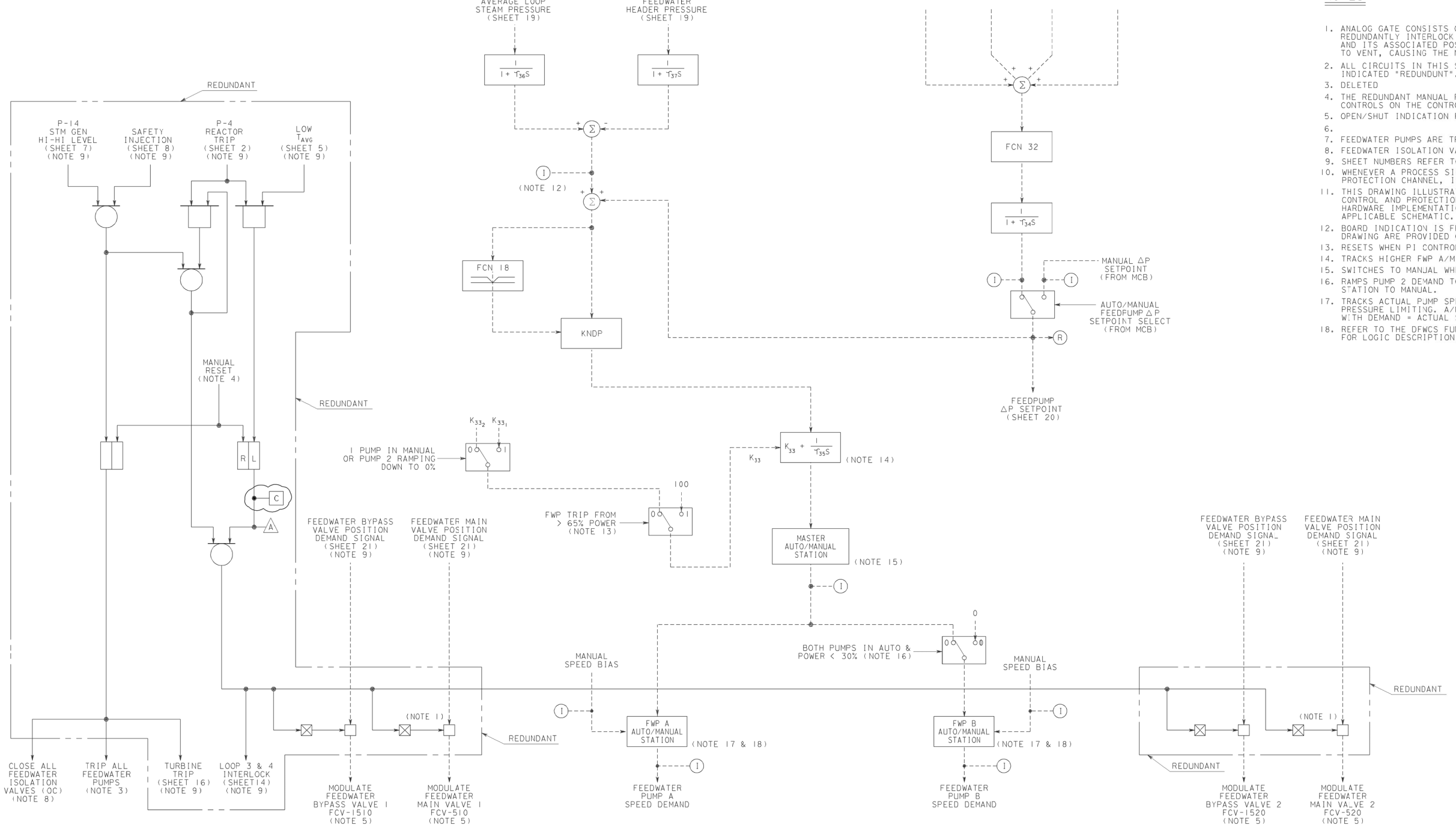

1. ANALOG GATE CONSISTS OF 2 SOLENOID VENT VALVES IN SERIES TO REDUNDANTLY INTERLOCK THE AIR LINE BETWEEN EACH VALVE DIAPHRAM AND ITS ASSOCIATED POSITIONER. THE SOLENOID VALVES ARE DE-ENERGIZED TO VENT, CAUSING THE MAIN FEEDWATER VALVE TO CLOSE IN 7 SECONDS.
2. ALL CIRCUITS IN THIS SHEET ARE NOT REDUNDANT EXCEPT WERE INDICATED "REDUNDUNT".
3. DELETED
4. THE REDUNDANT MANUAL RESET CONSISTS OF TWO MOMENTARY CONTROLS ON THE CONTROL BOARD, ONE OF EACH TRAIN.
5. OPEN/SHUT INDICATION FOR EACH FEEDWATER CONTROL VALVE IN CONTROL ROOM.
6.
7. FEEDWATER PUMPS ARE TRIPPED BY TRAIN "B" ONLY.
8. FEEDWATER ISOLATION VALVES ARE CLOSED BY TRAIN "A" ONLY.
9. SHEET NUMBERS REFER TO THE REFERENCE NUMBERS BELOW.
10. WHENEVER A PROCESS SIGNAL IS USED FOR CONTROL AND IS DERIVED FROM A PROTECTION CHANNEL, ISOLATION MUST BE PROVIDED.
11. 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.
12. BOARD INDICATION IS FROM A DFWCS OUTPUT. ALL OTHER INDICATIONS ON THIS DRAWING ARE PROVIDED ON THE DFWCS HMI.
13. RESETS WHEN PI CONTROLLER OUTPUT REACHES 100%. ALSO SETS PUMP BIASES TO 0.
14. TRACKS HIGHER FWP A/M STATION DEMAND WHEN BOTH PUMPS ARE IN MANUAL.
15. SWITCHES TO MANJAL WHEN BOTH FWP A/M STATIONS ARE IN MANUAL.
16. RAMPS PUMP 2 DEMAND TO 0%. ONCE PUMP 2 IS AT 0%, SWITCHES ITS A/M STATION TO MANUAL.
17. TRACKS ACTUAL PUMP SPEED WHEN WOODWARD FPSCS IS IN LOCAL MANUAL OR PRESSURE LIMITING. A/M GOES TO MANUAL WHEN IT COMES OUT OF TRACK MODE WITH DEMAND = ACTUAL SPEED AT TIME OF TRANSITION.
18. REFER TO THE DFWCS FUNCTIONAL REQUIREMENTS DOCUMENT DRAWING 663195-27 FOR LOGIC DESCRIPTION.

REFERENCES (NOTE 9)

	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. DRAWING INDEX SOLID STATE PROTECTION SYS INTERCONNECTION & SCHEM. DIAGRAM	108D442-1	458826

NUCLEAR SAFETY RELATED

DRAWING NUMBER 495883 1

OLD4 OUTLINE

Date: 09-14-2009