

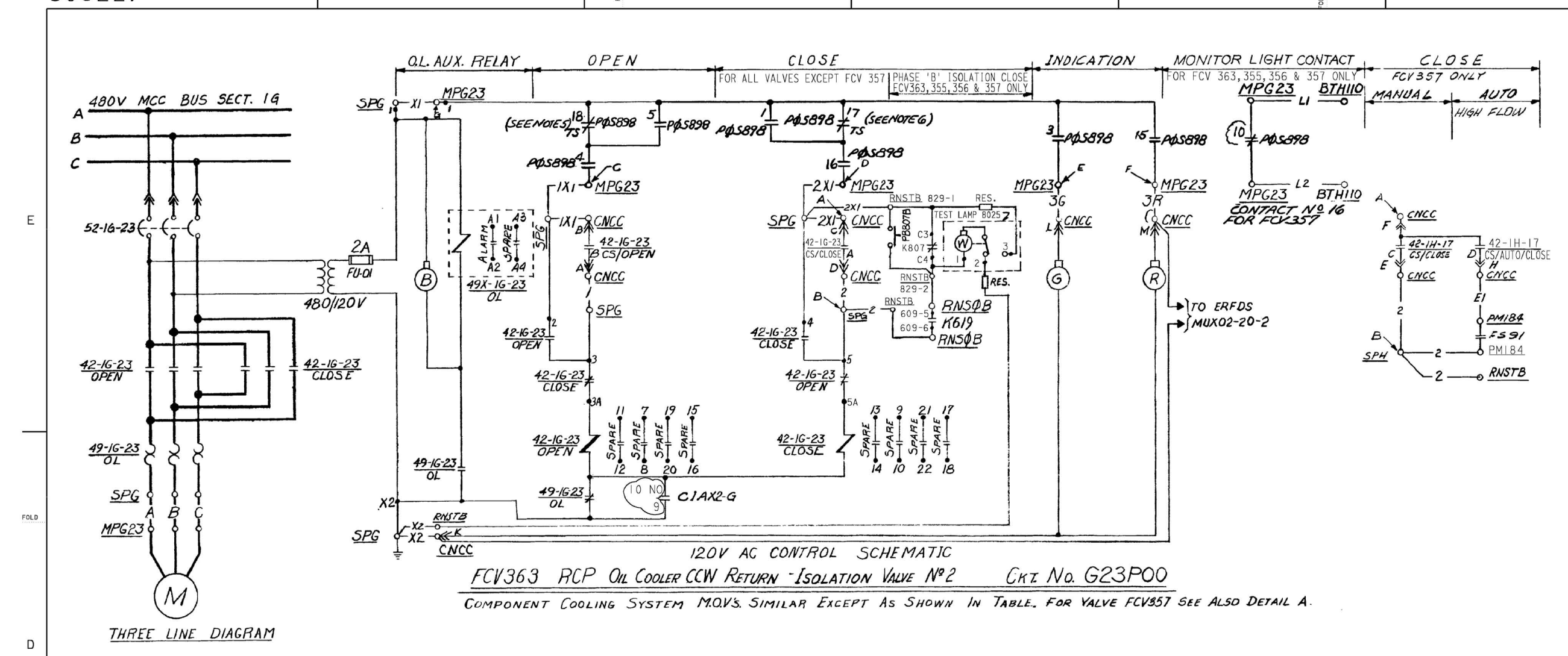


TABLE OF DEVICES					REMARKS
DEVICE No	FUNCTION	RATING	MFR.	TYPE	
42-16-23-36	480V AC MOTOR STARTER REVERSIBLE, SIZE 1	—	—	—	REF. DWG. #1, 2, 3
52-1F-23R	480V AIR CIRCUIT BREAKER	—	WE	(1) (3)	BACK-UP BREAKER
49-16-23-28-36	MOTOR OVERLOAD RELAY	—	WE CORP.	—	PART OF MOTOR STARTER
49-1H-16-17-18	MOTOR OVERLOAD AUX. RELAY	—	WE CORP.	—	PART OF MOTOR STARTER
49-1F-11-23	CNT ISOL. PH A AUX. RELAY MOTOR OC BYPASS.	—	—	(16)	CLOSES ON PH A ISOL & SIS ACTUATION
52-16-23-28-36	480V AC Air Circuit Bkr.	—	—	—	REF. DWG. #1, 2, 3
49-1H-16-17-18	CONTAINMENT ISOL. PHASE B AUX. REL.	—	—	(3) (9) (17)	—
49-1F-11-23	SAFEGUARD TEST RELAY	—	—	(9)	CONTACT OPEN DURING TEST
FCV-	FLOW CONTROL VALVE	—	—	—	SEE TABLE FOR VALVE NO'S
POS-	FCV POSITION SWITCH	—	—	—	SEE TABLE FOR SW. NO'S
FS 91	TORQUE SWITCH	—	—	—	CONTACT TO CLOSE ON HI-FLOW CONTACT TO CLOSE ON LOW-FLOW
FS 92AB	RCP BARRIER CCW RET. ISOL. VV.	—	—	—	(14), (17)

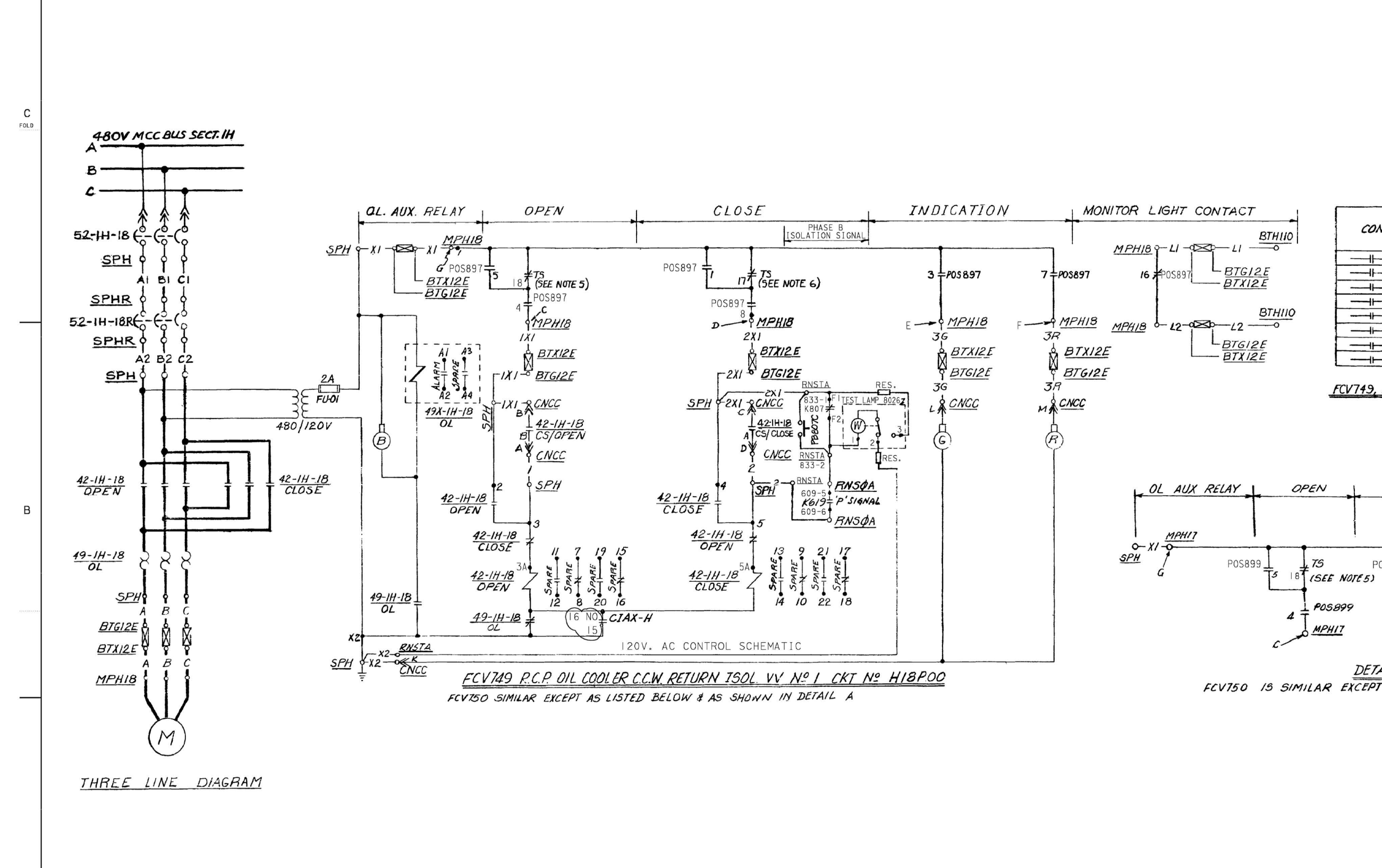
VALVE NO.	DESCRIPTION	CKT BKR NO.	CKT NO.	BUS SECT.	NORMAL POSITION	ENGINEER SAFETY VITAL FUNCTION	VALVE POS. SW. # (POS)	SSFS TEST PUSH BUTTON					CNT. ISOL. PH. A MOTOR OC BYPASS DEVICE CONTACT	ALARM CKT. No.			LOCATION OF CONTROL	MOTOR LOCATION	ISOLATION SIGNAL			PHASE B	ERFD																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
								PB SW #	TERM BLK	TRAIN A	PB SW #	TERM BLK		TRAIN B	RCP. BARRIER LOW FLOW (FS32)	OVER-CURRENT			HX OUTLET TEMP. ALARM	DEVICE	LOC.			CONTACT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
FCV363	RCP OIL CLR CCW RET ISOL VLV 2	521623	G23P00	1G	OPEN	P	899					PB807A	817-9,10	RNSTA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

CONTROL SWITCH					REMARKS
CONTACTS	POSITION	CLOSE	NEUT.	OPEN	
—	A	X	—	—	THIS DWG.
—	B	—	X	—	THIS DWG.
—	C	—	—	X	THIS DWG.
—	D	—	—	—	THIS DWG.

CONTROL SWITCH 42-1H-17 CS
USED AT LOCATION CNCC OPERATOR DT2V6
SPRING RETURN TO AUTO

CONTROL SWITCH					REMARKS
CONTACTS	POSITION	CLOSE	NEUT.	OPEN	
—	A	X	—	—	THIS DWG.
—	B	—	X	—	THIS DWG.
—	C	—	—	X	THIS DWG.
—	D	—	—	—	THIS DWG.

CONTROL SWITCH 42-1F-11, 42-1G-28 CS
USED AT LOCATION CNCC NO SPRING RETURN

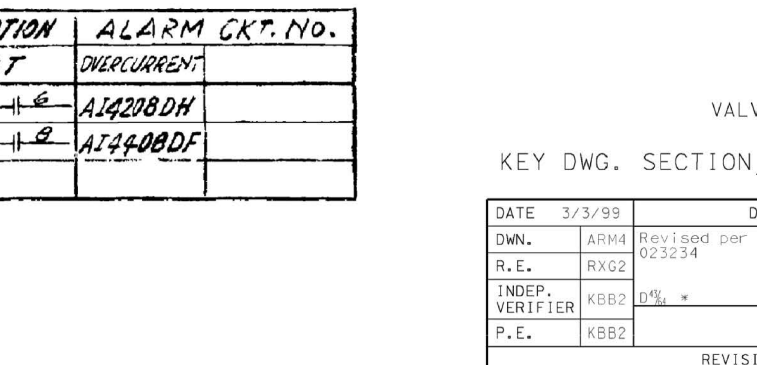


VALVE POSITION					FUNCTION
CONTACTS	POSITION	FULL OPEN	FULL CLOSED	CONTACTS 1 TO 8	
—	1	—	—	1 BYPASS INTLK	9 SPARE
—	2	—	—	2 SPARE	10 SPARE
—	3	—	—	3 GREEN LIGHT	11 SPARE
—	4	—	—	4 OPEN LIMIT	12 SPARE
—	5	—	—	5 BYPASS INTLK	13 SPARE
—	6	—	—	6 SPARE	14 SPARE
—	7	—	—	7 RED LIGHT	15 SPARE
—	8	—	—	8 SEE NOTE 7	16 MONITOR LIT.

FCV749, FCV357 & FCV750 W POSITION SWITCH CONTACT DEVELOPMENT.
ACTUAL SETPOINTS ARE IN PIMS

LEGEND:				
▲	MOVES PROVIDED WITH FIELD INSTALLED "QUICKTEST" CABLE ASSEMBLIES. SEE APPLICABLE DIAGRAM OF CONNECTIONS.			
EQUIPMENT LOCATION NUMBERS				
SEG -	480V Motor Control Center Bus Section 16			
MPG23 -	Motor Operated Valve FCV363			
CNCC -	Control Board, Component Cooling			
BTG12E -	Terminal Box, Area G, No. 12E			
BTH10 -	Terminal Box, Area H No. 10			
RNS0B -	Rack No. Safeg. Output Train B			
RNS0A -	Rack No. Safeg. Test Train B			
SPHR -	480V MCC Bus Section 1H, Back-Up O.C.			
NOTES:				
1.	MONITOR LIGHT APPLIES FOR FCV363, FCV355, FCV356 ONLY.			
3.	POS CONTACT INTERLOCK WITH TEMP. SW. TS181A & B FOR FCV 430. AND TS182A & B FOR FCV 431. THERE SHOULD BE NO ALARM WHEN FCV IS CLOSED. SEE REFERENCE 13.			
5.	SWITCH OPENS ON MECHANICAL TORQUE DURING OPENING CYCLE (B)			
6.	SWITCH OPENS ON MECHANICAL TORQUE DURING CLOSING CYCLE OR FULLY CLOSED VALVE (17)			
7.	FIELD TO INSTALL JUMPER FOR TORQUE SEATING. (FOR FCV357 AND FCV750 ONLY, FCV 749 NOT APPLICABLE)			
REFERENCE DRAWINGS				
1-	SINGLE LINE METER & RELAY DIAGRAM, 480V SYSTEM BUS SECT "IF"			DWG. 437916
2-	"16"			DWG. 437542
3-	"1H"			DWG. 437543
4-	DESCRIPTION OF ELEC. SCHEMATIC DIAG. SYMBOLS & CKT. DESIGNATIONS			050003
5-	EQUIPMENT LOCATION NUMBER LIST			101900
6-	PIPING SCHEMATIC COMPONENT COOLING WATER SYSTEM			102014
7-	INSTRUMENT SCHEMATIC FLOW INSTRUMENT SYSTEMS			102032
8-	FUNCTION DIAGRAM			REG. 663195
9-	SOLID STATE PROTECTION SYSTEM			REG. 663231
10-	WIRING DIAGRAM ROTORK SYNCHRO			REG. 663314-59
11-	LIMITORQUE WIRING DIAG, FCV363, 355, 356, 430 & 431			REG. 66335101
13-	Instrument Schematic Temp. Instrument System			DWG. 102035
14-	SCHEMATIC DIAGRAM MAIN ANNUNCIATOR SHEET 1			DWG. 501121
15-	SCHEMATIC DIAGRAM MONITOR LIGHT BOX D			DWG. 437699
16-	SCHEMATIC DIAGRAM SIS MOV'S			DWG. 437606
17-	SCHEM. DIAG. SSPS OUTPUT RELAYS, TRAIN A, TRAIN B			DWGS. 501869, 503088

VALVE NO.	DESCRIPTION	CKT BKR NO.	CIRCUIT NO.	BUS SECT.	NORMAL POSITION	ENGINEER SAFETY VITAL FUNCTION	VALVE POS. SW. #	TERMINAL	TRAIN A	TERMINAL	TRAIN B	CNT. ISOL. PH. A MOTOR OC BYPASS DEVICE CONTACT	ALARM CKT. NO.
FCV749	RCP OIL COOLER CCW RETURN ISOL. VV. 1	52-1H-18	H18P00	1H	OPEN	P	897	PB807C	899-1,2	RNSTA	—	CIAX-H 15-11	A14208DH
FCV750	RCP THERM. BARRIER CCW RET. ISOL. VV. 1	52-1F-23	F23P00	1F	OPEN	P	1073	PB807D	881-1,2	RNSTA	—	CIAX2-F 3-11	A14408DF



NUCLEAR SAFETY RELATED

VALVE NO'S: FCV355, FCV356, FCV357, FCV363, FCV430, FCV431, FCV749 & FCV750

KEY DWG. SECTION 4

UNIT 1

DATE: 3/3/99
DESCRIPTION: Revised per AR 40463245 & FCT 023234
R.E.: RXG2
INDEP. VERIFIER: KBB2
P.E.: KBB2

COORDINATION: NUCLE., MECH., ELEC., CIVIL, PIPING

REVISION INFORMATION

SCHEMATIC DIAGRAM
COMPONENT COOLING SYSTEM
MOTOR OPERATED VALVES

PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

DWG. SCALE: BILL OF MATL. SUPD. BY: SHEET NO. 1 OF 1

437608

REV 20

U2-441325