

SETTING	FUNCTION
BB, AA, B, A	3 150 PSIF STARTING AIR
D, C	3 210 PSIF STARTING AIR
C	8 45 PSIF LOP FILTER IN
D, C, B, A	9 45 PSIR UNIT TRIPPED
A, B, C, D, E, F	10 45 PSIR SD DE-ACTIVATE
B, A	12 45 PSIR MANUAL START
E, D, C	13 45 PSIR BARRING DEVICE LOCKOUT
C	14 45 PSIF TRIP HTJW
C	15 45 PSIF TRIP HT BRG
C	16 45 PSIF TRIP HT LO OUT
C	17 20 PSIR HAP LO FILTER
C	18 20 PSIR HAP FO FILTER
C	19 45 PSIF TRIP LPTO
C	20 20 PSIF LPTO LB
C	21 45 PSIF TRIP LPJW
C	22 15 PSIF LPJW
C	23 45 PSIR LOCKOUT W/DELAY
C	25 40 PSIF LPLO
C	26 45 PSIF TRIP VIB
C	27 45 PSIF TRIP HPCC
C	28 20 PSIF LPFO
D, C	29 45 PSIR TRIP OS
B, A	30 45 PSIR FIELD FLASH
A, B, D, C	31 45 PSIR DC AVAILABLE
BB, E, C, B, A	32 45 PSIR STARTING
BB, E, D, C, B, A	33 45 PSIR SYNCHRONOUS SPEED
C	34 45 PSIR READY TO LOAD
C, B	36 10 PSIF FUEL PUMP/OS FAIL
C	39 90 PSIF LPCA
B, A	40 45 PSIR OPERATIONAL / MAINTENANCE
C	41 15 PSIR DP JW
C	42 35 PSIF TRIP LPLO
C	43 20 PSIF LPTO RB
C	44 45 PSIR GEN. DIFF
C	37 37" H ₂ O LOW LEVEL JW - ON ENGINE

1. PNEUMATIC CONTROL MEDIUM IS AIR.
2. INDICATES 60 PSI CONTROL AIR.
3. SYSTEM SHOWS SHUTDOWN, DE-PRESSURIZED & DE-ENERGIZED.
4. SET TEST & TAG ALL SAFETY SENSORS.
5. PSIF INDICATES ACTUATION AT SETTING ON A FALLING PRESS. PSIR INDICATES ACTUATION AT SETTING ON A RISING PRESS.
6. SEE D-4903 FOR VALVE SYMBOLS.
7. DENOTES SWIRGELOK BULKHEAD TUBE TERMINATION NEAR BOTTOM OF CABINET, IDENTIFY TERMINALS.
8. TUBING IS 1/4" OD COPPER EXCEPT AS NOTED. FITTINGS ARE BRASS.
9. 1/4" OD TUBING IS RECOMMENDED FOR CONNECTION TO PANEL, EXCEPT WHERE TERMINATION ON THIS DWG IS SHOWN 3/8".
10. FOR 3 8" EXTERNAL CONNECTIONS, SEE DWG. 51816.
11. IDENTIFY BOTH ENDS OF WIRES.
12. WIRING TO BE #14 GA STRANDED 105°C INSULATED COPPER.
13. CONTACTS TRANSFER WHEN ENERGIZED.
14. MOUNT HIGH IN CABINET, CENTRALIZED.
15. PART OF FUEL TRANSFER PUMP HOP SWITCHES.
16. RELAY R1 TRANSFER WITH A START OR AT A STOP. RELAY R2 TRANSFERS 60 SEC AFTER A START OR AT A STOP.
- 17.
18. REMOVE RESISTOR IF REMOTE TACH IS USED.

ITEM	DESCRIPTION	PART NO.	QTY.	MFR.
1	SHUTDOWN LOGIC BD.	1A-6147	1	DELAVAL
2	MANOMETER	F-562-001	1	MERIAM
3	PRESS GAUGE 20-0-100" H ₂	F-530-400	1	ROYLYN
4	PRESS GAUGE 0-60	F-530-478	2	ASHCROFT
5	PRESS GAUGE 0-60 DIFF	F-530-489	1	ASHCROFT
6	PRESS GAUGE 0-100	F-530-479	1	ASHCROFT
7	PRESS GAUGE 0-30 DIFF	F-530-488	1	ASHCROFT
8	PRESS GAUGE 0-60 DUPLEX	F-530-125	1	ASHCROFT
9	PRESS GAUGE 0-300	F-530-482	3	ASHCROFT
10	PRESS GAUGE 0-100	F-530-330	1	MOORE
11	ACCUMULATOR 19.6 CU IN	F-573-326	5	BIMBA
12				
13				
14	ORIFICE .014	F-573-133	3	CALCON
15	PARALLEL ORIFICE CHECK .006	F-573-144	2	CALCON
16	CHECK VALVE	F-573-375	2	M#M
17	CHECK VALVE	F-573-127	9	NUPRO
18	SNUBBER	F-535-375	2	ASHCROFT
19	FILTER	F-527-002	1	NORGREN
20	REGULATOR	F-579-061	1	BELLOFRAM
21	TEST VALVE	F-573-299	1	WHITEY
22	3 WAY VALVE	F-573-387	1	HUMPHREY
23	3 WAY VALVE NO	F-573-132	1	HUMPHREY
24				
25	3 WAY VALVE NC MANUAL	F-573-389	2	HUMPHREY
26	LEVEL GAUGE LO	F-530-469	1	SIMMONS
27	LEVEL GAUGE DRY	F-530-498	1	SIMMONS
28	START VALVE	F-160-002	1	VALVAIR
29	SHUTTLE VALVE	F-573-126	4	HUMPHREY
30	SOL. VALVE 3-WAY 125VDC	F-586-061	16	HUMPHREY
31	PRESS SW.	F-577-045	7	BARNSDALE
32	PRESS SW.	F-577-046	57	BARNSDALE
33	PRESS SW. DIFF.	F-577-053	2	BARNSDALE
34	TEMP SW.	F-593-012	1	FENWAL
35				
36	CIRCUIT BREAKER DC 10AMP	F-511-083	8	HEINEMAN
37	CIRCUIT BREAKER AC 10AMP	F-511-001	3	HEINEMAN
38	TIME DELAY DC 50	F-590-116	4	SYRACUSE
39	CAPACITOR	F-514-006	2	SPRAGUE
40	TIME DELAY DC 50	F-590-112	2	SYRACUSE

ITEM	DESCRIPTION	PART NO.	QTY.	MFR.
41	RELAY DC 4 POLE	F-580-078	4	AB
42	RELAY DC 6 POLE	F-580-080	4	AB
43	RELAY UNDERVOLTAGE	F-580-213	2	WJLMAR
44	RELAY AC 2 POLE	F-580-083	1	AB
45	RELAY DC 2 POLE	F-580-076	2	AB
46	RELAY DC 6 POLE L/R	F-580-088	6	AB
47	RELAY DC 2 POLE L/R	F-580-086	1	AB
48	POWER SUPPLY	F-596-010	2	AIRPAX
49	TACH RELAY	F-594-041	2	AIRPAX
50	TACHOMETER	F-594-043	1	G. E.
51	RESISTOR 50 OHM	F-583-019	2	OHMITE
52	PUSHBUTTON BLACK	F-576-005	8	FURNAS
53				
54	3 POS. SW.	F-585-079	9	FURNAS
55	TOGGLE SW.	F-585-123	1	HUBBLE
56	INTERIOR LIGHT	F-555-033	1	CROUSE-HINDS
57	CONVIENCE OUTLET	F-581-024	1	HUBBLE
58	STRIP HEATER	F-535-395	2	G. E.
59	HOURLMETER	F-561-014	1	WESTINGHOUSE
60	TEMP INDICATOR	F-578-048	1	DORIC
61	TC SELECTOR SW.	F-585-119	1	OMEGA
62	TC SETPOINT RELAY DUAL	F-540-105	4	ACTION PAK
63	CAPACITOR	F-514-007	1	SPRAGUE
64				
65	ANNUNCIATOR	75080-124	1	RONAN
66	HORN	F-536-013	1	FEDERAL
67	MICRO SW	F-125-006	3	MICRO
68	PUSHBUTTON RED	F-576-006	2	FURNAS
69	RELAY 2 POLE 24VDC	F-580-021	1	PB
70	RELAY 2 POLE 125VDC	F-530-014	3	PB

- INDICATES LOCATION
- * PROVIDED BY OWNER
- 1 ON ENGINE
- 2 STANDPIPE
- * 3 IN CONTROL ROOM PANEL
- 4 IN GENERATOR PANEL
- 5 IN SWITCHGEAR
- * 6 IN MCC
- 7 ON AUX. EQUIPMENT
- 8 PART OF DAY TANK LEVEL SW.
- 9 PART OF LUBE TANK LEVEL SW.
- * 10 IN 6.9 KV SWITCHGEAR

CHK	DATE	REMARKS
A	12/7/76	UPORTED SHTS. 1-9
B	2/11/77	UPORTED SHTS. 1-9
C	4/9/77	UPORTED SHTS. 1-9
D	4/29/77	UPORTED SHTS. 3, 4, 7, 8
E	8/29/77	UPORTED SHTS. 1-9
F	1/17/78	REV. MANUAL POS. 307
G	10/27/79	REV. SH. 9, 5, 8
H	9/27/79	REV. SH. 1, 5

APERTURE CARD

NAM-20
TVA SEP 18 1979
PROJECT: GENERATOR 1 & 2
DRAWING NO. 820202
TITLE: CONTROL PANEL SCHEMATIC
CHECKED:

APPROVED
This approval does not release the Contractor from any part of his responsibility for the correctness of data, details, and dimensions.
Date OCT 29 1979
(ENCL. ENCL 28) BY E.A. HANLEY
E.A. HANLEY

DELAVAL TURBINE INC.
ENGINE AND COMPRESSOR DIVISION
OAKLAND, CALIFORNIA 94612
DELAVAL
CONTROL PANEL SCHEMATIC

MATERIAL AND HARDNESS	APPROVED BY: David D. EHRNETT	11-7-76	SHEET 9 OF 9
SCALE	CHKD. BY: David D. EHRNETT	09-500-73080	REV.

Drawn # 30473
Control # 8202020004
Data 820202 of Document
REGULATORY DOCKET FILE