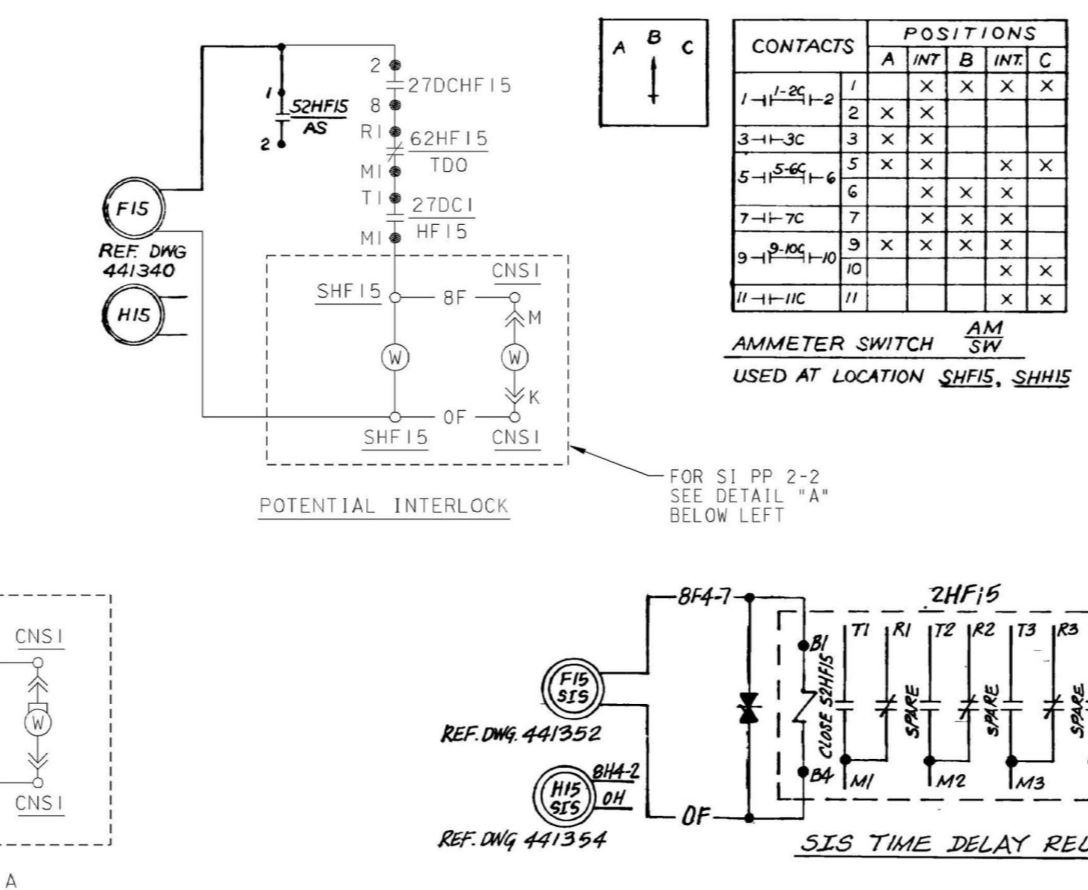
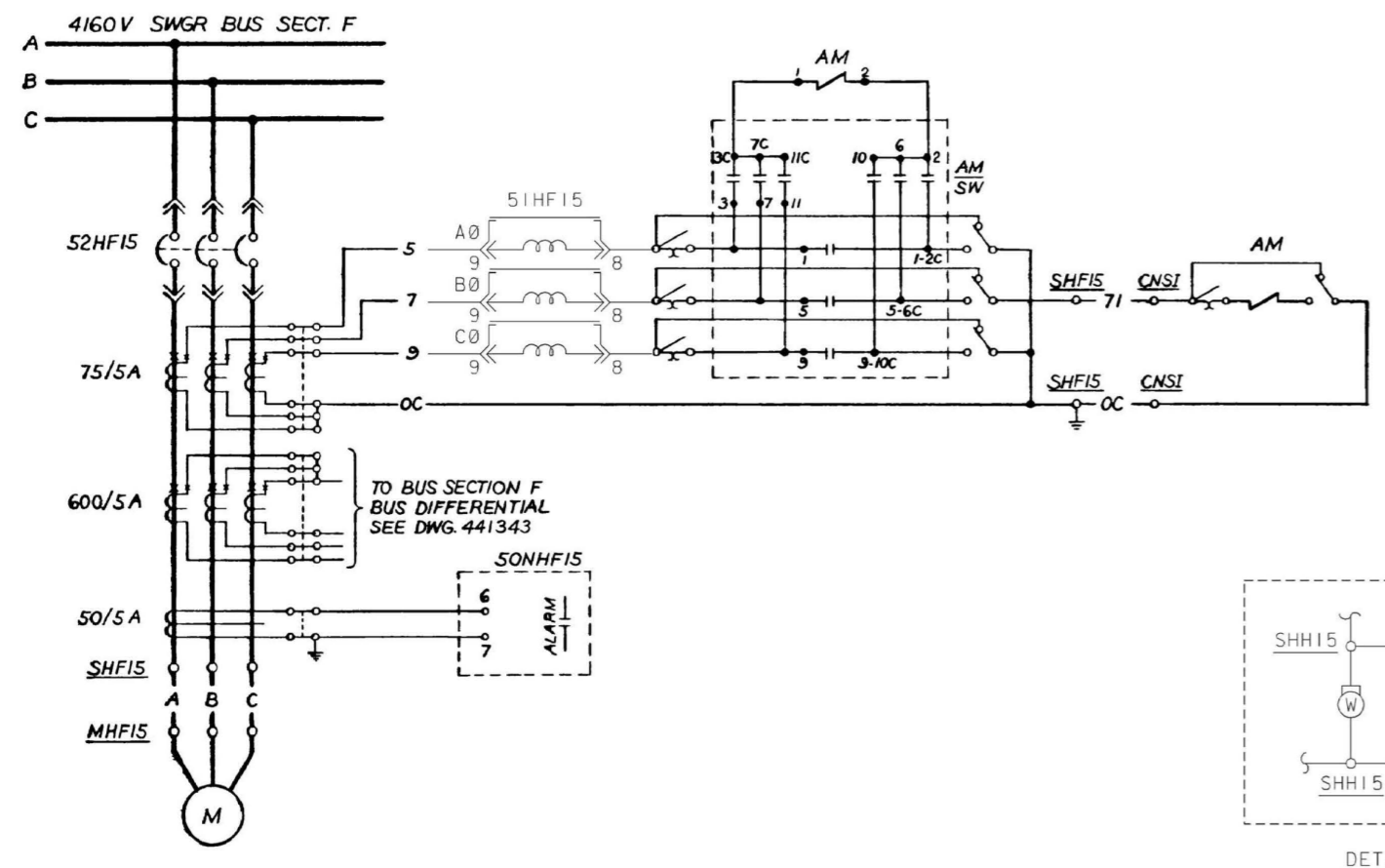
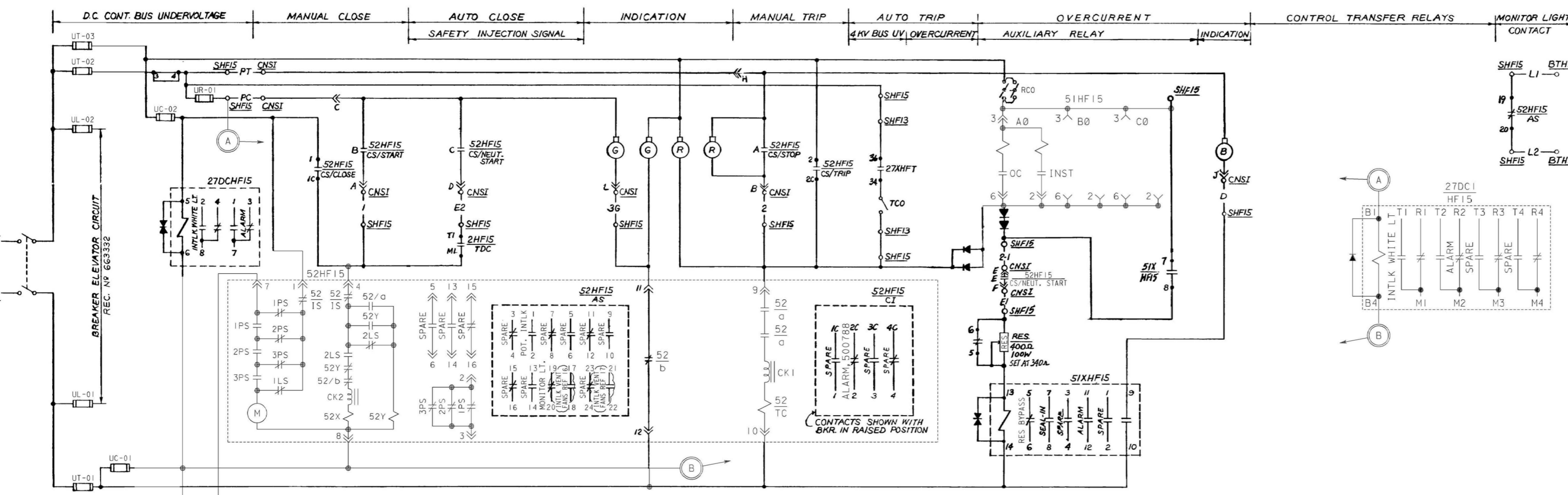


TABLE OF DEVICES						
DEVICE NO	FUNCTION	RATINGS	MFR	TYPE	CAT./DWS. NO	REMARKS
2HFIS	SAFETY INJECTION SIGNAL TIMING REL.	120V AC	AGASTAT			REFERENCE 14
2HHIS	SAFETY INJECTION SIGNAL TIMING REL.	120V AC	AGASTAT			REFERENCE 14
27DCHFIS	DC CONTROL BUS UNDERVOLTAGE REL.	125V DC	G.E. Co.	HGA		(6), (7) TRIPS ON UNDERVOLTAGE & TRANSFER TO DIESEL
27XHF1, HHT	4 KV UNDERVOLTAGE TRIP AUX. REL.					
27DCHFIS, HHTS	DC CONTROL BUS UNDERVOLTAGE RELAY	125V DC	AGASTAT	EGPD		
62HF15, HHIS	BKR CLOSING SPRING TIME DELAY RELAY	125V DC	AGASTAT	ETR		
50NHIS, HHS	GROUND OVERCURRENT SENSOR				(3), (12)	ALARM ONLY
51HFIS, HHIS	OVERCURRENT RELAY				(3), (12)	
51XHFIS, HHIS	OVERCURRENT AUXILIARY RELAY	24V DC	G.E. Co.	HFA		
52HFIS, HHIS	CIRCUIT BREAKER				(3), (12)	REC NO. 6009838
52HF15, 52HH15	CIRCUIT BREAKER AUX SWITCH					PART OF SWGR
52HF15, 52HH15	CIRCUIT BREAKER CELL INTLK					PART OF SWGR



CONTACTS		POSITIONS			REMARKS
TRIP	AFTER TRIP	TRIP	CLOSE		
1-11-1C		X	X	X	THIS DWG
2-11-2C	X				SPARE
3-11-3C	X				SPARE
4-11-4C	X				SPARE
5-11-5C	X	X	X	X	SPARE
6-11-6C	X	X	X	X	SPARE
7-11-7C	X	X	X	X	SPARE
8-11-8C	X	X	X	X	SPARE
9-11-9C	X	X	X	X	SPARE
10-11-10C	X	X	X	X	SPARE
11-11-11C	X	X	X	X	SPARE

THREE LINE DIAGRAM



125V DC CONTROL SCHEMATIC SAFETY INJECTION PUMP N° 21, CIRCUIT N° FISH00

TYPICAL SCHEMATIC DIAGRAM FOR SAFETY INJECTION PUMP N° 21 & 22 EXCEPT AS SHOWN IN TABLE BELOW

MOTOR N°	MOTOR LOC N°	CKT BKR N°	CIRCUIT N°	BUS SECTION	DC CKT N°	BUS UNDERVOLTAGE RELAY	LOCATION	CONTACT TRIP	OVERCURRENT	ALARM	CIRCUIT N°	GROUND	CONT BUS
21	MHFIS	52HFIS	FISH00	F	113D	27XHF1	SHF13	3/0-11-0-1	A10300DF	A10302DF	AW4407DF		
22	MHHIS	52HHIS	HISH00	H	314D	27XHHT	SHH13	3/0-11-0-1	A10300DH	A10303DH	AW4207DH		

- REFERENCES
- DESCRIPTION OF ELEC. SCHEMATIC DIAGS, SYMBOLS & CKT DESIGNATIONS 050003
 - EQUIPMENT LOCATION NUMBERS 103013
 - SINGLE LINE METER & RELAY DIAG 4160V SYSTEM SH.2 (BUS F) 441229
 - SINGLE LINE METER & RELAY DIAG 125V DC SYSTEM 441240
 - SCHEMATIC DIAG. 4160V BUS DIFFERENTIAL SH.2 441343
 - SCHEMATIC DIAG. 4160V BUS F AUTOMATIC TRANSFER 441352
 - SCHEMATIC DIAG. 4160V BUS H AUTOMATIC TRANSFER 441354
 - SCHEMATIC DIAG. POTENTIAL & SYNCHRONIZING 4160V SYSTEM 441340
 - LOGIC DIAGRAM SAFETY INJECTION PUMPS 102734
 - PIPING SCHEMATIC SAFETY INJECTION SYSTEM 108005
 - SCHEMATIC DIAG. MAIN ANNUNCIATOR SH.1 500771
 - SINGLE LINE METER & RELAY DIAG 4160V SYSTEM SH.3 (BUS G & H) 441230
 - SCHEMATIC DIAGRAM MONITOR LIGHT BOX C 441454
 - LIST OF ELECTRICAL DEVICES FOR PROTECTION & CONTROL CIRCUITS 050011
 - P.D.S. CONTROL CIRCUITS SCHEMATIC DIAGRAM 6009838-69
 - SCHEMATIC DIAG AUX & FUEL HANDLING BLDGS VENTILATION SYS (FV01) 454671
 - SCHEMATIC DIAG AUX & FUEL HANDLING BLDGS VENTILATION SYS (FV02) 454678

- EQUIPMENT LOCATION NUMBERS
- BTH10 TERMINAL BOX AREA H N° 110
 - CNS1 CONTROL BOARD SAFETY INJECTION
 - MHFIS SAFETY INJECTION PUMP N° 21
 - SHFIS SWITCHGEAR 4KV BUS F CUBICLE 15

NUCLEAR SAFETY RELATED

KEY DWG. SECTION 4

DATE 11-20-2009	REVISION DESCRIPTION REVISED PER DDN-2493-0	DWG SCALE: BILL OF MATL: SUPDS: SUPSD BY:
D.D. MNRU R.E. SMBS I.V. P.E. LAL3		DRAWING SHEET PAGE REV 441315 1 0 16
PACIFIC GAS AND ELECTRIC COMPANY SAN FRANCISCO, CALIFORNIA		

PASTEN 441315.dgn
 DSN 441315
 CAD User: MNRU Date: 11-20-2009