a warning on the ATS stating that both normal and emergency side of ATS is always energized.

    Budgetary Estimate: $1,500.00

39. In Building 9, the ATS is only connected to a normal source. The emergency side does not connect to anything. It is recommended to place a sign on the emergency panelboard stating that there is no emergency back-up power connected to Panelboard B-B9-EM.

    Budgetary Estimate: $1,500.00

40. It is recommended to replace the main breaker in Building 13 MDP with a Cutler-Hammer ND breaker with RMS310 LSI trip unit and a 1200-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $11,000.00

41. It is recommended to replace the main breaker in Building 17 MDP with a Cutler-Hammer LD breaker with RMS310 LSI trip unit and a 600-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $11,050.00

42. In Building 17 Panelboard DP, it is recommended to replace the Sq-D FA breaker B17-DP-3 from a 100 Amp trip to a 70 Amp trip. This will protect the #4 cable.

    Budgetary Estimate: $3,900.00

43. In Building 17 Panelboard DP, it is recommended to replace the SQ-D Q2H breaker B17-DP-6 from a 225 Amp trip to a 200 Amp trip. This will protect the 3/0 cable.

    Budgetary Estimate: $3,900.00

44. It is recommended to replace the main breaker in Building 18 MDP with a Cutler-Hammer LD breaker with RMS310 LSI trip unit and a 600-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $11,050.00

45. In Building 18 Panelboard NMDP, it is recommended to replace the Sq-D FA breaker B18-NMDP-7 from a 100 Amp trip to a 90 Amp trip. This will protect the #4 cable.

    Budgetary Estimate: $1,500.00

46. It is recommended to replace the main breaker in Building 19 MDP2 with a Cutler-Hammer ND breaker with RMS310 LSI trip unit and a 600-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $11,050.00

47. In Building 19 Panelboard MDP1, it is recommended to replace the Sq-D KA breaker B19-MDP1-7 from a 225 Amp trip to a 200 Amp trip. This will protect the 3/0 cable.

    Budgetary Estimate: $11,000.00

48. It is recommended to replace the main breaker in Building 22 MDP with a Cutler-Hammer ND breaker with RMS310 LSI trip unit and a 400-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous. By reducing the trip to 400 Amperes, the breaker will be rated to protect the transformer and the 500MCM cable.

    Budgetary Estimate: $11,050.00

49. It is recommended to replace the main distribution panelboard in Building 60. The existing panelboard is old and in bad shape.

    Budgetary Estimate: $6,000.00

50. It is recommended to replace Panelboard D-1 in Building 60. This panel is old and in bad shape. This is a 400-Ampere panelboard with a main and three feeder breakers. The feeders are rated 100 Amperes, 175 Amperes and 200 Amperes. The panelboard should have a short circuit rating of 18kA.

    Budgetary Estimate: $12,400.00

51. It is recommended to retrofit the existing Westinghouse SPB-100 in Building 61 MDP with a Cutler-Hammer Digitrip RMS-510 trip unit with LSI trip characteristics. The rating plug should be 800 Amperes. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $7,500.00

52. It is recommended to retrofit the existing Westinghouse SPB-100 in Building 62 MDP with a Cutler-Hammer Digitrip RMS-510 trip unit with LSI trip characteristics. The rating plug should be 1200 Amperes. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $7,500.00

53. In Building 62 Panelboard EQD, it is recommended to replace the Sq-D NEJ H breaker B62-EQD-5 from a 200 Amp trip to a breaker with 150 Amp trip. This will protect the 1/0 cable.

    Budgetary Estimate: $7,400.00

54. It is recommended to retrofit the existing Westinghouse SPB-100 in Building 70 MDP with a Cutler-Hammer Digitrip RMS-510 trip unit with LSI trip characteristics. The rating plug should be 800 Amperes. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $7,500.00

55. It is recommended to install an emergency distribution panelboard in order to protect the different sized cables that are spliced together in the junction box. The panel would conisist of a 400-Ampere main breaker with 2 - 350-Ampere feeder breakers and 1- 225-Ampere feeder breaker. The breakers could be thermal-magnetic trip.

    Budgetary Estimate: $14,750.00

56. There is a potential hazard with Building 70's emergency generator and the utility feeder. There are two firepump breakers, normal and emergency that are both closed. It is possible for the generater to come on line out of sync with the utility causing a catistrophic failure to the power system. It is highly recommended to install a 400 Ampere ATS in place of the emergency breaker designated B70-FIREPMP-E.

    Budgetary Estimate: $30,300.00

57. In Building 78 panel MDP, it it recommended to replace the GE SGDA Spectra 300-Ampere breaker B78-MDP-28 with a trip rating of 250 Amperes. This change will protectect the 250MCM cable.

    Budgetary Estimate: $5,500.00

58. In Building 78 panel MDP, it it recommended to replace the two GE TEY 600-Ampere breaker B78-MDP-211B and 31A with a breaker with a trip rating of 65 Amperes. This change will protectect the #6 cable.

    Budgetary Estimate: $14,750.00

59. In Building 78 panel MDP, it it recommended to replace the GE SFHA Spectra 225-Ampere breaker B78-MDP-39A with a breaker with a trip rating of 200 Amperes. This change will protectect the 3/0 cable.

    Budgetary Estimate: $5,500.00

60. In Building 78 panel MDP, it it recommended to replace the GE SGDA Spectra 400-Ampere breaker B78-MDP-45 with a breaker with a trip rating of 275 Amperes. This change will protectect the 300MCM cable.

    Budgetary Estimate: $5,500.00

61. It is recommended to replace the main breaker in Building 80 MDP with a Cutler-Hammer LD breaker with RMS310 LSI trip unit and a 600-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous.

    Budgetary Estimate: $11,050.00

62. It is recommended to replace the main breaker in Building 82 MDP with a Cutler-Hammer LD breaker with RMS310 LSI trip unit and a 400-Ampere rating plug. The recommended settings can be found in Section 3.5. Note LSI means Long Time Delay, Short Time Delay and Instantaneous. The trip rating is being reduced in order to protect the 112.5kVA transformer.

    Budgetary Estimate: $11,050.00

63. For buildings that have not been called out for a breaker or trip-unit replacement, the protective devices should be tested and set per the recommended settings located in Section 3.5. This will protect the remaining overloaded cables.

    Budgetary Estimate: $ 45,500.00

64. A more detailed load flow study with real-time measurements should be done to review possible over-loaded cables and out of spec % voltage drops resulting from this study. It is recommended that real-time load flow measurements be taken at the secondary of all twenty seven building substation transformers. An RPM meter should be connected for a 24hr monitoring period. See Table 1.1 located on the next page for transformer monitoring locations.

    Budgetary Estimate: $ 24,500.00

65. It is recommended that Arc-Flash Hazard labels be created and applied to each piece of equipment accessed by VA employees or contractors (approximately 700 locations). At some locations where the hazard risk level may be unacceptable to the Department of Veterans Affairs, further investigation, outside the scope of this study, is recommended to determine the most effective means of reducing the incident energy while maintaining the highest desired degree of reliability.

    Budgetary Estimate for arc-flash hazard labels $26,010.00

66. The emergency generators in Buildings 70, 92, 93, 94 and 95 should have their neutrals "disconnected" from ground at the generator location. The neutral from the generator should be carried through the 3-pole ATS's (connected to isolated neutral bar in ATS) to the neutral in the LV SWBD feeding the normal side of the ATS. This allows only one common ground for

the neutral of the associated circuit, which is specified in NEC 2002 Article 250. Further investigation of each generator wye point or neutral point should be performed inside the generator.

Budgetary Estimate $4,144.00

The total budgetary estimate for implementing all recommendations, which are based on working during normal business hours: *$ 822,454.00*

8.0 SYSTEM ONE-LINE DIAGRAM - (ATTACHED INSERTS)