

NOTES

1. THESE SIGNALS INDICATE THE CLOSING OF THE STOP VALVES.
2. REDUNDANCY IS INDICATED IN REGARDS TO (W) REQUIREMENTS ONLY.
3. DELETED
4. GENERATOR MOTORING PROTECTION SHOULD NOT DEFEAT THE THIRTY SECOND DELAY, THE 30 SECOND TIME DELAY IS DEFEATED IF BEARING OIL PRESSURE IS LO-LO AFTER LOSS OF AUTO STOP PRESSURE.
5. WESTINGHOUSE STEAM TURBINE DIVISION REQUIRES THE THIRTY SECOND TIME DELAY TO BE REDUNDANT. ONE TIMER IS CONNECTED TO THE TRAIN "A" OUTPUT OF THE PROTECTION LOGIC SYSTEM AND THE OTHER TIMER IS CONNECTED TO THE TRAIN "B" OUTPUT. THE TIMER OUTPUTS ARE WIRED SO THAT EITHER WILL ACTUATE A GENERATOR TRIP.
6. THE "AND" LOGIC AND THE ASSOCIATED PRESSURE SWITCHES (63/TB AND 63/AST) MUST BE TESTED PERIODICALLY, WHILE ON LINE AT POWER, WITHOUT PLANT TRIP. TEST VALVES AND TEST LIGHTS ARE REQUIRED TO PROVIDE THOROUGH TESTING AND TO VERIFY PRESSURE SWITCH CONTACT STATUS.
7. THE AMSAC LOGIC IS NOT REDUNDANT SINCE THE SAME INPUTS ARE USED FOR THE LOGIC OF VOTER "A" AND VOTER "B" (SEE REF. 17). ITS SIGNAL OUTPUTS ARE DUPLICATED FOR INPUT TO EACH TURBINE TRIP CIRCUIT. ISOLATION DEVICES ARE REQUIRED BETWEEN THE NON-IE AMSAC CIRCUITS AND THE TURBINE TRIP CIRCUITS.
8. SHEET NUMBERS REFER TO THE REFERENCE NUMBERS BELOW.
9. WHENEVER A PROCESS SIGNAL IS USED FOR CONTROL AND IS DERIVED FROM A PROTECTION CHANNEL, ISOLATION MUST BE PROVIDED.
10. THIS DRAWING ILLUSTRATES THE FUNCTIONAL REQUIREMENTS OF THE REACTOR CONTROL AND PROTECTION SYSTEM, THIS DRAWING DOES NOT REPRESENT ACTUAL HARDWARE IMPLEMENTATION. FOR HARDWARE IMPLEMENTATION, REFER TO THE APPLICABLE SCHEMATIC DIAGRAM(S).

REFERENCES (NOTE 8)

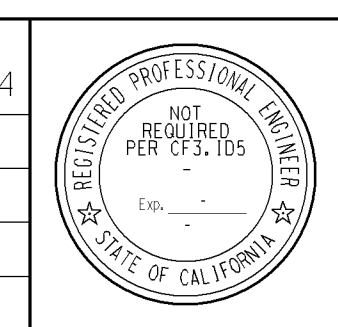
REF	DESCRIPTION	WE DWG	PG&E DWG
1.	FUNCTIONAL LOGIC DIAGRAM INDEX AND SYMBOLS	5653D74-1	495871
2.	FUNCTIONAL LOGIC DIAGRAM REACTOR TRIP SIGNALS	5653D74-2	495872
3.	FUNCTIONAL LOGIC DIAGRAM NUCLEAR INSTR AND MANUAL TRIP SIGNALS	5653D74-3	495873
4.	FUNCTIONAL LOGIC DIAGRAM NUCLEAR INSTR PERMISSIVES AND BLOCKS	5653D74-4	495874
5.	FUNCTIONAL LOGIC DIAGRAM PRIMARY COOLANT SYSTEM TRIP SIGNALS	5653D74-5	495875
6.	FUNCTIONAL LOGIC DIAGRAM PRESSURIZER TRIP SIGNALS	5653D74-6	495876
7.	FUNCTIONAL LOGIC DIAGRAM STEAM GENERATOR TRIP SIGNALS	5653D74-7	495877
8.	FUNCTIONAL LOGIC DIAGRAM SAFEGUARDS ACTUATION SIGNALS	5653D74-8	495878
9.	FUNCTIONAL LOGIC DIAGRAM ROD CONTROLS AND ROD BLOCKS	5653D74-9	495879
10.	FUNCTIONAL LOGIC DIAGRAM STEAM DUMP CONTROL	5653D74-10	495880
11.	FUNCTIONAL LOGIC DIAGRAM PRESSURIZER PRESSURE AND LEVEL CONTROL	5653D74-11	495881
12.	FUNCTIONAL LOGIC DIAGRAM PRESSURIZER HEATER CONTROL	5653D74-12	495882
13.	FUNCTIONAL LOGIC DIAGRAM FEEDWATER CONTROL AND ISOLATION	5653D74-13	495883
14.	FUNCTIONAL LOGIC DIAGRAM FEEDWATER CONTROL AND ISOLATION	5653D74-14	495884
15.	FUNCTIONAL LOGIC DIAGRAM AUXILIARY FEEDWATER PUMPS STARTUP	5653D74-15	495885
16.	FUNCTIONAL LOGIC DIAGRAM TURBINE TRIPS, RUNBACKS & SIGNALS	5653D74-16	495886
17.	FUNCTIONAL LOGIC DIAGRAM AMSAC SIGNALS	5653D74-17	495887
18.	FUNCTIONAL LOGIC DIAGRAM SEISMIC TRIP	8759D77	495888
19.	FUNCTIONAL LOGIC DIAGRAM DIGITAL FW CONT SYS INPUT SIGNAL VALIDATION	5653D74-18	495889
20.	FUNCTIONAL LOGIC DIAGRAM DIGITAL FW CONT SYS FW FLOW CONTROLLER & C _v DEMAND	5653D74-19	495900
21.	FUNCTIONAL LOGIC DIAGRAM DIGITAL FW CONT SYS CONT VCV SEQ & TRACKING LOGIC	5653D74-20	495901
22.	FUNCTIONAL LOGIC DIAGRAM DIGITAL FW CONT SYS SIGNAL SELECTOR LOGIC	5653D74-21	495902
23.	FUNCTION DIAGRAM REACTOR - TURBINE - GENERATOR PROTECTION		500800
24.	ATWS MITIGATION SYSTEM ACTUATION CIRCUITRY (AMSAC)		6008434
25.	SCHEMATIC DIAGRAM TURBINE CONTROL		441253
26.	INTERCONNECTING WIRING DIAGRAM		663224-117

NUCLEAR SAFETY RELATED

KEY DWG. SECTION 3

UNIT 2

DATE 05-05-2014	REVISION DESCRIPTION REVISED PER DFT-T*2567	DWG SCALES BILL OF MATL SUPDS: 663195-16
D.O. MNRU		DRAWING SHEET PAGE REV 495886 1 0 11
R.E. FXC2		
I.V. KJD3		
P.E. N/A		



FUNCTIONAL LOOP DIAGRAM
TURBINE TRIPS, RUNBACKS,
& OTHER SIGNALS

PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

RASTER=495886D.dgn
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 User:WNRU Date: 05-05-2014

DRAWING NUMBER 495886

UI - 495856