437607

480V VCC BUS SECT 1F

THREE LINE DIAGRAM

120V AC CONTROL SCHEMATIC

8105 CHARGING PUMPS №1 & 12 MINIFLOW VOV 1 CKT No F09P00

CHEMICAL & VOLUME CONTROL SYSTEM VOVs SIMILAR EXCEPT AS SHOWN IN TABLE

VALVE NO	DESCRIPTION	CIRCUIT BKR No	CIRCUIT NO	BUS SECT	NORMAL POSITION	POS NO	POS TRAVEL (INCHES) OPEN	POS TRAVEL (INCHES) CLOSE
8105	CHARGING PMPS 11 & 12 M.N. FLOW VLVs	12-F-9	B33P00	F	OPEN	271	15	
8106	" " " " " "	12-F-9	B32P00	F	OPEN	279	15	
8107*	BORON CHARG. TO ELEV. HX STOP VLV 1	12-F-9	B07P00	F	OPEN	227	15	
8108	" " " " " "	12-G-9	B10P00	F	OPEN	264	15	
LCV 128	VOLUME CONT TK OUTLET VLV 1	12-F-9	P08P00	F	OPEN	773	15	
LCV 112	" " " " " 2	12-F-9	B19P00	F	OPEN	781	15	
8107	RCP# SEAL WATER RET ISOL VLV	52-G-9	B34P00	S	OPEN	259	15	
B112	" " " " "	52-G-9	B07P00	S	OPEN	1129	15	

VALVE NO	CONT ISOL PNL & DEVICE	CONTROL LOCATION	LEVER KIT NOS	MOTOR LOC	SAFEGUARD SIGNAL DEVICE	SAFEGUARD SIGNAL LOC	SAFEGUARD SIGNAL CONTACT	PENN NO	HP	SAFEGUARD TEST RELAY DEVICE	SAFEGUARD TEST RELAY LOC	SAFEGUARD TEST RELAY CONTACT	TEST LAMP DS
8105	CIAX-F 7—8			MOV8					1.0				
8106	CIAX-G 7—8			MOV9					1.0				
8107	CIAX-F 9—10			MOV10					1.0				
8108	CIAX-G 9—10			MOV11					1.0				
LCV128	CIAX-F 11—12			MOV12					0.66				
LCV112	CIAX-G 11—12			MOV13					0.66				
8107	CIAX-F 13—14			MOV14					0.66	KB12	RA5TA	13-14-24	8046
B112	CIAX-G 13—14			MOV15					0.66	KB12	RA5TA	13-14-24	8047

OL AUX RELAY — OPEN — CLOSE — INDICATION — CONTROL TRANSFER RELAY

480V VCC BUS SECT 1G

THREE LINE DIAGRAM

120V AC CONTROL SCHEMATIC

8104 BORIC ACID BY PASS TO CHARGING PUMPS MOV CIRCUIT No G57P00

ALARM CIRCUIT NOS	
DIESEL	TRANSFER
CLOSED	OF CONT
ALARM	OPEN

CHANGES APPROVED BY SUPERVISING ENGINEER

COORDINATED APPROVAL FOR DESIGN

GROUP	CHG NO	CHG NO	CHG NO	CHG NO	CHG NO	CHG NO
	DES	CHG	DES	CHG	DES	CHG
ARCH						
CIVIL						
ELEC						
MECH						

TABLE OF CHANGES

NO	DATE	DESCRIPTION	GM	BY	CH	APPD

TABLE OF CHANGES

NO	DATE	DESCRIPTION	GM	BY	CH	APPD

CLOSE OPEN

CONTACTS	POSITION CLOSE	POSITION NEUT	POSITION OPEN	REMARKS
A		X	X	SPARE
B		X		THIS DWG
C	X			THIS DWG
D	X		X	SPARE

REMARKS FOR 42-IF-12, 42-IG-11 CS

42-IF-7 CS, 42-F-9 CS, 42-IF-12 CS, 42-IG-9 CS, 42-IG-10 CS, 42-IG-1 CS, 42-IG-26 CS, 42-IG-57 CS, 42-IH-27 CS

CONTROL SWITCH - USED AT LOCATION CNV, H02

SPRING RETURN TO NEUTRAL

NOTE- FOR SWITCH 42-IF-12, 42-IG-11 CENTER POSITION OF SWITCH TO READ AUTO

NAMEPLATE TO READ CLOSE-AUTO-OPEN

CONTACTS		VALVE POSITION FULL OPEN	VALVE POSITION FULL CLOSED	FUNCTION CONTACTS 1-8	FUNCTION CONTACTS 9-16
	1	9		BYPASS INTLK	SPARE
	2	10		SPARE	SPARE
	3	11		GREEN LIGHT	SPARE
	4	12		OPEN CMD	SPARE
	5	13		BYPASS INTLK	SPARE
	6	14		SPARE	SPARE
	7	15		OPEN CMD	MONITOR LIGHT
	8	16		NOTE 3	SPARE

TYPICAL VALVE POSITION SWITCH CONTACT DEVELOPMENT

CONT ROOM LOCAL

CONTACTS	POSITION LOCAL	POSITION CONT ROOM	REMARKS
A		X	THIS DWG
B	X		SPARE
C		X	THIS DWG
D	X		SPARE

TRANSFER SWITCH 43-IG-ST

USED AT LOCATION H02

NO SPRING RETURN

VALVE NO	INTERLOCK (POSITION)	
LCV112B	8804A	B804B
LCV112C	8804B	B804A

FOR CONTACT DEV SEE REF 8

LCV112B CLOSING CIRCUIT

LCV112C SIMILAR AS SHOWN IN TABLE

TABLE OF DEVICES

DEVICE No	FUNCTION	RATING	MFR	TYPE	CATALOG*	REMARKS
42-IF-7, 9, 10, 12 / 42-IG-7, 9, 10, 11, 26, 57	480 V AC MOTOR STARTER REVERSIBLE, SIZE 1	—	—	—	REF DWG #1, 2, 7	
49X-F, G, H, J / 49X-IF, IG, IH, IJ	MOTOR OVERLOAD RELAY	—	WESCORP	—	—	PART OF MOTOR STARTER
49X-F, G, H, J / 49X-IF, IG, IH, IJ	MOTOR OVERLOAD AUXILIARY RELAY	—	WESCORP	—	—	PART OF MOTOR STARTER
52-F-7, 9 / 52-G-7, 9	480V AC AIR CIRCUIT BREAKER	—	—	—	REF DWG #1, 2, 7	
43X-1G-ST	CONTROL TRANSFER RELAY	20VAC	E.R.ZETTLER SW 2971	3PDT 4PDT 10A	7903-F	HAND RESET
CIAX-F, H / CIAX-G	CNT ISOL PNL A AUX RELAY / MOTOR OC BYPASS	—	—	—	(8)	CLOSES ON PNL A ISOL & SIS ACTUATION
LCV	LEVEL CONTROL VALVE	—	—	—	—	SEE TABLE FOR VALVE NOS
PDS	VALVE POSITION SWITCH	—	—	—	—	SEE TABLE FOR SW NOS
LCV112B1, 112B2	VOL CONT TK LOW LEVEL AUX RELAY	—	—	—	(9)	CONTACT CLOSES ON VCT LOW-LOW LEVEL CONTACTS OPEN DURING TEST
A312	SAFEGUARD TEST RELAY	—	—	—	(10)	
TS	TORQUE SWITCH	—	—	—	—	
SIAS / NCA	SAFETY INJECTION AUX RELAY	—	—	—	(9)(10)	
NCOT	CONTAINMENT ISOLATION PHASE A AUX RLY	—	—	—	(9)(10)	

EQUIPMENT LOCATION NUMBERS

SPF - 480V MOTOR CONT CENTER, BUS SECTION F
MOV9 - MOTOR OPERATED VALVE 8105
CNV - CONTROL BOARD CHEMICAL & VOLUME CONTROL
H02 - HOT SHUTDOWN CONTROL PANEL 2, (CHARGING)
RN5SA - RACK NUCLEAR SAFEGUARD, OUTPUT TRAIN A
BTH110 - TERMINAL BOX AREA H NO 110
RNAA - RACK NO. AUX. RELAY CUB. A.

NOTES

1 - SWITCH OPENS ON MECHANICAL TORQUE DURING OPENING CYCLE
2 - SWITCH OPENS ON MECHANICAL TORQUE DURING CLOSING CYCLE OR FULLY CLOSED VALVE
3 - FIELD TO INSTALL JUMPER IF TORQUE SEATING IS REQUIRED

REFERENCE DRAWINGS

	DWG #
1 - SINGLE LINE METER & RELAY DIAGRAM 480V SYSTEM, BUS SECTION 1F	437716
2 " " " " " " 1G	437542
3 - DESCRIPTION OF ELECT SCHEMATIC DIAGS, SYMBOLS & CKT DESIGNATIONS	560033
4 - EQUIPMENT LOCATION NUMBER LIST	561930
5 - PIPING SCHEMATIC CHEMICAL & VOLUME CONTROL SYSTEM	520006
6 - INSTRUMENT SCHEMATIC FLOW INSTRUMENT SYSTEM	110582
7 - SINGLE LINE METER & RELAY DIAGRAM 480V SYSTEM BUS SECTION 1H	437543
8 - SCHEMATIC DIAGRAM SAFETY INJECTION SYSTEM MOV'S	437606
9. (a) FUNCTION DIAGRAMS & ELEMENTARY WIRING DIAGRAMS	FSK # 603155
10. (a) SOLID STATE PROTECTION SYSTEM	FSK # 662231
11. SCHEMATIC DIAGRAM MONITOR LIGHT BDS 1, 2, 3	SMD # 437607, 8
12. SCHEMATIC DIAGRAM MAIN ANNUNCIATOR SH 1 SMD # 501121	

DESIGN CLASS 1E EQUIPT.

VALVE NOS 8100, 8112, 8104, 8105, 8106, 8107, 8108, LCV112B, LCV112C

UNIT 1

PG&E SYSTEM PHASE SEQUENCE A-C-B

REGISTERED PROFESSIONAL ENGINEER — T. A. HEITKAMP — No. 17196 — ELECTRICAL — STATE OF CALIFORNIA

BILL OF MATERIAL	
DRAWING LIST	560052
SUPERSEDES	
SUPERSEDED BY	
SHEET NO	SHEET 1

APPROVED BY: GM 187027 — SUPV ENGR PROJ — DESIGN ENGR — DEPT SUPERVISOR — CH — DATE — SCALE: NONE

SCHEMATIC DIAGRAM CHEMICAL AND VOLUME CONTROL SYSTEM MOTOR OPERATED VALVES

DIABLO CANYON
DEPARTMENT OF ENGINEERING
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO CALIFORNIA

DRAWING NUMBER 437607