

VIRGINIA ELECTRIC AND POWER COMPANY  
RICHMOND, VIRGINIA 23261

April 19, 1993

United States Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555

Serial No. 93-196  
NL&P/EJW  
Docket Nos. 50-338  
50-339  
License Nos. NPF-4  
NPF-7

Gentlemen:

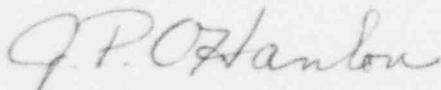
**VIRGINIA ELECTRIC AND POWER COMPANY**  
**NORTH ANNA POWER STATION UNITS 1 AND 2**  
**INSERVICE INSPECTION PROGRAM RELIEF REQUESTS**

North Anna Power Station Unit 1 is presently in the second period of the second ten-year interval. North Anna Unit 1 examinations have been conducted to the requirements of the 1963 Edition and Summer 1983 Addenda of ASME Section XI. North Anna Unit 2 is currently in the first period of its second ten year interval. North Anna Unit 2 examinations have been conducted to the requirements of the 1986 Edition of ASME Section XI.

Pursuant to 10 CFR 50.55a (g) 5, relief is requested from certain requirements of the ASME Section XI associated with partial examinations conducted for both North Anna Units 1 and 2. Relief Request NDE-19 (attached) for both units has been provided detailing the basis of this relief.

If you have any questions concerning these requests, please contact us.

Very truly yours,



for W. L. Stewart  
Senior Vice President - Nuclear

Enclosures

230012

9304230120 930419  
PDR ADOCK 05000338  
G PDR

AO47/1

cc: United States Nuclear Regulatory Commission  
Region II  
101 Marietta Street, N.W.  
Suite 2900  
Atlanta, GA 30323

Mr. M. S. Lesser  
NRC Senior Resident Inspector  
North Anna Power Station

NORTH ANNA UNIT 1  
RELIEF REQUEST NDE-19

I. IDENTIFICATION OF COMPONENTS

<u>Mark/Weld #</u>	<u>Line #</u>	<u>Drawing #</u>	<u>Class</u>
1		11715-WMKS-RC-R-1.2	1
14	4"-RC-15-1502-Q1	11715-WMKS-RC-E-2	1
4	31"-RC-2-2501-Q1	11715-WMKS-0109E-1	1
5	31"-RC-2-2501-Q1	11715-WMKS-0109E-1	1
SW-40	4"-RC-14-1502-Q1	11715-WMKS-0109E-2	1
72H	14"-RH-2-602-Q2	11715-WMKS-0113A-1	2
19H	6"-SI-133-1502-Q1	11715-WMKS-0103Y	2
64	14"-RH-3-602-Q2	11715-WMKS-0113A-2	2

II. IMPRACTICABLE CODE REQUIREMENTS

The 1983 edition, Summer 1983 Addenda (inclusive) of ASME Section XI in Tables IWB-2500-1 and IWC-2500-1 does not allow any limitations to the required volumetric and surface examinations. Code Case N-460, Alternative Examination Coverage for Class 1 and Class 2 Welds, allows a reduction in coverage, if it is less than 10%.

III. BASIS FOR RELIEF

The components listed above have been examined to the extent practical as required by the Code. Due to interferences of other components or weld joint geometry, the reduction in coverage for the listed components was greater than 10%. Tables NDE-19-1, 2, and 3 are provided detailing the limitations experienced. Amplifying sketches are also provided. Alternative components were not substituted for these examinations due to the mandatory selection requirements of the Code or because of the prorated selection criteria for piping in Category C-F-1 (Note 2 of Code Case N-408-1).

IV. ALTERNATE PROVISIONS

It is proposed that the examinations already completed at the reduced coverage be counted as meeting the Code requirements.

**Table NDE-19-1**  
**North Anna Unit 1**  
**Examination Coverage Estimates (Vessel)**  
**Category B-A, Item B1.40**

<u>Mark/Weld #</u>	<u>Beam Angle</u>	<u>Exam Area</u>	<u>Scan Direction</u>	<u>% Exam</u>	<u>Reason For Partial</u>	<u>Sketch#</u>
1 (0 to 120 degrees)	0	Weld & Base	-	72	Proximity To Flange And Lifting Lug Interference	1
	45	Weld	2	13		
	45	Weld	5	97		
	45	Weld	7	99		
	45	Weld	8	99		
	60	Weld	2	7		
	60	Weld	5	98		
	60	Weld	7	99		
	60	Weld	8	99		
	45 & 60	Base	2	36		
	45 & 60	Base	5	91		
	45 & 60	Base	7	68		
	45 & 60	Base	8	68		

UT Scan Direction Definitions

- 2 - Axial scan flange side of weld
- 5 - Axial scan head side of weld
- 7 - Circumferential scan, clockwise (looking down on head)
- 8 - Circumferential scan, counterclockwise (looking down on head)



**Table NDE-19-2**  
**North Anna Unit 1**  
**Examination Coverage Estimates (Vessels)**  
**Category B-D, Item B3.110**

<u>Mark/Weld#</u>	<u>Beam Angle</u>	<u>Exam Area</u>	<u>Scan Direction</u>	<u>% Exam</u>	<u>Reason For Partial</u>	<u>Sketch#</u>
14	0	Weld & Base	-	85	Nozzle Geometry, Cladding Prevents Extended V-path	2
	45	Weld	2	90		
	45	Weld	5	30		
	45	Weld	7	100		
	45	Weld	8	100		
	60	Weld	2	95		
	60	Weld	5	20		
	60	Weld	7	100		
	60	Weld	8	100		
	45 & 60	Base	2	85		
	45 & 60	Base	5	40		
	45 & 60	Base	7	70		
	45 & 60	Base	8	70		

UT Scan Direction Definitions

2 - Axial scan vessel side of weld

5 - Axial scan nozzle side of weld

7 - Circumferential scan, clockwise when looking in direction of isometric flow (weld count)

8 - Circumferential scan, counterclockwise when looking in direction of isometric flow (weld count)

**Table NDE-19-3**  
**North Anna Unit 1**  
**Examination Coverage Estimates (Piping & Integral Attachments)**

<u>Mark/Weld #</u>	<u>Category</u>	<u>Item #</u>	<u>UT Scan Coverage %</u>				<u>Surface Coverage %</u>	<u>Reason For Partial</u>	<u>Sketch #</u>
			2	5	7	8			
4	B-F	B5.70	0	70	70	70	N/A	Nozzle & Weld Crown Geometry, Material Attenuation Prevents Extended V-path	3
5	B-F	B5.70	70	0	70	70	N/A	Nozzle & Weld crown Geometry, Material Attenuation Prevents Extended V-path	3
SW-40	B-J	B9.31	91	91@	0	0	N/A	Branch Connection Joint Configuration	4
72H	C-C	C3.20		N/A			50	Support & Ceiling Interference	5
19H	C-C	C3.20		N/A			80	Support Configuration	6
64	C-F-1	C5.11	46*	46	100	100	N/A	Extended V-path and Smaller Transducer Used, Valve/Elbow Configuration & Weld Crown Limit Exam	7

\* - Extended V-path from 5 scan used.

@ - Extended V-path from 2 scan used.

UT Scan Direction Definitions

2 - Axial scan, 180 degrees from isometric flow direction (weld count).

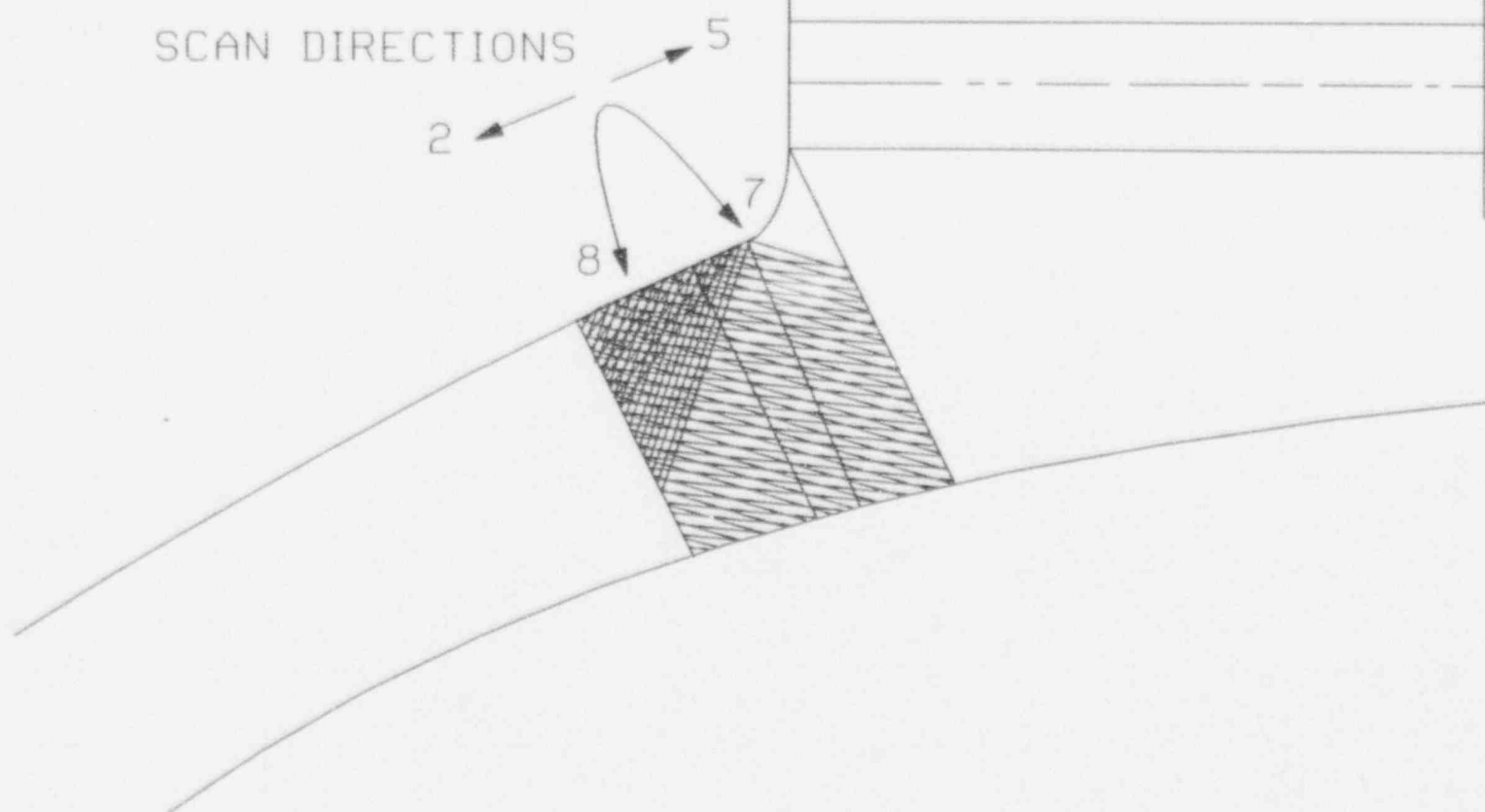
5 - Axial scan, the same direction as the isometric flow (weld count).

7 - Circumferential scan, clockwise rotation when viewing in the direction of isometric flow.

8 - Circumferential scan, counterclockwise rotation when viewing in the direction of isometric flow.

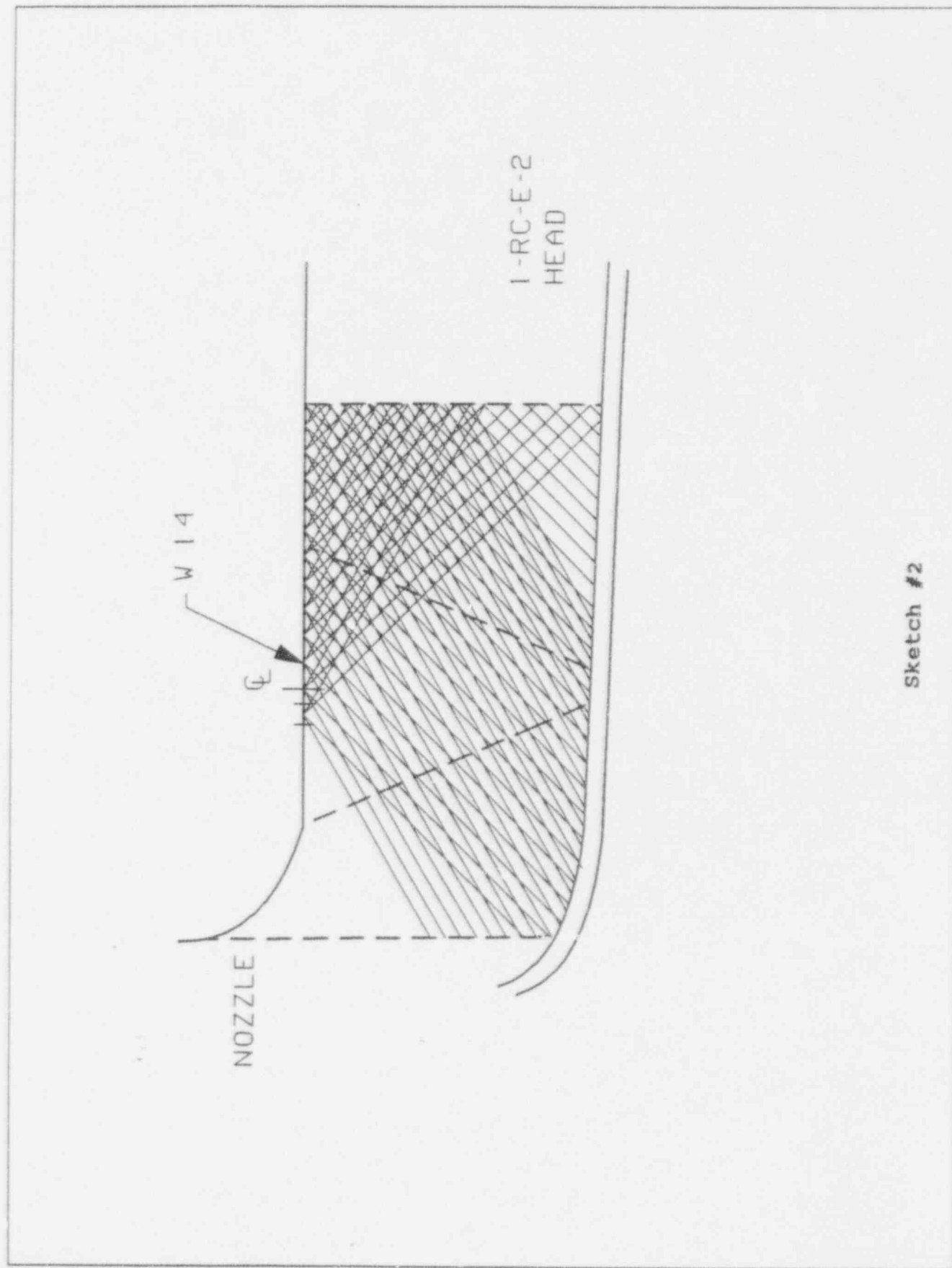
45 DEGREE AND 60 DEGREE

SCAN DIRECTIONS



WELD 1

Sketch #1



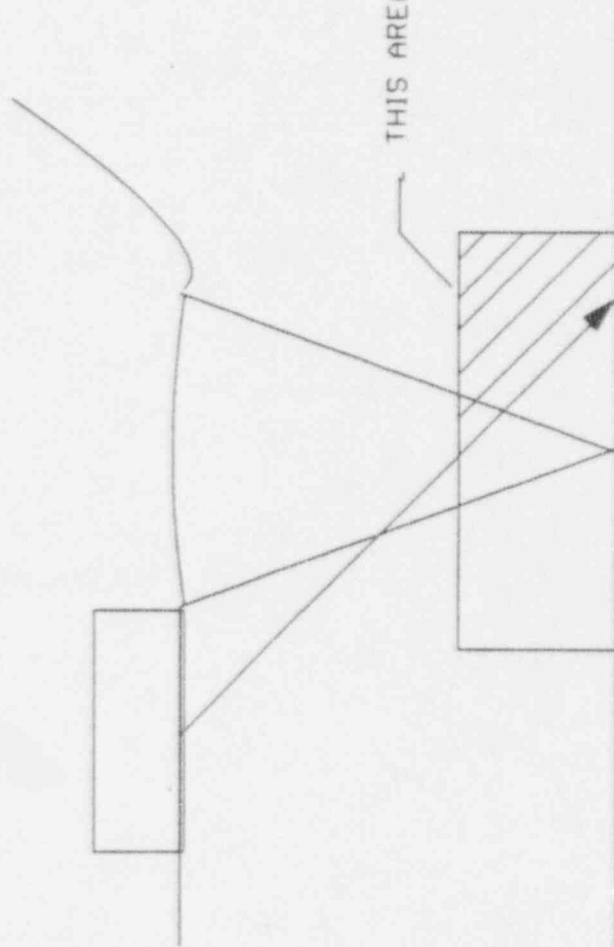
Sketch #2

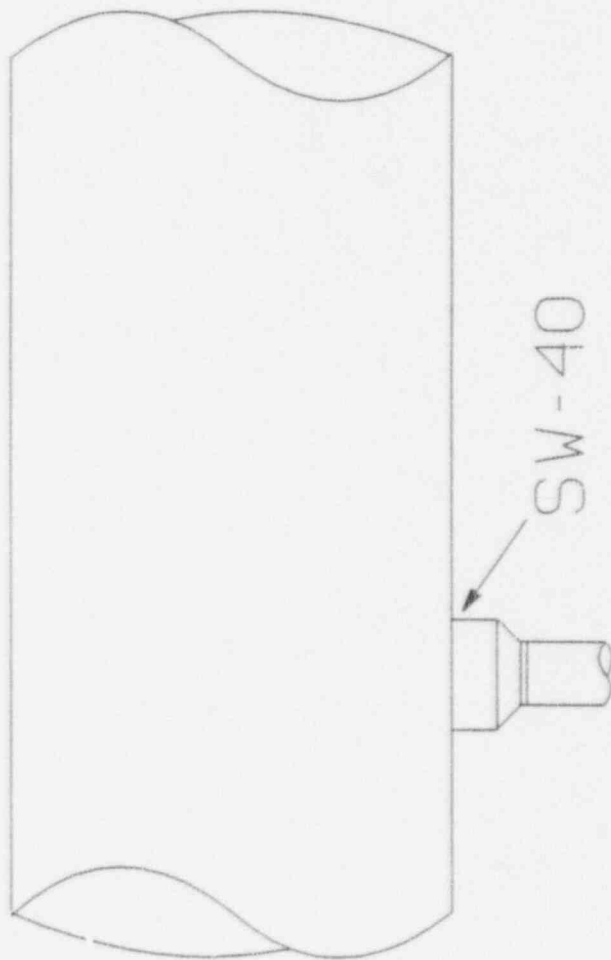
1-RC-E-1A

THIS AREA NOT EXAMINED

WELD 4 AND 5 (TYPICAL)

Sketch #3





SW-40

4"-RC-1 4-1 502-Q1

27 1/2"-RC-3-2501 R-Q1

Sketch #4



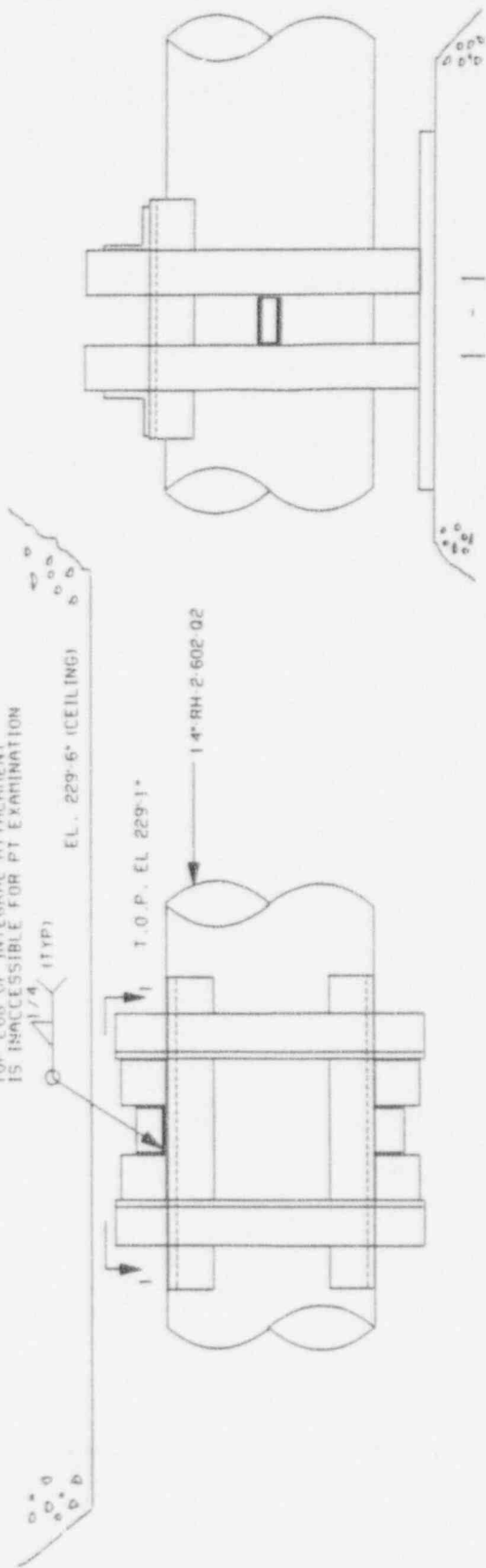
TOP LUG OF INTEGRAL ATTACHMENT  
IS INACCESSIBLE FOR PT EXAMINATION

(TYP)

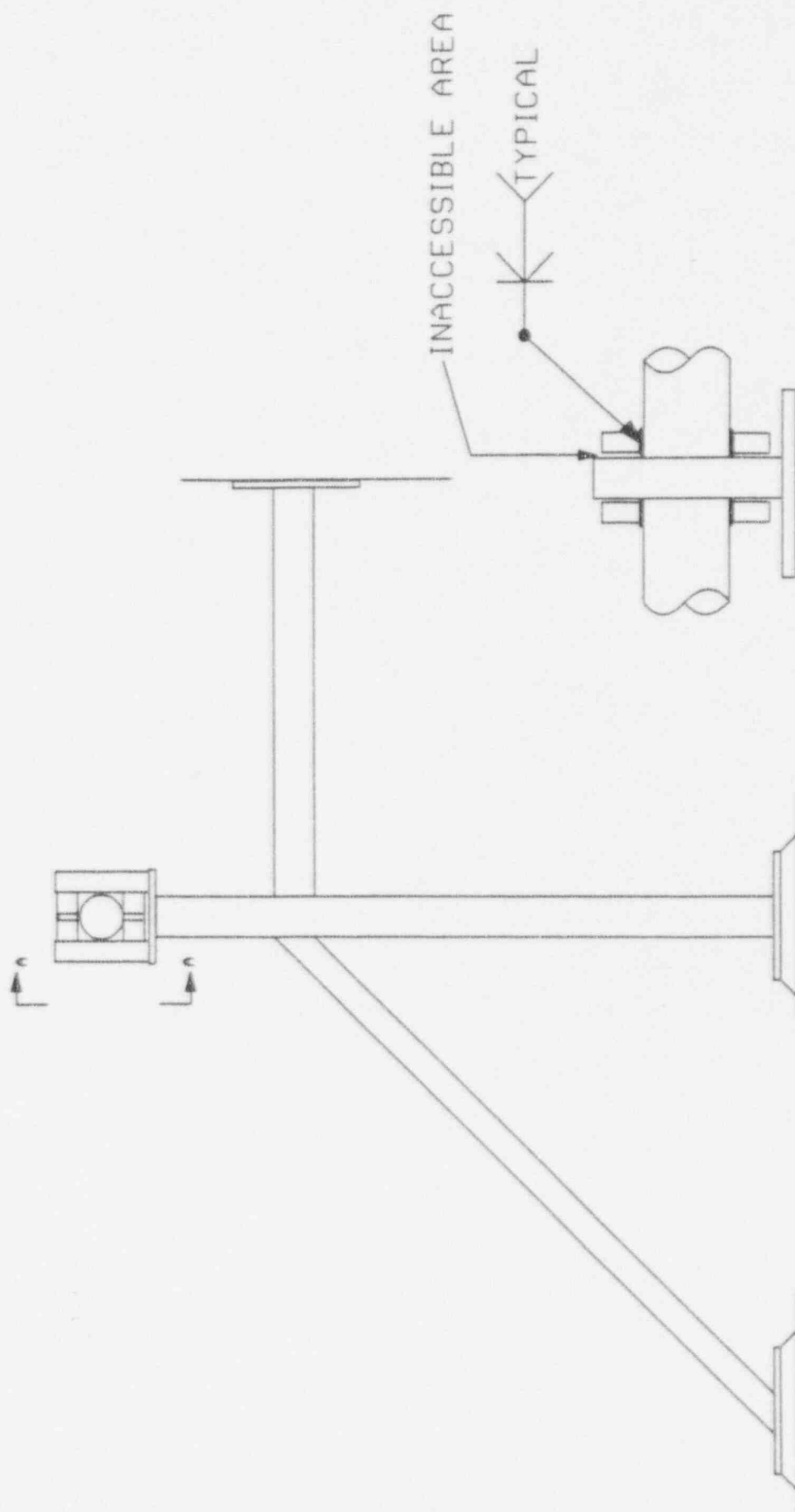
EL. 229'-6" (CEILING)

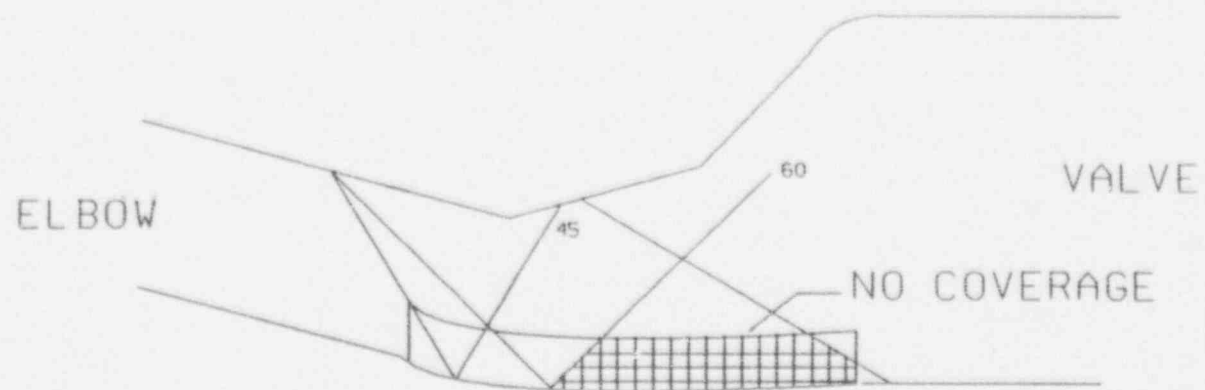
T.O.P. EL 229'-1"

14" RH 2-602 Q2

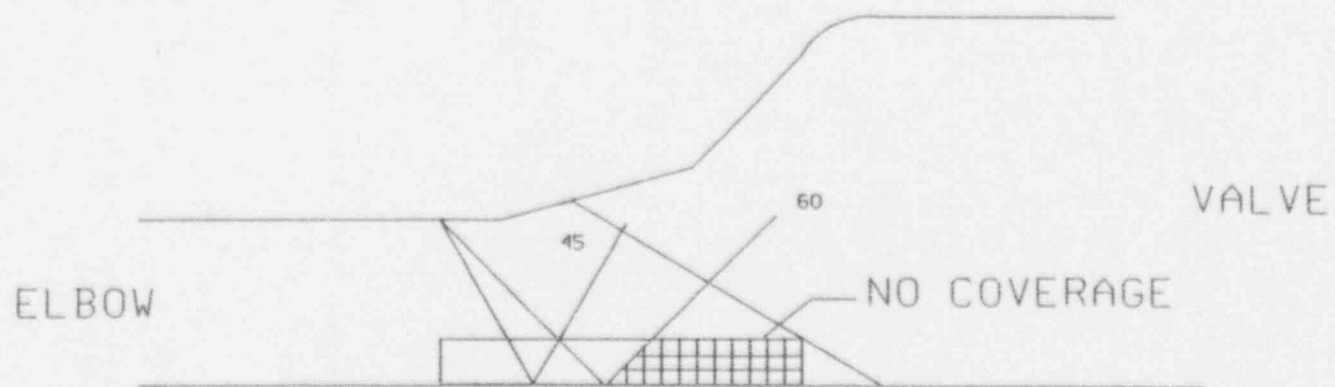


Sketch #5





INTRADOSE (225 - 315 DEGREES)

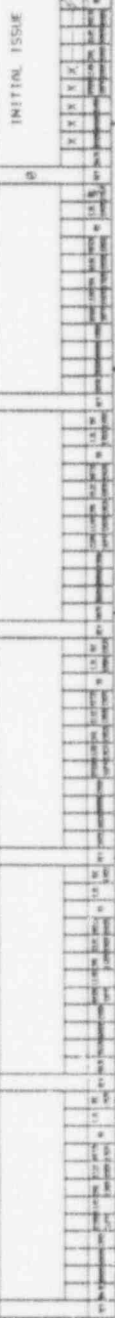


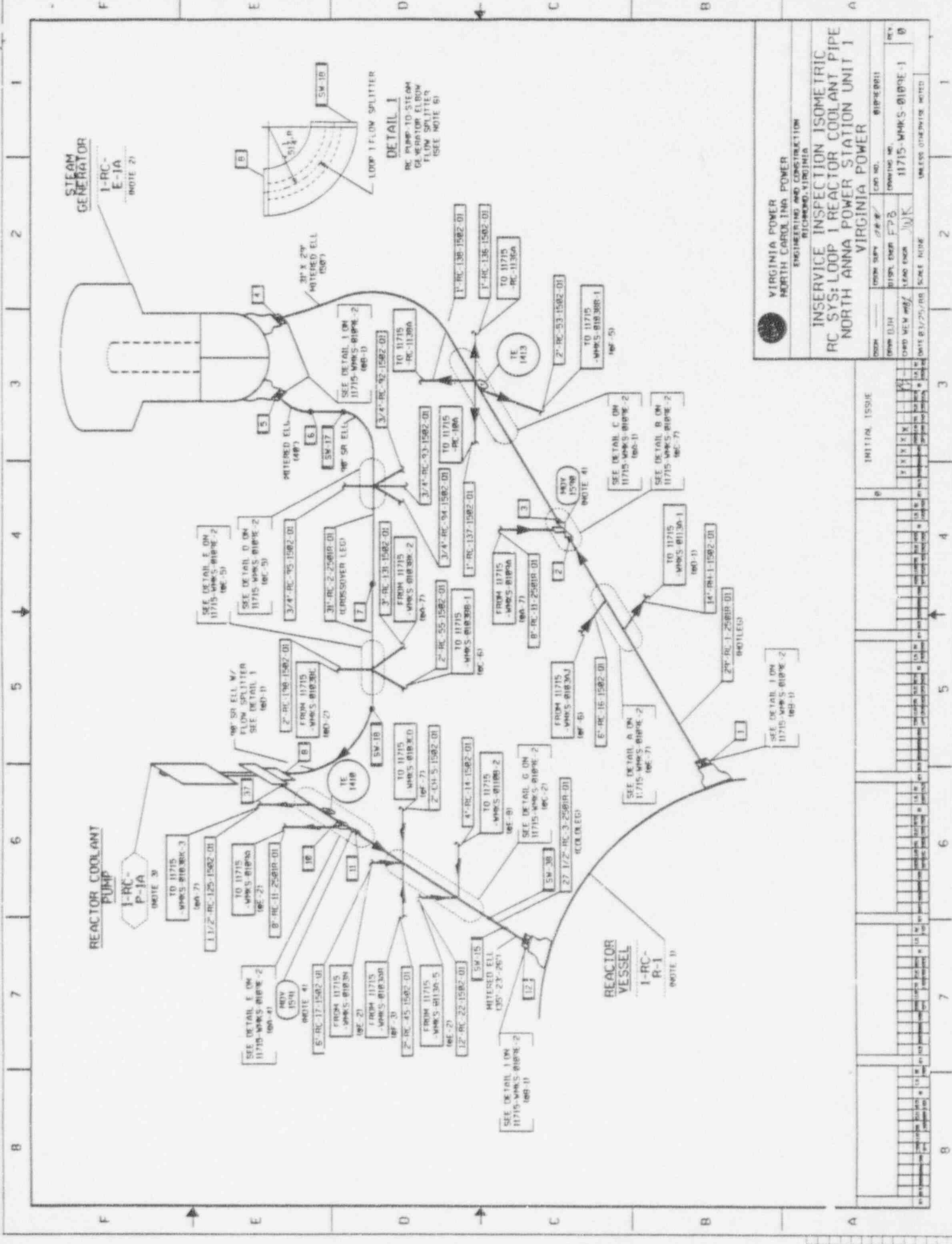
(315 - 45 DEGREES & 135 - 225 DEGREES)

WELD 64

Sketch #7







**VIRGINIA POWER**  
NORTH CAROLINA POWER  
ENGINEERING AND CONSTRUCTION  
RICHMOND, VIRGINIA

**INSERVICE INSPECTION ISOMETRIC**  
RC SYS LOOP 1 REACTOR COOLANT PIPE  
NORTH ANNA POWER STATION UNIT 1  
VIRGINIA POWER

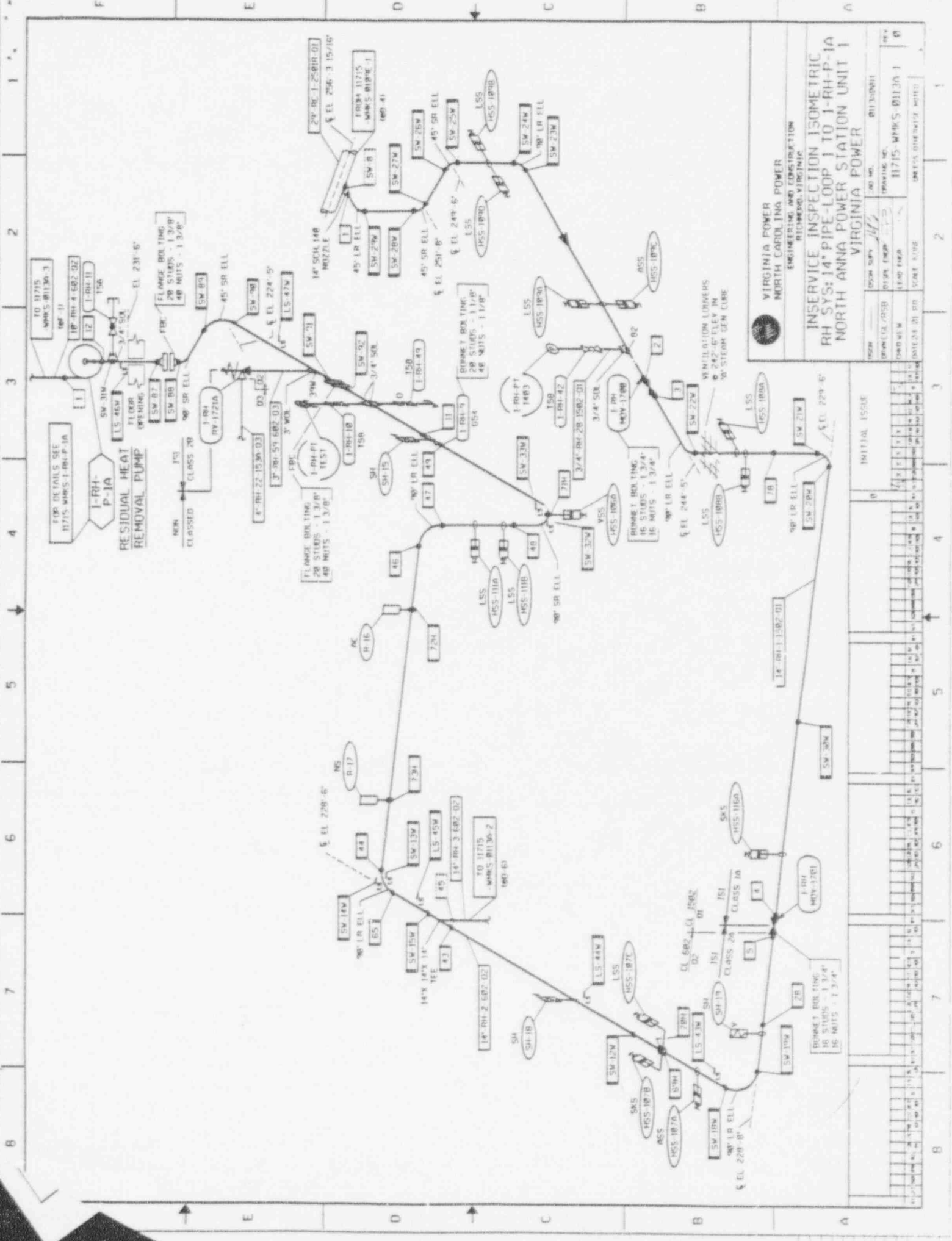
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UNLESS OTHERWISE NOTED

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VIRGINIA POWER  
NORTH CAROLINA POWER  
ENGINEERING AND CONSTRUCTION  
RICHMOND, VIRGINIA

INSERVICE INSPECTION ISOMETRIC  
RH SYS: 14" PIPE-LOOP 1 TO 1-RH-P-1A  
NORTH ANNA POWER STATION UNIT 1  
VIRGINIA POWER

NO. 11715	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 1	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 2	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 3	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 4	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 5	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 6	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 7	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 8	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 9	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 10	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 11	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 12	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 13	DATE: 11/15/81	BY: J. L. BROWN
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REVISION: 16	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 17	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 18	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 19	DATE: 11/15/81	BY: J. L. BROWN
REVISION: 20	DATE: 11/15/81	BY: J. L. BROWN

INITIAL ISSUE

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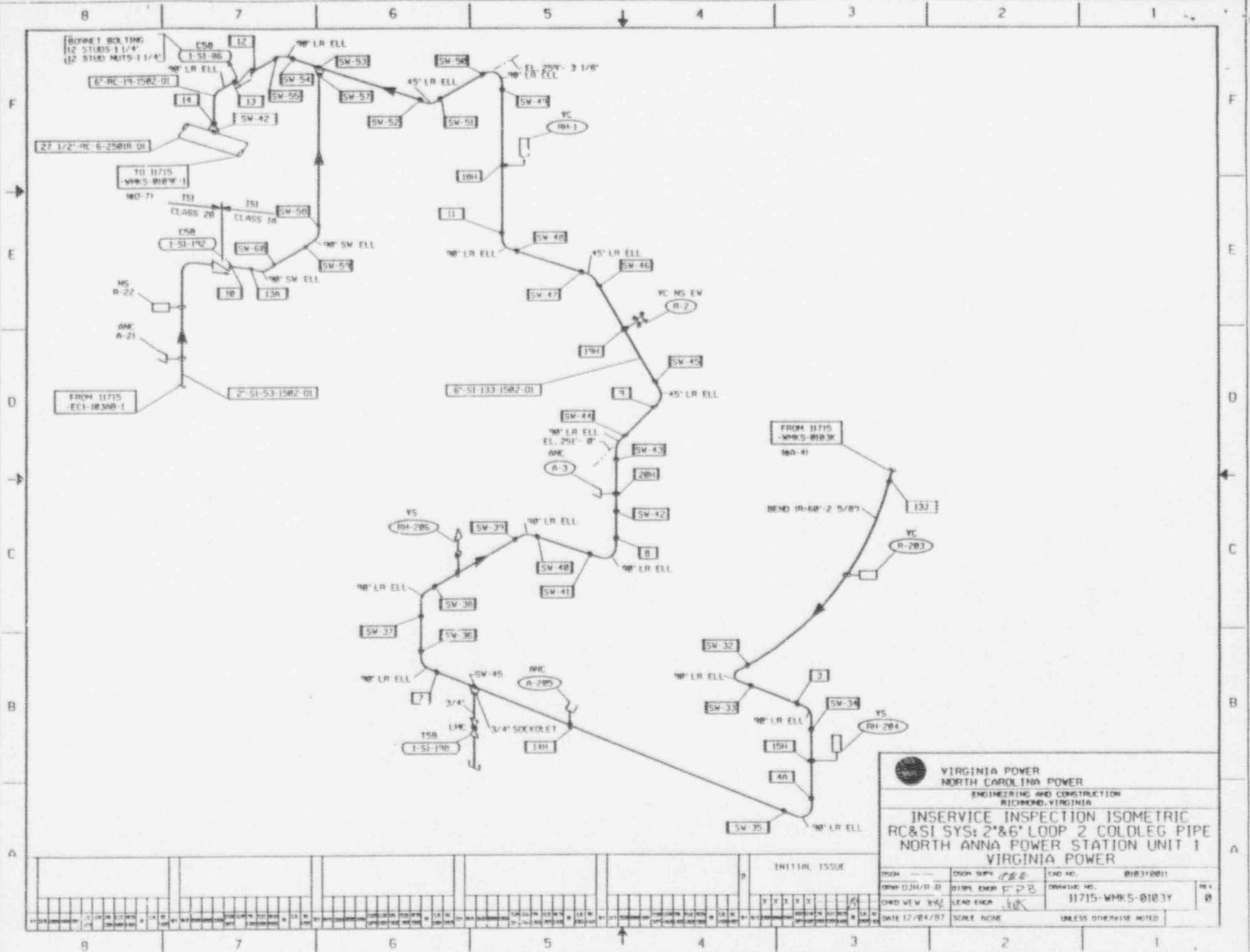
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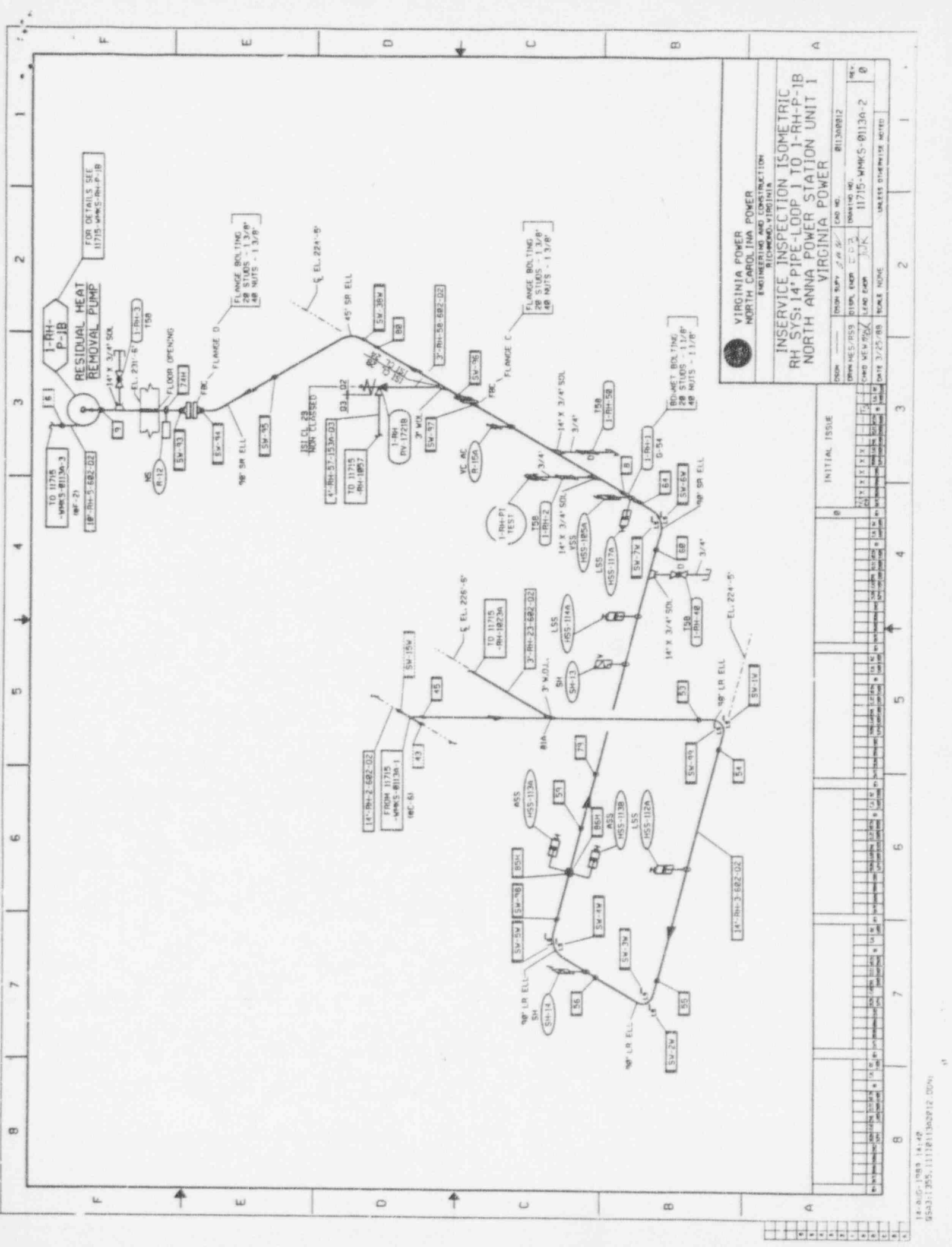
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<b>VIRGINIA POWER</b> <b>NORTH CAROLINA POWER</b> ENGINEERING AND CONSTRUCTION RICHMOND, VIRGINIA			
<b>INSERVICE INSPECTION ISOMETRIC</b> <b>RC&amp;SI SYS: 2"X6" LOOP 2 COLDLEG PIPE</b> <b>NORTH ANNA POWER STATION UNIT 1</b> <b>VIRGINIA POWER</b>			
DESIGNED BY (Signature)	CHECKED BY (Signature)	DRAWING NO. 11715-WMKS-0103Y	REV. 0
DATE 12/24/87	SCALE NONE	UNLESS OTHERWISE NOTED	



VIRGINIA POWER  
NORTH CAROLINA POWER  
ENGINEERING AND CONSTRUCTION  
RICHMOND, VIRGINIA

INSERVICE INSPECTION ISOMETRIC  
RH SYS: 14" PIPE-LOOP 1 TO 1-RH-P-1B  
NORTH ANNA POWER STATION UNIT 1  
VIRGINIA POWER

ITEM	QUANTITY	UNIT	DATE	BY	REVISION
1	1	FLANGE	11/7/83	WKS-0113A-2	0
2	1	FLANGE	11/7/83	WKS-0113A-2	0
3	1	FLANGE	11/7/83	WKS-0113A-2	0
4	1	FLANGE	11/7/83	WKS-0113A-2	0
5	1	FLANGE	11/7/83	WKS-0113A-2	0
6	1	FLANGE	11/7/83	WKS-0113A-2	0
7	1	FLANGE	11/7/83	WKS-0113A-2	0
8	1	FLANGE	11/7/83	WKS-0113A-2	0
9	1	FLANGE	11/7/83	WKS-0113A-2	0
10	1	FLANGE	11/7/83	WKS-0113A-2	0
11	1	FLANGE	11/7/83	WKS-0113A-2	0
12	1	FLANGE	11/7/83	WKS-0113A-2	0
13	1	FLANGE	11/7/83	WKS-0113A-2	0
14	1	FLANGE	11/7/83	WKS-0113A-2	0
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16	1	FLANGE	11/7/83	WKS-0113A-2	0
17	1	FLANGE	11/7/83	WKS-0113A-2	0
18	1	FLANGE	11/7/83	WKS-0113A-2	0
19	1	FLANGE	11/7/83	WKS-0113A-2	0
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23	1	FLANGE	11/7/83	WKS-0113A-2	0
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44	1	FLANGE	11/7/83	WKS-0113A-2	0
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98	1	FLANGE	11/7/83	WKS-0113A-2	0
99	1	FLANGE	11/7/83	WKS-0113A-2	0
100	1	FLANGE	11/7/83	WKS-0113A-2	0

**NORTH ANNA UNIT 2**  
**RELIEF REQUEST NDE-19**

I. IDENTIFICATION OF COMPONENTS

<u>Mark/Weld #</u>	<u>Line #</u>	<u>Drawing #</u>	<u>Class</u>
1	12050-WMKS-RC-R-1.2	1	
10	6"-RC-439-1502-Q1	12050-WMKS-RC-E-2	1
4	31"-RC-402-2501-Q1	12050-WMKS-0109E-1	1
5	31"-RC-402-2501-Q1	12050-WMKS-0109E-1	1
SW-79	32"-SHP-401-601-Q2	12050-WMKS-0101B	2
SW-80	32"-SHP-401-601-Q2	12050-WMKS-0101B	2
SW-88	32"-SHP-401-601-Q2	12050-WMKS-0101B	2
SW-89	32"-SHP-401-601-Q2	12050-WMKS-0101B	2
57H	16"-WFPD-424-601-Q2	12050-WMKS-0102A	2
59H	16"-WFPD-424-601-Q2	12050-WMKS-0102A	2
WS-1	12050-WMKS-CH-P-1B	2	
WS-2	12050-WMKS-CH-P-1B	2	
WS-3	12050-WMKS-CH-P-1B	2	
WS-4	12050-WMKS-CH-P-1B	2	
4A	12"-RS-408-153A-Q2	12050-WMKS-0104DA	2
SW-58	8"-QS-403-153A-Q3	12050-WMKS-0107D	2
SW-76	3"-SI-423-1502-Q2	12050-WMKS-0111AAJ	2
22	3"-CH-402-1502-Q2	12050-WMKS-0111AAM	2
LS-5		12050-WMKS-SI-P-1A	2

II. IMPRACTICABLE CODE REQUIREMENTS

The 1986 Edition of ASME Section XI in tables IWB-2500-1 and IWC-2500-1 does not allow any limitations to the required volumetric and surface examinations. Code Case N-460, Alternative Examination Coverage for Class 1 and Class 2 Welds, allows a reduction in coverage, if it is less than 10%.

III. BASIS FOR RELIEF

The components listed above have been examined to the extent practical as required by the Code. Due to interferences of other components or weld joint geometry, the reduction in coverage for the listed components was greater than 10%. Tables NDE-19-1, 2, 3a and 3b are provided detailing the limitations experienced. Amplifying sketches are also provided. Alternative components were not substituted for these examinations due to the mandatory selection requirements of the Code, or because of the prorated selection criteria for piping in Category C-F-1 (Note 2).

IV. ALTERNATE PROVISIONS

It is proposed that the examinations already completed at the reduced coverage be counted as meeting the Code requirements.

**Table NDE-19-1**  
**North Anna Unit 2**  
**Examination Coverage Estimates (Vessel)**  
**Category B-A, Item B1.40**

<u>Mark/Weld #</u>	<u>Beam Angle</u>	<u>Exam Area</u>	<u>Scan Direction</u>	<u>% Exam</u>	<u>Reason For Partial</u>	<u>Sketch #</u>
1	0	Weld & Base	-	72	Proximity To Flange And Lifting Lug Interference	1
(0 to 120 degrees)	45	Weld	2	13		
	45	Weld	5	97		
	45	Weld	7	99		
	45	Weld	8	99		
	60	Weld	2	7		
	60	Weld	5	98		
	60	Weld	7	99		
	60	Weld	8	99		
	45 & 60	Base	2	36		
	45 & 60	Base	5	91		
	45 & 60	Base	7	68		
	45 & 60	Base	8	68		

UT Scan Direction Definitions

2 - Axial scan flange side of weld

5 - Axial scan head side of weld

7 - Circumferential scan, clockwise (looking down on head)

8 - Circumferential scan, counterclockwise (looking down on head)



**Table NDE-19-2**  
**North Anna Unit 2**  
**Examination Coverage Estimates (Vessels)**  
**Category B-D, Item B3.110**

<u>Mark/Weld #</u>	<u>Beam Angle</u>	<u>Exam Area</u>	<u>Scan Direction</u>	<u>% Exam</u>	<u>Reason For Partial</u>	<u>Sketch#</u>
10	0	Weld & Base	-	80	Nozzle Geometry,	2
	45	Weld	2	85	Cladding Prevents	
	45	Weld	5	25	Extended V-path	
	45	Weld	7	100		
	45	Weld	8	100		
	60	Weld	2	90		
	60	Weld	5	15		
	60	Weld	7	100		
	60	Weld	8	100		
	45 & 60	Base	2	80		
	45 & 60	Base	5	35		
	45 & 60	Base	7	65		
	45 & 60	Base	8	65		

UT Scan Direction Definitions

2 - Axial scan vessel side of weld

5 - Axial scan nozzle side of weld

7 - Circumferential scan, clockwise when looking in direction of isometric flow (weld count)

8 - Circumferential scan, counterclockwise when looking in direction of isometric flow (weld count)

**Table NDE-19-3a**  
**North Anna Unit 2**  
**Examination Coverage Estimates (Piping & Integral Attachments)**

Mark/Weld #	Category	Item #	UT Scan Coverage %				Surface Coverage %	Reason For Partial	Sketch #
			2	5	7	8			
4	B-F	B5.70	22	100	100	100	N/A	Nozzle & Weld Crown Geometry, Material Attenuation Prevents Extended V-path	3
5	B-F	B5.70	100	22	100	100	N/A	Nozzle & Weld crown Geometry, Material Attenuation Prevents Extended V-path	3
SW-79	C-C	C3.20		N/A			50	Support Configuration	4
SW-80	C-C	C3.20		N/A			50	Support Configuration	4
SW-88	C-C	C3.20		N/A			50	Support Configuration	4
SW-89	C-C	C3.20		N/A			50	Support Configuration	4
57H	C-C	C3.20		N/A			70	Welded Pipe Connection Interface	5
59H	C-C	C3.20		N/A			70	Welded Pipe Connection Interface	5
WS-1	C-C	C3.20		N/A			83	Support Configuration	6
WS-2	C-C	C3.20		N/A			78	Support Configuration	6
WS-3	C-C	C3.20		N/A			83	Support Configuration	6
WS-4	C-C	C3.20		N/A			83	Support Configuration	6

UT Scan Direction Definitions

2 - Axial scan, 180 degrees from isometric flow direction (weld count).

5 - Axial scan, the same direction as the isometric flow (weld count).

7 - Circumferential scan, clockwise rotation when viewing in the direction of isometric flow.

8 - Circumferential scan, counterclockwise rotation when viewing in the direction of isometric flow.

**Table NDE-19-3b**  
**North Anna Unit 2**  
**Examination Coverage Estimates (Piping & Integral Attachments)**

Mark/Weld #	Category	Item #	UT Scan Coverage %				Surface Coverage %	Reason For Partial	Sketch #
			2	5	7	8			
4A	C-F-1	C5.11	76	76*	100	100	N/A	Interference From Two Socket Welds	7
SW-58	C-F-1	C5.11	81	81*	90	90	N/A	Interference From Adjacent Socket Welds	8
SW-76	C-F-1	C5.11	70	70*	100	100	N/A	Interference From Adjacent Socket Welds	9
22	C-F-1	C5.11	83	83*	100	100	N/A	Valve To Tee Joint Configuration	10
LS-5	C-G	C6.10		N/A			78	Pump Mount Interference	11

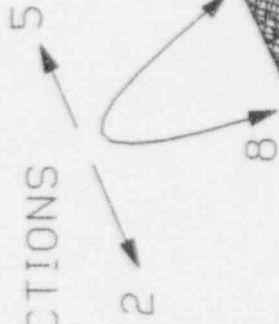
\* - Extended V-path from 2 scan used.

UT Scan Direction Definitions

- 2 - Axial scan, 180 degrees from isometric flow direction (weld count).
- 5 - Axial scan, the same direction as the isometric flow (weld count).
- 7 - Circumferential scan, clockwise rotation when viewing in the direction of isometric flow.
- 8 - Circumferential scan, counterclockwise rotation when viewing in the direction of isometric flow.

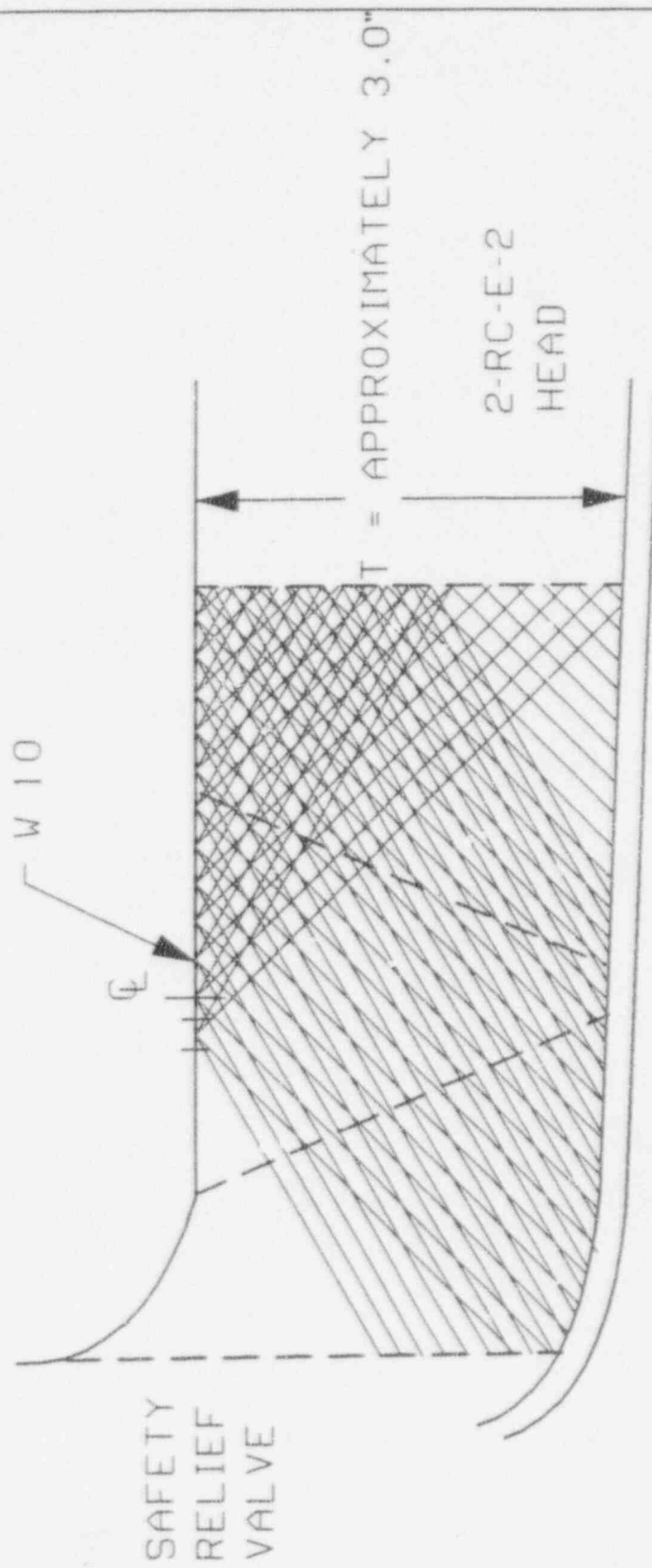
45 DEGREE AND 60 DEGREE

SCAN DIRECTIONS



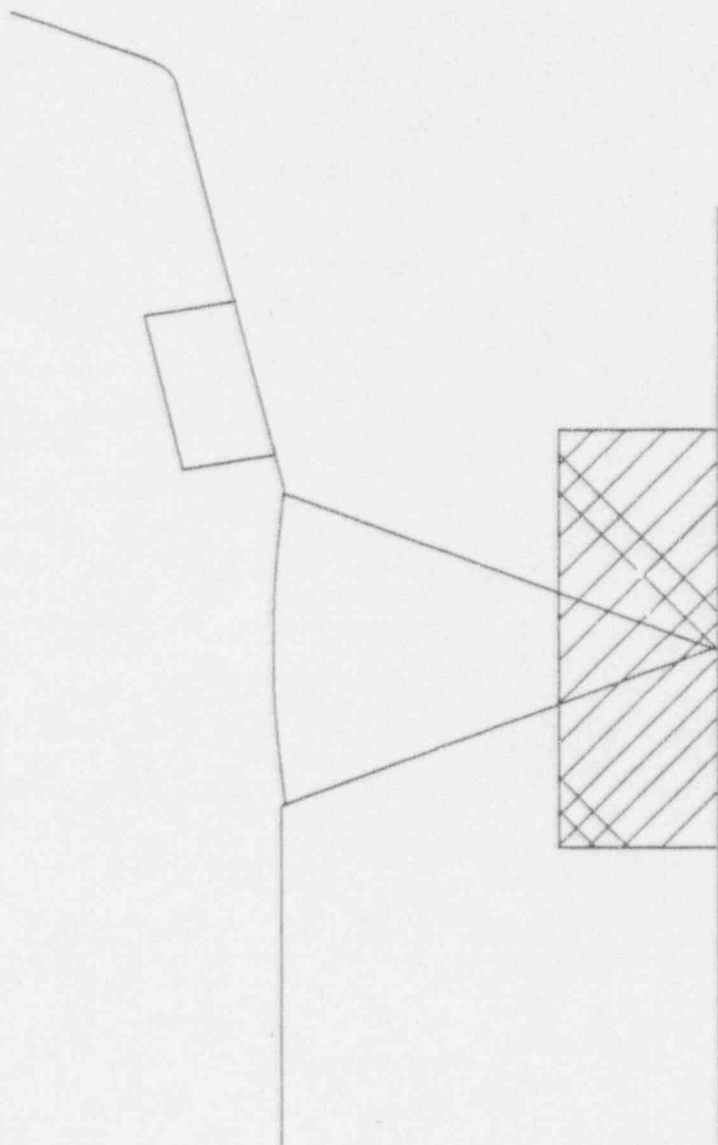
WELD 1

Sketch #1



Sketch #2

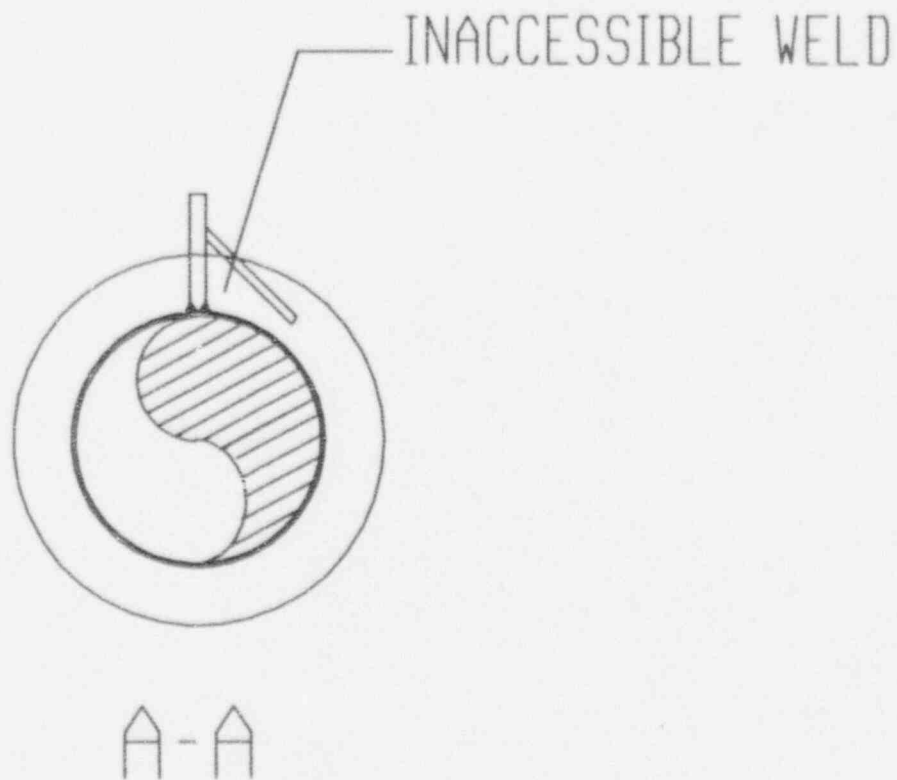
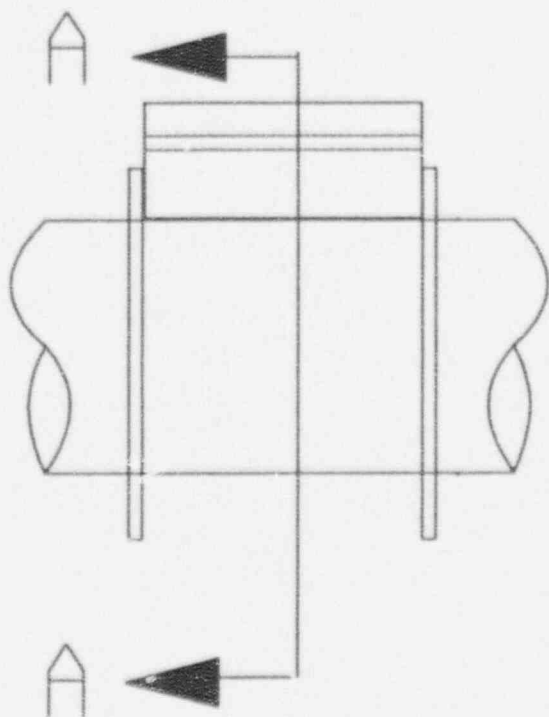
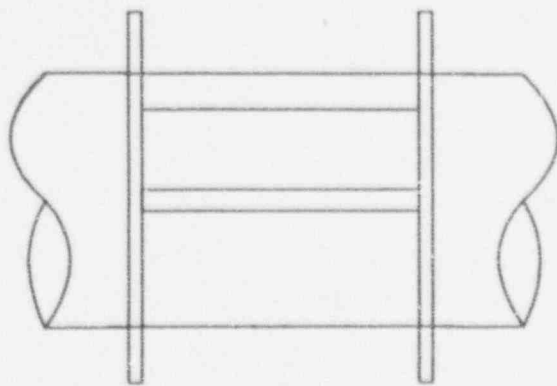
2-RC-E-1A



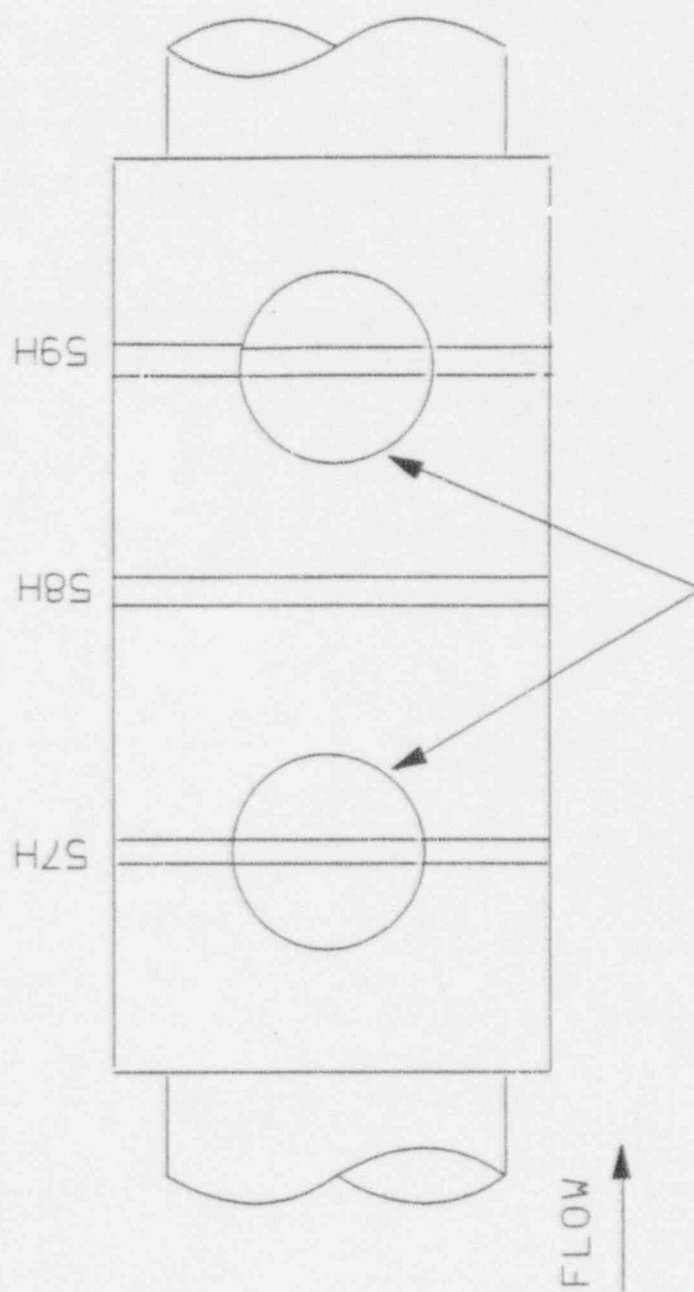
WELD 4 AND 5 (TYPICAL)

Sketch #3



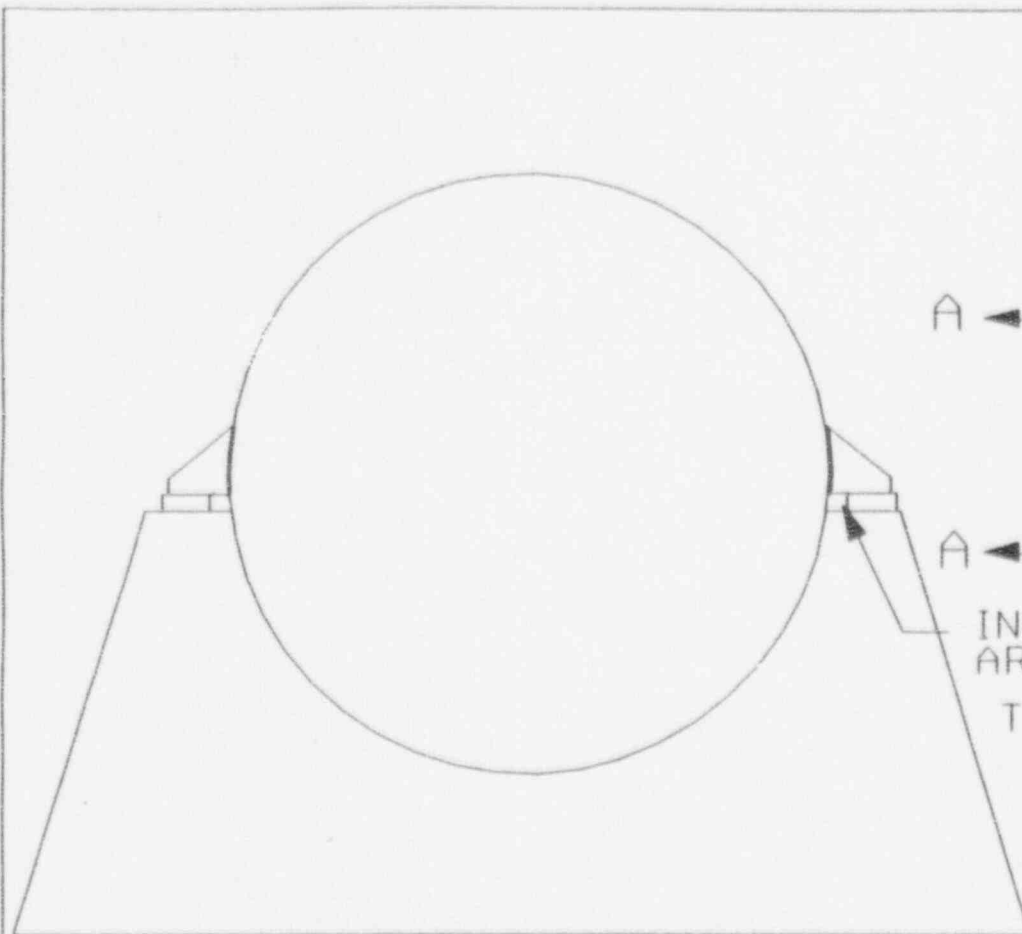


INTEGRAL ATTACHMENTS SW 79, SW-80, SW-88, AND SW-89  
11715-WMKS-101B



LIMITAION: AREAS UNDER WEI.DED  
PIPE CONNECTION FOR SNUBBERS

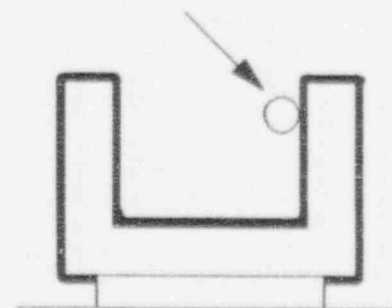
Sketch #5



2" DRAIN LINE RESTRICTS WS-02

INACCESSIBLE  
AREA

TYPICAL OF 4



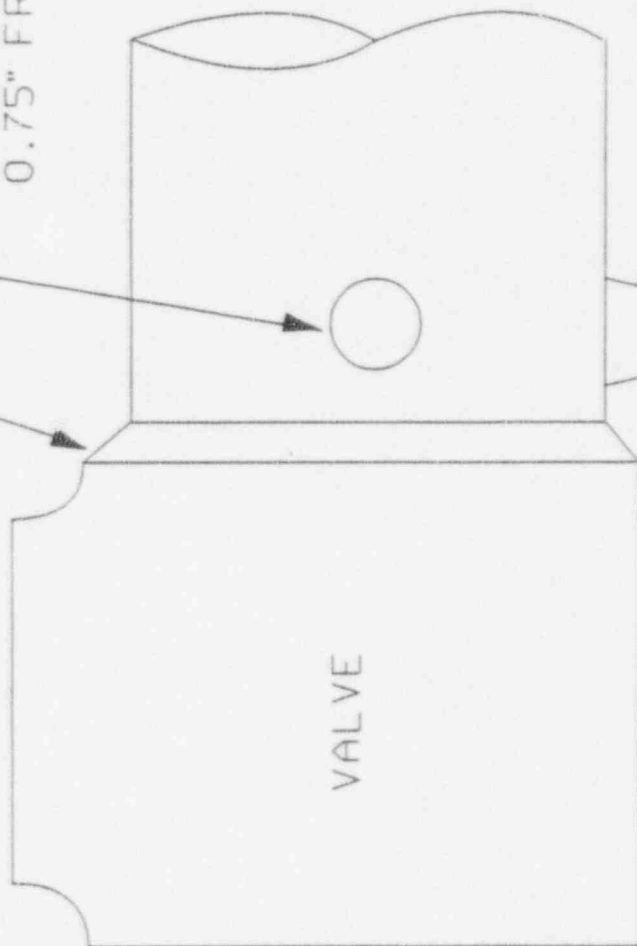
A - A

END VIEW OF 1-CH-P-1B

Sketch #6

WELD 4A

2.25" SOCKET @ 90 DEGREES  
0.75" FROM TOE OF WELD

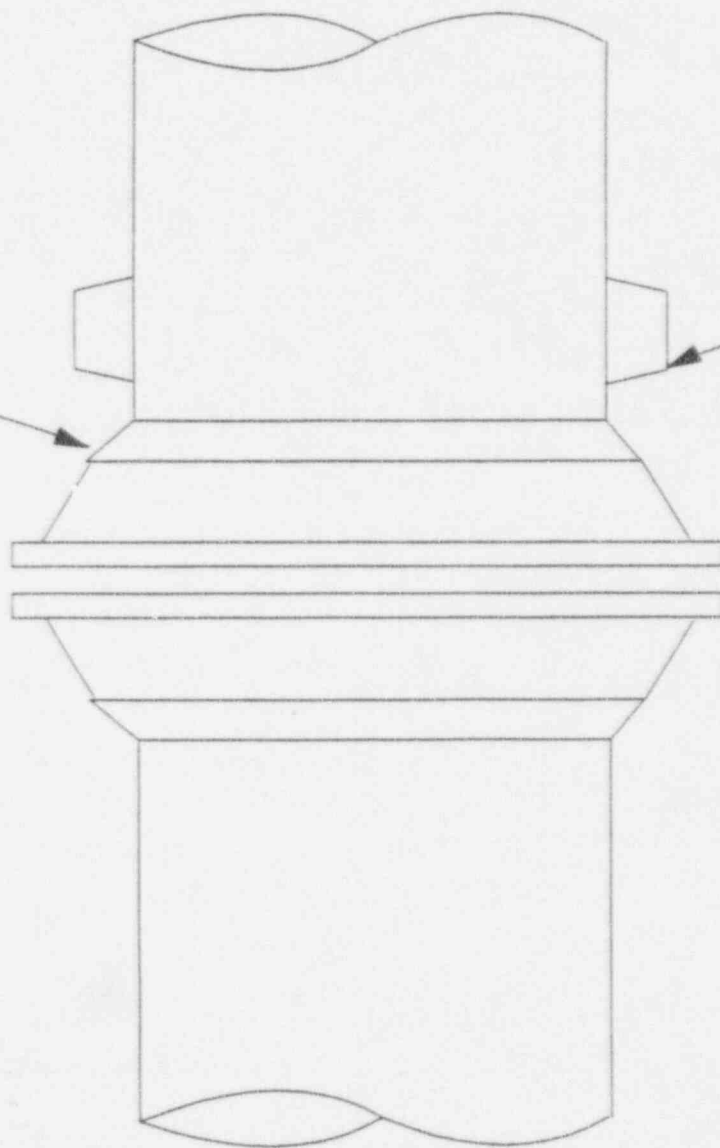


VALVE

2.25" SOCKET @ 180 DEGREES  
0.50" FROM TOE OF WELD

Sketch #7

WELD SW-58

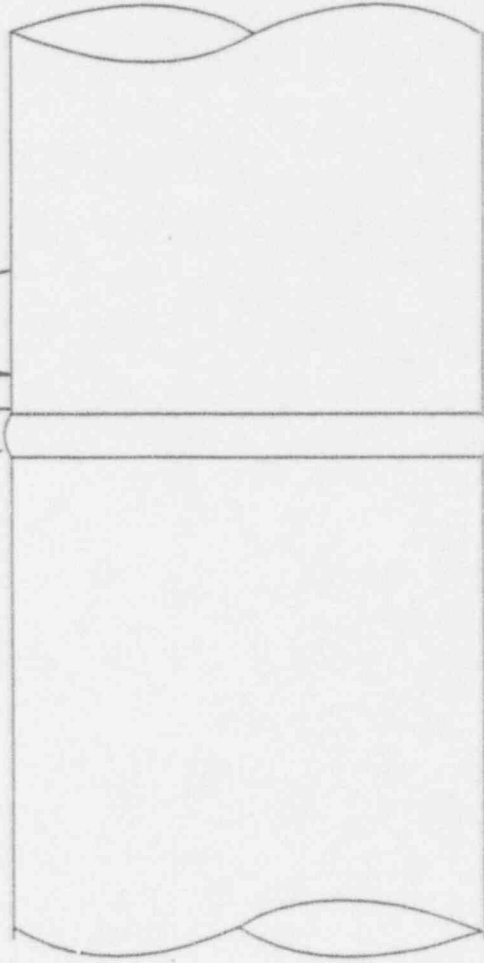


2.5" SOCKET WELDED CONNECTIONS  
(TYPICAL OF 2)

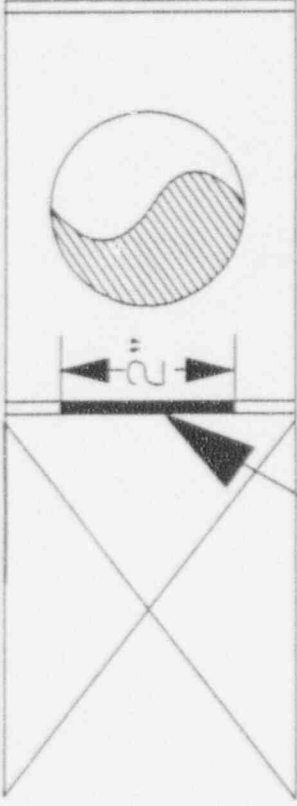
Sketch #8

WELD SW-76

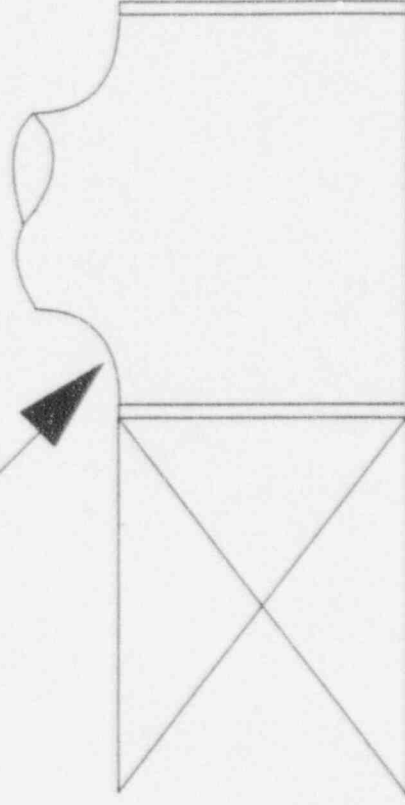
0.5"



Sketch #9

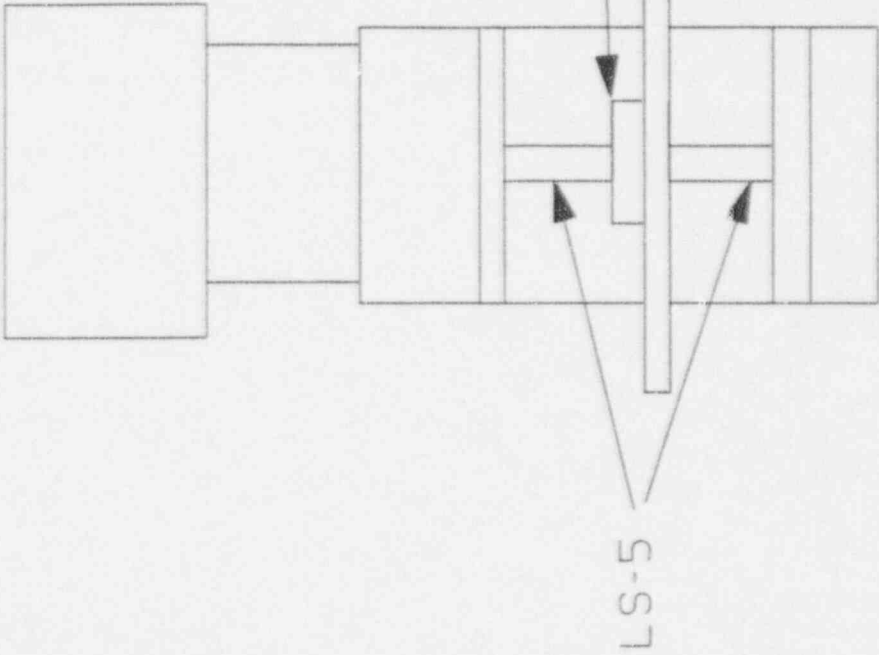


2" AREA NOT SCANNED



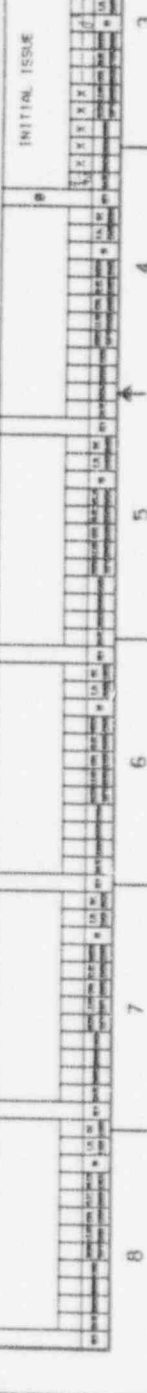
2-CH-1 93 VALVE TEE  
WELD 22

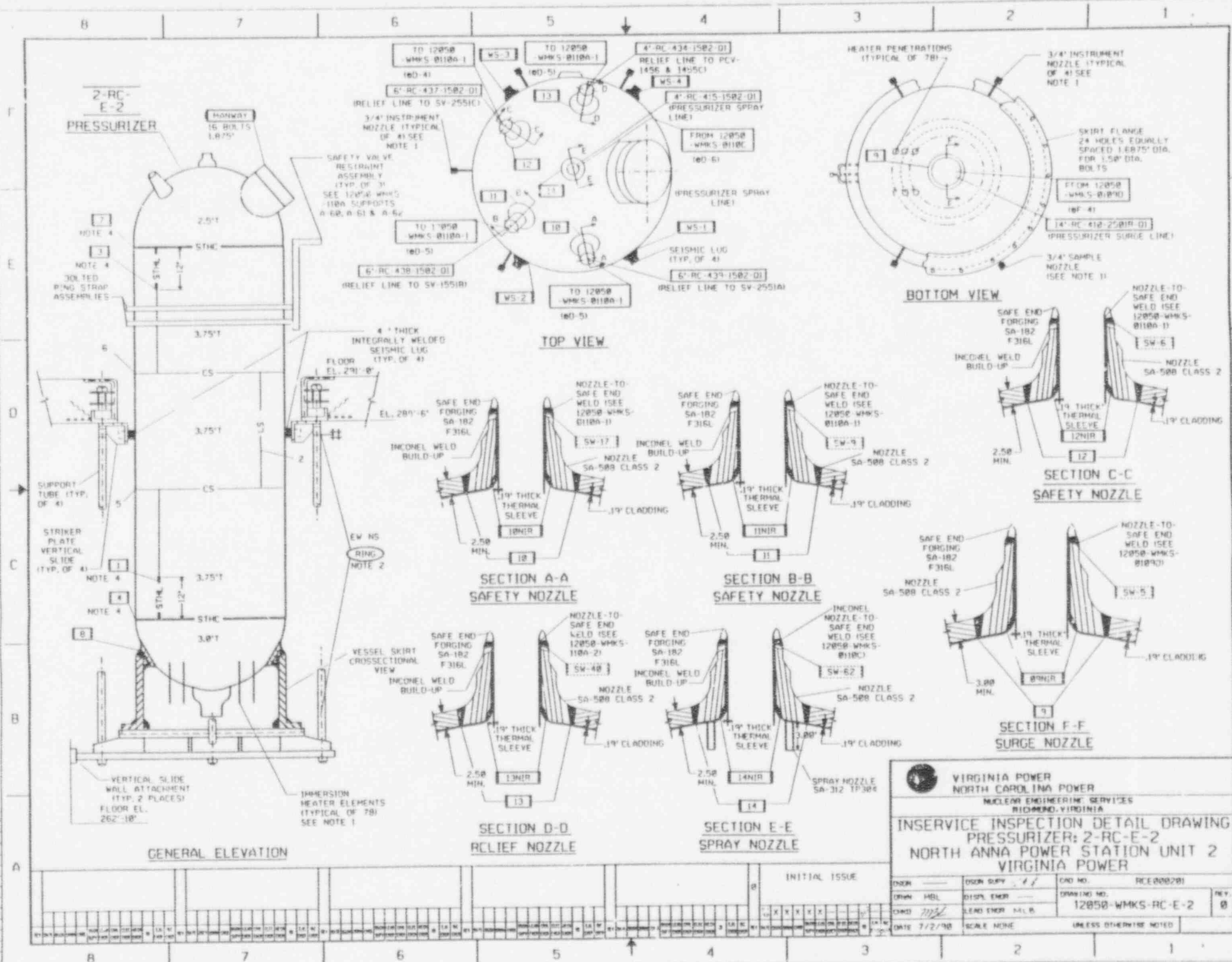
Sketch #10



Sketch #11







<b>VIRGINIA POWER</b> NORTH CAROLINA POWER NUCLEAR ENGINEERING SERVICES RICHMOND, VIRGINIA			
<b>INSERVICE INSPECTION DETAIL DRAWING</b> PRESSURIZER: 2-RC-E-2 NORTH ANNA POWER STATION UNIT 2 VIRGINIA POWER			
DESIGNED: _____ DRAWN: HBL CHECKED: <i>[Signature]</i> DATE: 7/2/90	DESIGN SURV: <i>[Signature]</i> DISPL. ENGR: _____ LEAD ENGR: H.B.	CND NO.: RCE008201 DRAWING NO.: 12050-WMKS-RC-E-2 SCALE: NONE UNLESS OTHERWISE NOTED	REV. 0

STEAM  
GENERATOR

2-RC-  
E-1A  
(NOTE 2)

REACTOR COOLANT  
PUMP

2-RC-  
P-1A  
(NOTE 3)

REACTOR  
VESSEL

2-RC-  
R-1  
(NOTE 1)

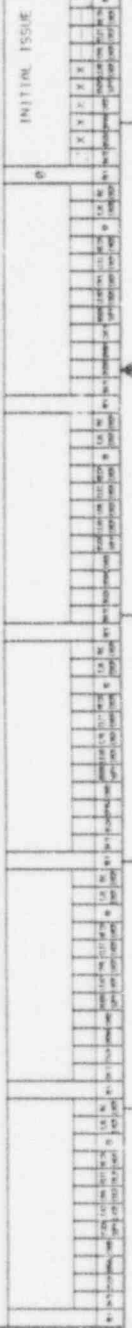
VIRGINIA POWER  
NORTH CAROLINA POWER  
POWER ENGINEERING SERVICES  
RICHMOND, VIRGINIA

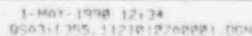
INSERVICE INSPECTION ISOMETRIC  
RC SYS: LOOP 1 REACTOR COOLANT PIPE  
NORTH ANNA POWER STATION UNIT 2  
VIRGINIA POWER

DESIGN	DESIGN DATE	DESIGN NO.
ISSUED	ISSUED DATE	ISSUED NO.
REVISION	REVISION DATE	REVISION NO.
DATE 12/8/83	SCALE NONE	UNLESS OTHERWISE NOTED

INITIAL ISSUE

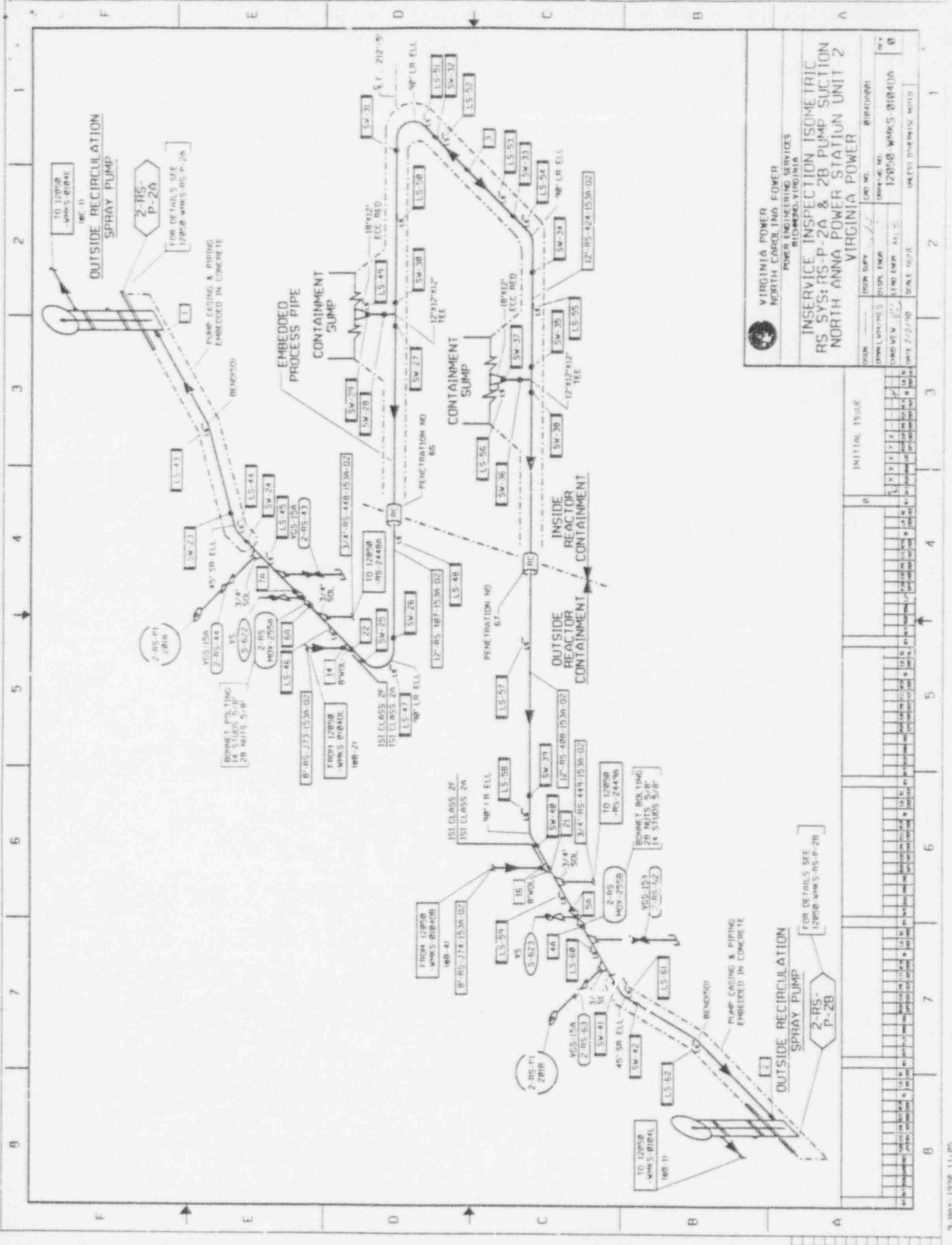
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4	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
5	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
6	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
7	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
8	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
9	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
10	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
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25	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
26	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
27	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
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29	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
30	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
31	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
32	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
33	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
34	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
35	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
36	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
37	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
38	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
39	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
40	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
41	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
42	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
43	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
44	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
45	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
46	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
47	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
48	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
49	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS
50	ISSUED FOR CONSTRUCTION	12/8/83	WMS	WMS











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

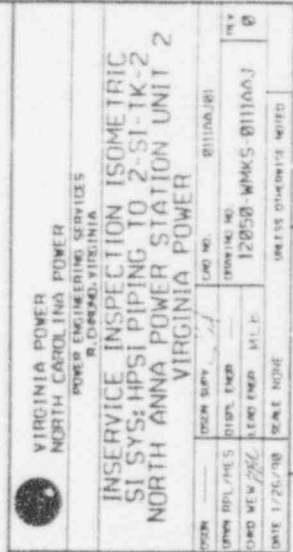
**INSERVICE INSPECTION ISOMETRIC**  
 RS SYS-P-2A & 2B PUMP SECTION  
 NORTH ANNA POWER STATION UNIT 2  
 VIRGINIA POWER

DESIGN	DESIGN	DATE	SCALE
12/20/88	12/20/88	12/20/88	1/2" = 1'-0"
12/20/88	12/20/88	12/20/88	1/2" = 1'-0"
12/20/88	12/20/88	12/20/88	1/2" = 1'-0"

INITIAL ISSUE		DATE		BY		CHECKED BY		APPROVED BY	
1		12/20/88		12/20/88		12/20/88		12/20/88	
2		12/20/88		12/20/88		12/20/88		12/20/88	
3		12/20/88		12/20/88		12/20/88		12/20/88	
4		12/20/88		12/20/88		12/20/88		12/20/88	
5		12/20/88		12/20/88		12/20/88		12/20/88	
6		12/20/88		12/20/88		12/20/88		12/20/88	
7		12/20/88		12/20/88		12/20/88		12/20/88	
8		12/20/88		12/20/88		12/20/88		12/20/88	
9		12/20/88		12/20/88		12/20/88		12/20/88	
10		12/20/88		12/20/88		12/20/88		12/20/88	

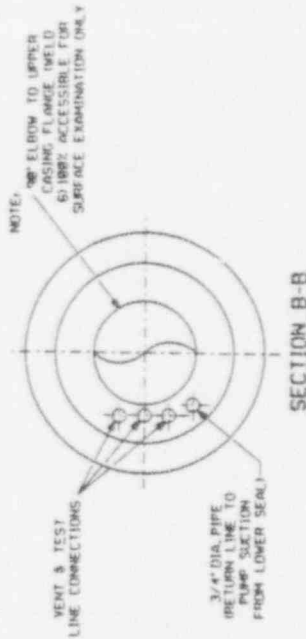
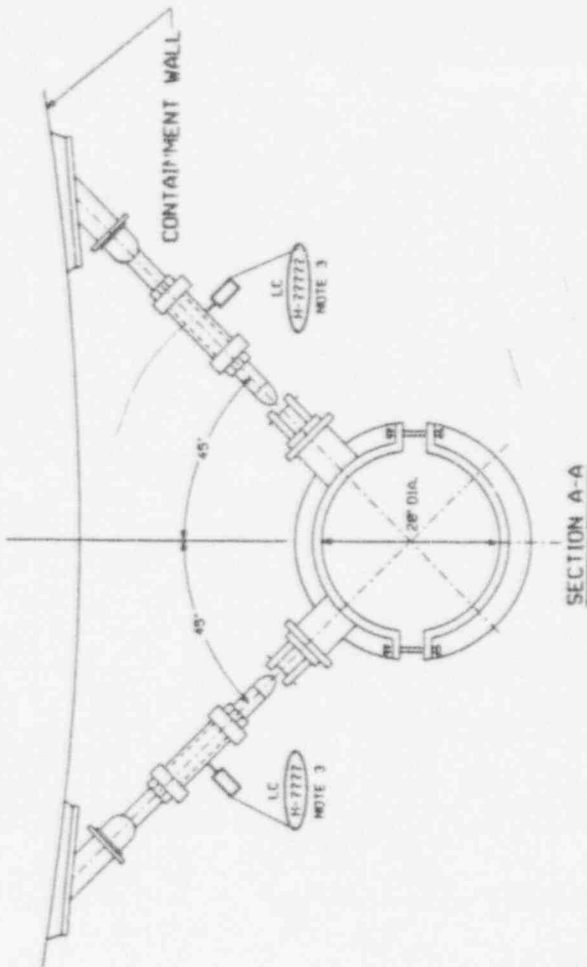
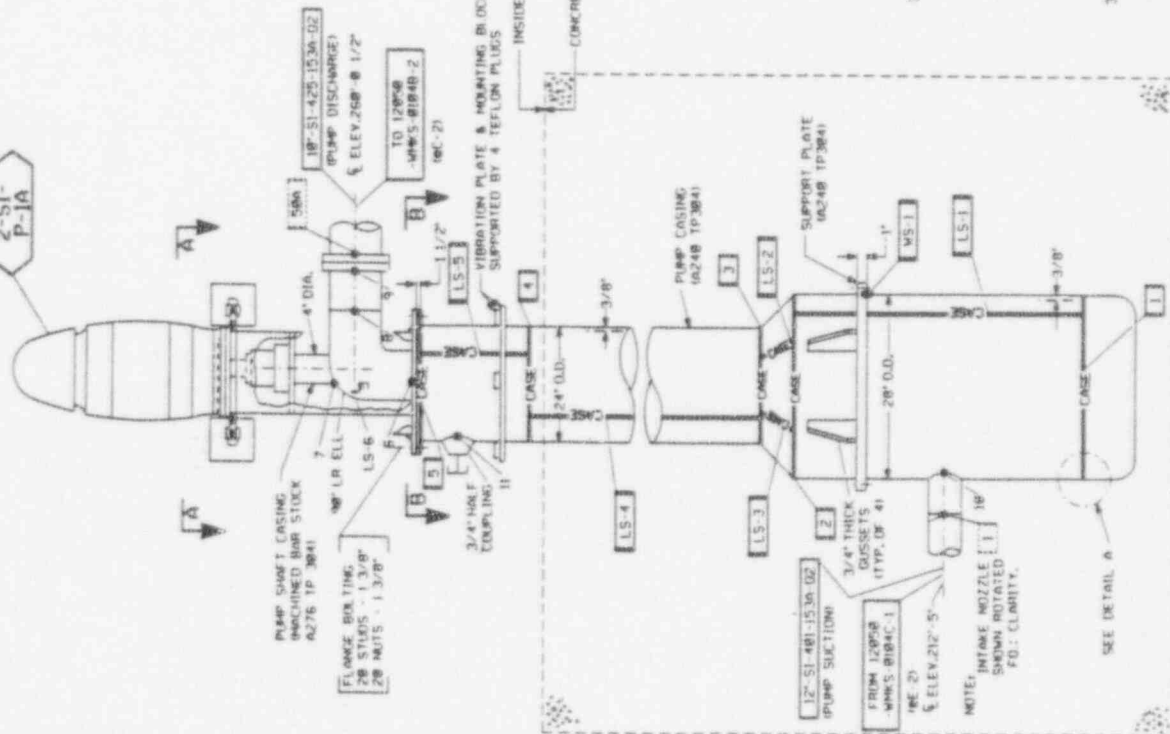




[illegible]



# LOW HEAD SAFETY INJECTION PUMP



<b>VIRGINIA POWER</b> <b>NORTH CAROLINA POWER</b> <b>NUCLEAR ENGINEERING SERVICES</b> <b>WILKES-BARRIE, VIRGINIA</b>			
<b>INSERVICE INSPECTION DETAIL DRAWING</b> <b>SAFETY INJECTION PUMP-2-SI-P-1A</b> <b>NORTH ANNA POWER STATION UNIT 2</b> <b>VIRGINIA POWER</b>		DRAWING NO. 12058-WMKS-SI-P-1A	REV. 0
DESIGNER J. H. B.	CHECKER J. H. B.	DATE 7-30-88	SCALE NONE

INITIAL ISSUE