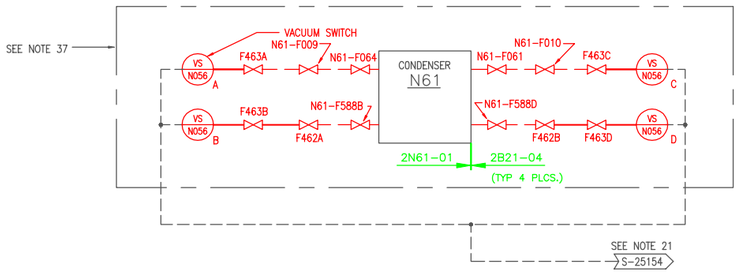
HL-26189

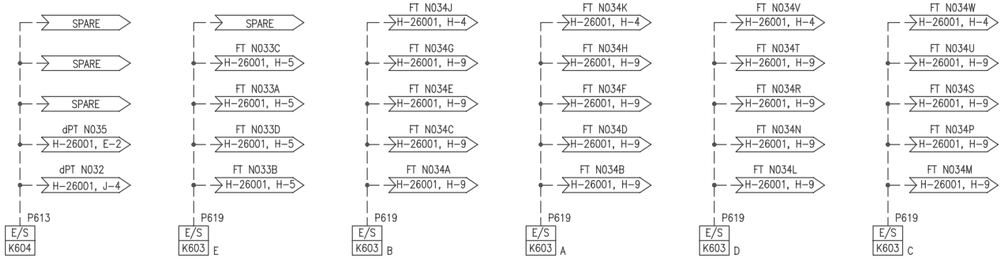
TABLE 6

JET PUMP	ISOLATION VALVE	EFCV	DRAIN VALVE
J1	F058B	F059B	F099B
J2	F058D	F059D	F099D
J3	F058F	F059F	F099F
J4	F058H	F059H	F099H
J5	F050B	F051B	F096B
	F052B	F053B	F095B
J6	F058M	F059M	F099M
J7	F058P	F059P	F099P
J8	F058S	F059S	F099S
J9	F058U	F059U	F099U
J10	F050D	F051D	F096D
	F052D	F053D	F095D
J11	F058A	F059A	F099A
J12	F058C	F059C	F099C
J13	F058E	F059E	F099E
J14	F058G	F059G	F099G
J15	F050A	F051A	F096A
	F052A	F053A	F095A
J16	F058L	F059L	F099L
J17	F058N	F059N	F099N
J18	F058R	F059R	F099R
J19	F058T	F059T	F099T
J20	F050C	F051C	F096C
	F052C	F053C	F095C

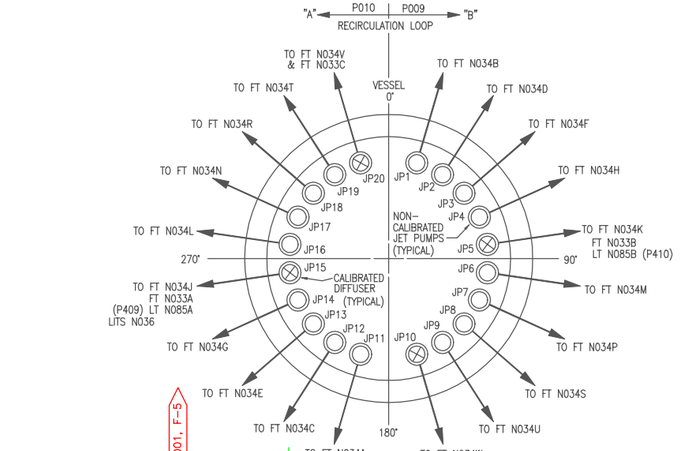
TABLE 5

TYPE T THERMOCOUPLE TAG NO's.	
2B21-N028A	2B21-N030D
2B21-N028B	2B21-N030E
2B21-N028C	2B21-N030F
2B21-N028D	2B21-N030G
2B21-N029A	2B21-N030R
2B21-N029B	2B21-N050A
2B21-N030A	2B21-N050B
2B21-N030B	2B21-N050C
2B21-N030C	





POWER DISTRIBUTION



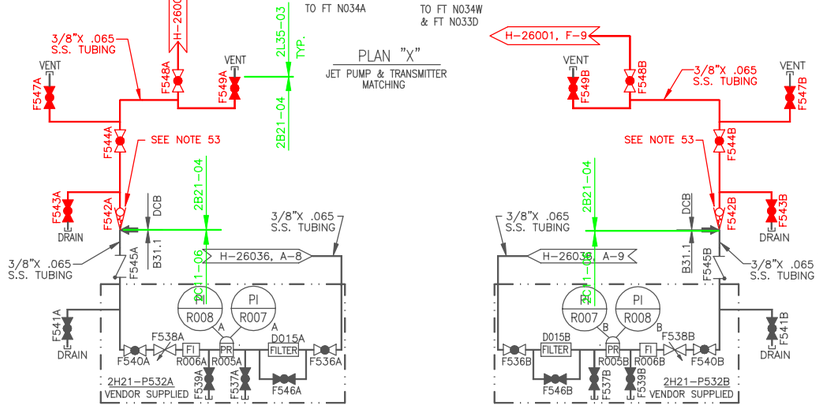


TABLE 2
ELEVATION CORRELATION CHART (SEE NOTE 5)

REFERENCE	(COLD VESSEL) INCHES ABOVE VESSEL ZERO	DESCRIPTION OF TRIPS	INSTRUMENT (S) PROVIDING TRIP	REACTOR VESSEL LEVELS (S-25213)	INDICATED LEVEL (NOTE 44) SAFEGUARDS LI-R604A, B L/PR-R623A,B	INDICATED LEVEL (NOTE 44) FEEDWATER 2C32-L/PR-R608
NOZZLE N3A, B, C, D	640.0					
NOZZLE N12A, B	586.25					
FEEDWATER SYSTEM & REACTOR PROTECTION SYSTEM FULL SCALE	577.0				+60	+60
		1. TRIP HPCI TURBINE	LIS N693B LS N693D			
		1. TRIP RCIC TURBINE	LIS N693A LS N693C	8		
		1. TRIP REACTOR FEED PUMPS 2. CLOSE MAIN TURBINE STOP VALVES	2C32-FY-K624A-C			
		1. HIGH LEVEL ALARM	2C32-L/PR-R608	7		
		1. NORMAL LEVEL	FEEDWATER LEVEL CONT SYS 2C32	5,6	+37.0	+37.0
		1. LOW LEVEL ALARM	2C32-L/PR-R608	4		
		1. SCRAM 2. CLOSE PCIS VALVES (SEE NOTE 47) 3. CLOSE RHR SHUTDOWN COOLING ISOLATION VALVES	LIS-N680A-D	3		
		1. AUTO DEPRESSURIZATION SYS. (ADS) PERMISSIVE	LIS-N695A, B			
FEEDWATER SYSTEM & REACTOR PROTECTION SYSTEM INSTRUMENT ZERO BOTTOM OF DRYER SKIRT	517.0				0	0
NOZZLE N11A, B	509.0	1. INITIATE HPCI 2. INITIATE RCIC 3. INITIATE ATWS-ARI	LS N692A-D	2		
		1. CLOSE RWCU ISOL VALVES 2. START SBGT SYSTEM 3. CLOSE REACTOR BLDG. VENTILATION SYSTEM DAMPERS	LS N682A-D			
		1. TRIP RECIRCULATION PUMPS	LS N694A-D	RPT		
		1. INITIATE RHR SYSTEM 2. INITIATE CORE SPRAY SYSTEM 3. CONTRIBUTE TO ADS 4. START STANDBY DIESEL	LIS N691A-D	1		
		1. CLOSE MSIV's 2. CLOSE MSL DRAIN ISOL VALVES 3. CLOSE REACTOR WATER SAMPLE ISOL VALVES	LIS N681A-D			
REACTOR PROTECTION SYSTEM FULL SCALE	367.0				-150.0	
NOZZLE N16A,B	358.0					
TOP OF ACTIVE FUEL	352.56					
LOWER JET PUMP TAP	143.0	1. CONTAINMENT SPRAY PERMISSIVE	LIS N685A,B	0		
NOZZLE N8A,B	132.0					

NOTES: CONTINUED

34. SAMPLE PROBE(S) AND FEEDWATER SAMPLE STATION TO COMPLY WITH REF. 20, WATER SAMPLING SECTION 8.
35. ALTERNATE TAP SET ON FEEDWATER FLOW ELEMENT.
36. TRIP RECIRC. PUMP (REF. 21).
37. LOW CONDENSER VACUUM SWITCHES CONNECTED THROUGH SEPARATE CALIBRATION VLVS. TO OPPOSITE SIDES OF THE CONDENSER ABOVE THE HIGH CONDENSATE LEVEL. THE VACUUM SWITCHES MUST BE ACCESSIBLE DURING PLANT OPERATION.
38. AN ORIFICE (1/4" MIN.) IS TO BE PROVIDED WITHIN THE PRIMARY CONTAINMENT IN EACH INSTRUMENT LINE WHICH CONNECTS TO THE REACTOR COOLANT PRESSURE BOUNDARY.
39. (PX) TO BE 3/4", INSTALLED IN A STRAIGHT RUN OF PIPE AS FAR AS POSSIBLE FROM ELBOWS, ETC. AND LOCATED SO THAT △ P'S FROM THE TAPS TO THE VESSEL NOZZLES ARE EQUAL. TAPS TO MEET ASME PTC 6, 1964 STEAM TURBINE PARA. 4.74. TWELVE WIRES ARE TO BE PROVIDED PENETRATING THE DRYWELL FOR READOUT OF TEMPORARY PRESSURE TRANSMITTERS DURING START-UP.
40. SOLENOID VALVE F113 IS LOCATED IN H.P. CONNECTION OF SENSING LINE TO 2B21-FT-N033C ONLY.
41. COMPUTER INPUT TO SOLENOID VALVE FOR AUTOMATIC CONTROL.
42. NUMBERS WITHIN ◯ INDICATE ANALOG INPUT NUMBER AS DESCRIBED IN THE FUNCTIONAL DESIGN CRITERIA FOR EMERGENCY RESPONSE FACILITY. TABLE "D" UNIT 2 ANALOG INPUT SIGNALS TO THE SPDS/ERF COMPUTER SYSTEMS. ALSO IDENTIFIED IS THE PANEL NUMBER/CHANNEL ADDRESS DESTINATION OF THE ANALOG SIGNALS (ie 2X75-P601/101).
43. THE AIR ACCUMULATOR AND AIR LINE VALVES ASSOCIATED WITH EACH SAFETY RELIEF VALVE ARE ASSIGNED THE SAME SUFFIX AS THE SAFETY RELIEF VALVE.
44. FOR TRIP SETTINGS-SEE HNP-2 INSTRUMENT SETPOINT INDEX.
45. INITIATE CLOSURE OF RECIRCULATION PUMP DISCHARGE VALVE.
46. RHR PERMISSIVE (SHUTDOWN COOLING MODE)
47. SCRAM (REF. 18) AND CLOSE PRIMARY CONTAINMENT ISOLATION SYSTEM (PCIS) VALVES EXCEPT FOR THE FOLLOWING:
    A) MSIV'S
    B) MSL DRAIN ISOLATION VALVES
    C) REACTOR WATER SAMPLE ISOLATION VALVES
    D) RWCU ISOLATION VALVES
48. DELETED
49. THE FOLLOWING DRAIN VALVES ARE ON THE CORRESPONDING ACCUMULATORS:
    2B21-F448-------2B21-A002A
    2B21-F451-------2B21-A002B
    2B21-F454-------2B21-A002C
    2B21-F457-------2B21-A002D
50. INITIATES ARI SYSTEM (REF 1)
51. B21-N024A & B AND B21-N025A & B ARE LOCAL REACTOR LEVEL INDICATORS ONLY.
52. INITIATES LLS
53. ELECTRICAL CONNECTIONS ARE NOT UTILIZED IN EXCESS FLOW CHECK VALVES F542A , B
54. VALVE 2B21-F011A IS NOT TO BE ISOLATED UNLESS 2C11-F072 AND 2C11-F082 ARE ISOLATED.
55. SYSTEM 2E32 HAS BEEN ABANDONED IN PLACE. 2E32 COMPONENTS SHOWN ON THIS DRAWING HAVE BEEN ELECTRICALLY AND MECHANICALLY DISABLED.

NOTES:
1. ALL EQUIPMENT & INSTRUMENTS ARE PRECEDED BY MPL NO. 2B21 UNLESS OTHERWISE NOTED.
2. STEAM LINES, ENCLOSED IN BOXES SHALL HAVE PART NOS. CORRESPONDING TO ITS RESPECTIVE LINE NO. UNLESS OTHERWISE NOTED. EXAMPLE: XXXB IS ON LINE "B" XXXC IS ON LINE "C"
3. WHERE GV-NUMBERS ARE SHOWN THE VALVES ARE TAGGED WITH THESE NUMBERS: WHERE GV-NUMBERS ARE NOT SHOWN THE VALVES ARE TAGGED WITH THE MPL NUMBER.
4. ANY ADDITIONAL HIGH POINT VENTS AND LOW POINT DRAINS TO BE ADDED BY FIELDS AS REQUIRED.
5. INDICATED LEVEL TRIP SETTINGS VERSUS ACTUAL LEVEL INSIDE DRYER SEAL SKIRT IS BASED UPON:
   A. CALIBRATION OF DEVICES AT 1000 PSIG REACTOR DOME PRESSURE & 135° F. DRYWELL AMBIENT TEMPERATURE X & 20 BTU/LB. SUBCOOLING IN VESSEL BELOW NOZZLE 11 & SATURATED COND. ABOVE NO. 2.11.
   B. △ Pg=DRYER PRESSURE DROP AT RATED LOAD=10" HOT WATER
   C. CARRY-UNDER CORRECTION (BASED ON 0.3% BY WEIGHT CARRY-UNDER)=5.5% DENSITY.
   D. FEEDWATER LEVEL SENSOR ERROR BAND ±2% RANGE.
   E. SAFEGUARDS LEVEL SENSOR ERROR BAND ±3% RANGE.
6. T/C JUNCTION BOX LOCALLY MOUNTED (BY OTHERS) EACH T/C JUNCTION BOX TO HAVE OWN SET OF TERMINALS.
7. LOCATE PRESSURE TEST POINTS AS CLOSE AS POSSIBLE TO 2B21-F028A, B, C, D.
8. AN EXPANSION LEG SHALL BE PROVIDED IN INSTRUMENT SENSING LINE BETWEEN POT (PART D002) AND THE BRANCH CONNECTION OFF THE VESSEL HEAD VENT LINE. THE EXPANSION LEG & PIPING INSTALLATION SHALL BE DESIGNED TO ALLOW FOR MAXIMUM CHANGE OF VESSEL LENGTH WITH TEMPERATURE TO AVOID OVERSTRESSING THE PIPING ON THE SEAL OR DAMAGE TO THE INSULATION AROUND THE VESSEL.
9. FOR LOCATION & IDENTIFICATION OF INSTRUMENTS SEE INSTRUMENT DATA SHEET LISTED IN MPL FOR EACH INSTRUMENT
10. ALL RELIEF AND SAFETY VALVE DISCHARGE THERMOCOUPLES SHALL BE CONNECTED TO TEMPERATURE RECORDER R614
11. INSTRUMENTS, INSTRUMENT PIPING AND VALVING MUST COMPLY WITH THE REQUIREMENTS OF REF 19.
12. ALL MOTOR AND SOLENOID OPERATED VALVES ARE NORMAL AC UNLESS OTHERWISE NOTED.
13. LINES TO DIFFERENTIAL PRESSURE TRANSMITTERS SHOULD BE AS SHORT AS PRACTICAL.
14. INSTALL TEMPERATURE EQUALIZING COLUMN AND LEVEL INSTRUMENT PIPING AS DIRECTED BY VENDORS INSTALLATION DRAWING.
15. ALARMS ASSOCIATED WITH THE SYSTEMS INITIATED BY THE REACTOR PROTECTION SYSTEM OR SAFEGUARD SYSTEM LEVEL AND PRESSURE SWITCHES ARE SHOWN ON THE P&ID FOR THE PARTICULAR SYSTEM.
16. TRIP RCIC AND HPCI TURBINES ON HIGH LEVEL (REF. 13 & 15).
17. SEE NOTE 47
18. CORE SPRAY AND RHR SYSTEM VALVE OPENING PERMISSIVE (REF. 14 & 17).
19. INITIATE CLOSURE OF RWCU ISOLATION VALVES, START SBGT SYSTEM, AND INITIATE CLOSURE OF REACTOR BUILDING VENT SYSTEM DAMPERS.
20. INITIATE HPCI SYSTEM (REF. 13), RCIC SYSTEM (REF. 15), ARI SYSTEM (REF. 1).
21. INITIATE CLOSURE OF MAIN STEAM LINE ISOLATION VALVES (REF. 16).
22. CONTRIBUTE TO AUTO BLOWDOWN (REF. 16), INITIATE CORE SPRAY (REF. 17) RHR SYSTEM (REF. 14) AND START STANDBY DIESEL GENERATOR (REF. 17).
23. WATER TIGHT JUNCTION BOX TO BE LOCATED INSIDE DRYWELL.
24. SUMMER K606 & K607 INPUTS SHALL BE INTERLOCKED WITH RECIRC. PUMP AND VALVES TO ADD INPUTS WHEN BOTH PUMPS ARE RUNNING AND THEIR DISCHARGE VALVES ARE OPEN OR SUBTRACT ONE INPUT WHEN THE CORRESPONDING PUMP IS STOPPED OR ITS DISCHARGE VALVE IS CLOSED.
25. NOZZLES 6A & 6B MAY BE INTERCHANGED.
26. TYPICAL FOR ALL (16) NON-CALIBRATED JET PUMPS EXCEPT FOR ASSIGNMENT LETTER SUFFIXES. FOR LETTER SUFFIX ASSIGNMENT SEE PLAN "X" AND TABLE 6.
27. TYPICAL FOR ALL (4) CALIBRATED JET PUMPS EXCEPT FOR ASSIGNMENT LETTER SUFFIXES. FOR LETTER SUFFIX ASSIGNMENT SEE PLAN "X" AND TABLE 6.
28. CONTAINMENT SPRAY MODE RHR INTERLOCK (REF. 14).
29. REACTOR PROTECTION SYS. SCRAM SIGNAL (REF. 18).
30. RHR INTERLOCK (LPCI MODE) (REF. 14).
31. LIS N685A & LR R615, LIS N685B & LI R610 SHALL CORRESPOND TO COLD SHUT DOWN CONDITIONS (125°F & ATMOS).
32. INSTRUMENTS READ FULL SCALE WHEN JET PUMPS ARE IN OPERATION.
33. RECIRCULATION LINES TO HOTWELL TO COMPLY WITH REF. 20, WATER QUALITY SECTION 7.

BOUNDARY DIAGRAM NO.:2B21-B02-03
FUNCTION(S) NO.: 2B21-04
PREPARED BY: Willie Jennings
DATE: 04/23/98
REVIEWED BY: William P. Evans
DATE: 07/09/98

FOR REFERENCES SEE DWG. H-26000 (SHT. 1)

WORK THIS DRAWING WITH H-26000 (SHT. 1) AND H-26001 (SHT. 2).

LICENSE RENEWAL DOCUMENT

MPL NO. 2B21-1010 | ACAD14 | HL26189

SOUTHERN COMPANY

LICENSE RENEWAL SCREENING FOR INFORMATION ONLY

EDWIN I. HATCH NUCLEAR PLANT UNIT No. 2
NUCLEAR BOILER SYSTEM P&ID
SHEET 3

Revision: A	Date: 11-02-99
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