NOTES:

1. FOR GENERAL NOTES SEE 1-15E500-1.
2. (J) INDICATES EQUIPMENT NOT SAFETY RELATED.
3. AFTER THE 6900V DIESEL GENERATOR C-S IS UP TO SPEED & VOLTAGE, AUTOMATIC TRANSFER WILL OCCUR BETWEEN BREAKERS DSB & TB ONLY.
4. X INDICATES ONLY ONE BREAKER REQUIRED FOR PANELS E,F,H & J.
5. USE OF ALTERNATE FEEDERS WHICH INDICATE A "NO" IN TABLE A PLACES BOTH THE BOARD/EQUIPMENT RECEIVING THE POWER AND THE BOARD SUPPLYING THE POWER IN AN UNANALYZED CONDITION. THE APPROPRIATE TECHNICAL SPECIFICATION REQUIREMENTS MUST BE FOLLOWED. ADDITIONALLY, WHEN ANY APPENDIX R REQUIRED POWER SUPPLY (NORMAL OR ALTERNATE) IS TAKEN OUT OF SERVICE COMPENSATORY MEASURES IN ACCORDANCE WITH THE FIRE PROTECTION REPORT MAY BE REQUIRED.
6. USE OF THE ALTERNATE FEEDERS FOR THE 480V SHUTDOWN BOARDS IS ALLOWABLE PROVIDED THAT ONLY ONE BOARD AT A TIME IS FED FROM THE APPLICABLE TRANSFORMER (1-0XF-212-A-A, -B-B, 2-0XF-212-A-A, -B-B). THESE FEEDERS ARE NOT HOWEVER AVAILABLE FOR APPENDIX R, THEREFORE, WHEN THESE FEEDERS ARE USED, COMPENSATORY MEASURES IN ACCORDANCE WITH THE FIRE PROTECTION REPORT MAY BE REQUIRED.
7. THE USE OF ALTERNATE FEEDERS FOR MCCS AND CHARGERS WHICH REFERENCE THIS NOTE (IN TABLE A) WILL RESULT IN THE MCC/CHARGER SUPPLIED BY THIS FEEDER BEING IN AN UNANALYZED CONDITION. ADDITIONALLY, USE OF THESE FEEDERS CAN CAUSE PROBLEMS RESULTING FROM MULTIPLE HIGH IMPEDANCE FAULTING DURING AN APPENDIX R EVENT. THE SUPPLY BREAKER AT THE 480V SHUTDOWN BOARD WHICH FEEDS THE MCCS AND CHARGERS MUST BE IN THE OPEN POSITION UNLESS THE BREAKER ALSO SERVES AS THE NORMAL FEEDER SUPPLY FOR ANOTHER MCC.
8. USE OF THE ALTERNATE FEEDERS FOR THE 6900V SHUTDOWN BOARDS IS ALLOWABLE, HOWEVER, USE OF THE MAINTENANCE FEEDER PLACES THE SHUTDOWN BOARD IN AN UNANALYZED CONDITION AND PROVISIONS OF THE TECHNICAL SPECIFICATION MUST BE MET.
9. USE OF THE 480V ALTERNATE FEEDERS FOR VITAL INVERTERS 1-INV-235-1-D, -2-E, -3-F -4-G 2-INV-235-1-D, -2-E, -3-F, -4-G, 2-INV-235-1-D, -2-E, -3-F, -4-G AND VITAL BATTERY CHARGERS 0-CHGR-236-1-D, -2-E, -3-F AND -4-G VIA THEIR RESPECTIVE 480V AC VITAL TRANSFER SWITCHES IS UNACCEPTABLE UNLESS SPECIFIC REMEDIAL ACTIONS ARE TAKEN. THESE ALTERNATE FEEDERS ARE NOT ACCOUNTED FOR IN LOADING CALCULATIONS. ADDITIONALLY, USE OF THESE ALTERNATE FEEDERS WOULD CONNECT THE APPLICABLE CHARGER/INVERTER TO THE REDUNDANT DIVISION AC SUPPLY. THE 480V AC VITAL TRANSFER SWITCHES I, II, III, AND IV ALTERNATE CONNECTIONS MAY BE USED AS FOLLOWS:

   THE ANALYZED LOADING FOR THESE TRANSFER SWITCHES IS 184.9KW (APPROXIMATELY 248HP). THEREFORE, AN EQUIVALENT AMOUNT OF LOAD MUST BE REMOVED FROM THE TRAIN THAT IS SUPPLYING THE ALTERNATE CONNECTION TO ENSURE THAT OPERABILITY OF THE TRAIN IS MAINTAINED. THIS LOAD REDUCTION MUST COME FROM LOADS WHICH WOULD BE LOADED ON THE DIESEL GENERATOR FOLLOWING A LOSS OF OFFSITE POWER (T=0).

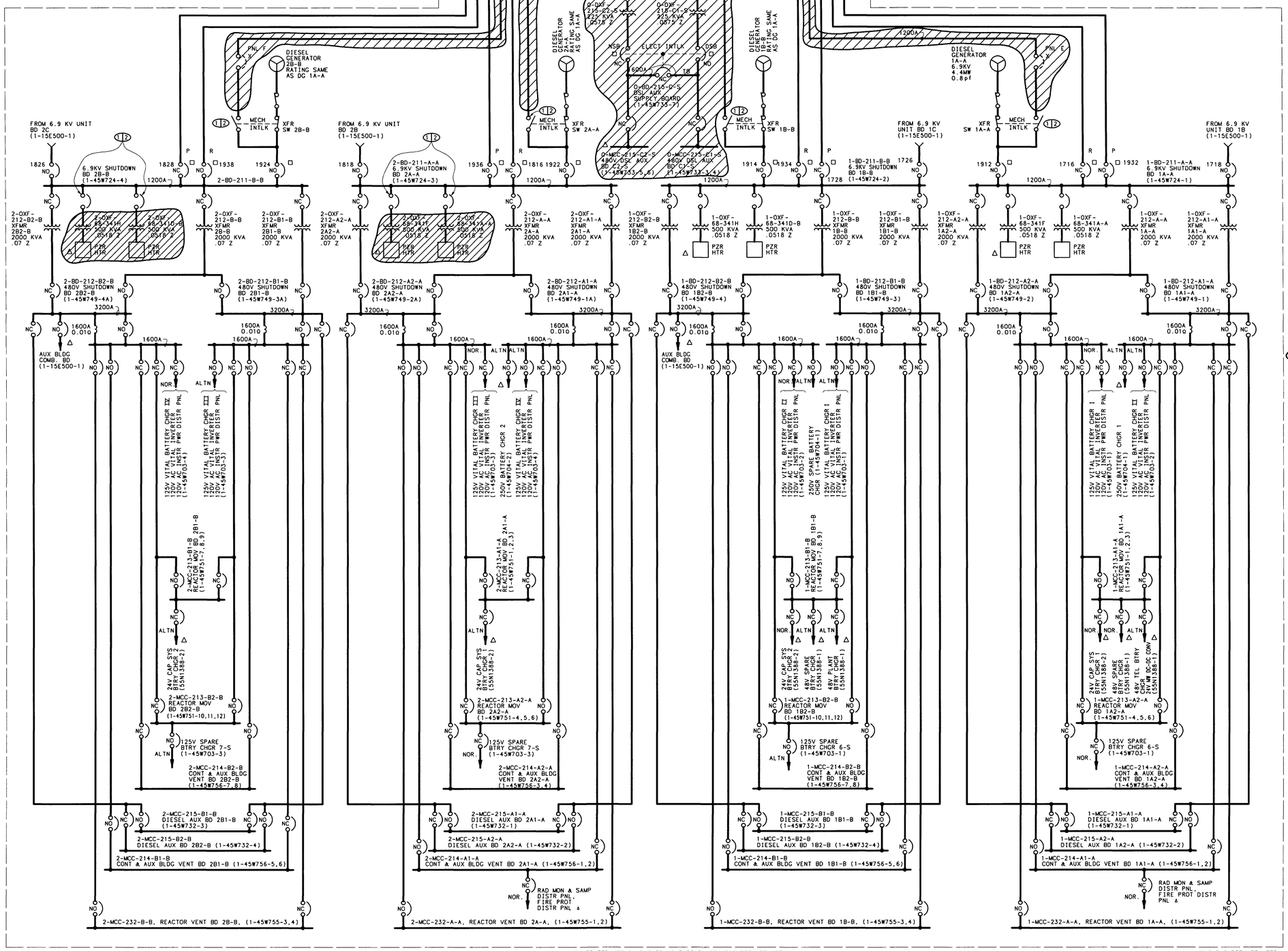
   NOTE CONT AT RIGHT:

NOTES CONT:

NOTE: EQUIVALENT LOADS MAY BE REMOVED FROM ANY OF THE VARIOUS BUSSES WITHIN THE TRAIN SUPPLYING THE ALTERNATE CONNECTION (EXCEPT CAA VENT BDS OR REACTOR VENT BDS (WHICH ARE TRIPPED OFF FOR UNDERVOLTAGE AND NOT AUTOMATICALLY RECONNECTED TO THE DIESEL GENERATORS)). FOR EXAMPLE, IF 125V BATTERY CHARGER I AND 120V AC VITAL INVERTER 1-I AND 2-I ARE BEING FED FROM THE ALTERNATE CONNECTION TO 480V AC VITAL TRANSFER SWITCH I, THE LOAD REDUCTION MUST COME FROM UNIT 1 TRAIN B 480V SHUTDOWN BOARDS OR MCCS. LOADS TO BE REMOVED SHALL BE COORDINATED WITH SYSTEM ENGINEERING AND SITE ENGINEERING.

AFTER THE LOAD REDUCTION, THE TRAIN SUPPLYING THE ALTERNATE CONNECTION WILL REMAIN OPERABLE BECAUSE THE CIRCUIT BREAKER ON THE 480V SHUTDOWN BOARD SUPPLYING THE ALTERNATE CONNECTION TO THE 480V VITAL TRANSFER SWITCH SERVES AS A QUALIFIED ISOLATOR. HOWEVER, THE 480V VITAL TRANSFER SWITCH CAN NOT BE DECLARED OPERABLE FOR TECHNICAL SPECIFICATIONS AND APPLICABLE LCO ACTIONS MUST BE CONSIDERED FOR LOADS CONNECTED TO THE TRANSFER SWITCH.

10. AUXILIARY BUILDING COMMON BOARD 0-BD-206-1 (BUS A AND BUS B) RECEIVES A SUPPLY FROM 480V SHUTDOWN BOARDS 1B2-B AND 2B2-B. THIS IS AN EMERGENCY FEEDER WHICH IS REQUIRED DURING CERTAIN ABNORMAL OPERATIONAL CONDITIONS. THERE ARE NO NORMAL OPERATIONAL CONDITIONS WHEN THE BREAKERS SUPPLYING THESE FEEDERS SHOULD BE CLOSED. USE OF THESE FEEDERS PLACES THE SHUTDOWN BOARD SUPPLYING THE POWER AND THE AUXILIARY BUILDING COMMON BOARD RECEIVING THE POWER IN AN UNANALYZED CONDITION AND BOTH BOARDS MUST BE DECLARED INOPERABLE. THE APPROPRIATE TECHNICAL SPECIFICATION REQUIREMENTS MUST BE FOLLOWED. FOR ADDITIONAL INFORMATION REGARDING APPENDIX R LIMITATIONS FOR THESE SHUTDOWN BOARD CIRCUIT BREAKERS, SEE NOTE 19 ON 1-45W749-4 AND NOTE 21 ON 1-45W749-4A.
11. USE OF THE 480V ALTERNATE FEEDERS FOR SPARE BATTERY CHARGERS 0-CHGR-236-6-S AND 0-CHGR-236-7-S IS ALLOWABLE WHEN THE CHANNEL THE SPARE BATTERY CHARGER IS REPLACING IS DIVISIONALLY COMPATABLE WITH THE TRAIN OF SEPARATION OF THE 480V BOARD WHICH PROVIDES THE ALTERNATE SUPPLY TO THE CHARGER. NO INTER-CONNECTION OF REDUNDANT DIVISIONS IS ALLOWED.
12. IN ADDITION TO THE LIMITATIONS IDENTIFIED IN NOTE 7, ALTERNATE FEEDERS TO THE 480V REACTOR VENT BOARDS AND THE 480V CAA VENT BOARDS ARE FURTHER LIMITED BY REDUCED SETTINGS ON THE UPSTREAM ALTERNATE BREAKER AT THE SHUTDOWN BOARD.
13. IN ADDITION TO THE LIMITATIONS IDENTIFIED IN NOTE 7, ALTERNATE FEEDERS TO THE 480V REACTOR MOV BOARDS AND THE 480V DIESEL AUX BOARDS ARE FED FROM A CIRCUIT BREAKER AT THE SHUTDOWN BOARD WHICH ALSO SUPPLIES THE NORMAL FEEDER TO ANOTHER BOARD. THE CIRCUIT BREAKER ON THE SHUTDOWN BOARD IS NOT RATED TO SUPPLY BOTH A NORMAL AND ALTERNATE LOAD SIMULTANEOUSLY. THEREFORE, THE NORMAL AND ALTERNATE FEEDERS SHOULD NOT BE USED AT THE SAME TIME.



ALL EQUIPMENT LOCATED WITHIN DASHED LINE IS CLASS 1E SAFETY RELATED EXCEPT AS NOTED

COMPANION DRAWINGS 1-15E500-1,-3

NUCLEAR SAFETY RELATED FSAR FIG 8.1-2A

BOARD / MCC IDENTIFIER:	NORMAL USE OF ALTERNATE FEEDER ALLOWED?	NOTES
0-BD-206-1 (BUS A)	NO	SEE NOTE 10
0-BD-206-1 (BUS B)	NO	SEE NOTE 10
1-BD-211-A-A	YES	SEE NOTE 8 FOR MAINT FEEDER LIMITATIONS
1-BD-211-B-B	YES	SEE NOTE 8 FOR MAINT FEEDER LIMITATIONS
2-BD-211-A-A	YES	SEE NOTE 8 FOR MAINT FEEDER LIMITATIONS
2-BD-211-B-B	YES	SEE NOTE 8 FOR MAINT FEEDER LIMITATIONS
1-BD-211-A-A(NCB-ACS)	YES	NOR CONTROL BUS - ALT CONTROL SUPPLY
1-BD-211-A-A(BCB-ACS)	YES	BACKUP CONTROL BUS - ALT CONTROL SUPPLY
1-BD-211-B-B(NCB-ACS)	YES	NOR CONTROL BUS - ALT CONTROL SUPPLY
1-BD-211-B-B(BCB-ACS)	YES	BACKUP CONTROL BUS - ALT CONTROL SUPPLY
2-BD-211-A-A(NCB-ACS)	YES	NOR CONTROL BUS - ALT CONTROL SUPPLY
2-BD-211-A-A(BCB-ACS)	YES	BACKUP CONTROL BUS - ALT CONTROL SUPPLY
2-BD-211-B-B(NCB-ACS)	YES	NOR CONTROL BUS - ALT CONTROL SUPPLY
2-BD-211-B-B(BCB-ACS)	YES	BACKUP CONTROL BUS - ALT CONTROL SUPPLY
1-BD-212-A1-A	YES	SEE NOTE 6 FOR LIMITATIONS
1-BD-212-A2-A	YES	SEE NOTE 6 FOR LIMITATIONS
1-BD-212-B1-B	YES	SEE NOTE 6 FOR LIMITATIONS
1-BD-212-B2-B	YES	SEE NOTE 6 FOR LIMITATIONS
2-BD-212-A1-A	YES	SEE NOTE 6 FOR LIMITATIONS
2-BD-212-A2-A	YES	SEE NOTE 6 FOR LIMITATIONS
2-BD-212-B1-B	YES	SEE NOTE 6 FOR LIMITATIONS
2-BD-212-B2-B	YES	SEE NOTE 6 FOR LIMITATIONS
1-BD-212-A1-A(NCB-ACS)	YES	NOR CONTROL BUS - ALT CONTROL SUPPLY
1-BD-212-A1-A(ECB-ACS)	YES	EMER CONTROL BUS - ALT CONTROL SUPPLY
1-BD-212-A2-A(NCB-ACS)	YES	NOR CONTROL BUS - ALT CONTROL SUPPLY
1-BD-212-A2-A(ECB-ACS)	YES	EMER CONTROL BUS - ALT CONTROL SUPPLY
1-BD-212-B1-B(NCB-ACS)	YES	NOR CONTROL BUS - ALT CONTROL SUPPLY
1-BD-212-B1-B(ECB-ACS)	YES	EMER CONTROL BUS - ALT CONTROL SUPPLY
1-BD-212-B2-B(NCB-ACS)	YES	NOR CONTROL BUS - ALT CONTROL SUPPLY
1-BD-212-B2-B(ECB-ACS)	YES	EMER CONTROL BUS - ALT CONTROL SUPPLY
2-BD-212-A1-A(NCB-ACS)	YES	NOR CONTROL BUS - ALT CONTROL SUPPLY
2-BD-212-A1-A(ECB-ACS)	YES	EMER CONTROL BUS - ALT CONTROL SUPPLY
2-BD-212-A2-A(NCB-ACS)	YES	NOR CONTROL BUS - ALT CONTROL SUPPLY
2-BD-212-A2-A(ECB-ACS)	YES	EMER CONTROL BUS - ALT CONTROL SUPPLY
2-BD-212-B1-B(NCB-ACS)	YES	NOR CONTROL BUS - ALT CONTROL SUPPLY
2-BD-212-B1-B(ECB-ACS)	YES	EMER CONTROL BUS - ALT CONTROL SUPPLY
2-BD-212-B2-B(NCB-ACS)	YES	NOR CONTROL BUS - ALT CONTROL SUPPLY
2-BD-212-B2-B(ECB-ACS)	YES	EMER CONTROL BUS - ALT CONTROL SUPPLY
1-MCC-213-A1-A	NO	SEE NOTE 7 AND NOTE 13
1-MCC-213-A2-A	NO	SEE NOTE 7 AND NOTE 13
1-MCC-213-B1-B	NO	SEE NOTE 7 AND NOTE 13
1-MCC-213-B2-B	NO	SEE NOTE 7 AND NOTE 13
2-MCC-213-A1-A	NO	SEE NOTE 7 AND NOTE 13
2-MCC-213-A2-A	NO	SEE NOTE 7 AND NOTE 13
2-MCC-213-B1-B	NO	SEE NOTE 7 AND NOTE 13
2-MCC-213-B2-B	NO	SEE NOTE 7 AND NOTE 13
1-MCC-214-A1-A	NO	SEE NOTE 7 AND NOTE 12
1-MCC-214-A2-A	NO	SEE NOTE 7 AND NOTE 12
1-MCC-214-B1-B	NO	SEE NOTE 7 AND NOTE 12
1-MCC-214-B2-B	NO	SEE NOTE 7 AND NOTE 12
2-MCC-214-A1-A	NO	SEE NOTE 7 AND NOTE 12
2-MCC-214-A2-A	NO	SEE NOTE 7 AND NOTE 12
2-MCC-214-B1-B	NO	SEE NOTE 7 AND NOTE 12
2-MCC-214-B2-B	NO	SEE NOTE 7 AND NOTE 12
0-CHGR-215-C-S	NO	ADD'L DG NOT USED, NOT IN UNIT 1 BOUNDARY
1-CHGR-215-A-A	YES	
1-CHGR-215-B-B	YES	
2-CHGR-215-A-A	YES	
2-CHGR-215-B-B	YES	
0-MCC-215-C1-S	NO	ADD'L DG NOT USED, NOT IN UNIT 1 BOUNDARY
0-MCC-215-C2-S	NO	ADD'L DG NOT USED, NOT IN UNIT 1 BOUNDARY
1-MCC-215-A1-A	NO	SEE NOTE 7 AND NOTE 13
1-MCC-215-A2-A	NO	SEE NOTE 7 AND NOTE 13
1-MCC-215-B1-B	NO	SEE NOTE 7 AND NOTE 13
1-MCC-215-B2-B	NO	SEE NOTE 7 AND NOTE 13
2-MCC-215-A1-A	NO	SEE NOTE 7 AND NOTE 13
2-MCC-215-A2-A	NO	SEE NOTE 7 AND NOTE 13
2-MCC-215-B1-B	NO	SEE NOTE 7 AND NOTE 13
2-MCC-215-B2-B	NO	SEE NOTE 7 AND NOTE 13
1-MCC-232-A-A	NO	SEE NOTE 7 AND NOTE 12
1-MCC-232-B-B	NO	SEE NOTE 7 AND NOTE 12
2-MCC-232-A-A	NO	SEE NOTE 7 AND NOTE 12
2-MCC-232-B-B	NO	SEE NOTE 7 AND NOTE 12
1-INV-235-1-D	NO	SEE NOTE 9
1-INV-235-2-E	NO	SEE NOTE 9
1-INV-235-3-F	NO	SEE NOTE 9
1-INV-235-4-G	NO	SEE NOTE 9
2-INV-235-1-D	NO	SEE NOTE 9
2-INV-235-2-E	NO	SEE NOTE 9
2-INV-235-3-F	NO	SEE NOTE 9
2-INV-235-4-G	NO	SEE NOTE 9
0-INV-235-1-D	NO	SEE NOTE 9
0-INV-235-2-E	NO	SEE NOTE 9
0-INV-235-3-F	NO	SEE NOTE 9
0-INV-235-4-G	NO	SEE NOTE 9
0-CHGR-236-1-D	NO	SEE NOTE 9
0-CHGR-236-2-E	NO	SEE NOTE 9
0-CHGR-236-3-F	NO	SEE NOTE 9
0-CHGR-236-4-G	NO	SEE NOTE 9
0-CHGR-236-6-S	YES	SEE NOTE 11
0-CHGR-236-7-S	YES	SEE NOTE 11
0-CHGR-239-S	NO	SEE NOTE 7
0-CHGR-239-1	NO	SEE NOTE 7
0-CHGR-239-2	NO	SEE NOTE 7

TABLE A
ALTERNATE FEEDER STATUS

SYMBOLS:

(1|2) - DENOTES UNIT 1/UNIT 2 INTERFACE.

[1|2] - DENOTES NON-CLASS 1E UNIT 1 / UNIT 2 INTERFACE.

THIS CONFIGURATION CONTROL DRAWING SUPERSEDES UNIT 1 AS-CONSTRUCTED DRAWING 15E500-2 REVISION J.

39	52285	CJB	ESJ	JKQ	10-7-09
REVISED PER DCA 52285-159-O.					
REV	CHANGE REF	PREPARER	CHECKER	APPROVED	DATE

SCALE: NTS — EXCEPT AS NOTED

PROJECT FACILITY
GENERAL
UNITS 1 & 2

TITLE
KEY DIAGRAM STATION AUX POWER SYSTEM

1 — WATTS BAR NUCLEAR PLANT, TENNESSEE VALLEY AUTHORITY — Q

DESIGN		INITIAL ISSUE	ENGINEERING APPROVAL
DRAFTER DRF/MEB	CHECKER JDM/ESJ	RO ISSUE PER WBEP 5.17 & RIMS B26 '91 0129 377	1 VICTOR PACHECO
DESIGNER M.L. CHAPMAN	REVIEWER DVT R.L. FORESTER		2 S.M. ENRIQUEZ
			3 C.C. LYKE FOR MCB

ISSUED BY: R.M. JOHNSON FOR WLE

DATE 6-14-91 | 85 | E | 1-15E500-2 | R39

PRINTS REQ'D R — PRINT SIZE F: BR OR PROJ AB CE EE ME NE FE HE SE TE BL BF WB SO — PRINT SIZE H: BR OR PROJ AB CE EE ME NE FE HE SE TE BL BF WB SO

CAD MAINTAINED DRAWING

CONFIGURATION CONTROL DRAWING