

VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

January 28, 1997

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

Serial No. 97-033
NL&OS/ETS
Docket No. 50-339
License No. NPF-7

Gentlemen:

VIRGINIA ELECTRIC AND POWER COMPANY
NORTH ANNA POWER STATION UNIT 2
REVISED ASME SECTION XI RELIEF REQUESTS

North Anna Unit 2 is currently in the second period of the second ten year interval. North Anna Unit 2 inservice inspections and examinations are conducted to the requirements of the 1986 Edition of ASME Section XI. Several examinations performed during the recent refueling outage did not meet the ASME Code required weld examination coverage. Therefore, pursuant to 10 CFR 50.55a (g)(5)(iii), relief is requested from the weld examination coverage requirements of ASME Section XI for welds in the Reactor Coolant System. Relief Requests NDE-33, 34, and 35 detail the weld examination coverage obtained and are provided as Attachments to this letter.

These relief requests have been reviewed and approved by the Station Nuclear Safety and Operating Committee.

This letter is not intended to establish any additional commitments. If you have any additional questions concerning these relief requests, please contact us.

Very truly yours,

R. F. Saunders

R. F. Saunders
Vice President - Nuclear Engineering and Services

Attachments

9702200008 970128
PDR ADOCK 05000339
Q PDR

AD47
1/1

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

ATTACHMENT 1

**ASME Section XI Relief Requests
NDE-33, 34, and 35**

**Virginia Electric and Power Company
North Anna Power Station Unit 2**

Virginia Electric & Power Company
North Anna Power Station Unit 2
Second 10 Year Interval
Request for Relief Number NDE-33

I. IDENTIFICATION OF COMPONENTS

<u>Mark/Weld#</u>	<u>Line#</u>	<u>Drawing#</u>	<u>Class</u>
9	27½"-RC-403-2501R-Q1	12050-WMKS-109E-1	1
20	31"-RC-405-2501R-Q1	12050-WMKS-109F-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. CODE REQUIREMENT FROM WHICH RELIEF IS REQUESTED

Relief is requested from examining the Code required volume for the identified pipe-to-pump welds.

IV. 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 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-33-1. Figures NDE-33-1 and NDE-33-2 are provided detailing the limitations experienced. These welds are classified as terminal ends and are required to be examined by the ISI Program.

V. ALTERNATE PROVISIONS

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

1. A visual (VT-2) examination will be performed during the normally scheduled system leakage test each refueling outage;
2. Technical Specifications requires that the reactor coolant system leak rate be limited to one gallon per minute unidentified leakage. This value is calculated at least once per 72 hours; and
3. The containment atmosphere particulate radioactivity is monitored every 12 hours.

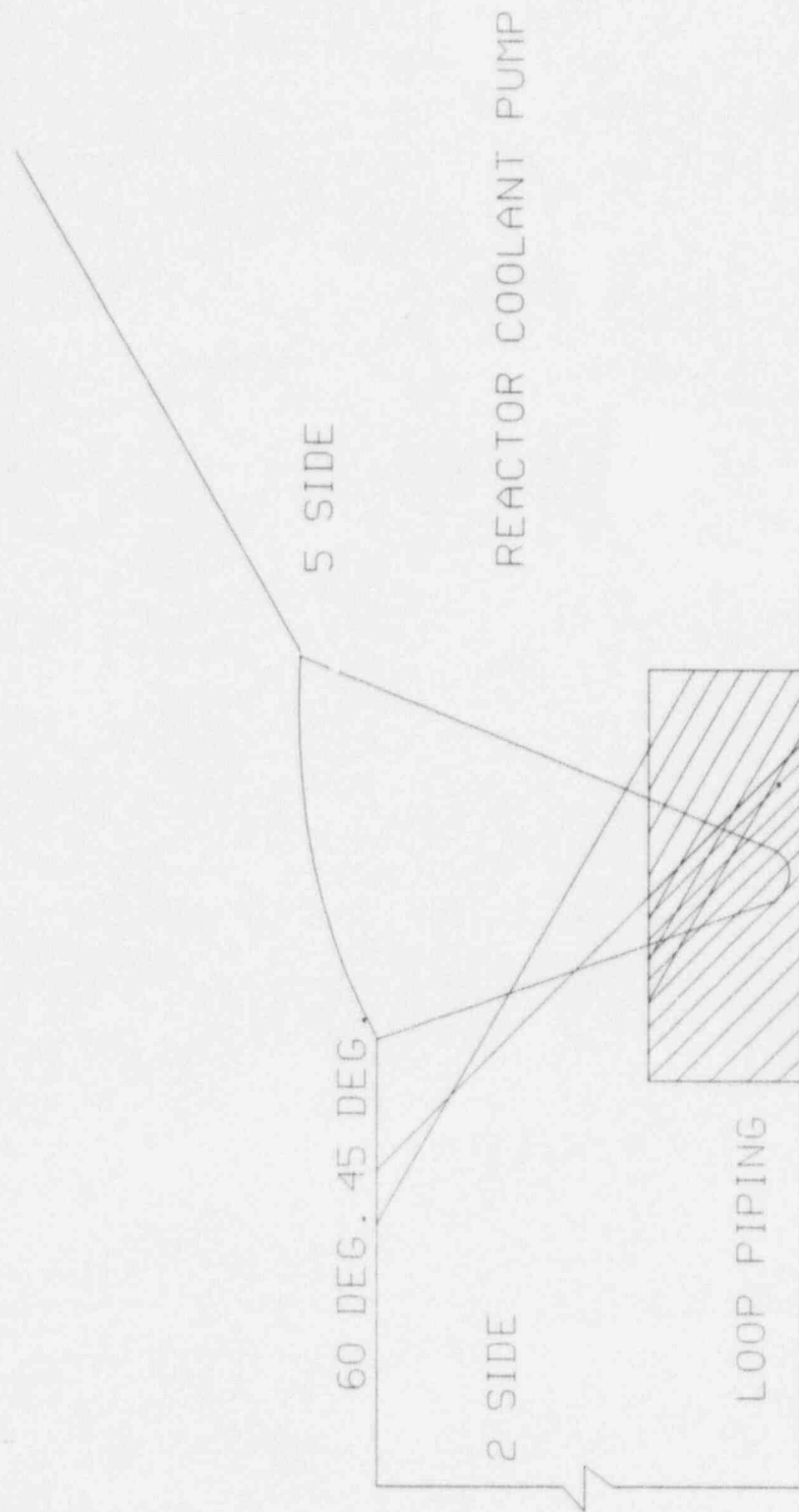
The proposed alternative examinations stated above will ensure that the overall level of plant quality and safety will not be compromised.

Table NDE-33-1
North Anna Unit 2
Examination Coverage Estimates
Category B-J, Item B9.11

Mark/Weld#	UT Coverage %				Surface Examination % Coverage %	Reason for Partial Examination
	2	5	7	8		
9	97	0	50	50	100	Nozzle and weld joint configuration and material type (ASTM A-351 austenitic steel casting) limit the use of an extended V-path examination. The weld was examined to the maximum extent practical using 45° and 60° RTD search units from the loop pipe side. Approximately 97% of the lower 1/3 of the weld was covered in the 2 direction.
20	0	100	100	100	100	Nozzle and weld joint configuration and material type (ASTM A-351 austenitic steel casting) limit the use of an extended V-path examination. The weld was examined to the maximum extent practical using 45° and 60° RTD search units from the loop pipe side. Approximately 100% of the lower 1/3 of the weld was covered in the 5 direction.

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.



WELD 9
Figure NDE-33-1

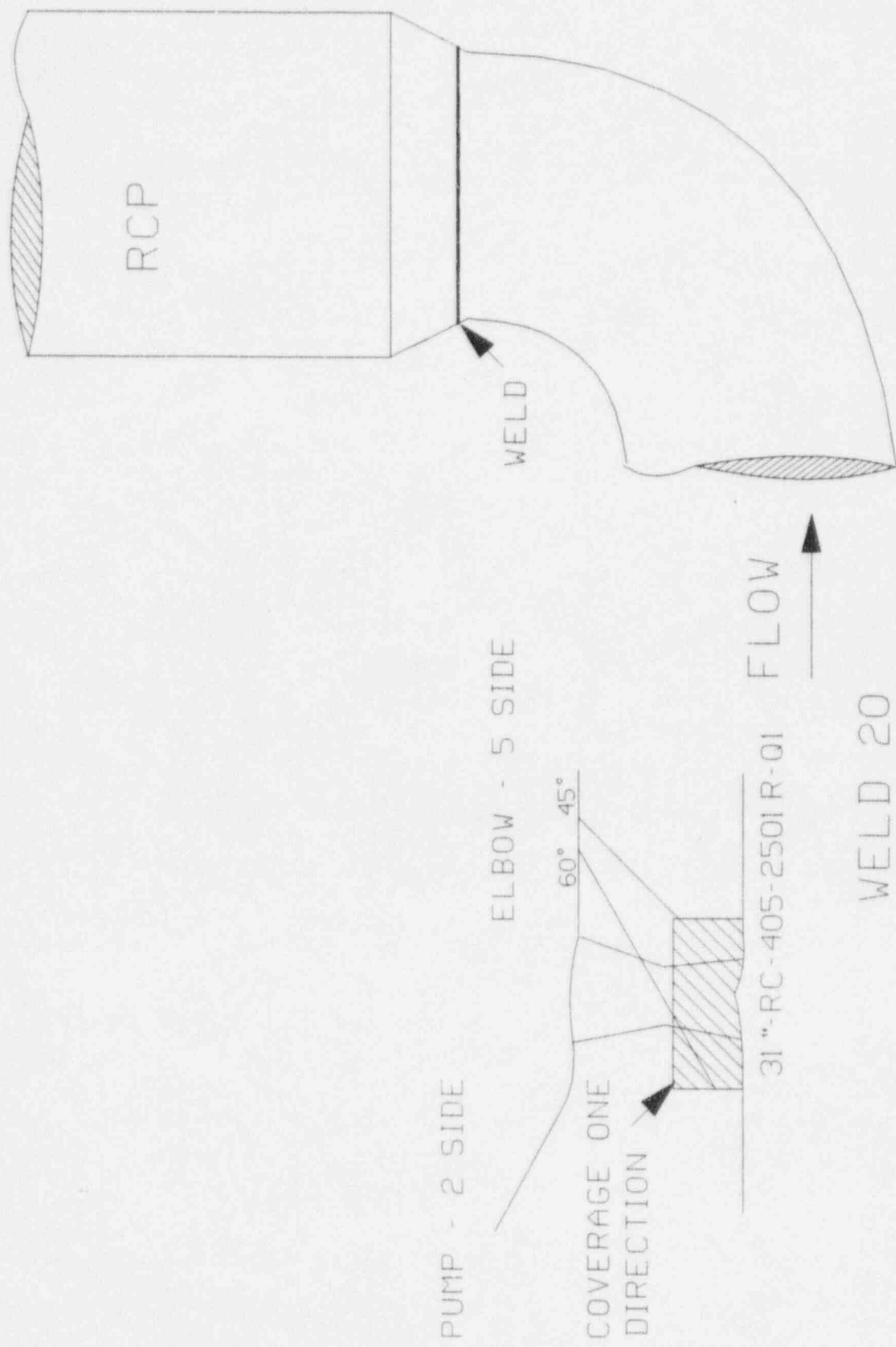
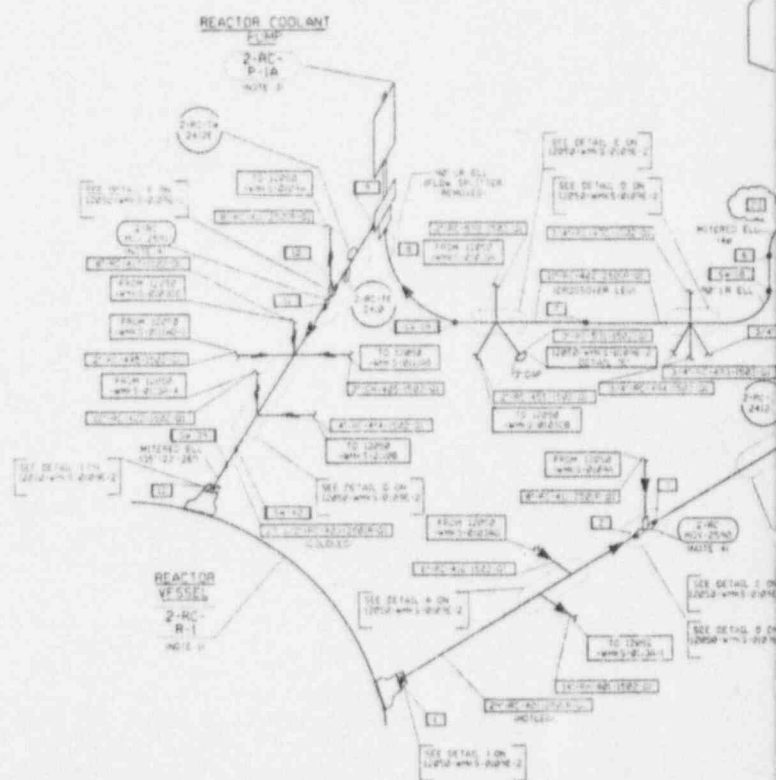
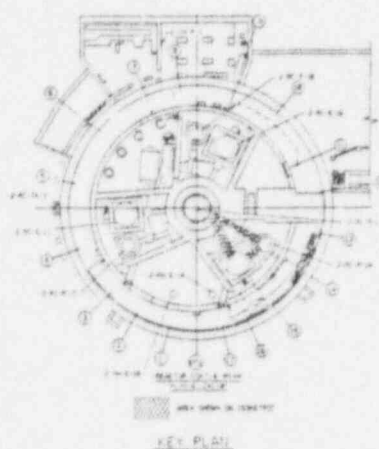


Figure NDE-33-2





NOTES

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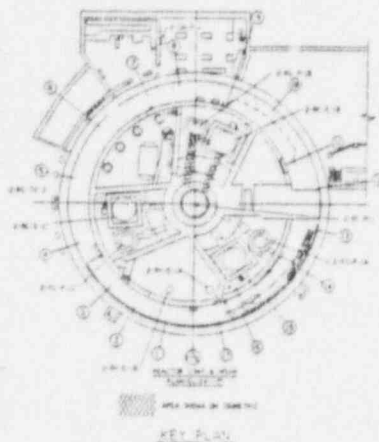
VIRGINIA POWER
NORTH CAROLINA POWER

NUCLEAR ENGINEERING SERVICES
RICHMOND VIRGINIA

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

RELEASED PER DOJ 91-11 THIS DNA SUPPLEMENTARY KEY IS OMISSION										RETURN TO GALT SINGLE SHEET FORMS AND RELEASED PER DOJ REVIEW AND PER DOB 91-11										LAMPED MARKS SHOWN 1									
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PRIOR TO USING FOR DESIGN WORK CHECK THIS FOR WORK PENDING



NOTES:

1. FOR DETAILS OF THE REACTOR VESSEL, SEE 12050-WMS-RC-401.
2. FOR DETAILS OF THE STEAM GENERATOR, SEE 12050-WMS-RC-402.
3. FOR DETAILS OF THE REACTOR COOLANT PUMP, SEE 12050-WMS-RC-403.
4. FOR DETAILS OF THE LOOP STOP VALVES, SEE 12050-WMS-RC-404.
5. 12050-WMS-RC-405 AND 12050-WMS-RC-406.
6. REFER TO STRESS CALCULATION BY WESTINGHOUSE.

**ANSTEC
APEPTURE
CARD**

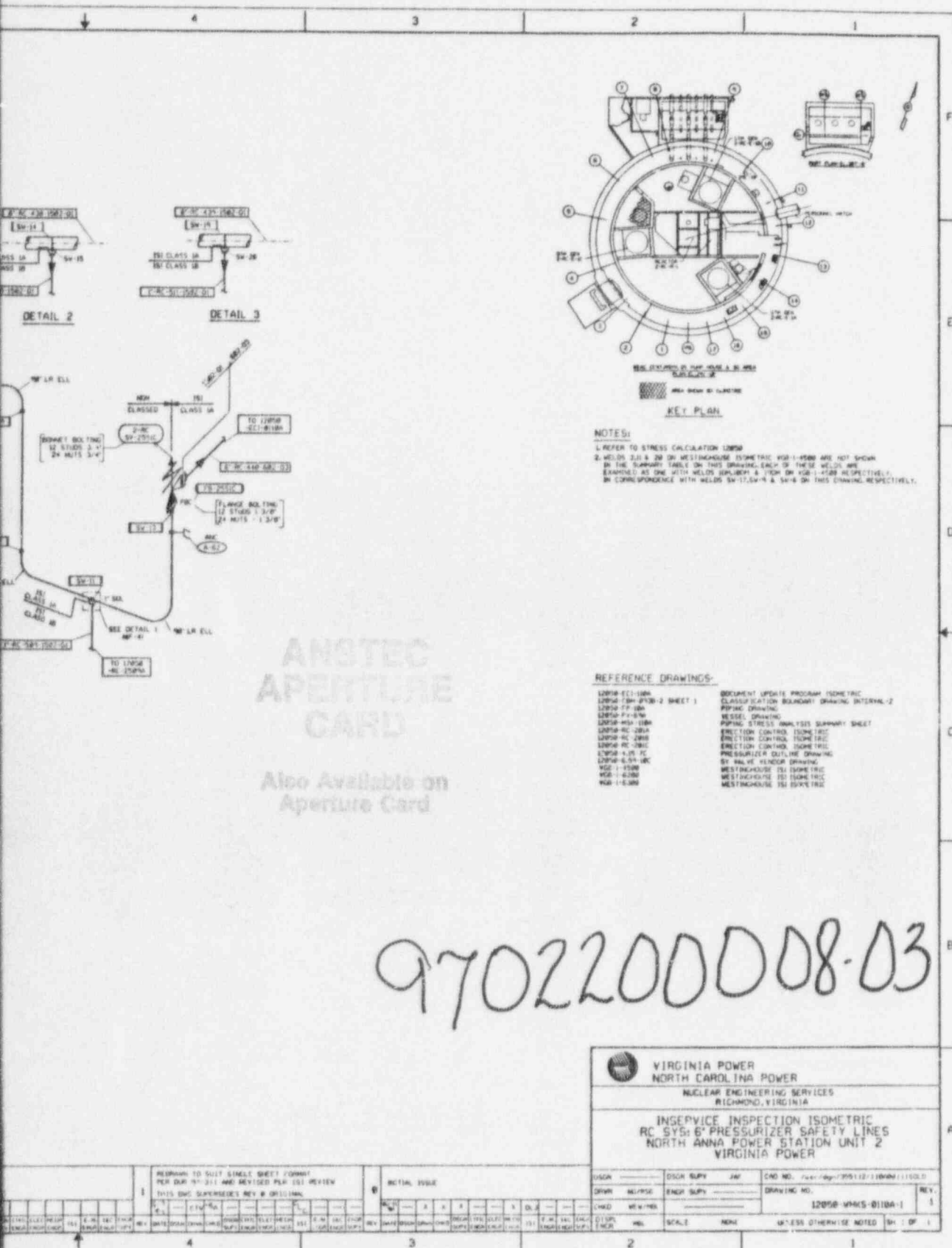
Also Available on
Aperture Card

REFERENCE DRAWINGS:

- | | |
|----------------------|-----------------------------------|
| 12050-CT-100-SHEET 1 | DOCUMENT UPDATE PROGRAM ISOMETRIC |
| 12050-SP-100-SHEET 2 | ISOMETRIC DRAWING INTERVIEW |
| 12050-SP-100 | ISOMETRIC DRAWING |
| 12050-RC-404 | ISOMETRIC DRAWING |
| 12050-RC-405 | ISOMETRIC DRAWING |
| 12050-RC-406 | ISOMETRIC DRAWING |
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9702200008-02

VIRGINIA POWER NORTH CAROLINA POWER NUCLEAR ENGINEERING SERVICES RICHMOND VIRGINIA	
INSERVICE INSPECTION ISOMETRIC RC SYS LOOP 2 REACTOR COOLANT PIPE NORTH ANNA POWER STATION UNIT 2 VIRGINIA POWER	
DATE: 12/1/81 DESIGNED BY: [blank] CHECKED BY: [blank] DRAWING NO: 12050-WMS-RC-401-1	DATE: 12/1/81 DESIGNED BY: [blank] CHECKED BY: [blank] DRAWING NO: 12050-WMS-RC-401-1



9702200008-03

Virginia Electric & Power Company
North Anna Power Station Unit 2
Second 10 Year Interval
Request for Relief Number NDE-35

I. IDENTIFICATION OF COMPONENT

<u>Mark/Weld#</u>	<u>Drawing#</u>	<u>Class</u>
1	12050-WMKS-RC-R-1.2	1

II. IMPRACTICABLE CODE REQUIREMENTS

The 1986 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. CODE REQUIREMENT FROM WHICH RELIEF IS REQUESTED

Relief is requested from examining the Code required volume for the identified head-to-flange weld.

IV. BASIS FOR RELIEF

The component listed above has been examined to the extent practical as required by the Code. Due to the joint configuration and a lifting lug the required volume could not be examined. The reduction in coverage is detailed in Table NDE-35-1. Figures NDE-35-1 and NDE-35-2 are provided detailing the limitations experienced.

V. ALTERNATE PROVISIONS

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

1. A visual (VT-2) examination will be performed during the normally scheduled system leakage test each refueling outage;
2. Technical Specifications requires that the reactor coolant system leak rate be limited to one gallon per minute unidentified leakage. This value is calculated at least once per 72 hours; and
3. The containment atmosphere particulate radioactivity is monitored every 12 hours.

The proposed alternative examinations stated above will ensure that the overall level of plant quality and safety will not be compromised.

Table NDE-35-1
North Anna 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 (120° - 240°)	0	Weld & Base	-	96	Joint configuration and material type (ASTM SA-533 GR. B with stainless steel cladding) limit the use of an V-path examination. Lift lug restricts UT scans in all directions.
	45	Weld	2	48	
	45	Weld	5	96	
	45	Weld	7	95	
	45	Weld	8	95	
	60	Weld	2	15	
	60	Weld	5	96	
	60	Weld	7	95	
	60	Weld	8	95	
	45 & 60	Base	2	56	
	45 & 60	Base	5	96	
	45 & 60	Base	7	95	
	45 & 60	Base	8	95	

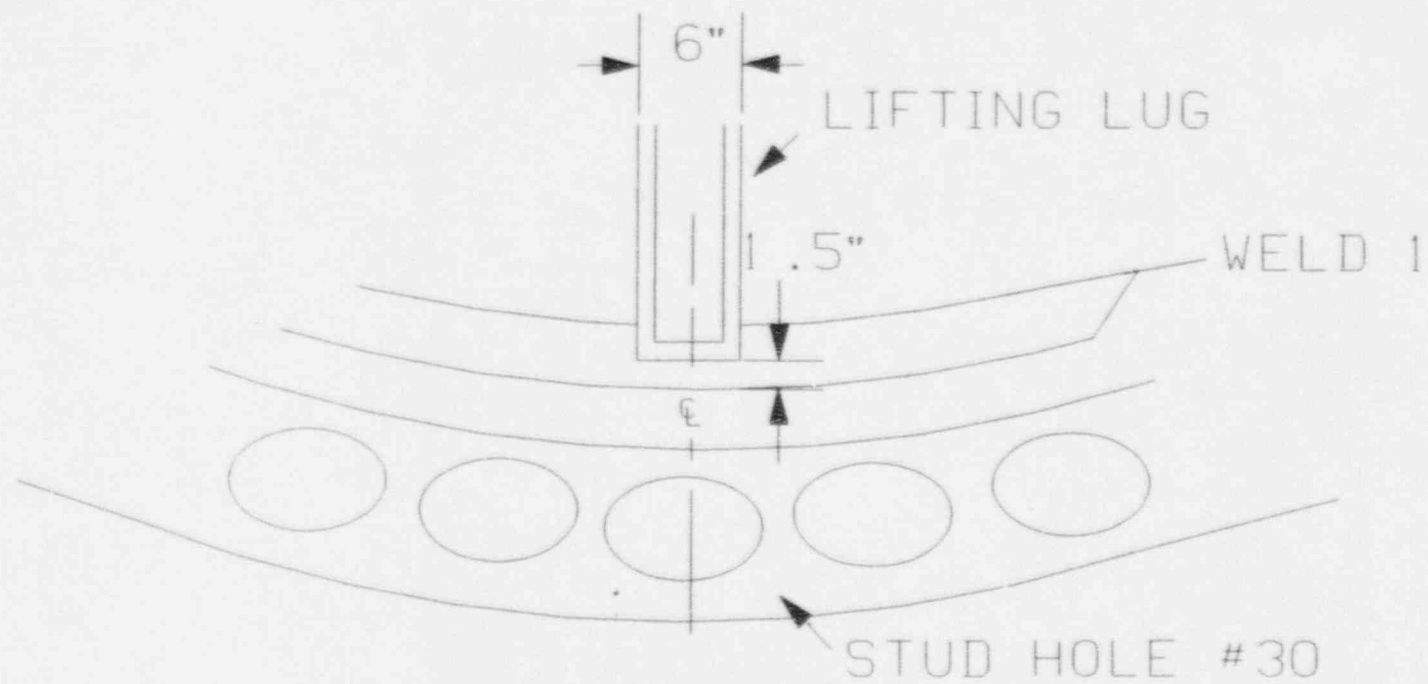
Surface coverage 96%

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-R-1.2 WELD 1

Figure NDE-35-1



12050-WMKS-RC-R-1.2 WELD 1

Figure NDE-35-2

B

7

6

5

F

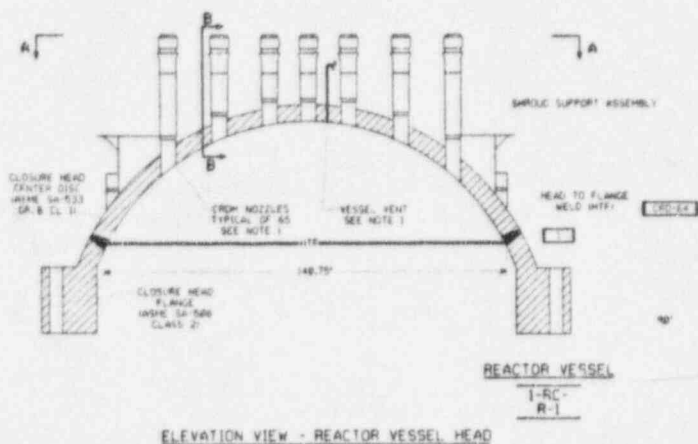
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D

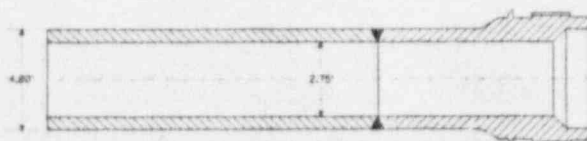
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B

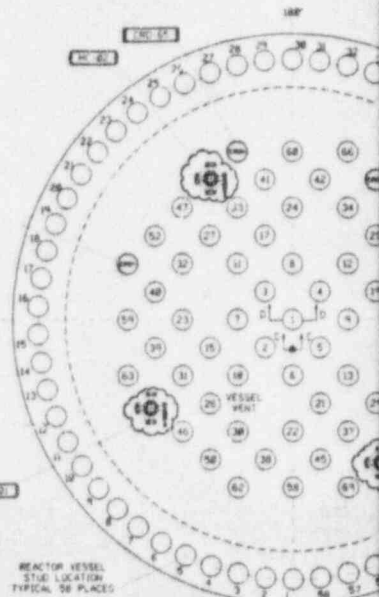
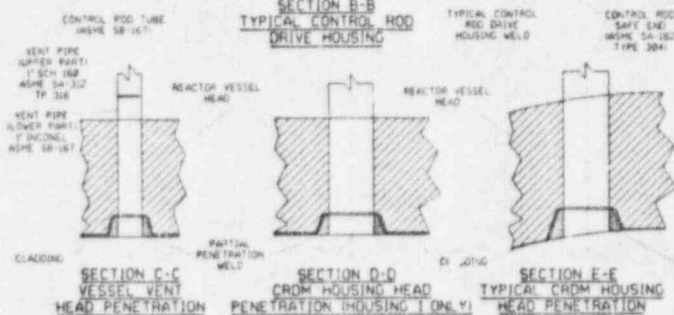
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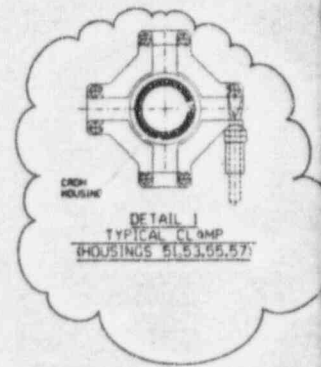
ELEVATION VIEW - REACTOR VESSEL HEAD



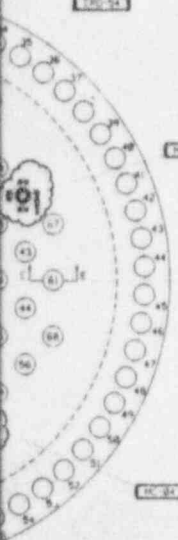
SECTION B-B
TYPICAL CONTROL ROD
DRIVE HOUSING



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



03 REVISED PER DCR 90-018 THIS DWG SUPERSEDES REV 02 ORIGINAL										02 REVISED PER DCR 93-478 THIS DWG SUPERSEDES REV 01 ORIGINAL									
REV	DATE	BY	CHKD	APPD	REV	DATE	BY	CHKD	APPD	REV	DATE	BY	CHKD	APPD	REV	DATE	BY	CHKD	APPD




1. THE REACTOR VESSEL, INLET PIPE AND DREM HOUSINGS MAY PARTIAL PENETRATION. WELDED AND CLASSIFIED CATEGORY B-E ITEM NUMBERS RA111 AND RA12 ARE PLACED, IN THE PER AIME SECTION 5. THE +12 VISION EXAMINATION OF THESE WELDS WILL BE PERFORMED DURING THE 1-ACTOR COOLANT 155M HYDROSTATIC TEST.
2. THE WESTINGHOUSE COMPONENT SKETCH WRA104-IP11 AND WRA104-IP12 WERE DEVELOPED FROM A VENDOR PART SHOWING THE DREM TOP NEAR PENETRATIONS FROM INSIDE THE REACTOR VESSEL. THE DREM ORIENTATION OF THE REACTOR VESSEL STUD LOCATIONS WERE ADDED. THE ORIENTATION OF THE REACTOR FLANGE TO DREM HOUSINGS WAS SHOWN TOP OF, COUNTERCLOCKWISE. THIS DESCRIPTION IS ADDED IN THE COMPONENT SKETCHES.

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11715-CHM-073A-2 SHEET 1          ISI CLASSIFIED/BOUNDARY DRAWING INTERVAL-2
11715-51-10-00                     REACTION VESSEL CLOSURE HEAD ASSEMBLY
11715-51-10-10                     CLOSURE HEAD ASSEMBLY - PRO HOLDING ASSEMBLY
11715-51-14-10                     CLOSURE HEAD ASSEMBLY - VENT PIPE ASSEMBLY
VBA-1(1)200                        WESTINGHOUSE PSI COMPONENT SKETCH
VBA-1(1)204                        WESTINGHOUSE PSI COMPONENT SKETCH
VBA-1(1)300                        WESTINGHOUSE PSI COMPONENT SKETCH
VBA-1(1)300A                       WESTINGHOUSE PSI COMPONENT SKETCH

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9702200008-04

 <p>VIRGINIA POWER NORTH CAROLINA POWER</p> <p>NUCLEAR ENGINEERING SERVICES RICHMOND, VIRGINIA</p>			
<p>INSERVICE INSPECTION DETAIL DRAWING REACTOR VESSEL HEAD & CRDM WELDS NORTH ANNA POWER STATION UNIT 1 VIRGINIA POWER</p>			
DESIGN DRAWING NO.	DESIGN SUPPLY ENG. SUPPLY	REV. JWA	CAD NO. /user:sgn/255/11/NA/RCR121/00P DRAWING NO. 11715-WMKS-RC-R-1-2
CAD NEW HBL			REV. 1
DISPL. FACTOR FFB	SCALE NONE	UNLESS OTHERWISE NOTED SH. 1 OF 1	

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