

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

July 10, 1995

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

Serial No. 95-230
NL&P/DCH R2
Docket No. 50-338
License No. NPF-4

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNIT 1
INSERVICE INSPECTION PROGRAM RELIEF REQUEST

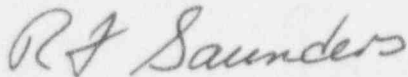
North Anna Unit 1 is currently in the second period of its second ten-year inservice inspection interval. North Anna Unit 1 examinations have been conducted to the requirements of the 1983 Edition, through Summer 1983 Addenda, of ASME Section XI.

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from certain requirements of the ASME Section XI Code associated with partial examinations conducted for North Anna Unit 1. Relief Requests NDE-20, Rev. 2, and NDE 26 for North Anna Unit 1 (attached) provide the basis for the requested relief. Relief Request NDE-20, Rev. 2, supersedes Relief Request NDE-20 submitted by our letter dated August 5, 1993 (Serial No. 93-435).

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
Senior Vice President - Nuclear

Enclosures

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9507130045 950710
PDR ADCK 05000338
Q PDR

A047
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cc: U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Suite 2900
Atlanta, Georgia 30323

Mr. R. D. McWhorter
NRC Senior Resident Inspector
North Anna Power Station

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

ATTACHMENT 1

**North Anna Power Station Unit 1
ASME Section XI Relief Request NDE-20**

NORTH ANNA UNIT 1
RELIEF REQUEST NDE-20 REVISION 2

I. IDENTIFICATION OF COMPONENTS

<u>Mark/Weld #</u>	<u>Line #</u>	<u>Drawing #</u>	<u>Class</u>
1	RC-R-1	11715-WMKS-RC-R-1.2	1
1	SI-TK-2	11715-WMKS-SI-TK-2	2
10	6"-RC-39-1502-Q1	11715-WMKS-RC-E-2	1
11	6"-RC-38-1502-Q1	11715-WMKS-RC-E-2	1
12	6"-RC-37-1502-Q1	11715-WMKS-RC-E-2	1
37	27 1/2"-RC-3-2501-Q1	11715-WMKS-0109E-1	1
SW-39	12"-RC-22-1502-Q1	11715-WMKS-0109E-2	1
SW-19	6"-RC-18-1502-Q1	11715-WMKS-0109F-2	1
SW-41	12"-RC-23-1502-Q1	11715-WMKS-0109F-2	1
SW-42	6"-RC-19-1502-Q1	11715-WMKS-0109F-2	1

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-20-1, 2, 3, and 4 are provided detailing the limitations experienced. Amplifying sketches are also provided. 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-20-1, Revision 2
North Anna Unit 1
Examination Coverage Estimates (Reactor 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 (120° - 240°)	0	Weld & Base	-	72	Joint Configuration And Lifting Lug Interference	1A & 1B
	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		

Surface coverage 98%

UT Scan Direction Definitions

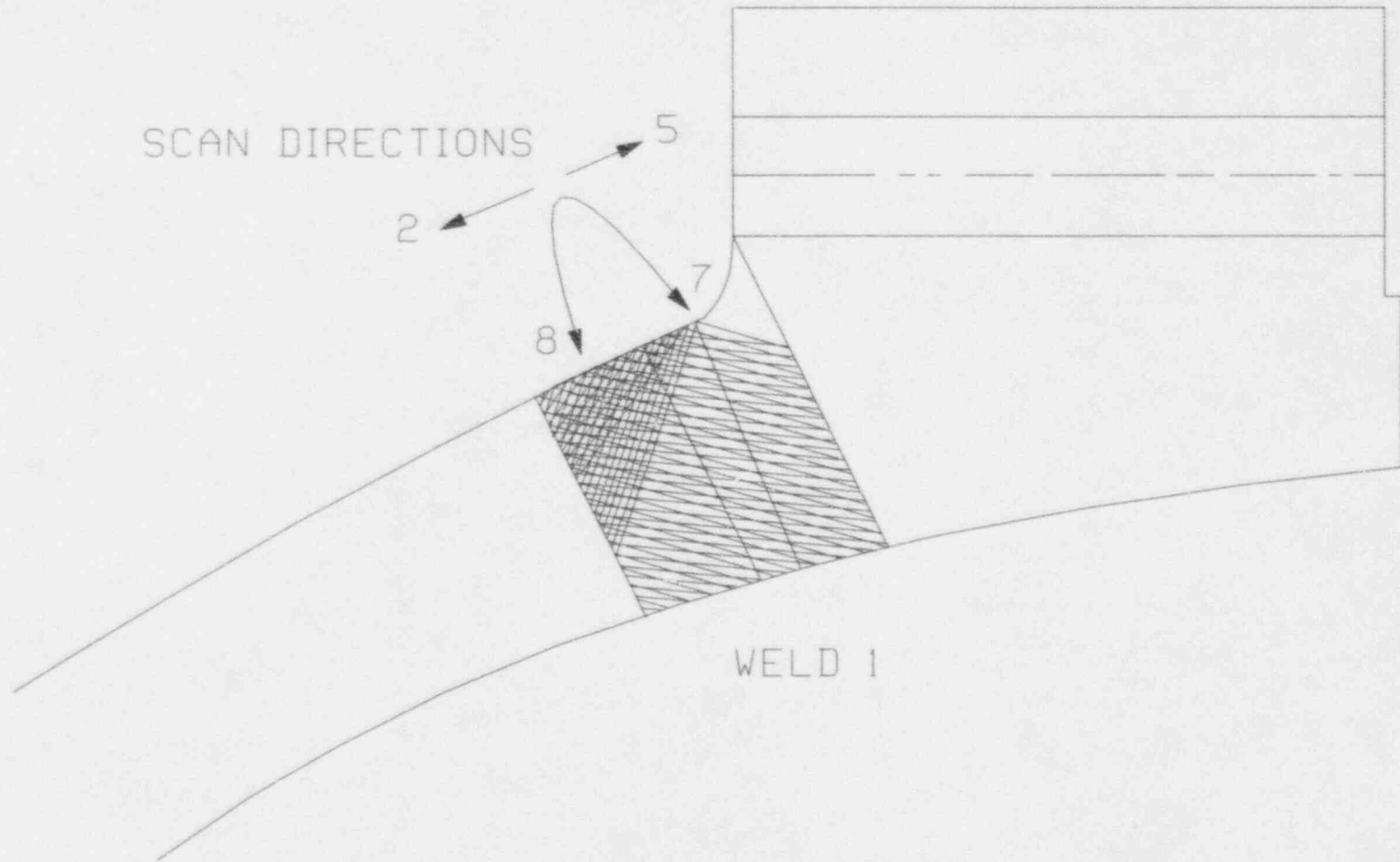
2 - Axial scan flange side of weld

5 - Axial scan head side of weld

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

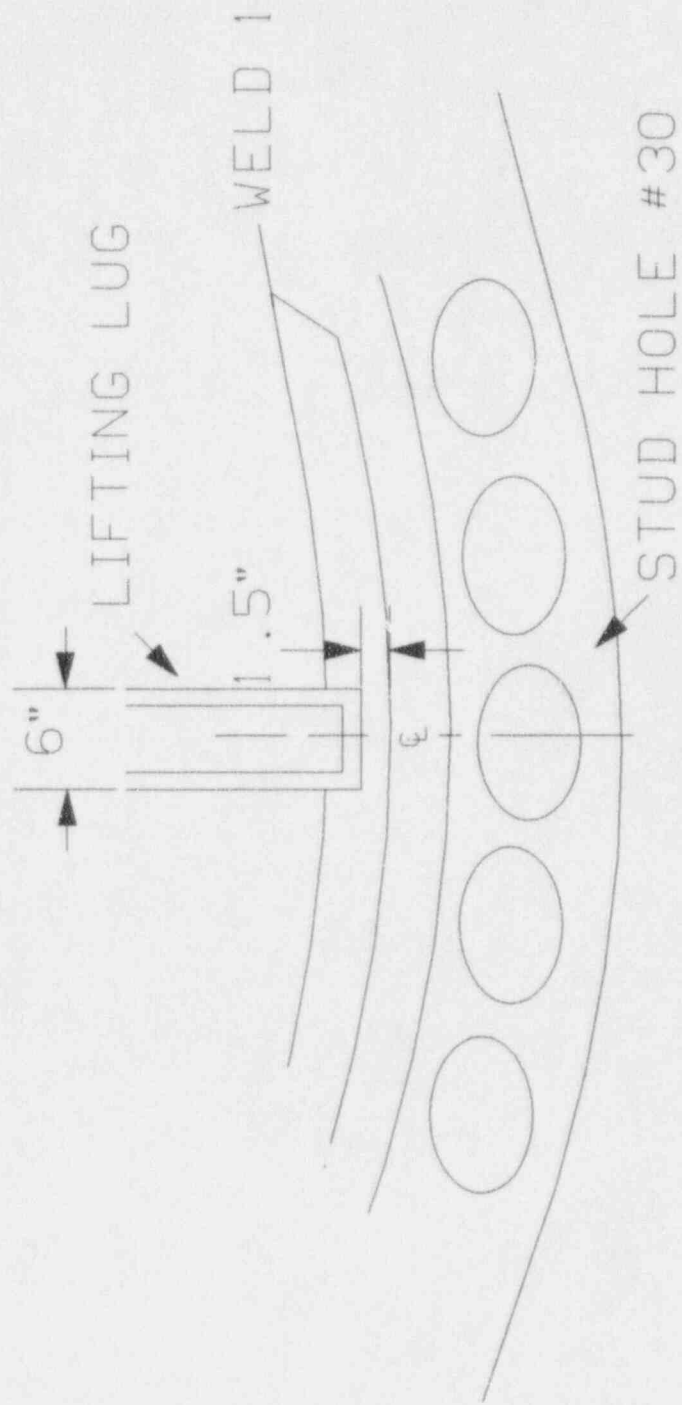
8 - Circumferential scan, counterclockwise (looking down on head)

45 DEGREE AND 60 DEGREE



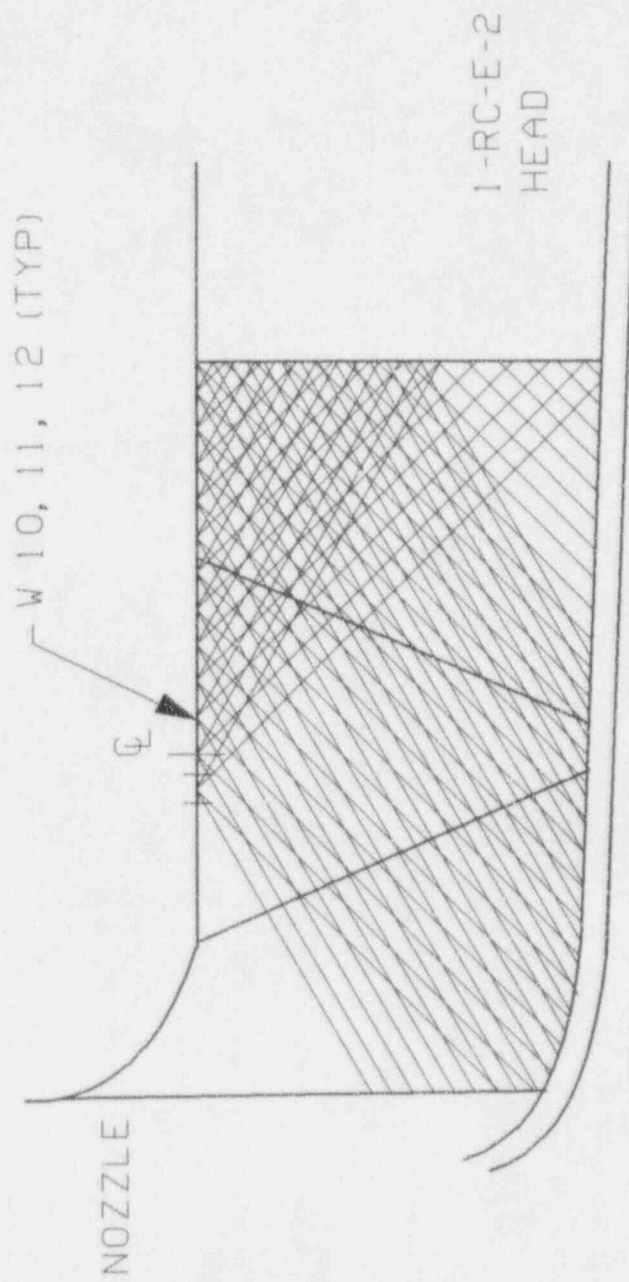
SKETCH 1A

11715-WMKS-RC-R-1.2
WELD 1



SKETCH 1 B

111715-WMKS-RC-R-1 .2
WELD 1



SKETCH 2

11715-WMKS-RC-E-2
WELDS 10, 11, & 12

Table NDE-20-2
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>
10, 11, 12	0	Weld & Base	-	80	Nozzle Geometry, Cladding Prevents Extended V-path	2
	45	Weld	2	85		
	45	Weld	5	25		
	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 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)

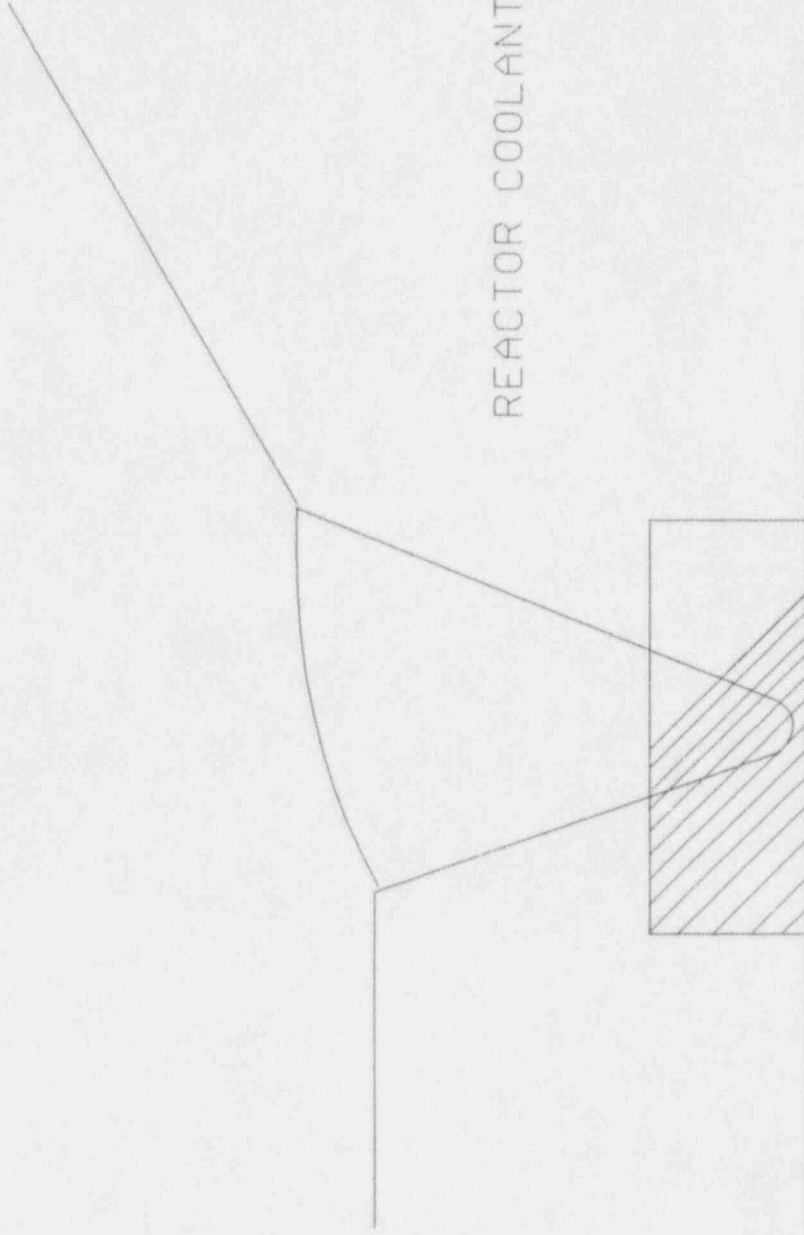
Table NDE-20-3, Revision 2
North Anna Unit 1
Examination Coverage Estimates (Piping & Integral Attachments)

<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>
			<u>2</u>	<u>5</u>	<u>7</u>	<u>8</u>			
37	B-J	B9.11	75	0	90	90	100	Nozzle and Weld Geometry, Material Attenuation Prevent	3
SW-39	B-J	B9.31	90	0	27	27	100	Branch Connect Configuration	4
SW-19	B-J	B9.31	90	0	27	27	100	Branch Connect Configuration	4
SW-41	B-J	B9.31	90	0	27	27	100	Branch Connect Configuration	4
SW-42	B-J	B9.31	90	0	27	27	100	Branch Connect Configuration	4

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.

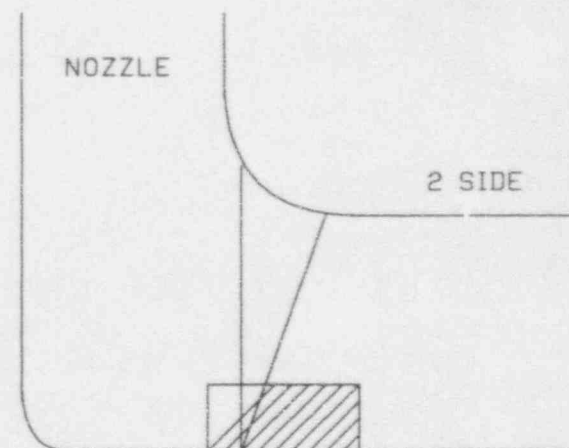
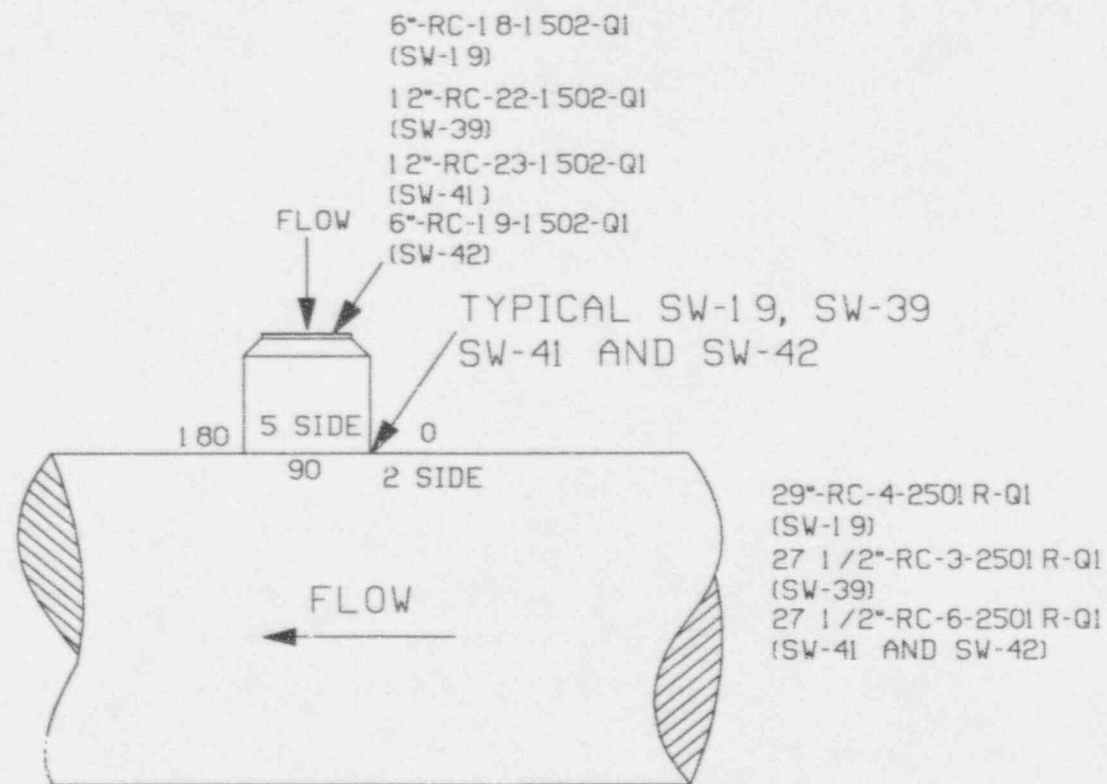
REACTOR COOLANT PUMP



WELD 37

SKETCH 3

11715-WMKS-109E-1
WELD 37



SKETCH 4

11715-WMKS-109E-2

WELD SW-39

11715-WMKS-109F-2

WELDS SW-19, SW-41, & SW-42

Table NDE-20-4, Revision 2
North Anna Unit 1
Examination Coverage Estimates (Boron Injection Tank)
Category C-A, Item C1.20

<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 (58" - 116")	0	Weld & Base	-	91	Support Legs 3 and 4	5
	45	Weld	2	95		
	45	Weld	5	82		
	45	Weld	7	100		
	45	Weld	8	100		
	60	Weld	2	99		
	60	Weld	5	78		
	60	Weld	7	100		
	60	Weld	8	100		
	45 & 60	Base	2	98		
	45 & 60	Base	5	80		
	45 & 60	Base	7 (2 side)	100		
	45 & 60	Base	8 (2 side)	100		
	45 & 60	Base	7 (5 side)	87		
	45 & 60	Base	8 (5 side)	87		

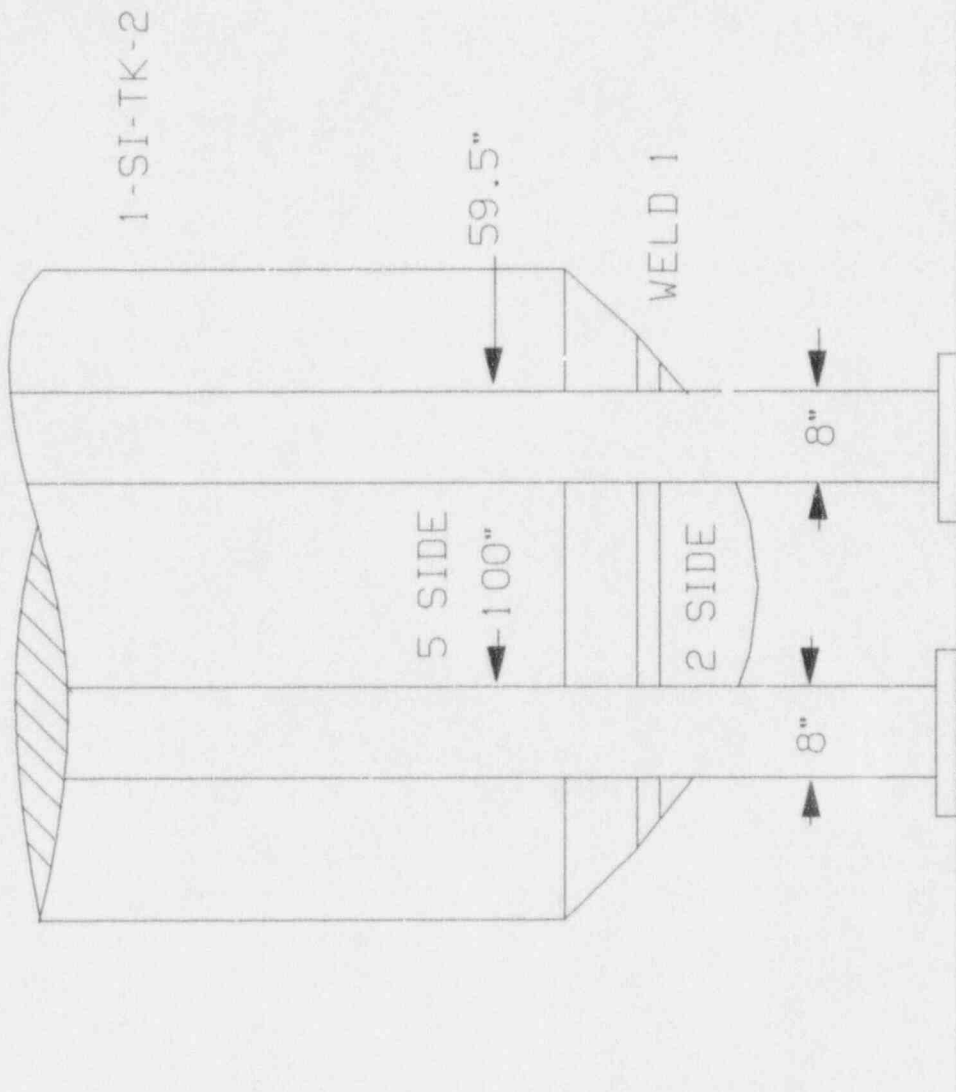
UT Scan Direction Definitions

2 - Axial scan head side of weld

5 - Axial scan shell side of weld

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

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



11715-WMKS-SI-TK-2
WELD 1

ATTACHMENT 2

**North Anna Power Station Unit 1
ASME Section XI Relief Request NDE-26**

NORTH ANNA UNIT 1
RELIEF REQUEST NDE-26

I. IDENTIFICATION OF COMPONENTS

<u>Mark/Weld #</u>	<u>Line #</u>	<u>Drawing #</u>	<u>Class</u>
4A	29"-RC-1-2501-Q1	11715-WMKS-0109E-1	1
N-SE29 IN	29"-RC-1-2501-Q1	11715-WMKS-RC-E-1A.2P	1
5A	31"-RC-2-2501-Q1	11715-WMKS-0109E-1	1
N-SE31 IN	31"-RC-2-2501-Q1	11715-WMKS-RC-E-1A.2P	1
16A	29"-RC-4-2501-Q1	11715-WMKS-0109F-1	1
N-SE29 IN	29"-RC-4-2501-Q1	11715-WMKS-RC-E-1B.2P	1
17A	31"-RC-5-2501-Q1	11715-WMKS-0109F-1	1
N-SE31 IN	31"-RC-5-2501-Q1	11715-WMKS-RC-E-1B.2P	1
28A	29"-RC-7-2501-Q1	11715-WMKS-0109G-1	1
N-SE29 IN	29"-RC-7-2501-Q1	11715-WMKS-RC-E-1C.2P	1
29A	31"-RC-8-2501-Q1	11715-WMKS-0109G-1	1
N-SE31 IN	31"-RC-8-2501-Q1	11715-WMKS-RC-E-1C.2P	1

II. IMPRACTICABLE CODE REQUIREMENTS

The 1983 edition, Summer 1983 Addenda (inclusive) of ASME Section XI in Table IWB-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. Longitudinal waves were used to perform the examination because of the materials involved (cast stainless steel and inconel). However, the use of longitudinal waves prevents the use of beam extension to increase examination volume. Due to interferences of other components or weld joint geometry, the reduction in coverage for the listed components was greater than 10%. Table NDE-26-1 is provided detailing the limitations experienced. Amplifying sketches are also provided. Alternative components could not be substituted for examination due to the mandatory selection requirements of the Code.

IV. ALTERNATE PROVISIONS

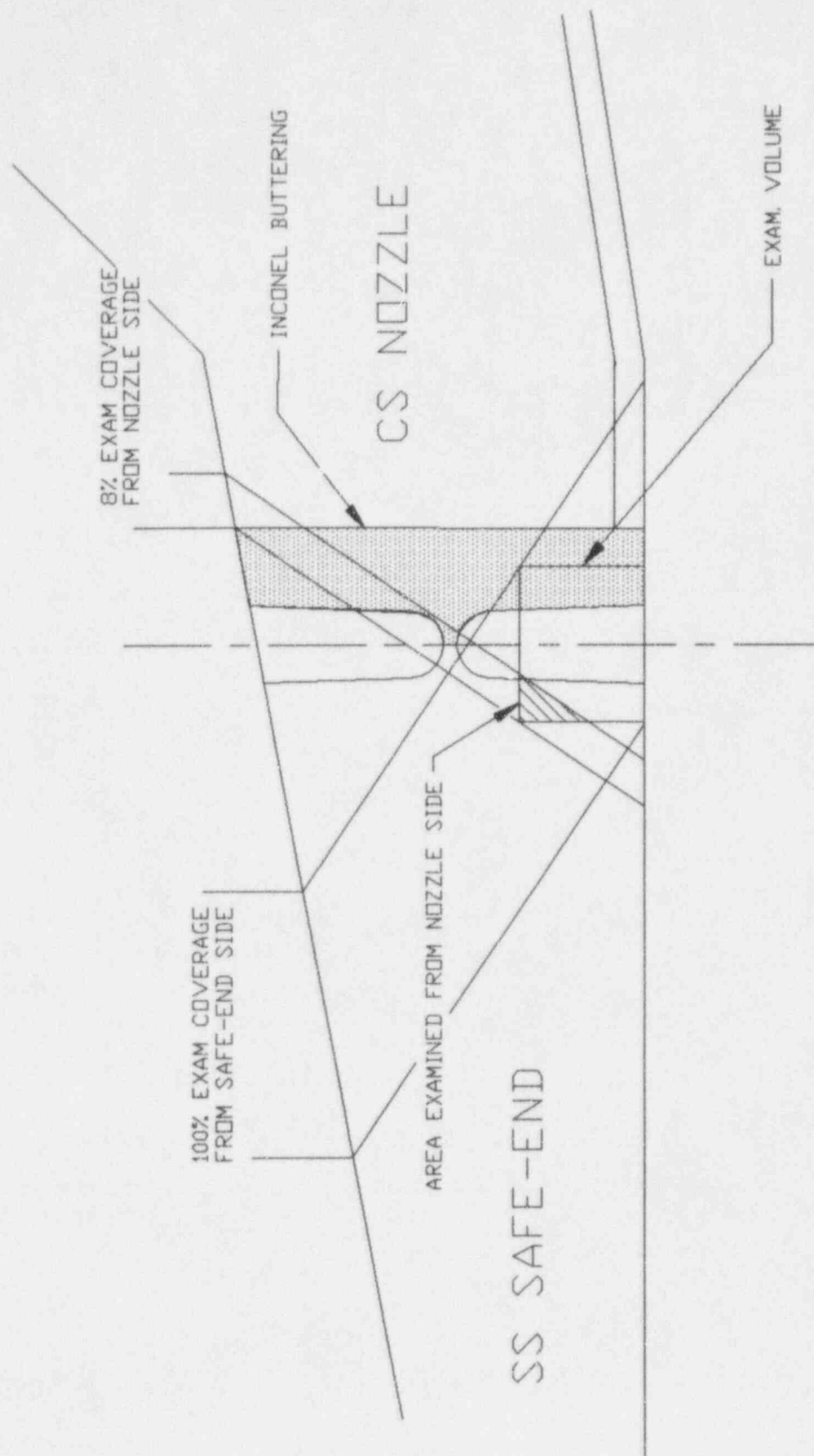
It is proposed that the examinations already completed at the reduced coverage be counted as meeting the Code requirements.

**Table NDE-26-1
North Anna Unit 1
Examination Coverage Estimates**

Mark/Weld#	Category	Item #	UT Scan Coverage %				Surface Coverage %	Reason For Partial	Sketch#
			2	5	7	8			
N-SE-29 IN (A)	B-F	B5.70	8	100	100	100	100	Nozzle Geometry, Material Attenuation Prevent Extended V-Path	1
N-SE-31 IN (A)	B-F	B5.70	100	8	100	100	100	Nozzle Geometry, Material Attenuation Prevent Extended V-Path	1
N-SE-29 IN (B)	B-F	B5.70	8	100	100	100	100	Nozzle Geometry, Material Attenuation Prevent Extended V-Path	1
N-SE-31 IN (B)	B-F	B5.70	100	8	100	100	100	Nozzle Geometry, Material Attenuation Prevent Extended V-Path	1
N-SE-29 IN (C)	B-F	B5.70	8	100	100	100	100	Nozzle Geometry, Material Attenuation Prevent Extended V-Path	1
N-SE-31 IN (C)	B-F	B5.70	100	8	100	100	100	Nozzle Geometry, Material Attenuation Prevent Extended V-Path	1
4A	B-J	B9.11	100	70	75	75	100	Nozzle & Weld Crown Geometry, Material Attenuation Prevent Extended V-Path	2
5A	B-J	B9.11	91	94	80	80	100	Nozzle & Weld Crown Geometry, Material Attenuation Prevent Extended V-Path	2
16A	B-J	B9.11	100	62	90	90	100	Nozzle & Weld Crown Geometry, Material Attenuation Prevent Extended V-Path	2
17A	B-J	B9.11	62	100	90	90	100	Nozzle & Weld Crown Geometry, Material Attenuation Prevent Extended V-Path	2
28A	B-J	B9.11	78	100	90	90	100	Nozzle & Weld Crown Geometry, Material Attenuation Prevent Extended V-Path	2
29A	B-J	B9.11	83	100	90	90	100	Nozzle & Weld Crown Geometry, Material Attenuation Prevent Extended V-Path	2

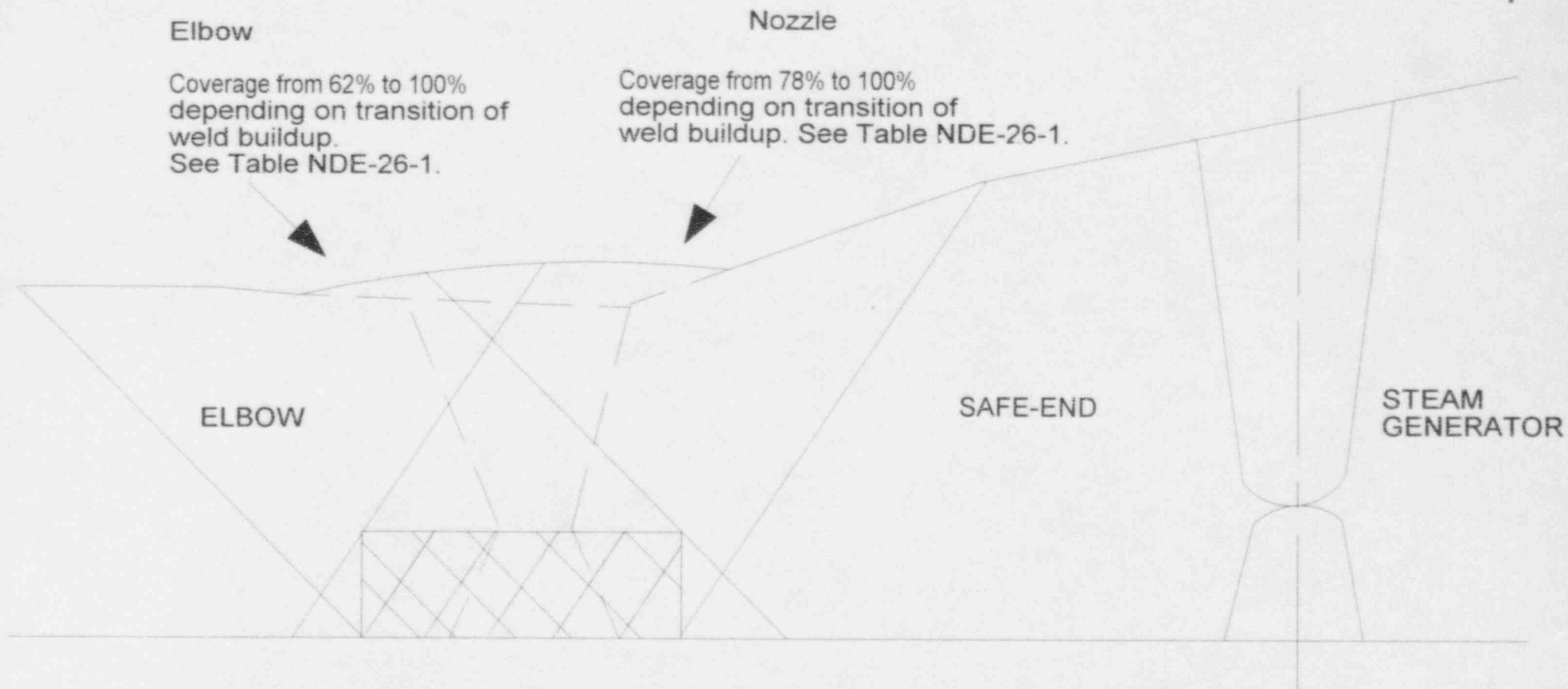
UT Scan Direction Definitions

- 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.



WELDS N-SE-29 and N-SE-31 (Typical)

SKETCH 1



Welds 4A, 5A, 16A, 17A, 28A, AND 29A (TYPICAL)

SKETCH 2