

- NOTES**
- 27 1/2\"/>
  - ALL CLASS 250R PIPING SUPPLIED BY WESTINGHOUSE FOR DETAILS SEE W SPEC. G676580, G676342, G675343, G577124, AND G676262.
  - ALL OTHER CLASSES-PIPING SPEC. (NAS28)
  - ALL HIGH PRESSURE VENTS & DRAINS TO BE BLANKED OFF WITH 1500 LB. TP 316SS BLIND FLANGE DURING NORMAL OPERATION.
  - PROVIDE WATER SEAL FOR SPRAY VALVES.
  - GLOBE VALVES NORMALLY INSTALLED WITH FLOW UNDER SEAT
  - PROVIDE EXTENSION STEM FOR ADJUSTMENT DURING NORMAL OPERATION.
  - SYMBOLS - E & C GENERAL NUCLEAR STANDARDS APPENDIX A-STD-GH-0013.
  - ACCESS FOR INSPECTION OF REACTOR COOLANT PIPE TO REACTOR VESSEL NOZZEL WELDS TO BE PROVIDED.
  - DELETED
  - PLACE DETECTORS AT BOTTOM OF PIPE.
  - 0.25\"/>
  - LOCATE BELOW ELEVATION OF REACTOR VESSEL FLANGE
  - LOCATE COLLECTION POINT FOR DETERMINING LEAKAGE RATE
  - LOCATE COLLECTION POINT 45 DEGREES BELOW HORIZONTAL CENTER LINE
  - HOT LEG BYPASS LINE SCOOPS - ALL LOCATED IN SAME CROSS-SECTIONAL PLANE (SEE SECTION A-A)
  - DELETED
  - DELETED
  - \*PRESSURE REGULATOR WITH SCH 40 SS PIPE NIPPLES INSTALLED PER DC 92-248

**REFERENCE DRAWINGS**

NUMBER	TITLE
01. 11715-FM-079A	FLOW/VON DIAGRAM, COMPONENT COOLING WATER SYSTEM
02. 11715-FM-079B	FLOW/VON DIAGRAM, COMPONENT COOLING WATER SYSTEM
03. 11715-FM-086A	FLOW/VON DIAGRAM, BORON RECOVERY SYSTEM
04. 11715-FM-086B	FLOW/VON DIAGRAM, BORON RECOVERY SYSTEM
05. 11715-FM-089A	FLOW/VON DIAGRAM, SAMPLING SYSTEM
06. 11715-FM-089B	FLOW/VON DIAGRAM, SAMPLING SYSTEM
07. 11715-FM-090B	FLOW/VON DIAGRAM, VENT & DRAIN SYSTEM
08. 11715-FM-090C	FLOW/VON DIAGRAM, VENT & DRAIN SYSTEM
09. 11715-FM-093A	FLOW/VON DIAGRAM, REACTOR COOLANT SYSTEM
10. 11715-FM-093B	FLOW/VON DIAGRAM, REACTOR COOLANT SYSTEM
11. 13075-FM-093C	FLOW/VON DIAGRAM, REACTOR COOLANT SYSTEM
12. 11715-FM-094A	FLOW/VON DIAGRAM, RESIDUAL HEAT REMOVAL SYSTEM
13. 11715-FM-095B	FLOW/VON DIAGRAM, CHEM & VOLUME CONTROL SYSTEM
14. 11715-FM-095C	FLOW/VON DIAGRAM, CHEM & VOLUME CONTROL SYSTEM
15. 11715-FM-096A	FLOW/VON DIAGRAM, SAFETY INJECTION SYSTEM
16. 11715-FM-096B	FLOW/VON DIAGRAM, SAFETY INJECTION SYSTEM

**BYPRODUCT DRAWINGS**

1. 11715-CBM-093A, SH.1	ISI CLASSIFICATION BOUNDARY DRAWING
2. DELETED	
3. 11715-SPM-093A, SH.1	ISI SYSTEM PRESSURE TESTING DRAWING

**BYPRODUCT NOTES**

NOTE 1: DELETED

2: (H) HIGH SAFETY SIGNIFICANT PIPING

3: (L) LOW SAFETY SIGNIFICANT PIPING

FOR ISI CLASSIFICATION BOUNDARY DRAWING LEGEND AND SYMBOLS, SEE 11715-CBM-L65-3 THIS CLASSIFICATION BOUNDARY DWG IS TO BE USED FOR THE 10RD TEN YEAR INSPECTION INTERVAL (04-30-1999 TO 04-30-2009)

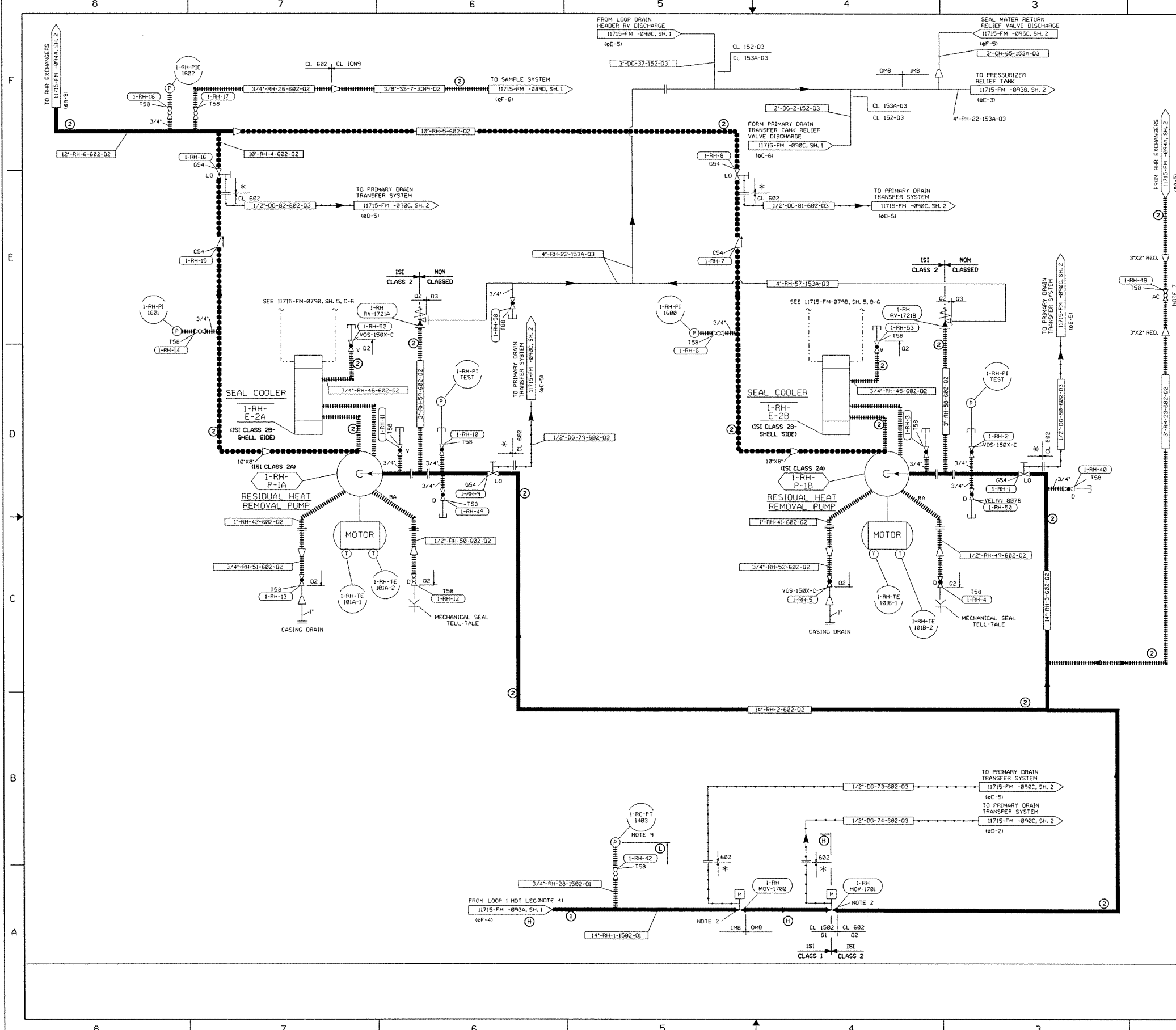
CONTINUATION DRAWING NUMBERS REFER TO FM OR FB DRAWINGS, THE CORRESPONDING CLASSIFICATION BOUNDARY DRAWINGS (SOM OR CBO) CAN BE DETERMINED BY SUBSTITUTING CBM OR CBB FOR FM OR FB.

**CAUTION:**  
THE BACKGROUND PORTION OF THIS BYPRODUCT DRAWING IS FOR REFERENCE ONLY. THE BACKGROUND INFORMATION IS NOT CONTROLLED AND MAY NOT REFLECT THE ACTUAL PLANT CONFIGURATION. REFER TO THE LATEST FLOW/VALVE OPERATING NUMBERS DIAGRAM FOR CONTROLLED BACKGROUND INFORMATION.

**REVISION DESCRIPTION**

REV	DESCRIPTION
29	THIS BYPRODUCT DWG ISSUED PER THE FOLLOWING FLOW/VON DIAGRAM
29	FLOW/VON DRAWING NO: 11715-FM-093A
29	SH 1 OF 3

NUCLEAR ENGINEERING RICHMOND, VIRGINIA	
<b>ISI CLASSIFICATION BOUNDARY DWG INTERVAL-3</b> REACTOR COOLANT SYSTEM - LOOP 1 NORTH ANNA POWER STATION UNIT 1 VIRGINIA POWER	
REVISION DESCRIPTION REVISED PER DCR 2004-0250 AND REV 29 OF THE FM DWG SUPERSEDES REV 2. THIS	CAD NO: Cr\user\vdgn\N1093A\MCB3qz1 DRAWING NO: 11715-CBM-093A-3 REV 3
DSGN ANM SCALE: NONE UNLESS OTHERWISE NOTED SH 1 OF 3	SH 1 OF 3



- NOTES**
- VALVES ARE NORMALLY INSTALLED WITH FLOW UNDER SEAT.
  - REACTOR COOLANT PRESSURE INTERLOCK PREVENTS ISOLATION VALVE OPENING ABOVE SET PRESSURE.
  - LOCATE ISOLATION VALVE CLOSE TO MAIN HEADER.
  - LOCATE CONNECTION IN BOTTOM HALF OF REACTOR COOLANT PIPING ON 45° ANGLE TO VERTICAL.
  - THE VALVES LISTED BELOW ARE SUPPLIED BY STONE AND WEBSTER. ALL OTHERS ARE SUPPLIED BY WESTINGHOUSE.
    - 1"-6"-VGV-15X & 3/4"-VGS-15A
  - LINE 14"-RH-1-1502-01 IS SCHEDULED 160 PIPE. FITTINGS ON 14"-RH-1 ARE SCHEDULE 14B.
  - ADJUST VALVE IN FIELD TO ESTABLISH MINI FLOW AND LOCK IN POSITION.
  - LEGEND:
    - Ø - LOCAL DRAIN CONNECTION
    - Y - LOCAL VENT CONNECTION
    - OMB - OUTSIDE MISSILE BARRIER
    - IMB - INSIDE MISSILE BARRIER
    - ↑ - CAPPED VENT, DRAIN OR LMC
    - BA - INDICATES 1/2" PT DRAIN MECH SEAL TELL-TALE BY MANUFACTURER
    - \* - INDICATES SUPPLIED BY MANUFACTURER
    - 9. 1-RC-PT-1403 IS AN RC SYS INSTRUMENT LOCATED WITHIN THE RH SYS BOUNDARY

**REFERENCE DRAWINGS**

NUMBER	TITLE
01. 11715-FM-079A	FLOW/VON DIAGRAM, COMPONENT COOLING WATER SYSTEM
02. 11715-FM-088A	FLOW/VON DIAGRAM, FUEL PIT CLNG & REF PURIF SYSTEM
03. 11715-FM-089A	FLOW/VON DIAGRAM, SAMPLING SYSTEM
04. 11715-FM-089D	FLOW/VON DIAGRAM, SAMPLING SYSTEM
05. 11715-FM-090B	FLOW/VON DIAGRAM, VENT & DRAIN SYSTEM
06. 11715-FM-090C	FLOW/VON DIAGRAM, VENT & DRAIN SYSTEM
07. 11715-FM-091A	FLOW/VON DIAGRAM, CONT QUENCH & RECIRC SPRAY SUB SYSTEM
08. 11715-FM-093A	FLOW/VON DIAGRAM, REACTOR COOLANT SYSTEM
09. 11715-FM-093B	FLOW/VON DIAGRAM, REACTOR COOLANT SYSTEM
10. 11715-FM-094A	FLOW/VON DIAGRAM, RESIDUAL HEAT REMOVAL SYSTEM
11. 11715-FM-095B	FLOW/VON DIAGRAM, CHEM & VOLUME CONTROL SYSTEM
12. 11715-FM-095C	FLOW/VON DIAGRAM, CHEM & VOLUME CONTROL SYSTEM
13. 11715-FM-096A	FLOW/VON DIAGRAM, SAFETY INJECTION SYSTEM
14. 11715-FM-079B	FLOW/VON DIAGRAM, COMPONENT COOLING WATER SYSTEM

**BYPRODUCT DRAWINGS**

- 11715-CBM-094A, SH.1 ISI CLASSIFICATION BOUNDARY DRAWING
- DELETED
- 11715-SPM-094A, SH.1 ISI SYSTEM PRESSURE TESTING DRAWING

- BYPRODUCT NOTES**
- NOTE 1: DELETED
- 2: (H) HIGH SAFETY SIGNIFICANT PIPING
- 3: (L) LOW SAFETY SIGNIFICANT PIPING

FOR ISI CLASSIFICATION BOUNDARY DRAWING LEGEND AND SYMBOLS, SEE 11715-CBM-L&S-3 THIS CLASSIFICATION BOUNDARY Dwg IS TO BE USED FOR THE THIRD TEN YEAR INSPECTION INTERVAL (04-30-1999 TO 04-30-2009)

CONTINUATION DRAWING NUMBERS REFER TO FM OR FB DRAWINGS. THE CORRESPONDING CLASSIFICATION BOUNDARY DRAWINGS (CBM OR CBB) CAN BE DETERMINED BY SUBSTITUTING CBM OR CBB FOR FM OR FB.

**CAUTION:**  
THE BACKGROUND PORTION OF THIS BYPRODUCT DRAWING IS FOR REFERENCE ONLY. THE BACKGROUND INFORMATION IS NOT CONTROLLED AND MAY NOT REFLECT THE ACTUAL PLANT CONFIGURATION. REFER TO THE LATEST FLOW/VON OPERATING NUMBERS DIAGRAM FOR CONTROLLED BACKGROUND INFORMATION.

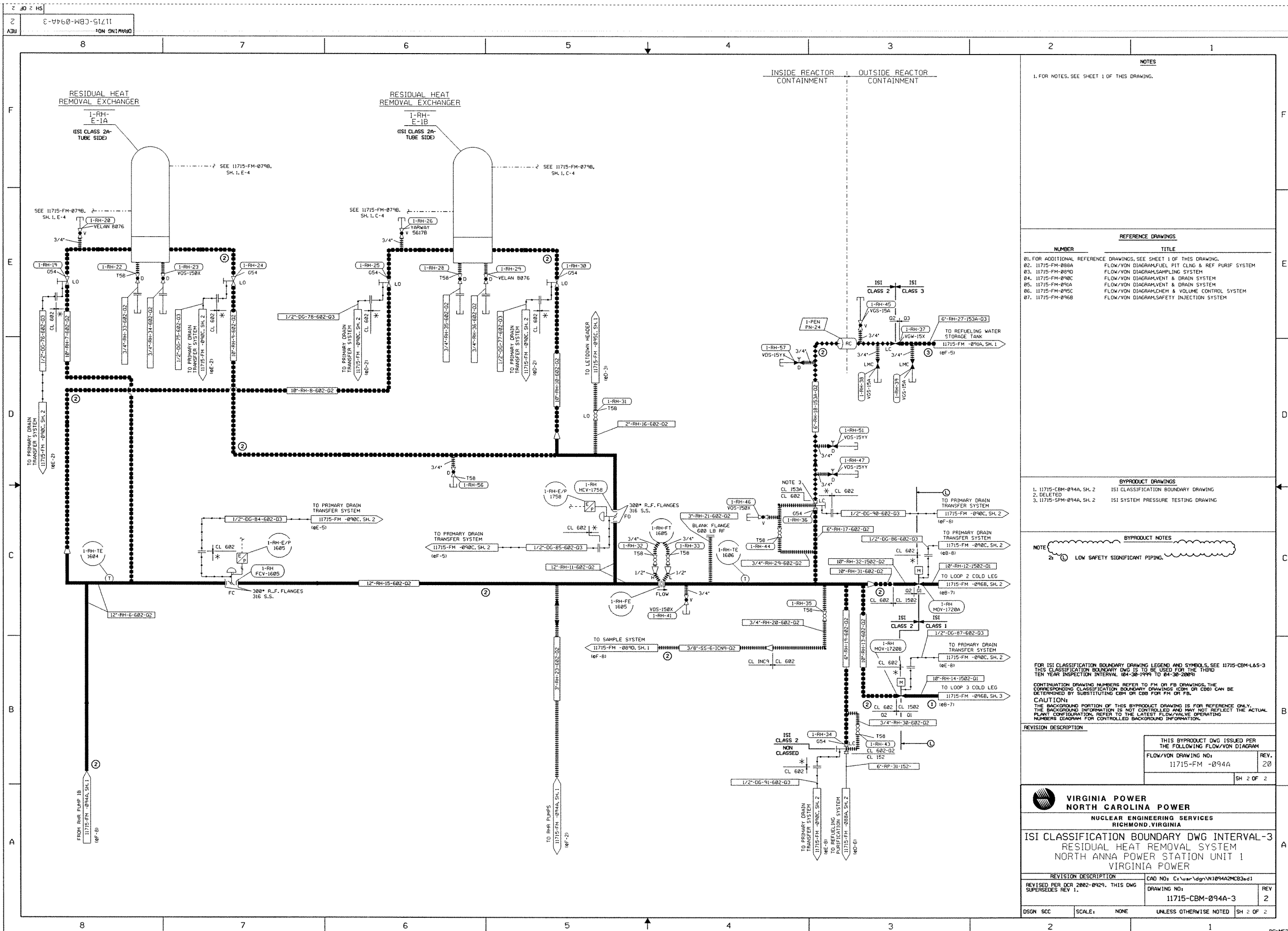
**REVISION DESCRIPTION**

THIS BYPRODUCT DWG ISSUED PER THE FOLLOWING FLOW/VON DIAGRAM	
FLOW/VON DRAWING NO: 11715-FM-094A	REV. 16
SH. 1 OF 2	

**Dominion**  
NUCLEAR ENGINEERING  
RICHMOND, VIRGINIA

**ISI CLASSIFICATION BOUNDARY DWG INTERVAL-3  
RESIDUAL HEAT REMOVAL SYSTEM  
NORTH ANNA POWER STATION UNIT 1  
VIRGINIA POWER**

REVISION DESCRIPTION	CAD NO: C:\usr\adgn\11715\11715-CBM-094A-3.dwg
REVISED PER DCR 2004-0012 & REV 16 OF FM THIS DWG SUPERSEDES REV 1	DRAWING NO: 11715-CBM-094A-3
DSGN	AEG
SCALE: NONE	UNLESS OTHERWISE NOTED
SH. 1 OF 2	



**NOTES**

1. FOR NOTES, SEE SHEET 1 OF THIS DRAWING.

**REFERENCE DRAWINGS**

NUMBER	TITLE
01.	FOR ADDITIONAL REFERENCE DRAWINGS, SEE SHEET 1 OF THIS DRAWING.
02.	11715-FM-098A FLOW/VON DIAGRAM FUEL PIT CLNG & REF PURIF SYSTEM
03.	11715-FM-098D FLOW/VON DIAGRAM SAMPLING SYSTEM
04.	11715-FM-098C FLOW/VON DIAGRAM VENT & DRAIN SYSTEM
05.	11715-FM-091A FLOW/VON DIAGRAM VENT & DRAIN SYSTEM
06.	11715-FM-091C FLOW/VON DIAGRAM CHEM & VOLUME CONTROL SYSTEM
07.	11715-FM-096B FLOW/VON DIAGRAM SAFETY INJECTION SYSTEM

**BYPRODUCT DRAWINGS**

- 1. 11715-CBM-094A, SH. 2 ISI CLASSIFICATION BOUNDARY DRAWING
- 2. DELETED
- 3. 11715-FM-094A, SH. 2 ISI SYSTEM PRESSURE TESTING DRAWING

**BYPRODUCT NOTES**

- NOTE 2. (1) LOW SAFETY SIGNIFICANT PIPING.

FOR ISI CLASSIFICATION BOUNDARY DRAWING LEGEND AND SYMBOLS, SEE 11715-CBM-L&S-3 THIS CLASSIFICATION BOUNDARY DWG IS TO BE USED FOR THE THIRD TEN YEAR INSPECTION INTERVAL (04-30-1999 TO 04-30-2009)

CONTINUATION DRAWING NUMBERS REFER TO FM OR FB DRAWINGS, THE CORRESPONDING CLASSIFICATION BOUNDARY DRAWINGS (CBM OR CBB) CAN BE DETERMINED BY SUBSTITUTING CBM OR CBB FOR FM OR FB.  
**CAUTION:** THE BACKGROUND PORTION OF THIS BYPRODUCT DRAWING IS FOR REFERENCE ONLY. THE BACKGROUND INFORMATION IS NOT CONTROLLED AND MAY NOT REFLECT THE ACTUAL PLANT CONFIGURATION. REFER TO THE LATEST FLOW/VALVE OPERATING NUMBERS DIAGRAM FOR CONTROLLED BACKGROUND INFORMATION.

**REVISION DESCRIPTION**

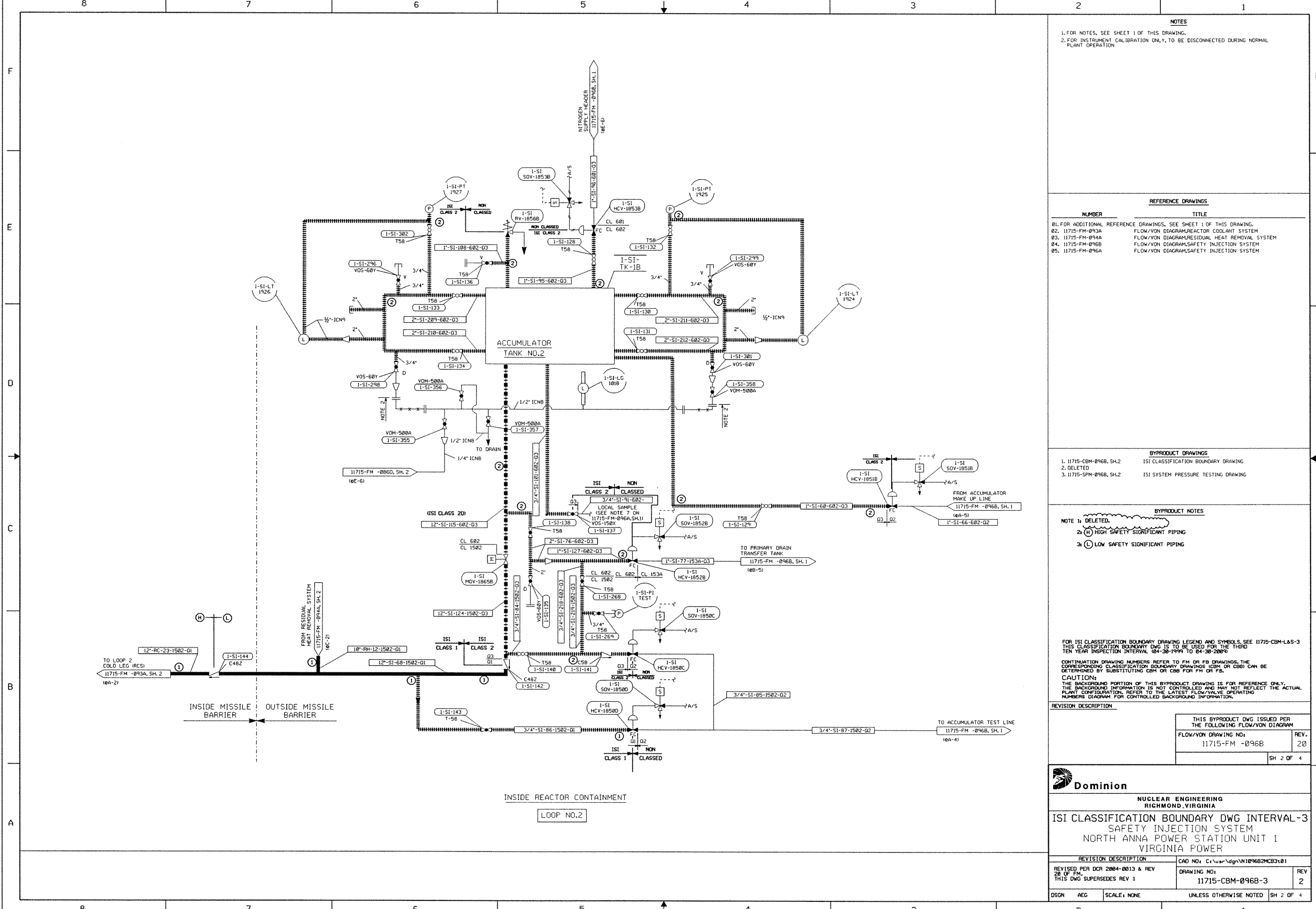
THIS BYPRODUCT DWG ISSUED PER THE FOLLOWING FLOW/VON DIAGRAM	
FLOW/VON DRAWING NO:	REV.
11715-FM-094A	Z0
	SH 2 OF 2

**VIRGINIA POWER  
NORTH CAROLINA POWER**  
 NUCLEAR ENGINEERING SERVICES  
 RICHMOND, VIRGINIA  
**ISI CLASSIFICATION BOUNDARY DWG INTERVAL-3  
 RESIDUAL HEAT REMOVAL SYSTEM  
 NORTH ANNA POWER STATION UNIT 1  
 VIRGINIA POWER**

REVISION DESCRIPTION	CAD NO: C:\user\dgn\N1094A2MCB3.d1
REVISED PER DCR 2002-0929. THIS DWG SUPERSEDES REV 1.	DRAWING NO: 11715-FM-094A-3
	REV 2
DSGN SCC	SCALE: NONE UNLESS OTHERWISE NOTED
	SH 2 OF 2







**NOTES**  
 1. FOR NOTES, SEE SHEET 1 OF THIS DRAWING.  
 2. FOR INSTRUMENT CALIBRATION ONLY, TO BE DISCONNECTED DURING NORMAL PLANT OPERATION.

**REFERENCE DRAWINGS**

NUMBER	TITLE
01.	FOR ADDITIONAL REFERENCE DRAWINGS, SEE SHEET 1 OF THIS DRAWING.
02.	11715-FM-093A FLOW/VON DIAGRAM, REACTOR COOLANT SYSTEM
03.	11715-FM-094A FLOW/VON DIAGRAM, RESIDUAL HEAT REMOVAL SYSTEM
04.	11715-FM-096B FLOW/VON DIAGRAM, SAFETY INJECTION SYSTEM
05.	11715-FM-096A FLOW/VON DIAGRAM, SAFETY INJECTION SYSTEM

**BYPRODUCT DRAWINGS**

1.	11715-CBM-096B, SH. 2	ISI CLASSIFICATION BOUNDARY DRAWING
2.	DELETED	
3.	11715-SPM-096B, SH. 2	ISI SYSTEM PRESSURE TESTING DRAWING

**BYPRODUCT NOTES**  
 NOTE 1: DELETED.  
 2: (H) HIGH SAFETY SIGNIFICANT PIPING  
 3: (L) LOW SAFETY SIGNIFICANT PIPING

FOR ISI CLASSIFICATION BOUNDARY DRAWING LEGEND AND SYMBOLS, SEE 11715-CBM-L&S-3 THIS CLASSIFICATION BOUNDARY DWG IS TO BE USED FOR THE THIRD TEN YEAR INSPECTION INTERVAL (04-30-1999 TO 04-30-2009)  
 CONTINUATION DRAWING NUMBERS REFER TO FM OR FB DRAWINGS. THE CORRESPONDING CLASSIFICATION BOUNDARY DRAWINGS (CDB OR CDBI) CAN BE DETERMINED BY SUBSTITUTING CDB OR CDBI FOR FM OR FB.  
**CAUTION:**  
 THE BACKGROUND PORTION OF THIS BYPRODUCT DRAWING IS FOR REFERENCE ONLY. THE BACKGROUND INFORMATION IS NOT CONTROLLED AND MAY NOT REFLECT THE ACTUAL PLANT CONFIGURATION. REFER TO THE LATEST FLOW/VALVE OPERATING NUMBERS DIAGRAM FOR CONTROLLED BACKGROUND INFORMATION.

**REVISION DESCRIPTION**

REV	DESCRIPTION	DATE
20	THIS BYPRODUCT DWG ISSUED PER THE FOLLOWING FLOW/VON DIAGRAM	
19	11715-FM-096B	
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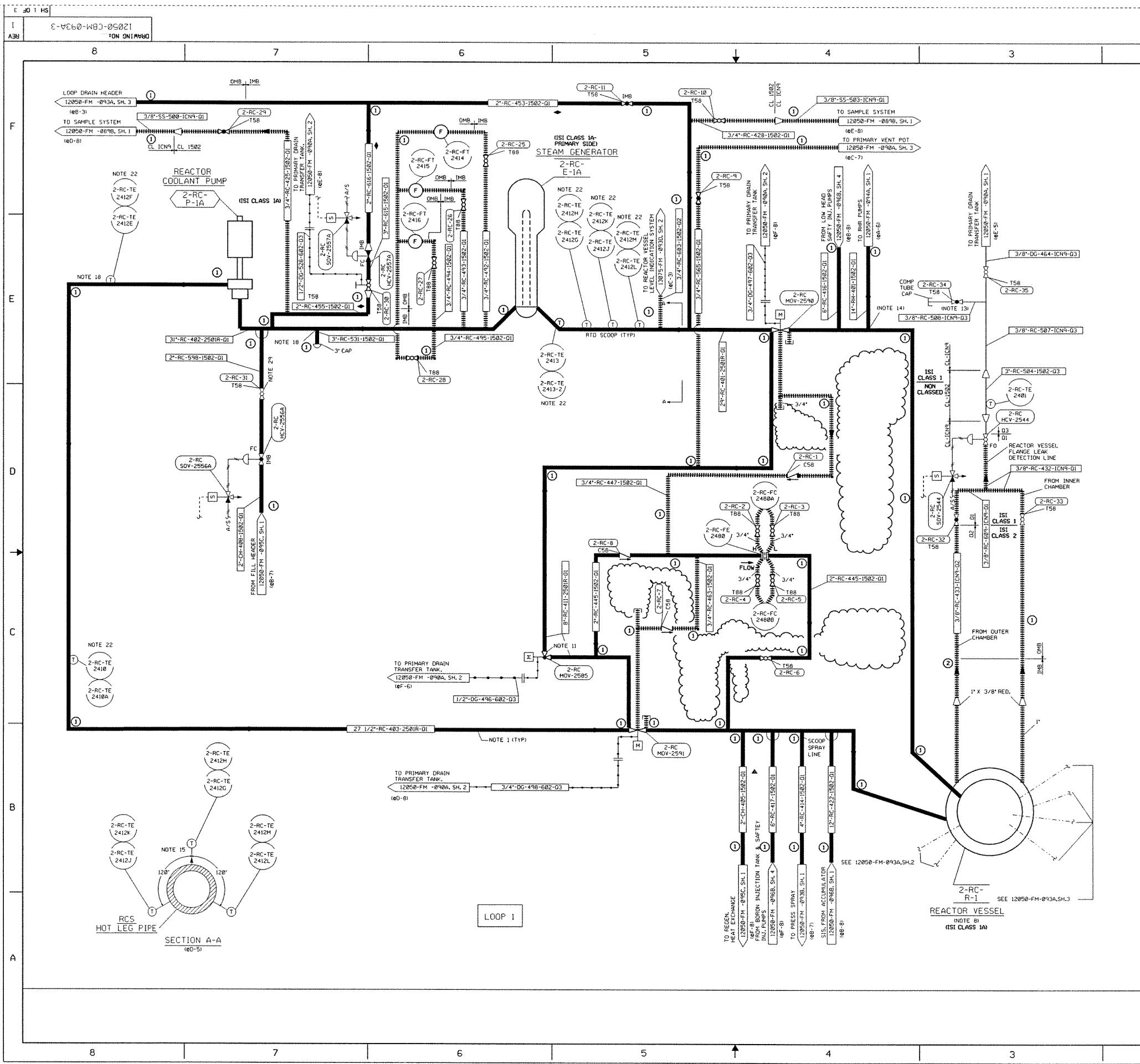
**Dominion**  
 NUCLEAR ENGINEERING  
 RICHMOND, VIRGINIA

ISI CLASSIFICATION BOUNDARY DWG INTERVAL-3  
 SAFETY INJECTION SYSTEM  
 NORTH ANNA POWER STATION UNIT 1  
 VIRGINIA POWER

REV	DESCRIPTION	DATE
20	REVISED PER DCR 2004-0013 & REV 20 IF FM	
19	THIS DWG SUPERSEDES REV 1	
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- NOTES**
1. 27 1/2", 24" AND 31" REFER TO INSIDE DIAMETER.
  2. ALL CLASS 250R PIPING SUPPLIED BY WESTINGHOUSE FOR DETAILS SEE W SPEC. 6-517352 & 6-517352.
  3. ALL OTHER CLASSES-PIPING SPEC. N45-28.
  4. ALL HIGH PRESSURE VENTS & DRAINS TO BE BLANKED OFF WITH 1500 LB. TP 316SS BLIND FLANGE DURING NORMAL OPERATION.
  5. ARRANGE SO THAT SPRAY VALVES WILL HAVE A WATER SEAL, NO INSULATION REOD.
  6. GLOBE VALVES NORMALLY INSTALLED WITH FLOW UNDER SEAT.
  7. PROVIDE EXTENSION STEM FOR ADJUSTMENT DURING NORMAL OPERATION.
  8. SYMBOLS - VIRGINIA POWER GENERAL NUCLEAR STANDARDS APPENDIX A-5TD-GN-0013.
  9. ACCESS FOR INSPECTION OF REACTOR COOLANT PIPE TO REACTOR VESSEL NOZZLE WELDS TO BE PROVIDED.
  10. TEST CONNECTION FOR LOOP STOP VALVES ANALYSIS, CONNS. TO BE USED FOR LOOP LEVEL MON. FOR PARTIALLY DR. LOOP DURING MAINTAINANCE.
  11. PLACE DETECTORS AT BOTTOM OF PIPE.
  12. 0.25" HOLE THROUGH VALVE PLUG.
  13. LOCATE BELOW ELEVATION OF REACTOR VESSEL FLANGE.
  14. LOCATE COLLECTION POINT FOR DETERMINING LEAKAGE RATE.
  15. HOT LEG BYPASS LINE SCOOPS - ALL LOCATED IN SAME CROSS-SECTIONAL PLANE (SEE SECTION A-A).
  16. DELETED
  17. DELETED

**REFERENCE DRAWINGS**

NUMBER	TITLE
01. 12050-FM-079A	FLOW/VON DIAGRAM, COMPONENT COOLING WATER SYSTEM
02. 11715-FM-086A	FLOW/VON DIAGRAM, BORON RECOVERY SYSTEM
03. 11715-FM-086B	FLOW/VON DIAGRAM, BORON RECOVERY SYSTEM
04. 12050-FM-089A	FLOW/VON DIAGRAM, SAMPLING SYSTEM
05. 12050-FM-089B	FLOW/VON DIAGRAM, SAMPLING SYSTEM
06. 12050-FM-090A	FLOW/VON DIAGRAM, VENT & DRAIN SYSTEM
07. 12050-FM-090B	FLOW/VON DIAGRAM, VENT & DRAIN SYSTEM
08. 12050-FM-093B	FLOW/VON DIAGRAM, REACTOR COOLANT SYSTEM
09. 12050-FM-094A	FLOW/VON DIAGRAM, RESIDUAL HEAT REMOVAL SYSTEM
10. 12050-FM-095B	FLOW/VON DIAGRAM, CHEM & VOLUME CONTROL SYSTEM
11. 12050-FM-095C	FLOW/VON DIAGRAM, CHEM & VOLUME CONTROL SYSTEM
12. 12050-FM-096A	FLOW/VON DIAGRAM, SAFETY INJECTION SYSTEM
13. 12050-FM-096B	FLOW/VON DIAGRAM, SAFETY INJECTION SYSTEM
14. 12050-FM-096C	FLOW/VON DIAGRAM, SAFETY INJECTION SYSTEM
15. 13075-FM-093D	FLOW/VON DIAGRAM, REACTOR COOLANT SYSTEM

**BYPRODUCT DRAWINGS**

1. 12050-CBM-093A, SH.1 ISI CLASSIFICATION BOUNDARY DRAWING
2. DELETED
3. 12050-SPM-093A, SH.1 ISI SYSTEM PRESSURE TESTING DRAWING

**BYPRODUCT NOTES**

NOTE 1: SEE EWR-86-489 FOR DETAILS OF THE ISI CLASSIFICATION BASIS.

FOR ISI CLASSIFICATION BOUNDARY DRAWING LEGEND AND SYMBOLS, SEE 12050-CBM-L45-3 THIS CLASSIFICATION BOUNDARY DRAWING IS TO BE USED FOR THE 3<sup>RD</sup> TEN YEAR INSPECTION INTERVAL.

CONTINUATION DRAWING NUMBERS REFER TO FM OR FB DRAWINGS. THE CORRESPONDING CLASSIFICATION BOUNDARY DRAWING (CBM OR CBB) CAN BE DETERMINED BY SUBSTITUTING CBM OR CBB FOR FM OR FB.

**CAUTION:**  
THE BACKGROUND PORTION OF THIS BYPRODUCT DRAWING IS FOR REFERENCE ONLY. THE BACKGROUND INFORMATION IS NOT CONTROLLED AND MAY NOT REFLECT THE ACTUAL PLANT CONFIGURATION. REFER TO THE LATEST FLOW/VALVE OPERATING NUMBERS DIAGRAM FOR CONTROLLED BACKGROUND INFORMATION.

**REVISION DESCRIPTION**

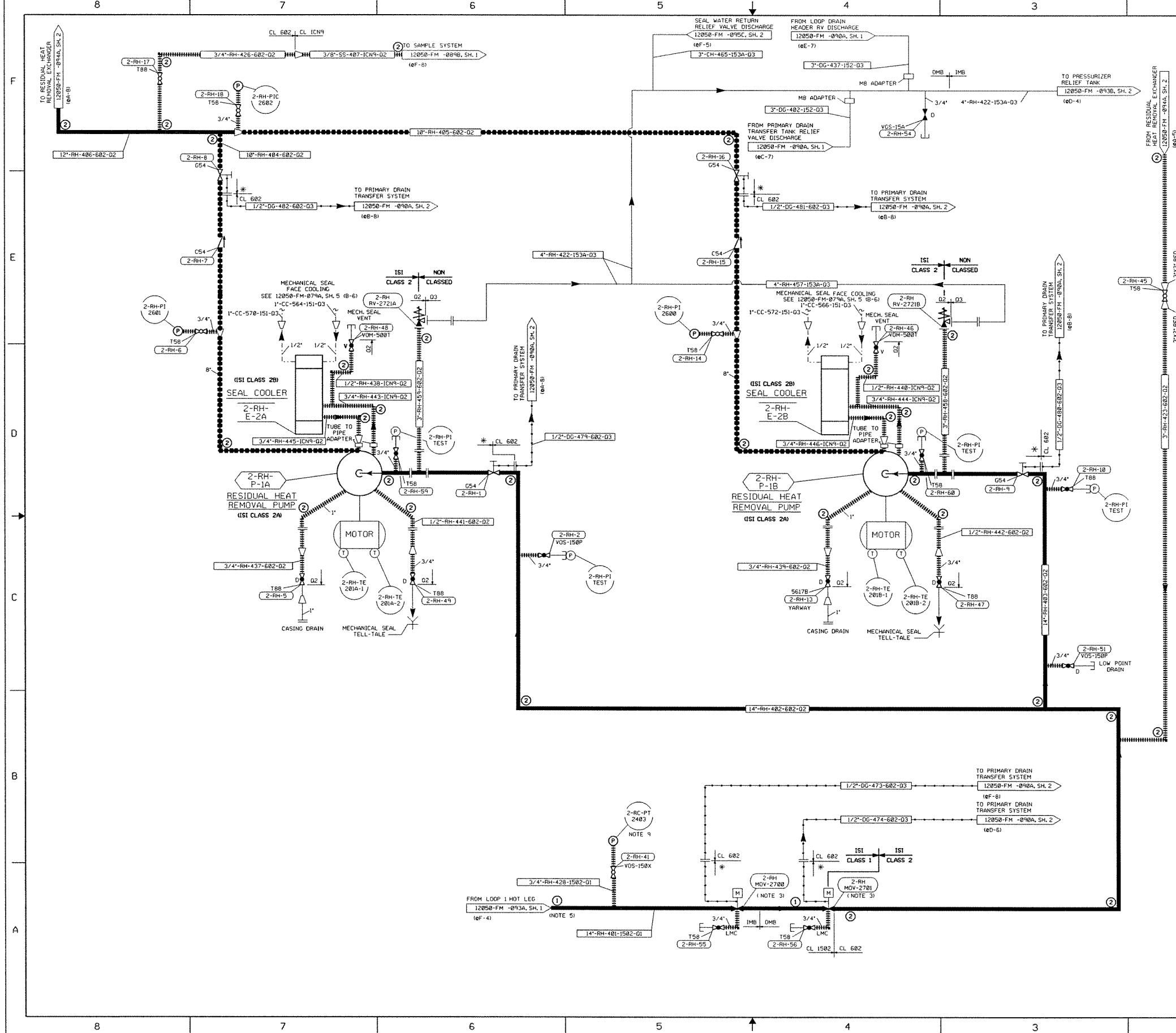
THIS BYPRODUCT DWG ISSUED PER THE FOLLOWING FLOW/VON DIAGRAM	
FLOW/VON DRAWING NO:	REV.
12050-FM-093A	33
SH 1 OF 3	

**Dominion**

**NUCLEAR ENGINEERING**  
RICHMOND, VIRGINIA

**ISI CLASSIFICATION BOUNDARY DWG INTERVAL-3**  
REACTOR COOLANT SYSTEM - LOOP 1  
NORTH ANNA POWER STATION UNIT 2  
VIRGINIA POWER

<b>REVISION DESCRIPTION</b>		CAD NO: C:\user\dgn\N2093A\MCB3p1	
REVISED PER DCP 08-112/DCR 2002-1772A AND REV 33 OF FM		DRAWING NO:	REV
THIS DWG SUPERSEDES REV 0		12050-CBM-093A-3	1
DSGN	GTW	SCALE:	NONE UNLESS OTHERWISE NOTED
		SH 1 OF 3	



- NOTES**
- \* INDICATES SUPPLIED BY MANUFACTURER
  - VALVES ARE NORMALLY INSTALLED WITH FLOW UNDER SEAT.
  - REACTOR COOLANT PRESSURE INTERLOCK PREVENTS ISOLATION VALVE BEING OPEN ABOVE SET PRESSURE.
  - LOCATE ISOLATION VALVE CLOSE TO MAIN HEADER.
  - LOCATE CONNECTION IN BOTTOM HALF OF REACTOR COOLANT PIPING ON 45° ANGLE TO VERTICAL.
  - THE 6" VOS-15X VALVE AND THE 3/4" VOS-15A VALVES ARE SUPPLIED BY STONE AND WEBSTER, ALL OTHERS SUPPLIED BY WESTINGHOUSE.
  - LINE 14"-RH-481 IS PARTIALLY SCHEDULE 160 PIPE AND FITTINGS ARE SCHEDULE 160
  - LEGEND:  
 D - LOCAL DRAIN CONNECTION  
 V - LOCAL VENT CONNECTION  
 OMB - OUTSIDE MISSILE BARRIER  
 IMB - INSIDE MISSILE BARRIER  
 T - CAPPED VENT, DRAIN, OR LMC  
 AC - INDICATES MANUAL VALVE POSITION (MAINTAINED BY ADMINISTRATIVE CONTROL CONSIDERED EQUAL TO A LOCKED VALVE)  
 FO - FAILS OPEN  
 FC - FAILS CLOSED  
 9. 2-RC-PT-2403 IS AN RC SYSTEM INSTRUMENT LOCATED WITHIN THE RH SYSTEM BOUNDARY

**REFERENCE DRAWINGS**

NUMBER	TITLE
01. 12050-FM-079A	FLOW/VON DIAGRAM, COMPONENT COOLING WATER SYSTEM
02. 12050-FM-089B	FLOW/VON DIAGRAM, SAMPLING SYSTEM
03. 12050-FM-090A	FLOW/VON DIAGRAM, VENT & DRAIN SYSTEM
04. 12050-FM-091A	FLOW/VON DIAGRAM, CONT QUENCH & RECIRC SPRAY SYS
05. 12050-FM-093A	FLOW/VON DIAGRAM, REACTOR COOLANT SYSTEM
06. 12050-FM-093B	FLOW/VON DIAGRAM, REACTOR COOLANT SYSTEM
07. 12050-FM-095B	FLOW/VON DIAGRAM, CHEM & VOLUME CONTROL SYSTEM
08. 12050-FM-095C	FLOW/VON DIAGRAM, CHEM & VOLUME CONTROL SYSTEM
09. 12050-FM-096A	FLOW/VON DIAGRAM, SAFETY INJECTION SYSTEM
10. 12050-FM-096B	FLOW/VON DIAGRAM, SAFETY INJECTION SYSTEM
11. 11715-FM-088A	FLOW/VON DIAGRAM, FUEL PIT CLNG & REF PURIF SYSTEM

**BYPRODUCT DRAWINGS**

1. 12050-CBM-094A, SH.1	ISI CLASSIFICATION BOUNDARY DRAWING
2. DELETED	
3. 12050-SPM-094A, SH.1	ISI SYSTEM PRESSURE TESTING DRAWING

**BYPRODUCT NOTES**

NOTE 1: SEE EWR-86-489 FOR DETAILS OF THE ISI CLASSIFICATION BASIS.

FOR ISI CLASSIFICATION BOUNDARY DRAWING LEGEND AND SYMBOLS, SEE 12050-CBM-LAS-3 THIS CLASSIFICATION BOUNDARY DRAWING IS TO BE USED FOR THE 3-YR TEN YEAR INSPECTION INTERVAL.

CONTINUATION DRAWING NUMBERS REFER TO FM OR FB DRAWINGS, THE CORRESPONDING CLASSIFICATION BOUNDARY DRAWINGS (CBM OR CBB) CAN BE DETERMINED BY SUBSTITUTING CBM OR CBB FOR FM OR FB.

**CAUTION:**  
 THE BACKGROUND PORTION OF THIS BYPRODUCT DRAWING IS FOR REFERENCE ONLY. THE BACKGROUND INFORMATION IS NOT CONTROLLED AND MAY NOT REFLECT THE ACTUAL PLANT CONFIGURATION. REFER TO THE LATEST FLOW/VALVE OPERATING NUMBERS DIAGRAM FOR CONTROLLED BACKGROUND INFORMATION.

**REVISION DESCRIPTION**

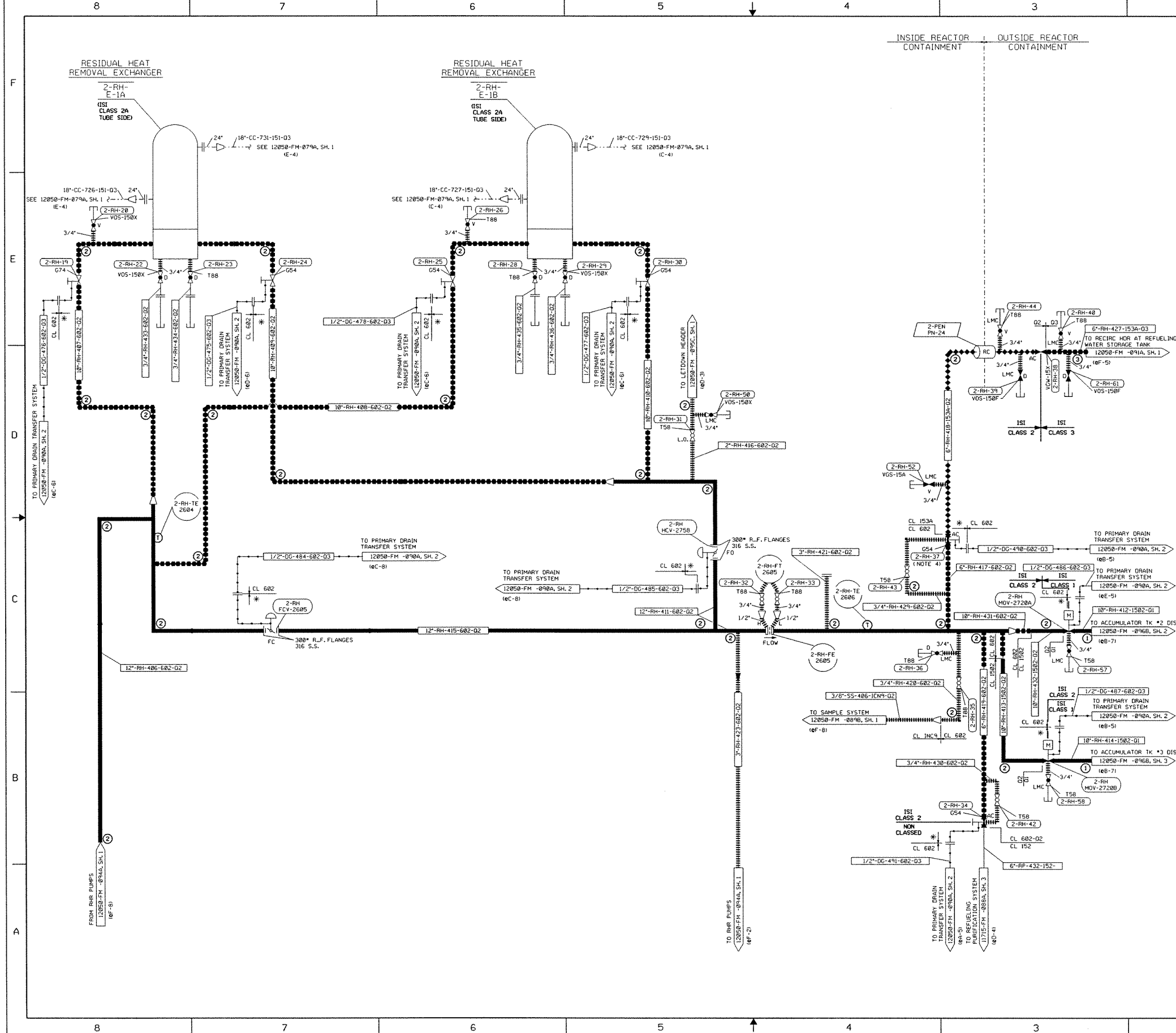
REV	DESCRIPTION
20	THIS BYPRODUCT DWG ISSUED PER THE FOLLOWING FLOW/VON DIAGRAM
0	12050-FM-094A

**VIRGINIA POWER  
 NORTH CAROLINA POWER**

NUCLEAR ENGINEERING SERVICES  
 RICHMOND, VIRGINIA

ISI CLASSIFICATION BOUNDARY DWG INTERVAL-3  
 RESIDUAL HEAT REMOVAL SYSTEM  
 NORTH ANNA POWER STATION UNIT 2  
 VIRGINIA POWER

ORIGINAL ISSUE PER DCR 2001-674 AND REV 20 OF FM	CAD NO: C:\user\dgn\N2094A\MCB3.c1	DRAWING NO: 12050-FM-094A-3	REV 0
DGN SCC	SCALE: NONE	UNLESS OTHERWISE NOTED	SH 1 OF 2



**NOTES**

1. FOR NOTES, SEE SHEET 1 OF THIS DRAWING.

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**REFERENCE DRAWINGS**

NUMBER	TITLE
01.	FOR ADDITIONAL REFERENCE DRAWINGS, SEE SHEET 1 OF THIS DRAWING.
02.	12050-FM-079A FLOW/VON DIAGRAM, COMPONENT COOLING WATER SYSTEM
03.	12050-FM-089G FLOW/VON DIAGRAM, SAMPLING SYSTEM
04.	12050-FM-090A FLOW/VON DIAGRAM, VENT & DRAIN SYSTEM
05.	12050-FM-091A FLOW/VON DIAGRAM, CONT QUENCH & RECIRC SPRAY SYS
06.	12050-FM-095C FLOW/VON DIAGRAM, CHEM & VOLUME CONTROL SYSTEM
07.	12050-FM-095D FLOW/VON DIAGRAM, SAFETY INJECTION SYSTEM
08.	11715-FM-0968A FLOW/VON DIAGRAM, FUEL PIT CLNG & REF PURIF SYSTEM

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**BYPRODUCT DRAWINGS**

1.	12050-CBM-094A, SH.2	ISI CLASSIFICATION BOUNDARY DRAWING
2.	DELETED	
3.	12050-SPM-094A, SH.2	ISI SYSTEM PRESSURE TESTING DRAWING

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**BYPRODUCT NOTES**

NOTE 1: SEE EWR-86-489 FOR DETAILS OF THE ISI CLASSIFICATION BASIS.

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FOR ISI CLASSIFICATION BOUNDARY DRAWING LEGEND AND SYMBOLS, SEE 12050-CBM-L&S-3 THIS CLASSIFICATION BOUNDARY DRAWING IS TO BE USED FOR THE 3-YEAR TEN YEAR INSPECTION INTERVAL.

CONTINUATION DRAWING NUMBERS REFER TO FM OR FB DRAWINGS. THE CORRESPONDING CLASSIFICATION BOUNDARY DRAWING (CBM OR CBB) CAN BE DETERMINED BY SUBSTITUTING CBM OR CBB FOR FM OR FB.

**CAUTION:** THE BACKGROUND PORTION OF THIS BYPRODUCT DRAWING IS FOR REFERENCE ONLY. THE BACKGROUND INFORMATION IS NOT CONTROLLED AND MAY NOT REFLECT THE ACTUAL PLANT CONFIGURATION. REFER TO THE LATEST FLOW/VALVE OPERATING NUMBERS DIAGRAM FOR CONTROLLED BACKGROUND INFORMATION.

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**REVISION DESCRIPTION**

REV	DESCRIPTION
18	THIS BYPRODUCT DWG ISSUED PER THE FOLLOWING FLOW/VON DIAGRAM
0	12050-FM-094A

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**VIRGINIA POWER NORTH CAROLINA POWER**  
NUCLEAR ENGINEERING SERVICES  
RICHMOND, VIRGINIA

**ISI CLASSIFICATION BOUNDARY DWG INTERVAL-3**  
RESIDUAL HEAT REMOVAL SYSTEM  
NORTH ANNA POWER STATION UNIT 2  
VIRGINIA POWER

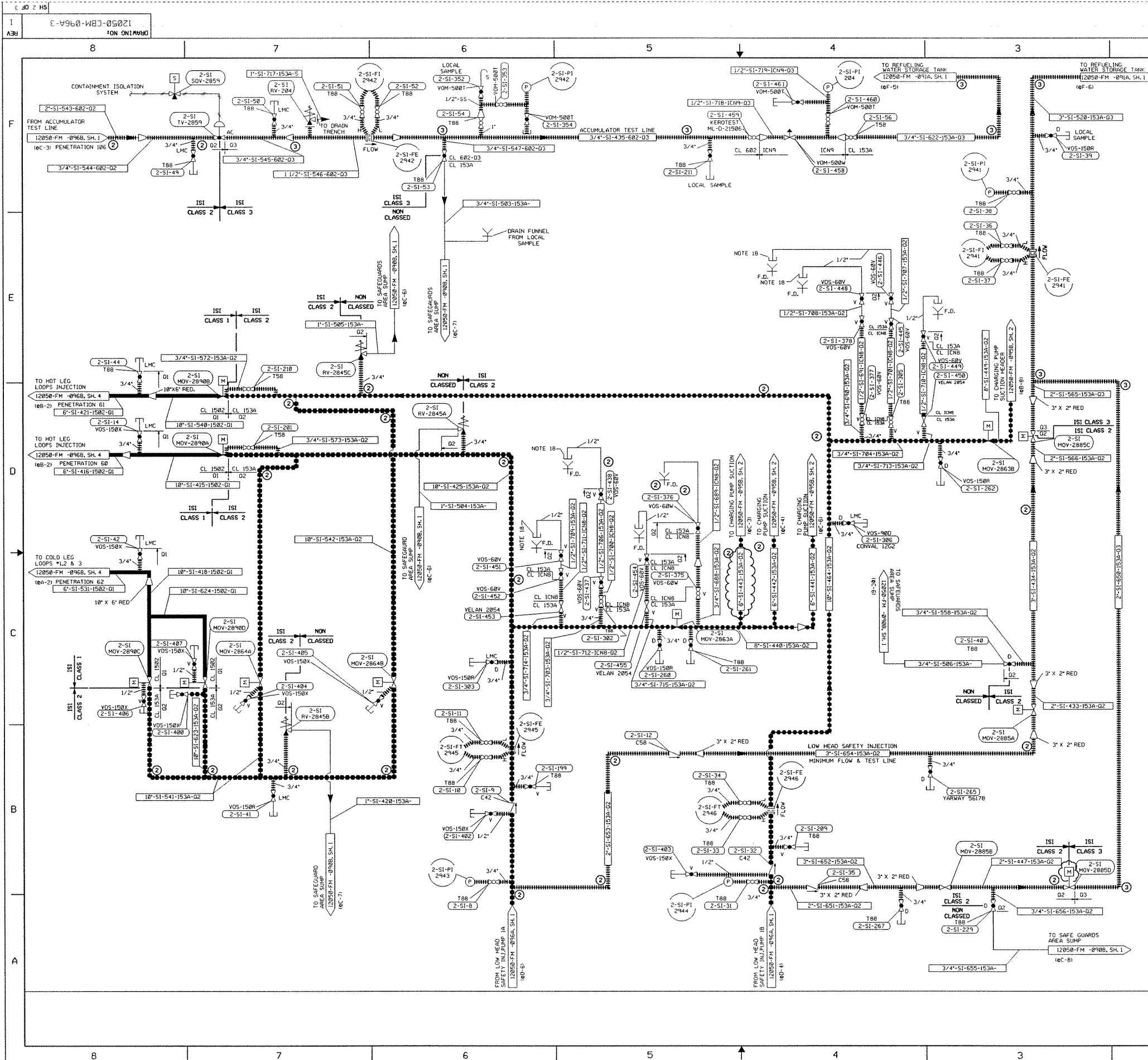
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**REVISION DESCRIPTION**

REV	DESCRIPTION	DATE
0	ORIGINAL ISSUE PER DCR 2001-675 AND REV 18 OF FM.	

CAD NO: C:\user\jg\N2094A2MBC3.wg1  
DRAWING NO: 12050-FM-094A-3  
REV 0

DSGN SCC SCALE: NONE UNLESS OTHERWISE NOTED SH 2 OF 2



NOTES  
1. FOR NOTES, SEE SHEET 1 OF THIS DRAWING.

REFERENCE DRAWINGS	
NUMBER	TITLE
01.	FOR ADDITIONAL REFERENCE DRAWINGS, SEE SHEET 1 OF THIS DRAWING.
02.	12050-FM-0908 FLOW/VON DIAGRAM, VENT & DRAIN SYSTEM
03.	12050-FM-091A FLOW/VON DIAGRAM, CONT. QUENCH & RECIRC. SPRAY SYS
04.	12050-FM-095B FLOW/VON DIAGRAM, CHEM. & VOLUME CONTROL SYSTEM
05.	12050-FM-096B FLOW/VON DIAGRAM, SAFETY INJECTION SYSTEM

BYPRODUCT DRAWINGS	
NUMBER	TITLE
1.	12050-CBM-096A, SH.2 ISI CLASSIFICATION BOUNDARY DRAWING
2.	DELETED
3.	12050-SPM-096A, SH.2 ISI SYSTEM PRESSURE TESTING DRAWING

BYPRODUCT NOTES  
NOTE 1: SEE EWR-86-489 FOR DETAILS OF THE ISI CLASSIFICATION BASIS.

FOR ISI CLASSIFICATION BOUNDARY DRAWING LEGEND AND SYMBOLS, SEE 12050-CBM-L45-3 THIS CLASSIFICATION BOUNDARY DRAWING IS TO BE USED FOR THE 3<sup>rd</sup> TEN YEAR INSPECTION INTERVAL.

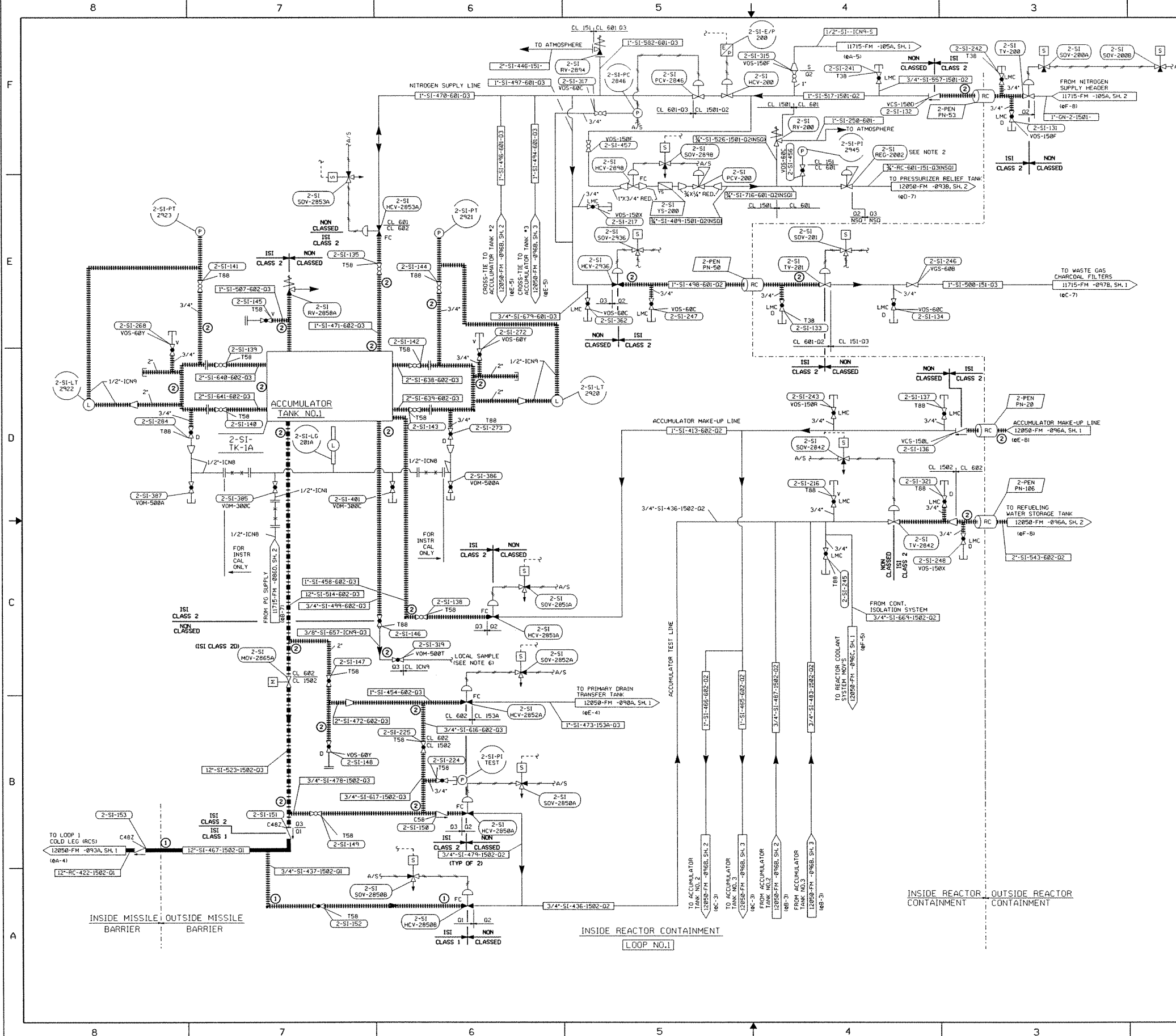
CONTINUATION DRAWING NUMBERS REFER TO FM OR FB DRAWINGS. THE CORRESPONDING CLASSIFICATION BOUNDARY DRAWINGS (CBM OR CBB) CAN BE DETERMINED BY SUBSTITUTING CBM OR CBB FOR FM OR FB.  
CAUTION: THE BACKGROUND PORTION OF THIS BYPRODUCT DRAWING IS FOR REFERENCE ONLY. THE BACKGROUND INFORMATION IS NOT CONTROLLED AND MAY NOT REFLECT THE ACTUAL PLANT CONFIGURATION. REFER TO THE LATEST FLOW/VALVE OPERATING NUMBERS DIAGRAM FOR CONTROLLED BACKGROUND INFORMATION.

REVISION DESCRIPTION	
THIS BYPRODUCT DWG ISSUED PER THE FOLLOWING FLOW/VON DIAGRAM	REV. 36
FLOW/VON DRAWING NO: 12050-FM-096A	SH 2 OF 3

**Dominion**  
NUCLEAR ENGINEERING  
RICHMOND, VIRGINIA

ISI CLASSIFICATION BOUNDARY DWG INTERVAL-3  
SAFETY INJECTION SYSTEM  
NORTH ANNA POWER STATION UNIT 2  
VIRGINIA POWER

REVISION DESCRIPTION		CAD NO: C:\user\adgn\N2096A2M033.rvt
REVISED PER DCR 2802-2242A AND REV 25 & 36 OF FM DWG. THIS DWG. SUPERSEDES REV 0	DRAWING NO: 12050-CBM-096A-3	REV 1
OSGN AEG SCALE: NONE	UNLESS OTHERWISE NOTED	SH 2 OF 3



- NOTES**
- FOR NOTES, SEE SHEET 1 OF 12050-FM-096A.
  - PRESSURE REGULATOR WITH SCHEDULE 40 STAINLESS STEEL PIPE NIPPLES.
  - PRESSURE CONTROL VALVE WITH 1/4" SS PIPE NIPPLES AND 3/4" TO 1/4" SS REDUCING COUPLINGS SUPPLIED BY VENDOR.
  - ARMSTRONG STRAINER C15W W/CHROME MOLY BODY & 304 SS SCREEN.
  - THE PIPING CLASS BETWEEN PCV-200 & REG-2002 CAN BE RELAXED DUE TO RV-200, DCP 95-159 MADE CHANGE AS SHOWN.

**REFERENCE DRAWINGS**

NUMBER	TITLE
01.	FOR ADDITIONAL REFERENCE DRAWINGS, SEE SHEET 1 OF 12050-FM-096A.
02.	12050-FM-096A FLOW/VON DIAGRAM,VENT & DRAIN SYSTEM
03.	12050-FM-093A FLOW/VON DIAGRAM,REACTOR COOLANT SYSTEM
04.	12050-FM-093B FLOW/VON DIAGRAM,REACTOR COOLANT SYSTEM
05.	12050-FM-096A FLOW/VON DIAGRAM,SAFETY INJECTION SYSTEM
06.	12050-FM-096C FLOW/VON DIAGRAM,SAFETY INJECTION SYSTEM
07.	11715-FM-097B FLOW/VON DIAGRAM,GASEOUS WASTE DISPOSAL SYSTEM
08.	11715-FM-105A FLOW/VON DIAGRAM,PRIMARY PLANT GAS SUPPLY SYSTEM

**BYPRODUCT DRAWINGS**

1.	12050-CBM-096B, SH.1	ISI CLASSIFICATION BOUNDARY DRAWING
2.	DELETED	
3.	12050-SPM-096B, SH.1	ISI SYSTEM PRESSURE TESTING DRAWING

**BYPRODUCT NOTES**

NOTE 1: SEE EWR-86-489 FOR DETAILS OF THE ISI CLASSIFICATION BASIS.

FOR ISI CLASSIFICATION BOUNDARY DRAWING LEGEND AND SYMBOLS, SEE 12050-CBM-L&S-3 THIS CLASSIFICATION BOUNDARY DRAWING IS TO BE USED FOR THE 3-D TEN YEAR INSPECTION INTERVAL.

CONTINUATION DRAWING NUMBERS REFER TO FM OR FB DRAWINGS, THE CORRESPONDING CLASSIFICATION BOUNDARY DRAWINGS (CBM OR CBB) CAN BE DETERMINED BY SUBSTITUTING CBM OR CBB FOR FM OR FB.

**CAUTION:** THE BACKGROUND PORTION OF THIS BYPRODUCT DRAWING IS FOR REFERENCE ONLY. THE BACKGROUND INFORMATION IS NOT CONTROLLED AND MAY NOT REFLECT THE ACTUAL PLANT CONFIGURATION. REFER TO THE LATEST FLOW/VALVE OPERATING NUMBERS DIAGRAM FOR CONTROLLED BACKGROUND INFORMATION.

**REVISION DESCRIPTION**

REV.	DESCRIPTION
30	THIS BYPRODUCT DWG ISSUED PER THE FOLLOWING FLOW/VON DIAGRAM
	FLOW/VON DRAWING NO: 12050-FM-096B
	SH 1 OF 4

**VIRGINIA POWER**  
**NORTH CAROLINA POWER**  
NUCLEAR ENGINEERING SERVICES  
RICHMOND, VIRGINIA

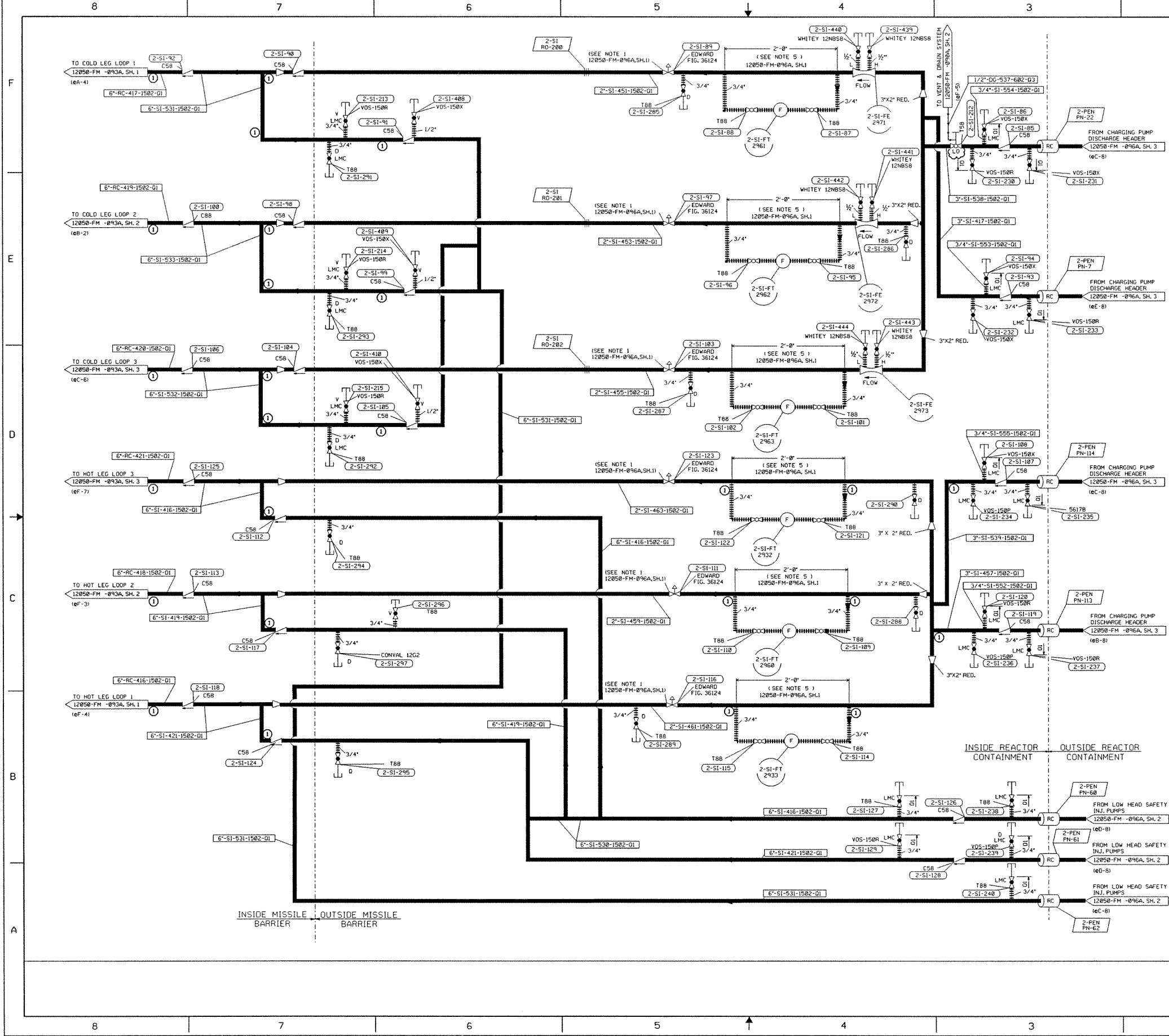
ISI CLASSIFICATION BOUNDARY DWG INTERVAL-3  
SAFETY INJECTION SYSTEM  
NORTH ANNA POWER STATION UNIT 2  
VIRGINIA POWER

REVISION DESCRIPTION	CAD NO:	REV.
ORIGINAL ISSUE PER DCR 2001-685 AND REV 30 OF FM	C:\user\dgn\N2096B1MCR31.p1	0
	DRAWING NO:	
	12050-CBM-096B-3	
		SH 1 OF 4

DSGN	ECC	SCALE:	NONE	UNLESS OTHERWISE NOTED	SH 1 OF 4
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**REFERENCE DRAWINGS**

NUMBER	TITLE
01.	FOR ADDITIONAL REFERENCE DRAWINGS, SEE SHEET 1 OF THIS DRAWING.
02.	12050-FM-090A FLOW/VON DIAGRAM, VENT & DRAIN SYSTEM
03.	12050-FM-093A FLOW/VON DIAGRAM, REACTOR COOLANT SYSTEM
04.	12050-FM-096A FLOW/VON DIAGRAM, SAFETY INJECTION SYSTEM

**BYPRODUCT DRAWINGS**

1.	12050-CBM-096B, SH.4 ISI CLASSIFICATION BOUNDARY DRAWING
2.	DELETED
3.	12050-SPM-096B, SH.4 ISI SYSTEM PRESSURE TESTING DRAWING

**BYPRODUCT NOTES**  
 NOTE 1: SEE EWR-86-489 FOR DETAILS OF THE ISI CLASSIFICATION BASIS.

FOR ISI CLASSIFICATION BOUNDARY DRAWING LEGEND AND SYMBOLS, SEE 12050-CBM-L&S-3  
 THIS CLASSIFICATION BOUNDARY DRAWING IS TO BE USED FOR THE 3-YEAR  
 TEN YEAR INSPECTION INTERVAL.

CONTINUATION DRAWING NUMBERS REFER TO FM OR FB DRAWINGS. THE  
 CORRESPONDING CLASSIFICATION BOUNDARY DRAWINGS (CSD OR CSD) CAN BE  
 DETERMINED BY SUBSTITUTING CSD OR CSD FOR FM OR FB.  
**CAUTION:**  
 THE BACKGROUND PORTION OF THIS BYPRODUCT DRAWING IS FOR REFERENCE ONLY.  
 THE BACKGROUND INFORMATION IS NOT CONTROLLED AND MAY NOT REFLECT THE ACTUAL  
 PLANT CONFIGURATION. REFER TO THE LATEST FLOW/VALVE OPERATING  
 NUMBERS DIAGRAM FOR CONTROLLED BACKGROUND INFORMATION.

**REVISION DESCRIPTION**

REV.	DESCRIPTION
30	THIS BYPRODUCT DWG ISSUED PER THE FOLLOWING FLOW/VON DIAGRAM
30	12050-FM-096B
30	SH 4 OF 4

**Dominion**  
 NUCLEAR ENGINEERING  
 RICHMOND, VIRGINIA

ISI CLASSIFICATION BOUNDARY DWG INTERVAL-3  
 SAFETY INJECTION SYSTEM  
 NORTH ANNA POWER STATION UNIT 2  
 VIRGINIA POWER

**REVISION DESCRIPTION**

REVISED PER	DATE	BY	REV
DCR 2002-0993A & PER REV 30 OF F&V THIS DWG SUPERSEDES THE REV 0 ORIGINAL.			1

UNLESS OTHERWISE NOTED