

NOTES:

1. CHILLED WATER IS NOT TO BE USED FOR REACTOR COOLANT SYSTEMS.
2. SEE INSTRUMENTATION SYMBOL M-1100-01.
3. SEE INSTRUMENTATION SYMBOL M-1100-02.
4. SEE INSTRUMENTATION SYMBOL M-1100-03.
5. SEE INSTRUMENTATION SYMBOL M-1100-04.
6. DETECTOR OF REACTOR COOLANT FLOW CONTROL VALVE, SEEN WITH M-2269A.
7. TYPICAL USE TO BE INSTALLED AT THESE CONNECTIONS TO VENT PRESSURES.
8. DETECTOR.
9. DETECTOR.
10. DETECTOR.
11. THE SYSTEM IS A HIGH PRESSURE SYSTEM. ALL SYSTEMS SHALL BE DESIGNED TO OPERATE AT THE DESIGN PRESSURE AND TEMPERATURE. THE SYSTEM SHALL BE DESIGNED TO OPERATE AT THE DESIGN PRESSURE AND TEMPERATURE. THE SYSTEM SHALL BE DESIGNED TO OPERATE AT THE DESIGN PRESSURE AND TEMPERATURE.
12. OPERATING PRESSURE AND TEMPERATURE SHALL BE SHOWN IN THESE SYMBOLS.
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29. OPERATING PRESSURE AND TEMPERATURE SHALL BE SHOWN IN THESE SYMBOLS.
30. OPERATING PRESSURE AND TEMPERATURE SHALL BE SHOWN IN THESE SYMBOLS.

REFERENCE:

ANSI Y32.2-1975

ANSI Y32.3-1975

ANSI Y32.4-1975

ANSI Y32.5-1975

ANSI Y32.6-1975

ANSI Y32.7-1975

ANSI Y32.8-1975

ANSI Y32.9-1975

ANSI Y32.10-1975

ANSI Y32.11-1975

ANSI Y32.12-1975

ANSI Y32.13-1975

ANSI Y32.14-1975

ANSI Y32.15-1975

ANSI Y32.16-1975

ANSI Y32.17-1975

ANSI Y32.18-1975

ANSI Y32.19-1975

ANSI Y32.20-1975

ANSI Y32.21-1975

ANSI Y32.22-1975

ANSI Y32.23-1975

ANSI Y32.24-1975

ANSI Y32.25-1975

ANSI Y32.26-1975

ANSI Y32.27-1975

ANSI Y32.28-1975

ANSI Y32.29-1975

ANSI Y32.30-1975

ANSI Y32.31-1975

ANSI Y32.32-1975

ANSI Y32.33-1975

ANSI Y32.34-1975

ANSI Y32.35-1975

ANSI Y32.36-1975

ANSI Y32.37-1975

ANSI Y32.38-1975

ANSI Y32.39-1975

ANSI Y32.40-1975

ANSI Y32.41-1975

ANSI Y32.42-1975

ANSI Y32.43-1975

ANSI Y32.44-1975

ANSI Y32.45-1975

ANSI Y32.46-1975

ANSI Y32.47-1975

ANSI Y32.48-1975

ANSI Y32.49-1975

ANSI Y32.50-1975

ANSI Y32.51-1975

ANSI Y32.52-1975

ANSI Y32.53-1975

ANSI Y32.54-1975

ANSI Y32.55-1975

ANSI Y32.56-1975

ANSI Y32.57-1975

ANSI Y32.58-1975

ANSI Y32.59-1975

ANSI Y32.60-1975

ANSI Y32.61-1975

ANSI Y32.62-1975

ANSI Y32.63-1975

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ANSI Y32.65-1975

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ANSI Y32.67-1975

ANSI Y32.68-1975

ANSI Y32.69-1975

ANSI Y32.70-1975

ANSI Y32.71-1975

ANSI Y32.72-1975

ANSI Y32.73-1975

ANSI Y32.74-1975

ANSI Y32.75-1975

ANSI Y32.76-1975

ANSI Y32.77-1975

ANSI Y32.78-1975

ANSI Y32.79-1975

ANSI Y32.80-1975

ANSI Y32.81-1975

ANSI Y32.82-1975

ANSI Y32.83-1975

ANSI Y32.84-1975

ANSI Y32.85-1975

ANSI Y32.86-1975

ANSI Y32.87-1975

ANSI Y32.88-1975

ANSI Y32.89-1975

ANSI Y32.90-1975

ANSI Y32.91-1975

ANSI Y32.92-1975

ANSI Y32.93-1975

ANSI Y32.94-1975

ANSI Y32.95-1975

ANSI Y32.96-1975

ANSI Y32.97-1975

ANSI Y32.98-1975

ANSI Y32.99-1975

ANSI Y32.100-1975

USAR FIG. 5.1-1-01

ESSENTIAL DRAWING

REVISED TO REMOVE TOC; SPS 08-215

DATE: 03/23/2008

APPROVAL: [Signature]

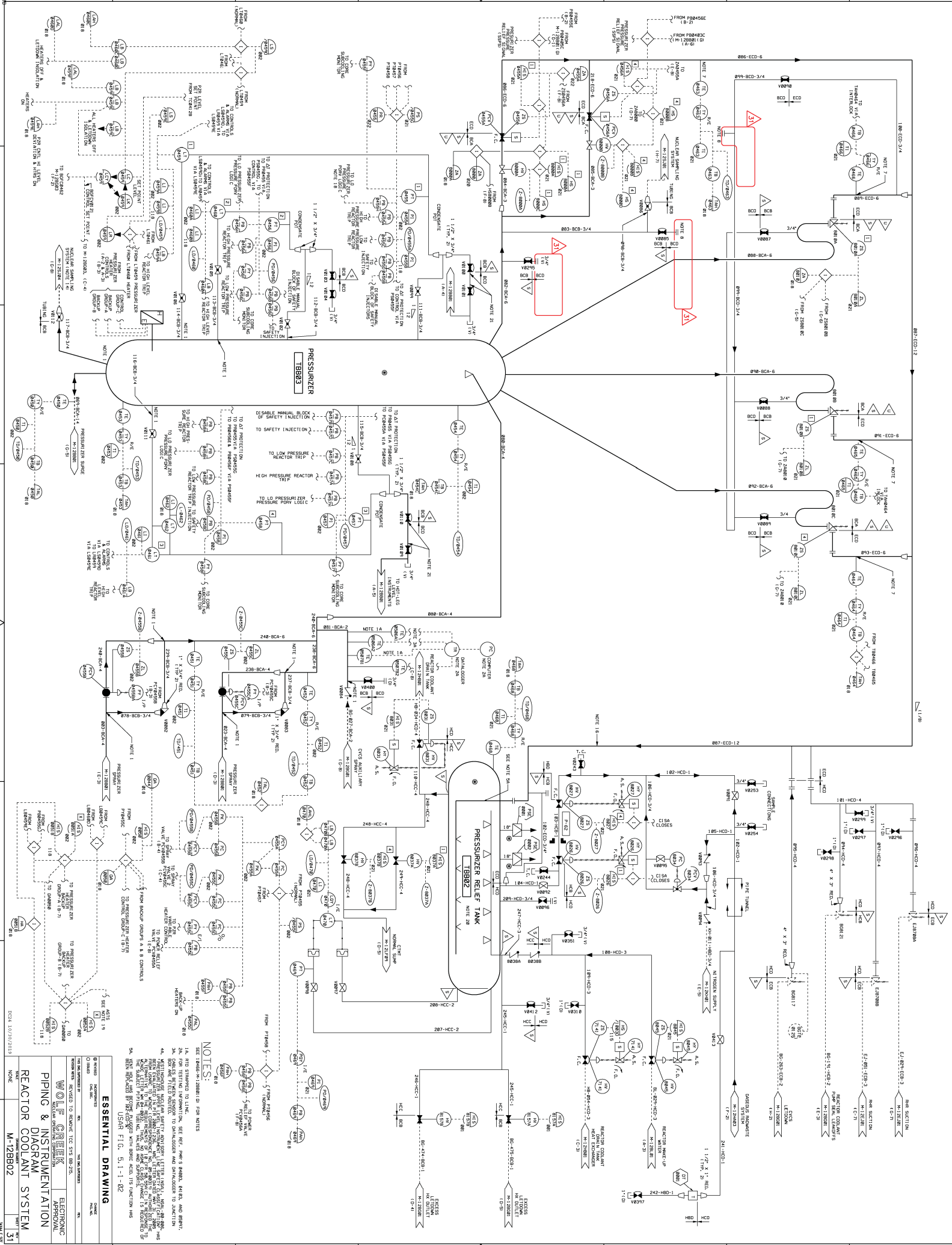
REACTOR COOLANT SYSTEM

M-226901

DATE: 03/23/2008

SHEET 39

OF 39



NO.	DATE	BY	DESCRIPTION
1	10/27/83	[Signature]	ISSUED FOR CONSTRUCTION

Table with columns: RC PUMP, PBB01A, PBB01B, PBB01C, PBB01D, PBB01E, PBB01F, PBB01G, PBB01H, PBB01I, PBB01J, PBB01K, PBB01L, PBB01M, PBB01N, PBB01O, PBB01P, PBB01Q, PBB01R, PBB01S, PBB01T, PBB01U, PBB01V, PBB01W, PBB01X, PBB01Y, PBB01Z.

Table with columns: LINC NUMBER CROSS REFERENCE, PBB01A, PBB01B, PBB01C, PBB01D, PBB01E, PBB01F, PBB01G, PBB01H, PBB01I, PBB01J, PBB01K, PBB01L, PBB01M, PBB01N, PBB01O, PBB01P, PBB01Q, PBB01R, PBB01S, PBB01T, PBB01U, PBB01V, PBB01W, PBB01X, PBB01Y, PBB01Z.

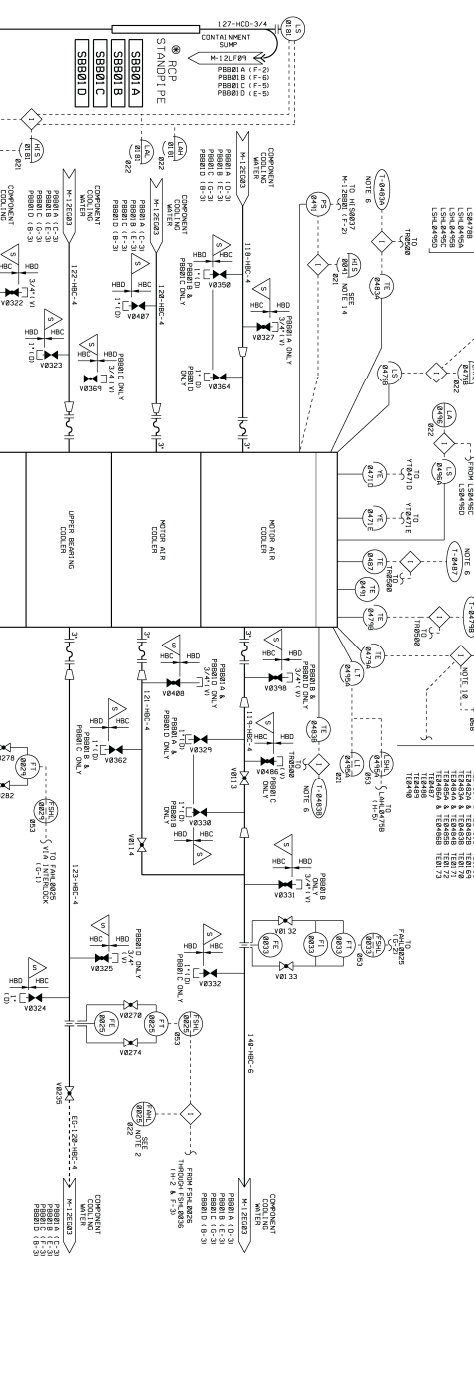


Table with columns: INSTRUMENTATION CROSS REFERENCE, PBB01A, PBB01B, PBB01C, PBB01D, PBB01E, PBB01F, PBB01G, PBB01H, PBB01I, PBB01J, PBB01K, PBB01L, PBB01M, PBB01N, PBB01O, PBB01P, PBB01Q, PBB01R, PBB01S, PBB01T, PBB01U, PBB01V, PBB01W, PBB01X, PBB01Y, PBB01Z.

Table with columns: LINC NUMBER CROSS REFERENCE, PBB01A, PBB01B, PBB01C, PBB01D, PBB01E, PBB01F, PBB01G, PBB01H, PBB01I, PBB01J, PBB01K, PBB01L, PBB01M, PBB01N, PBB01O, PBB01P, PBB01Q, PBB01R, PBB01S, PBB01T, PBB01U, PBB01V, PBB01W, PBB01X, PBB01Y, PBB01Z.

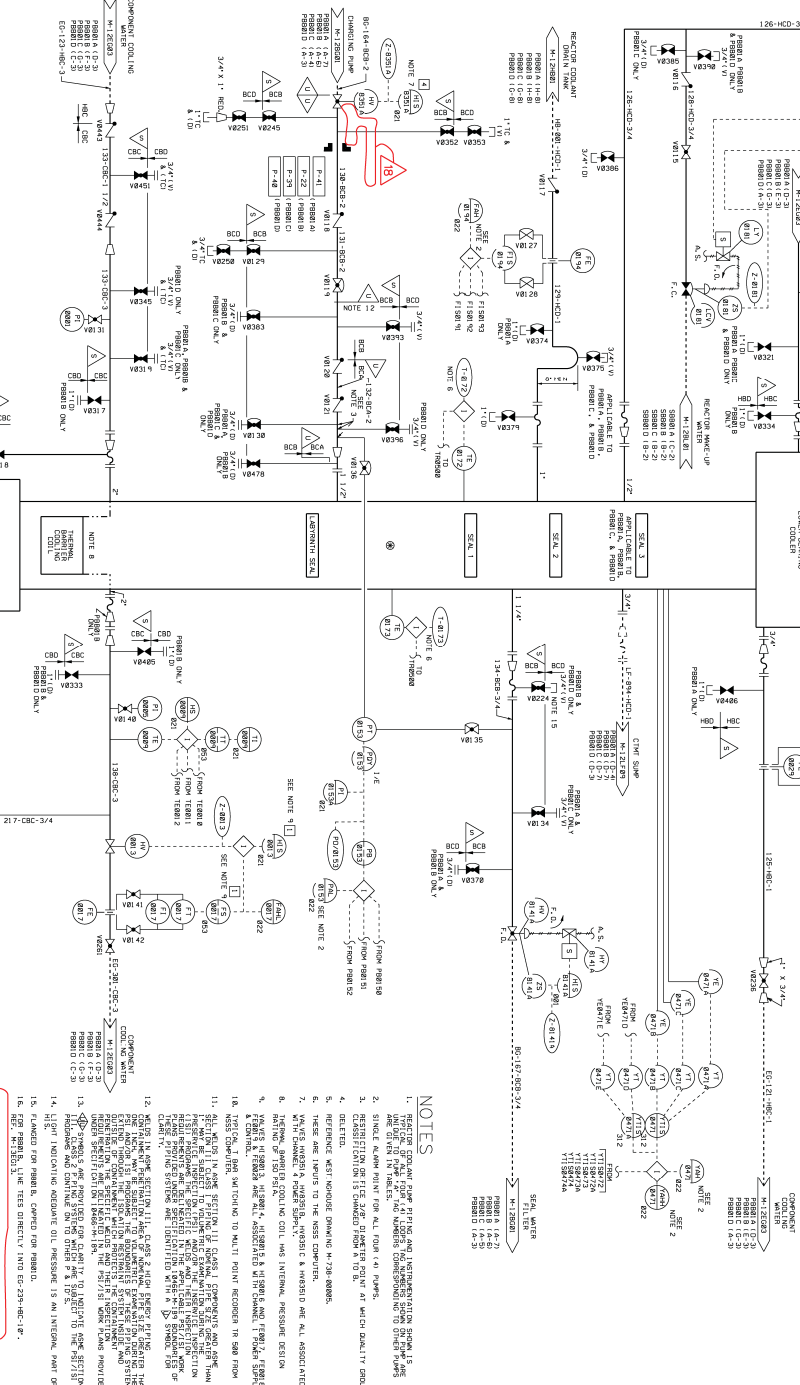
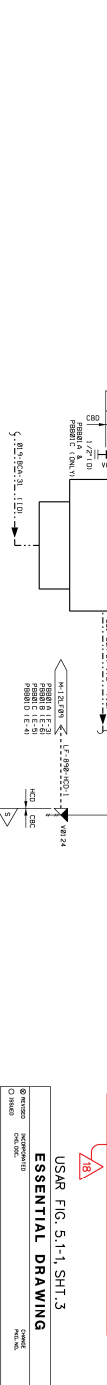


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Table with columns: LINC NUMBER CROSS REFERENCE, PBB01A, PBB01B, PBB01C, PBB01D, PBB01E, PBB01F, PBB01G, PBB01H, PBB01I, PBB01J, PBB01K, PBB01L, PBB01M, PBB01N, PBB01O, PBB01P, PBB01Q, PBB01R, PBB01S, PBB01T, PBB01U, PBB01V, PBB01W, PBB01X, PBB01Y, PBB01Z.



USAR FIG. 5.1-1-SHT.3 ESSENTIAL DRAWING PIPING AND INSTRUMENTATION DIAGRAM REACTOR COOLANT SYSTEM M-12BBO3

- NOTES: 1. THIS DRAWING IS AN ESSENTIAL DRAWING... 2. SINCE REACTOR PUMP FOR ALL FOUR PUMPS... 3. DESIGNATION IS FORMED FROM A... 4. REFERENCE AND INDICATE SPACING... 5. VALVE SYMBOLS AND INDICATE... 6. INSTRUMENTATION SYMBOLS... 7. INSTRUMENTATION SYMBOLS... 8. INSTRUMENTATION SYMBOLS... 9. INSTRUMENTATION SYMBOLS... 10. INSTRUMENTATION SYMBOLS... 11. INSTRUMENTATION SYMBOLS... 12. INSTRUMENTATION SYMBOLS... 13. INSTRUMENTATION SYMBOLS... 14. INSTRUMENTATION SYMBOLS... 15. INSTRUMENTATION SYMBOLS... 16. INSTRUMENTATION SYMBOLS...

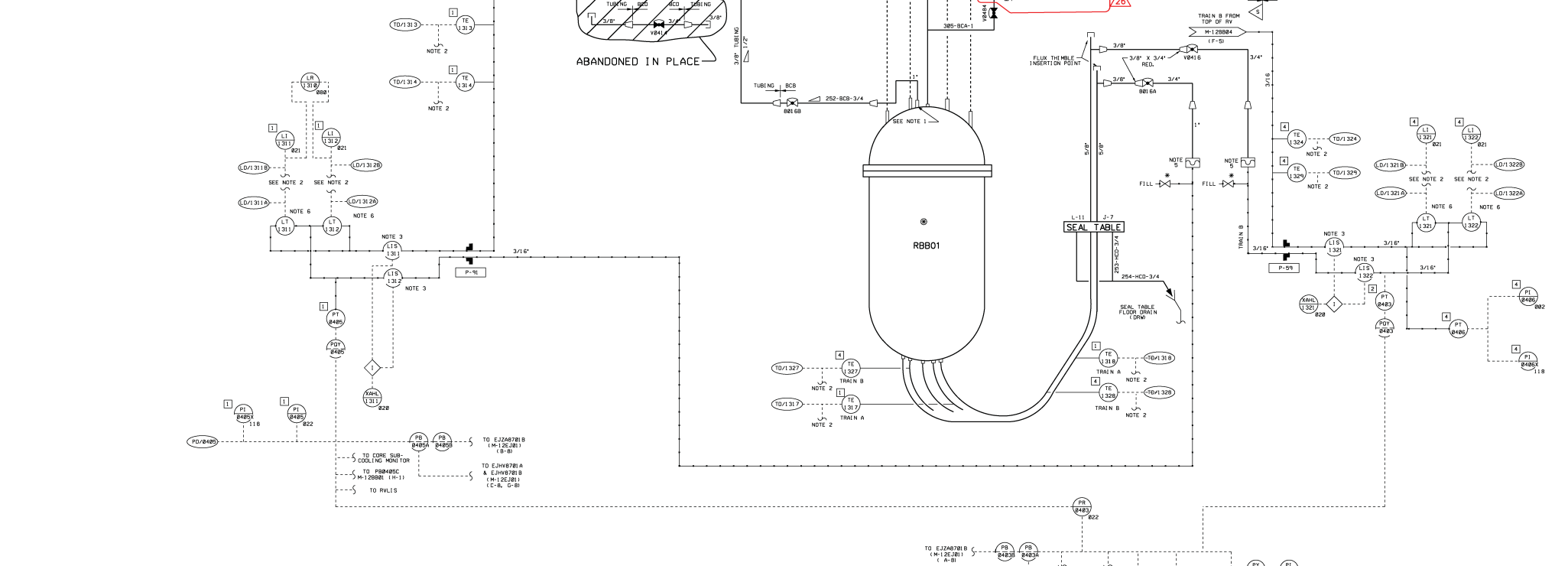
RV CORE SUBCOOLING MONITOR

TRAIN	SEP. DRP.	T/C JUNCT. BOX NO.	T/C NUMBER						PEN. NO.
A	1	BB0004A	38	30	33	5	45	41	SPR 75
			48	20	44	47	49	43	SPR 76
			42	39	15	35	13	46	7 77
			31	27	32	29	4	1	SPR 78
B	4	BB0004B	37	9	17	12	36	11	SPR 75
			24	23	19	50	25	22	18 76
			40	16	14	34	10	21	SPR 77
			26	2	8	28	3	6	SPR 78

RV CORE SUBCOOLING MONITOR (NOTE 6)

THERMOCOUPLE/CORE COOLING MONITOR DISPLAY INSTRUMENTS FOR CONTROL BOARD SECTION AND OR OTHER CABINETS

INSTRUMENT TAG NO.	LOCATION
LUI 338A	RP881A
LUI 338B	RP881B
TRI 338A	RP881A
TRI 338B	RP881B
TII 338A	RL882A
TII 338B	RL882B
TAL 338A	RL882A
TAL 338B	RL882B



- NOTES:
- REFER TO NOTE 1 ON M-12888-1.
 - SEE WESTINGHOUSE PROCESS BLOCK DIAGRAMS: V DMC, NO. 23260198 (V SHEETS); WESTINGHOUSE DMC, M-76-88441, 442, 443 & 444, AND WESTINGHOUSE INSTALLATION SCHEMATIC.
 - L13131, L13132, & L1322 ARE HYDRAULIC ISOLATORS WITH A MALFUNCTION INDICATION.
 - DELETED.
 - HYDRAULIC SENSORS.
 - LEVEL TRANSDUCER ELEVATION ABOVE HYDRAULIC ISOLATOR AND NEAR CONTAINMENT PENETRATION.
 - DELETED.
 - FOR THERMOCOUPLE/CORE COOLING MONITOR SEE WESTINGHOUSE DRAWING 2322278 (8 SHEETS) SPECIFIC DRAWINGS: M-764-88317, M-764-88318, M-764-88319, M-764-88320 & M-764-88321.

USAR FIG. 5.1-1-04

DATE: 10/30/2019

REVISION		DATE	BY	CHKD.
1	REVISED TO REMOVE TCC SYS BB-215.			

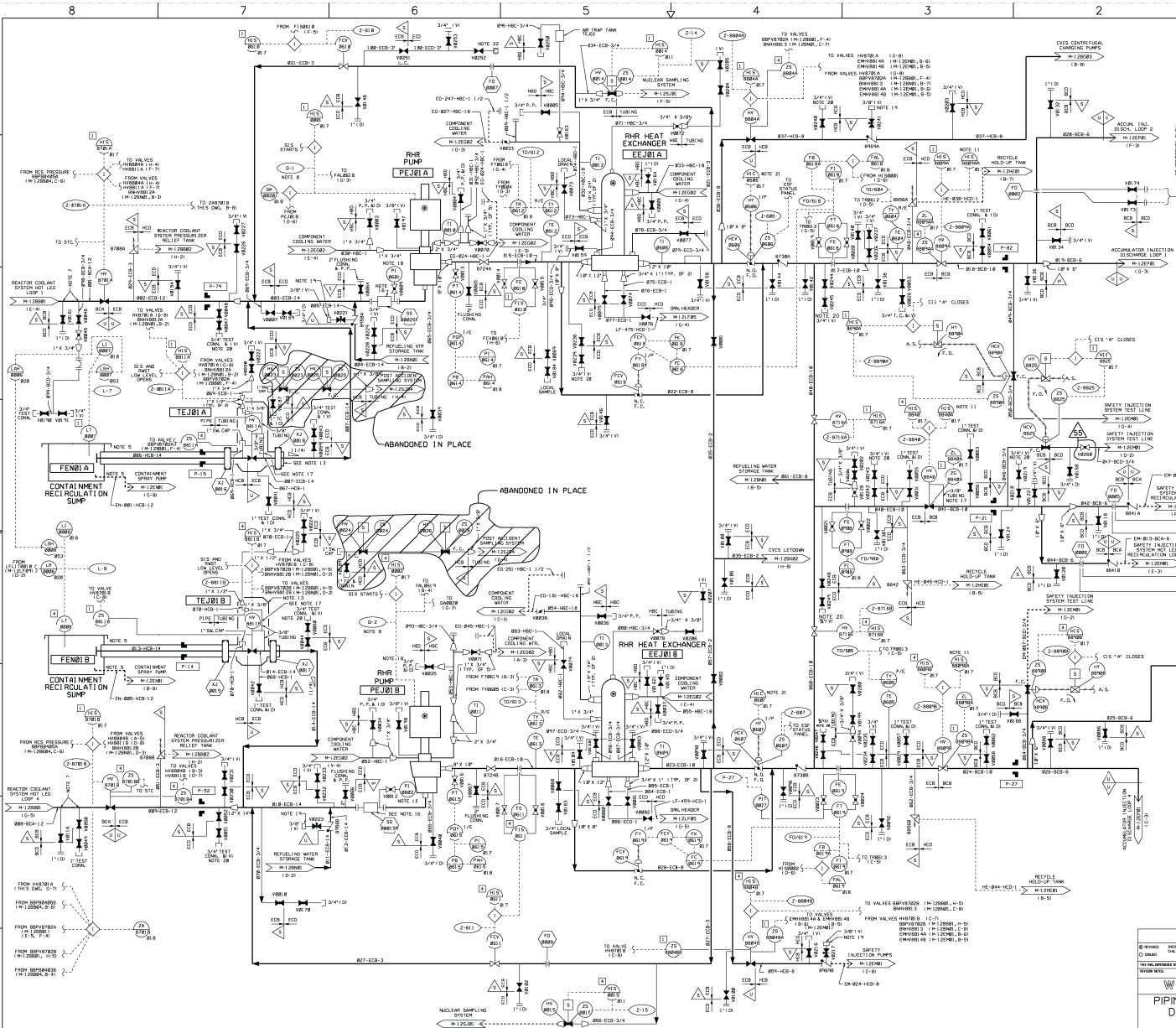
DESIGNED BY: WOLF CREEK
 CHECKED BY: [Signature]
 DRAWN BY: [Signature]

WOLF CREEK
 NUCLEAR OPERATING CORPORATION

ELECTRONIC APPROVAL

PIPING & INSTRUMENTATION
 DIAGRAM REACTOR
 COOLANT SYSTEM

SHEET NO. 26



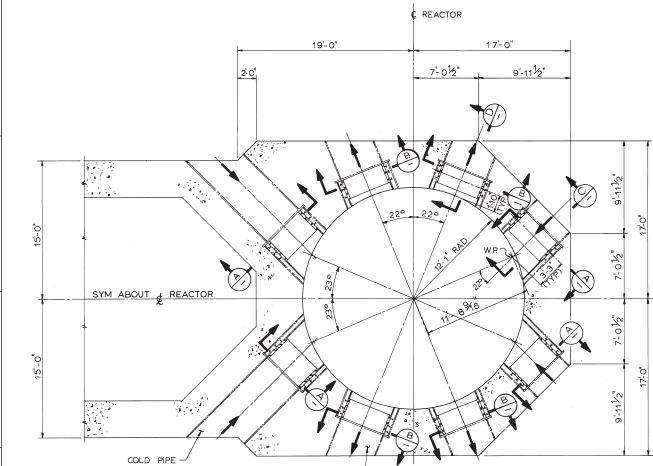
NOTES

1. DELETED
2. DELETED
3. THIS DRAWING IS BASED ON MEETING:
 - (A) CONTRACT & PAPER 5986A
4. DELETED
5. SAFETY BREAKER LOCATED IN PIPE
6. ALL 4" AND SMALLER PIPING BRANCHED FROM MAIN LINE SHALL BE IDENTIFIED BY THE DESIGNER AND SHALL BE IDENTIFIED BY THE CONTRACTOR. ALL 4" AND SMALLER PIPING BRANCHED FROM MAIN LINE SHALL BE IDENTIFIED BY THE DESIGNER AND SHALL BE IDENTIFIED BY THE CONTRACTOR.
7. PIPING SHALL BE IDENTIFIED BY THE DESIGNER AND SHALL BE IDENTIFIED BY THE CONTRACTOR.
8. PIPING SHALL BE IDENTIFIED BY THE DESIGNER AND SHALL BE IDENTIFIED BY THE CONTRACTOR.
9. PIPING SHALL BE IDENTIFIED BY THE DESIGNER AND SHALL BE IDENTIFIED BY THE CONTRACTOR.
10. PIPING SHALL BE IDENTIFIED BY THE DESIGNER AND SHALL BE IDENTIFIED BY THE CONTRACTOR.
11. HOLDUP TANK PROVIDED IN THE CONTROL SYSTEM SHALL BE IDENTIFIED BY THE CONTRACTOR.
12. DELETED
13. HOLDUP TANK PROVIDED IN THE CONTROL SYSTEM SHALL BE IDENTIFIED BY THE CONTRACTOR.
14. DELETED
15. HOLDUP TANK PROVIDED IN THE CONTROL SYSTEM SHALL BE IDENTIFIED BY THE CONTRACTOR.
16. HOLDUP TANK PROVIDED IN THE CONTROL SYSTEM SHALL BE IDENTIFIED BY THE CONTRACTOR.
17. HOLDUP TANK PROVIDED IN THE CONTROL SYSTEM SHALL BE IDENTIFIED BY THE CONTRACTOR.
18. HOLDUP TANK PROVIDED IN THE CONTROL SYSTEM SHALL BE IDENTIFIED BY THE CONTRACTOR.
19. HOLDUP TANK PROVIDED IN THE CONTROL SYSTEM SHALL BE IDENTIFIED BY THE CONTRACTOR.
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21. HOLDUP TANK PROVIDED IN THE CONTROL SYSTEM SHALL BE IDENTIFIED BY THE CONTRACTOR.
22. HOLDUP TANK PROVIDED IN THE CONTROL SYSTEM SHALL BE IDENTIFIED BY THE CONTRACTOR.

ANY REVISION TO THIS DRAWING MAY REQUIRE A REVISION TO M-122001

USAR FIG. 5, 4-7-98

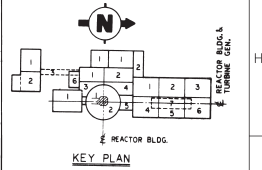
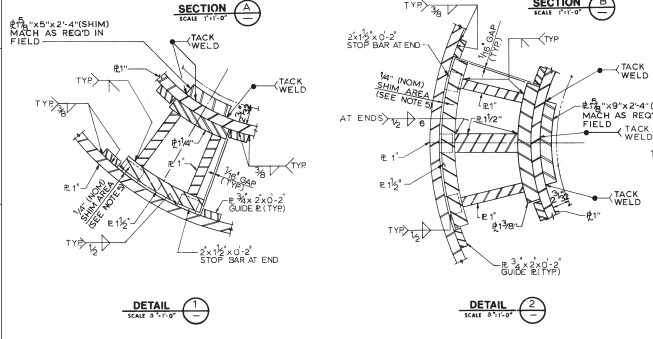
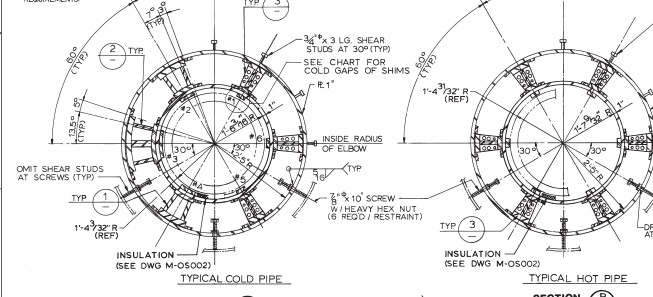
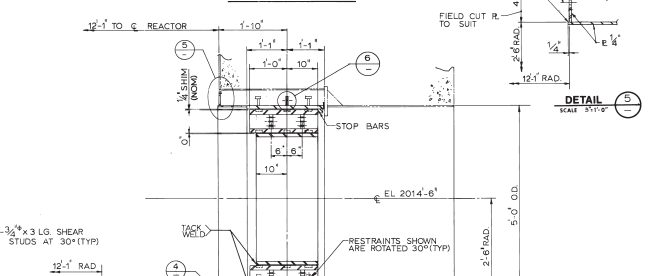
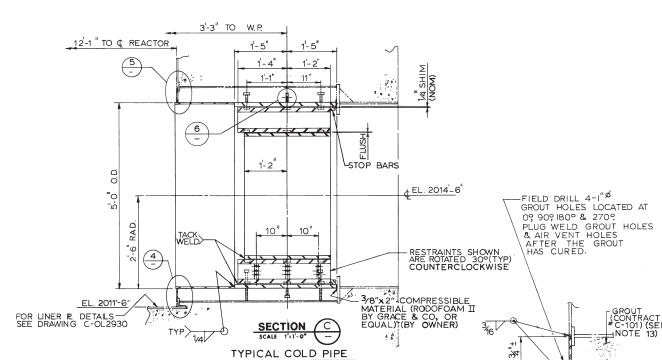
ESSENTIAL DRAWING											
REVISION	DESCRIPTION	DATE	BY								
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">W P</td> <td style="width: 25%; text-align: center;">C R</td> <td style="width: 25%; text-align: center;">E B</td> <td style="width: 25%; text-align: center;">A</td> </tr> <tr> <td colspan="4" style="text-align: center;"> PIPING AND INSTRUMENTATION DIAGRAM RESIDUAL HEAT REMOVAL SYSTEM </td> </tr> </table>				W P	C R	E B	A	PIPING AND INSTRUMENTATION DIAGRAM RESIDUAL HEAT REMOVAL SYSTEM			
W P	C R	E B	A								
PIPING AND INSTRUMENTATION DIAGRAM RESIDUAL HEAT REMOVAL SYSTEM											
DATE: M-122001		PAGE: 55									



COLD GAPS FOR COLD PIPE SHIMS

SHIM NO.	GAP	SHIM NO.	GAP
1	3/16" ± 1/64"	4	3/16" ± 1/64"
2	3/16" ± 1/64"	5	3/16" ± 1/64"
3	3/16" ± 1/64"	6	3/16" ± 1/64"

* SEE NOTE 14 FOR ADDITIONAL COLD GAP REQUIREMENTS.



- NOTES
1. ALL DIMENSIONS GIVEN ARE IN COLD POSITION UNLESS NOTED OTHERWISE.
 2. MATERIAL FOR THE 1" THICK COLLAR RING SHALL BE ASTM A516 OR 70.
 3. THE 1" THICK COLLAR RING AND BUILT UP FILLER MEMBERS SHALL BE POST WELD HEAT TREATED.
 4. SURFACES WHICH RECEIVE SHIM AND/OR BEARING SHALL BE MACHINED TO THE DESIGN CONTOUR.
 5. SHIM AREA AS INDICATED ON THE DRAWING SHALL BE PROVIDED WITH NOT LESS THAN 50% OF THE BEARING AREA.
 6. SHIM PLATES SHALL BE SHOP TACK WELDED TO THE BUILT UP FILLER MEMBER AFTER POSITIONING.
 7. THE BEARING LOCATION FOR RESTRANTS AT ANY POINT OF THE 1" THICK COLLAR RING SHALL NOT VARY FROM THE DESIGN RADIUS BY MORE THAN 1/8".
 8. RESTRAINT ASSEMBLIES SHALL BE SHOP PRE-ASSEMBLED TO INSURE PROPER ALIGNMENT AND DELIVER TO SITE AS ONE UNIT FOR EACH RESTRAINT.
 9. THE MAXIMUM ALLOWABLE GAP AT THE SHIM OR BEARING SURFACES SHALL BE LESS THAN SHOWN ON THE DRAWING. THE OUTSIDE FACE OF THE INNER RING AND THE INSIDE FACE OF THE SPOKE TO MEET THIS REQUIREMENT.
 10. THE FIELD MACHINED SHIMS SHALL ACCOUNT FOR THE AS-BUILT DIMENSIONS OF THE RESTRAINT RING. THE INSIDE FACE OF THE INNER RING AND THE OUTSIDE DIAMETER OF THE HOT AND COLD PIPE AT EACH LOCATION.
 11. DELETED
 12. THE OUTER RING SHALL BE PRESSED AGAINST THE COMPRESSIBLE MATERIAL AS MUCH AS POSSIBLE TO PREVENT LEAKAGE OF GROUT.
 13. DELETED
 14. THE AS-BUILT COLD GAP AT SHIM #3 MUST BE:
 - a) SMALLER THAN SHOWN ON DRAWING TO THE AS-BUILT COLD GAP AT SHIM #2.
 - b) SMALLER THAN (OR EQUAL TO) THE AS-BUILT COLD GAP AT SHIM #6 PLUS .005"

- REFERENCE DRAWINGS
- C-OL2930 REACTOR BUILDING LINER PLATE REACTOR CAVITY WALL

- MATERIAL RESPONSIBILITY
1. STEEL TO BE FURNISHED UNDER SPEC 10-456-C202

USAR FIG. 5.4-21

ESSENTIAL DRAWING

DESIGNED	INTEGRATED	DATE
13	13	13
DESIGNED	INTEGRATED	DATE
WORK BY	REV. NO.	DATE
WOLF CREEK	1	
ELECTRONIC APPROVAL		
PIPE WHIP RESTRAINTS		
REACTOR COOLANT SYSTEM		
REACTOR VESSEL NOZZLE		
AS NOTED	C-13BB53	00