

REF. DESIG.	DEVICE	FUNCTION	SWITCH	INDICATOR LAMPS	LOCATION
				RED GREEN OTHER	MTG LOC SH
B33-C001A	PUMP "A" DRIVE MOTOR BRK 3A		S101A	X X X	H13-P810-4C 24
B33-C001B	PUMP "A" DRIVE MOTOR BRK 3B		S101B	X X X	H13-P810-4C 25
B33-C001C	PUMP "A" DRIVE MOTOR BRK 3A		S102A		H13-P810-4C 24, 27
B33-C001D	PUMP "A" DRIVE MOTOR BRK 3B		S102B		H13-P810-4C 25, 27
B33-C001E	PUMP "A" DRIVE MOTOR BRK 3A		S103A	X X X	H13-P810-4C 30
B33-C001F	PUMP "A" DRIVE MOTOR BRK 3B		S103B	X X X	H13-P810-4C 30
B33-S001A	LENG "A" GENERATOR		S104A	X X X	H13-P810-4C 31
B33-S001B	LENG "B" GENERATOR		S104B	X X X	H13-P810-4C 32
B33-C001A	PUMP "A" DRIVE MOTOR BRK 3A		S105A	X X X	H13-P810-4C 27
B33-C001B	PUMP "A" DRIVE MOTOR BRK 3B		S105B	X X X	H13-P810-4C 28
B33-C001A	PUMP "A" DRIVE MOTOR BRK 3A		S105A	X X X	H13-P810-4C 27
B33-C001B	PUMP "A" DRIVE MOTOR BRK 3B		S105B	X X X	H13-P810-4C 28
B33-C001B	PUMP "A" DRIVE MOTOR BRK 3B		S105B	X X X	H13-P810-4C 28
B33-F067B	PUMP "A" DISCHARGE BLOCK VALVE		S107A	X X X	H13-P810-4C 19
B33-F067B	PUMP "A" DISCHARGE BLOCK VALVE		S107B	X X X	H13-P810-4C 19
B33-F023A	PUMP "A" SUCTION VALVE		S108A	X X X	H13-P810-4C 19
B33-F023B	PUMP "B" SUCTION VALVE		S108B	X X X	H13-P810-4C 19
B33-D003A	NPV "A" SHUTDOWN		S109A		H13-P810-4B 14
B33-D003B	NPV "B" SHUTDOWN		S109B		H13-P810-4B 14
B33-C001A/B	PUMP A/B VIBRATION SWITCH RESET		S110		H13-P810-4C 25
	REV A/D MOTION		S112		H13-P810-4C 14, 15
	VEHICLE LOW INTRK		S113		H13-P810-4C 23, 24
	ATWS "A" TEST		S116A		H13-P810-4C 24
	ATWS "B" TEST		S116B		H13-P810-4C 24
	DRYWELL HIGH PRESS TEST "A"		S117A		H13-P810-4C 15
	DRYWELL HIGH PRESS TEST "B"		S117B		H13-P810-4C 15
	NPV A-1 PUMP / FAN MOTOR STOP		S121A		H13-P810-4C 14, 17
	NPV A-2 PUMP / FAN MOTOR STOP		S121B		H13-P810-4C 14, 17
	NPV B-1 PUMP / FAN MOTOR STOP		S121C		H13-P810-4C 14, 17
	NPV B-2 PUMP / FAN MOTOR STOP		S121D		H13-P810-4C 14, 17
	NPV A-1 READY		S119A		H13-P810-4C 14
	NPV B-1 READY		S119B		H13-P810-4C 14
	NPV A-2 READY		S120A		H13-P810-4C 14
	NPV B-2 READY		S120B		H13-P810-4C 14
	NPV A-1 LEAD		S120C		H13-P810-4C 15
	NPV A-2 LEAD		S120D		H13-P810-4C 15
	NPV B-1 LEAD		S120E		H13-P810-4C 15
	NPV B-2 LEAD		S120F		H13-P810-4C 15
	NPV A-1 PUMP / FAN MOTOR STOP		S121A		H13-P810-4C 14, 17
	NPV B-1 PUMP / FAN MOTOR STOP		S121C		H13-P810-4C 14, 17
	NPV A-1 MAINTENANCE		S122A		H13-P810-4C 15
	NPV B-1 MAINTENANCE		S122B		H13-P810-4C 15
	NPV A-2 MAINTENANCE		S122C		H13-P810-4C 15
	NPV B-2 MAINTENANCE		S122D		H13-P810-4C 15
	FLUX ESTIMATOR		S128		H13-P810-4C 13
	FLUX ESTIMATOR ALARM RESET		S129		H13-P810-4C 13

REF. DESIG.	DEVICE	FUNCTION	SWITCH	INDICATOR LAMPS	LOCATION
				RED GREEN OTHER	MTG LOC SH
	NPV A SHUTDOWN		S123A		H13-P814 14
	NPV B SHUTDOWN		S123B		H13-P814 14
	NPV A-1 OVERLOAD/UNDERVOLTAGE		DS1A		H13-P814 14
	NPV A-2 OVERLOAD/UNDERVOLTAGE		DS1B		H13-P814 14
	NPV B-1 OVERLOAD/UNDERVOLTAGE		DS2A		H13-P814 14
	NPV B-2 OVERLOAD/UNDERVOLTAGE		DS2B		H13-P814 14
	NPV A OPERATIONAL/PRESURIZED		US1B		H13-P814 14
	NPV B OPERATIONAL/PRESURIZED		US2B		H13-P814 14
	NPV A-1 PRESS. FILTER/RETURN LINE FILTER		OS1A		H13-P814 14
	NPV A-2 PRESS. FILTER/RETURN LINE FILTER		OS1B		H13-P814 14
	NPV B-1 PRESS. FILTER/RETURN LINE FILTER		OS2A		H13-P814 14
	NPV B-2 PRESS. FILTER/RETURN LINE FILTER		OS2B		H13-P814 14
	NPV A TANK EMPTY		OS4A		H13-P814 14
	NPV B TANK EMPTY		OS4B		H13-P814 14
	NPV A OIL NOT/OIL WARM		OS5A		H13-P814 14
	NPV B OIL NOT/OIL WARM		OS5B		H13-P814 14
	NPV A ACTUATOR		OS6A		H13-P814 14
	NPV B ACTUATOR		OS6B		H13-P814 14

CONT.

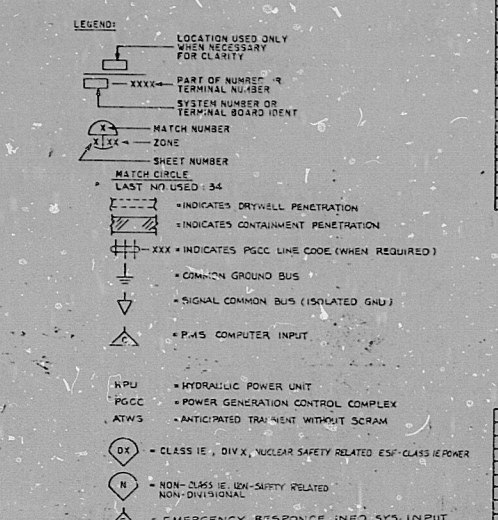
MPA/EXX NO.	REFERENCE DOCUMENTS
23 E64-SRCS08	PUMP B DRIVE MOTOR BRK 4B
24 E64-SRCS09	LENG A DRIVE MOTOR BRK 1A
25 E64-SRCS02	LENG B DRIVE MOTOR BRK 1B
26 E64-SRCS07	VALVES B33-F067
27 E64-SRCS08	VALVES B33-F023
28 E64-SRCS04	PUMP A PROT RELAYS BRK 3A
29 E64-SRCS06	PUMP A PROT RELAYS BRK 3B
30 E64-SRCS02	CONDENSATE AUX CONTROL
31 E64-SRCS23	PUMP B BRK 3A
32 E64-SRCS24	PUMP B BRK 3B
33 E64-SRCS09	PUMP B BRK 2A
34 E64-SRCS10	PUMP B BRK 2B
35 E64-SRCS05	13 # AT SWGR BUS IN NOM SVLY
36 E64-SRCS02	12 # AT SWGR BUS IN NOM SVLY
37 E64-SRCS25	13 # AT SWGR SA ZSS
38 C78-1050	ELCIS ELEM DIAG
39 A62-4050	ELECTRICAL EQUIPMENT SEPARATION FOR PROTECTION SYSTEMS

CONTACT CLOSED VALVE OPENING

F023A	F023B	F041A	F067B	CONTACT NUMBER	VALVE OPENING
					OS 303 100%
*	*	*	*	L51	
SP	SP	SP	SP	L52	
*	*	*	*	L53	
*	*	*	*	L54	
*	*	*	*	L55	
SP	SP	SP	SP	L56	
*	*	*	*	L57	
SP	SP	SP	SP	L58	
SP	SP	SP	SP	L59	
27	27	27	27	L60	
24	25	24	25	L51	
31	32	31	32	L52	
SP	SP	SP	SP	L53	
SP	SP	SP	SP	L54	
SP	SP	SP	SP	L55	
SP	SP	SP	SP	L56	

TYPICAL FOR VALVES B33-F023A (B), B33-F067A (B)
 1. OPEN ON MECHANICAL OVERLOAD IN CLOSING DIRECTION
 2. OPEN ON MECHANICAL OVERLOAD IN OPENING DIRECTION
 * - SEE REF. 26, 27 FOR LS USAGE

SH	INDEX
NO.	CONTENTS
1	NOTES, LEGEND, REF DOCUMENTS, AND PUMP, VALVE & CONTROL TAB.
2	SWITCHES
3	RELAY TABULATIONS
4	POWER DISTRIBUTION
5	POWER DISTRIBUTION
6	POWER DISTRIBUTION
7	POWER DISTRIBUTION
8	ANNUNCIATORS
9	ANNUNCIATORS
10	ANNUNCIATORS
11	TEMPERATURE RECORDERS
12	TEMPERATURE RECORDERS
13	TEMPERATURE RECORDERS
14	TEMPERATURE RECORDERS
15	TEMPERATURE RECORDERS
16	TEMPERATURE RECORDERS
17	TEMPERATURE RECORDERS
18	TEMPERATURE RECORDERS
19	TEMPERATURE RECORDERS
20	TEMPERATURE RECORDERS
21	TEMPERATURE RECORDERS
22	TEMPERATURE RECORDERS
23	TEMPERATURE RECORDERS
24	TEMPERATURE RECORDERS
25	TEMPERATURE RECORDERS
26	TEMPERATURE RECORDERS
27	TEMPERATURE RECORDERS
28	TEMPERATURE RECORDERS
29	TEMPERATURE RECORDERS
30	TEMPERATURE RECORDERS
31	TEMPERATURE RECORDERS
32	TEMPERATURE RECORDERS
33	TEMPERATURE RECORDERS
34	TEMPERATURE RECORDERS
35	TEMPERATURE RECORDERS



NOTES:
 1. UNLESS OTHERWISE INDICATED, THE FOLLOWING REFERENCE DESIGNATIONS SHOWN ON THIS DIAG ARE REFERRED WITH D311.
 2. TRIP COIL MONITOR INFLY & INDICATION LIGHT MUST HAVE SUFFICIENT RESISTANCE WHEN IN PARALLEL TO PREVENT INDEPENDENT TRIP COIL OPERATION.
 3. SPECIAL PRECAUTIONS SHALL BE TAKEN TO PREVENT ENTRANCE OF EXTERNAL VOLTAGE TRANSIENTS INTO THE SPEED SENSING TECHNIQUE CABLES.
 4. 10 CONDUCTOR CABLE WITH OVERALL SHIELD. EACH CONDUCTOR 24 AWG MAX. (20 AWG MAX. TYPICAL FOR 120 PART NO. N0249TH). SUPPLIED WITH N/A TATION.
 5. SEE SHS 5, 6 & 7 FOR POWER DISTRIBUTION.
 6. POWER REQUIREMENTS ARE ESTIMATED NOT MEASURED QUANTITIES. AC LOADS ARE BASED ON 60HZ.
 7. TRANSIENT TEST POINTS.
 8. SUPPLIED BY CUSTOMER.
 9. SUPPLY WIRING PART OF FLOW CONTROL VALVE POSITION CONTROL PACKS.
 10. SUPPLIED AS PART OF CONTROL VALVE ACTUATOR & HYDRAULIC POWER UNIT.
 11. SUPPLIED AS PART OF PUMP OR PUMP MOTOR.
 12. ALL CIRCUITS AND EQUIPMENT FOR PANEL H13-P814 ARE SHOWN FOR REF ONLY. TO BE SUPPLIED AS PART OF F067B040 CONTROLS.
 13. ANSI METERING ACCURACY CLASS OF THE POTENTIAL AND CURRENT TRANSFORMERS SHALL BE 0.5. BURDEN OF THE WATT TRANSDUCER IS: 1.0 VA TOTAL AND VA TOTAL CURRENT CIRCUIT - 0.25 VA TOTAL.
 14. WIRING FROM CONTROL ROOM TO EACH PAIR OF PRESSURE / LEVEL SENSORS TO BE IN INDIVIDUAL CONDUIT AND SEPARATE FROM ANY REACTOR PROTECTION SYSTEM CABLES.
 15. RTD TEMP TRANSMITTER AND TEMP ELEMENT ARE A MATCHED PAIR AND MUST BE INSTALLED AS SUCH.
 16. WATT TRANSDUCER CONNECTION IS BASED ON A POSITIVE PHASE SEQUENCE OF 1, 2, 3. A, B, C AS INDICATED.

TI APERTURE CARD

NO.	REV.	DATE	BY	CHKD.
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				

PDR RIDS

8412200178

