



NOTES:

1. TRAIN A CONTROLS MAFF 2: BREAKER
TRAIN B CONTROLS MAFF 2: BREAKER
2. LOCAL CONTROL OVERRIDES ALL OTHER SIGNALS.
3. LOCAL OVERRIDE ACTUATES ALARM IN CONTROL ROOM.
4. OPEN/SHUT INDICATION IN CONTROL ROOM.
5. MOTOR OPERATING LIGHTS IN CONTROL ROOM.
6. INDIVIDUAL FOR EACH PUMP.
7. INDIVIDUAL FOR EACH VALVE.
8. THE TURBINE SPEED CONTROL IS TYPICAL. ACTUAL IMPLEMENTATION MAY NOT INCLUDE SPEED CONTROL.
9. THE AMSAC SIGNAL IS NOT REDUNDANT FOR THE TURBINE DRIVEN AFW PUMP (AMSAC OUTPUT 'A' AND 'B' RELAYS ARE WIRED IN PARALLEL). AMSAC OUTPUT 'A' STARTS MOTOR DRIVEN PUMP 3. AMSAC OUTPUT 'B' STARTS MOTOR DRIVEN PUMP 2. ISOLATION DEVICES ARE REQUIRED BETWEEN THE NON-IE AMSAC CIRCUITS AND THE IE AUXILIARY FEEDWATER START CIRCUITS.
10. INPUT TO THE AUXILIARY FEEDWATER ACTUATION DEVICE FOR EACH AUXILIARY FEEDWATER TRAIN.
11. SHEET NUMBERS REFER TO THE REFERENCE NUMBERS BELOW.
12. WHENEVER A PROCESS SIGNAL IS USED FOR CONTROL AND IS DERIVED FROM A PROTECTION CHANNEL, ISOLATION MUST BE PROVIDED.
13. THIS DRAWING ILLUSTRATES THE FUNCTIONAL REQUIREMENTS OF THE REACTOR CONTROL IMPLEMENTATION. FOR HARDWARE IMPLEMENTATION, REFER TO THE APPLICABLE SCHEMATIC DIAGRAM(S).

REFERENCES (NOTE 11)

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 495890
21. FUNCTIONAL LOGIC DIAGRAM DIGITAL FW CONT SYS CONT VCV SEQ & TRACKING LOGIC	5653D74-20 495891
22. FUNCTIONAL LOGIC DIAGRAM DIGITAL FW CONT SYS SIGNAL SELECTOR LOGIC	5653D74-21 495892
23. ATWS MITIGATION SYSTEM ACTUATION CIRCUITRY (AMSAC)	608434
24. SCHEMATIC DIAGRAM AUXILIARY FEEDWATER PUMPS	441302
25. SCHEMATIC DIAGRAM AUXILIARY FEEDWATER PUMPS TURBINE CONTROL	455097

NUCLEAR SAFETY RELATED

KEY DWG. SECTION 3

DATE	REVISION DESCRIPTION
02-23-2015	REVISED PER DFT-1*2909
D.O. ZMS4	
R.E. KJD3	
I.V. N/A	
P.E. N/A	



UNIT 2	I & C
FUNCTIONAL LOGIC DIAGRAM AUXILIARY FEEDWATER PUMPS STARTUP	
PACIFIC GAS AND ELECTRIC COMPANY SAN FRANCISCO, CALIFORNIA	

DWG SCALES	BILL OF MAT'L
SUPDS: 663195-15 <td></td>	
DRAWING	SHEET
495885	1 0 5

RASTER=495885.dgn
 C:\N\495885.dwg
 C:\N\USER\ZMS4\Date: 02-23-2015

SHEET NUMBER
 495885-1