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O'HANLON,J.P. Virginia Power (Virginia Electric & Power Co.)
RECIP.NAME RECIPIENT AFFILIATION
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SUBJECT: Requests relief from exam coverage requirements of ASME Section XI for five welds identified in relief requests SR-14 through SR-17.

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MRA

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

February 7, 1996

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

Serial No. 96-009
NLOS/ETS: R0
Docket Nos. 50-281
License Nos. DPR-37

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION UNIT 2
INSERVICE INSPECTION PROGRAM
EXAMINATION RELIEF REQUESTS

Surry Power Station Unit 2 is currently in the first period of its third ten year inservice inspection interval. The component examination program is conducted in accordance with ASME Section XI 1989 Edition. ASME Code Case N-460 has been incorporated into the Inservice Inspection Program as an alternative for examination coverage of class 1 and 2 welds. During the recent Surry refueling outage, the examination coverage requirements of Code Case N-460 and ASME Section XI could not be met for five weld examinations as detailed in the attached relief requests (SR-14 through SR-17). Therefore, pursuant to 10 CFR 50.55a, paragraph g(5), Virginia Electric and Power Company requests relief from the examination coverage requirements of ASME Section XI for these welds.

In addition, four of the five welds require additional examinations during the second and third periods of the third ten year inspection interval. However, the Code required examination coverage will not be possible for these examinations. Therefore, relief is also being requested from the examination coverage requirements of ASME Section XI for the four welds identified in Relief Requests SR-15, SR-16 and SR-17 for the remainder of the third ten year inservice inspection interval.

Justification from the partial examination coverage requirements are provided in the attached relief requests (SR-14 through 17).

Should you have any questions or require additional information, please contact us.

Very truly yours,

James P. O'Hanlon

James P. O'Hanlon
Senior Vice President - Nuclear

Attachments

A047
1/1

120051

cc: U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N. W.
Suite 2900
Atlanta, Georgia 30323

Mr. M. W. Branch
NRC Senior Resident Inspector
Surry Power Station

Attachment 1

Surry Unit 2

Weld Examination Partial Coverage Relief Requests

SR-14 through SR-17

RELIEF REQUEST SR-14

I. IDENTIFICATION OF COMPONENT

Mark/Weld#	Line#	Drawing#	Class
3-04A	3"-CH-381-1503	11548-WMKS-CH-11	2

II. IMPRACTICABLE CODE REQUIREMENTS

The 1989 edition of ASME Section XI Table IWC-2500-1, examination category C-F-1, item number C5.11 does not allow any limitations to the required volumetric or 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 component listed is a three inch pipe to valve body weld. This weld is located on the upstream side of the discharge check valve for the "A" charging pump. The component listed above has been examined to the extent practical as required by the Code. Due to interferences from a branch connection and an adjacent valve body the reduction in coverage of the volumetric examination is detailed in Table SR-14-1. The required surface examination had no limitations. Figure SR-14-1 is provided detailing the limitations experienced.

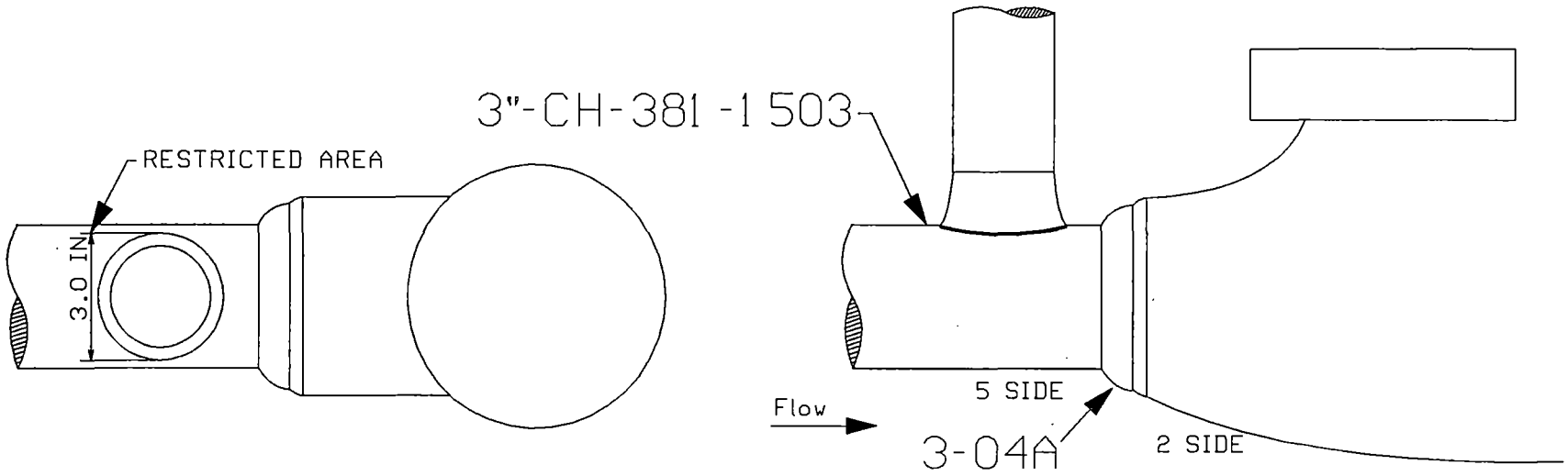
IV. ALTERNATE PROVISIONS

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

Table SR-14-1
Surry Unit 2
Examination Coverage Estimates
11548-WMKS-CH-11
Category C-F-1, Item C5.11

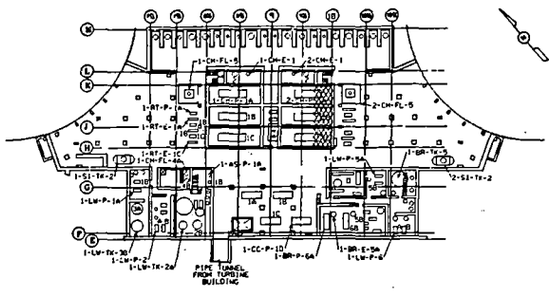
Mark/Weld#	UT Scan Coverage % 2	5	7	8	Surface Examination Coverage %	Reason For Partial
3-04A	73	73	100	100	100	A branch connection limits the 2 and 5 scan to 8 out of 11 inches. A valve body limits the examination to one side. The 2 scan was performed using an extended beam.

UT Scan Direction Definitions
2 - Axial scan, 180 degrees from isometric flow direction.
5 - Axial scan, the same direction as the isometric flow.
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.

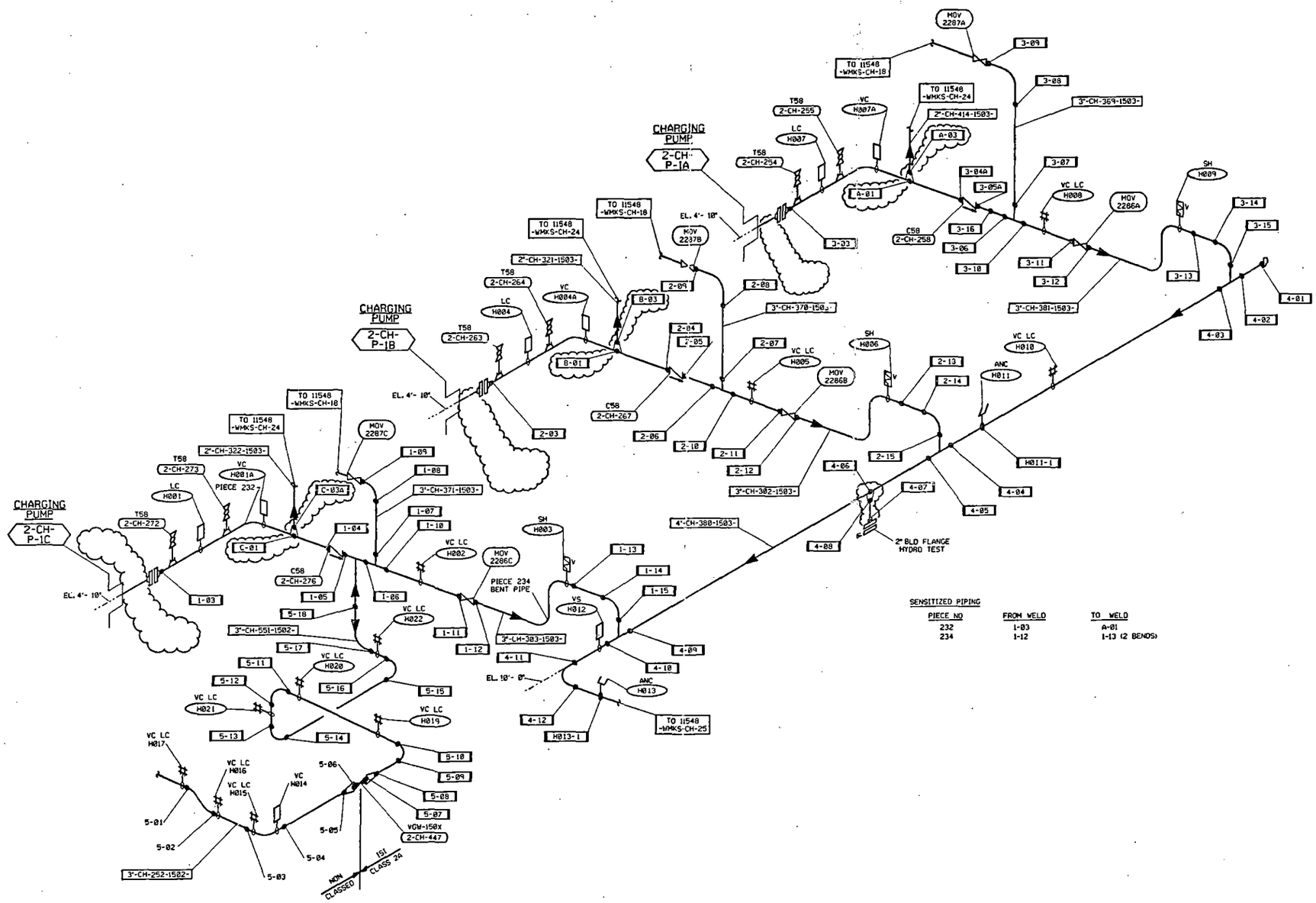


11548-WMKS-CH-11

Figure SR-14-1



KEY PLAN



NOTES:

1. WELD/ITEM NUMBERS ARE INDICATED AS FOLLOWS: 5-6 (DRAWING REFERENCE NO. (SEE REF DWG) — INDIVIDUAL WELD/ITEM NUMBER)
2. ALL PIPING IS ISI CLASS 2B FOR INTERVAL 2
   ALL PIPING IS ISI CLASS 2A FOR INTERVAL 3

SENSITIZED PIPING

PIECE NO	FROM WELD	TO WELD
232	1-03	A-01
234	1-12	1-13 (2 BENDS)

REFERENCE DRAWINGS:

VIR-1-4664	WESTINGHOUSE ISOMETRIC
11548-CBM-088B SHEET 2	ISI CLASSIFICATION BOUNDARY DRAWING
11548-MSK-CH-11	PIPE STRESS SKETCH
11548-FP-18C	PIPING DRAWING
11548-FP-18F	PIPING DRAWING
11448-FP-286E	PIPING DRAWING
11448-FP-286J	PIPING DRAWING
11448-FP-286N	PIPING DRAWING
11448-FP-286AG	PIPING DRAWING

9602120221-01

REV	DATE	DSGN	DRWN	CHKD	DSGN SUPV	CIVIL ENGR	ELEC ENGR	MECH ENGR	ISI	E.M. ENGR	I&C ENGR	ENGR SUPV
5	-95	—	RPD									
4	4-7 -95	—	DMR	DV	ARF	—	—	BR	BC			
3	10-07 -94	—	LPM	DV	ARF	—	—	BC				
2	12-06 -93	—	GTW	BC	ARF	—	—	BJJ	BC			
1	9-16 -93	—	CLW GTW	MS	ARF	—	—	CEB	BC			

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REVISED PER ISI REVIEW. (4)
REVISED PER ISI REVIEW. (3)
REVISED PER ISI REVIEW. (2)
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VIRGINIA POWER
NORTH CAROLINA POWER
NUCLEAR ENGINEERING SERVICES
RICHMOND, VIRGINIA

INSERVICE INSPECTION ISOMETRIC
CH SYS: CHEMICAL & VOLUME CONTROL
SURRY POWER STATION UNIT 2
VIRGINIA POWER

DSGN		DSGN SUPV	ARF
DRWN	RPL/MES	ENGR SUPV	
CHKD	VEW		
DISPL ENGR	BWF	SCALE	NONE

CAD NO. /usr/dgn/355002/0CH0011115OZP
DRAWING NO. 11548-WMKS-CH-11 REV. 5
UNLESS OTHERWISE NOTED SH 1 OF 1

[SDDIMMERY]
8-AUG-1995 14:03
"/usr/dgn/355002/0CH0011115OZP"

RELIEF REQUEST SR-15

I. IDENTIFICATION OF COMPONENT

Mark/Weld#	Drawing#	Class
1-01	11548-WMKS-CH-E-2	2
1-02	11548-WMKS-CH-E-2	2

II. IMPRACTICABLE CODE REQUIREMENTS

The 1989 edition of ASME Section XI Table IWC-2500-1, examination category C-A, item numbers C1.10 and C1.20 do not allow any limitations to the required volumetric or 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

One third of the welds listed above have been examined to the extent practical as required by the Code. The examinations were limited due to interferences from the non-regenerative heat exchanger inlet nozzle and a component support. Similar restrictions are expected for the remaining two thirds. The anticipated reduction in coverage of the volumetric examination is detailed in Table SR-15-1. Figure SR-15-1 is provided detailing the limitations experienced.

IV. ALTERNATE PROVISIONS

It is proposed that the examinations completed at the reduced coverage and scheduled examinations at the coverage stated in Table SR-15-1 be counted as meeting the Code requirements.

Table SR-15-1
Surry Unit 2
Examination Coverage Estimates
11548-WMKS-CH-E-2
Category C-A, Items C1.10 and C1.20

Mark/Weld#	UT Scan Coverage % 2	5	7	8	Section XI Item Number	Reason For Partial
Completed Examinations 0" to 28"						
1-01	93.75	93.75	50	50	C1.20	A component support limits the 7 and 8 scan to 14 inches out of 28 inches (0 inches to 14 inches). An extended beam path was used for the 2 and 5 scans.
1-02	88.39	88.39	100	100	C1.10	A 3 inch OD inlet nozzle 0.6 inches from the toe of weld, a welded support between 17.75 inches and 19.5 inches, the 5 side of the weld is flanged with studs and nuts blocking access.
Scheduled Examinations 28" to 85"						
1-01	93.75	93.75	44	44	C1.20	Two component supports limit the 7 and 8 scans to 25 out of 57 inches. An extended beam path will be used for the 2 and 5 scans.
1-02	84.7	84.7	100	100	C1.10	The 2 and 5 scans will be restricted by two 3 inch OD nozzles 0.6 inches from the toe of weld, three welded supports restricting 1.25 inches. The 5 side of the weld is flanged with studs and nuts blocking access. Extended beam path will be used.
Total Coverage 0" to 85"						
1-01	93.75	93.75	46	46	C1.20	
1-02	85.93	85.93	100	100	C1.10	

UT Scan Direction Definitions

2 - Axial scan head side of weld

5 - Axial scan vessel side of weld

7 - Circumferential scan, clockwise when looking down on the vessel

8 - Circumferential scan, counterclockwise when looking down on the vessel

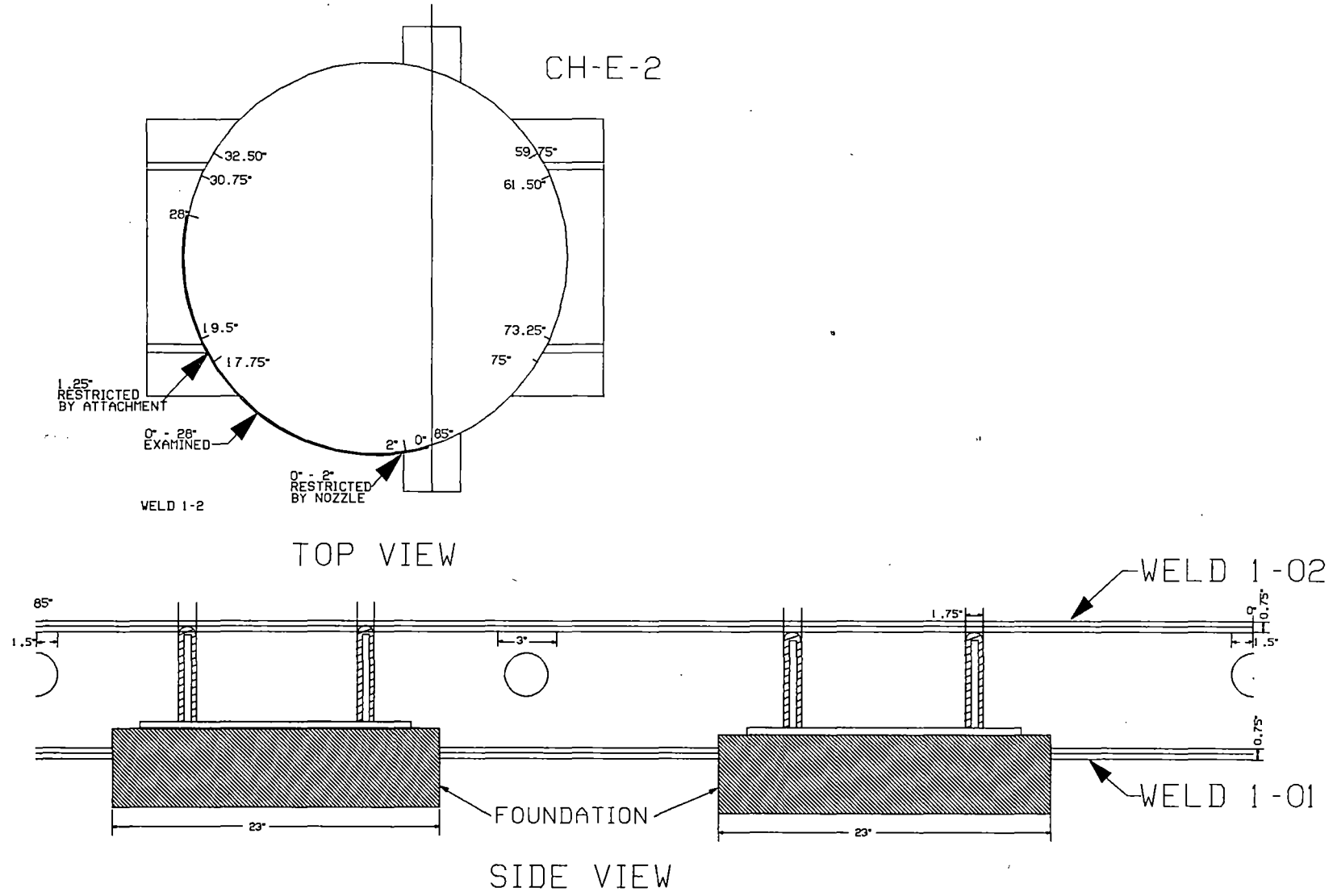
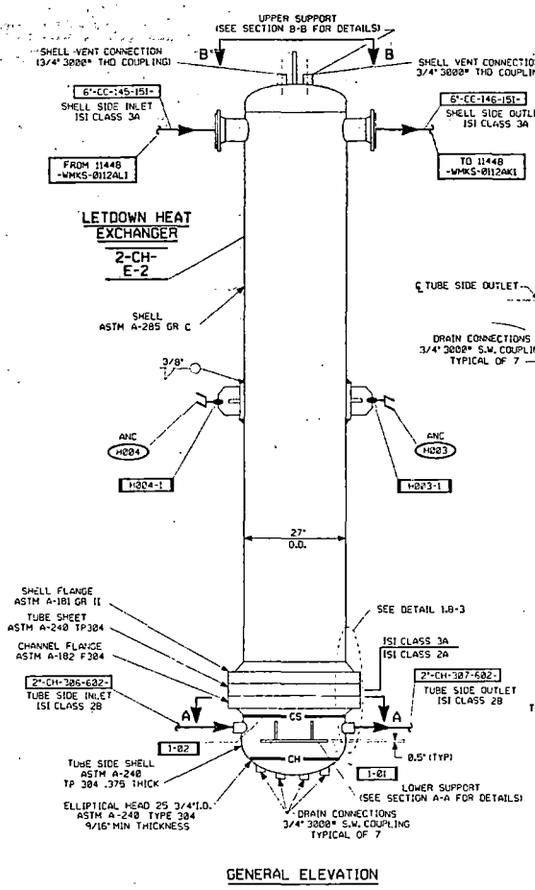
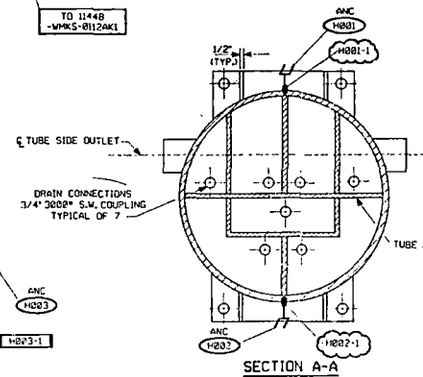


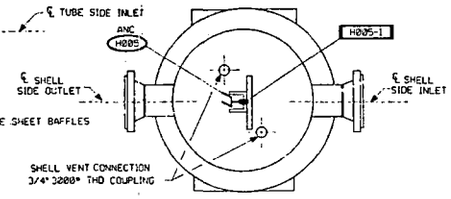
FIGURE SR-15-1



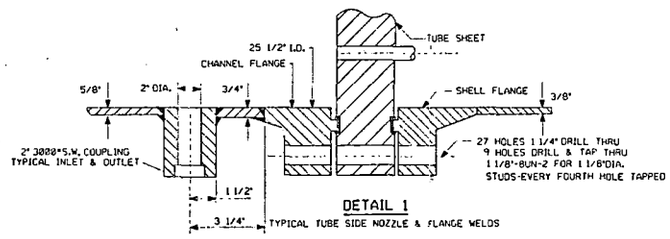
GENERAL ELEVATION



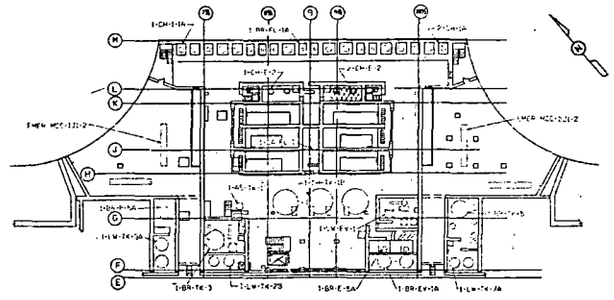
SECTION A-A
LOWER SUPPORT



SECTION B-B
UPPER SUPPORT



DETAIL 1



KEY PLAN

NOTES:

REFERENCE DRAWINGS:

VIR-2-1140	WESTINGHOUSE ISOMETRIC
11548-CBM-071E SHEET 1	ISI CLASSIFICATION BOUNDARY DRAWING
11548-CBM-088A SHEET 2	ISI CLASSIFICATION BOUNDARY DRAWING

9602120221-02

VIRGINIA POWER
NORTH CAROLINA POWER

NUCLEAR ENGINEERING SERVICES
RICHMOND, VIRGINIA

INSERVICE INSPECTION DETAIL DRAWING
LETDOWN HEAT EXCHANGER:2-CH-E-2
SURRY POWER STATION UNIT 2
VIRGINIA POWER

DSGN —	DSGN SUPV ARF	CAD NO. 2051(355.0021CHE00002.ISO	
DRWN MBL	ENGR SUPV	DRAWING NO. 11548-WMKS-CH-E-2	REV. 2
CHKD MBL			
DISPL ENGR BAK	SCALE NONE	UNLESS OTHERWISE NOTED	SH 1 OF 1

REV	DATE	DESCRIPTION
2		REVISED PER ISI REVIEW.
1	8/94	REDRAWN TO SUIT SINGLE SHEET FORMAT

OCT-1993 15:48
2051(355.0021CHE00002.ISO

RELIEF REQUEST SR-16

I. IDENTIFICATION OF COMPONENT

Mark/Weld#	Drawing#	Class
1-01	11548-WMKS-CH-FL-4A	1

II. IMPRACTICABLE CODE REQUIREMENTS

The 1989 edition of ASME Section XI Table IWC-2500-1, examination category C-A, item number C1.20 does not allow any limitations to the required volumetric or 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 component listed above is the lower head to shell weld of the "A" seal water injection filter. One third, 0" to 12", of the component listed above has been examined to the extent practical as required by the Code. Due to interferences from a support leg the reduction in coverage of the volumetric examination is detailed in Table SR-16-1. Figure SR-16-1 is provided detailing the limitations experienced. Interferences were encountered when the remaining two thirds of the weld was examined during the second interval. It is anticipated that the same limitations will exist when the remaining two thirds of the weld are examined during the third inspection interval.

IV. ALTERNATE PROVISIONS

It is proposed that the examination completed at the reduced coverage be counted as meeting the Code requirements. The remaining two thirds will be examined to the extent practical. The estimated coverage is for the remaining two thirds is expected to be similar to the coverage presented in Table SR-16-1.

Table SR-16-1
Surry Unit 2
Examination Coverage Estimates
Category C-A, Item C1.20

Mark/Weld#	Beam Angle	Exam Area	Scan Direction	% Exam	Reason For Partial
1-01 (0" - 12")	45	Weld	2	62	Support leg
	45	Weld	5	62	
	45	Weld	7	82	
	45	Weld	8	82	
	45	Base	2	62	
	45	Base	5	60	
	45	Base	7	82	
	45	Base	8	82	

Surface Examination coverage 62.5% (7.5"/12")

UT Scan Direction Definitions

2 - Axial scan vessel side of weld

5 - Axial scan flange side of weld

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

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

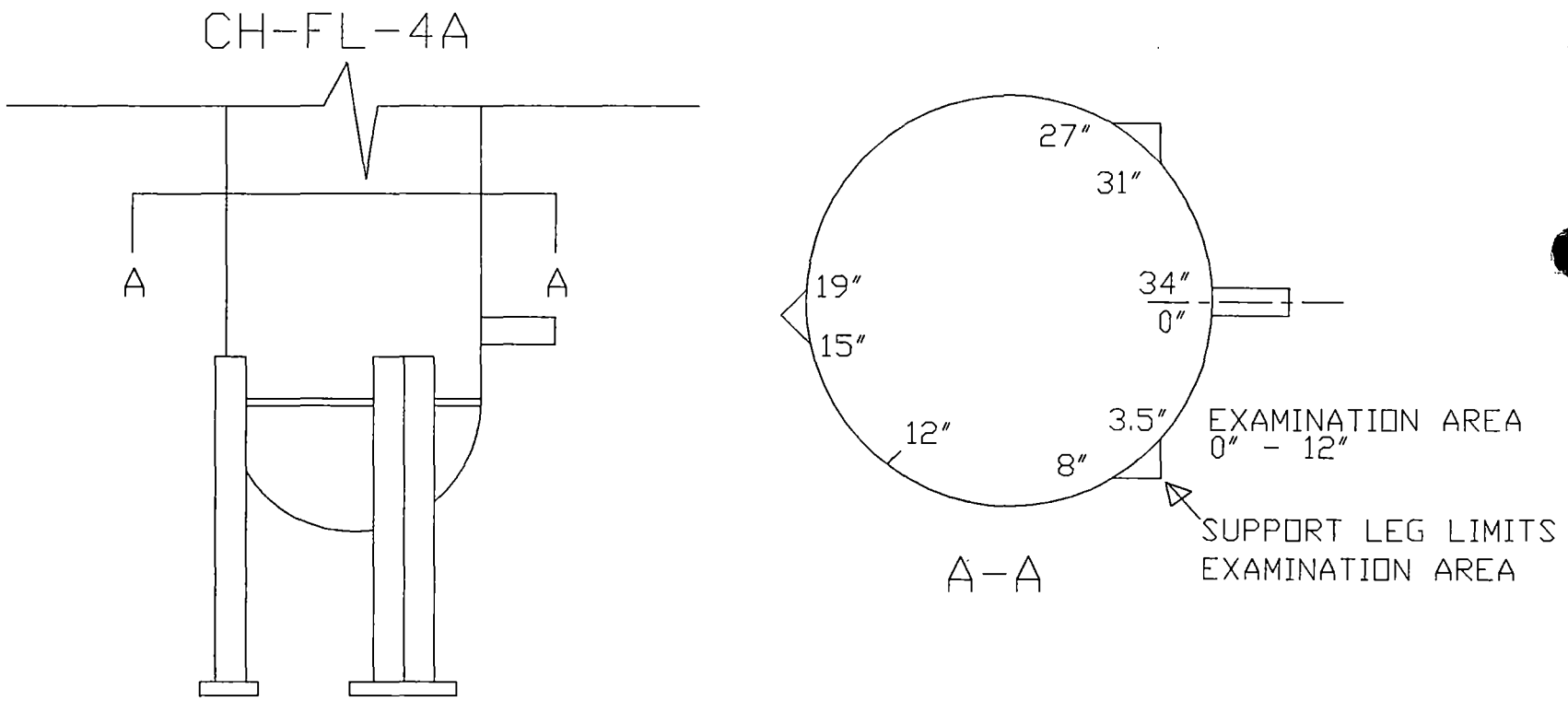
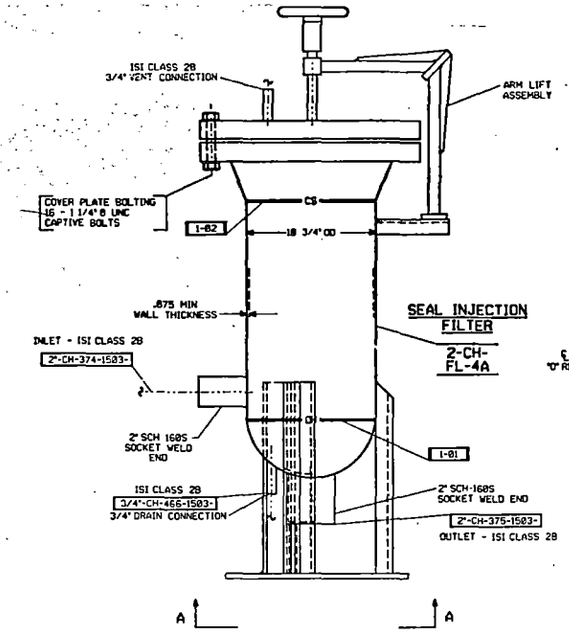
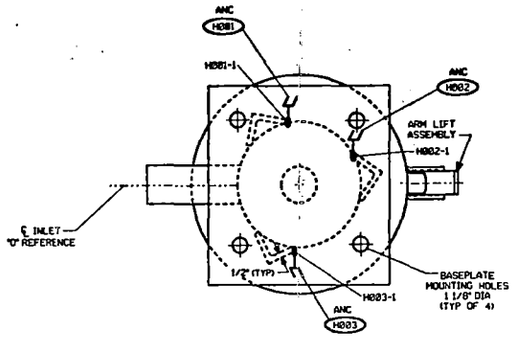


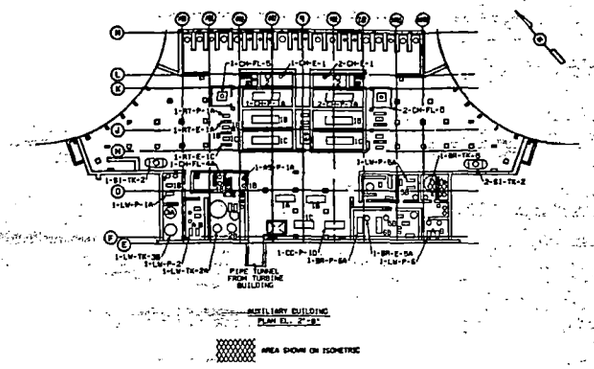
Figure SR-16-1



GENERAL ELEVATION



SECTION A-A
SUPPPORT DETAILS



KEY PLAN

NOTES:

1. WELD/ITEM NUMBERS ARE INDICATED AS FOLLOWS:
   DRAWING REFERENCE NO. (SEE REF DWG)
   INDIVIDUAL WELD/ITEM NUMBER

REFERENCE DRAWINGS:

VIR-2-1300	WESTINGHOUSE ISOMETRIC
11548-CBM-888C SHEET 2	ISI CLASSIFICATION BOUNDARY DRAWING
D-9444-2003	COMMERCIAL FILTERS CORP
11448-1.85-17A	COMMERCIAL FILTERS CORP (MFG DRG NO D-9444-2026)

9602120221-03

VIRGINIA POWER
NORTH CAROLINA POWER

NUCLEAR ENGINEERING SERVICES
RICHMOND, VIRGINIA

INSERVICE INSPECTION DETAIL DRAWING
SEAL INJECTION FILTER: 2-CH-FL-4A
SURRY POWER STATION UNIT 2
VIRGINIA POWER

DSGN —	DSGN SUPV ARF	CAD NO. 2081G555.0221CHFL01A1.ISO	
DRWN MBL	ENGR SUPV —	DRAWING NO. 11548-WMKS-CH-FL-4A	REV. 1
CHKD RBL	—		
DESGL ENGR RBL	SCALE NONE	UNLESS OTHERWISE NOTED	SH 1 OF 1

REDRAWN TO SUIT SINGLE SHEET FORMAT

RELIEF REQUEST SR-17

I. IDENTIFICATION OF COMPONENT

Mark/Weld#	Drawing#	Class
1-01	11548-WMKS-RC-R-1.2	1

II. IMPRACTICABLE CODE REQUIREMENTS

The 1989 edition of ASME Section XI Table IWB-2500-1, examination category B-A, item number B1.40 does not allow any limitations to the required volumetric or 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 component listed above is the reactor head to flange weld. One third, 0" to 179", of the component listed above has been examined to the extent practical as required by the Code. Due to interferences from a lifting lug and the geometry of the weld the reduction in coverage of the volumetric examination is detailed in Table SR-17-1. Figures SR-17-1 and SR-17-2 are provided detailing the limitations experienced. The surface examination had no limitations.

Limitations were encountered when the remaining two thirds of the weld was examined during the second interval. It is anticipated that the same limitations will exist when the remaining two thirds of the weld are examined during the third interval.

IV. ALTERNATE PROVISIONS

It is proposed that the examination completed at the reduced coverage be counted as meeting the Code requirements. The remaining two thirds will be examined to the extent practical. The estimated coverage for the remaining two thirds is expected to be similar to the coverage presented in Table SR-17-1 for 0" to 179".

Table SR-17-1
Surry Unit 2
Examination Coverage Estimates (Reactor Vessel)
Category B-A, Item B1.40

Mark/Weld#	Beam Angle	Exam Area	Scan Direction	% Exam	Reason For Partial
1 (0" - 179")	0	Weld & Base	-	96.65	Joint Configuration
	45	Weld	2	91.84	and Lifting Lug
	45	Weld	5	96.65	
	45	Weld	7	96.65	
	45	Weld	8	96.65	
	60	Weld	2	56.71	
	60	Weld	5	90.16	
	60	Weld	7	96.65	
	60	Weld	8	96.65	
	45	Base	2	70.96	
	45	Base	5	96.65	
	45	Base	7	95.19	
	45	Base	8	95.19	
	60	Base	2	44.23	
	60	Base	5	83.02	
	60	Base	7	94.86	
	60	Base	8	94.86	

Surface coverage 100%

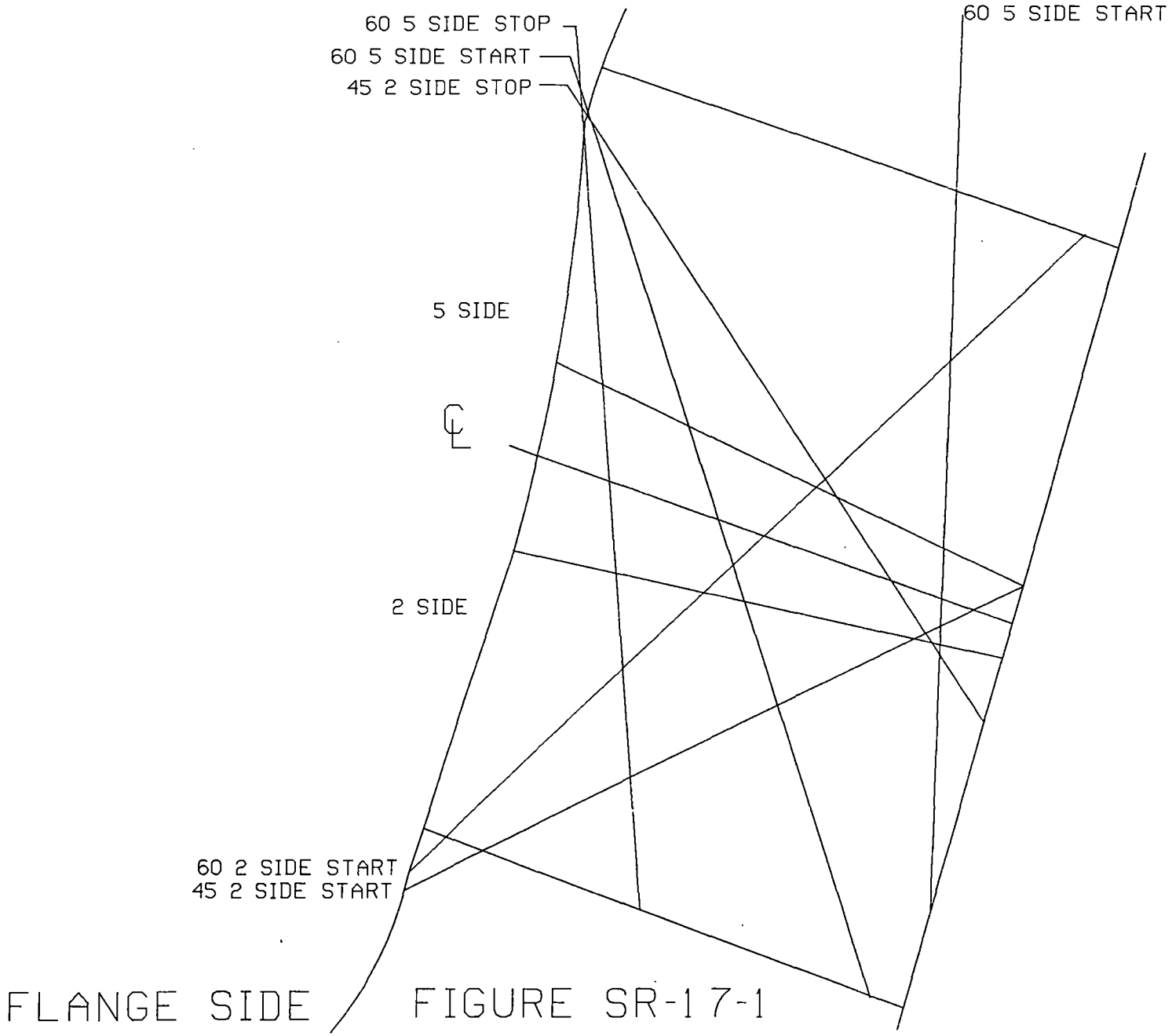
UT Scan Direction Definitions

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)



FLANGE SIDE

FIGURE SR-17-1

11548-WMKS-RC-R-1 .2 WELD 1-01

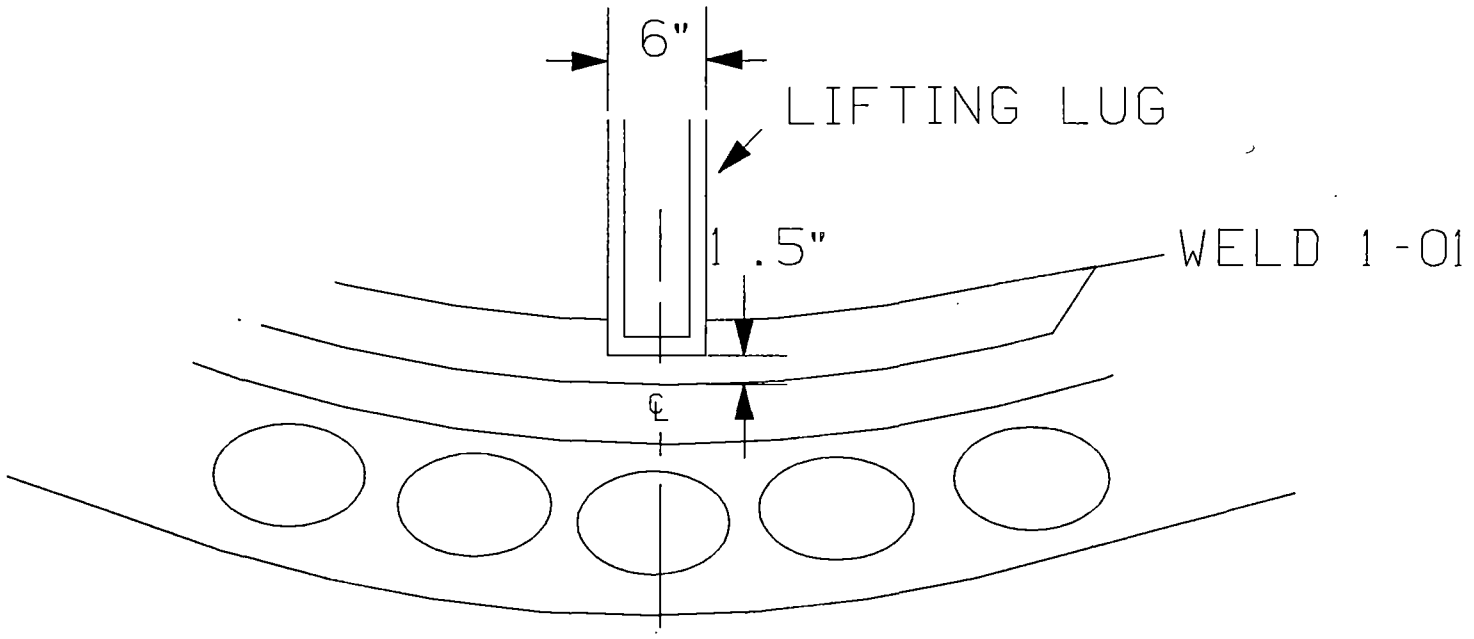
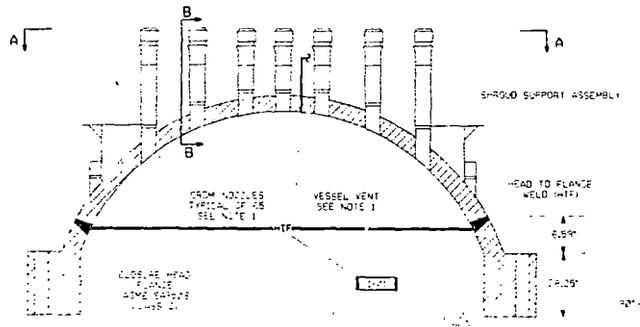
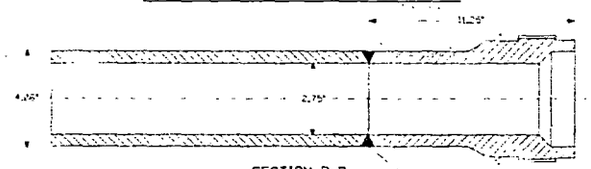


Figure SR-17-2

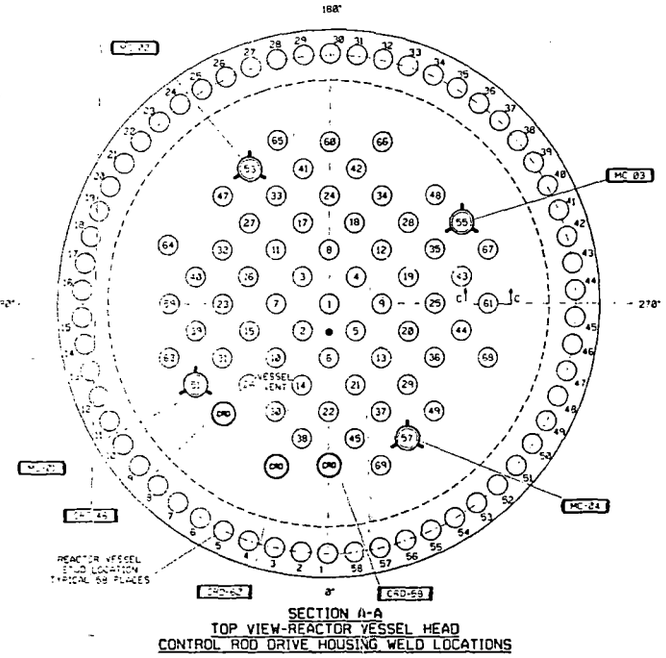


REACTOR VESSEL
2-RC-R-1

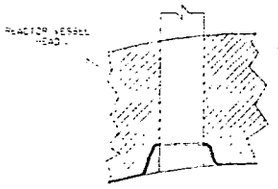
ELEVATION VIEW - REACTOR VESSEL HEAD



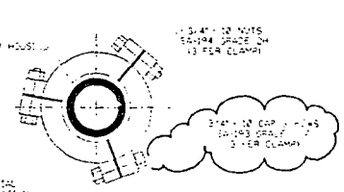
SECTION B-B
TYPICAL CONTROL ROD
DRIVE HOUSING



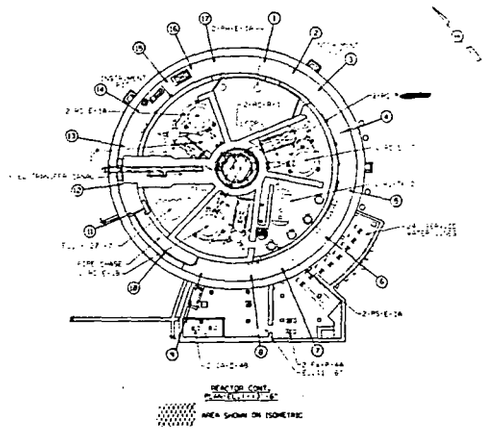
SECTION A-A
TOP VIEW-REACTOR VESSEL HEAD
CONTROL ROD DRIVE HOUSING WELD LOCATIONS



SECTION C-C
TYPICAL CRDM HOUSING
HEAD PENETRATION



DETAIL 1
TYPICAL MARMON CLAMP
(HOUSINGS 51,53,55,57)



KEY PLAN

NOTES:

1. THE REACTOR VESSEL VENT PIPE AND CRDM HOUSINGS ARE PARTIAL PENETRATION WELDED AND CLASSIFIED CATEGORY B-E ITEM NUMBERS B4.11 AND B4.12 RESPECTIVELY. PER ASME SECTION XI, THE VT-2 VISUAL EXAMINATION OF THESE WELDS WILL BE PERFORMED DURING THE REACTOR COOLANT SYSTEM HYDROSTATIC TEST.
2. HEAD DIAMETER AT WELD 1-21 IS 172.875".

REFERENCE DRAWINGS:

WIR-1-1320A	WESTINGHOUSE ISOMETRIC
WIR-1-1320	WESTINGHOUSE ISOMETRIC
30678-1184	DE ROTTERDAMSCHE DROOGDOK (MANUFACTURER DRAWING)

9602120221-04

VIRGINIA POWER
NORTH CAROLINA POWER

NUCLEAR ENGINEERING SERVICES
RICHMOND, VIRGINIA

INSERVICE INSPECTION DETAIL DRAWING REACTOR VESSEL HEAD & CRDM WELDS SURRY POWER STATION UNIT 2 VIRGINIA POWER

DSGN	DSGN SUPV	CAD NO.	
DRAWN	ENGR SUPV	DRAWING NO.	REV.
CHKD		11548-WMKS-RC-R-1.2	2
DISPL ENGR	SCALE	UNLESS OTHERWISE NOTED	SH 1 OF

2 REVISED PER ISI REVIEW.

1 REDRAWN TO SUIT SINGLE SHEET FORMAT