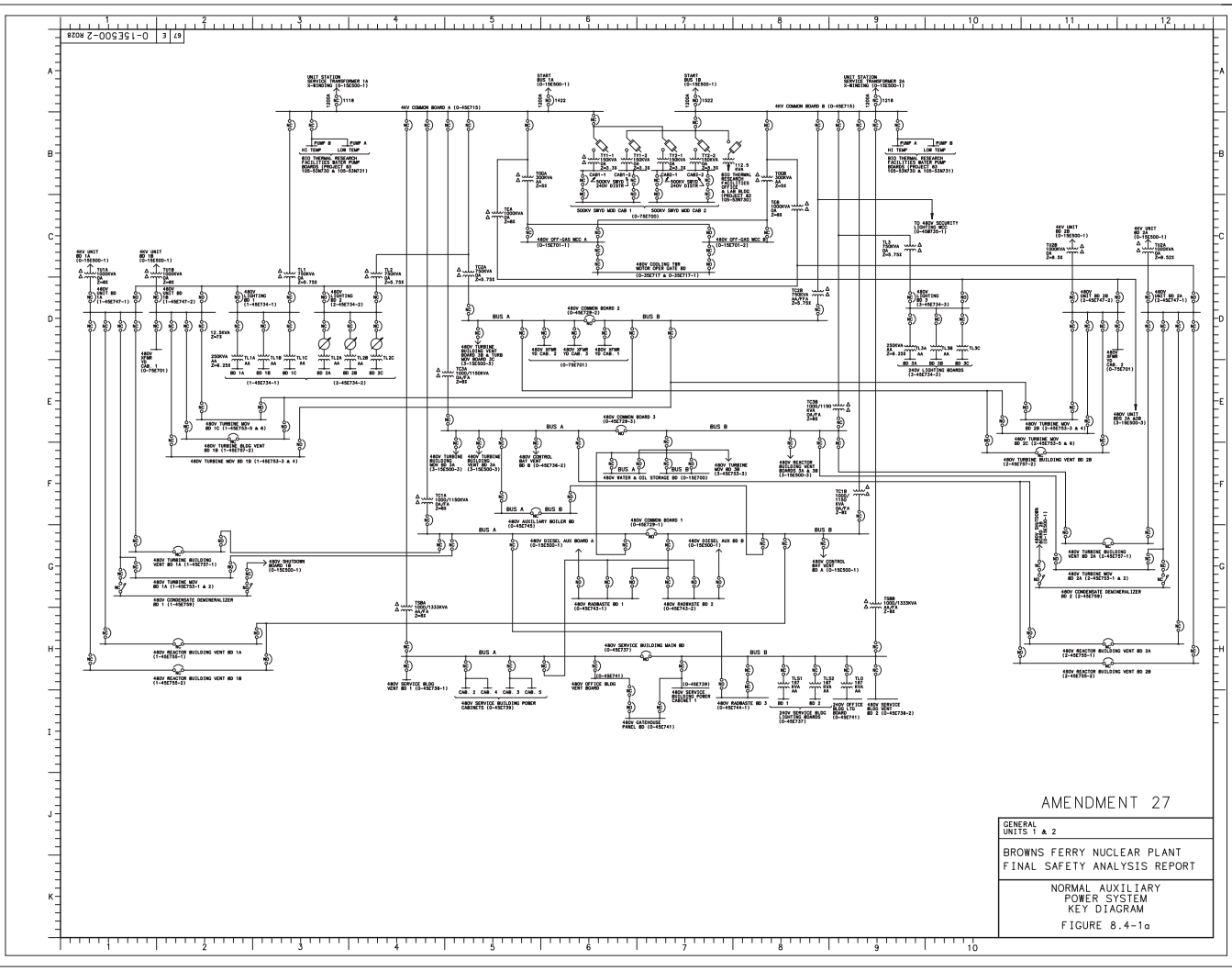
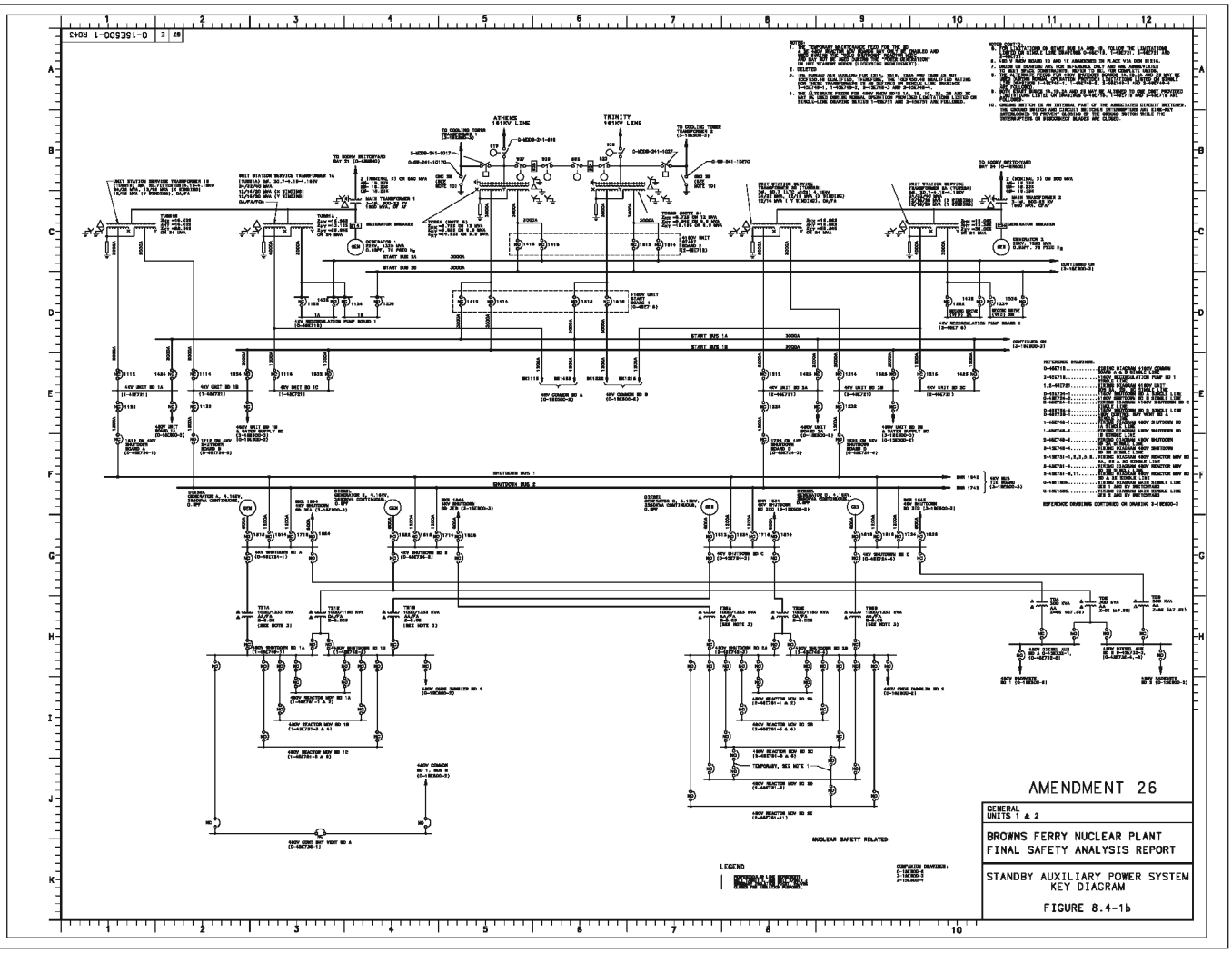
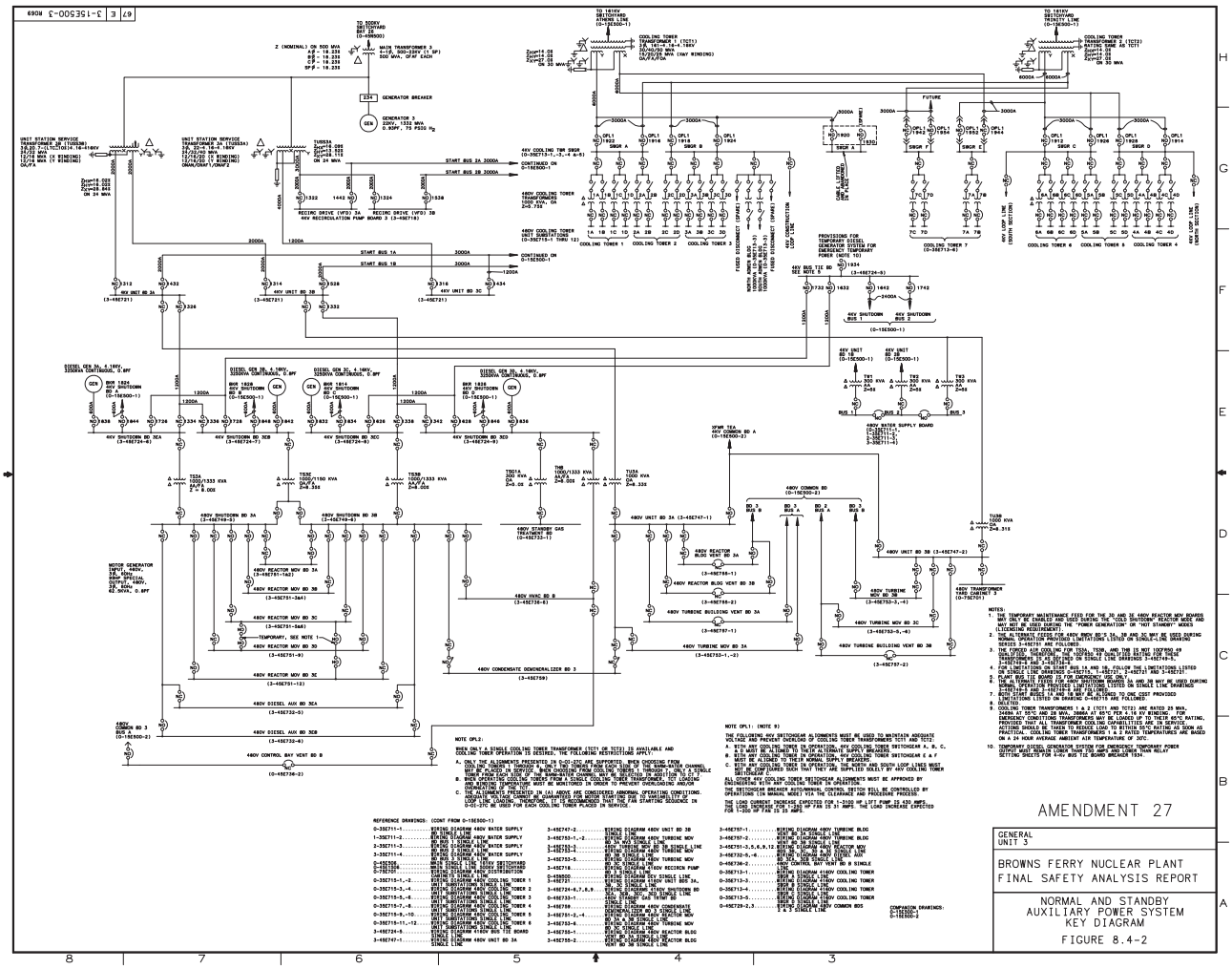

0-15E500-2 R028
67 E
UNIT STATION SERVICE TRANSFORMER 1A X-WINDING (0-15E500-1)
START BUS 1A (0-15E500-1)
START BUS 1B (0-15E500-1)
UNIT STATION SERVICE TRANSFORMER 2A X-WINDING (0-15E500-1)
4KV COMMON BOARD A (0-45E715)
4KV COMMON BOARD B (0-45E715)
PUMP B HI TEMP
PUMP A LOW TEMP
BIO THERMAL RESEARCH FACILITIES WATER PUMP HOUSE (REMOTE) #1 (0S-53A730 & 10S-53A731)
500KV SWYD MOD CAB 1 (0-78E700)
500KV SWYD MOD CAB 2
480V OFF-GAS MCC A (0-15E701-11)
480V OFF-GAS MCC B1 (0-15E701-21)
480V COOLING TW MOTOR CNTR SUS BD (0-35E717 & 0-35E717-1)
TO 480V SECURITY LIGHTING BDS (0-69B25-1)
480V UNIT BD 1A (0-15E500-1)
480V UNIT BD 1B (1-45E747-2)
480V UNIT BD 2A (2-45E747-1)
480V UNIT BD 2B (2-45E747-2)
480V UNIT BD 3A (3-15E500-3)
480V UNIT BD 3B (3-15E500-3)
480V SHUTDOWN BOARD 1A (0-15E500-1)
480V SHUTDOWN BOARD 1B (0-15E500-1)
480V SHUTDOWN BOARD 2A (2-15E500-1)
480V SHUTDOWN BOARD 2B (2-15E500-1)
480V SHUTDOWN BOARD 3A (3-15E500-3)
480V SHUTDOWN BOARD 3B (3-15E500-3)
480V LIGHTING (1-45E734-1)
480V LIGHTING (2-45E734-2)
480V LIGHTING (3-45E734-3)
480V LIGHTING (2-45E734-3)
480V CAM (0-78E701)
480V TURBINE BUILDING VENT BOARD 1A & TURB BLDG VENT BD 2A (1-15E500-2)
480V TURBINE BUILDING VENT BOARD 1B & TURB BLDG VENT BD 2B (2-15E500-2)
480V TURBINE MOV BD 1C (1-45E753-5 & 6)
480V TURBINE BLDG VENT BD 1B (1-45E737-2)
480V TURBINE MOV BD 1B (1-45E753-3 & 4)
480V TURBINE MOV BD 2C (2-45E753-5 & 6)
480V TURBINE BUILDING VENT BD 2B (2-45E737-2)
480V TURBINE MOV BD 2B (2-45E753-3 & 4)
480V TURBINE BUILDING VENT BD 2A (2-45E737-1)
480V TURBINE MOV BD 2A (2-45E753-1 & 2)
480V CONDENSATE DEMINERALIZER BD 2 (2-45E708)
480V TURBINE BUILDING VENT BD 1A (1-45E737-1)
480V TURBINE MOV BD 1A (1-45E753-1 & 2)
480V CONDENSATE DEMINERALIZER BD 1 (1-45E708)
480V REACTOR BUILDING VENT BD 1A (1-45E735-1)
480V REACTOR BUILDING VENT BD 1B (1-45E735-2)
480V REACTOR BUILDING VENT BOARD 1A & 3A (1-15E500-3)
480V REACTOR BUILDING VENT BOARD 2A & 3B (2-15E500-3)
480V REACTOR BUILDING VENT BD 2A (2-45E735-1)
480V REACTOR BUILDING VENT BD 2B (2-45E735-2)
480V WATER & SOIL STORAGE BD (0-15E700)
480V AUXILIARY BOILER BD (0-45E745)
480V DIESEL AUX BOARD A (0-15E500-1)
480V DIESEL AUX BD B (0-15E500-1)
480V CONTROL BOARD 2A (0-45E736-2)
480V CONTROL BOARD 2B (0-45E736-2)
480V CONTROL BOARD A (0-15E500-1)
480V RADWASTE BD 1 (0-45E743-1)
480V RADWASTE BD 2 (0-45E743-2)
480V RADWASTE BD 3 (0-45E744-1)
480V SERVICE BLDG VENT BD 1 (0-45E739-1)
480V SERVICE BUILDING MAIN BD (0-45E737)
480V SERVICE BUILDING POWER CABINETS (0-45E739)
480V SERVICE BUILDING POWER CABINET 1
480V OFFICE BLDG VENT BOARD
480V OFFICE BLDG 1/0 BOARD (0-45E741)
480V SERVICE BLDG VENT BD 1 (0-45E738-2)
480V GATEHOUSE PANEL BD (0-45E741)
BUS A
BUS B
AMENDMENT 27
GENERAL
UNITS 1 & 2
BROWNS FERRY NUCLEAR PLANT
FINAL SAFETY ANALYSIS REPORT
NORMAL AUXILIARY POWER SYSTEM KEY DIAGRAM
FIGURE 8.4-1a


ATHENS 161KV LINE
TRINITY 161KV LINE
AMENDMENT 26
GENERAL
UNITS 1 & 2
BROWNS FERRY NUCLEAR PLANT
FINAL SAFETY ANALYSIS REPORT
STANDBY AUXILIARY POWER SYSTEM
KEY DIAGRAM
FIGURE 8.4-1b
NUCLEAR SAFETY RELATED
LEGEND



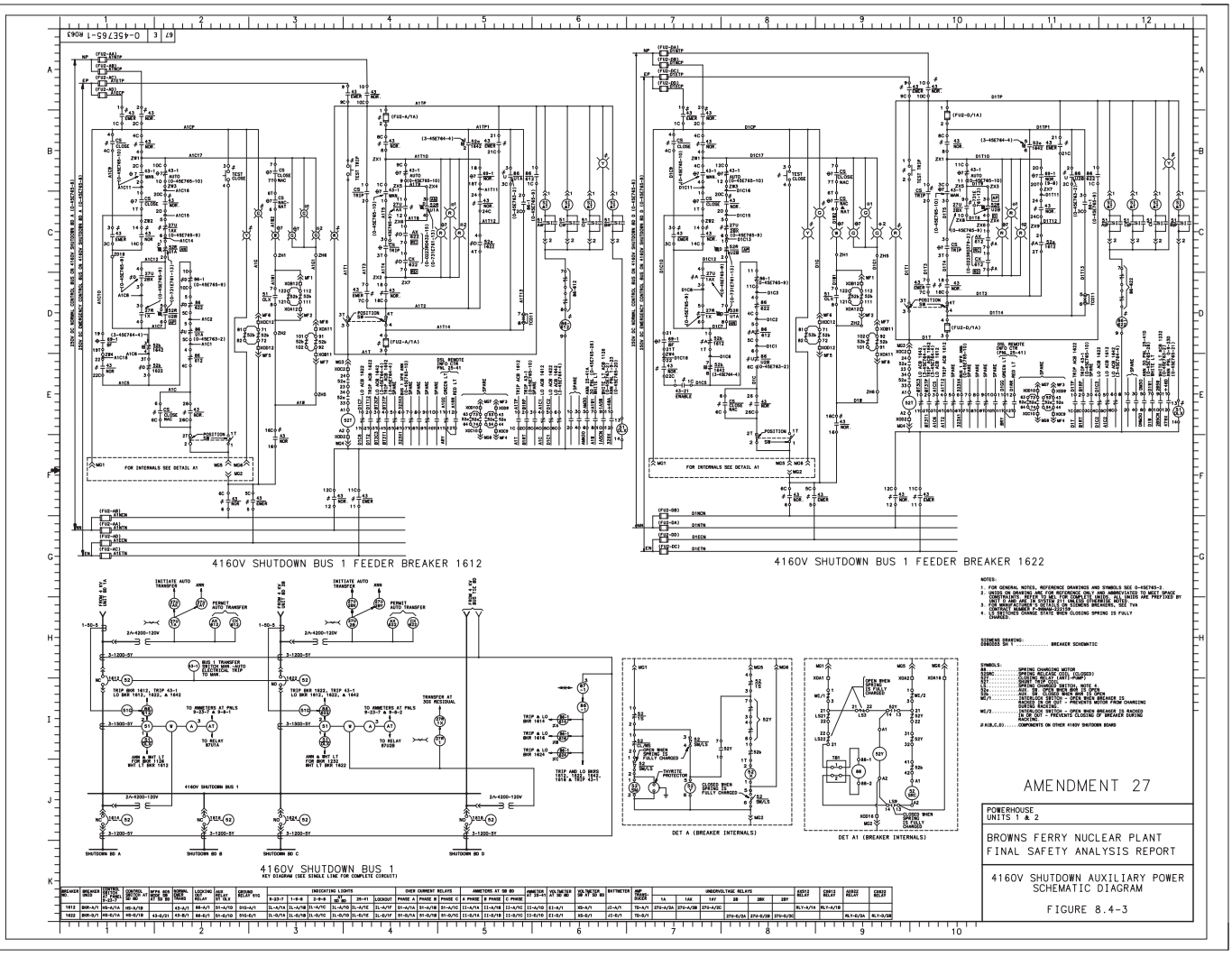
AMENDMENT 27

GENERAL
UNIT 3

BROWNS FERRY NUCLEAR PLANT
FINAL SAFETY ANALYSIS REPORT

NORMAL AND STANDBY
AUXILIARY POWER SYSTEM
KEY DIAGRAM

FIGURE 8.4-2



BREAKER NO.	BREAKER UNIT	CONTROL SWITCH (LOCATION) (SEE NOTE 2)	CONTROL SWITCH CONTACTS AT 1R BD	SPARE 86BK CONTACTS AT 1R BD	NORMAL POSITION	LOCKING RELAY	86BK RELAY (SEE NOTE 3)	GROUND RELAY 51G	INDICATING LIGHTS 9-23-7	1-R-8	2-R-8	86BK	20-41	LOCKOUT	OVER CURRENT RELAYS PHASE A	PHASE B	PHASE C	AMMETERS AT 1R BD A PHASE	B PHASE	C PHASE	AMMETER 24-41	VOLTMETER AT 1R BD	KV TRANSDUCER AT 1R BD	WATTMETER	MW TRANSDUCER	UNDERVOLTAGE RELAYS 1A	1AX	1AY	2B	2BK	2BF	62PC3 RELAY	62PC2 RELAY	62PC3 RELAY
1612	BKR-A/1	HS-A/1A	HS-A/1B		43-A/1	86-A/1	51-A/1D	51G-A/1	IL-A/1A	IL-A/1B	IL-A/1C	IL-A/1D	IL-A/1E	IL-A/1F	51-A/1A	51-A/1B	51-A/1C	I1-A/1A	I1-A/1B	I1-A/1C	I1-A/1D	E1-A/1	KV-A/1		J1-A/1	TD-A/1	27U-A/3A	27U-A/3B	27U-A/3C				KLY-A/1A	KLY-A/1B	
1622	BKR-A/1	HS-B/1A	HS-B/1B	43-A/21	43-B/1	86-B/1	51-A/1D	51G-A/1	IL-B/1A	IL-B/1B	IL-B/1C	IL-B/1D	IL-B/1E	IL-B/1F	51-B/1A	51-B/1B	51-B/1C	I1-B/1A	I1-B/1B	I1-B/1C	I1-B/1D	E1-B/1	KV-B/1		J1-B/1	TD-B/1				27U-B/3A	27U-B/3B	27U-B/3C		KLY-B/3A	KLY-B/3B

NOTES:
1. FOR GENERAL NOTES, REFERENCE DRAWINGS AND SYMBOLS SEE 0-45E765-2
2. INDICATING LIGHTS (RED) ON THE CONTROL SWITCH ARE USED TO MEET SPACE LIMITATIONS ON THE PANEL. ALL OTHER INDICATING LIGHTS ARE PROVIDED BY UNIT 2 UNLESS OTHERWISE NOTED.
3. 86BK RELAYS ARE IN VOLTAGE SELECTING BREAKERS. SEE TVA CONTRACT NUMBER 47B600-87376.
4. LS SWITCHES CHANGE STATE WHEN CLOSING SPRING IS FULLY CHARGED.

SCHEMATIC DRAWING:
0-45E765-1 ..... BREAKER SCHEMATIC

SYMBOLS:
88 ..... SPRING CHARGING MOTOR
52/CC ..... SPRING RELEASE COIL (CLOSED)
52/T ..... CLOSING COIL OF (52/T)-PUMP
52/TC ..... TRIP COIL
52/X ..... SPARE TERMINAL BUTTON, NOTE 4
52a ..... AUX. SW. OPEN WHEN BKR OPEN
52b ..... AUX. SW. CLOSED WHEN BKR OPEN
MC/1 ..... INTERLOCK SWITCH - CLOSED WHEN BREAKER IS RACKED IN OR OUT - PREVENTS MOTOR FROM CHARGING SPRING
MC/2 ..... INTERLOCK SWITCH - OPEN WHEN BREAKER IS RACKED IN OR OUT - PREVENTS CLOSING OF BREAKER DURING RACKING
#.#(B,C,D).....COMPONENTS ON OTHER 4160V SHUTDOWN BOARD

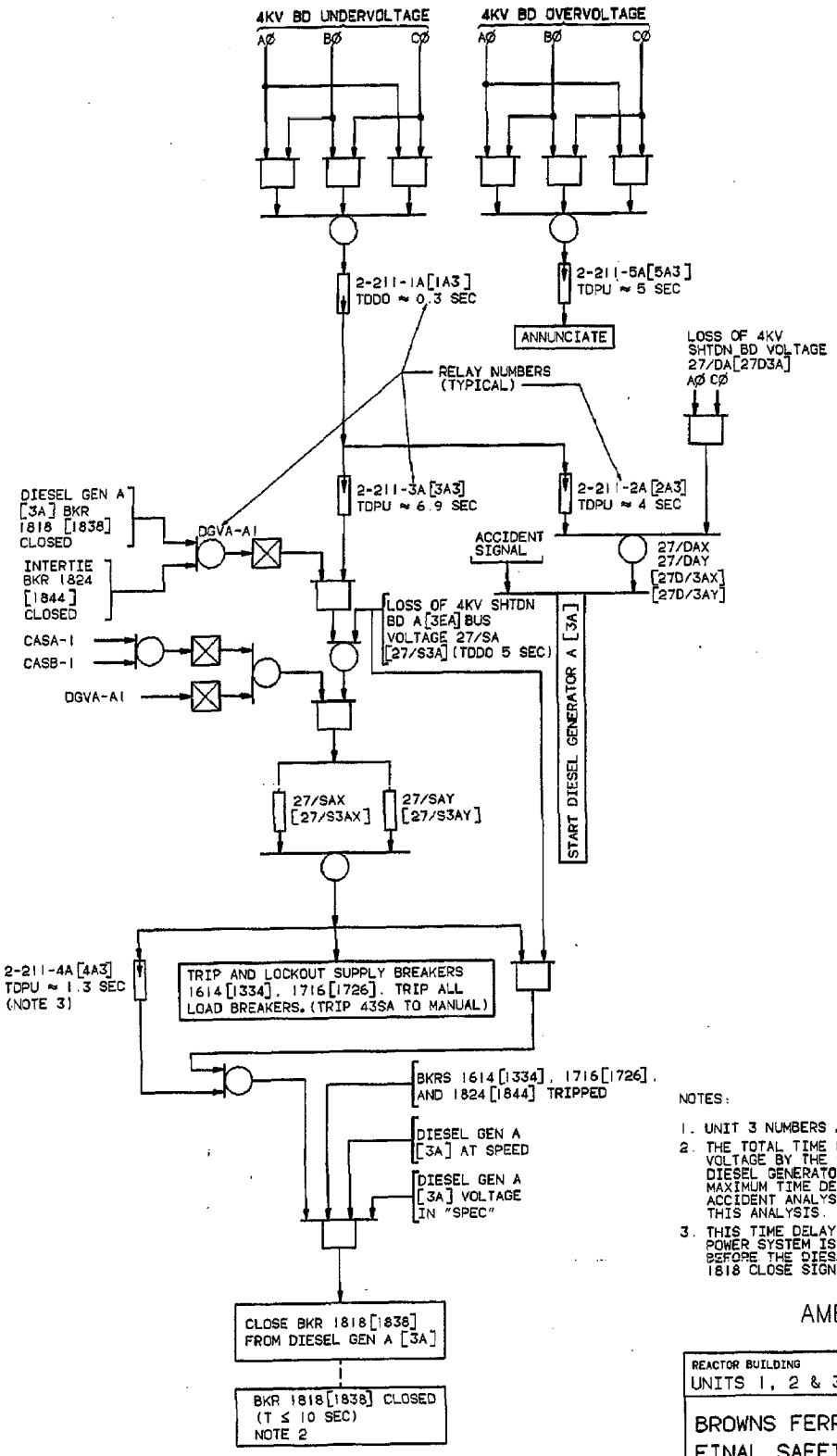
AMENDMENT 27

POWERHOUSE
UNITS 1 & 2

BROWNS FERRY NUCLEAR PLANT
FINAL SAFETY ANALYSIS REPORT

4160V SHUTDOWN AUXILIARY POWER SCHEMATIC DIAGRAM

FIGURE 8.4-3



NOTES:

1. UNIT 3 NUMBERS ARE IN BRACKETS [ ].
2. THE TOTAL TIME FROM DETECTION OF DEGRADED VOLTAGE BY THE 27 RELAYS TO THE CLOSING OF THE DIESEL GENERATOR BREAKER MUST NOT EXCEED THE MAXIMUM TIME DELAY THAT IS ASSUMED IN THE FSAR ACCIDENT ANALYSIS. SEE FSAR SECTION 6.5 FOR THIS ANALYSIS.
3. THIS TIME DELAY ALLOWS FOR SHUTDOWN BOARD POWER SYSTEM ISOLATION AND VOLTAGE DECAY BEFORE THE DIESEL GENERATOR BREAKER 1818 CLOSE SIGNAL IS ISSUED.

AMENDMENT 16

REACTOR BUILDING
UNITS 1, 2 & 3

BROWNS FERRY NUCLEAR PLANT
FINAL SAFETY ANALYSIS REPORT

LOGIC DIAGRAM - DEGRADED VOLTAGE AND LOSS-OF-VOLTAGE RELAY CHANNELS

FIGURE 8.4-4