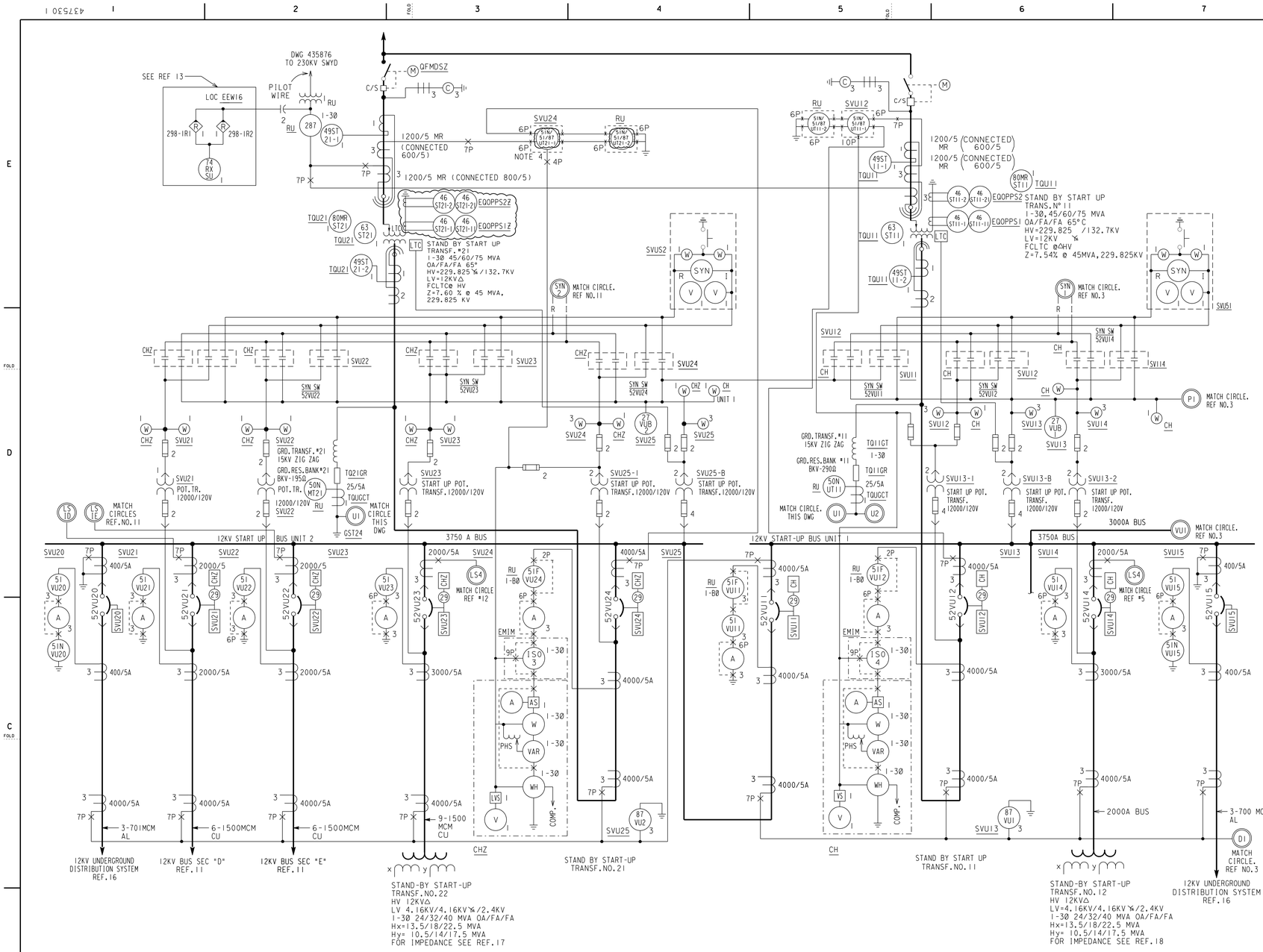

TABLE OF DEVICES

DEVICE NO.	DESCRIPTION	RATING	RATING	MFR	TYPE	CATALOG OR REF DWG	REMARKS
A	AMMETER CELL VU21,22	5A	0-2000A	G.E.CO.	AB-40	50103131LSTM2	AT SWGR
A	AMMETER CELL VU14,23		0-3000A		AB-40	50103131LSUA2	
A	AMMETER CELL VU11,12,24		0-4000A		AB-40	50103131LSUE2	
A	AMMETER CELL VU12,24		0-4000A				AT STA ELECT BD
A	AMMETER CELL VU20,15		0-4000A	G.E.CO.	AB-40	50103131LSSC2	AT SWGR
PHS	PHASE SHIFTING TRANSF	120V		W.E.	MV-832	292B048B09	3-PHASE, 3-WIRE
CBT	CURRENT BALANCING TRANSF	100V		W.E.	A	608A938G02	
SYN	SYNCHROSCOPE	120V-60Hz		G.E.CO.	AB16	50120452AAAA2	AT SWGR
V	VOLTMETER SYNCHRONIZING	150V	0-15KV	G.E.CO.	AB16	50120021P2WZ2	
V	VOLTMETER START-UP TRANSF						
VAR	VARMETER START-UP TRANSF #1I	120V,5A	0-60MVAR	W.E.			2 ELEMENT,3 PHASE
VAR	VARMETER START-UP TRANSF #2I		0-60MVAR				
W	WATTMETER START-UP TRANSF #1I		0-80MW				
W	WATTMETER START-UP TRANSF #2I		0-80MW				
WH	WATTHOUR METER START-UP TRANSF #1I				D2B-2F		WITH CD-2I PULSE INIT
WH	WATTHOUR METER START-UP TRANSF #2I				D2B-2F		
80MRST1I,80MRST2I	LTC PROTECTION RELAY	250V DC	3A	M.R.	IP54	RS 2001	
49ST1I-1,49ST2I-1	THERMAL RLY START-UP TRANSFORMER	0-180° C		*			* QUALITROL CORP
ISO-3	ISO METER STAND BY START-UP TRANSF #2I	120V,4 WIRE,3Ø		PSI	QUAD 4 +	I9	
ISO-4	ISO METER STAND BY START-UP TRANSF #1I	120V,4 WIRE,3Ø		PSI	QUAD 4 +	I9	
63ST1I,63ST2I	SUDDEN PRESSURE RELAY			*			* QUALITROL CORP
27VUB1,2	UNDERVOLTAGE RLY START-UP BUS			G.E.CO.	IAV54F	208A8215G1	SEE NOTE 1
49ST1I-2,49ST2I-2	THERMAL RLY START-UP TRANSFORMER	0-180° C		*			* QUALITROL CORP
50NUT1I,2I	STBY START-UP TRANSF GRD OC RELAY	1-4A		W.E.	SC	1876047	
74-RX/SU		125VDC		W.E.	AR		PILOT WIRE ALARM RELAY
51VU14,23	OVERCURRENT RLY START UP TRANSFORMER	1.5-6A,V.INV.		G.E.CO.	IAC53	121AC53B26A	20-80A I.T.
51VU11	OVERCURRENT RLY 12KV SECTIONALIZING BKR	4-16A,V.INV			IAC53	121AC53A101A	NO L.T. UNIT
51VU20	OVERCURRENT RLY 12KV UNDERGROUND FDR	4-16A,V.INV			IAC53	121AC53B104A	20-80A I.T.
51VU21	OVERCURRENT RLY 12KV BUS SECT "D"	4-16A,V.INV			IAC53	121AC53A101A	NO I.T. UNIT
51VU22	OVERCURRENT RLY 12KV BUS SECT "E"	4-16A,V.INV					
51FVU11,12 & 24	OVERCURRENT RLY FAN CONTROL	5A.60Hz			PJC	2084B397	SET P/U AT 4 AMP (1-3Ø RLY)
52VU11,12	CKT BKR 12KV SWGR	3750A		CH		AM 13.8-VR1000-3750A	I.C.1000MVA
52VU14	CKT BKR 12KV SWGR	2000A		CH		AM 13.8-VR750TU-2000A	I.C.1000MVA
52VU15	CKT BKR 12KV SWGR	1200A		CH		AM 13.8-VR750TU-1200A	I.C.1000MVA
52VU20	CKT BKR 12KV SWGR	1200A		CH		AM 13.8-VR750TU-1200A	I.C.1000MVA
52VU21,22 & 23	CKT BKR 12KV SWGR	2000A		CH		AM 13.8-VR750TU-2000A	I.C.1000MVA
52VU24	CKT BKR 12KV SWGR	3750A		CH		AM 13.8-VR1000-3750A	I.C.1000MVA
287	230KV TIE LINE DIFFERENTIAL RELAY	5A.60Hz		G.E.CO.	CPD11	12CPD11D2A	T.D.O.MONITOR BBA11A2
87VU1,VU2	DIFFERENTIAL START-UP BUS	4-16A,V.INV			IAC53	121AC53A101A	NO I.T. UNIT
298-121,1R2	PILOT WIRE MONITORING SYSTEM TONE RECEIVER				I9	I9AM	LOCATED IN UNIT-1 P.P.COMM.ROOM
51VU15	OVERCURRENT RLY 12KV UNDERGROUND FDR	1.5-12A,V.INV		G.E.CO.	IAC53	121AC53B111A	1.0-80A I.T.
51NVU20,15	GND OC RLY 12KV UNDERGROUND FDR	0.1-0.8A INV		G.E.CO.	SFC	12SFC151D1A	NO I.T. UNIT
51N/51/87UT1I-1	NEUTRAL OVERCURRENT/ OVERCURRENT/DIFFERENTIAL RLY START-UP TRANSF. 1I			SEL	387E	SEL-387E	SEE NOTE 2
51N/51/87UT1I-2	NEUTRAL OVERCURRENT/ OVERCURRENT/DIFFERENTIAL RLY START-UP TRANSF. 1I			G.E.CO.	T60	T60	SEE NOTE 2
51N/51/87UT2I-1	NEUTRAL OVERCURRENT/ OVERCURRENT/DIFFERENTIAL RLY START-UP TRANSF. 2I			SEL	387E	SEL-387E	SEE NOTE 3
51N/51/87UT2I-2	NEUTRAL OVERCURRENT/ OVERCURRENT/DIFFERENTIAL RLY START-UP TRANSF. 2I			G.E.	T60	T60	SEE NOTE 3
46ST1I-1	230KV OPEN PHASE CH 1 (PASSIVE DETECTION)			SEL	241I	6024618-1	PSS TECH COMPONENT: SEL 241I
46ST1I-2	230KV OPEN PHASE CH 2 (PASSIVE DETECTION)			SEL	241I	6024618-2	PSS TECH COMPONENT: SEL 241I
46ST1I-11	230KV OPEN PHASE CH 1 (ACTIVE DETECTION)			NATIONAL INSTRUMENTS	CRIO-906B	6024618-1	PSS TECH COMPONENT: CRIO
46ST1I-21	230KV OPEN PHASE CH 2 (ACTIVE DETECTION)			NATIONAL INSTRUMENTS	CRIO-908I	6024618-2	PSS TECH COMPONENT: CRIO
46ST2I-1	230KV OPEN PHASE CH.1 (PASSIVE DETECTION)			SEL	241I	6024618	PSS TECH COMPONENT SEL 241I
46ST2I-11	230KV OPEN PHASE CH.1 (ACTIVE DETECTION)			NATIONAL INSTRUMENTS	CRIO-906B	6024618	PSS TECH COMPONENT CRIO
46ST2I-2	230KV OPEN PHASE CH.2 (PASSIVE DETECTION)			SEL	241I	6024618	PSS TECH COMPONENT SEL 241I
46ST2I-21	230KV OPEN PHASE CH.2 (ACTIVE DETECTION)			NATIONAL INSTRUMENTS	CRIO-908I	6024618	PSS TECH COMPONENT CRIO

LEGEND:

- CH — CONTROL STATION AT LOC CH
- COMP. — COMPUTER
- LIGHTNING ARRESTOR
- (C) — COUNTER
- MR — MULTI-RATIO CT
- (29) — ISOLATION SWITCH AT SWITCHGEAR (DISC.BKR.CONTROL FROM CONTROL ROOM)
- AS — SWITCH, AMMETER
- VS — SWITCH, VOLTMETER
- SWITCH, TEST
- (W) — LAMP INDICATING WHITE

LOCATIONS:

CHZ	CONTROL BOARD STA.ELECTRONIC UNIT #2
TQU1I	ST-UP TRANSF.1I CONT.CAB
TQU12	ST-UP TRANSF.2I CONT.CAB
EEW16	COMM.TONE REC EQUIP RACK 16
CH	CONTROL BOARD STA.ELECTRIC
SVU1I	START-UP SWGR CUBICLE 1I
RU	RELAY BOARD START-UP
TQ11GT	GROUNDING TRANSFORMER NO.1I CAB
TQ21GT	GROUNDING TRANSFORMER NO.2I CAB
TQ11GR	GROUNDING RESISTOR BANK NO.1I CAB
TQ21GR	GROUNDING RESISTOR BANK NO.2I CAB
TQUGCT	GROUNDING TRANSFORMER NO.1I & NO.2I CAB
EQOPPS1	230KV OPEN PHASE CHANNEL 1
EQOPPS2	230KV OPEN PHASE CHANNEL 2
EQOPPS1Z	230KV OPEN PHASE CHANNEL 1 (UNIT 2)
EQOPPS2Z	230KV OPEN PHASE CHANNEL 2 (UNIT 2)
EMIM	ISO METERING CABINET

NOTE:

1. FOR ELECTRICAL DEVICES TECH DATA AND SETPOINTS SEE PIMS COMPONENT DATABASE.
2. RELAYS 51N/51/87UT1I-1 AND 51N/51/87UT1I-2 ARE WIRED AND PROGRAMMED FOR ACB PHASE ROTATION.
3. RELAYS 51N/51/87UT2I-1 AND 51N/51/87UT2I-2 ARE WIRED AND PROGRAMMED FOR ACB PHASE ROTATION.
4. RELAYS 51N/51/87UT1I-1 AND 51UT2I ALSO HAVE AN OVERVOLTAGE (59) FUNCTION USED FOR ALARM.

REFERENCES:

	DWG.
1. DESCRIPTION OF ELECT SCHEM DIAG SYMBOLS & CKTS DESIG.	050003
2. SINGLE LINE METER & RELAY DIAG GEN & MAIN TRANSF.	437529
3. SINGLE LINE METER & RELAY DIAG 12KV SYSTEM,UNIT #1	437531
4. SINGLE LINE METER & RELAY DIAG 4160V SWGR BUS SECT F,G & H	437533
5. SINGLE LINE METER & RELAY DIAG 4160V SWGR BUS SECT D & E,U#1	437532
6. SCHEMATIC DIAG 12KV BUS POT & SYNCHRO START UP BUS	437611
7. SCHEMATIC DIAG AUTOMATIC TRANSFER	437623
8. SCHEMATIC DIAG BUS DIFFERENTIAL	437615
9. SCHEMATIC DIAG STAND BY START-UP TRANSF.NO.1I	437618,19 & 434100
10. SCHEMATIC DIAG STAND BY START-UP TRANSF.NO.12	437620 & 21
11. SINGLE LINE METER & RELAY DIAG,12KV SYSTEM,UNIT #2	441227
12. SINGLE LINE METER & RELAY DIAG,4160V SWGR BUS SECT D & E,UNIT #2	441228
13. DEVICE LIST AND SUPPLEMENT FOR 500KV SWYD.SCHEM.DIAG.	036764
14. SCHEMATIC DIAG STAND BY START-UP TRANSF.NO.2I	437659 & 60
15. LIST OF EQUIPMENT LOCATION CODES	101900
16. SINGLE LINE DIAG 12KV DISTRIBUTION SYSTEM	445387
17. SINGLE LINE DIAG FOR STATION AUXILIARIES	441220
18. SINGLE LINE DIAG FOR STATION AUXILIARIES	437518
19. ISO METERING MFR DWGS.	6016585-1 THRU 12

A B C
P.G.&E. SYSTEM PHASE SEQUENCE A-C-B

KEY DWG. SECTION 1C

UNIT 1 & 2

DATE	
07-30-2018	
D.D.	ZNS4
R.E.	RXG2
I.V.	N/A
P.E.	N/A

REGISTERED PROFESSIONAL ENGINEER — NOT REGISTERED PER EC 1005 — STATE OF CALIFORNIA

REVISION DESCRIPTION: Revised Per DDN-2#1716

ELECTRICAL
SINGLE LINE
METER & RELAY DIAGRAM
12KV START-UP SYSTEM

DIABLO CANYON POWER PLANT
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

DWG SCALE:
BILL OF MATL:
SUPSDS:
SUPSD BY:

DRAWING	SHEET	PAGE	REV
437530	1	0	40

DRAWING NUMBER 437530 1

RASTER=437530-1-0.dgn
DGN=437530-1-0.dgn
CAD User:ZNS4 Date: 07-30-2018

4 SIZE