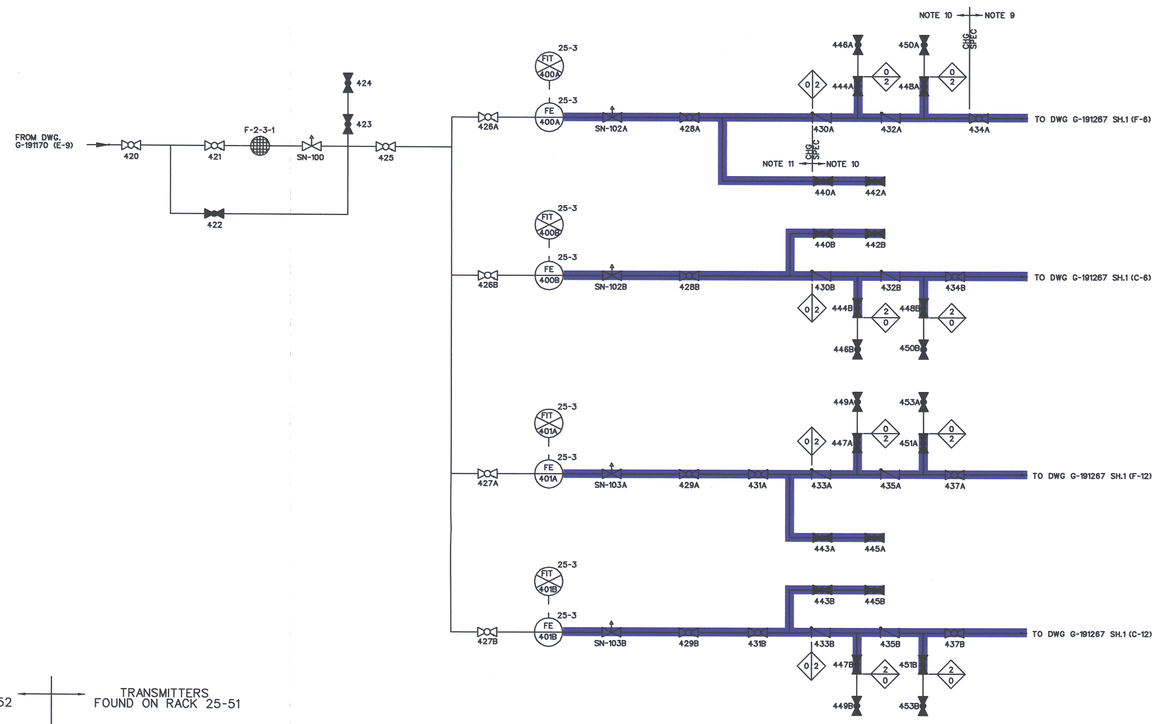
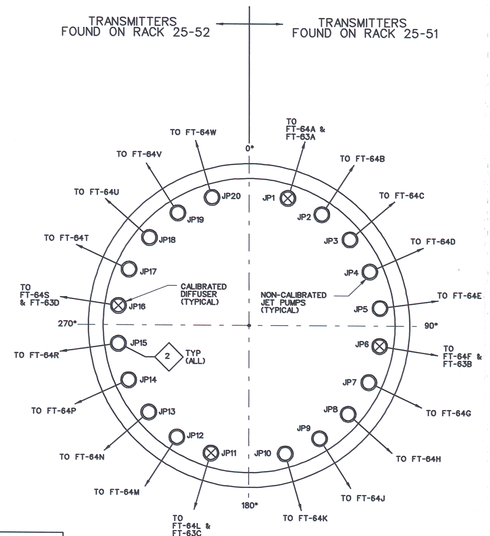
G-191267 SH.2

JET PUMP	PENETRATION	ROOT VALVE	JET PUMP	PENETRATION	ROOT VALVE
JP1 (UPPER)	X-40B-C	22B	JP11 (UPPER)	X-40D-C	22D
JP1 (LOWER)	X-40B-B	20B	JP11 (LOWER)	X-40D-B	20D
JP2	X-40B-E	30A	JP12	X-40D-E	30I
JP3	X-40B-D	30B	JP13	X-40D-D	30J
JP4	X-40B-F	30C	JP14	X-40D-F	30K
JP5	X-40B-A	30D	JP15	X-40D-A	30L
JP6 (UPPER)	X-40A-C	22A	JP16 (UPPER)	X-40C-C	22C
JP6 (LOWER)	X-40A-B	20A	JP16 (LOWER)	X-40C-B	20C
JP7	X-40A-E	30E	JP17	X-40C-E	30M
JP8	X-40A-D	30F	JP18	X-40C-D	30N
JP9	X-40A-F	30G	JP19	X-40C-F	30P
JP10	X-40A-A	30H	JP20	X-40C-A	30Q





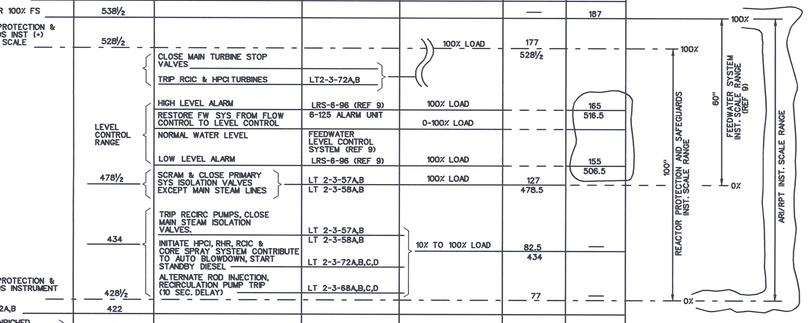
PLAN X

JET PUMP & TRANSMITTER MATCHING (SEE NOTE 4 & 7)

THIS IS AN [redacted] DRAWING

ELEVATION CORRELATION CHART

REFERENCE	INCHES ABOVE VESSEL ZERO	TRIPS DESCRIPTION	INSTRUMENT(S) PROVIDING TRIP (NOTE 5)	LOAD CONDITION	INDICATED LEVEL & TRIP SETTINGS (NOTE 5) SAFEGUARDS LI-2-3-72	INDICATED LEVEL & TRIP SETTINGS (NOTE 5) FEEDWATER LRS-6-96
NOZZLE N 11A,B	542					
FEEDWATER 100% FS	538½				—	187
REACTOR PROTECTION & SAFEGUARDS INST (+) 100% FULL SCALE	528½			100% LOAD	177 528½	
		CLOSE MAIN TURBINE STOP VALVES				
		TRIP RCIC & HPCI TURBINES	LT2-3-72A,B			
		HIGH LEVEL ALARM	LRS-6-96 (REF 9)	100% LOAD		165
		RESTORE FW SYS FROM FLOW CONTROL TO LEVEL CONTROL	6-125 ALARM UNIT	0-100% LOAD		516.5
	LEVEL CONTROL RANGE	NORMAL WATER LEVEL	FEEDWATER LEVEL CONTROL SYSTEM (REF 9)			
		LOW LEVEL ALARM	LRS-6-96 (REF 9)	100% LOAD		155
	478½	SCRAM & CLOSE PRIMARY SYS ISOLATION VALVES EXCEPT MAIN STEAM LINES	LT 2-3-57A,B LT 2-3-58A,B	100% LOAD	127 478.5	506.5
	434	TRIP RECIRC PUMPS, CLOSE MAIN STEAM ISOLATION VALVES.	LT 2-3-57A,B			
		INITIATE HPCI, RHR, RCIC & CORE SPRAY SYSTEM CONTRIBUTE TO AUTO BLOWDOWN, START STANDBY DIESEL	LT 2-3-58A,B LT 2-3-72A,B,C,D	10% TO 100% LOAD	82.5 434	—
		ALTERNATE ROD INJECTION, RECIRCULATION PUMP TRIP (10 SEC. DELAY)	LT 2-3-68A,B,C,D			—
REACTOR PROTECTION & SAFEGUARDS INSTRUMENT 0% FS	428½				77	
NOZZLE N12A,B	422					
TOP OF ENRICHED FUEL, FDWR INST. & PROT. & SAFEGUARDS INSTR. ZERO	351½					
2/3 OF CORE HT. LEVEL	303½	NOT PERMISSIVE TO OPERATE CONTROL SPRAY	LT 2-3-73A,B		297½	



NOTES:

1. UNLESS OTHERWISE NOTED ALL INSTRUMENT AND VALVE NUMBERS TO BE PREFIXED BY SYSTEM NUMBER 2-3
   FOR EXAMPLE: FOR INSTRUMENT LT-61
   ACTUAL TAGGING SHALL BE: LT-2-3-61
   TYPE OF INSTRUMENT
   SYSTEM NO.
   INSTRUMENT DESIGNATION NO.
   FOR VALVE 12B
   ACTUAL TAGGING SHALL BE V2-3-12B
   SYSTEM NO.
   VALVE DESIGNATION NO.
2. INSTRUMENT LINES TO SLOPE MINIMUM ½ INCH PER FOOT TOWARDS INSTRUMENT. WATER LINES MUST NOT HAVE AIR TRAPS, AND STEAM LINES MUST NOT HAVE WATER TRAPS.
3. LINES TO DIFFERENTIAL PRESSURE TRANSMITTERS SHOULD BE AS SHORT AS PRACTICABLE.
4. ALL INSTRUMENT LINES FROM JET PUMPS 1 TO 10 EXIT THRU PENETRATIONS N8A AND X-40A AND B, LINES 11 TO 20 EXIT THRU PENETRATIONS N8B AND X-40C AND D. SEE TABLE THIS DRAWING (A-16).
5. INSTRUMENTS ARE CALIBRATED FOR 1005 PSIG REACTOR PRESSURE AND 150°F AMBIENT TEMPERATURE AT THE COLUMN. AT 100% LOAD WITH LIQUID LEVEL ABOVE DRYER SKIRT, THE LEVEL INCLUDES 7" WC Pa ACROSS DRYER, AND ALLOWANCE FOR 32% STEAM CARRY UNDER. THIS BIAS IS ACCOUNTED FOR IN THE ACCIDENT AND TRANSIENT ANALYSES. INDICATED LEVELS MARKED WITH + ARE TRIP SETTINGS ON THE ASSOCIATED INSTRUMENT LISTED IN "INSTRUMENTS PROVIDING TRIP" COLUMN.
6. ALARMS ASSOCIATED WITH THE SYSTEMS INITIATED BY THE REACTOR PROTECTION OR SAFEGUARD SYSTEM LEVEL AND PRESSURE TRANSMITTERS ARE SHOWN ON THE P AND I.D. FOR THE PARTICULAR SYSTEM.
7. ON PLAN "X" JET PUMPS JP-1 THRU JP-10 ARE RELATED TO RECIRC. LOOP B; AND JP-11 THRU JP-20 ARE RELATED TO RECIRC. LOOP A.
8. DESIGN PRESSURE/TEMPERATURE IS 1750 PSIG/575°F.
9. DESIGN PRESSURE/TEMPERATURE IS 1750 PSIG/575°F. ⅜ INCH, 0.049 INCH WALL SS TUBING.
10. DESIGN PRESSURE/TEMPERATURE IS 1750 PSIG/281°F. ⅜ INCH, 0.049 INCH WALL SS TUBING.
11. DESIGN PRESSURE/TEMPERATURE IS 1750 PSIG/150°F. ⅜ INCH, 0.049 INCH WALL SS TUBING.

LEGEND

△ - ERFIS COMPUTER DATA SYSTEM

REFERENCE DRAWINGS:

1. PIPING AND INSTRUMENT SYMBOLS — G-191155
2. FLOW DIAGRAM - NUCLEAR BOILER — G-191167
3. FLOW DIAGRAM - CORE SPRAY SYSTEM — G-191168
4. FLOW DIAGRAM - HIGH PRESSURE COOLANT INJECTION SYSTEM SHEET 1 & 2 — G-191169
5. FLOW DIAGRAM - CONTROL ROD HYDRAULIC SYSTEM — G-191170
6. FLOW DIAGRAM - STANDBY LIQUID CONTROL SYSTEM — G-191171
7. FLOW DIAGRAM - RESIDUAL HEAT REMOVAL SYSTEM — G-191172
8. FLOW DIAGRAM - REACTOR CORE ISOLATION COOLING SYSTEMS SHEET 1 & 2 — G-191174
9. I.E.D. - FEEDWATER CONTROL SYSTEM — EBASCO F.F.* 5920-204
10. I.E.D. - NEUTRON MONITORING SYSTEM — EBASCO F.F.* 5920-270 & 271
11. I.E.D. - REACTOR PROTECTION SYSTEM — EBASCO F.F.* 5920-272,273 & 274
12. FUNCTIONAL CONTROL DIAGRAM HIGH PRESSURE COOLANT INJECTION SYSTEM — EBASCO F.F.* 5920-38,39, & 44
13. FUNCTIONAL CONTROL DIAGRAM - RESIDUAL HEAT REMOVAL SYSTEM — EBASCO F.F.* 5920-27,28 & 29
14. FUNCTIONAL CONTROL DIAGRAM - REACTOR CORE ISOLATION COOLING SYSTEM — EBASCO F.F.* 5920-25,26 & 490
15. FUNCTIONAL CONTROL DIAGRAM - NUCLEAR BOILER MISC. SYSTEMS — EBASCO F.F.* 5920-611 & 612
16. FUNCTIONAL CONTROL DIAGRAM - CORE SPRAY SYSTEM — EBASCO F.F.* 5920-37
17. FUNCTIONAL CONTROL DIAGRAM - RECIRCULATION FLOW CONTROL SYSTEM — EBASCO F.F.* 5920-1472,1488 & 1515
18. REACTOR VESSEL (THERMOCOUPLE PAD) — EBASCO F.F.* 5920-22
19. REACTOR ASSEMBLY DRAWING — EBASCO F.F.* 5920-3773 & 3774

SYSTEM INTENDED FUNCTION BOUNDARY

COMPONENTS SUBJECT TO AMR

REACTOR COOLANT SYSTEM PRESSURE BOUNDARY AMRM-33

REV	DESCRIPTION	BY	CHKD.	APPD.
3	REVISED PER C.U. 98-71	3-18-98 WTT	3-18-98 PMR	5-19-98 GH
5	REVISED PER ER 2000-1074	8-22-00 WTT	8-22-00 ADP	8-22-00 JWA
4	REVISED PER J.O. 99-0069	6-28-99 MAC	6-29-99 TLM	7-6-99 RLS

YANKEE ATOMIC ELECTRIC COMPANY
580 MAIN STREET BOLTON,MA.
NUCLEAR SERVICES DIVISION
VERMONT YANKEE NUCLEAR POWER STATION
VERNON, VERMONT

DRAWING TITLE: FLOW DIAGRAM NUCLEAR BOILER VESSEL INSTRUMENTATION

JOB NO. EDCR 93-404 | DRAWING NO. G-191267 SH.2

NO.	DATE	DESCRIPTION	BY	ENG CHK	APP
0	3-29-05		-	- -	-

REVISIONS

CAD FILE: LRA-G-191267-SH-02-0

RASTER FILE: N/A

$$TIMES $$DATES $$FILES