VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

August 2, 1995

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Serial No. 95-327
NL&P/EJW R0
Docket No. 50-339
License No. NPF-7

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNIT 2
INSERVICE INSPECTION PROGRAM RELIEF REQUEST

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from certain requirements of the ASME Section XI Code associated with the extent of examinations practical for the North Anna Unit 2. North Anna Unit 2 is currently in the second period of second ten-year inservice inspection interval. The North Anna Unit 2 Inservice Inspection Program is in conformance with the requirements of the 1986 Edition of ASME Section XI.

During the recent Unit 2 refueling/steam generator replacement outage, several weld examinations were determined to be impracticable due to interferences from adjacent components and component supports and/or because of the weld joint geometry. Relief Requests NDE-23 through NDE 29 for North Anna Unit 2 (attached) identify the affected components and provide bases for Virginia Electric and Power Company's proposal to consider the partial examinations as having met the Code requirements. These relief requests have been approved by the North Anna Station Nuclear Safety and Operating Committee.

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

Very truly yours,

James P. O'Hanlon

James P O'Hanlon
Senior Vice President - Nuclear

Attachments

cc: U.S. Nuclear Regulatory Commission
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ATTACHMENT 1

North Anna Power Station Unit 2
ASME Section XI Relief Request NDE-23

NORTH ANNA UNIT 2
RELIEF REQUEST NDE-23

I. IDENTIFICATION OF COMPONENT

Mark/Weld #	Line #	Drawing #	Class
26	3"-SI-417-1502-Q1	12050-WMKS-103BV	2

II. IMPRACTICABLE CODE REQUIREMENTS

The 1986 edition of ASME Section XI, Table IWC-2500-1, examination category C-F-1, item number C5.21 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 a three inch pipe to tee weld. This component has been examined to the extent practical as required by the Code. The Code required volumetric examination coverage was reduced due to interferences from an adjacent pipe. The extent of volumetric examination which was completed is detailed in Table NDE-23. An extended beam path was used to examine the component in the tangential direction from the pipe side. The required surface examination had no limitations. Figure NDE-23-1 is provided detailing the limitations experienced.

IV. ALTERNATE PROVISIONS

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

Table NDE-23-1
North Anna Unit 2
Examination Coverage Estimates
Category C-F-1, Item C5.21

Mark/Weld #	UT Scan Coverage % 2	5	7	8	Surface Examination Coverage %	Reason For Partial
26	85.2	85.2	100	100	100	An adjacent pipe prohibits the 2 and 5 scan for 1.625 inches out of 11 inches.

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.

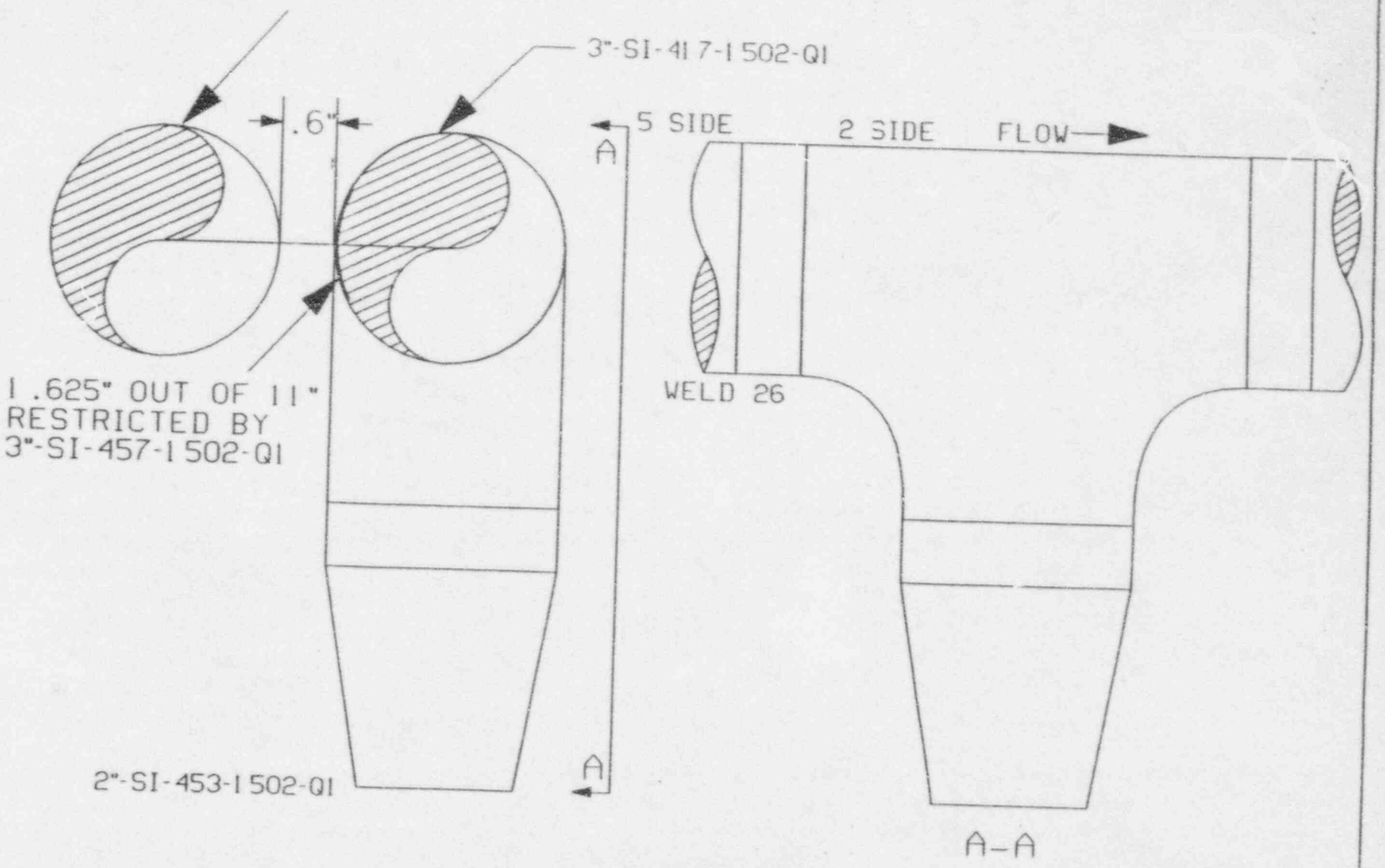


Figure NDE-23-1 11

12050-WMKS-103BV WELD 26

ATTACHMENT 2

North Anna Power Station Unit 2
ASME Section XI Relief Request NDE-24

NORTH ANNA UNIT 2
RELIEF REQUEST NDE-24

I. IDENTIFICATION OF COMPONENTS

Mark/Weld #	Line #	Drawing #	Class
SW-23	6"-RC-418-1502-Q1	12050-WMKS-0109F-2	1
SW-43	12"-RC-423-1502-Q1	12050-WMKS-0109F-2	1
SW-45	6"-RC-419-1502-Q1	12050-WMKS-0109F-2	1

II. IMPRACTICABLE CODE REQUIREMENTS

The 1986 edition of ASME Section XI in Table IWB-2500-1, examination category B-J, item number B9.31 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 components listed above have been examined to the extent practical as required by the Code. The Code required volumetric examination coverage was reduced due to nozzle configuration, weld joint geometry, and the material type from which the components are constructed. The scope of volumetric examination coverage completed for the above listed welds is listed in Table NDE-24-1. The required surface examinations had no limitations. Figure NDE-24-1 is provided detailing the limitations experienced. Alternative components could not be substituted for examination due to the mandatory selection requirements of the Code.

IV. ALTERNATE PROVISIONS

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

Table NDE-24-1
North Anna Unit 2
Examination Coverage Estimates
12050-WMKS-109F-2
Category B-J, Item B9.31

Mark/Weld #	UT Scan Coverage % 2	5	7	8	Surface Examination Coverage %	Reason For Partial
SW-23	80	0	28	28	100	Nozzle & weld joint configuration and material type, ASTM A-351 austentic steel casting, limit the use of an extended V-path examination. Due to change in configuration around the nozzle, the percent of volume varied around the circumference from 60% at 0° and 180° to 90% at 90° and 270°. Approximately 80% of the lower 1/3 was covered in the 2 direction.
SW-43	83	0	28	28	100	Nozzle & weld joint configuration and material type, ASTM A-351 austentic steel casting, limit the use of an extended V-path examination. Due to change in configuration around the nozzle, the percent of volume varied around the circumference from 52% at 0° and 180° to 63% at 90° and 270°. Approximately 83% of the lower 1/3 was covered in the 2 direction.
SW-45	76	0	28	28	100	Nozzle & weld joint configuration and material type, ASTM A-351 austentic steel casting, limit the use of an extended V-path examination. Due to change in configuration around the nozzle, the percent of volume varied around the circumference from 56% at 0° and 180° to 92% at 90° and 270°. Approximately 76% of the lower 1/3 was covered in the 2 direction.

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.

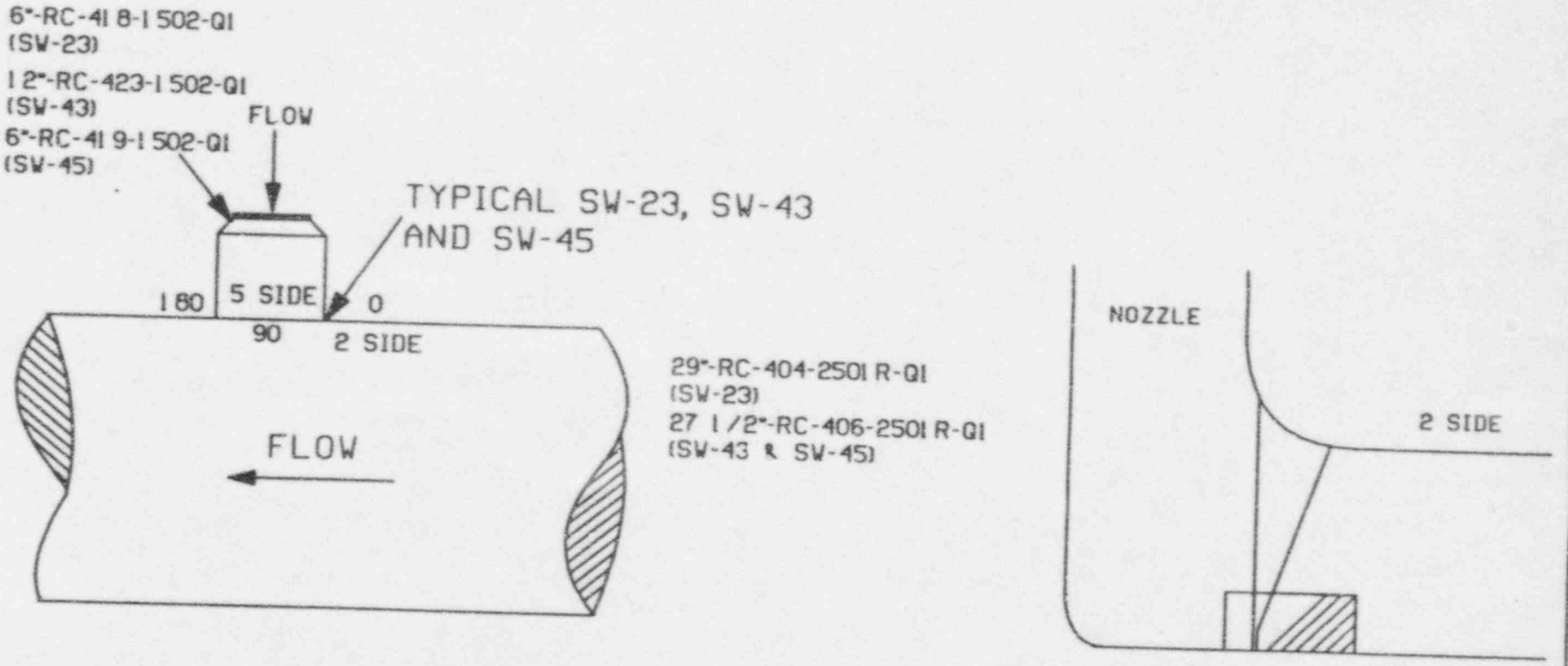


Figure NDE-24-1

12050-WMKS-109F-2 SW-23, SW-43, & SW-45

ATTACHMENT 3

North Anna Power Station Unit 2
ASME Section XI Relief Request NDE-25

NORTH ANNA UNIT 2
RELIEF REQUEST NDE-25

I. IDENTIFICATION OF COMPONENT

Mark/Weld #	Drawing #	Class
2	12050-WMKS-RH-E-1A	2

II. IMPRACTICABLE CODE REQUIREMENTS

The 1986 edition of ASME Section XI in Table IWC-2500-1, examination category C-A, item number C1.10 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 has been examined to the extent practical as required by the Code. This examination was limited due to interferences from saddle plates around the inlet and outlet nozzles. The weld was examined with a 45° transducer and a 60° transducer. An extended beam path was used with both transducers. The reduction in coverage of the volumetric examination is detailed in Table NDE-25-1. Figure NDE-25-1 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 requirements.

Table NDE-25-1
North Anna Unit 2
Examination Coverage Estimates
12050-WMKS-RH-E-1A
Category C-A, Item C1.10

Mark/Weld #	UT Scan Coverage % 2	5	7	8	Reason For Partial
2	81.2	81.2	100	100	Saddle plates for the inlet and outlet nozzles limit the 2 and 5 scan for 25.6 inches out of 124.88 inches. An extended beam path was used for the examination.

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

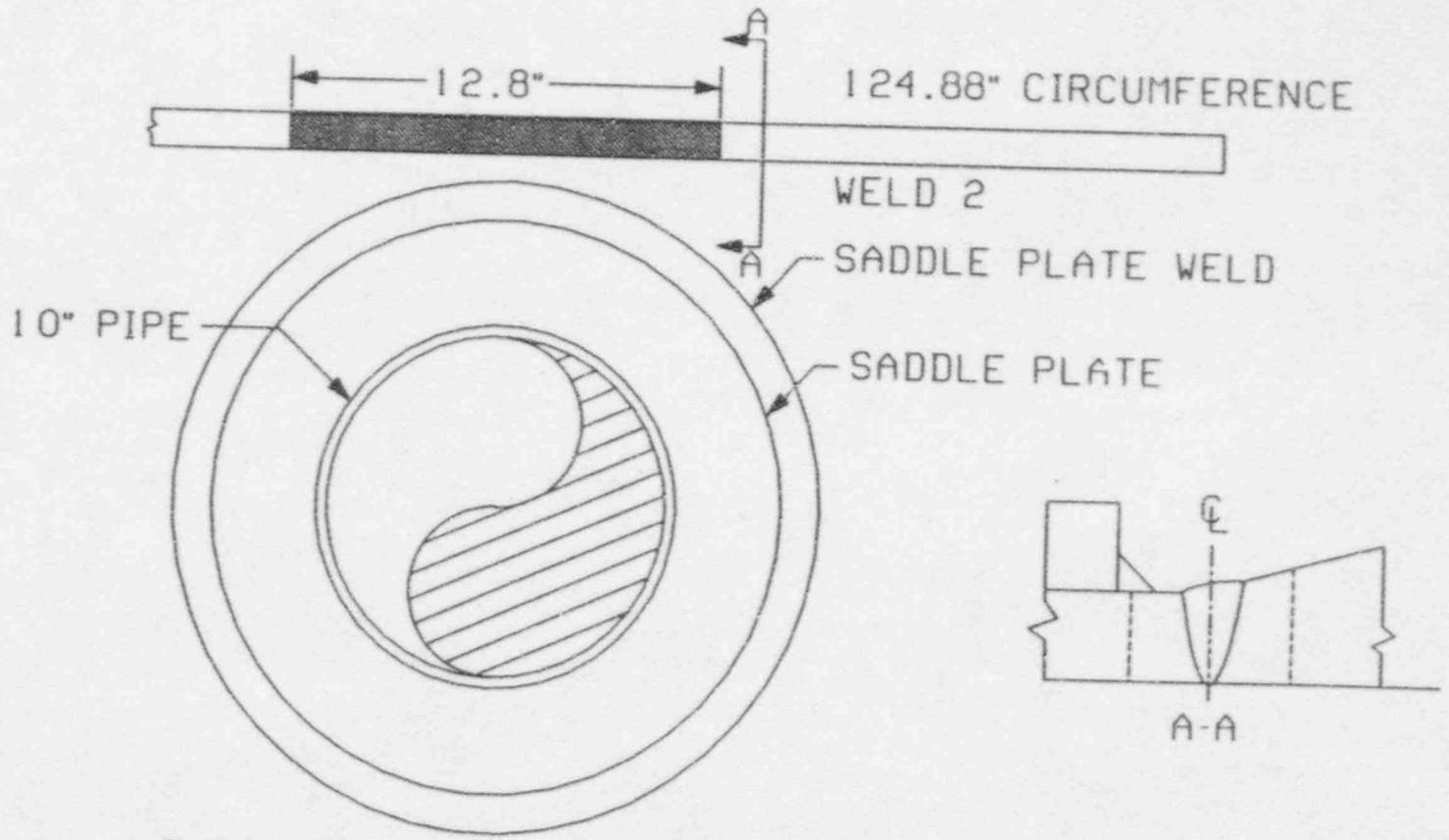


Figure NDE-25-1

ATTACHMENT 4

North Anna Power Station Unit 2
ASME Section XI Relief Request NDE-26

NORTH ANNA UNIT 2
RELIEF REQUEST NDE-26

I. IDENTIFICATION OF COMPONENTS

Mark/Weld #	Line #	Drawing #	Class
SW-14	6"-RC-438-1502-Q1	12050-WMKS-110A-1	1
SW-19	6"-RC-439-1502-Q1	12050-WMKS-110A-1	1

II. IMPRACTICABLE CODE REQUIREMENTS

The 1986 edition of ASME Section XI, Table IWB-2500-1, examination category B-J, item number B9.11 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 components listed above have been examined to the extent practical as required by the Code. Due to a 3.5 inch diameter branch connection located at the center line of each weld, only 83.3% of the required volume and surface of each weld was examined. The reduction in coverage is detailed in Table NDE-26-1. Figure NDE-26-1 is provided detailing the limitations experienced as part of an augmented inspection program. Performing additional examinations on welds which would allow greater coverage would require additional radiation dose and expense with very little increase in safety.

IV. ALTERNATE PROVISIONS

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

Table NDE-26-1
North Anna Unit 2
Examination Coverage Estimates
12050-WMKS-110A-1
Category B-J, Item B9.11

Mark/Weld #	UT Scan Coverage % 2	5	7	8	Surface Examination Coverage %	Reason For Partial
SW-14	83.3	83.3	83.3	83.3	83.3	Branch connection restricts examination of 3.5 inches out of 21 inches.
SW-19	83.3	83.3	83.3	83.3	83.3	Branch connection restricts examination of 3.5 inches out of 21 inches.

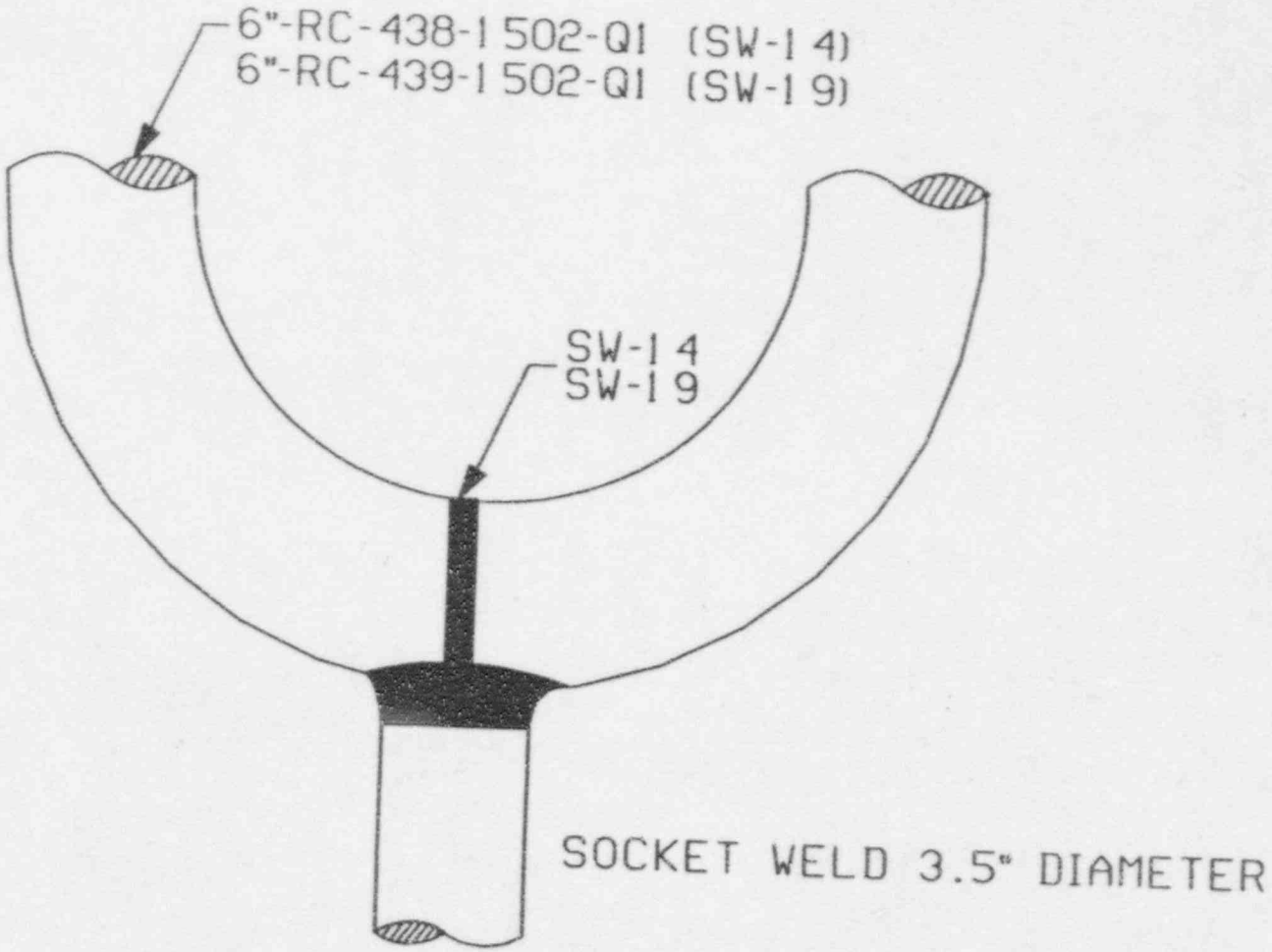
UT Scan Direction Definitions

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.



12050-WMKS-110A-1 SW-14 & SW-19

Figure NDE-26-1

ATTACHMENT 5

North Anna Power Station Unit 2
ASME Section XI Relief Request NDE-27

NORTH ANNA UNIT 2
RELIEF REQUEST NDE-27

I. IDENTIFICATION OF COMPONENTS

Mark/Weld #	Line #	Drawing #	Class
SW-16	6"-RC-438-1502-Q1	12050-WMKS-110A-1	1
SW-24	6"-RC-439-1502-Q1	12050-WMKS-110A-1	1

II. IMPRACTICABLE CODE REQUIREMENTS

The 1986 edition of ASME Section XI, Table IWB-2500-1, examination category B-J, item number B9.11 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 components listed above have been examined to the extent practical as required by the Code. Due to interference by an existing pipe support, only 6 inches out of 21 inches were examined. The reduction in coverage is detailed in Table NDE-27-1. Figure NDE-27-1 is provided detailing the limitations experienced. These welds are classified as terminal ends and are required to be examined by the ISI Program.

IV. ALTERNATE PROVISIONS

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

Table NDE-27-1
North Anna Unit 2
Examination Coverage Estimates
12050-WMKS-110A-1
Category B-J, Item B9.11

Mark/Weld #	UT Scan Coverage % 2	5	7	8	Surface Examination Coverage %	Reason For Partial
SW-16	29	29	29	29	29	Pipe support limits examination to 6 inches out of 20.8 inches.
SW-24	29	29	29	29	29	Pipe support limits examination to 6 inches out of 20.8 inches.

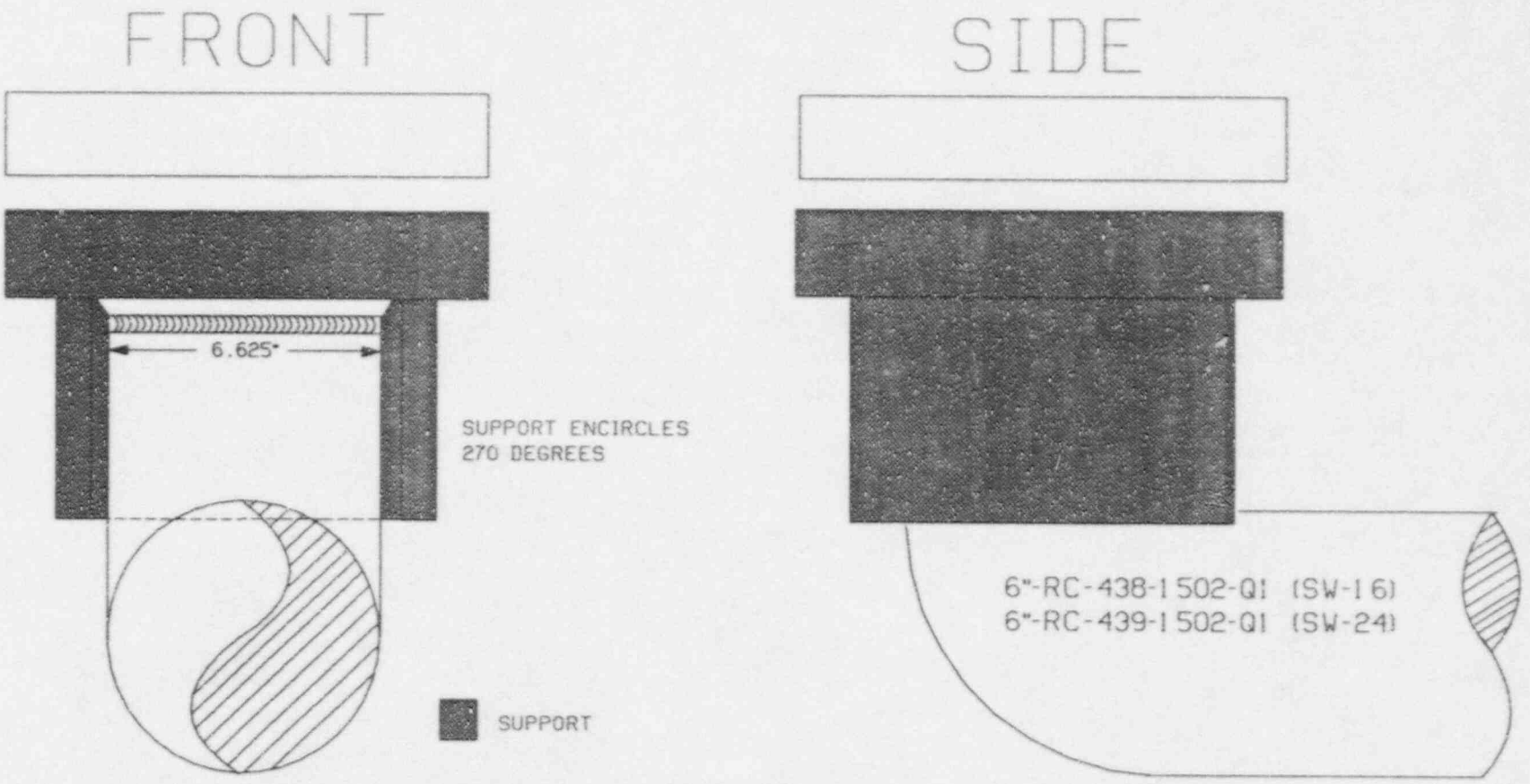
UT Scan Direction Definitions

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.



12050-WMKS-110A-1 SW-16 & SW-24

Figure NDE-27-1

ATTACHMENT 6

North Anna Power Station Unit 2
ASME Section XI Relief Request NDE-28

NORTH ANNA UNIT 2
RELIEF REQUEST NDE-28

I. IDENTIFICATION OF COMPONENTS

Mark/Weld #	Line #	Drawing #	Class
11	6"-RC-438-1502-Q1	12050-WMKS-RC-E-2	1
12	6"-RC-437-1502-Q1	12050-WMKS-RC-E-2	1

II. IMPRACTICABLE CODE REQUIREMENTS

The 1986 edition of ASME Section XI, Table IWB-2500-1, examination category B-D, item number B3.110 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 components listed above have been examined to the extent practical as required by the Code. The Code required volumetric examination coverage was reduced due to nozzle configuration and weld joint geometry. The scope of volumetric examination coverage completed for the above listed welds is listed in Table NDE-28-1. Figure NDE-28-1 is provided detailing the limitations experienced. Alternative components could not be substituted for examination due to the mandatory selection requirements of the Code.

IV. ALTERNATE PROVISIONS

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

Table NDE-28-1
North Anna Unit 2
Examination Coverage Estimates (Vessel)
Category B-D, Item B3.110

Mark/Weld #	Beam Angle	Exam Area	Scan Direction	% Exam	Reason For Partial
11 & 12	0	Weld & Base	-	66	Nozzle geometry
	45	Weld	2	90	Cladding Prevents
	45	Weld	5	16	Extended V-Path
	45	Weld	7	90	
	45	Weld	8	90	
	60	Weld	2	96	
	60	Weld	5	16	
	60	Weld	7	90	
	60	Weld	8	90	
	45 & 60	Base	2	89	
	45 & 60	Base	5	24	
	45 & 60	Base	7	50	
	45 & 60	Base	8	50	

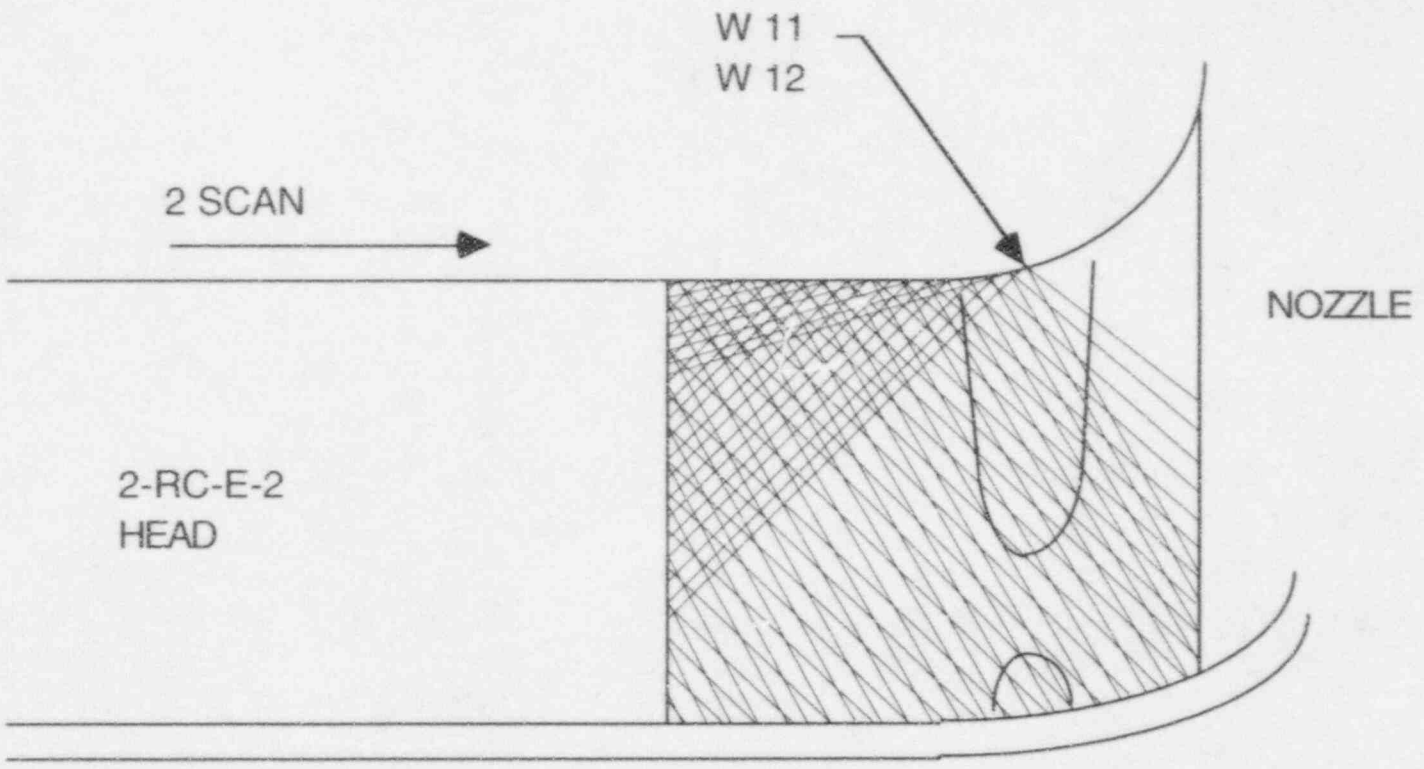
UT Scan Direction Definitions

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)



12050-WMKS-RC-E-2 WELDS 11 & 12

Figure NDE-28-1

ATTACHMENT 7

North Anna Power Station Unit 2
ASME Section XI Relief Request NDE-29

NORTH ANNA UNIT 2
RELIEF REQUEST NDE-29

I. IDENTIFICATION OF COMPONENTS

Mark/Weld #	Line #	Drawing #	Class
52H	8"-QS-403-153A-Q3	12050-WMKS-107D	2

II. IMPRACTICABLE CODE REQUIREMENTS

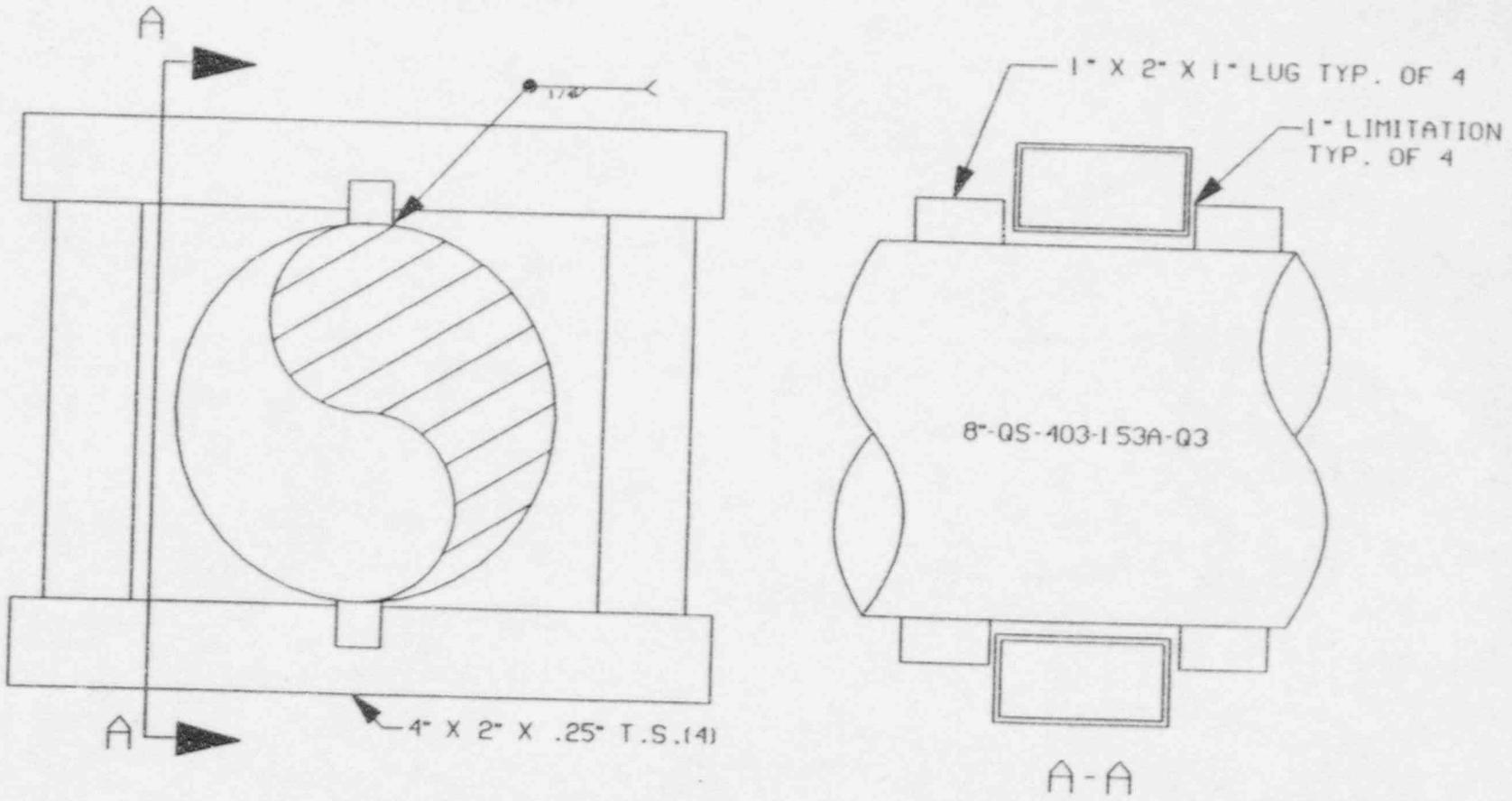
The 1986 edition of ASME Section XI, Table iWC-2500-1, examination category C-C, item number C3.20 does not allow any limitations to the required volumetric or surface examinations. Code Case N-460, Alternative Examination Coverage for Class 1 and Class 2 Welds, allows a reduction in coverage, if it is less than 10%.

III. BASIS FOR RELIEF

The weld listed above has been examined to the extent practical as required by the Code. Due to interference from an existing pipe support, only five inches out of six inches (83%) of each of the four integral attachments that are associated with weld 52H are accessible for an inservice examination. Figure NDE-29-1 is provided detailing the limitations experienced. Alternative components could not be substituted for examination due to the mandatory selection requirements of the Code.

IV. ALTERNATE PROVISIONS

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



12050-WMKS-107D WELD 52H

Figure NDE-29-1