

December 14, 2006
GO2-06-156

10 CFR 50.55a

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

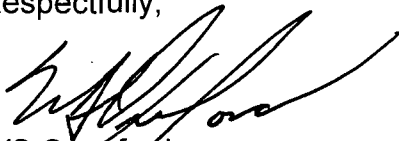
Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397
SECOND TEN-YEAR INTERVAL ISI REQUEST 2ISI-32**

Dear Sir or Madam:

In accordance with 10 CFR 50.55a(g)(5)(iii) and 10 CFR 50.55a(g)(5)(iv), Energy Northwest hereby submits the attached request for approval related to the Columbia Generating Station second ten-year interval inservice inspection program. This request pertains to the 1989 Edition, with no Addenda, of Section XI of the ASME Boiler and Pressure Vessel Code, for examinations which resulted in less than 100% ASME code required coverage. Energy Northwest has determined that conformance with the code requirements described herein is impractical for Columbia Generating Station.

There are no commitments being made to the NRC by this letter. If you have any questions or require additional information regarding this matter, please contact GV Cullen, Licensing Supervisor, at (509) 377-6105.

Respectfully,



WS Oxenford
Vice President, Technical Services
Mail Drop PE04

Attachment: Request 2ISI-32 Tables and Sections including Attachments A through G

cc: BS Mallett – NRC RIV (w/o)
RF Kuntz – NRC NRR (w/o)
NRC Senior Resident Inspector/988C (w/o)
RN Sherman – BPA/1399 (w/o)
WA Horin – Winston & Strawn (w/o)

A047

REQUEST 2ISI-32 TABLES AND SECTIONS

Attachment

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10 CFR 50.55a Request Number 2ISI-32

Proposed Alternative

In Accordance with 10 CFR 50.55a(g)(5)(iii)

--Inservice Inspection Impracticality—

Summary

This request identifies components whose inspection coverage during the second Inservice Inspection Interval was less than essentially 100% due to impracticality. Essentially 100% examination coverage is defined in Code Case N-460 (listed in Regulatory Guide 1.147 Revision 14 as acceptable without conditions) as examining greater than 90% of the applicable volume or area.

Tables 1 through 4 list the individual components.

Sections 1 through 7 provide the details of the limitations, alternate examination proposed, and duration of the request.

Attachments A through G provide additional information supporting the request including examination data sheets, coverage plots, and drawings.

Abbreviations

RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
MS	Main Steam
RRC	Reactor Recirculation
HPCS	High Pressure Core Spray
SWL	Sweep-O-Let
RWCU	Reactor Water Cleanup
RPV	Reactor Pressure Vessel
IGSCC	Intergranular Stress Corrosion Cracking
TT	Thermal Transient
TASCS	Thermal Stratification Cycling and Striping
SCC	Stress Corrosion Cracking

REQUEST 2ISI-32 TABLES AND SECTIONS

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TABLE 1 Code Category B-D Item Number B3.90								
REQUEST NUMBER	1. ASME CODE COMPONENT (AREA OR WELD TO BE EXAMINED)	2. COMPONENT ID NO. Material (Associated damage mechanism)	3. APPLICABLE CODE REQUIREMENT (% COVERAGE OBTAINED)	4. IMPRACTICALITY OF COMPLIANCE	5. BURDEN CAUSED BY COMPLIANCE	6. PROPOSED ALTERNATIVE AND BASIS FOR USE	7. DURATION OF PROPOSED ALTERNATIVE	8. RECORDABLE INDICATIONS FOUND DURING EXAMINATION?
2ISI-32-1	RPV Top Head Spare Nozzle to RPV Weld	N7 SA 508 CL2 (None)	Relief Request 2ISI-24 Figure 2ISI-24-1 (88% volumetric coverage)	See Paragraph 4.A	See Paragraph 5.A	See Paragraph 6.A	See Paragraph 7	None
2ISI-32-2	RPV Top Head Spare Nozzle to RPV Weld	N18 SA 508 CL2 (None)	Relief Request 2ISI-24 Figure 2ISI-24-1 (85% volumetric coverage)	See Paragraph 4.A	See Paragraph 5.A	See Paragraph 6.A	See Paragraph 7	None

REQUEST 2ISI-32 TABLES AND SECTIONS

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TABLE 2
Code Category B-F
Item Number B5.130

REQUEST NUMBER	1. ASME CODE COMPONENT (AREA OR WELD TO BE EXAMINED)	2. COMPONENT ID NO. Material (Associated damage mechanism)	3. APPLICABLE CODE REQUIREMENT (% COVERAGE OBTAINED)	4. IMPRACTICALITY OF COMPLIANCE	5. BURDEN CAUSED BY COMPLIANCE	6. PROPOSED ALTERNATIVE AND BASIS FOR USE	7. DURATION OF PROPOSED ALTERNATIVE	8. RECORDABLE INDICATIONS FOUND DURING EXAMINATION?
2ISI-32-3	HPCS Discharge to RPV Safe end extension to safe end	10HPCS(1)-3 SA 508 CL1 / SB 166 (SCC)	Fig. IWB-2500-8 (85% volumetric coverage)	See Paragraph 4.B	See Paragraph 5.A	See Paragraph 6.B	See Paragraph 7	None
2ISI-32-4	RHR Shutdown Cooling Return Valve to Safe end	12RHR(1)A-14 SA-350 GR LF2 / SA-182 TP 304 (IGSCC)	Fig. IWB-2500-8 (26% volumetric coverage)	See Paragraph 4.B	See Paragraph 5.A	See Paragraph 6.B	See Paragraph 7	None
2ISI-32-5	RHR Shutdown Cooling Return Valve to Safe end	12RHR(1)B-10 SA-350 GR LF2 / SA-182 TP 304 (IGSCC)	Fig. IWB-2500-8 (29% volumetric coverage)	See Paragraph 4.B	See Paragraph 5.A	See Paragraph 6.B	See Paragraph 7	None

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TABLE 3 Code Category B-J Item Number B9.11								
REQUEST NUMBER	1. ASME CODE COMPONENT (AREA OR WELD TO BE EXAMINED)	2. COMPONENT ID NO. Material (Associated damage mechanism)	3. APPLICABLE CODE REQUIREMENT (% COVERAGE OBTAINED)	4. IMPRACTICALITY OF COMPLIANCE	5. BURDEN CAUSED BY COMPLIANCE	6. PROPOSED ALTERNATIVE AND BASIS FOR USE	7. DURATION OF PROPOSED ALTERNATIVE	8. RECORDABLE INDICATIONS FOUND DURING EXAMINATION?
2ISI-32-6	RCIC Head Spray Pipe to Valve	6RCIC(1)-40 SA 106 GR B (TT,TASCS)	Fig. IWB-2500-8 (86% volumetric coverage)	See Paragraph 4.C	See Paragraph 5.A	See Paragraph 6.C	See Paragraph 7	None
2ISI-32-7	RRC Discharge Pipe to Valve	24RRC(1)A-14 SA 358 GR 304 CL 1 (IGSCC)	Fig. IWB-2500-8 (50% volumetric coverage)	See Paragraph 4.D	See Paragraph 5.A	See Paragraph 6.D	See Paragraph 7	None
2ISI-32-8	RRC Discharge Valve to Pipe	24RRC(1)A-15 SA 358 GR 304 CL (IGSCC)	Fig. IWB-2500-8 (50% volumetric coverage)	See Paragraph 4.D	See Paragraph 5.A	See Paragraph 6.D	See Paragraph 7	None
2ISI-32-9	RRC Discharge Pipe to Valve	24RRC(1)A-18 SA 358 GR 304 CL 1 (IGSCC)	Fig. IWB-2500-8 (50% volumetric coverage)	See Paragraph 4.D	See Paragraph 5.A	See Paragraph 6.D	See Paragraph 7	None
2ISI-32-10	RRC Discharge Valve to Elbow	24RRC(1)A-19 SA 358 GR 304 CL 1 (IGSCC)	Fig. IWB-2500-8 (50% volumetric coverage)	See Paragraph 4.D	See Paragraph 5.A	See Paragraph 6.D	See Paragraph 7	None

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TABLE 3 Code Category B-J Item Number B9.11								
REQUEST NUMBER	1. ASME CODE COMPONENT (AREA OR WELD TO BE EXAMINED)	2. COMPONENT ID NO. Material (Associated damage mechanism)	3. APPLICABLE CODE REQUIREMENT (% COVERAGE OBTAINED)	4. IMPRACTICALITY OF COMPLIANCE	5. BURDEN CAUSED BY COMPLIANCE	6. PROPOSED ALTERNATIVE AND BASIS FOR USE	7. DURATION OF PROPOSED ALTERNATIVE	8. RECORDABLE INDICATIONS FOUND DURING EXAMINATION?
2ISI-32-11	RRC Discharge Pipe to Valve	24RRC(1)B-12 SA 358 GR 304 CL 1 (IGSCC)	Fig. IWB-2500-8 (50% volumetric coverage)	See Paragraph 4.D	See Paragraph 5.A	See Paragraph 6.D	See Paragraph 7	None
2ISI-32-12	RRC Discharge Pipe to Valve	24RRC(1)B-16 SA 358 GR 304 CL 1 (IGSCC)	Fig. IWB-2500-8 (50% volumetric coverage)	See Paragraph 4.D	See Paragraph 5.A	See Paragraph 6.D	See Paragraph 7	None
2ISI-32-13	RRC Discharge Valve to Elbow	24RRC(1)B-17 SA 358 GR 304 CL 1 (IGSCC)	Fig. IWB-2500-8 (50% volumetric coverage)	See Paragraph 4.D	See Paragraph 5.A	See Paragraph 6.D	See Paragraph 7	None
2ISI-32-14	RRC Suction Valve to Pipe	24RRC(2)A-10 SA 358 GR 304 CL 1 (IGSCC)	Fig. IWB-2500-8 (50% volumetric coverage)	See Paragraph 4.D	See Paragraph 5.A	See Paragraph 6.D	See Paragraph 7	None
2ISI-32-15	RRC Suction Valve to Pipe	24RRC(2)B-8 SA 358 GR 304 CL 1 (IGSCC)	Fig. IWB-2500-8 (50% volumetric coverage)	See Paragraph 4.D	See Paragraph 5.A	See Paragraph 6.D	See Paragraph 7	None

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TABLE 3 Code Category B-J Item Number B9.11								
REQUEST NUMBER	1. ASME CODE COMPONENT (AREA OR WELD TO BE EXAMINED)	2. COMPONENT ID NO. Material (Associated damage mechanism)	3. APPLICABLE CODE REQUIREMENT (% COVERAGE OBTAINED)	4. IMPRACTICALITY OF COMPLIANCE	5. BURDEN CAUSED BY COMPLIANCE	6. PROPOSED ALTERNATIVE AND BASIS FOR USE	7. DURATION OF PROPOSED ALTERNATIVE	8. RECORDABLE INDICATIONS FOUND DURING EXAMINATION?
2ISI-32-16	RRC Suction Elbow to Pump	24RRC(2)B-10 SA 358 GR 304 CL 1 (IGSCC)	Fig. IWB-2500-8 (50% volumetric coverage)	See Paragraph 4.E	See Paragraph 5.A	See Paragraph 6.E	See Paragraph 7	None
2ISI-32-17	RRC Discharge Cap to Sweep-O-Let	24RRC(2)B-11/8CAP-1 SA 403 GR WP 304 with Corrosion resistant clad – CRC (IGSCC)	Fig. IWB-2500-8 (50% volumetric coverage)	See Paragraph 4.F	See Paragraph 5.A	See Paragraph 6.F	See Paragraph 7	None
2ISI-32-18	RRC Discharge Pipe to Sweep-O-Let	24RRC(2)B-11/4RRC(4)-4S SA 358 GR 304 CL 1 (IGSCC)	Fig. IWB-2500-8 (50% volumetric coverage)	See Paragraph 4.F	See Paragraph 5.A	See Paragraph 6.F	See Paragraph 7	None
2ISI-32-19	RRC Suction Pipe to Sweep-O-Let	24RRC(2)B-8/4RRC(8)-4S SA 358 GR 304 CL 1 (IGSCC)	Fig. IWB-2500-8 (50% volumetric coverage)	See Paragraph 4.F	See Paragraph 5.A	See Paragraph 6.F	See Paragraph 7	None

REQUEST 2ISI-32 TABLES AND SECTIONS

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TABLE 3
Code Category B-J
Item Number B9.11

REQUEST NUMBER	1. ASME CODE COMPONENT (AREA OR WELD TO BE EXAMINED)	2. COMPONENT ID NO. Material (Associated damage mechanism)	3. APPLICABLE CODE REQUIREMENT (% COVERAGE OBTAINED)	4. IMPRACTICALITY OF COMPLIANCE	5. BURDEN CAUSED BY COMPLIANCE	6. PROPOSED ALTERNATIVE AND BASIS FOR USE	7. DURATION OF PROPOSED ALTERNATIVE	8. RECORDABLE INDICATIONS FOUND DURING EXAMINATION?
2ISI-32-20	RRC Suction Pipe to Sweep-O-Let	24RRC(2)B-8/4RRC(4)-4S SA 358 GR 304 CL 1 (IGSCC)	Fig. IWB-2500-8 (50% volumetric coverage)	See Paragraph 4.F	See Paragraph 5.A	See Paragraph 6.F	See Paragraph 7	None

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TABLE 4 Code Category C-F-2 Item Number C5.51								
REQUEST NUMBER	1. ASME CODE COMPONENT (AREA OR WELD TO BE EXAMINED)	2. COMPONENT ID NO. Material (Associated damage mechanism)	3. APPLICABLE CODE REQUIREMENT (% COVERAGE OBTAINED)	4. IMPRACTICALITY OF COMPLIANCE	5. BURDEN CAUSED BY COMPLIANCE	6. PROPOSED ALTERNATIVE AND BASIS FOR USE	7. DURATION OF PROPOSED ALTERNATIVE	8. RECORDABLE INDICATIONS FOUND DURING EXAMINATION?
2ISI-32-21	MS line Cap to Pipe	6MS(1)B-2 SA 106 GR B (None)	Fig. IWC-2500-7 (81% volumetric coverage 85% surface coverage)	See Paragraph 4.G	See Paragraph 5.A	See Paragraph 6.G	See Paragraph 7	None

REQUEST 2ISI-32 TABLES AND SECTIONS

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1. ASME Code Components Affected

Refer to Tables 1 through 4, Columns 1 and 2

2. Applicable Code Edition and Addenda

ASME Section XI - 1989 Edition no Addenda

ASME Section XI – 1995 Edition, 1996 Addenda for Appendix VIII

3. Applicable Code Requirement

Refer to Tables 1 through 4, Column 3

All welds receiving a volumetric examination after the implementation dates in 10 CFR 50.55a for ASME Section XI, Appendix VIII were performed in accordance with Appendix VIII as modified by 10 CFR 50.55a.

4. Impracticality of Compliance

- A. Table 1 Code Category B-D weld identification N18. See additional information in attachment A. Examination requirement is per 10 CFR 50.55a request 2ISI-24, figure 2ISI-24-1. This request was authorized by letter, Nuclear Regulatory Commission to Mr. J. V. Parrish, "Columbia Generating Station - Relief Requests 2ISI-21, 2ISI-22, 2ISI-23, 2ISI-24 and Commitment Change (TAC No. MB0686)," dated April 25, 2001 (reference 1). When applying this requirement, Energy Northwest was only able to obtain 85% examination coverage of the weld due to the configuration of the nozzle. Full code examination volume was obtained in both axial directions and one circumferential direction. The other circumferential direction scan was limited by the nozzle radius configuration.
- B. Table 2 Code Category B-F Weld identification 10HPCS(1)-3, 12RHR(1)A-14, and 12RHR(1)B-10. See additional information in attachment B. The reason the examination was limited for 10HPCS(1)-3 was the configuration of the safe end which does not allow full code coverage from the safe end side. The reason the examination was limited for welds 12RHR(1)A-14 and 12RHR(1)B-10 is the configuration of the safe end and valve body did not allow full coverage scanning from both the safe end side and the valve side.
- C. Table 3 Code Category B-J support attachment weld configuration Weld identification 6RCIC(1)-40. See additional information in attachment C. The reason the examination was limited for the weld listed above is the support attachment welded to the pipe did not allow full coverage scanning from the attachment side.

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- D. Table 3 Code Category B-J Valve configuration Weld identification 24RRC(1)A-14, 24RRC(1)A-15, 24RRC(1)A-18, 24RRC(1)B-12, 24RRC(1)B-16, 24RRC(2)A-10, 24RRC(2)B-8, 24RRC(1)B-17, 24RRC(1)A-19. See additional information in attachment D. The reason the examination was limited for the welds listed above is the configuration of the valve body did not allow full coverage scanning from the valve side.
- E. Table 3 Code Category B-J pump configuration Weld identification 24RRC(2)B-10. See additional information in attachment E. The reason the examination was limited for above weld is the configuration of the pump body did not allow full coverage scanning from the pump side.
- F. Table 3 Code Category B-J sweep-o-let configuration Weld identification 24RRC(2)B-8/4RRC(8)-4S, 24RRC(2)B-8/4RRC(4)-4S 24RRC(2)B-11/8CAP-1 24RRC(2)B-11/4RRC(4)-4S. See additional information in attachment F. The reason the examination was limited for the above welds is the configuration of the sweep-o-let did not allow full coverage scanning from the sweep-o-let side.
- G. Table 4 Code Category C-F-2 Weld identification 6MS(1)B-2. See additional information in attachment G. The reason for the limited coverage for this weld is a pipe support attachment welded to the pipe. Transducers were not able to scan from the three areas where the support is welded to the pipe. The surface examination could not examine the pipe that was under the welded attachments. This resulted in the limitation for this weld.

5. Burden Caused by Compliance

- A. To achieve the code required examination volume or area the part would need to be redesigned. This is not a practical action.

6. Proposed Alternative and Basis for Use

- A. Table 1 Code Category B-D weld identification N18. The proposed alternative is to examine the weld to achieve at least 85% examination coverage. A significant volume of the weld and base material was examined to provide a reasonable assurance that any service induced flaws would be detected. The weld volume was interrogated using 0, 45, 60, and 70RL transducers. The ultrasonic technique was performed in accordance with ASME Section XI, Appendix VIII as modified by 10 CFR 50.55a and 10CFR50.55a request 2ISI-24. The examinations performed applied all the current knowledge and techniques to obtain the maximum amount of coverage to the extent practical within the limitations of design, geometry and materials of construction of the component. No indications were detected in the base material nor weld.

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- B. Table 2 Code Category B-F Weld identification 10HPCS(1)-3, 12RHR(1)A-14, and 12RHR(1)B-10. The proposed alternative is to examine the welds to achieve at least the examination coverage identified in Table 2, column 3 for each weld. The examinations performed applied all the current knowledge and techniques to obtain the maximum amount of coverage to the extent practical within the limitations of design, geometry and materials of construction of the component. The entire weld population Code Category B-F was examined. Of the forty three (43) Code Category B-F welds the three welds listed in Table 2 were the only ones where essentially 100% code coverage was not obtained. This represents a significant total volume of welds examined in this category. No indications were detected in the base material nor welds for all the volume examined in this category.
- C. Table 3 Code Category B-J support attachment weld configuration Weld identification 6RCIC(1)-40. The proposed alternative is to examine the weld to achieve at least 86% examination coverage. The examinations performed applied all the current knowledge and techniques to obtain the maximum amount of coverage to the extent practical within the limitations of design, geometry and materials of construction of the component. No indications were detected in the base material nor weld.
- D. Table 3 Code Category B-J Valve configuration Weld identification 24RRC(1)A-14, 24RRC(1)A-15, 24RRC(1)A-18, 24RRC(1)B-12, 24RRC(1)B-16, 24RRC(2)A-10, 24RRC(2)B-8, 24RRC(1)B-17, 24RRC(1)A-19. The proposed alternative is to examine the weld to achieve at least the examination coverage identified in Table 3, column 3 for each weld. The examinations performed applied all the current knowledge and techniques to obtain the maximum amount of coverage to the extent practical within the limitations of design, geometry and materials of construction of the component. No indications were detected in the base material nor welds.
- E. Table 3 Code Category B-J pump configuration Weld identification 24RRC(2)B-10. The proposed alternative is to examine the weld to achieve at least 50% examination coverage. The examinations performed applied all the current knowledge and techniques to obtain the maximum amount of coverage to the extent practical within the limitations of design, geometry and materials of construction of the component. No indications were detected in the base material nor weld.
- F. Table 3 Code Category B-J sweep-o-let configuration Weld identification 24RRC(2)B-8/4RRC(8)-4S, 24RRC(2)B-8/4RRC(4)-4S 24RRC(2)B-11/8CAP-1 24RRC(2)B-11/4RRC(4)-4S. The proposed alternative is to examine the weld to achieve at least the examination coverage identified in Table 3, column 3 for each weld. The examinations performed applied all the current knowledge and techniques to obtain the maximum amount of coverage to the extent practical

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within the limitations of design, geometry and materials of construction of the component. No indications were detected in the base material nor welds.

- G. Table 4 Code Category C-F-2 Weld identification 6MS(1)B-2 The proposed alternative is to examine the weld to achieve at least the examination coverage identified in Table 5, Column 3. The examinations performed applied all the current knowledge and techniques to obtain the maximum amount of coverage to the extent practical within the limitations of design, geometry and materials of construction of the component. No indications were found with either the surface or volumetric examinations.

7. Duration of Proposed Alternative

The request is for the duration of the second inspection interval which began February 10, 1995 and concluded December 12, 2005.

References

1. Nuclear Regulatory Commission to Mr. J. V. Parrish, "Columbia Generating Station - Relief Requests 2ISI-21, 2ISI-22, 2ISI-23, 2ISI-24 and Commitment Change (TAC No. MB0686)," dated 4/25/2001, ML011150323

**REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment**

Attachment A

2ISI-32-1

Weld Identification N7

ISI Diagram RPV-111

Figure 2ISI-24-1

NDE Data Report R-R13-G17 pages 1, 8, and 9 through 15

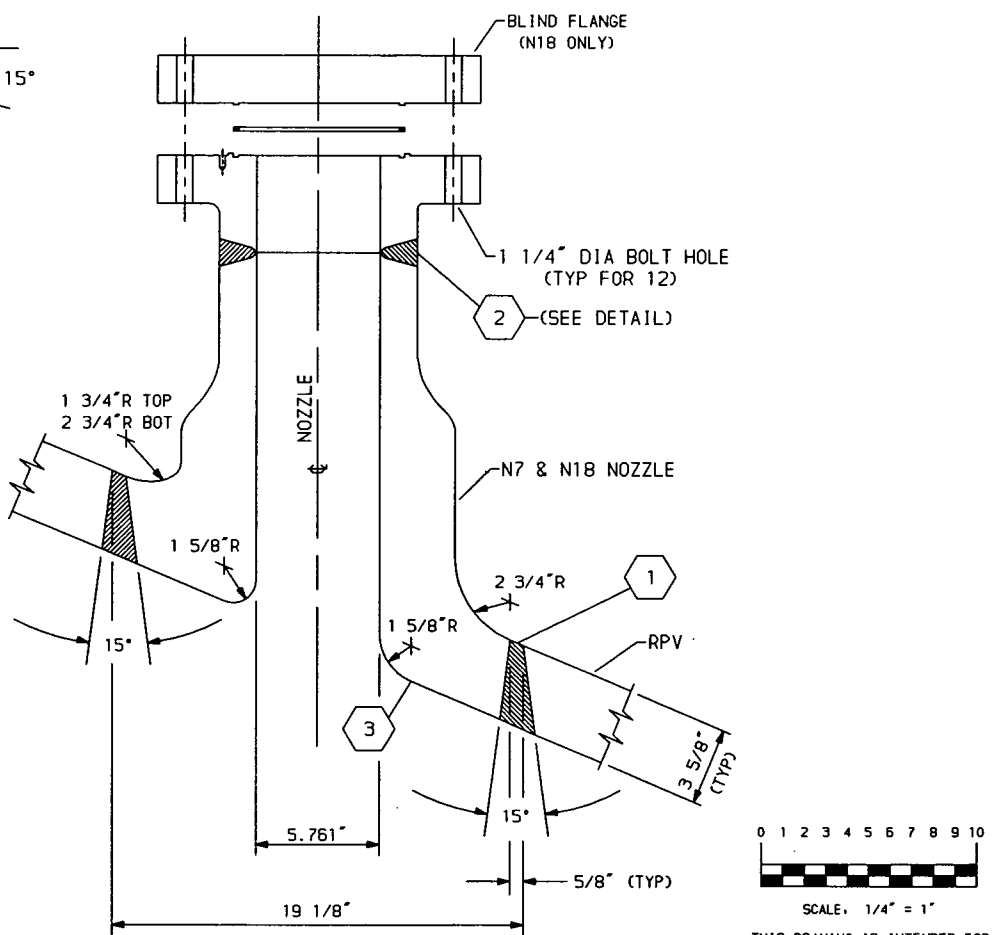
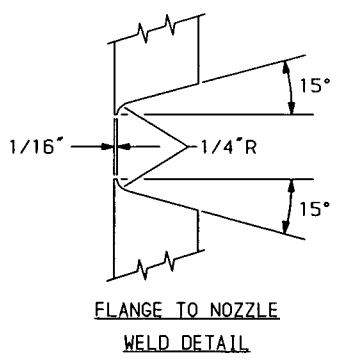
2ISI-32-2

Weld Identification N18

NDE Data Report R15-109 pages 1, 6, and 7

NDE Data Report R15-109 enlarged page 6 of 7 two pages

A
B
C
D
E
F
G
H



WELDS

- (1) N7 0° RCIC
N18 180° SPARE
- (2) 6RCIC(1)-45
6" SPARE-1

NOTES

- CAL BLOCK END EXTENSION**
- (1) UT-115 NOZZLE TO VESSEL HEAD WELD
 - (2) UT-107 NOZZLE TO FLANGE WELD
 - (3) UT-115 NOZZLE INNER RADIUS

REFERENCES:

- CBI NUCLEAR CO. 205 AE 023
SHT 68 REV 2 N7 NOZZLE & WELD NECK FLANGE
SHT 69 REV 4 N7 NOZZLE ASSEMBLY
SHT 92 REV 4 N18 NOZZLE & WELD NECK FLANGE
SHT 93 REV 6 N18 NOZZLE ASSEMBLY
- ISI ISOMETRICS
RCIC-102-3 REV 5
RPV-102 REV 2

QUALITY CLASS, 1	ASME CODE CLASS, 1
ENGR, T HOYLE	DRAWN, K-McA DATE, 5-17-79

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM
RICHLAND, WASHINGTON 99352

PIPING SYSTEM	NOM DIA INCH	SCH	NOM WALL THICKNESS	MATERIAL SPEC	MATL TYPE	CAL BLOCK NUMBER
6"RCIC(1)-4	6	80	0.432	SA 106 GR B	CS	SEE NOTES
WELD NECK FLANGE	6	900#		SA 508 CL 1	CS	SEE NOTES
N7 NOZZLE				SA 508 CL 2	CS	SEE NOTES
N18 NOZZLE				SA 508 CL 2	CS	SEE NOTES
RPV			3 5/8	SA 533 GR B CL 1	CS	SEE NOTES

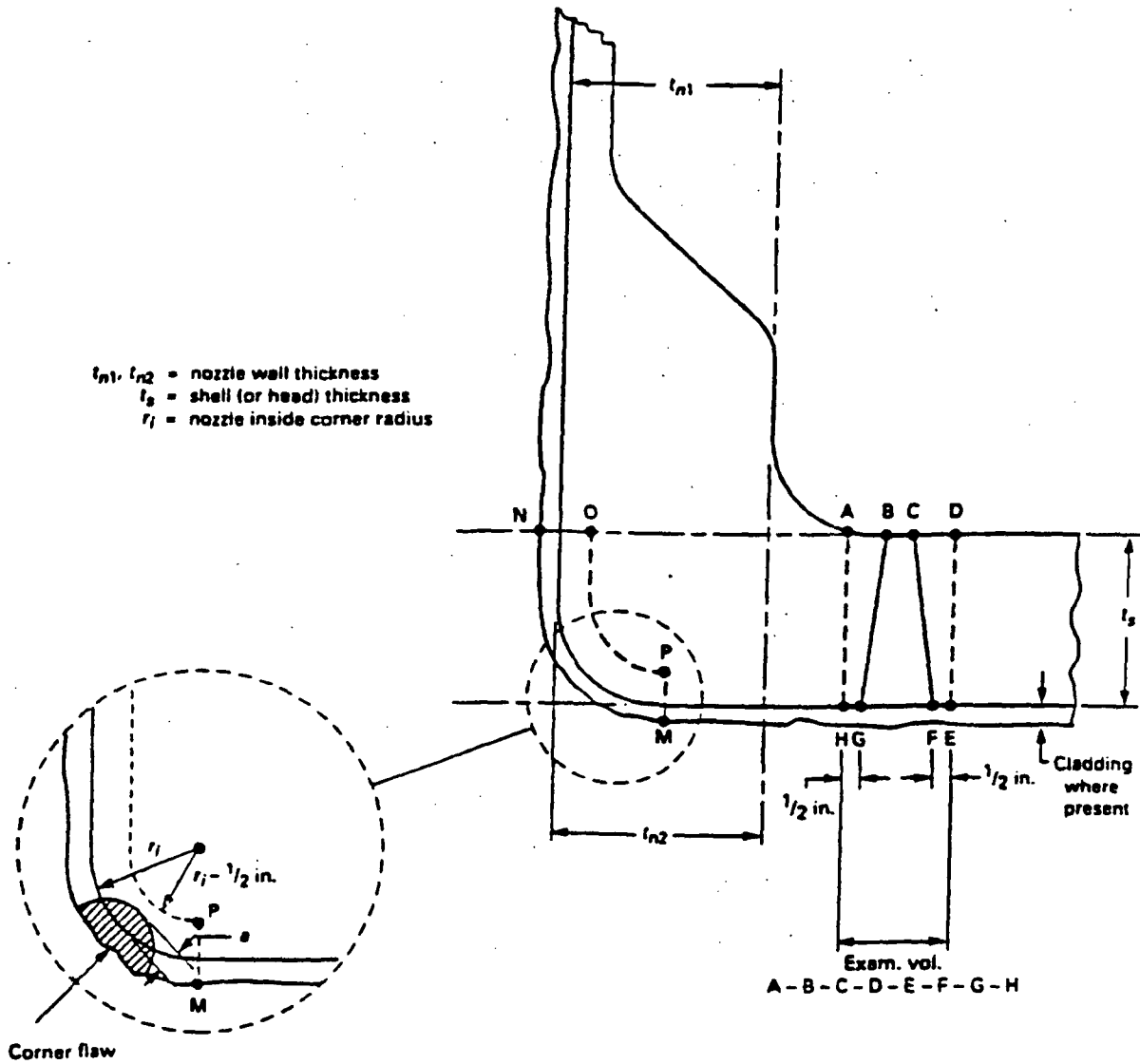
WNP-2
WELD & COMPONENT
IDENTIFICATION DIAGRAM

TITLE, RCIC / SPARE
N7 NOZZLE AT 0° N18 NOZZLE AT 180°

DWG NO: RPV-111 REV 1

NO	DATE	REVISION	BY	CHKD	APVD
1	2-20-92	UPDATED TO DOCUMENT THE SAFE-END AND INCONEL INFORMATION FOR AS-BUILT CONDITION. MODIFIED LOGO. REDRAWN	K-McA	OJ	DPR
0	7-31-79	ISSUED FOR USE	K-McA	TFF DMF	LFB

THIS DRAWING IS INTENDED FOR USE IN PRESERVICE AND INSERVICE INSPECTIONS PROGRAMS ONLY.



EXAMINATION REGION [Note (1)]

- Shell (or head) adjoining region
- Attachment weld region
- Nozzle cylinder region
- Nozzle inside corner region

EXAMINATION VOLUME [Note (2)]

- C-D-E-F
- B-C-F-G
- A-B-G-H
- M-N-O-P

NOTES:

- (1) Examination regions are identified for the purpose of differentiating the acceptance standards in IWB-3512.
- (2) Examination volumes may be determined either by direct measurements on the component or by measurements based on design drawings.

Figure 2ISI-24-1

From ASME Code Case N-613, approval date July 30, 1998

REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-1



GE Nuclear Energy

EXAMINATION SUMMARY SHEET

REPORT NO.: R-R13-G17

PROJECT: WNP2 R13

PROCEDURE: UT-WNP2-300V3 REV: N/A FRR: N/A

SYSTEM: REACTOR PRESSURE VESSEL

N/A REV: N/A FRR: N/A

WELD NO.: N7

CONFIGURATION: NOZZLE TOP HEAD SPRAY

N/A REV: N/A FRR: N/A

EXAMINER: J. SIMPSON LEVEL: II

MT PT UT VT

EXAMINER: K. KIMBALL LEVEL: II

CIRCUMFERENTIAL

EXAMINER: N/A LEVEL: II

WELD TYPE: LONGITUDINAL OTHER NZ-VSL HEAD

DATA SHEET NO.(S): DGR13-07, DGR13-13

CAL SHEET NO.(S): CGR-13-09, 10, 11, 16

Ultrasonic examination results were acceptable to the requirements of ASME Section XI, 1989 no Addenda, Category B-D welds and USNRC Reg. Guide 1.150.

Manual exams were performed in accordance with UT-WNP2-300V3.

Manual scans were unrestricted.

Due to the nozzle to vessel weld design it is not feasible to effectively ultrasonically examine 100% of the ASME Code examination volume as defined in Section XI.

EXAM COMPLETE PARTIALLY EXAMINED EXAM COMPLETE IN COMBINATION WITH DATA SHEETS BELOW

ADDITIONAL DATA SHEETS: N/A NO. OF RECORDABLE INDICATIONS: 0 CODE COVERAGE OBTAINED: 87.94 %

COMPARED TO: PSI ISI REPORT NO.(S): 1RPU-009 NO CHANGE NO. OF REPORTABLE INDICATIONS: 0

EXAMINATION RESULTS: ACCEPTABLE UNACCEPTABLE

SUMMARY BY DATE LEVEL UTILITY REVIEW DATE GE REVIEWED BY DATE LEVEL ANII REVIEW DATE

WNP2 R-R13-G17 PAGE: 1 OF: 15 FORM UT-09 REV 9

WNP2

N7 Nozzle

UNRESTRICTED

	CROSS SECTIONAL AREA (per slice)					TOTAL CODE COVERAGE			
	code cross sectional area	area scanned automated	area scanned manually	% of code area scanned automated	% of code area scanned manually	degrees scanned automated	degrees scanned manually	percent scanned automated	percent scanned manually
0 wm	18.87	0	15.05	0.00	79.76	0.00	360.00	0.00	79.76
45 T-scan	18.87	0	17.42	0.00	92.32	0.00	360.00	0.00	92.32
60 T-scan	18.87	0	17.51	0.00	92.79	0.00	360.00	0.00	92.79
45 P-scan CW	18.87	0	16.32	0.00	86.49	0.00	360.00	0.00	86.49
60 P-scan CW	18.87	0	16.32	0.00	86.49	0.00	360.00	0.00	86.49
45 P-scan CCW	18.87	0	16.32	0.00	86.49	0.00	360.00	0.00	86.49
60 P-scan CCW	18.87	0	16.32	0.00	86.49	0.00	360.00	0.00	86.49
70 T-scan	4.74	0	4.61	0.00	97.26	0.00	360.00	0.00	97.26
70 P-scan CW	4.74	0	4.06	0.00	85.65	0.00	360.00	0.00	85.65
70 P-scan CCW	4.74	0	4.06	0.00	85.65	0.00	360.00	0.00	85.65
							Coverages	0.0	87.94
								Total coverage	87.94

RESTRICTED

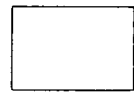
	CROSS SECTIONAL AREA (per slice)					TOTAL CODE COVERAGE			
	code cross sectional area	area scanned automated	area scanned manually	% of code area scanned automated	% of code area scanned manually	degrees scanned automated	degrees scanned manually	percent scanned automated	percent scanned manually
0 wm	18.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45 T-scan	18.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60 T-scan	18.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45 P-scan CW	18.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60 P-scan CW	18.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45 P-scan CCW	18.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60 P-scan CCW	18.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70 T-scan	4.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70 P-scan CW	4.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70 P-scan CCW	4.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
							Coverages	0.0	0.0
								Total coverage	0.0
								Total Composite Coverage =	87.94

WNP-2
 R-13-617
 PAGE 8 OF 15

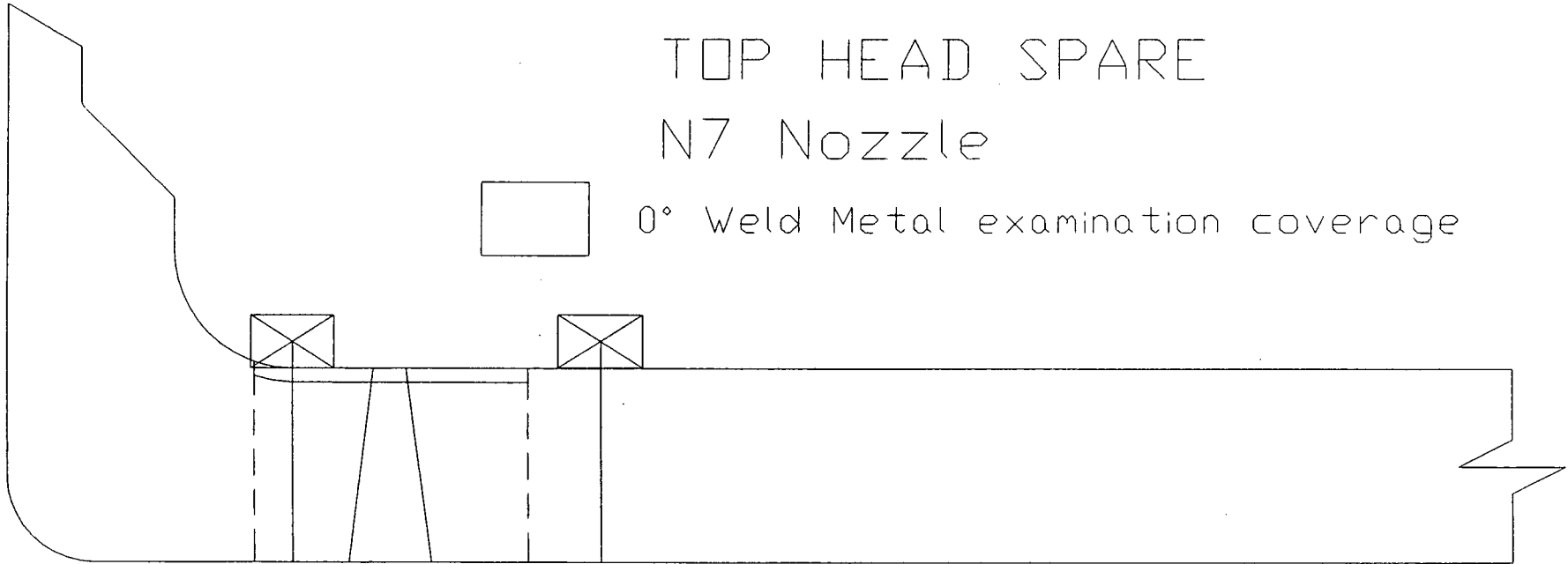
WNP - 2

TOP HEAD SPARE

N7 Nozzle



0° Weld Metal examination coverage



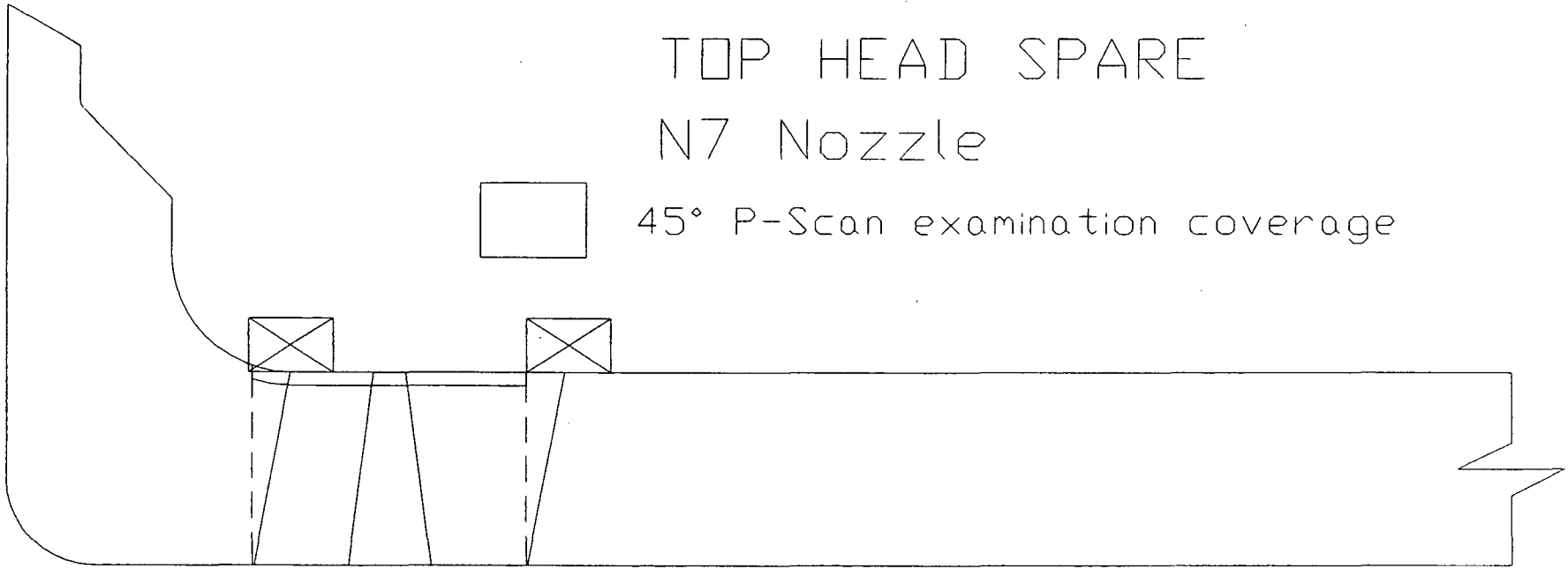
WNP - 2

TOP HEAD SPARE

N7 Nozzle



45° P-Scan examination coverage



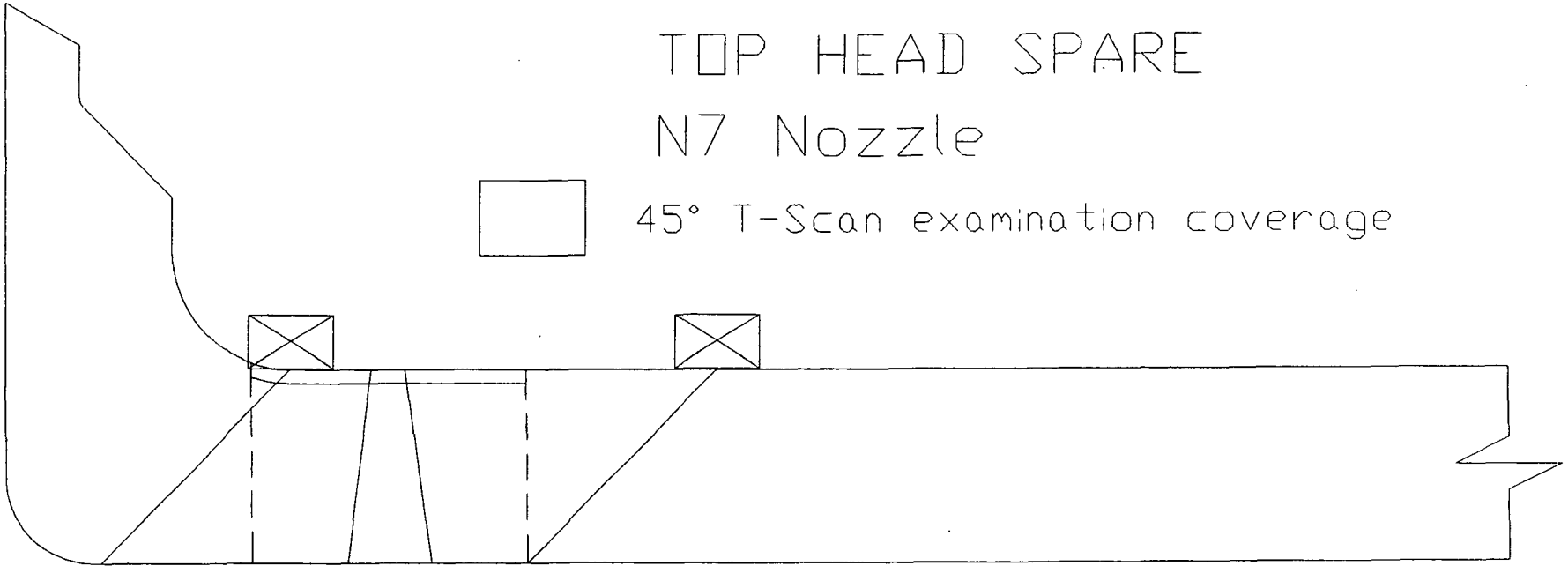
WNP - 2

TOP HEAD SPARE

N7 Nozzle



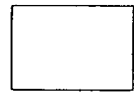
45° T-Scan examination coverage



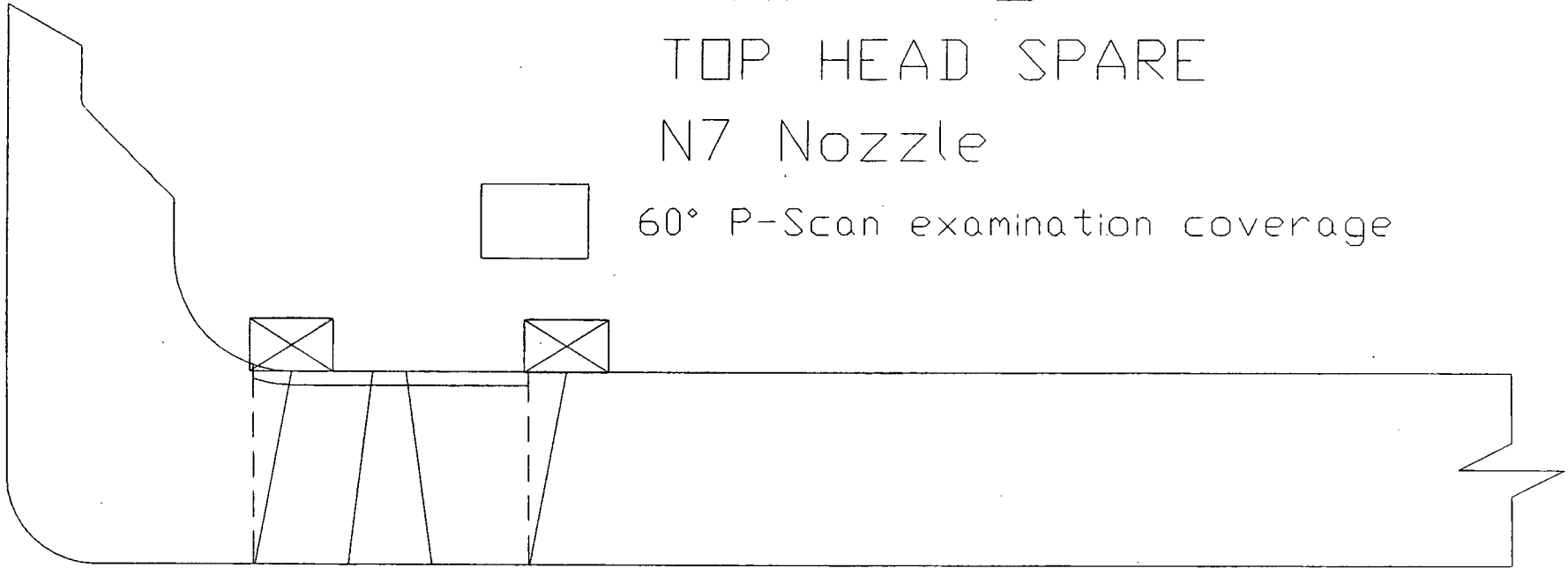
WNP - 2

TOP HEAD SPARE

N7 Nozzle



60° P-Scan examination coverage



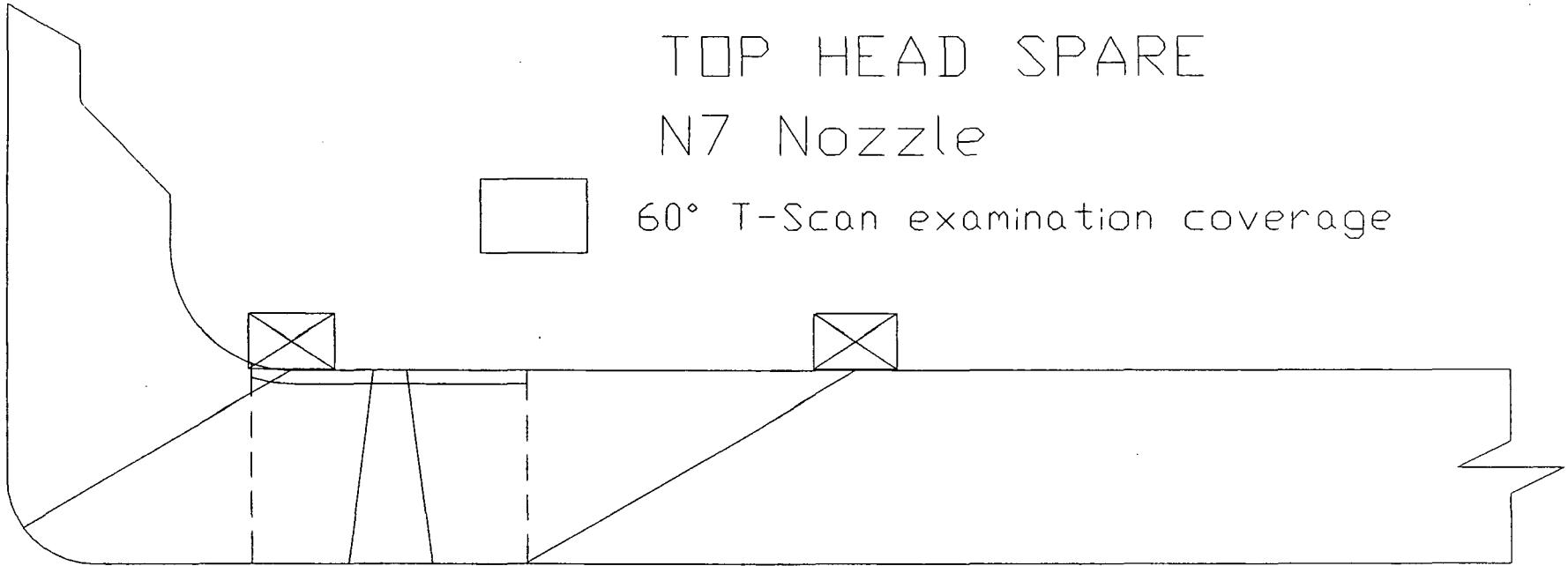
WNP - 2

TOP HEAD SPARE

N7 Nozzle



60° T-Scan examination coverage



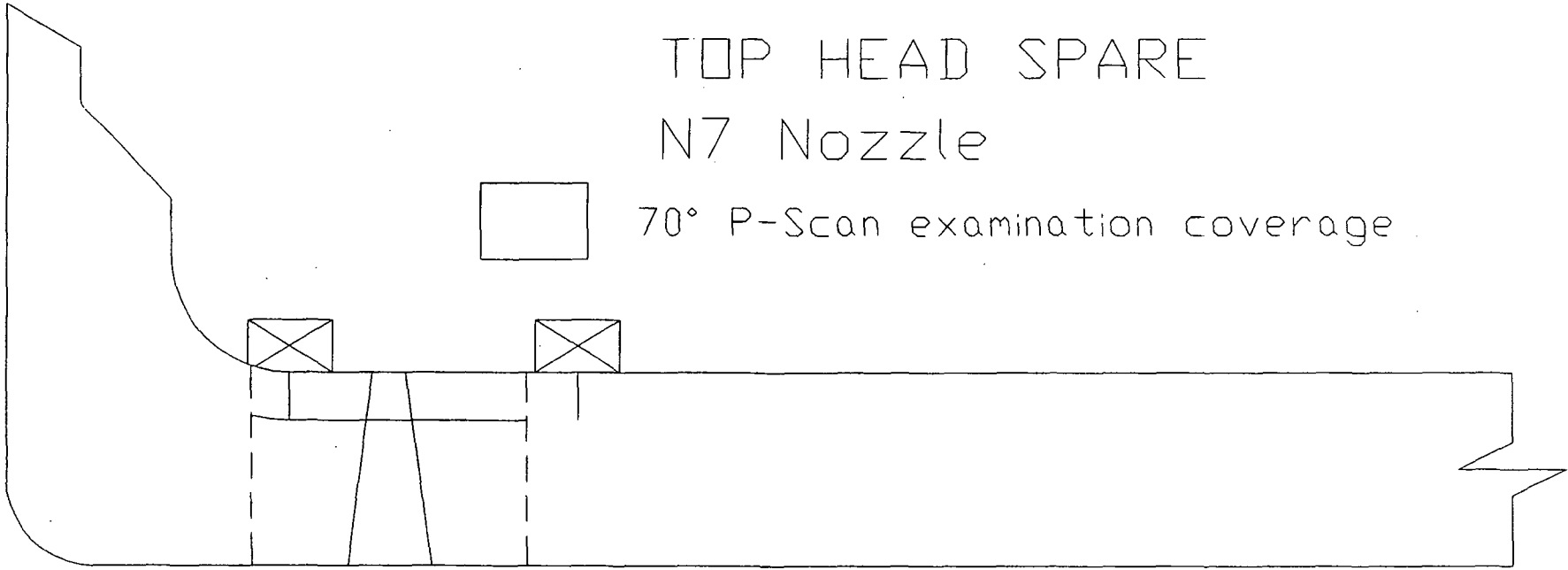
WNP - 2

TOP HEAD SPARE

N7 Nozzle



70° P-Scan examination coverage



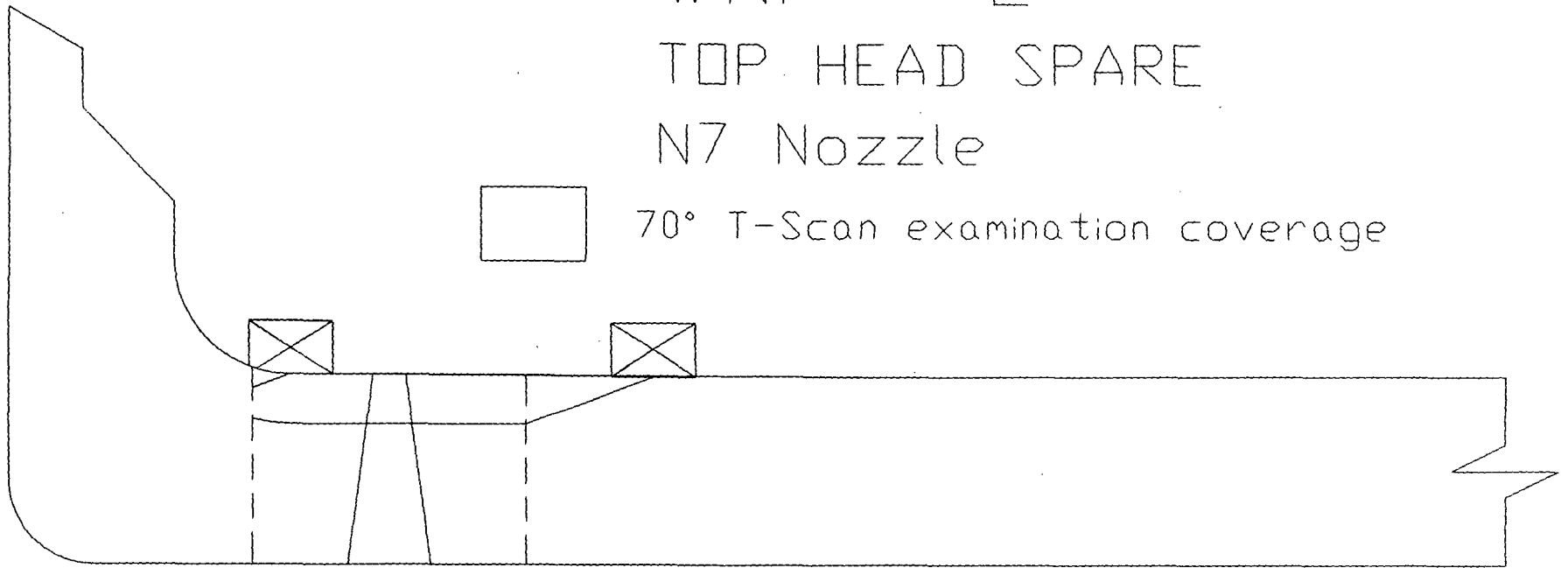
WNP - 2

TOP HEAD SPARE

N7 Nozzle



70° T-Scan examination coverage



REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-2



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.: R15-109

Site and Unit: **Columbia Generating Station** Component ID: **N18**
 Outage: **RFO-15** **SPARE NOZZLE TO TOP HEAD WELD**
 System **RPV** ASME Cat.: **B-D** ASME Item **B3.90** Aug Requirements: **N/A**

Exams Performed:	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
70° RL	RPV-R15-C097	N/A	GE-UT-300 Ver. 3	UT-115	KENT MONTGOMERY	II	5/30/01
0° Long	RPV-R15-C084	N/A	GE-UT-300 Rev. 3	UT-115	KEVIN LOCKLER	II	5/30/01
45° Shear	RPV-R15-C086	N/A	GE-UT-300 Rev. 3	UT-115	KEVIN LOCKLER	II	5/30/01
60° Shear	RPV-R15-C088	N/A	GE-UT-300 Rev. 3	UT-115	KEVIN LOCKLER	II	5/30/01

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no indications were recorded utilizing the 0°, 45°, 60° and 70° RL search units.

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, No Addenda and USNRC Regulatory Guide 1.150, Rev.1.

This examination was limited due to the weld Top Head to Nozzle configuration. 85.6% Code coverage was obtained.

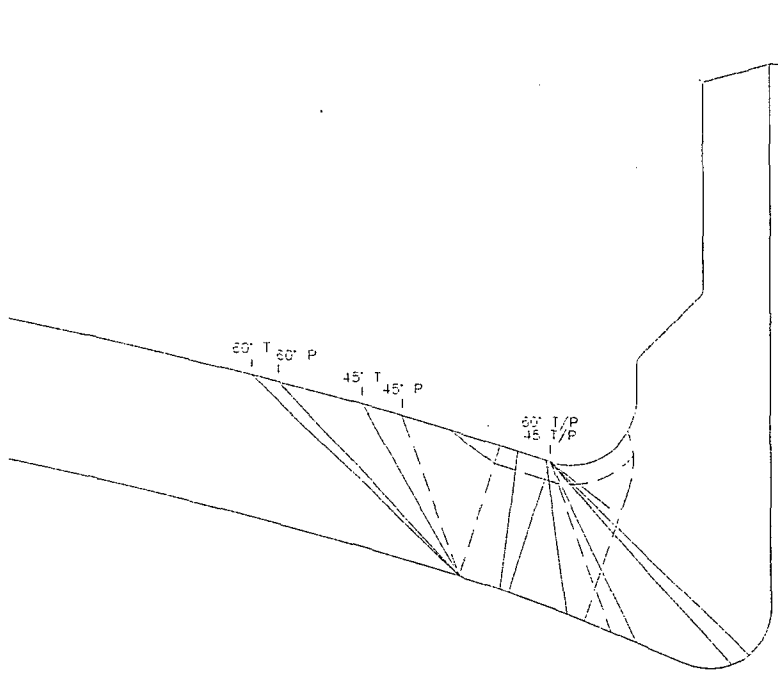
Previous data was reviewed prior to this summary.

Examination results were compared to data report 1RPU-048 from R-4 outage with No Change
 These examinations were performed under Work Order: 01010463 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

Prepared By: M. Whaley Level: II Date: 6/2/01 Utility Reviewed By: [Signature] Title: NDE Lead Date: 6/3/01
 GE Reviewed By: [Signature] Level: III Date: 6/2/01 ANII Reviewed By: [Signature] Title: [Signature] Date: 6/4/01

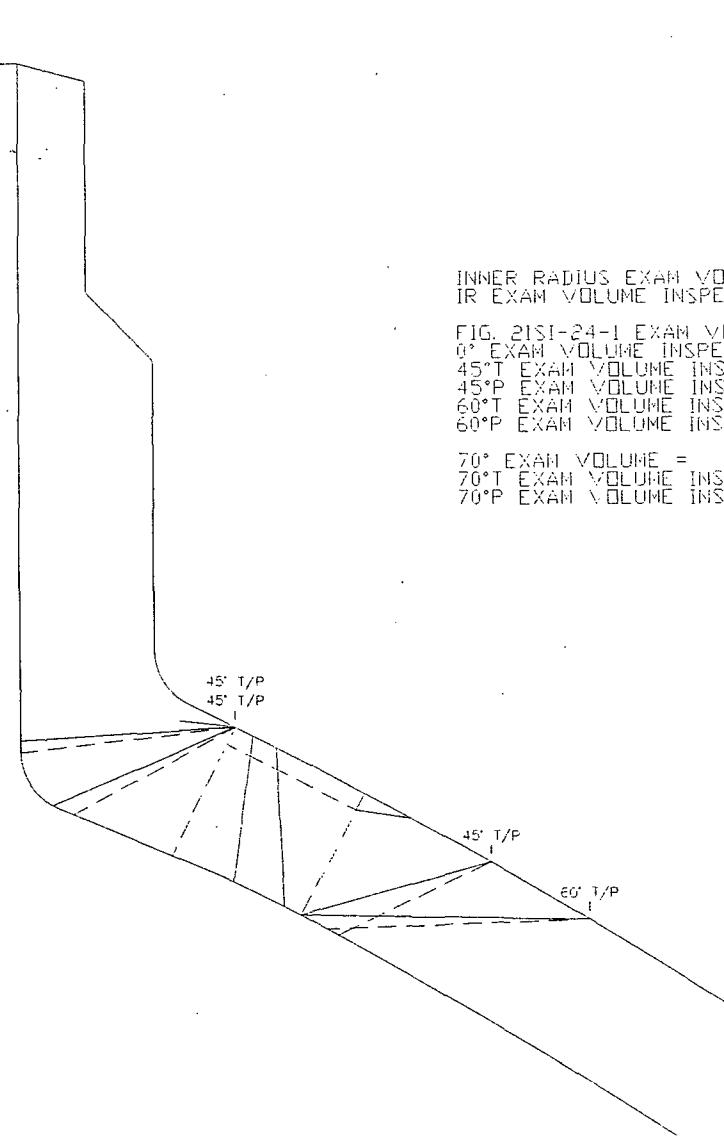
RWP: N/A
Dose: N/A mr.



INNER RADIUS EXAM VOLUME = 2.3"
 IR EXAM VOLUME INSPECTED = 2.3"

FIG. 21S1-24-1 EXAM VOLUME = 14.1"
 0° EXAM VOLUME INSPECTED = 5.0"
 45°T EXAM VOLUME INSPECTED = 10.5"
 45°P EXAM VOLUME INSPECTED = 9.9"
 60°T EXAM VOLUME INSPECTED = 11.3"
 60°P EXAM VOLUME INSPECTED = 11.6"

70° EXAM VOLUME = 2.1"
 70°T EXAM VOLUME INSPECTED = 2.1"
 70°P EXAM VOLUME INSPECTED = 2.1"



INNER RADIUS EXAM VOLUME = 2.3"
 IR EXAM VOLUME INSPECTED = 2.1"

FIG. 21S1-24-1 EXAM VOLUME = 13.9"
 0° EXAM VOLUME INSPECTED = 13.9"
 45°T EXAM VOLUME INSPECTED = 13.9"
 45°P EXAM VOLUME INSPECTED = 13.9"
 60°T EXAM VOLUME INSPECTED = 13.9"
 60°P EXAM VOLUME INSPECTED = 13.9"

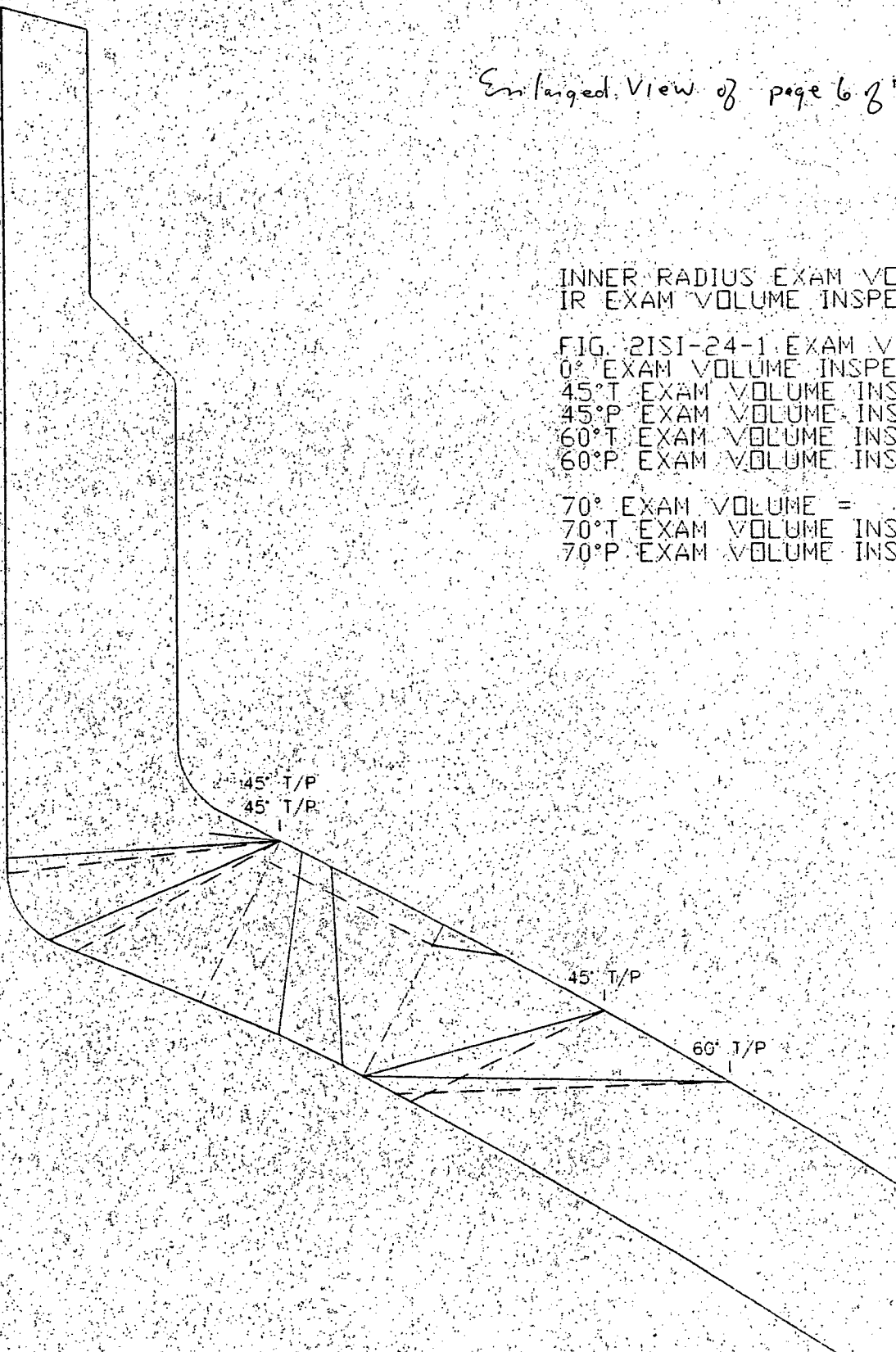
70° EXAM VOLUME = 1.9"
 70°T EXAM VOLUME INSPECTED = 1.9"
 70°P EXAM VOLUME INSPECTED = 1.9"

PAGE 6 OF 7

GE NUCLEAR ENERGY	COLUMBIA GEN. STATION	WELD N13 EXAM VOLUME	SCALE: NONE	DWG. CGS-N18	REV. 0
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Enlarged View of page 6 of 7

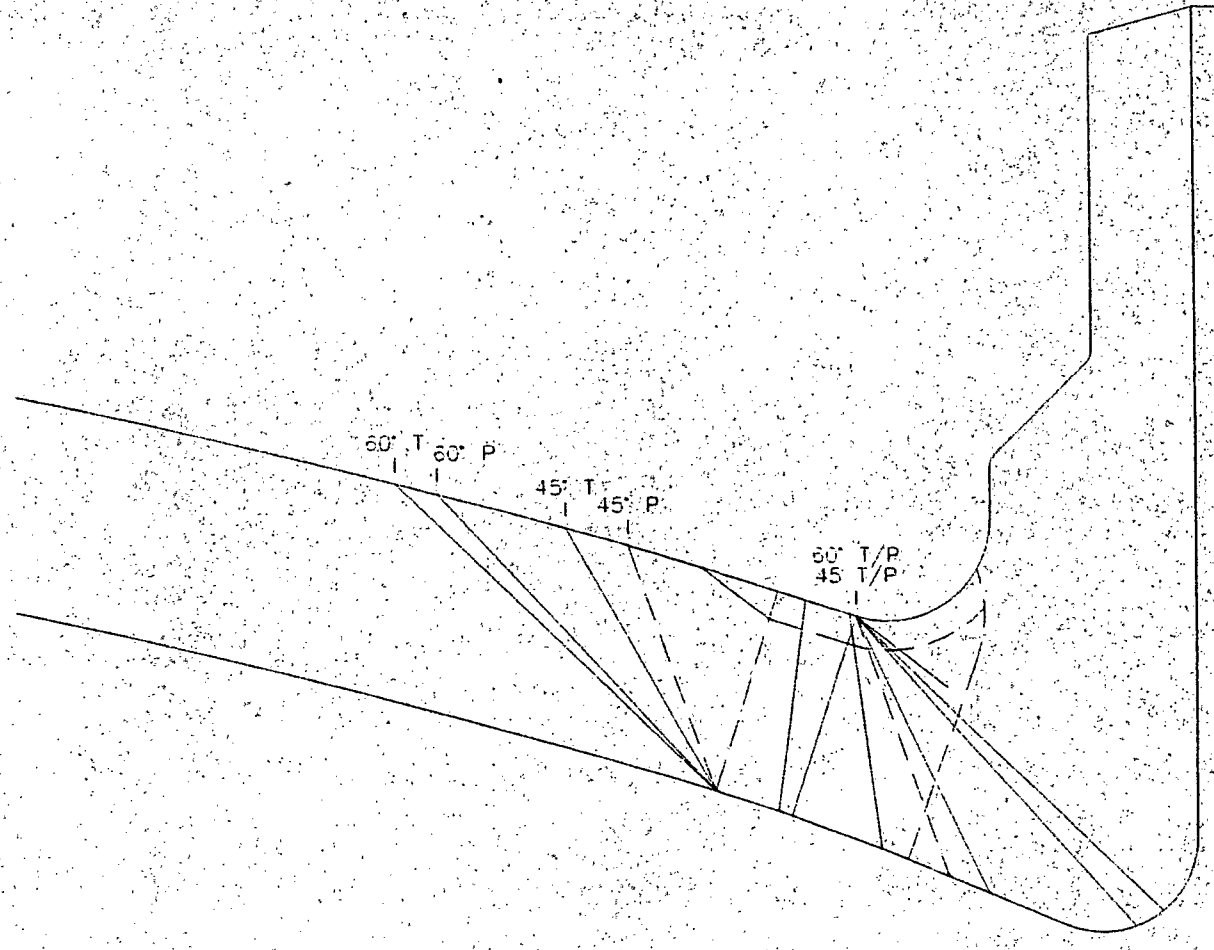
INNER RADIUS EXAM VOLUME = 23'
IR EXAM VOLUME INSPECTED = 21'
FIG. 21SI-24-1 EXAM VOLUME = 13.9'
0° EXAM VOLUME INSPECTED = 13.9'
45°T EXAM VOLUME INSPECTED = 13.9'
45°P EXAM VOLUME INSPECTED = 13.9'
60°T EXAM VOLUME INSPECTED = 13.9'
60°P EXAM VOLUME INSPECTED = 13.9'
70° EXAM VOLUME = 1.9'
70°T EXAM VOLUME INSPECTED = 1.9'
70°P EXAM VOLUME INSPECTED = 1.9'



PAGE 6 OF 7

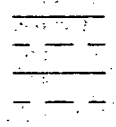
EXAM VOLUME	SCALE: NONE	DWG. CGS-N18	REV. 0
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Enlarged view of
page 6 of 7



INNER RADIUS EXAM VOLUME = 2.3"
 IR EXAM VOLUME INSPECTED = 2.3"

FIG. 2ISI-24-1 EXAM VOLUME = 14.1"
 0° EXAM VOLUME INSPECTED = 5.0"
 45°T EXAM VOLUME INSPECTED = 10.5"
 45°P EXAM VOLUME INSPECTED = 9.9"
 60°T EXAM VOLUME INSPECTED = 11.8"
 60°P EXAM VOLUME INSPECTED = 11.6"



**Columbia Generating Station
N18 - Top Head Spare Nozzle
Spring 2001**

Area	CODE CROSS-SECTIONAL AREA					TOTAL CODE COVERAGE			
	Area Inch ²	Area Scanned		% of Area Scanned		Degrees Scanned		% Scanned	
		Auto	Manual	Auto	Manual	Auto	Manual	Auto	Manual
0° WELD METAL 1	14.1	0.0	5.0	0.0	35.5	0.0	180.0	0.0	17.7
0° WELD METAL 2	13.9	0.0	13.9	0.0	100.0	0.0	180.0	0.0	50.0
45° T-SCAN 1	14.1	0.0	10.5	0.0	74.5	0.0	180.0	0.0	37.2
45° T-SCAN 2	13.9	0.0	13.9	0.0	100.0	0.0	180.0	0.0	50.0
45° T-SCAN 1	14.1			0.0	0.0			0.0	0.0
60° T-SCAN 1	14.1	0.0	11.8	0.0	83.7	0.0	180.0	0.0	41.8
60° T-SCAN 2	13.9	0.0	13.9	0.0	100.0	0.0	180.0	0.0	50.0
60° T-SCAN 1	14.1			0.0	0.0			0.0	0.0
45° P-SCAN CW 1	14.1	0.0	9.9	0.0	70.2	0.0	180.0	0.0	35.1
45° P-SCAN CW 2	13.9	0.0	13.9	0.0	100.0	0.0	180.0	0.0	50.0
60° P-SCAN CW 1	14.1	0.0	11.6	0.0	82.3	0.0	180.0	0.0	41.1
60° P-SCAN CW 2	13.9	0.0	13.9	0.0	100.0	0.0	180.0	0.0	50.0
45° P-SCAN CCW 1	14.1	0.0	9.9	0.0	70.2	0.0	180.0	0.0	35.1
45° P-SCAN CCW 2	13.9	0.0	13.9	0.0	100.0	0.0	180.0	0.0	50.0
60° P-SCAN CCW 1	14.1	0.0	11.6	0.0	82.3	0.0	180.0	0.0	41.1
60° P-SCAN CCW 2	13.9	0.0	13.9	0.0	100.0	0.0	180.0	0.0	50.0
Coverages								0.0	85.6

Total Composite Coverage = 85.6

COMMENTS:

Code examination volume as defined by Relief Request 2ISI-24, Figure 2ISI-24-1.
Manual UT scans were not restricted
Credit for the initial 1/4" of material in Code coverage not obtained with the 45° and 60° near field effects is taken with the 70° RL.
Area 1 is the exam volume calculated at Top Dead Center. Area 2 is the exam volume calculated at 180°.

REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

Attachment B

2ISI-32-3

Weld Identification 10HPCS(1)-3

ISI Diagram HPCS-101-2

ISI Diagram RPV-109

NDE Data Report APR-001 pages 1 through 4

2ISI-32-4

Weld Identification .12RHR(1)A-14

ISI Diagram RHR-105

NDE Data Report R17-010 pages 1 through 4

2ISI-32-5

Weld Identification 12RHR(1)B-10

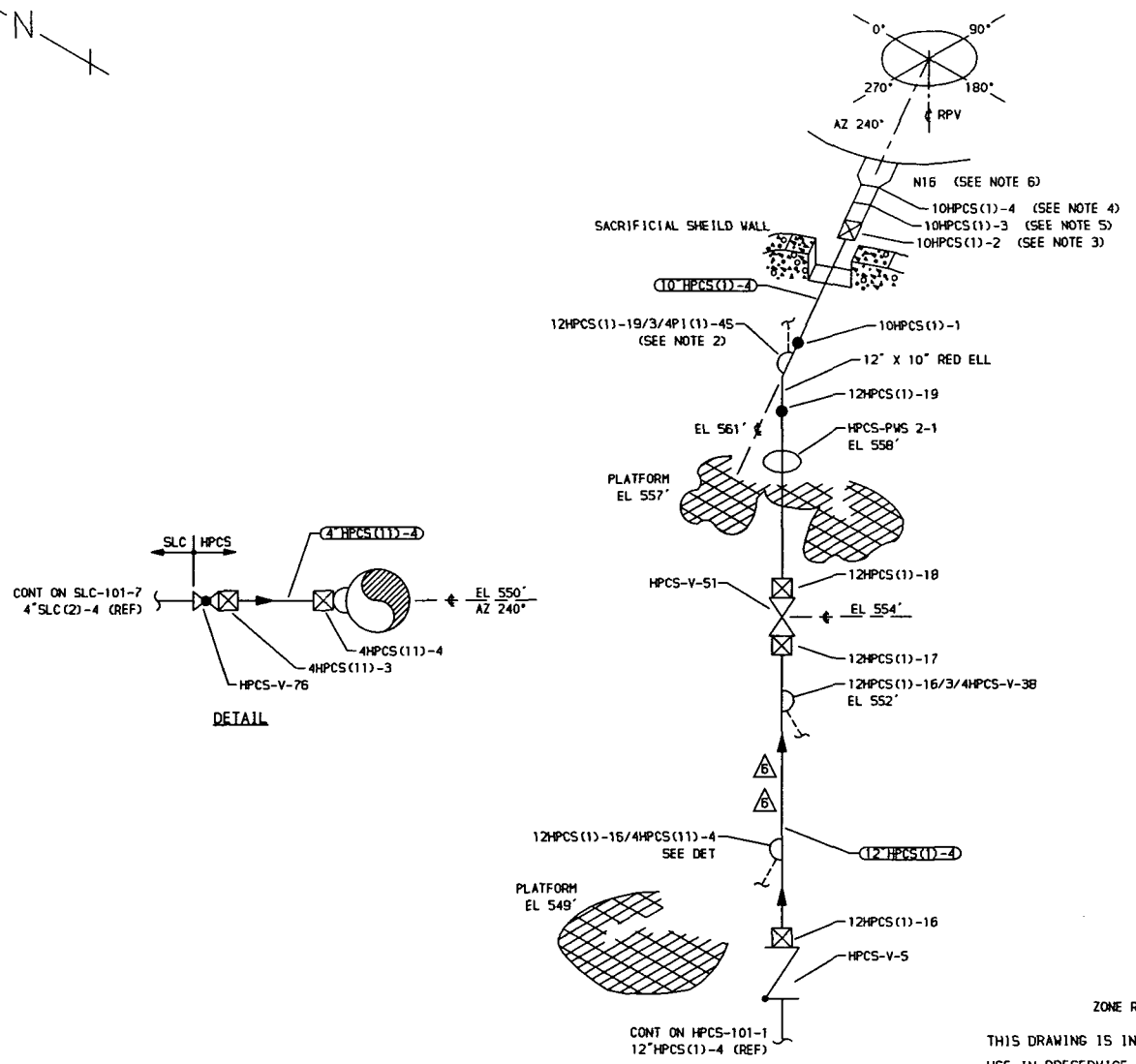
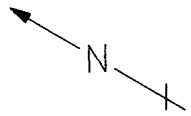
ISI Diagram RHR-106

NDE Data Report R17-012 pages 1 through 3

REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

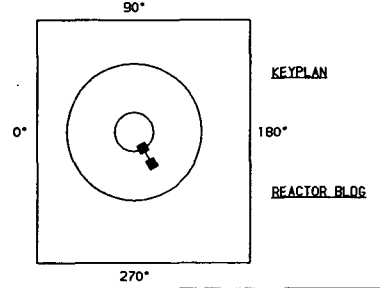
2ISI-32-3

A
B
C
D
E
F
G
H



- NOTES:**
1. DELETED
 2. EXTEND VISUAL LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-730) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 3. DISTANCE BETWEEN WELDS 10HPCS(1)-2 AND 10HPCS(1)-3 IS LESS THAN 6".
 4. DISSIMILAR METAL WELD, CS TO INCO, USE CAL BLOCK UT-102.
 5. DISSIMILAR METAL WELD, CS TO INCO, USE CAL BLOCK UT-106.
 6. FOR NOZZLE ASSEMBLY DETAILS SEE RPV-109.
 7. HPCS-91BN & HPCS-91SN WERE DELETED PER BDC 86-0525-6F-022.

- REFERENCES:**
- ISI - 220-1
 - BOVEE AND CRAIL ISOMETRICS
HPCS-630-29-30 REV 11
HPCS-630-31.33 REV 11



QUALITY CLASS, 1	ASME CODE CLASS, 1
ENGR, GA KUSLER	DRAWN, K-McA DATE, 11-2-77



WASHINGTON PUBLIC POWER
SUPPLY SYSTEM
RICHLAND, WASHINGTON 99352

ZONE R-43
THIS DRAWING IS INTENDED FOR
USE IN PRESERVICE AND INSERVICE
INSPECTIONS PROGRAMS ONLY.

NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
6	11-13-92	ADDED NOTE 7. MODIFIED ACCORDINGLY.	K-McA	DPR	DRW							
5	12-4-89	SYSTEM CHANGE AT HPCS-V-76. ADDED DWG LINE CONTINUATION, & LOGO. MODIFIED KEYPLAN. REDRAWN	K-McA	DPR	TFH	12" HPCS (1)-4	12	80	0.688	SA 106 GR B	CS	UT-17
4	5-24-83	ADDED SNUBBERS 91BN & 91SN, REMOVED 3/4LOC, ADDED 4" HPCS (11)-4, ADDED UT-30 (REDRAWN)	K-McA	DPR	TFH	10" HPCS (1)-4	10	80	0.594	SA 106 GR B	CS	UT-22
3	12-2-81	REVISED AS NOTED	K-McA	DPR	TFH	4" HPCS (11)-4	4	80	0.377	SA 106 GR B	CS	UT-30
2	7-17-79	DELETED NOTE 1 AND REF TO WELDS IN REDUCING ELBOW. AS BUILT ELBOW IS SEAMLESS. ZN C-5	K-McA	TFH	LFB							

WNP-2 WELD & COMPONENT IDENTIFICATION DIAGRAM	
TITLE: HPCS DISCHARGE TO VESSEL	
DWG NO, HPCS-101-2	REV 6



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.:
APR-001

Site: **Columbia Generating Station** Component ID: **10HPCS(1)-3**

Outage: **R17** **SE EXT TO SE**

System **HIGH PRES CORE SPRAY** ASME Cat.: **B-F** A ASME Item **B5.130** Aug Req

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
45°/RL	N/A	APC-001	GE-UT-209	UT-106	Kevin Fish	II	5/16/2005
45°/S	N/A	APC-002	GE-UT-209	UT-106	Kevin Fish	II	5/16/2005
45°/S	N/A	APC-005	GE-UT-209	UT-106	Kevin Fish	II	5/16/2005
60°/RL	N/A	APC-006	GE-UT-209	CAL-DPTH-068	Kevin Fish	II	5/16/2005
60°/RL	N/A	APC-003	GE-UT-209	CAL-DPTH-068	Kevin Fish	II	5/16/2005
45°/RL	N/A	APC-004	GE-UT-209	UT-106	Kevin Fish	II	5/16/2005
N/A	APD-008	N/A	GE-UT-209	N/A	Kevin Fish	II	5/16/2005

Examination Results:

During the automated examination of the above referenced component, the Smart 2000 system recorded no indications associated with IGSCC utilizing 45° shear wave, 45° and 60° refracted longitudinal wave search units.

The 45° shear wave examinations were performed from both the upstream and downstream sides of the weld and recorded non-relevant indications, acoustic interface, inside surface geometry, outside surface geometry, root geometry, and beam re-direct.

The 45° refracted longitudinal wave examinations were performed from both the upstream and downstream sides of the weld and recorded non-relevant indications, acoustic interface, inside surface geometry, and root geometry.

The 60° refracted longitudinal wave examinations were performed from both the upstream and downstream sides of the weld and recorded non-relevant indications, acoustic interface, inside surface geometry, and root geometry.

Previous data was reviewed prior to this examination.

Pictures, thickness and contours were taken in accordance with BWRVIP 2005-14.

No counterbore was detected.

Examination coverage achieved utilizing a composite of the 45° shear, 45° RL and 60° RL search units.

85% code coverage achieved.

81% procedural coverage achieved.

This examination meets the requirements of ASME Section XI, 1989 Edition, no Addenda, and Appendix VIII, up to, and including 1998 Edition, with the 2000 Addenda.

Examination results were compared to data report R-R10-016 from 1995 outage with No Change

These examinations were performed under Work Order: 10853480 01 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

Prepared By:	Level: II	Date: 5/18/05	Utility Review:	Date: 5/18/05
GE Review By:	Level: III	Date: 5-18-05	ANII Review:	Date: 5/18/05

RWP: 30001291
Dose: 181 mr.



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: 2

Report No.:

Project: 16423

APR-001

System: HIGH PRES CORE SPRAY

Component ID Number: 10HPCS(1)-3

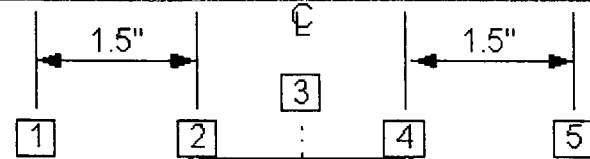
Position	0°	90°	180°	270°
1	.80	N/A	N/A	N/A
2	.80	N/A	N/A	N/A
3	.82	N/A	N/A	N/A
4	.80	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A

Crown Height: FLUSH

Crown Width: 0.87

Nominal Diameter: 10.0"

Weld Length: 36.5"



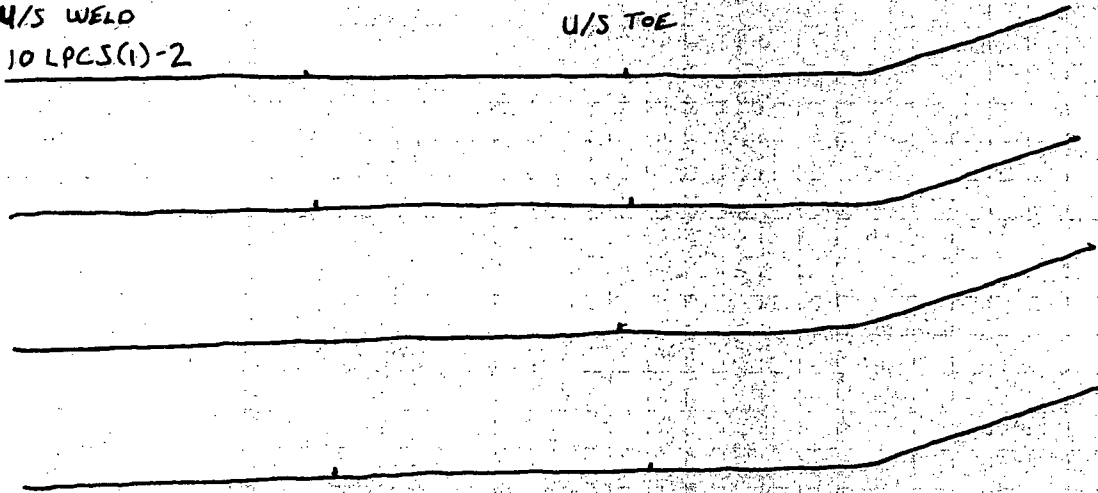
SAFE END EXT.
UPST Component:

SAFE END
DNST Component:

FLOW →

U/S WELD
10 LPCS(1)-2

U/S TOE



Justin Lehmann II 5/15/2005
Initials: Drawn by: Level: Date:

[Signature] II 5/13/05
GE Reviewed By: Level: Date:



GE NUCLEAR ENERGY

Indication / Coverage Plot Sheet

Site: Columbia Generating Station Unit: 2
Project: 16423

Report Number.:
APR-001

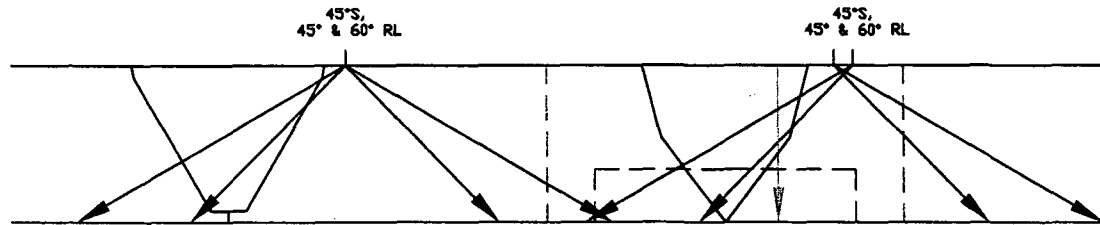
System: HIGH PRES CORE SPRAY

Component ID Number: 10HPCS(1)-3

Configuration: SAFE END EXT.

SAFE END

10 HPCS(1)-3



Code Required Inspection Volume - 85%

Procedural Required Inspection Volume - 81%

Circ Scan

JSZ

Justin Lehmann

II

5/15/2005

Initials:

Drawn by:

Level:

Date:

II

5/18/05

GE Reviewed By:

Level:

Date:



GE Nuclear Energy

Ultrasonic Data / Scan Parameter Sheet
(Automated with Micro TomoScan)

Site: <u>Columbia Generating Station</u>	Procedure: <u>GE-UT-209</u>	System: <u>HIGH PRES CORE SPRAY</u>	Report No.: <u>APR-001</u>
Unit: <u>2</u>	Version / Revision: <u>17</u>	Weld No.: <u>10HPCS(1)-3</u>	Data Sheet No.: <u>APD-008</u>
Project No.: <u>16423</u>	DRR: <u>N/A</u>	Configuration: <u>SE EXT TO SE</u>	Calibration Sheet No. <u>APC-001 to 006</u>

Scanner Information

Weld Reference, (GE-ADM-1005) : Lo: Top Dead Center Wo: Weld Centerline Motor Steps: Cir: 96.125 Tra: 98.3
 Examination Surface: OD Exam Surface Temperature: 90 °F Thermometer S/N: 241942 Exam Start : 5/16/2005 2:30:00 AM
 Exam End : 5/16/2005 8:51:00 PM
 Nominal Pipe Size: 10 in. Nominal Thickness: .8 in. Weld Width: .875 in. Weld Length: 36 in.
 Scanner: NOVA Track Diameter: 16 in. Arm Length: 12 in. Track Location: UPSTREAM 12"
 X Positive Scan Direction: DOWNSTREAM Y Positive Scan Direction: CW
 Resolution: ≤ .036" Index Ax / Circ: ≤ .18" .047" Axial Scan Speed: ≤ 2.0 in./Sec. Circ Scan Speed: ≤ 1.0 in./Sec.
 Scanner Zero Positions: CIR: TOP DEAD CENTER TRA: WELD CENTERLINE ROT Zero: LOOKING DOWNSTREAM

Scan Parameters and Results

Scan:	Skew:	File ID:	Disk:	X-Start:	X-Stop:	Y-Start:	Y-Stop:	Gain:	Results:	Comments:
<u>Z31</u>	<u>0</u>	<u>N16 3Z31</u>	<u>01</u>	<u>8.0mm</u>	<u>-49.0mm</u>	<u>0.0mm</u>	<u>950.0mm</u>	<u>Log</u>	<u>C,D</u>	<u>*</u>
<u>Z41</u>	<u>180</u>	<u>N16 3Z41</u>	<u>01</u>	<u>7.0mm</u>	<u>-49.0mm</u>	<u>0.0mm</u>	<u>950.0mm</u>	<u>Log</u>	<u>C,D</u>	
<u>Z10</u>	<u>0</u>	<u>N16 3Z10</u>	<u>01</u>	<u>-53.0mm</u>	<u>14.6mm</u>	<u>0.0mm</u>	<u>950.0mm</u>	<u>Log</u>	<u>C,D,E,F,H</u>	
<u>Z11</u>	<u>0</u>	<u>N16 3Z11</u>	<u>01</u>	<u>-53.0mm</u>	<u>14.6mm</u>	<u>0.0mm</u>	<u>950.0mm</u>	<u>Log</u>	<u>C,D,E,F,H</u>	
<u>Z20</u>	<u>180</u>	<u>N16 3Z20</u>	<u>01</u>	<u>-48.2mm</u>	<u>17.1mm</u>	<u>0.0mm</u>	<u>950.0mm</u>	<u>Log</u>	<u>C,D,E,F,H</u>	

EXAMINATION RESULTS LEGEND

- A - NO RECORDABLE INDICATIONS B - NON-GEOMETRIC INDICATIONS C - NON-RELEVANT INDICATIONS D - ACOUSTIC INTERFACE
- E - INSIDE SURFACE F - OUTSIDE SURFACE G - WELD DISCONTINUITY H - ROOT GEOMETRY
- I - COUNTERBORE J - SHEAR COMPONENT K - BEAM RE-DIRECT

Comments:
 Exam limited to 17 mm downstream due to safe end taper.
 Exam limited to 53 mm upstream due to location of weld 10HPCS(1)-2.
 * Configuration was not as designed. Load modified DXF.

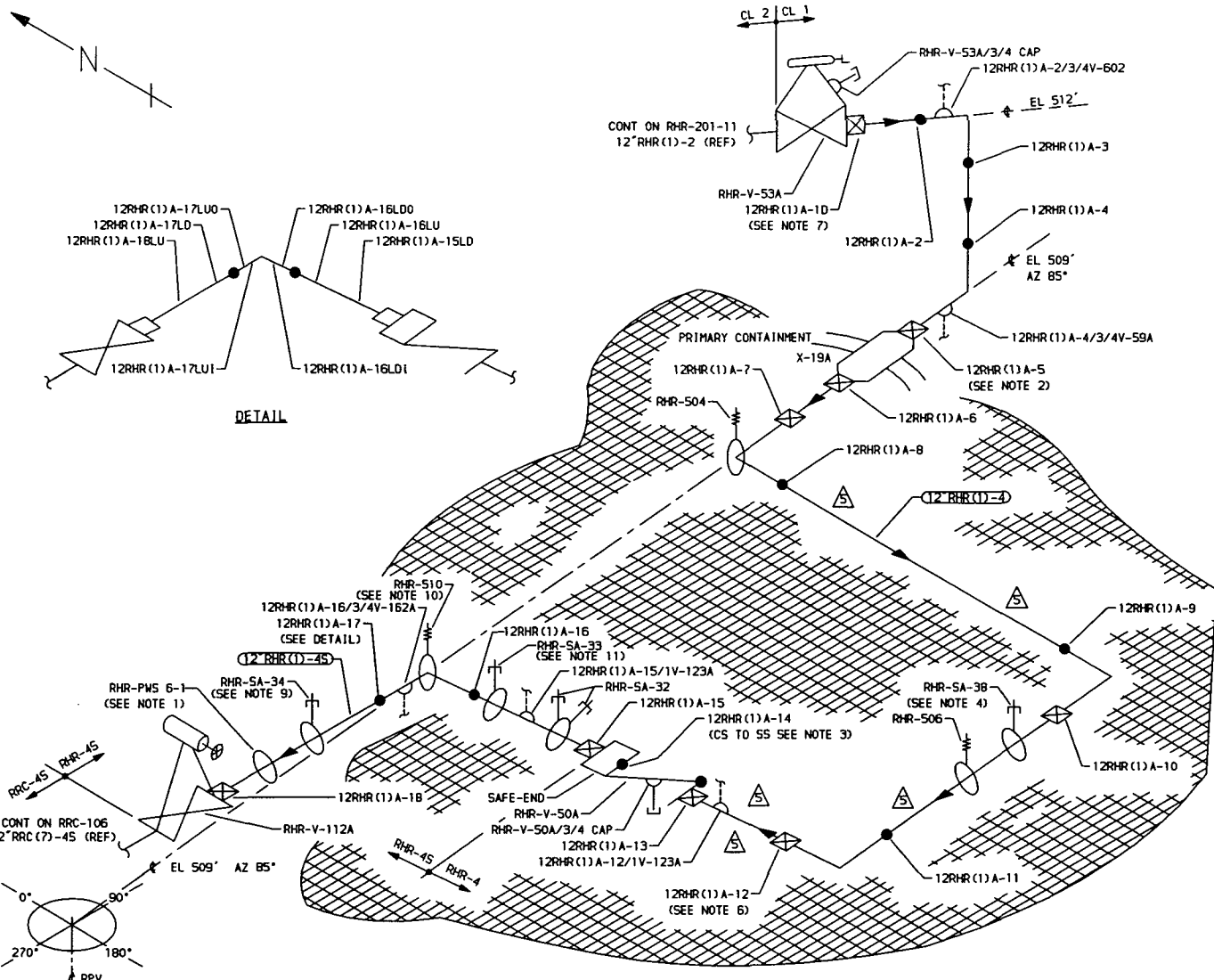
Kevin Fish	II	5/16/2005	<i>[Signature]</i>	IV	5-18-05
Examiner:	Level:	Date:	GE Review:	Level:	Date:

REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-4

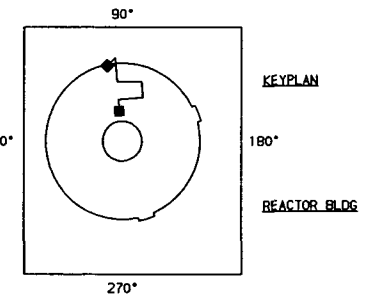
}

A
B
C
D
E
F
G



- NOTES:**
1. ACCESS TO WELD 12RHR(1)A-18 REQUIRES REMOVAL OF RHR-PWS 6-1.
 2. WELD 12RHR(A)-5 IS FITTING TO FITTING.
 3. DISSIMILAR METAL WELD, CS TO SS, USE CAL BLOCK UT-19.
 4. ACES TO WELD 12RHR(1)A-10 REQUIRES REMOVAL OF RHR-SA-38.
 5. DELETED.
 6. CONDUIT 2 1/2" ABOVE WELD 12RHR(1)A-12.
 7. WELD 12RHR(1)A-1 WAS REPLACED BY 12RHR(1)A-10 WHEN RHR-V-53A WAS REPLACED.
 8. RHR-SA-35, RHR-SA-36, RHR-SA-37, RHR-SA-39, & RHR-SA-40 WERE DELETED PER BDC 87-0244-OJ-025.
 9. ACCESS TO WELD 12RHR(1)A-17 REQUIRES REMOVAL OF RHR-SA-34.
 10. ACCESS TO WELDS 12RHR(1)A-17LUO, 12RHR(1)A-17LUI, 12RHR(1)A-16LUO AND 12RHR(1)A-16LUI REQUIRES REMOVAL OF RHR-510.
 11. ACCESS TO WELDS 12RHR(1)A-16 REQUIRES REMOVAL OF RHR-SA-33.

- REFERENCES:**
- 151 - 221-1
 - BOVEE & CRAIL ISOMETRICS
 - RHR-851-14 REV 10
 - RHR-851-15.16 REV 10
 - RHR-851-17 REV 11



THIS DRAWING IS INTENDED FOR USE IN PRESERVICE AND INSERVICE INSPECTIONS PROGRAMS ONLY.

QUALITY CLASS, 1	ASME CODE CLASS, 1
ENGR: D PORTER	DRAWN: K-McA DATE: 12-14-77

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
RICHLAND, WASHINGTON 99352

WNP-2
WELD & COMPONENT IDENTIFICATION DIAGRAM

TITLE:
RHR SHUTDOWN COOLING RETURN LOOP "A"

DWG NO, RHR-105 REV 6

NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
5	9-22-94	ADDED NOTE 8, MODIFIED ACCORDINGLY.	K-McA	DPR	DW							
4	12-9-92	ADDED NOTE 7, 151 DWG REF & DWG LINE CONT, MODIFIED LOGO, NOTES 1 & 3, RHR SA-32 & RHR SA-59. REDRAWN	K-McA	DPR	DRW							
3	9-26-83	REVISED AS NOTED, ADDED KEYPLAN	K-McA	DPR	TFH							
1	12-2-81	REVISED AS NOTED	K-McA	DPR	TFH	12"RHR(1)-4	12	100	0.844	SA 106 GR B	CS	UT-16
0	8-30-79	ADDED LONG SEAM DOWNSTREAM FROM WELDS 12RHR(1)A-15, 16 & 17 PER AS BUILT. ADDED DETAIL FOR CLARITY ZN C-3	K-McA	TFH	DMP	12"RHR(1)-45	12	80	0.688	SA 312 GR B	SS	UT-19
6	1-24-96	ADDED NOTES 9, 10 & 11, RELOCATED RHR-PWS-6-1 & RHR-SA-34	SRP	DPR	CMK							



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.: R17-010

Site: Columbia Generating Station

Component ID: 12RHR(1)A-14

Outage: R17

VALVE TO SE

System SHUTDN COOL RET LP-A ASME Cat.: B-F A ASME Item B5.130 Aug Req

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
45 RL	UT-033	N/A	PDI-UT-10	8746	George DuBose, III	III	5/11/2005
45° RL	UT-034	N/A	PDI-UT-10	8746	George DuBose, III	III	5/11/2005
60 RL	UT-035	N/A	PDI-UT-10	8746	George DuBose, III	III	5/11/2005
45° Shear	UT-036	N/A	PDI-UT-10	8746	George DuBose, III	III	5/11/2005

Examination Results:

During the manual examination of the above referenced dissimilar metal weld, no reportable indications were detected utilizing a 45° Shear wave, 45° and 60° Refracted Longitudinal wave search units.

The 45° Shear did record root and counterbore geometry.

No upstream examination was performed due to valve configuration.

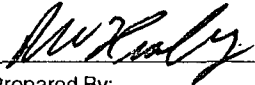

31% Procedural coverage achieved
26% Code coverage achieved

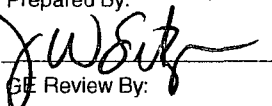
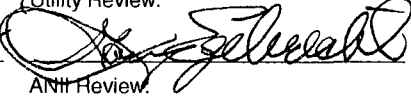
This examination meets the requirements of ASME Section XI, 1989 Edition, no Addenda and 1995 Edition, 1996 Addenda, as modified by the Performance Demonstration Initiative (PDI) program description.

Examination results were compared to data report R-R8-136 from 1993 outage with No Change

These examinations were performed under Work Order: 01082543 01 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

 III 5-13-05
 Prepared By: Level: Date: Utility Review:  5/15/05 Date:

 III 5-15-05
 GE Review By: Level: Date: ANR Review:  5/15/05 Date:

RWP: N/A
Dose: N/A mr.



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: 2

Report No.:

Project: 16423

R17-010

System: SHUTDN COOL RET LP-A

Component ID Number: 12RHR(1)A-14

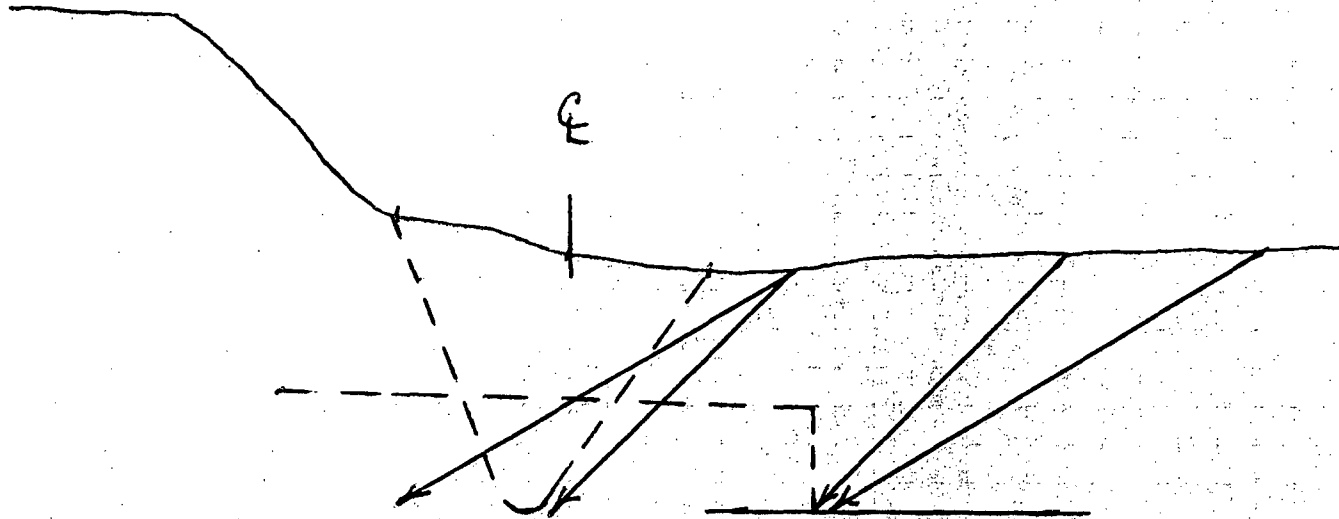
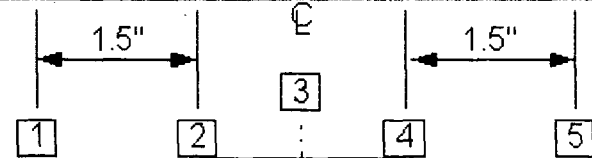
Position	0°	90°	180°	270°
1	N/A	N/A	N/A	N/A
2	1.4	N/A	N/A	N/A
3	1.4	N/A	N/A	N/A
4	1.22	N/A	N/A	N/A
5	1.3	N/A	N/A	N/A

Crown Height: 0.15"

Crown Width: 1.65"

Nominal Diameter: 12.0"

Weld Length: 43.0"



George DuBose, III
 Initials: GD Drawn by: George DuBose, III Level: III Date: 5/11/2005

JWB
 GE Reviewed By: JWB Level: III Date: 5/15/05

John Welch
 Utility Review: John Welch Date: 5/15/05

John Welch
 ANII Review: John Welch Date: 5/15/05



GE NUCLEAR ENERGY

Ultrasonic Examination Indication Report

Data Report Number: R17-010

Cal/Data Sheet Number UT-036

Site: Columbia Generating Station

Procedure: PDI-UT-10 / A / N/A

Weld ID: 12RHR(1)A-14

Drawing: RHR-105 Rev. 8

Size: 12"

Thickness: 1.22"

Exam Start: 0240

Lo Location: TDC

Wo Location: Weld Centerline

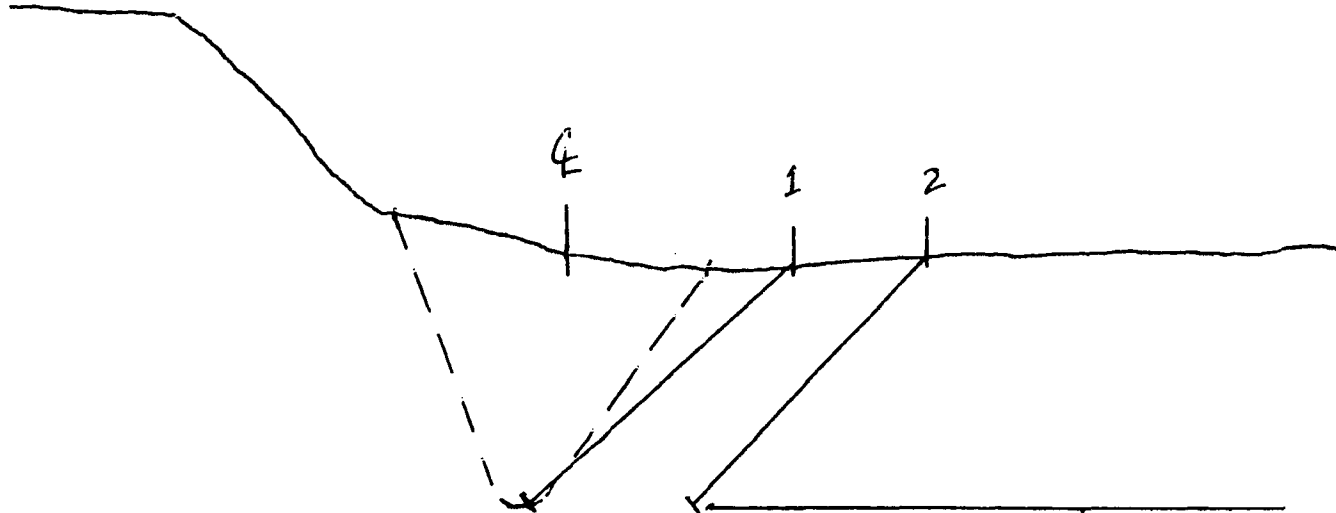
Weld Width: 1.65"

Weld Height: 0.15"

Exam End: 0410

Ind No.	Angle Used	% of DAC	Indication Length			W Distance			Metal Path			Ax / Circ	Upst/ Dnst	Comments:
			L1	L Max	L 2	W1	W Max	W 2	MP 1	MP Max	MP 2			
1	45°	112	N/A	5.0	N/A	N/A	1.2	N/A	N/A	1.9	N/A	Ax	Dnst	Root geometry observed 360°.
2	45°	141	N/A	31.0	N/A	N/A	1.9	N/A	N/A	1.75	N/A	Ax	Dnst	Counterbore geometry observed 360°.

Sketch



George DuBose, III

Examiner

III 5/11/2005

Level: Date:

JWS III 5/15/05
GE Reviewed By: Level: Date:

[Signature] 5/15/05
Utility Review: Date:

[Signature] 5/15/05
ANII Review: Date:



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: **Columbia Generating Station / 2**
Outage: **R17**

Report Number: **R17-010**
Data Sheet Number: **UT-033**
Linearity Sheet: **L-006**

Calibration Data for Block: **8746**

SS	N/A	1.50" to 2.0	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	2201
Ultragel II	00325		Cal Check:	N/A
Couplant:	Couplant batch		Cal Check:	N/A
241783	72° F		Final Cal:	0456
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction: **N/A**
 Cal Reflector: **1.5 Notch**
 Signal Amplitude: **80%**
 Signal Sweep: **5.2 Div**
 Signal dB: **59.0 dB**
 Sweep 0-10 = **4.0 in. Metal Path**

Calibration Verification

Field Simulator Block S/N: **N/A**

Reflector	N/A	N/A
Amplitude	N/A	N/A
Gain (dB)	N/A	N/A
Sweep (SD)	N/A	N/A

Acceptable Linearity performed : **4/20/2005**

Procedure: **PDI-UT-10**

Ver / Rev: **A** DRR: **N/A**

Search Unit Data

RTD **04-301** **2(10x18) mm/Rect.**
 Manufacturer: Serial Number Size/Shape:
0.55 in. **45** **45°**
 Incident Point: Nominal Angle: Measured Angle:
2.0 MHz **45°TRL 2-Aust** **RL** **2**
 Frequency: Style: Mode: Elements:

Search Unit Cable

2(RG-174) **6'** **0**
 Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P **136P1106C031373**
 Manufacturer/Model: Serial Number:
1.0 in. **0.227 in./usec.** **2** **4 KHz**
 Delay: Velocity: Filter: Rep Rate:
4.0 in. **250** **500 Ohms**
 Range: Pulsar: Damping:
Off **2.25 MHz** **Dual**
 Reject: Frequency: Mode:

Exam Data for Weld: **12RHR(1)A-14**

VALVE TO SE

Configuration:

QD **84° F** **241783**
 Exam Surface: Exam Temp. Exam Thermometer

Axial	UPST	Scan dB	Recordable	Exam
Circ	DNST		Indications	Angle
Axial	Dnst	65.0	NRI	45°

Exam Comments / Limitations:

Exams performed to maintain 5% to 20% ID roll.
No upstream exam performed due to valve configuration.

Exam Start: **0240** Exam End: **0410**

GD

George DuBose, III

Initials: Examiner:

III
Level:

n/a

Initials: Examiner 2:

Level:

Initial Cal/Exam Date: **5/11/2005**

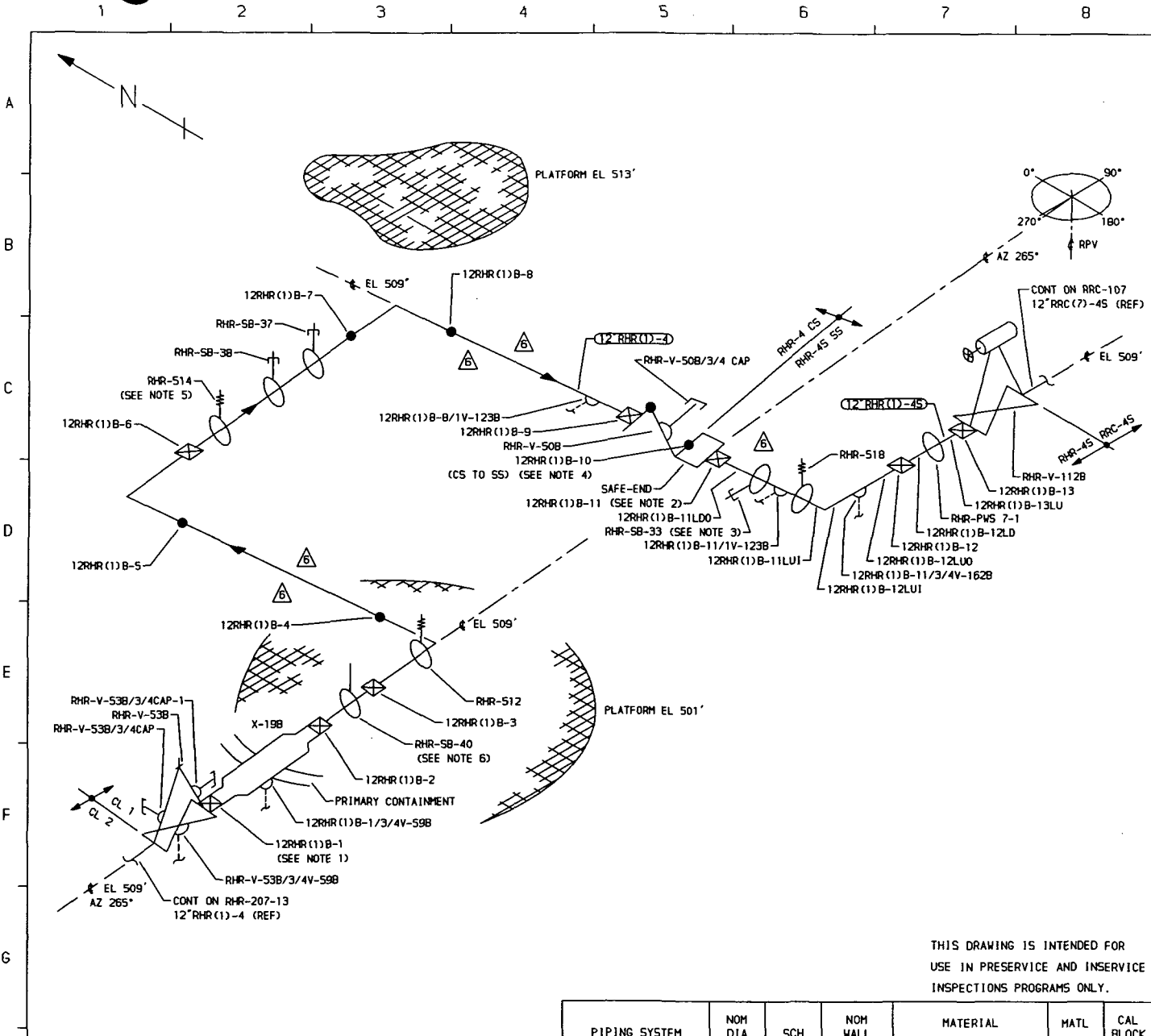
[Signature] **III** **5/15/05**
 GE Reviewed By: Level: Date:

[Signature] **5/15/05**
 Utility Review: Date:

[Signature] **5/15/05**
 ANII Review: Date:

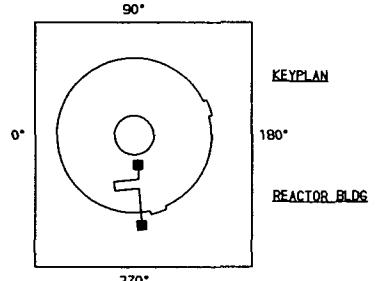
REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-5



- NOTES:**
1. WELD 12RHR(1)B-1 IS FITTING TO FITTING.
 2. WELD 12RHR(1)B-11 IS FITTING TO FITTING.
 3. ACCESS TO WELD 12RHR(1)B-11 REQUIRES REMOVAL OF RHR-SB-32 & RHR-SB-33.
 4. DISSIMILAR METAL WELD, CS TO SS, USE CAL BLOCK UT-19.
 5. ACCESS TO WELD 12RHR(1)B-6 REQUIRES REMOVAL OF RHR-514.
 6. RHR-SB-40 CHANGED FROM SNUBBER TO STRUT PER BDC-86-0525-0A.
 7. RHR-V-53B WAS REPLACED WITH A GATE VALVE AT OUTAGE RF 88A PER BDC-86-0323-0A.
 8. RHR-SB-32, RHR-SB-34, RHR-SB-35, RHR-SB-36 & RHR-SB-39 WERE DELETED PER BDC 087-0244-0J-026.

- REFERENCES:**
- ISI - 221-2
 - BOVEE & CRAIL ISOMETRICS
RHR-899-46.47 REV 12
RHR-899-48 REV 10



QUALITY CLASS, 1	ASME CODE CLASS, 1
ENGR, D PORTER	DRAWN, K-McA DATE, 12-15-77

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM
 RICHLAND, WASHINGTON 99352

WNP-2
 WELD & COMPONENT
 IDENTIFICATION DIAGRAM

THIS DRAWING IS INTENDED FOR
 USE IN PRESERVICE AND INSERVICE
 INSPECTIONS PROGRAMS ONLY.

NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
6	9-22-94	ADDED NOTE 8, MODIFIED ACCORDINGLY.	K-McA	DPR	DW							
5	2-20-92	ADDED RHR-PWS 7-1 ZONE C-7.	K-McA	OJ	DPR	12\"RHR(1)-4	12	100	0.844	SA 106 GR B	CS	UT-16
4	12-4-89	ADDED ISI DWG REF, DWG LINE CNT, LOGO, NOTES 6 & 7, DELETED LUGS, CORRECTED RHR-V-53B & CONN., MOD KEYPLAN, REDRAWN	K-McA	DPR	TFH	12\"RHR(1)-45	12	80	0.688	SA 312 TP 304	SS	UT-19
3	9-16-83	REVISED AS NOTED. ADDED KEYPLAN & LUGS.	K-McA	DPR	TFH							
2	12-2-81	REVISED AS NOTED	K-McA	DPR	TFH							

TITLE,
 SHUTDOWN COOLING RETURN LOOP 'B'

DWG NO. RHR-106 REV 6



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.:
R17-012

Site: **Columbia Generating Station** Component ID: **12RHR(1)B-10**

Outage: **R17** **VALVE TO SAFE END**

System **SHUTDN COOL RET LP-B** ASME Cat.: **B-F** A ASME Item **B5.130** Aug Req

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
45° Shear	UT-091	N/A	PDI-UT-10	8746	George DuBose, III	III	5/21/2005
45° Long.	UT-092	N/A	PDI-UT-10	8746	George DuBose, III	III	5/21/2005
60° Long.	UT-093	N/A	PDI-UT-10	8746	George DuBose, III	III	5/21/2005
45° Long.	UT-094	N/A	PDI-UT-10	8746	George DuBose, III	III	5/21/2005

Examination Results:

During the manual examination of the above referenced dissimilar metal weld, no reportable indications were detected utilizing a 45° Shear wave, 45° and 60° Refracted Longitudinal wave search units.

The 45° Shear did record counterbore geometry.

The 45° RL did record counterbore geometry.

No upstream examination was performed due to valve configuration.

16% Procedural coverage achieved
29% Code coverage achieved

This examination meets the requirements of ASME Section XI, 1989 Edition, no Addenda and 1995 Edition, 1996 Addenda, as modified by the Performance Demonstration Initiative (PDI) program description.

No previous data was available prior to this examination.

Examination results were compared to data report N/A from N/A outage with No Change

These examinations were performed under Work Order: 01082186 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

Prepared By: George E. DuBose III Level: III Date: 5-23-05
 Utility Review: [Signature] Date: 5/23/05
 GE Review By: [Signature] Level: III Date: 5-23-05
 ANII Review: [Signature] Date: 5/23/05

RWP: N/A
Dose: N/A mr.



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: 2

Report No.:

Project: 16423

R17-012

System: SHUTDN COOL RET LP-B

Component ID Number: 12RHR(1)B-10

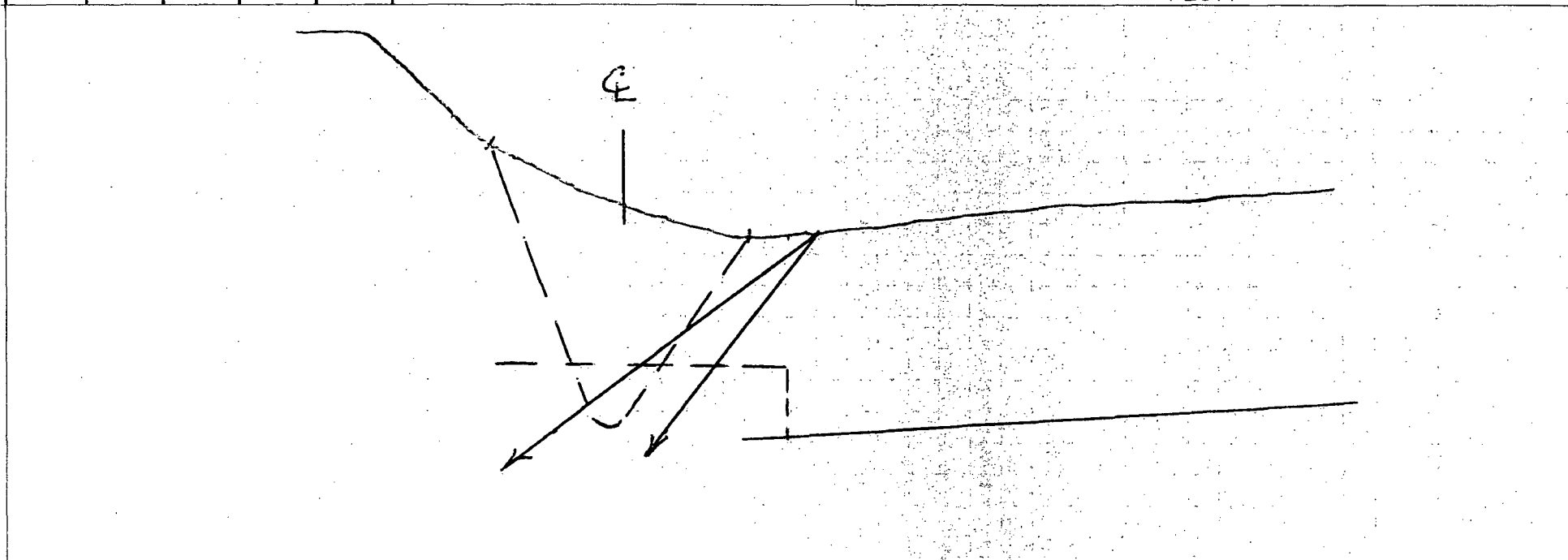
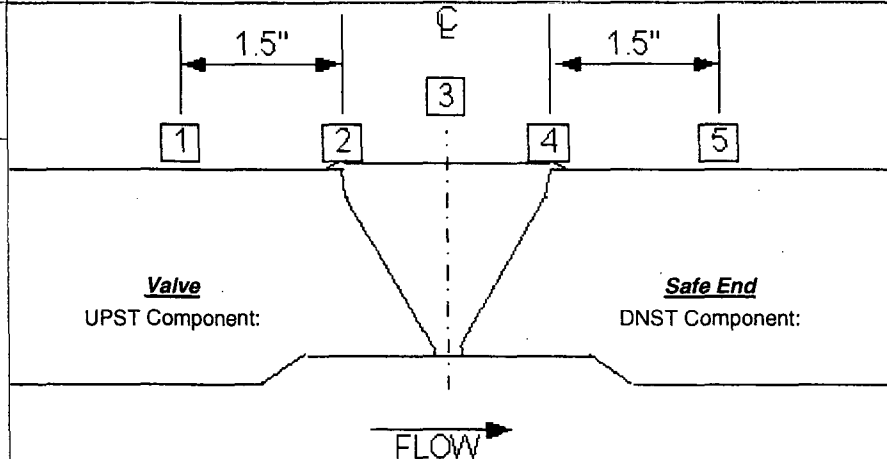
Position	0°	90°	180°	270°
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	1.34	N/A	N/A	N/A
4	1.30	N/A	N/A	N/A
5	1.36	N/A	N/A	N/A


Crown Height: Flush

Crown Width: 1.7

Nominal Diameter: 12.0"

Weld Length: 42.0"



 George DuBose, III III 5/21/2005
 Initials: Drawn by: Level: Date:

 M. Walsh III 5-23-04
 GE Reviewed By: Level: Date:



GE NUCLEAR ENERGY

Ultrasonic Examination Indication Report

Data Report Number: R17-012

Cal/Data Sheet Number UT-091 and 092

Site: Columbia Generating Station

Procedure: PDI-UT-10 / A

Weld ID: 12RHR(1)B-10

Drawing: RHR-106

Size: N/A

Thickness: 0.50" to 2.0"

Exam Start: 1450

Lo Location: Top Dead Center

Wo Location: Weld Centerline

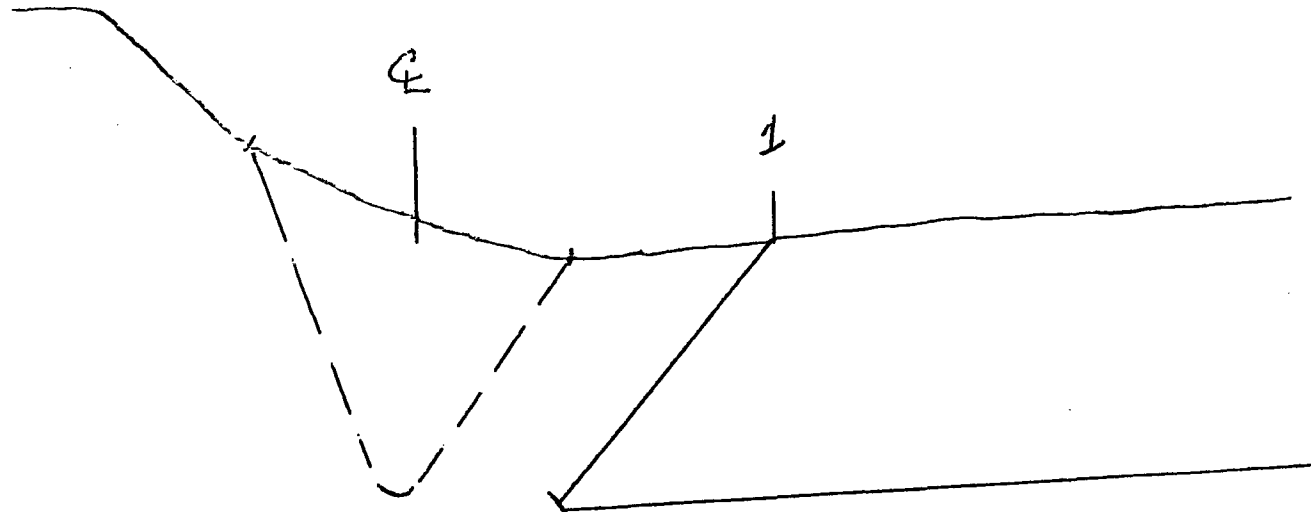
Weld Width: 1.70 in

Weld Height: Flush

Exam End: 1555

Ind No.	Angle Used	% of DAC	Indication Length			W Distance			Metal Path			Ax / Circ	Upst/ Dnst	Comments:
			L1	L Max	L 2	W1	W Max	W 2	MP 1	MP Max	MP 2			
1	45°	200	-	28.5	-	-	1.9	-	-	1.8	-	AX	DNST	45 Shear - Counterbore Geometry observed 360
1	45°	159	-	29.0	-	-	1.9	-	-	1.8	-	AX	DNST	45 RL - Counterbore Geometry observed 360

Sketch



George DuBose, III

George DuBose, III

Examiner

III 5/21/2005

Level: Date:

W. Kelly

GE Reviewed By:

III

Level:

5-23-05

Date:

Paul Little

Utility Review:

5/23/05

Date:

W. Kelly

ANII Review:

Date:

REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

Attachment C

2ISI-32-6

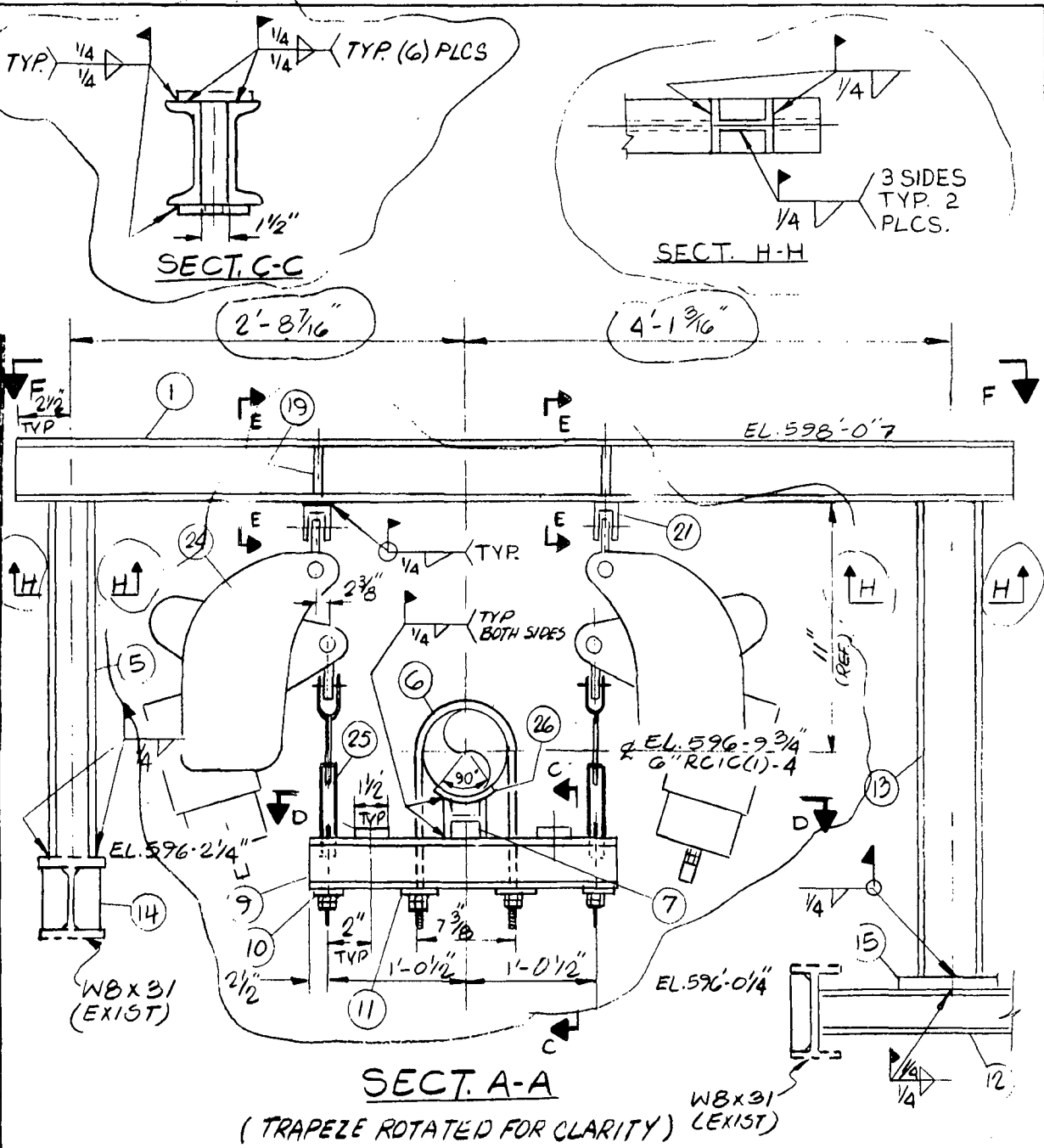
Weld Identification 6RCIC(1)-40

ISI Diagram RCIC-102-3

Construction Drawing RCIC-129 (CVI 02-215-008, 203) sheets 2, 4, and 5

NDE Data Report R15-086 pages 1, 4, and 5

SUPERIOR BLUEPRINT GRAPHICS TB 397

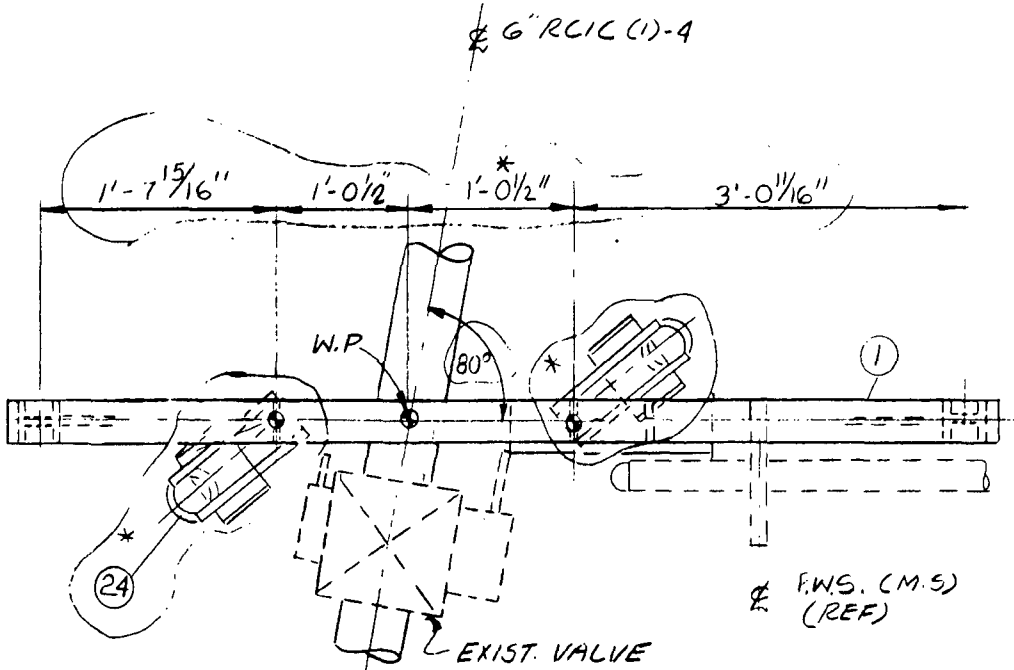


02-25-03	203	CVI SHT	DWG SHT
20	2	REV	REV
		NO	

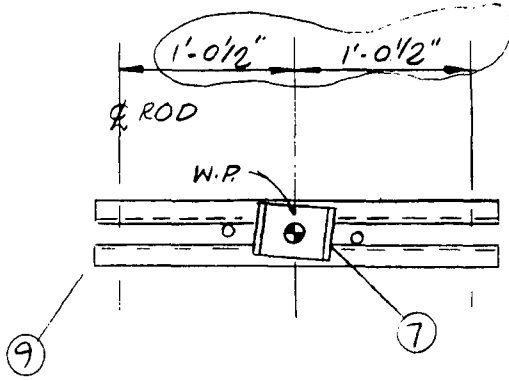
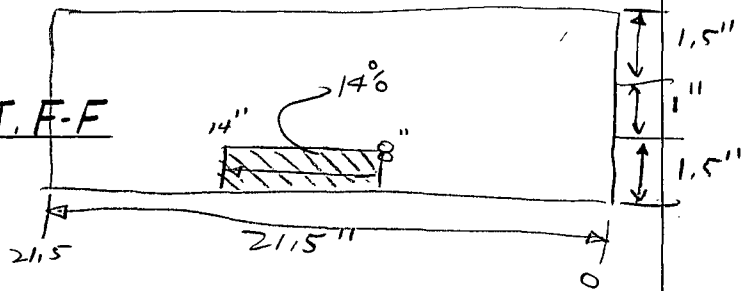
3	REV'D & REDRAWN BY GER TO INCORP. PED H-G 250	11-30-82	1/2	5/10
REV NO	REVISION	DATE	DWN CHKO	APVD
OWN	CHKD. BOHANICER	SCALE	NTS	
SL/LDE	HDF	DATE	3-13-82	
ENGINEERING REVIEW				
MECH	CIVIL	DATE	12-15-82	
ELEC				
REV'D	3/13/82	APVD	DATE	12/13/82
CHIEF DRAFTSMAN	CHIEF MECH.	ENGINEER		

WASHINGTON PUBLIC POWER SUPPLY SYSTEM	
HANFORD NO.2	
MARK NO.	RCIC-129
BURNS AND ROE, INC. Engineers and Constructors New Jersey • New York • Connecticut • California	
W.O.3808	DWG. RCIC-129
SHT	REV
408	5

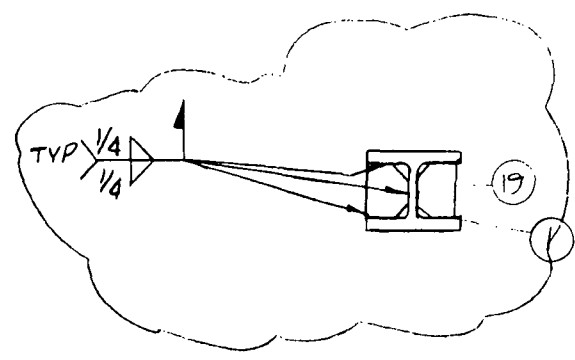
FRAME 2 OF 2



SECT. F-F



SECT. D-D



SECT. E-E

3	REV'D & REDRAWN BY BER TO INCORP. PER H.G. 250	11-30-82	K2	FB	SM	WASHINGTON PUBLIC POWER SUPPLY SYSTEM HANFORD NO. 2	
REV NO	REVISION	DATE	DWN	ENKD	APVD	MARK NO. RCIC-129	
DWN	CHKD	SCALE	ENGINEERING REVIEW				BURNS AND ROE, INC. Engineers and Constructors New Jersey • New York • Connecticut • California
SL/LDE	WDF	DATE 3-13-82	CIVIL <i>MD</i> 12-10-82				
MECH						W.O. 3808 DWG. RCIC-129 SHT 5 OF 5	
ELEC						REV 3	
REVD	3/14/82	APVD	12/13/82		MECH.	ENGINEER	
G.P. Taylor		J.P. Taylor					
CHIEF DRAFTSMAN		CHIEF MECH.		ENGINEER			

SUPERIOR MICROGRAPHICS 78-397

ITEM NO	QUAN	SIZE-DESCRIPTION	ASTM	WT
10	2	1/2" Ø WASHER R FIG. 160	A-36	1
11	2	5/8" Ø WASHER R FIG. 160	A-36	2
12	1	M4 x 13 x (6-0 5/8)	A-36	79
13	1	M4 x 13 x (1-7 1/8)	A-36	21
14	4	STIFF R 3/8" x 3 1/16" x 0'-7 1/16"	A-36	12
15	1	R 5/8" x 6 1/2" x 0'-6 1/2"	A-36	4
19	4	STIFF R 3/8" x 2" x 0'-3 1/2" (CUT TO SUIT SEE SECT. E-E)	A-36	1
21	2	1/2" Ø WELDED BEAM ATTACHMENT FIG. 14DA		1
22	2	1/2" Ø x 1'-7" LG. HANGER ROD FIG. 165		2
24	2	CONSTANT SUPPORT #VA-905-3009 TOTAL LOAD = 554# CALC. TRAVEL = 2 5/8" UP TOTAL TRAVEL = 3 1/2" UP		94
25	2	1/2" Ø TURNBUCKLE, 3" OPENING FIG. 164		1
26	1	R 3/8 x 5" x 0'-6" (BEND TO RADIUS 6" Ø PIPE)		4
DELETED ITEMS 16, 17, 18, 20 & 23			TOTAL WT.	392

*

DELETED DETAIL

3	REV'D & REDRAWN BY BER TO INCORP. PED-H-G250	11-30-82	KJ FB	SM	WASHINGTON PUBLIC POWER SUPPLY SYSTEM HANFORD NO.2
REV NO	REVISION	DATE	OWN	CHKD	APVD
DWN	CHKD FBOHANKER	SCALE	NTS		
SL/LDE	HDF	DATE	3-13-82		
ENGINEERING REVIEW					MARK NO. RCIC-129
MECH	CIVIL MM 12 10 82				BURNS AND ROE, INC. Engineers and Constructors New Jersey • New York • Connecticut • California
ELEC					
REV'D	3/13/82	APVD	DATE	INT	REV
Chief Draftsman		Chief	MECH. ENGINEER	2005	3
				W.O.3808	DWG. RCIC-129



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.: R15-086

Site and Unit: Columbia Generating Station Component ID: 6RCIC(1)-40
 Outage: RFO-15 PIPE TO VALVE
 System: RCIC ASME Cat.: B-J ASME Item B9.11 Aug Requirements: N/A

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
60° Shear	UT-R15-067	N/A	PDI-UT-1	UT-28	DREW PETERSON	II	5/28/01
45° Shear	UT-R15-068	N/A	PDI-UT-1	UT-28	DREW PETERSON	II	5/28/01

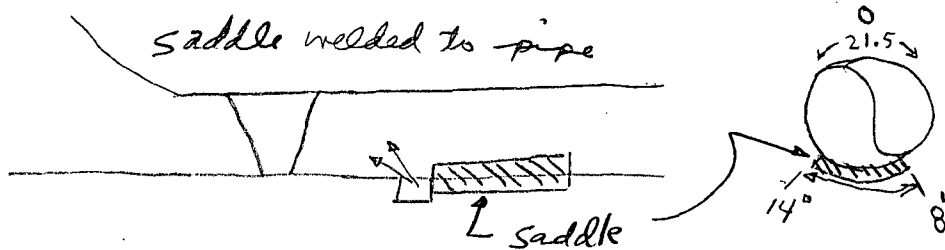
Examination Results:

During the manual ultrasonic examination of the above referenced weld, no reportable indications were recorded utilizing the 45° and 60° search units. Root geometry was recorded by the 60° search unit.

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, no Addenda and the 1995 Edition, 1996 Addenda with modifications as stated in 10CFR50.55.

The examination was limited from 8" to 14" due to a support. 86% Code coverage was obtained.

Previous data was reviewed prior to this summary.



Examination results were compared to data report RIU-080 from 1980 outage with No Change
 These examinations were performed under Work Order: 01010463 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

	II	5-30-01		ND/LEAD	5/31/01
Prepared By:	Level:	Date:	Utility Reviewed By:	Title:	Date:
	III	5/31/01		AWFI	5/31/01
GE Reviewed By:	Level:	Date:	ANII Reviewed By:	Title:	Date:

RWP: N/A
 Dose: N/A mr.



GE NUCLEAR ENERGY

Ultrasonic Examination Indication Report

Site: Columbia Generating Station

Procedure: PDI-UT-1 / B / Site Specific Rev. 0

Data Report Number: R15-086

Cal / Data Sheet Number: UT-R15-067

Weld ID: 6RCIC(1)-40

Drawing: RCIC-102-3

Size: 6

Thickness: 0.432

Exam Start: 2105

Lo Location: TOP DEAD CENTER

Wo Location: WELD CENTERLINE

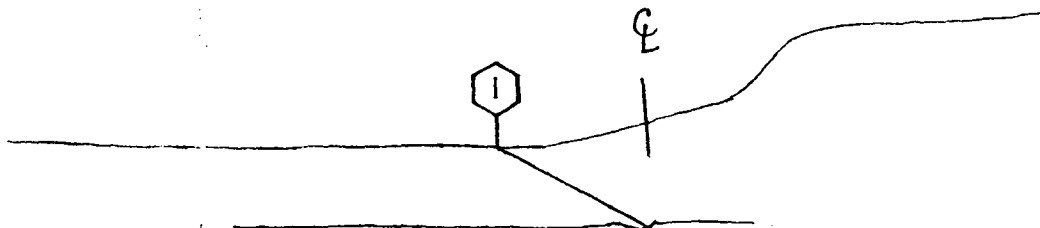
Weld Width: 1.0"

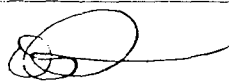
Weld Height: FLUSH

Exam End: 2155

Ind No.	Angle Used	% of DAC	Indication Length			W Distance			Metal Path			Ax / Circ	Upst/ Dnst	Comments:
			L1	L Max	L 2	W1	W Max	W 2	MP 1	MP Max	MP 2			
1	60°	80	N/A	7" CCW	N/A	N/A	.8"	N/A	N/A	.87"	N/A	Ax	Upst	Root geometry seen 360° intermittent.

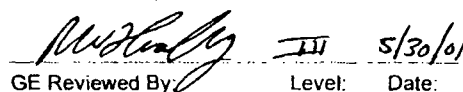
Sketch



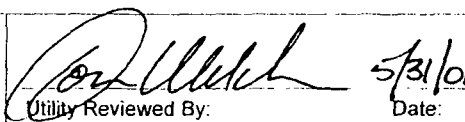

DREW PETERSON

Examiner

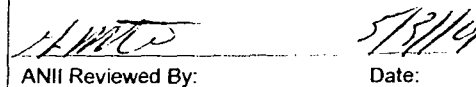
Level: II Date: 5/28/01


GE Reviewed By: III Date: 5/30/01

Level: III Date: 5/30/01


Utility Reviewed By: 5/31/01

Date: 5/31/01


ANII Reviewed By: 5/31/01

Date: 5/31/01



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: N/A

Report No.:

Project: RFO-15

R15-086

System: RCIC

Component ID Number: 6RCIC(1)-40

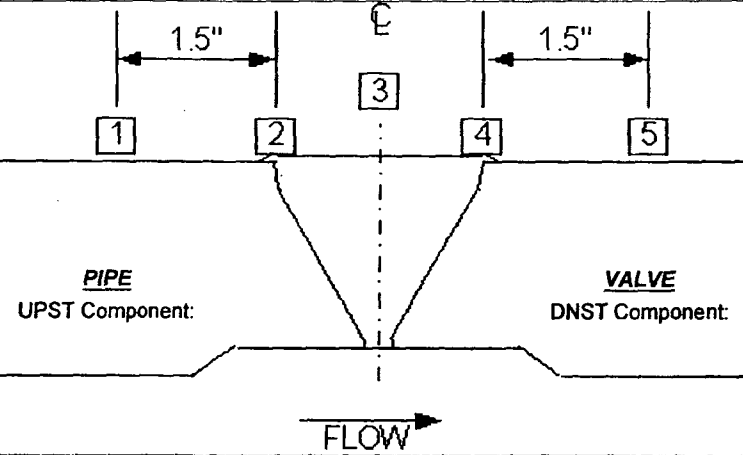
Position	0°	90°	180°	270°
1	.40	N/A	N/A	N/A
2	.48	N/A	N/A	N/A
3	.51	N/A	N/A	N/A
4	.58	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A

Crown Height: FLUSH

Crown Width: 1.0"

Nominal Diameter: 6.0"

Weld Length: 21.5"



PIPE

VALVE

FLOW

DBP DREW PETERSON II 5/28/01
Initials: Examiner: Level: Date:

[Signature] JW 5/30/01
GE Reviewed By: Level: Date:

[Signature] 5/31/01
Utility Reviewed By: Date:

[Signature] 5/31/01
ANII Reviewed By: Date:

REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

Attachment D

2ISI-32-7

Weld Identification 24RRC(1)A-14

ISI Diagram RRC-101-2

NDE Data Report R15-053

2ISI-32-8

Weld Identification 24RRC(1)A-15

ISI Diagram RRC-101-2

NDE Data Report R15-054

2ISI-32-9

Weld Identification 24RRC(1)A-18

ISI Diagram RRC-101-2

NDE Data Report R15-057

2ISI-32-10

Weld Identification 24RRC(1)A-19

ISI Diagram RRC-101-2

NDE Data Report R15-058

2ISI-32-11

Weld Identification 24RRC(1)B-12

ISI Diagram RRC-102-2

NDE Data Report R16-060

REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-12

Weld Identification 24RRC(1)B-16

ISI Diagram RRC-102-2

NDE Data Report R16-062

2ISI-32-13

Weld Identification 24RRC(1)B-17

ISI Diagram RRC-102-2

NDE Data Report R16-063

2ISI-32-14

Weld Identification 24RRC(2)A-10

ISI Diagram RRC-101-2

NDE Data Report R15-049 pages 1 and 6

2ISI-32-15

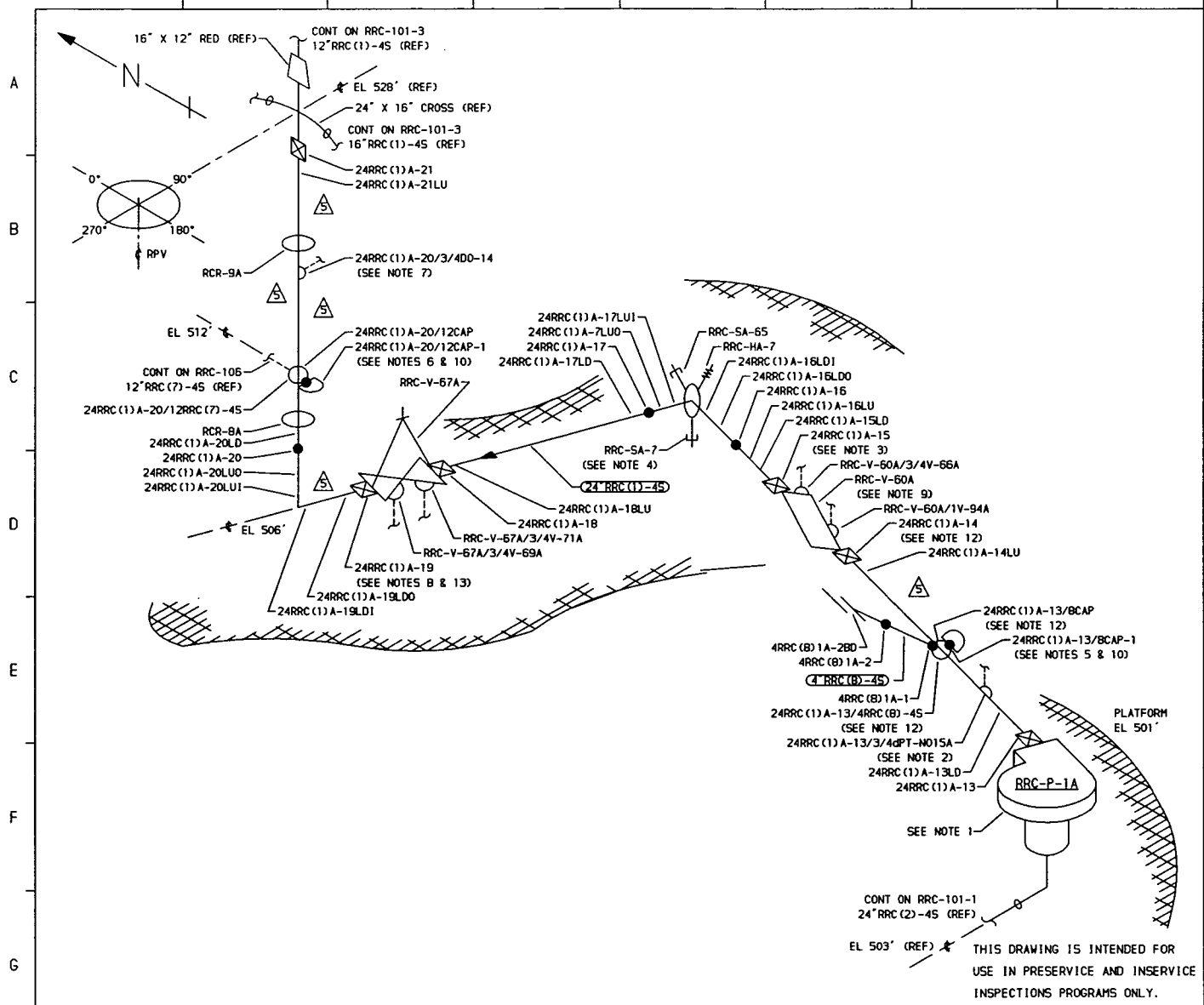
Weld Identification 24RRC(2)B-8

ISI Diagram RRC-102-2

NDE Data Report R16-066

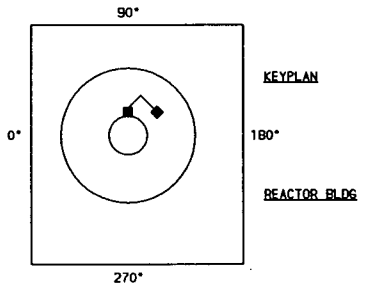
REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-7



- NOTES:**
1. SEE RRC-P-1A DETAIL DWG RRC-103 FOR PUMP SUPPORT DETAILS.
 2. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-70a) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 3. DELETED
 4. SPECIAL CLAMP WITH HA-7 & SA-7 ATTACHMENTS.
 5. WELD 24RRC(1)A-13/BCAP-1 IS FITTING TO FITTING.
 6. WELD 24RRC(1)A-20/10CAP-1 IS FITTING TO FITTING.
 7. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-77a) THROUGH VALVE RRC-V-20.
 8. WELD 24RRC(1)A-19 IS FITTING TO FITTING.
 9. RRC-V-60A HAS TWELVE (12) 2 3/4" X 15" BODY TO BONNET STUDS.
 10. CAP TO NOZZLE WELDS ARE CLAD ON THE ID IN THE WELD AREAS. SEE REF DWGS 131 C 7588 & 131 C 7589.
 11. PIPING FROM PUMP DISCHARGE TO RRC-V-67A HAS MIN WALL OF 1.218. PIPING FROM RRC-V-67A HAS MIN WALL OF 1.140.
 12. DELETED
 13. DELETED
 14. RRC-SA-8, RRC-SA-9, RRC-SA-15, RRC-SA-17, RRC-SA-18 & RRC-SA-66 WERE DELETED PER BDC 87-0244-0J-024.

- REFERENCES:**
- ISI - 230-1
 GENERAL ELECTRIC DRAWINGS
 761 E 424 REV 2
 762 E 538 SH 1 REV 12
 762 E 538 SH 2 REV 11
 761 E 735 REV 8
 131 C 7588 REV 3
 131 C 7589 REV 5
 131 C 7582 REV 3
 BOVEE CRAIL/GERI
 BC/6-216 REV 9



QUALITY CLASS, 1	ASME CODE CLASS, 2
ENGR, D TIMMINS	DRAWN, K-McA DATE, 4-6-78

WASHINGTON PUBLIC POWER
 SUPPLY SYSTEM
 RICHLAND, WASHINGTON 99352

WNP-2
 WELD & COMPONENT
 IDENTIFICATION DIAGRAM

TITLE, REACTOR RECIRCULATION LOOP A	
DWG NO. RRC-101-2	REV 5

NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
5	9-22-94	ADD NOTE 14, MOD ACCORDINGLY. DEL NOTES 12, 13	K-McA	DPR	DW							
4	6-7-94	CORRECTED PENETRATION NUMBER IN NOTES 2 & 7.	K-McA	DPR	DW							
3	12-4-89	ADDED ISI DWG REF, DWG LINE CONT, LOGO & 'A' TO RCR-8 & RCR-9. CHG MATL & UT NO FOR 4" RRC(B)-45. MODIFIED KEYPLAN REDRAWN	K-McA	DPR	TFH							
2	10-13-83	REVISED AS NOTED. ADDED KEYPLAN	K-McA	DPR	TFH	24"RRC(1)-45	24	XXX	SEE NOTE 11	SA 358 GR 304 CL 1	SS	UT-7
1	11-5-80	REVISED AS NOTED	K-McA	TFH	DWP	4"RRC(B)-45	4	80	0.337	SA 376 TP 304	SS	UT-29
0	11-27-78	ISSUED FOR USE	K-McA	DWP	LFB	CAP	12	80	0.688	SA 403 GR WP 304	SS	UT-19
A	5-19-78	ISSUED FOR INFORMATION ONLY	K-McA	NCH	DWP	CAP	8	80	0.500	SA 403 GR WP 304	SS	UT-26



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.:
R15-053

Site and Unit: **Columbia Generating Station** Component ID: **24RRC(1)A-14**

Outage: **RFO-15** **PIPE TO VALVE**

System: **RRC** ASME Cat.: **B-J** ASME Item **B9.11** Aug Requirements: **N/A**

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
60° RL	UT-R15-046		PDI-UT-2	UT-7	JACK REISEWITZ	II	5/24/01
45° SHEAR	UT-R15-045		PDI-UT-2	UT-7	JACK REISEWITZ	II	5/24/01

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no reportable indications were recorded utilizing the 45° and 60° search units.

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, no Addenda and the 1995 Edition, 1996 Addenda with modifications as stated in 10CFR50.55.

Examined from pipe side only due to valve configuration. 50% code coverage obtained.

Previous data was reviewed prior to this summary.

Examination results were compared to data report RRU-240 from 1979 outage with No Change

These examinations were performed under Work Order: 01011024 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

<i>Jack Reiszewitz</i>	<u>II</u>	<u>5-24-01</u>	<i>Con Ulrich</i>	<u>ME LEAD</u>	<u>5/28/01</u>
Prepared By:	Level:	Date:	Utility Reviewed By:	Title:	Date:
<i>P.W. Hardy</i>	<u>III</u>	<u>5/27/01</u>	<i>A. M. East</i>	<u>ANII</u>	<u>5/30/01</u>
GE Reviewed By:	Level:	Date:	ANII Reviewed By:	Title:	Date:

RWP: N/A
Dose: N/A mr.



Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station / N/A
Outage: RFO-15

Data Report Number: R15-053
Data Sheet Number: UT-R15-045
Linearity Sheet: L-004

Calibration Data for Block: UT-7

SS	<u>24</u>	<u>1.14</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>2030</u>
<u>ULTRAGEL</u>	<u>97425</u>		Cal Check:	<u>N/A</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>213183</u>	<u>70° F</u>		Final Cal:	<u>2354</u>
Thermometer S/N	Cal Temp.			

Procedure: PDI-UT-2

Rev B DRR: Site Specific Rev. 0

Search Unit Data

KBA 003R18 0.50"/Round
Manufacturer: Serial Number Size/Shape:

0.55 in. 45° 45°
Incident Point: Nominal Angle: Measured Angle:

1.5 MHz Comp-G SHEAR
Frequency: Style: Mode:

Search Unit Cable

RG-174 6' 0
Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 136991A091220
Manufacturer/Model: Serial Number:

0.48 in. 0.122in./µsec. 2 4 KHz
Delay: Velocity: Filter: Rep Rate:

4.0 in. 334 ns 500 Ohms
Range: Pulser: Damping:

Off 2.25 MHz P/E
Reject: Frequency: Mode:

DAC Construction

Scan Direction Ax Circ
Cal Reflector ID Notch ID Notch
Signal Amplitude 80% 80%
Signal Sweep: 5.2 Div 5.3 Div
Signal dB: 37.2 dB 42.0 dB
Sweep 0-10 = 4.0 in. Metal Path

Calibration Verification

Field Simulator Block S/N: N/A

Reflector	<u>N/A</u>	<u>N/A</u>
Amplitude	<u>N/A</u>	<u>N/A</u>
Gain (dB)	<u>N/A</u>	<u>N/A</u>
Sweep (SD)	<u>N/A</u>	<u>N/A</u>

Acceptable Linearity performed : 5/16/01

Exam Comments / Limitations:

No axial exams performed on downstream valve surface.
Counterbore observed below recordable level.

Exam Data for Weld: 24RRC(1)A-14

PIPE TO VALVE

Configuration:

OD 92° F 213183
Exam Surface: Exam Temp. Exam Thermometer

Drawing: RRC-101-2

Axial	UPST	Scan dB	Recordable	Exam
Circ	DNST		Indications	Angle
<u>Axial</u>	<u>Upst</u>	<u>51.2</u>	<u>NR</u>	<u>45°</u>
<u>Axial</u>	<u>Dnst</u>	<u>N/A</u>	<u>N/A</u>	
<u>Circ</u>	<u>Upst</u>	<u>56.0</u>	<u>NR</u>	<u>45°</u>
<u>Circ</u>	<u>Dnst</u>	<u>N/A</u>	<u>NR</u>	

Exam Start: 2100 Exam End: 2215

JAR JACK REISEWITZ II
Initials: Examiner: Level:

[Signature] II 5/27/01
GE Reviewed By: Level: Date:

N/A N/A
Initials: Examiner 2: Level:

[Signature] 5/28/01
Utility Reviewed By: Date:

Cal/Exam Date: 5/24/01

[Signature] 5/28/01
ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station / N/A
Outage: RFO-15

Data Report Number: R15-053
Data Sheet Number: UT-R15-046
Linearity Sheet: L-004

Calibration Data for Block: UT-7

SS	<u>24</u>	<u>1.14</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>2045</u>
<u>ULTRAGEL</u>	<u>97425</u>		Cal Check:	<u>N/A</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>213183</u>	<u>70° F</u>		Final Cal:	<u>2357</u>
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction: Ax
 Cal Reflector: ID Notch
 Signal Amplitude: 80%
 Signal Sweep: 5.9 Div
 Signal dB: 76.0 dB
 Sweep 0-10 = 5.0 in. Metal Path

Calibration Verification

Field Simulator Block S/N: N/A

Reflector	<u>N/A</u>	<u>N/A</u>
Amplitude	<u>N/A</u>	<u>N/A</u>
Gain (dB)	<u>N/A</u>	<u>N/A</u>
Sweep (SD)	<u>N/A</u>	<u>N/A</u>

Acceptable Linearity performed: 5/18/01

Exam Data for Weld: 24RRC(1)A-14

PIPE TO VALVE

Configuration:

OD 92° F 213183
 Exam Surface: Exam Temp. Exam Thermometer

Drawing: RRC-101-2

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>Axial</u>	<u>Upst</u>	<u>76.0</u>	<u>NRI</u>	<u>60°</u>
<u>Axial</u>	<u>Dnst</u>	<u>N/A</u>	<u>N/A</u>	
<u>Circ</u>	<u>Upst</u>	<u>N/A</u>	<u>N/A</u>	
<u>Circ</u>	<u>Dnst</u>	<u>N/A</u>	<u>N/A</u>	

Procedure: PDI-UT-2

Rev B DRR: Site Specific Rev. 0

Search Unit Data

RTD 92-894 2(10x18) mm/Rect.
 Manufacturer: Serial Number Size/Shape:

0.5 in. 60° 60°
 Incident Point: Nominal Angle: Measured Angle:

2.0 MHz TRLA RL
 Frequency: Style: Mode:

Search Unit Cable

RG-174 6' 0
 Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 136991A091220
 Manufacturer/Model: Serial Number:

0.85 in. 0.23in./usec. 2 4 KHz
 Delay: Velocity: Filter: Rep Rate:

5.0 in. 250 ns 500 Ohms
 Range: Pulser: Damping:

Off 2.25 MHz Dual
 Reject: Frequency: Mode:

Exam Comments / Limitations:

No scans possible from downstream valve surface.

Exam Start: 2100 Exam End: 2215

JAR JACK REISEWITZ II
Initials: Examiner: Level:

N/A N/A
 Initials: Examiner 2: Level:

Cal/Exam Date: 5/24/01

[Signature] II 5/26/01
 GE Reviewed By: Level: Date:

[Signature] 5/28/01
 Utility Reviewed By: Date:

[Signature] 5/28/01
 ANII Reviewed By: Date:

Form: Pipe Weld
Record # 52



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: N/A

Report No.: R15-053

Project: RFO-15

System: RRC

Component ID Number: 24RRC(1)A-14

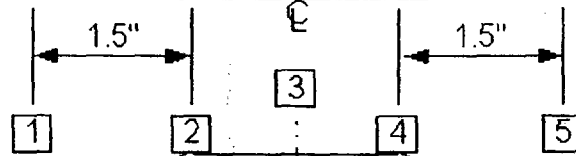
Position	0°	90°	180°	270°
1	N/A	N/A	1.03	N/A
2	N/A	N/A	1.10	N/A
3	N/A	N/A	1.21	N/A
4	N/A	N/A	1.32	N/A
5	N/A	N/A	N/A	N/A

Crown Height: FLUSH

Crown Width: 1.1"

Nominal Diameter: 24.0"

Weld Length: 75.0"



PIPE
UPST Component:

VALVE
DNST Component:

FLOW →

PIPE

FLOW →

VALVE

PROFILE TAKEN AT TOC

NO THICKNESS MEASUREMENT TAKEN AT POSITION 5 DUE TO VALVE

B.F. BRET FLESNER II 5/24/01
 Initials: Examiner: Level: Date:

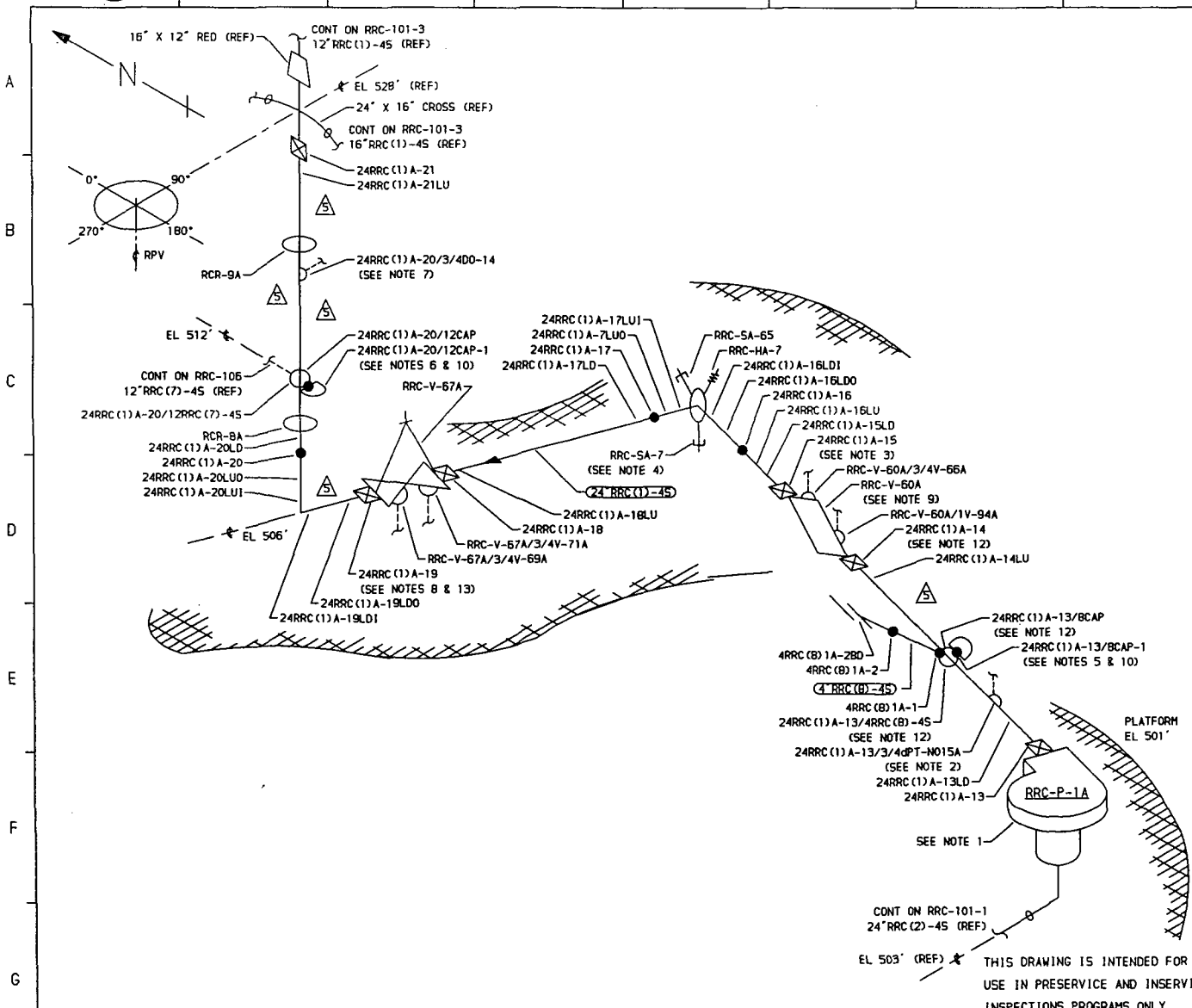
[Signature] III 5/27/01
 GE Reviewed By: Level: Date:

[Signature] 5/28/01
 Utility Reviewed By: Date:

[Signature] 5/28/01
 ANII Reviewed By: Date:

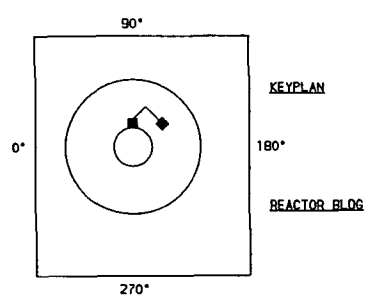
REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-8



- NOTES:**
1. SEE RRC-P-1A DETAIL DWG RRC-103 FOR PUMP SUPPORT DETAILS.
 2. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-70e) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 3. DELETED
 4. SPECIAL CLAMP WITH HA-7 & SA-7 ATTACHMENTS.
 5. WELD 24RRC(1)A-13/BCAP-1 IS FITTING TO FITTING.
 6. WELD 24RRC(1)A-20/10CAP-1 IS FITTING TO FITTING.
 7. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-77a) THROUGH VALVE RRC-V-20.
 8. WELD 24RRC(1)A-19 IS FITTING TO FITTING.
 9. RRC-V-60A HAS TWELVE (12) 2 3/4" X 15" BODY TO BONNET STUDS.
 10. CAP TO NOZZLE WELDS ARE CLAD ON THE ID IN THE WELD AREAS. SEE REF DWGS 131 C 7588 & 131 C 7589.
 11. PIPING FROM PUMP DISCHARGE TO RRC-V-67A HAS MIN WALL OF 1.218. PIPING FROM RRC-V-67A HAS MIN WALL OF 1.140.
 12. DELETED
 13. DELETED
 14. RRC-SA-8, RRC-SA-9, RRC-SA-15, RRC-SA-17, RRC-SA-18 & RRC-SA-66 WERE DELETED PER BDC 07-0244-OJ-024.

- REFERENCES:**
- ISI - 230-1
 GENERAL ELECTRIC DRAWINGS
 761 E 424 REV 2
 762 E 538 SH 1 REV 12
 762 E 538 SH 2 REV 11
 761 E 735 REV 8
 131 C 7588 REV 3
 131 C 7589 REV 5
 131 C 7582 REV 3
 BOVEE CRAWL/GERI
 BC/G-216 REV 9



QUALITY CLASS:	1	ASME CODE CLASS:	2
ENGR:	D TIMMINGS	DRAWN:	K-McA
DATE:	4-6-78		

WASHINGTON PUBLIC POWER
 SUPPLY SYSTEM
 RICHLAND, WASHINGTON 99352

WNP-2	
WELD & COMPONENT IDENTIFICATION DIAGRAM	
TITLE:	REACTOR RECIRCULATION LOOP A
DWG NO:	RRC-101-2
REV	5

NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
5	9-22-94	ADD NOTE 14, MOD ACCORDINGLY. DEL NOTES 12, 13	K-McA	DPR	DW							
4	6-7-94	CORRECTED PENETRATION NUMBER IN NOTES 2 & 7.	K-McA	DPR	DW							
3	12-4-89	ADDED ISI DWG REF, DWG LINE CONT, LOGO & 'A' TO RCR-9 & RCR-9A. CHG MATL & UT MD FOR 4" RRC(B)-45. MODIFIED KEYPLAN REDRAWN	K-McA	DPR	TFH							
2	10-13-83	REVISED AS NOTED. ADDED KEYPLAN	K-McA	DPR	TFH	24" RRC(1)-45	24	XXX	SEE NOTE 11	SA 358 GR 304 CL 1	SS	UT-7
1	11-5-80	REVISED AS NOTED	K-McA	TFH	DWP	4" RRC(B)-45	4	80	0.337	SA 376 TP 304	SS	UT-29
0	11-27-78	ISSUED FOR USE	K-McA	DWP	LFB	CAP	12	80	0.688	SA 403 GR WP 304	SS	UT-19
A	5-19-78	ISSUED FOR INFORMATION ONLY	K-McA	NCH	DWP	CAP	8	80	0.500	SA 403 GR WP 304	SS	UT-26
NO	DATE	REVISION	BY	CHKD	APVD							



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.:
R15-054

Site and Unit: **Columbia Generating Station** Component ID: **24RRC(1)A-15**

Outage: **RFO-15** **VALVE TO PIPE**

System: **RRC** ASME Cat.: **B-J** ASME Item **B9.11** Aug Requirements: **N/A**

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
45° Shear	UT-R15-047	N/A	PDI-UT-2	UT-7	JACK REISEWITZ	II	5/24/01
60° RL	UT-R15-048	N/A	PDI-UT-2	UT-7	JACK REISEWITZ	II	5/24/01

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no reportable indications were recorded utilizing the 45° and 60° search units.

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, no Addenda and the 1995 Edition, 1996 Addenda with modifications as stated in 10CFR50.55.

Examined from the pipe side only due to valve configuration. 50% code coverage was obtained.

Previous data was reviewed prior to this summary.

Examination results were compared to data report **RRU-174** from **1979** outage with **No Change**
 These examinations were performed under Work Order: **01011024** **Change**

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

<i>Jack Reisewitz</i>	<u>II</u>	<u>5-24-01</u>	<i>Tom Welch</i>	<u>NBELEAD</u>	<u>5/28/01</u>
Prepared By:	Level:	Date:	Quality Reviewed By:	Title:	Date:
<i>Michael G...</i>	<u>III</u>	<u>5/21/01</u>	<i>...</i>	<u>...</u>	<u>5/28/01</u>
GE Reviewed By:	Level:	Date:	ANII Reviewed By:	Title:	Date:

RWP: N/A
 Dose: N/A mr.
 Page 1 of 4



Site/Unit: Columbia Generating Station / N/A
Outage: RFO-15

Data Report Number: R15-054
Data Sheet Number: UT-R15-047
Linearity Sheet: L-004

Calibration Data for Block: UT-7

Procedure: PDI-UT-2

Rev B DRR: Site Specific Rev. 0

<u>SS</u>	<u>24</u>	<u>1.14</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>2030</u>
<u>ULTRAGEL</u>	<u>97425</u>		Cal Check:	<u>N/A</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>213183</u>	<u>70° F</u>		Final Cal:	<u>2354</u>
Thermometer S/N	Cal Temp.			

Search Unit Data

KBA 003R18 0.50"/Round
Manufacturer: Serial Number Size/Shape:
0.55 in. 45° 45°
Incident Point: Nominal Angle: Measured Angle:

1.5 MHz Comp-G Shear
Frequency: Style: Mode:

Search Unit Cable

RG-174 6' 0
Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 136991A091220
Manufacturer/Model: Serial Number:

0.48 in. 0.122In./usec. 2 4 KHz
Delay: Velocity: Filter: Rep Rate:

4.0 in. 334 ns 500 Ohms
Range: Pulser: Damping:

Off 2.25 MHz P/E
Reject: Frequency: Mode:

DAC Construction

Scan Direction Ax Circ
Cal Reflector ID Notch ID Notch
Signal Amplitude 80% 80%
Signal Sweep: 5.2 Div 5.3 Div
Signal dB: 37.2 dB 42.0 dB
Sweep 0-10 = 4.0 in. Metal Path

Calibration Verification

Field Simulator Block S/N: N/A

Reflector	<u>N/A</u>	<u>N/A</u>
Amplitude	<u>N/A</u>	<u>N/A</u>
Gain (dB)	<u>N/A</u>	<u>N/A</u>
Sweep (SD)	<u>N/A</u>	<u>N/A</u>

Acceptable Linearity performed : 5/16/01

Exam Comments / Limitations:

No Axial exams performed on upstream valve surface.
Counterbore observed below recordable level.

Exam Data for Weld: 24RRC(1)A-15

VALVE TO PIPE

Configuration:

OD 92° F 213183
Exam Surface: Exam Temp. Exam Thermometer

Drawing: RRC-101-2

Axial	UPST	Scan dB	Recordable	Exam
Circ	DNST		Indications	Angle
<u>Axial</u>	<u>Upst</u>	<u>N/A</u>	<u>N/A</u>	
<u>Axial</u>	<u>Dnst</u>	<u>51.2</u>	<u>NRI</u>	<u>45°</u>
<u>Circ</u>	<u>Upst</u>	<u>N/A</u>	<u>NRI</u>	
<u>Circ</u>	<u>Dnst</u>	<u>56.0</u>	<u>NRI</u>	<u>45°</u>

Exam Start: 2220 Exam End: 2335

JRP JACK REISEWITZ II
Initials: Examiner: Level:
N/A N/A
Initials: Examiner 2: Level:

[Signature] II 5/27/01
GE Reviewed By: Level: Date:

[Signature] 5/28/01
Utility Reviewed By: Date:

Cal/Exam Date: 5/24/01

[Signature] 5/28/01
ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station / N/A
Outage: RFO-15

Data Report Number: R15-054
Data Sheet Number: UT-R15-048
Linearity Sheet: L-004

Calibration Data for Block: UT-7

<u>SS</u>	<u>24</u>	<u>1.14</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>2045</u>
<u>ULTRAGEL</u>	<u>97425</u>		Cal Check:	<u>N/A</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>213183</u>	<u>70° F</u>		Final Cal:	<u>2357</u>
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction: Ax
 Cal Reflector: ID Notch
 Signal Amplitude: 80%
 Signal Sweep: 5.9 Div
 Signal dB: 76.0 dB
 Sweep 0-10 = 5.0 In. Metal Path

Calibration Verification

Field Simulator Block S/N: N/A

Reflector	<u>N/A</u>	<u>N/A</u>
Amplitude	<u>N/A</u>	<u>N/A</u>
Gain (dB)	<u>N/A</u>	<u>N/A</u>
Sweep (SD)	<u>N/A</u>	<u>N/A</u>

Acceptable Linearity performed : 5/16/01

Exam Data for Weld: 24RRC(1)A-15

VALVE TO PIPE

Configuration:

OD 92° F 213183
 Exam Surface: Exam Temp. Exam Thermometer

Drawing: RRC-101-2

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>Axial</u>	<u>Upst</u>	<u>N/A</u>	<u>N/A</u>	
<u>Axial</u>	<u>Dnst</u>	<u>76.0</u>	<u>NRI</u>	<u>60°</u>
<u>Circ</u>	<u>Upst</u>	<u>N/A</u>	<u>N/A</u>	
<u>Circ</u>	<u>Dnst</u>	<u>N/A</u>	<u>N/A</u>	

Procedure: PDI-UT-2

Rev B DRR: Site Specific Rev. 0

Search Unit Data

RTD 92-894 2(10x18) mm/Rect.
 Manufacturer: Serial Number Size/Shape:
0.5 in. 60° 60°
 Incident Point: Nominal Angle: Measured Angle:
2.0 MHz TRLA RL
 Frequency: Style: Mode:

Search Unit Cable

RG-174 6' 0
 Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 136991A091220
 Manufacturer/Model: Serial Number:
0.85 in. 0.23in./µsec. 2 4 KHz
 Delay: Velocity: Filter: Rep Rate:
5.0 in. 250 ns 500 Ohms
 Range: Pulser: Damping:
Off 2.25 MHz Dual
 Reject: Frequency: Mode:

Exam Comments / Limitations:

No exams performed on upstream valve surface.

Exam Start: 2220 Exam End: 2335

JAR JACK REISEWITZ II
 Initials: Examiner: Level:

N/A N/A
 Initials: Examiner 2: Level:

Cal/Exam Date: 5/24/01

[Signature] III 5/26/01
 GE Reviewed By: Level: Date:

[Signature] 5/28/01
 Utility Reviewed By: Date:

[Signature] 5/18/01
 ANII Reviewed By: Date:

Form: Pipe Weld
Record # 69



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: N/A

Report No.:

Project: RFO-15

R15-054

System: RRC

Component ID Number: 24RRC(1)A-15

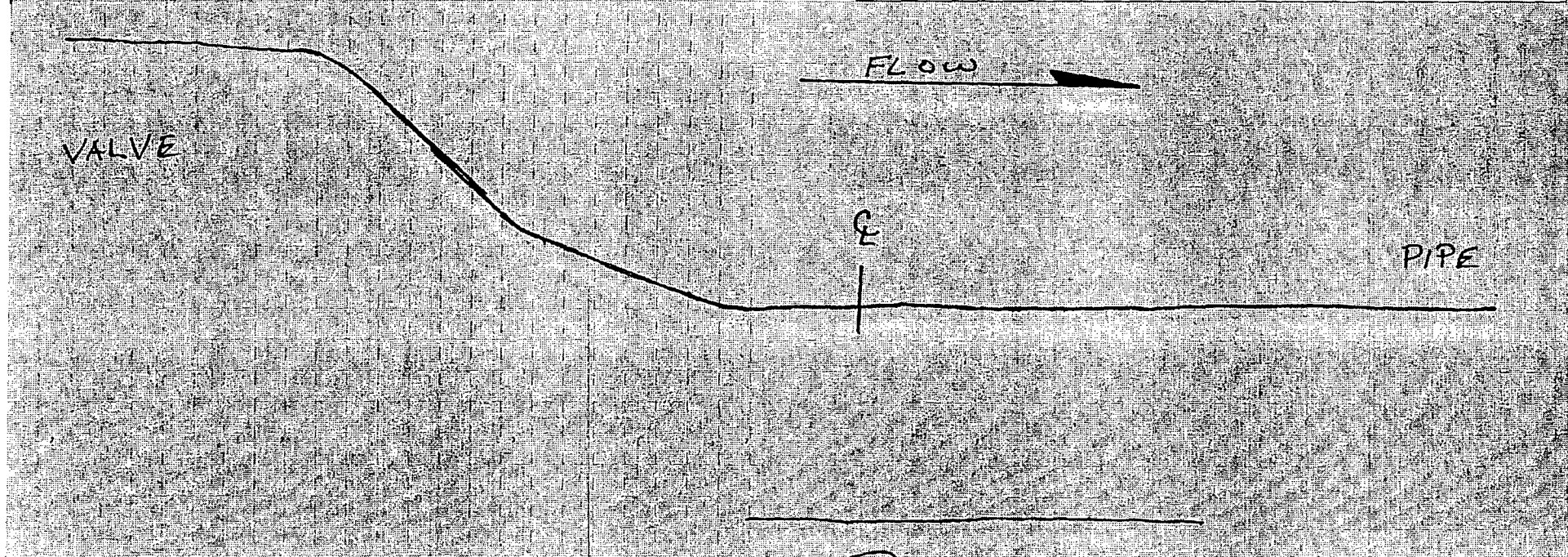
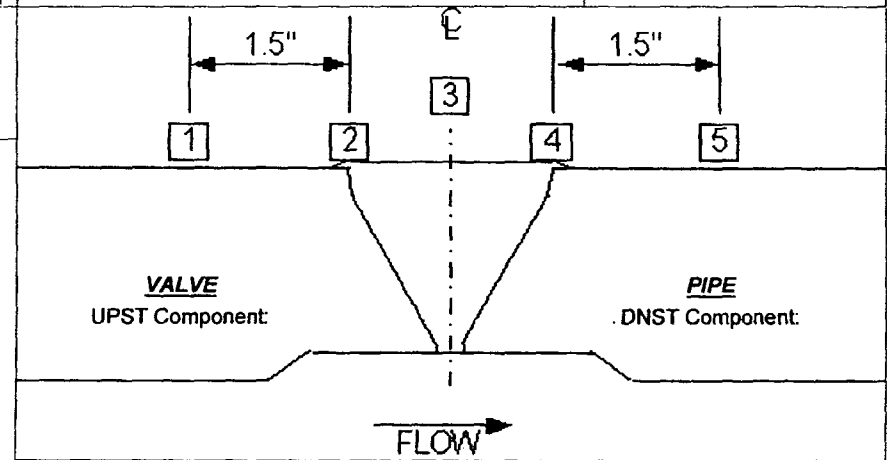
Position	0°	90°	180°	270°
1	N/A	N/A	N/A	N/A
2	N/A	N/A	1.35	N/A
3	N/A	N/A	1.40	N/A
4	N/A	N/A	1.35	N/A
5	N/A	N/A	1.35	N/A

Crown Height: FLUSH

Crown Width: 1.5"

Nominal Diameter: 24.0"

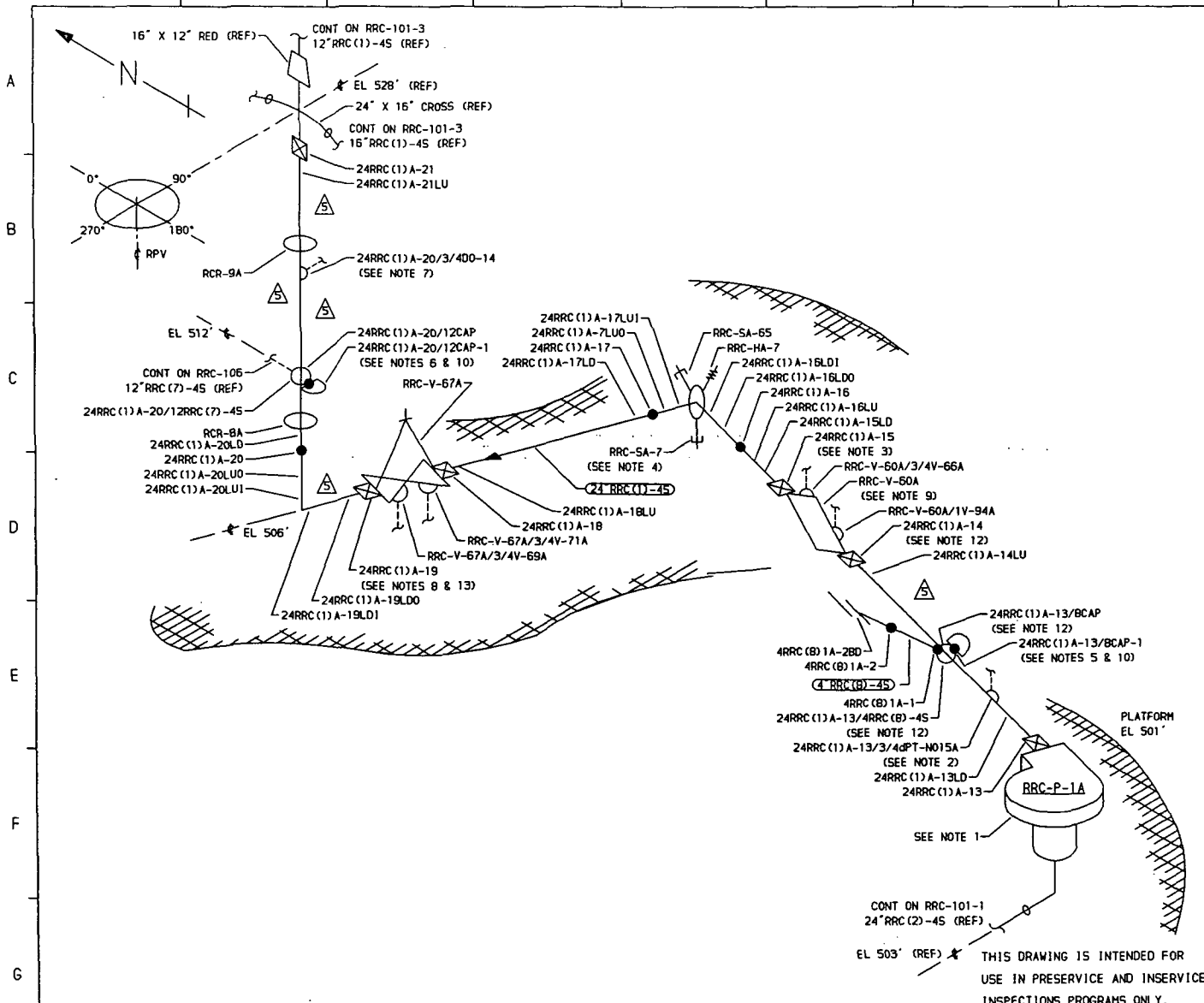
Weld Length: 75.0"



<u>DBP</u> <u>DREW PETERSON</u> <u>II</u> <u>5/23/01</u>	<u>[Signature]</u> <u>II</u> <u>5/26/01</u>	<u>[Signature]</u> <u>5/28/01</u>	<u>[Signature]</u> <u>5/28/01</u>
Initials: Examiner: Level: Date:	GE Reviewed By: Level: Date:	Utility Reviewed By: Date:	ANII Reviewed By: Date:

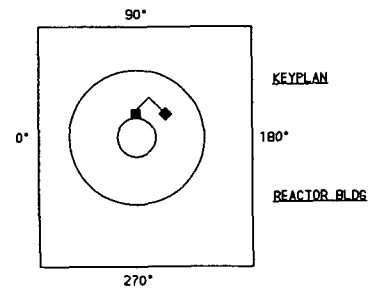
REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-9



- NOTES:**
- SEE RRC-P-1A DETAIL DWG RRC-103 FOR PUMP SUPPORT DETAILS.
 - EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-70a) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 - DELETED
 - SPECIAL CLAMP WITH HA-7 & SA-7 ATTACHMENTS.
 - WELD 24RRC(1)A-13/BCAP-1 IS FITTING TO FITTING.
 - WELD 24RRC(1)A-20/10CAP-1 IS FITTING TO FITTING.
 - EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-77a) THROUGH VALVE RRC-V-20.
 - WELD 24RRC(1)A-19 IS FITTING TO FITTING.
 - RRC-V-60A HAS TWELVE (12) 2 3/4" X 15" BODY TO BONNET STUDS.
 - CAP TO NOZZLE WELDS ARE CLAD ON THE ID IN THE WELD AREAS. SEE REF DWGS 131 C 7588 & 131 C 7589.
 - PIPING FROM PUMP DISCHARGE TO RRC-V-67A HAS MIN WALL OF 1.218. PIPING FROM RRC-V-67A HAS MIN WALL OF 1.140.
 - DELETED
 - DELETED
 - RRC-SA-B, RRC-SA-9, RRC-SA-15, RRC-SA-17, RRC-SA-18 & RRC-SA-66 WERE DELETED PER BDC 07-0244-OJ-024.

- REFERENCES:**
- ISI - 230-1
 GENERAL ELECTRIC DRAWINGS
 761 E 424 REV 2
 762 E 538 SH 1 REV 12
 762 E 538 SH 2 REV 11
 761 E 735 REV B
 131 C 7588 REV 3
 131 C 7589 REV 5
 131 C 7582 REV 3
 BOVEE CRAIL/GERI
 BC/G-216 REV 9



QUALITY CLASS, 1	ASME CODE CLASS, 2
ENGR, D TIMMINS	DRAWN, K-McA DATE, 4-6-78

WASHINGTON PUBLIC POWER
 SUPPLY SYSTEM
 RICHLAND, WASHINGTON 99352

WNP-2 WELD & COMPONENT IDENTIFICATION DIAGRAM	
TITLE, REACTOR RECIRCULATION LOOP A	
DWG NO, RRC-101-2	REV 5

NO	DATE	REVISION	BY	CHKD	APVD	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
5	9-22-94	ADD NOTE 14, MOD ACCORDINGLY. DEL NOTES 12, 13	K-McA	DPR	DW						
4	6-7-94	CORRECTED PENETRATION NUMBER IN NOTES 2 & 7.	K-McA	DPR	DW						
3	12-4-89	ADDED 1ST DWG REF, DWG LINE CONT, LOGO & 'A' TO RCR-9 & RCR-9. CHG MATL & UT NO FOR 4" RRC(B)-4S. MODIFIED KEYPLAN REDRAWN	K-McA	DPR	TFH						
2	10-13-83	REVISED AS NOTED. ADDED KEYPLAN	K-McA	DPR	TFH	24" RRC(1)-4S	24	XXX	SEE NOTE 11 SA 358 GR 304 CL 1	SS	UT-7
1	11-5-80	REVISED AS NOTED	K-McA	TFH	DWP	4" RRC(B)-4S	4	80	SA 376 TP 304	SS	UT-29
0	11-27-78	ISSUED FOR USE	K-McA	DWP	LFB	CAP	12	80	SA 403 GR WP 304	SS	UT-19
A	5-19-78	ISSUED FOR INFORMATION ONLY	K-McA	NCH	DWP	CAP	8	80	SA 403 GR WP 304	SS	UT-26



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.:
R15-057

Site and Unit: **Columbia Generating Station** Component ID: **24RRC(1)A-18**

Outage: **RFO-15** **PIPE TO VALVE**

System: **RRC** ASME Cat.: **B-J** ASME Item **B9.3¹¹** ^{5/22/01} Aug Requirements:

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
45° Shear	UT-R15-051	N/A	PDI-UT-2	UT-7	CHAD OLSON	II	5/25/01
60° RL	UT-R15-052	N/A	PDI-UT-2	UT-7	CHAD OLSON	II	5/25/01

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no indications associated with IGSCC were recorded utilizing the 45° search unit. Root geometry was recorded by the 60° RL:

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, no Addenda and the 1995 Edition, 1996 Addenda with modifications as stated in 10CFR50.55.

The examination was performed from the pipe side only due to valve configuration, 50% Code coverage was obtained.

Previous data was reviewed prior to this summary.

Examination results were compared to data report **RRU-157** from **1979** outage with **No Change**

These examinations were performed under Work Order: **01011024** **Change**

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

<u>Chad Olson</u>	<u>II</u>	<u>5/25/01</u>	<u>Chad Olson</u>	<u>UT-7</u>	<u>5/26/01</u>
Prepared By:	Level:	Date:	Utility Reviewed By:	Title:	Date:
<u>RW Kraly</u>	<u>III</u>	<u>5/25/01</u>	<u>A. M. East</u>	<u>ANII</u>	<u>5/24/01</u>
GE Reviewed By:	Level:	Date:	ANII Reviewed By:	Title:	Date:

RWP: N/A
Dose: N/A mr.



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station / N/A
Outage: RFO-15

Data Report Number: R15-057
Data Sheet Number: UT-R15-051
Linearity Sheet: L-004

Calibration Data for Block: UT-7

Procedure: PDI-UT-2

Rev B DRR: Site Specific Rev. 0

<u>SS</u>	<u>24</u>	<u>1.14</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>0938</u>
<u>ULTRAGEL</u>	<u>94125</u>		Cal Check:	<u>N/A</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>213067</u>	<u>71° F</u>		Final Cal:	<u>1135</u>
Thermometer S/N	Cal Temp.			

Search Unit Data

KBA 00L18D 0.375"/Round
 Manufacturer: Serial Number Size/Shape:
0.4 in. 45° 45°
 Incident Point: Nominal Angle: Measured Angle:
1.5 MHz Comp-G Shear
 Frequency: Style: Mode:

Search Unit Cable

RG-174 6' 0
 Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 136991A091220
 Manufacturer/Model: Serial Number:
0.426 in. 0.123in./µsec. 2 4 KHz
 Delay: Velocity: Filter: Rep Rate:
4.0 in. 334 ns 500 Ohms
 Range: Pulser: Damping:
Off 2.25 MHz PE
 Reject: Frequency: Mode:

DAC Construction

Scan Direction Ax
 Cal Reflector ID Notch
 Signal Amplitude 80%
 Signal Sweep: 5.0 Div
 Signal dB: 38.2 dB
 Sweep 0-10 = 4.0 in. Metal Path

Calibration Verification

Field Simulator Block S/N: N/A

Reflector	<u>N/A</u>	<u>N/A</u>
Amplitude	<u>N/A</u>	<u>N/A</u>
Gain (dB)	<u>N/A</u>	<u>N/A</u>
Sweep (SD)	<u>N/A</u>	<u>N/A</u>

Acceptable Linearity performed : 5/16/01

Exam Comments / Limitations:

EXAMINED FROM PIPE SIDE DUE TO VALVE CONFIGURATION. ACHIEVED 50% CODE COVERAGE.

Exam Data for Weld: 24RRC(1)A-18

PIPE TO VALVE

Configuration:

OD 85° F 213067
 Exam Surface: Exam Temp. Exam Thermometer

Drawing: RRC-101-2

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>AXIAL</u>	<u>UPST</u>	<u>50.2</u>	<u>NRI</u>	<u>45°</u>
<u>CIRC</u>	<u>UPST</u>	<u>50.2</u>	<u>NRI</u>	<u>45°</u>

Exam Start: 1040 Exam End: 1125

CO CHAD OLSON II
 Initials: Examiner: Level:
 Initials: Examiner 2: Level:
 Cal/Exam Date: 5/25/01

W. Walsh II 5/25/01
 GE Reviewed By: Level: Date:
W. Walsh 5/26/01
 Utility Reviewed By: Date:
A. M. [Signature] 5/24/01
 ANII Reviewed By: Date: Form: Pipe Weld Record # 66
 Page 2 of 5



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station / N/A
Outage: RFO-15

Data Report Number: R15-057
Data Sheet Number: UT-R15-052
Linearity Sheet: L-004

Calibration Data for Block: UT-7

Procedure: PDI-UT-2

Rev B DRR: Site Specific Rev. 0

<u>SS</u>	<u>24</u>	<u>1.14</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>0950</u>
<u>ULTRAGEL</u>	<u>94125</u>		Cal Check:	<u>N/A</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>213067</u>	<u>71° F</u>		Final Cal:	<u>1138</u>
Thermometer S/N	Cal Temp.			

Search Unit Data

RTD 92-893 2(10x18) mm/Rect.
 Manufacturer: Serial Number Size/Shape:
0.5 In. 60° 60°
 Incident Point: Nominal Angle: Measured Angle:
2.0 MHz TRLA RL
 Frequency: Style: Mode:

Search Unit Cable

RG-174 6' 0
 Cable Type: Length: Connectors:

Instrument Settings

Stavelley / Sonic 136P 136991A091220
 Manufacturer/Model: Serial Number:
1.08 In. 0.237In./µsec. 2 4 KHz
 Delay: Velocity: Filter: Rep Rate:
5.0 In. 250 ns 500 Ohms
 Range: Pulser: Damping:
Off 2.25 MHz DUAL
 Reject: Frequency: Mode:

DAC Construction

Scan Direction Ax
 Cal Reflector ID Notch
 Signal Amplitude 80%
 Signal Sweep: 5.6 Div
 Signal dB: 76.2 dB
 Sweep 0-10 = 5.0 In. Metal Path

Calibration Verification

Field Simulator Block S/N: N/A

Reflector	<u>N/A</u>	<u>N/A</u>
Amplitude	<u>N/A</u>	<u>N/A</u>
Gain (dB)	<u>N/A</u>	<u>N/A</u>
Sweep (SD)	<u>N/A</u>	<u>N/A</u>

Acceptable Linearity performed : 5/16/01

Exam Data for Weld: 24RRC(1)A-18

PIPE TO VALVE

Configuration:

OD 85° F 213067
 Exam Surface: Exam Temp. Exam Thermometer

Drawing: RRC-101-2

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>AXIAL</u>	<u>UPST</u>	<u>76.2</u>	<u>YES</u>	<u>60°</u>

Exam Comments / Limitations:

EXAMINED FROM PIPE SIDE DUE TO VALVE CONFIGURATION. ACHIEVED 50% CODE COVERAGE. MAINTAINED 5% TO 20% NOISE LEVEL AT REFERENCE dB.

Exam Start: 1040 Exam End: 1125

CO CHAD OLSON II
 Initials: Examiner: Level:
 Initials: Examiner 2: Level:
 Cal/Exam Date: 5/25/01

N. Whaley ID 5/25/01
 GE Reviewed By: Level: Date:
[Signature] 5/26/01
 Utility Reviewed By: Date:
[Signature] 5/24/01
 ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Ultrasonic Examination Indication Report

Data Report Number: R15-057
Cal / Data Sheet Number UT-R15-052

Site: Columbia Generating Station Procedure: PDI-UT-2 / B / Site Specific Rev. 0

Weld ID: 24RRC(1)A-18

Drawing: RRC-101-2

Size: 24 Thickness: 1.14

Exam Start: 1040

Lo Location: TDC

Wo Location: WELD CL

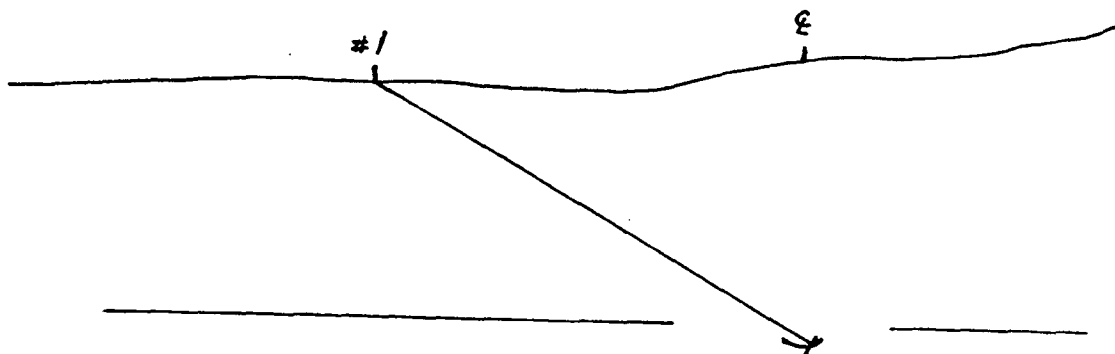
Weld Width: 1.5

Weld Height: FLUSH

Exam End: 1125

Ind No.	Angle Used	% of DAC	Indication Length			W Distance			Metal Path			Ax / Circ	Ups/ Dnst	Comments:
			L1	L Max	L 2	W1	W Max	W 2	MP 1	MP Max	MP 2			
1	60°	100	*	69.0	*	N/A	2.25	N/A	N/A	2.70	N/A	AX	UPST	CAN BE SEEN INTERMITTENTLY 360° ROOT GEOMETRY

Sketch



CO CHAD OLSON
Examiner

II 5/25/01
Level: Date:

[Signature]
GE Reviewed By:

III 5/25/01
Level: Date:

[Signature]
Utility Reviewed By:

5/26/01
Date:

[Signature]
ANII Reviewed By:

5/26/01
Date:



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: N/A

Report No.:

Project: RFO-15

R15-057

System: RRC

Component ID Number: 24RRC(1)A-18

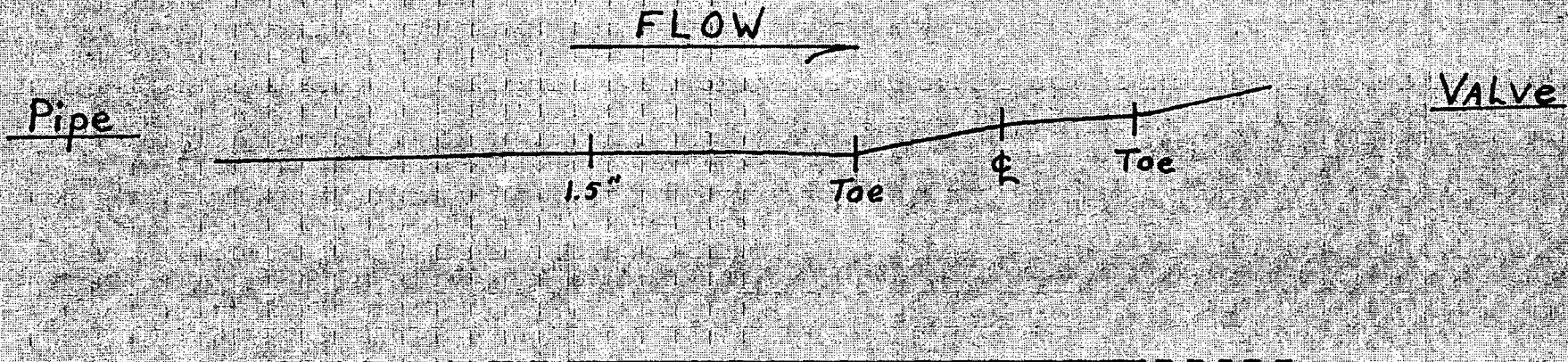
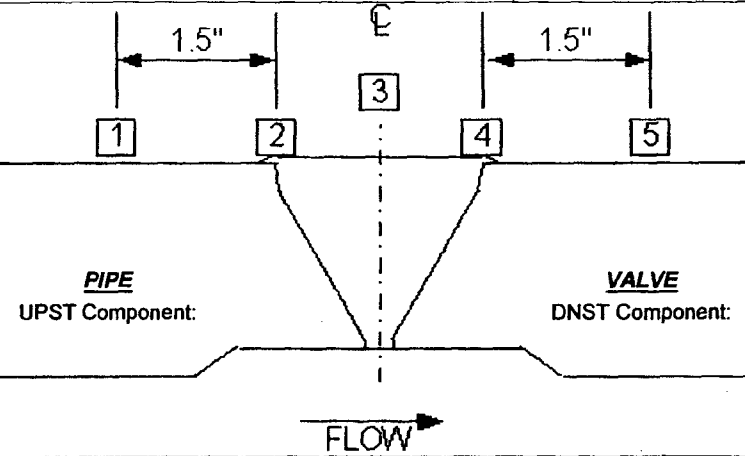
Position	0°	90°	180°	270°
1	N/A	N/A	1.200	N/A
2	N/A	N/A	1.200	N/A
3	N/A	N/A	1.380	N/A
4	N/A	N/A	1.400	N/A
5	N/A	N/A	N/A	N/A

Crown Height: FLUSH

Crown Width: 1.5"

Nominal Diameter: 24.0"

Weld Length: 75.0"



BDC

JAR JACK REISEWITZ II 5-24-01
Initials: Examiner: Level: Date:

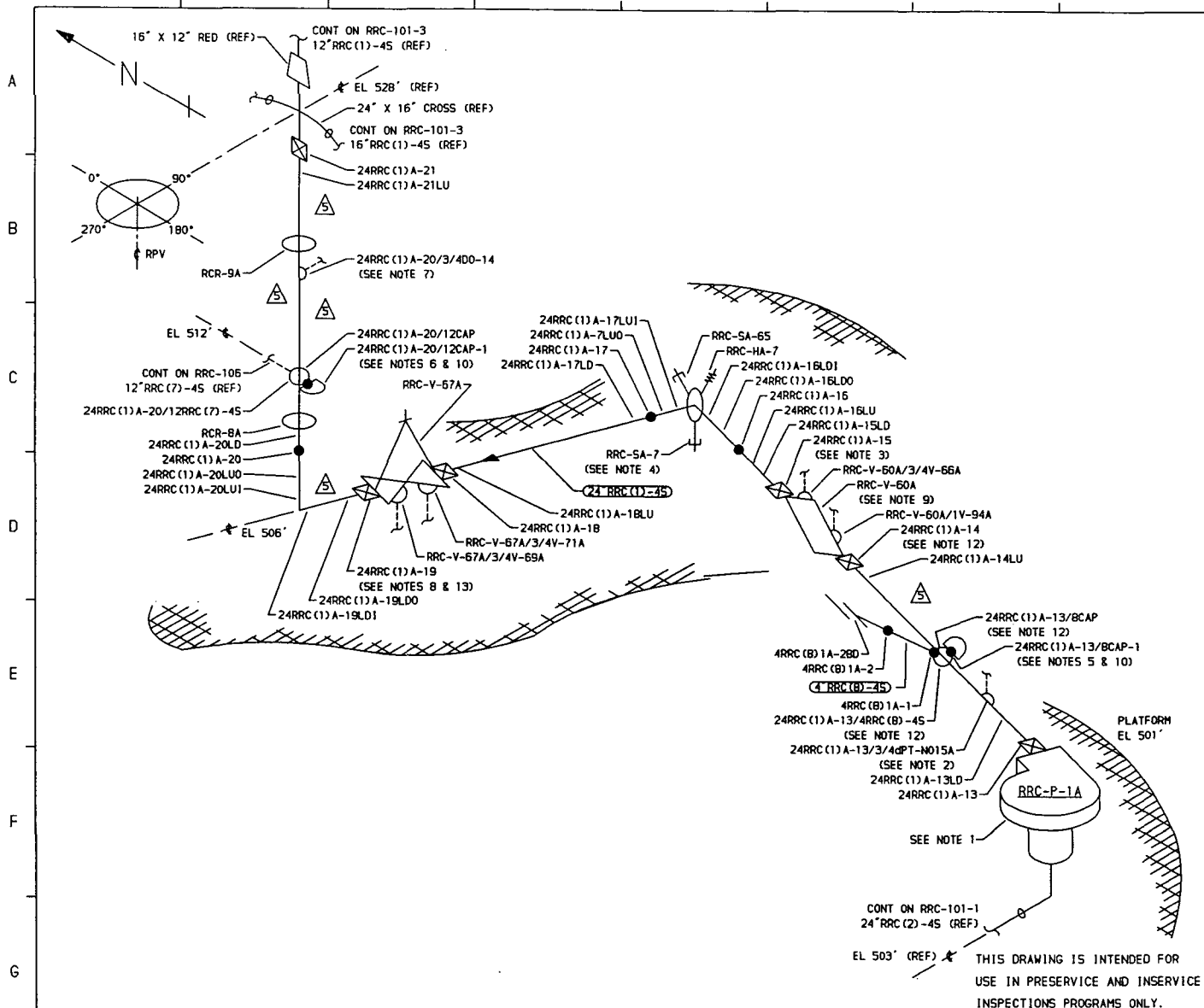
[Signature] III 5/25/01
GE Reviewed By: Level: Date:

[Signature] 5/26/01
Utility Reviewed By: Date:

[Signature] 5/24/01
ANII Reviewed By: Date:

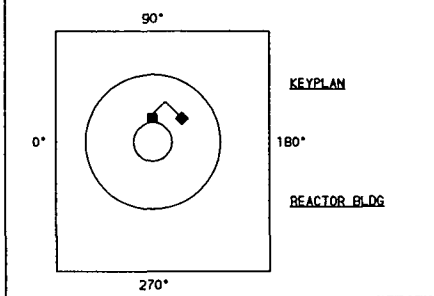
REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-10



- NOTES.**
1. SEE RRC-P-1A DETAIL DWG RRC-103 FOR PUMP SUPPORT DETAILS.
 2. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-700) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 3. DELETED
 4. SPECIAL CLAMP WITH HA-7 & SA-7 ATTACHMENTS.
 5. WELD 24RRC(1)A-13/BCAP-1 IS FITTING TO FITTING.
 6. WELD 24RRC(1)A-20/10CAP-1 IS FITTING TO FITTING.
 7. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-77A) THROUGH VALVE RRC-V-20.
 8. WELD 24RRC(1)A-19 IS FITTING TO FITTING.
 9. RRC-V-60A HAS TWELVE (12) 2 3/4" X 15" BODY TO BONNET STUDS.
 10. CAP TO NOZZLE WELDS ARE CLAD ON THE ID IN THE WELD AREAS. SEE REF DWGS 131 C 7589 & 131 C 7589.
 11. PIPING FROM PUMP DISCHARGE TO RRC-V-67A HAS MIN WALL OF 1.218. PIPING FROM RRC-V-67A HAS MIN WALL OF 1.140.
 12. DELETED
 13. DELETED
 14. RRC-SA-8, RRC-SA-9, RRC-SA-15, RRC-SA-17, RRC-SA-18 & RRC-SA-66 WERE DELETED PER BDC B7-0244-0J-024.

- REFERENCES.**
- 151 - 230-1
 GENERAL ELECTRIC DRAWINGS
 761 E 424 REV 2
 762 E 538 SH 1 REV 12
 762 E 538 SH 2 REV 11
 761 E 735 REV B
 131 C 7588 REV 3
 131 C 7589 REV 5
 131 C 7582 REV 3
 BOVEE CRAIL/GERI
 BC/G-216 REV 9



QUALITY CLASS, 1	ASME CODE CLASS, 2
ENGR, D TIMMINS	DRAWN, K-MCA DATE, 4-6-78

WASHINGTON PUBLIC POWER
 SUPPLY SYSTEM
 RICHLAND, WASHINGTON 99352

NO	DATE	REVISION	BY	CHKD	APVD	NOH DIA (IN)	SCH	NOH WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
5	9-22-94	ADD NOTE 14, MOD ACCORDINGLY. DEL NOTES 12, 13	K-McA	DPR	DW						
4	6-7-94	CORRECTED PENETRATION NUMBER IN NOTES 2 & 7.	K-McA	DPR	DW	PIPING SYSTEM					
3	12-4-89	ADDED 151 DWG REF, DWG LINE CONT, LOGO & 'A' TO RCR-8 & RCR-9. CHG MATL & UT MD FOR 4" RRC(B)-45. MODIFIED KEYPLAN REDRAWN	K-McA	DPR	TFH						
2	10-13-83	REVISED AS NOTED. ADDED KEYPLAN	K-McA	DPR	TFH	24"RRC(1)-45	24	XXX	SEE NOTE 11	SA 358 GR 304 CL 1	SS UT-7
1	11-5-80	REVISED AS NOTED	K-McA	TFH	DWP	4"RRC(B)-45	4	80	0.337	SA 376 TP 304	SS UT-29
0	11-27-78	ISSUED FOR USE	K-McA	DWP	LFB	CAP	12	80	0.688	SA 403 GR WP 304	SS UT-19
A	5-19-78	ISSUED FOR INFORMATION ONLY	K-McA	NCH	DWP	CAP	B	80	0.500	SA 403 GR WP 304	SS UT-26
NO	DATE	REVISION	BY	CHKD	APVD						

WNP-2
 WELD & COMPONENT
 IDENTIFICATION DIAGRAM

TITLE:
 REACTOR RECIRCULATION LOOP A

DWG NO, RRC-101-2 REV 5



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.:
R15-058

Site and Unit: **Columbia Generating Station** Component ID: **24RRC(1)A-19**

Outage: **RFO-15** **VALVE TO ELBOW**

System: **RRC** ASME Cat.: **B-J** ASME Item: **B9.21** ^{11 11/21} _{5/24/01} Aug Requirements: **N/A**

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
45° Shear	UT-R15-036	N/A	PDI-UT-2	UT-7	CHAD OLSON	II	5/24/01
60° RL	UT-R15-037	N/A	PDI-UT-2	UT-7	CHAD OLSON	II	5/24/01

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no reportable indications were recorded utilizing the 45° search unit, root geometry was seen by the 60° search unit.

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, no Addenda and the 1995 Edition, 1996 Addenda with modifications as stated in 10CFR50.55.

Exam performed from the elbow side only due to valve configuration, 50% Code coverage was obtained.

Previous data was reviewed prior to this summary.

Examination results were compared to data report RRU-524 from 1982 outage with No Change

These examinations were performed under Work Order: 01011024 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

<u>Chad Olson</u>	<u>II</u>	<u>5/24/01</u>	<u>Chad Olson</u>	<u>Nuclear</u>	<u>5/24/01</u>
Prepared By:	Level:	Date:	Utility Reviewed By:	Title:	Date:
<u>W. Kealey</u>	<u>III</u>	<u>5/24/01</u>	<u>A. M. ...</u>	<u>...</u>	<u>5/24/01</u>
GE Reviewed By:	Level:	Date:	ANII Reviewed By:	Title:	Date:

RWP: N/A
Dose: N/A mr.



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station / N/A
Outage: RFO-15

Data Report Number: R15-058
Data Sheet Number: UT-R15-036
Linearity Sheet: L-002

Calibration Data for Block: UT-7

Procedure: PDI-UT-2

Rev B DRR: Site Specific Rev. 0

<u>SS</u>	<u>24</u>	<u>1.14</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>0946</u>
<u>ULTRAGEL</u>	<u>94125</u>		Cal Check:	<u>N/A</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>213067</u>	<u>73° F</u>		Final Cal:	<u>1610</u>
Thermometer S/N	Cal Temp.			

Search Unit Data

KBA 00L18D 0.375"/Round
 Manufacturer: Serial Number Size/Shape:
0.4 in. 45° 45°
 Incident Point: Nominal Angle: Measured Angle:
1.5 MHz Comp-G Shear
 Frequency: Style: Mode:

Search Unit Cable

RG-174 6' 0
 Cable Type: Length: Connectors:

Instrument Settings

STAVELEY / Sonic 136P 770 I
 Manufacturer/Model: Serial Number:
0.426 in. 0.123 in./usec. 2 4 KHz
 Delay: Velocity: Filter: Rep Rate:
4.0 in. 334 ns 500 Ohms
 Range: Pulser: Damping:
Off 2.25 MHz P/E
 Reject: Frequency: Mode:

DAC Construction

Cal Reflector: ID Notch
 Signal Amplitude: 80%
 Signal Sweep: 5.0 Div
 Signal dB: 44.2 dB
 Sweep 0-10 = 4.0 in.

Calibration Verification

Field Simulator Block S/N: N/A

Reflector	<u>N/A</u>	<u>N/A</u>
Amplitude	<u>N/A</u>	<u>N/A</u>
Gain (dB)	<u>N/A</u>	<u>N/A</u>
Sweep (SD)	<u>N/A</u>	<u>N/A</u>

Acceptable Linearity performed : 4/12/01

Exam Data for Weld: 24RRC(1)A-19

VALVE TO ELBOW

Configuration:

OD 93° F 213067
 Exam Surface: Exam Temp. Exam Thermometer

Drawing: RRC-101-2

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>AX</u>	<u>DNST</u>	<u>56.2</u>	<u>NRI</u>	<u>45°</u>
<u>CIRC</u>	<u>DNST</u>	<u>56.2</u>	<u>NRI</u>	<u>45°</u>

Exam Comments / Limitations:

Maintained 5% to 20% ID roll.
 Examined from downstream side due to valve configuration.
 Achieved 50% code coverage.

Exam Start: 1500 Exam End: 1545

CO CHAD OLSON II
 Initials: Examiner: Level:
N/A N/A N/A
 Initials: Examiner 2: Level:
 Cal/Exam Date: 5/24/01

[Signature] III 5/24/01
 GE Reviewed By: Level: Date:
[Signature] 5/24/01
 Utility Reviewed By: Date:
[Signature] 5/24/01
 ANII Reviewed By: Date:

Form: Pipe Weld Record # 49



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station / N/A
Outage: RFO-15

Data Report Number: R15-058
Data Sheet Number: UT-R15-037
Linearity Sheet: L-002

Calibration Data for Block: UT-7

Procedure: PDI-UT-2

Rev B DRR: Site Specific Rev. 0

<u>SS</u>	<u>24</u>	<u>1.14</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>1023</u>
<u>ULTRAGEL</u>	<u>94125</u>		Cal Check:	<u>N/A</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>213067</u>	<u>73° F</u>		Final Cal:	<u>1616</u>
Thermometer S/N	Cal Temp.			

Search Unit Data

RTD 92-893 2(10x18) mm/Rect.
Manufacturer: Serial Number Size/Shape:

0.5 in. 60° 60°
Incident Point: Nominal Angle: Measured Angle:

2.0 MHz TRLA RL
Frequency: Style: Mode:

Search Unit Cable

RG-174 6' 0
Cable Type: Length: Connectors:

Instrument Settings

STAVELEY / Sonic 136P 770 I
Manufacturer/Model: Serial Number:

1.08 in. 0.237in/µsec. 2 4 KHz
Delay: Velocity: Filter: Rep Rate:

5.0 in. 250 ns 500 Ohms
Range: Pulser: Damping:

Off 2.25 MHz Dual
Reject: Frequency: Mode:

DAC Construction

AX 10x12x1.0

Cal Reflector: ID Notch

Signal Amplitude: 80%

Signal Sweep: 5.6 Div

Signal dB: 81.2 dB

Sweep 0-10 = 5.0 in.

Calibration Verification

Field Simulator Block S/N: N/A

Reflector	<u>N/A</u>	<u>N/A</u>
Amplitude	<u>N/A</u>	<u>N/A</u>
Gain (dB)	<u>N/A</u>	<u>N/A</u>
Sweep (SD)	<u>N/A</u>	<u>N/A</u>

Acceptable Linearity performed : 4/12/01

Exam Data for Weld: 24RRC(1)A-19

VALVE TO ELBOW

Configuration:

OD 93° F 213067
Exam Surface: Exam Temp. Exam Thermometer

Drawing: RRC-101-2

Axial	UPST	Scan dB	Recordable	Exam
Circ	DNST		Indications	Angle
<u>AX</u>	<u>DNST</u>	<u>81.2</u>	<u>YES</u>	<u>60°</u>

Exam Comments / Limitations:

Maintained 5% to 20% ID roll.
Examined from downstream side due to valve configuration.
Achieved 50% code coverage.

Exam Start: 1500 Exam End: 1545

CO CHAD OLSON II
Initials: Examiner: Level:

N/A N/A N/A
Initials: Examiner 2: Level:

Cal/Exam Date: 5/24/01

[Signature] III 5/25/01
GE Reviewed By: Level: Date:

[Signature] 5/26/01
Utility Reviewed By: Date:

[Signature] 5/24/01
ANII Reviewed By: Date:

Form: Pipe Weld
Record # 50



GE NUCLEAR ENERGY

Ultrasonic Examination Indication Report

Data Report Number: R15-058

Cal / Data Sheet Number: UT-R15-037

Site: Columbia Generating Station

Procedure: PDI-UT-2 / B / Site Specific Rev. 0

Weld ID: 24RRC(1)A-19

Drawing: RRC-101-2

Size: 24"

Thickness: 1.14"

Exam Start: 1500

Lo Location: TDC

Wo Location: Weld Centerline

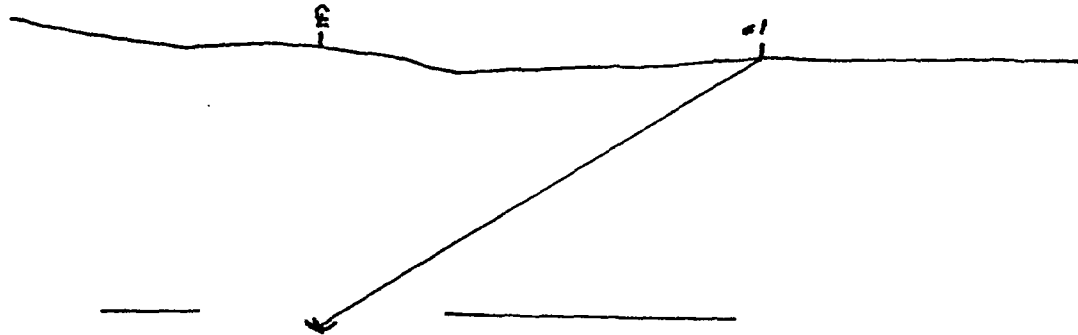
Weld Width: 1.50"

Weld Height: Flush

Exam End: 1545

Ind No.	Angle Used	% of DAC	Indication Length			W Distance			Metal Path			Ax / Circ	Upst/ Dnst	Comments:
			L1	L Max	L 2	W1	W Max	W 2	MP 1	MP Max	MP 2			
1	60°	100	*	10.5	*	N/A	2.35	N/A	N/A	2.7	N/A	Ax	Dnst	*Can be seen intermittently 360°. Root geometry.

Sketch



CO CHAD OLSON

Examiner

II 5/24/01

Level: Date:

GE Reviewed By: [Signature]

Level: III Date: 5/25/01

Utility Reviewed By: [Signature]

Date: 5/24/01

ANII Reviewed By: [Signature]

Date: 5/24/01



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: N/A

Report No.:

Project: RFO-15

R15-058

System: RRC

Component ID Number: 24RRC(1)A-19

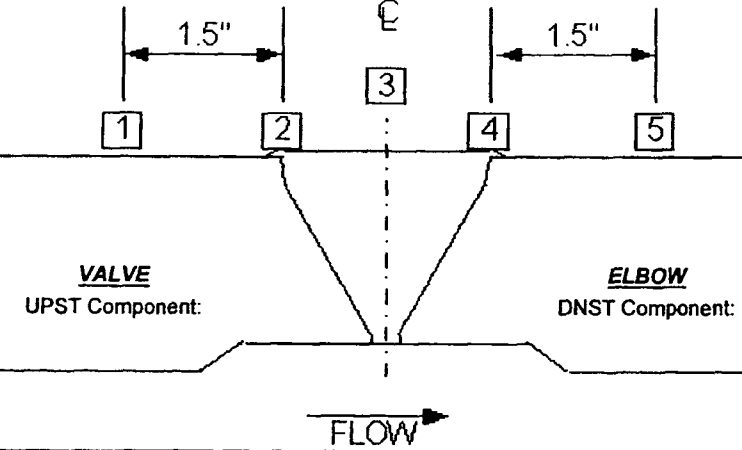
Position	0°	90°	180°	270°
1	N/A	N/A	N/A	N/A
2	N/A	N/A	1.40	N/A
3	N/A	N/A	1.320	N/A
4	N/A	N/A	1.28	N/A
5	N/A	N/A	1.360	N/A

Crown Height: FLUSH

Crown Width: 1.5"

Nominal Diameter: 24.0"

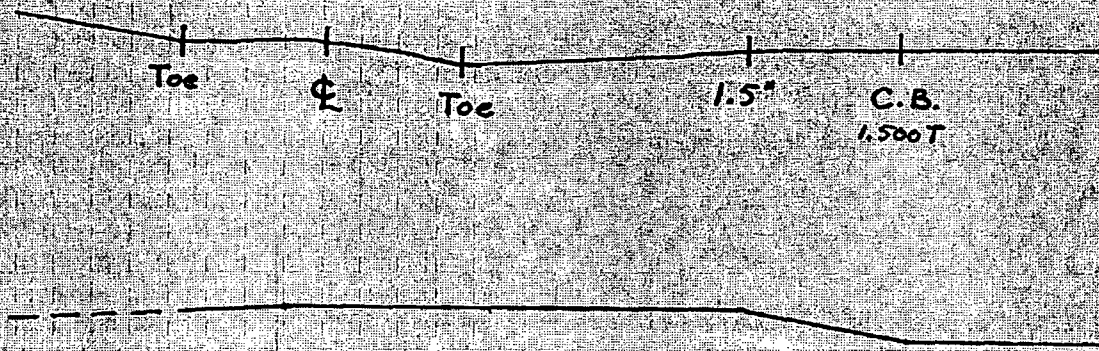
Weld Length: 75.0"



FLOW

VALVE

ELbow



BDC

JAR JACK REISEWITZ II 5-24-01
 Initials: Examiner: Level: Date:

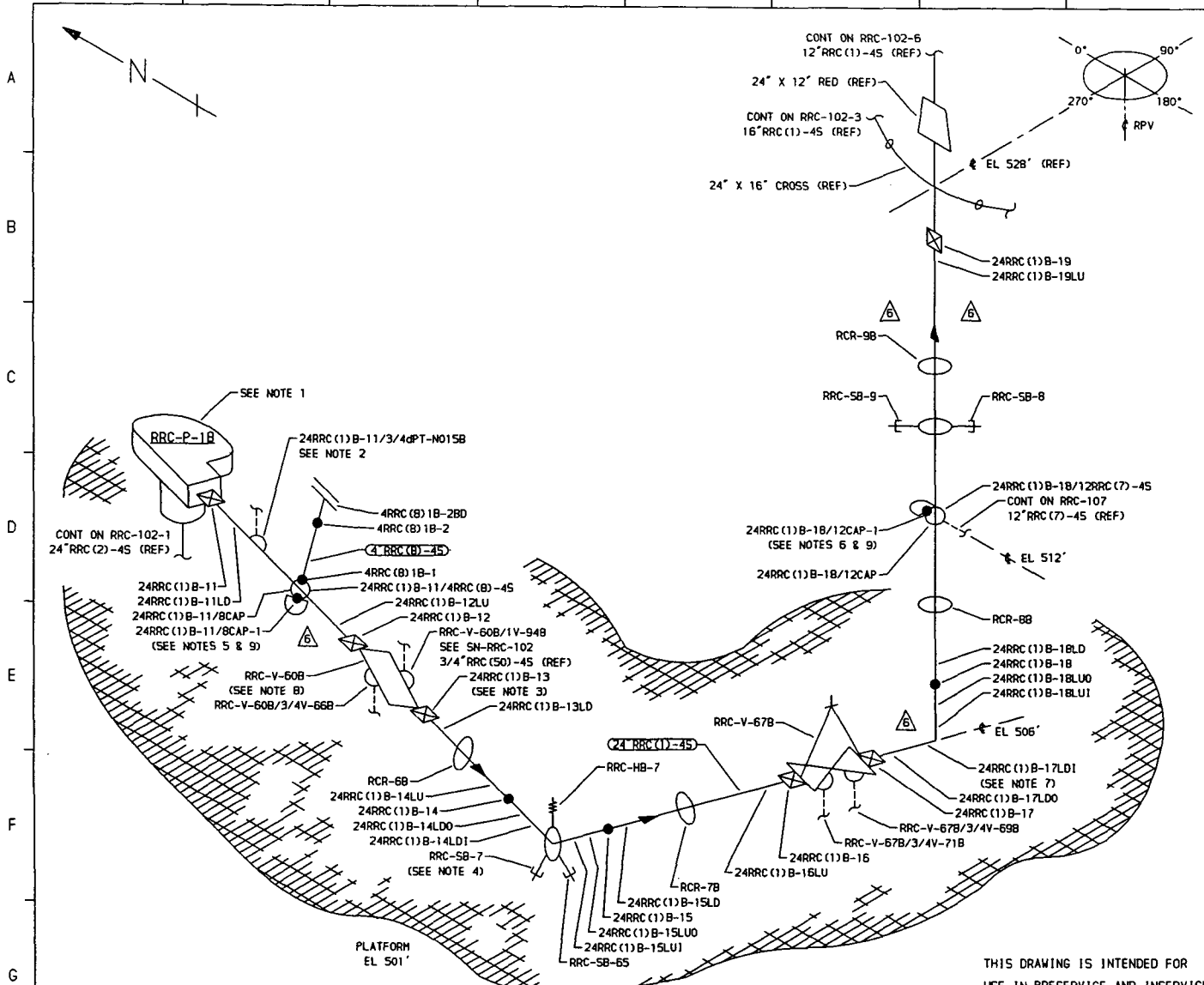
[Signature] III 5/25/01
 GE Reviewed By: Level: Date:

[Signature] 5/26/01
 Utility Reviewed By: Date:

[Signature] 5/24/01
 ANII Reviewed By: Date:

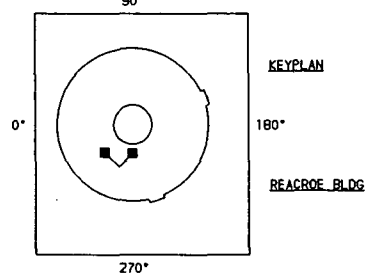
REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-11



- NOTES:**
1. SEE RRC-P-1B DETAIL, DWG RRC-103, FOR PUMP SUPPORT DETAILS.
 2. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-410) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 3. ACCESS TO WELD 24RRC(1)B-13 REQUIRES REMOVAL OF RCR-6B.
 4. SPECIAL CLAMP WITH HB-7 & SB-7 ATTACHMENTS.
 5. WELD 24RRC(1)B-11/BCAP-1 IS FITTING TO FITTING.
 6. WELD 24RRC(1)B-18/12CAP-1 IS FITTING TO FITTING.
 7. WELD 24RRC(1)B-17 IS FITTING TO FITTING.
 8. RRC-V-608 HAS TWELVE (12) 2 3/4" X 15" BODY TO BONNET STUDS.
 9. CAP TO NOZZLE WELDS ARE CLAD ON THE ID IN THE WELD AREA. SEE REFERENCE DWGS 131 C 7588 & 131 C 7589.
 10. PIPING FROM PUMP DISCHARGE TO RRC-V-67B IS MIN WALL 1.218. PIPING FROM RRC-V-76B TO WELD 24RRC(1)B-19 IS MIN WALL 1.140.
 11. RRC-SB-15, RRC-SB-17, RRC-SB-18 & RRC-SB-66 WERE DELETED PER BDC 87-0244-OJ-026.

- REFERENCES:**
- ISI - 230-2
 GENERAL ELECTRIC DRAWINGS
 761 E 424 REV 2
 762 E 538 SH 1 REV 3
 762 E 538 SH 2 REV 3
 761 E 735 REV 6
 131 C 7588 REV 3
 131 C 7589 REV 5
 131 C 7592 REV 3
- CBI NUCLEAR CO.
 4B REV 4 NI NOZZLE ASSEMBLY
- BOVEE CRAIL/GERI
 BC/G-218 REV 9



QUALITY CLASS.	1	ASME CODE CLASS.	1
ENGR.	D TIMMINS	DRAWN.	K-McA
DATE.	3-30-78		

WASHINGTON PUBLIC POWER
 SUPPLY SYSTEM
 RICHLAND, WASHINGTON 99352

WNP-2
 WELD & COMPONENT
 IDENTIFICATION DIAGRAM

TITLE:
 REACTOR RECIRCULATION LOOP B

DWG NO. RRC-102-2

REV 6

THIS DRAWING IS INTENDED FOR
 USE IN PRESERVICE AND INSERVICE
 INSPECTIONS PROGRAMS ONLY.

NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
6	9-22-94	ADDED NOTE 11, MODIFIED ACCORDINGLY.	K-McA	DPR	DW							
5	12-9-92	ADDED 'B' TO ALL RCR'S.	K-McA	DPR	DRW	24"RRC(1)-4S	24	XXX	SEE NOTE 10	SA 358 GR 304 CL 1	SS	UT-7
4	10-16-87	ADDED RRC-SB-56, 1" CONN & CONT AT RRC-V-608. CHG RRC-HB-7 TO SPR. RRC-SB-8 & RRC-SB-9 TO SMLBERS. MOD KEYPLAN. REDRAWN.	K-McA	DPR	TFH	4"RRC(8)-4S	4	80	0.337	SA 312 TP 304	SS	UT-29
3	10-13-83	REVISED AS NOTED ADDED KEYPLAN	K-McA	DPR	TFH	CAP	12	80	0.688	SA 403 GR WP 304	SS	UT-19
2	11-5-80	REVISED AS NOTED	K-McA	TFH	DWP	CAP	8	80	0.500	SA 403 GR WP 304	SS	UT-26



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.: R16-060

Site and Unit: **Columbia Generating Station** Component ID: **24RRC(1)B-12**

Outage: **R16** **PIPE TO VALVE**

System: **RRC** ASME Cat.: **B-J** ASME Item **B9.11** Aug Requirements: **N/A**

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
45° Shear	UT-071	N/A	PDI-UT-2/Site Specific	UT-7	Dickey Michael	II	5/19/2003
60° Long	UT-072	N/A	PDI-UT-2/Site Specific	UT-7	Dickey Michael	II	5/19/2003

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no reportable indications were recorded utilizing the 45° and 60° search units.

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, no Addenda and the 1995 Edition, 1996 Addenda with modifications as stated in 10CFR50.55.

50% Code coverage was obtained.

Previous data was reviewed prior to this summary.

Examination results were compared to data report RRU-106 from PSI (1979) outage with No Change

These examinations were performed under Work Order: 01044925-01 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

<u>Dickey Michael</u>	<u>II</u>	<u>5-19-03</u>	<u>[Signature]</u>	<u>5/23/03</u>
Prepared By:	Level:	Date:	Utility Reviewed By:	Date:
<u>[Signature]</u>	<u>III</u>	<u>05/20/03</u>	<u>[Signature]</u>	<u>5/24/03</u>
Reviewed By:	Level:	Date:	ANII Reviewed By:	Date:



GE NUCLEAR ENERGY

Ultrasonic Examination Indication Report

Data Report Number: R16-060

Cal / Data Sheet Number UT-072

Site: Columbia Generating Station

Procedure: PDI-UT-2/Site Specific / C/1

Weld ID: 24RRC(1)B-12

Drawing: RRC-102-2

Size: 24"

Thickness: 1.350"

Exam Start: 2343

Lo Location: Top Dead Center

Wo Location: Weld Centerline

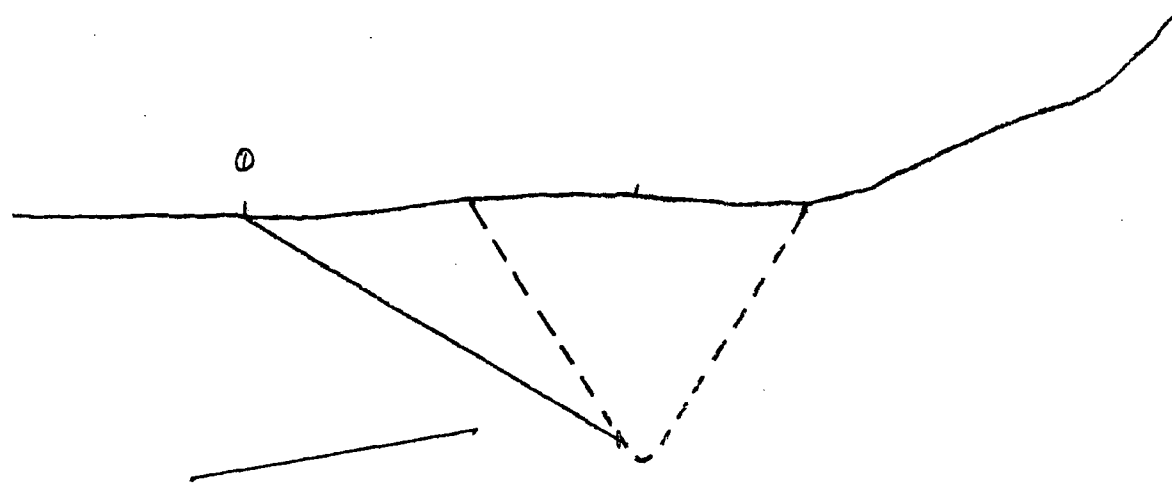
Weld Width: 1.80"

Weld Height: Flush

Exam End: 2351

Ind No.	Angle Used	% of DAC	Indication Length			W Distance			Metal Path			Ax / Circ	Upst/ Dnst	Comments:
			L1	L Max	L 2	W1	W Max	W 2	MP 1	MP Max	MP 2			
1	60°	250	N/A	8"	N/A	N/A	2.1"	N/A	N/A	2.4"	N/A	Ax	Upst	Root geometry seen 360° at varying amplitudes.

Sketch



DEM Dickey Michael
Examiner

II 5/19/2003
Level: Date:

[Signature] III 05/24/03
GE Reviewed By: Level: Date:

[Signature] 5/23/03
Utility Reviewed By: Date:

[Signature] 5/24/03
ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: N/A

Report No.:

Project: 16423

R16-060

System: RRC

Component ID Number: 24RRC(1)B-12

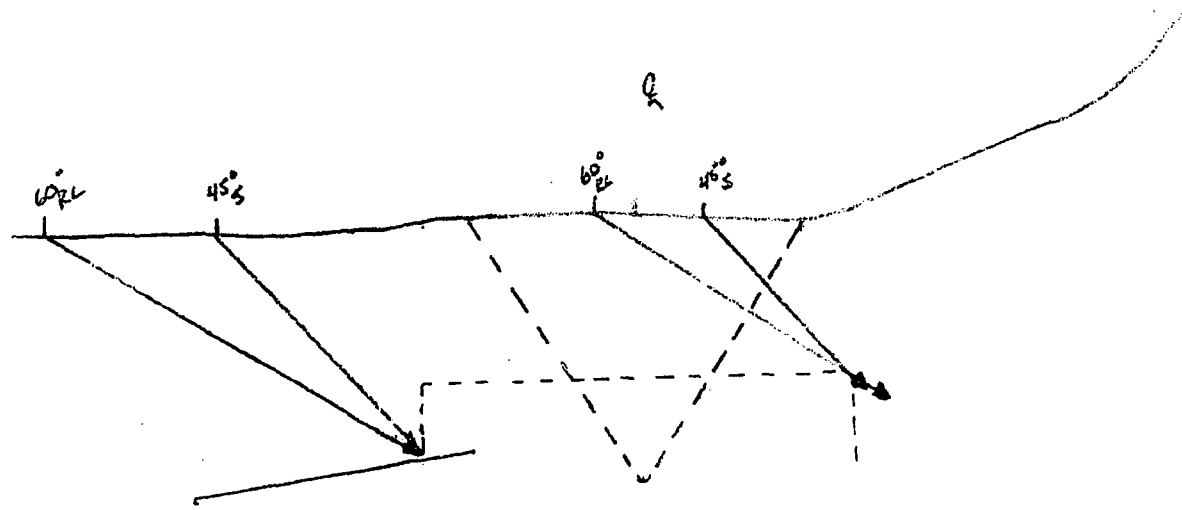
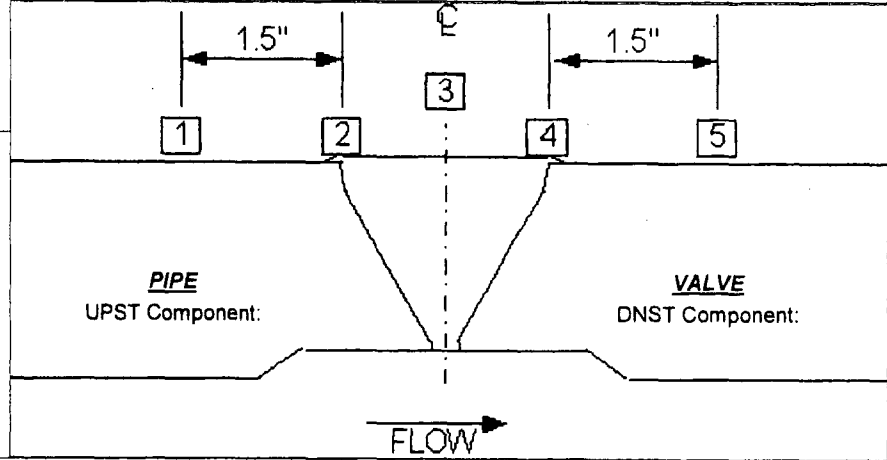
Position	0°	90°	180°	270°
1	N/A	1.4"	N/A	N/A
2	N/A	1.2"	N/A	N/A
3	N/A	1.35"	N/A	N/A
4	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A

Crown Height: FLUSH

Crown Width: 1.8"

Nominal Diameter: 24.0"

Weld Length: 75.5"



DEM Dickey Michael II 5/19/03
Initials: Examiner: Level: Date:

[Signature] III 05/20/03
GE Reviewed By: Level: Date:

[Signature] 5/23/03
Utility Reviewed By: Date:

[Signature] 5/24/03
ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station
Outage: R16

Data Report Number: R16-060
Data Sheet Number: UT-071
Linearity Sheet: L-04

Calibration Data for Block: UT-7

Procedure: PDI-UT-2/Site Specific

Ver / Rev: C/1 DRR: N/A

<u>SS</u>	<u>24"</u>	<u>1.140"</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>2154</u>
<u>Ultrage II</u>	<u>00325</u>		Cal Check:	<u>2321</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>225291</u>	<u>72° F</u>		Final Cal:	<u>0028</u>
Thermometer S/N	Cal Temp.			

Search Unit Data

KBA 00H8Y3 0.50"/Round
 Manufacturer: Serial Number Size/Shape:
0.35 in. 45° 46°
 Incident Point: Nominal Angle: Measured Angle:
1.5 MHz Comp-G Shear 1
 Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 6' 0
 Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 707H
 Manufacturer/Model: Serial Number:
0.279 in. 0.126in./µsec. 1 4 KHz
 Delay: Velocity: Filter: Rep Rate:
4.0 in. 334 ns 500 Ohms
 Range: Pulser: Damping:
Off 2.25 MHz P/E
 Reject: Frequency: Mode:

DAC Construction

Scan Direction Ax
 Cal Reflector ID Notch
 Signal Amplitude 80%
 Signal Sweep: 5.1 Div
 Signal dB: 32.2 dB
 Sweep 0-10 = 4.0 in. Metal Path

Calibration Verification

Field Simulator Block S/N: CAL-RHOM-066

Reflector	<u>2" Radius</u>	<u>N/A</u>
Amplitude	<u>80%</u>	<u>N/A</u>
Gain (dB)	<u>20.4</u>	<u>N/A</u>
Sweep (SD)	<u>5.0</u>	<u>N/A</u>

Acceptable Linearity performed : 4/7/2003

Exam Comments / Limitations:

Exams performed to maintain 5% to 20% ID roll.
 ID geometry observed below recordable levels.
 No exam performed from downstream side due to component configuration.

Exam Data for Weld: 24RRC(1)B-12

PIPE TO VALVE

Configuration:

OD 72° F 225291
 Exam Surface: Exam Temp. Exam Thermometer

Actual Cal Block "T" is 1.410."

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>Axial</u>	<u>UPST</u>	<u>44.2</u>	<u>NRI</u>	<u>46°</u>
<u>Circ</u>	<u>UPST</u>	<u>46.2</u>	<u>NRI</u>	<u>46°</u>

Exam Start: 2322 Exam End: 2341

DEM Dickey Michael II
 Initials: Examiner: Level:

[Signature] III 05/20/03
 GE Reviewed By: Level: Date:

N/A N/A
 Initials: Examiner 2: Level:

[Signature] 5/23/03
 Utility Reviewed By: Date:

Cal/Exam Date: 5/19/2003

[Signature] 5/24/03
 ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station
Outage: R16

Data Report Number: R16-060
Data Sheet Number: UT-072
Linearity Sheet: L-04

Calibration Data for Block: UT-7

<u>SS</u>	<u>24"</u>	<u>1.140"</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>2136</u>
<u>UltraGel II</u>	<u>00325</u>		Cal Check:	<u>2342</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>225291</u>	<u>72° F</u>		Final Cal:	<u>0030</u>
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction: Ax
 Cal Reflector: ID Notch
 Signal Amplitude: 80%
 Signal Sweep: 5.2 Div
 Signal dB: 71.0 dB
 Sweep 0-10 = 5.0 in. Metal Path

Calibration Verification

Field Simulator Block S/N: CAL-RHOM-066

Reflector	<u>2" Radius</u>	<u>N/A</u>
Amplitude	<u>80%</u>	<u>N/A</u>
Gain (dB)	<u>40.0</u>	<u>N/A</u>
Sweep (SD)	<u>4.0</u>	<u>N/A</u>

Acceptable Linearity performed: 4/7/2003

Exam Data for Weld: 24RRC(1)B-12

PIPE TO VALVE

Configuration:

OD 72° F 225291
 Exam Surface: Exam Temp. Exam Thermometer

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>Axial</u>	<u>UPST</u>	<u>71</u>	<u>Yes</u>	<u>60°</u>

Procedure: PDI-UT-2/Site Specific

Ver / Rev: C/1 DRR: N/A

Search Unit Data

RTD 00-407 2(10x18) mm/Rect.
 Manufacturer: Serial Number Size/Shape:
0.45 in. 60° 60°
 Incident Point: Nominal Angle: Measured Angle:
2.0 MHz TRL 2-Aust Long 2
 Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 6' 0
 Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 707H
 Manufacturer/Model: Serial Number:
1.08 in. 0.24in./usec. 1 4 KHz
 Delay: Velocity: Filter: Rep Rate:
5.0 in. 250 ns 500 Ohms
 Range: Pulser: Damping:
Off 2.25 MHz Dual
 Reject: Frequency: Mode:

Exam Comments / Limitations:

Exams performed at reference sensitivity to maintain 5% to 20% noise level.

ID root geometry recorded. See attached data sheet.

Supplemental 60° RL examination due to single side access.

No exam performed from downstream side due to component configuration.

Actual Cal Block "T" is 1.410."

Exam Start: 2343 Exam End: 2351

DEM Dickey Michael II
 Initials: Examiner: Level:

N/A N/A
 Initials: Examiner 2: Level:

Cal/Exam Date: 5/19/2003

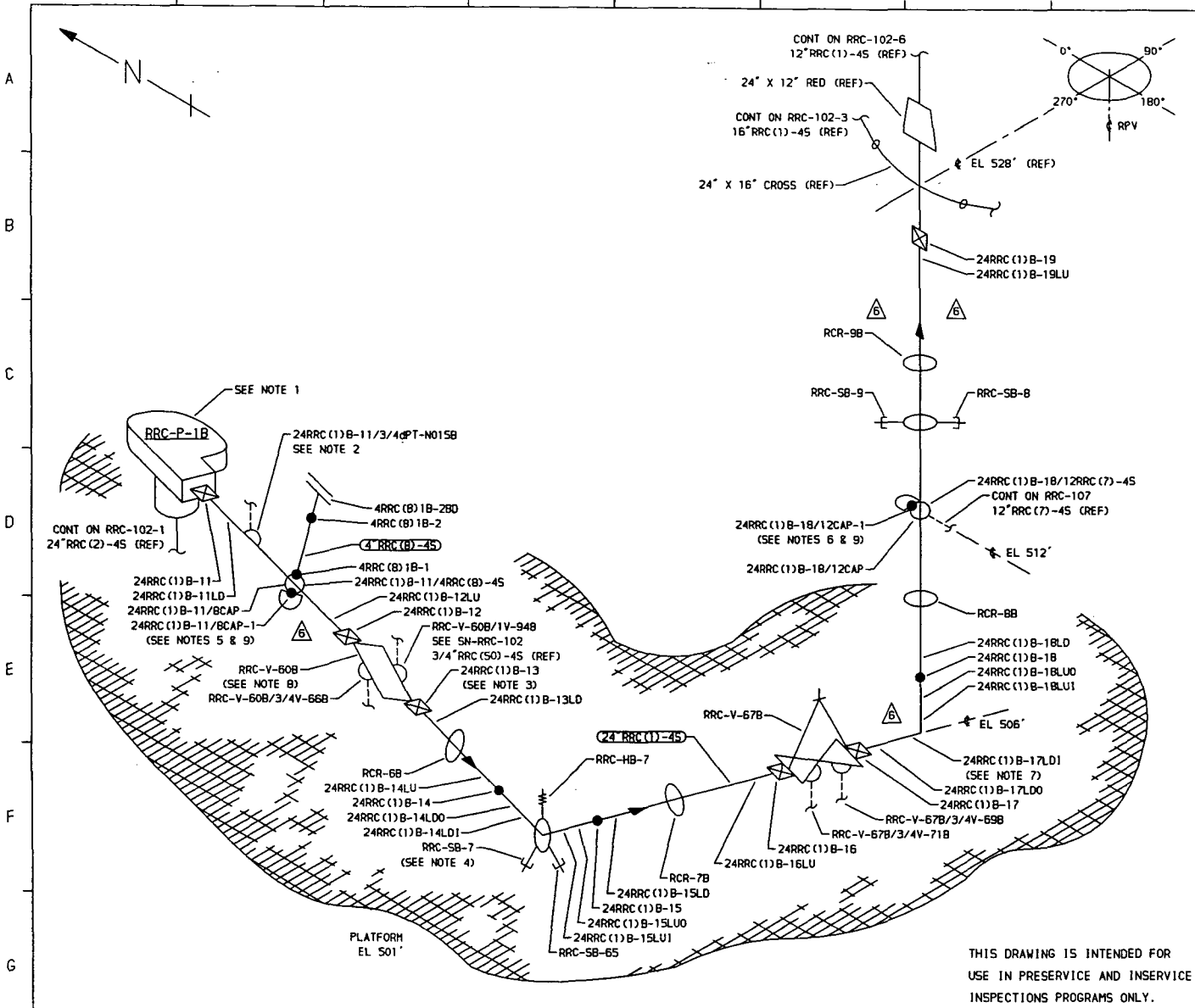
[Signature] III 05/20/03
 GE Reviewed By: Level: Date:

[Signature] 5/23/03
 Utility Reviewed By: Date:

[Signature] 5/24/03
 ANII Reviewed By: Date:

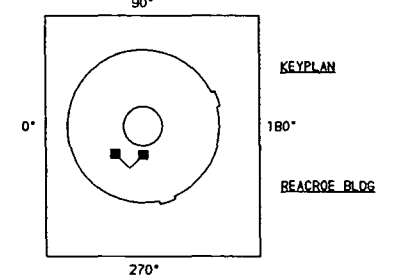
REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-12




- NOTES:**
1. SEE RRC-P-1B DETAIL, DWG RRC-103, FOR PUMP SUPPORT DETAILS.
 2. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-41d) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 3. ACCESS TO WELD 24RRC(1)B-13 REQUIRES REMOVAL OF RCR-6B.
 4. SPECIAL CLAMP WITH HB-7 & SB-7 ATTACHMENTS.
 5. WELD 24RRC(1)B-11/BCAP-1 IS FITTING TO FITTING.
 6. WELD 24RRC(1)B-1B/12CAP-1 IS FITTING TO FITTING.
 7. WELD 24RRC(1)B-17 IS FITTING TO FITTING.
 8. RRC-V-60B HAS TWELVE (12) 2 3/4" X 15" BODY TO BONNET STUDS.
 9. CAP TO NOZZLE WELDS ARE CLAD ON THE ID IN THE WELD AREA. SEE REFERENCE DWGS 131 C 7588 & 131 C 7589.
 10. PIPING FROM PUMP DISCHARGE TO RRC-V-67B IS MIN WALL 1.21B. PIPING FROM RRC-V-76B TO WELD 24RRC(1)B-19 IS MIN WALL 1.140.
 11. RRC-SB-15, RRC-SB-17, RRC-SB-18 & RRC-SB-66 WERE DELETED PER BDC 87-0244-OJ-026.

- REFERENCES:**
- 151 - 230-2
 GENERAL ELECTRIC DRAWINGS
 761 E 424 REV 2
 762 E 538 SH 1 REV 3
 762 E 538 SH 2 REV 3
 761 E 735 REV 6
 131 C 7588 REV 3
 131 C 7589 REV 5
 131 C 7592 REV 3
- CBI NUCLEAR CO.
 4B REV 4 NI NOZZLE ASSEMBLY
- BOVEE CRAIL/GERI
 BC/G-218 REV 9



QUALITY CLASS, 1	ASME CODE CLASS, 1
ENGR. D THIMMS	DRAWN. K-McA DATE: 3-30-78


**WASHINGTON PUBLIC POWER
 SUPPLY SYSTEM**
 RICHLAND, WASHINGTON 99352

THIS DRAWING IS INTENDED FOR
 USE IN PRESERVICE AND INSERVICE
 INSPECTIONS PROGRAMS ONLY.

WNP-2 WELD & COMPONENT IDENTIFICATION DIAGRAM	
TITLE, REACTOR RECIRCULATION LOOP B	
DWG NO. RRC-102-2	REV 6

NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
6	9-22-94	ADDED NOTE 11, MODIFIED ACCORDINGLY.	K-McA	DPR	DW							
5	12-9-92	ADDED 'B' TO ALL RCR'S.	K-McA	DPR	DRN	24"RRC(1)-45	24	XXX	SEE NOTE 10	SA 358 GR 304 CL 1	SS	UT-7
4	10-16-87	ADDED RRC-SB-66, 1" CONN & CONT AT RRC-V-60B. CHG RRC-HB-7 TO SPR. RRC-SB-8 & RRC-SB-9 TO SMLBERS. MOD KEYPLAN. REDRAWN	K-McA	DPR	TFH	4"RRC(B)-45	4	80	0.337	SA 312 TP 304	SS	UT-29
3	10-13-83	REVISED AS NOTED ADDED KEYPLAN	K-McA	DPR	TFH	CAP	12	80	0.688	SA 403 GR WP 304	SS	UT-19
2	11-5-80	REVISED AS NOTED	K-McA	TFH	DWP	CAP	B	80	0.500	SA 403 GR WP 304	SS	UT-26



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.: R16-062

Site and Unit: **Columbia Generating Station** Component ID: **24RRC(1)B-16**

Outage: **R16** **PIPE TO VALVE**

System: **RRC** ASME Cat.: **B-J** ASME Item **B9.11** Aug Requirements: **N/A**

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
45° Shear	UT-077	N/A	PDI-UT-2/Site Specific	UT-7	Charles Barrett	II	5/19/2003
60° Long	UT-078	N/A	PDI-UT-2/Site Specific	UT-7	Charles Barrett	II	5/19/2003

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no reportable indications were recorded utilizing the 45° and 60° search units.

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, no Addenda and the 1995 Edition, 1996 Addenda with modifications as stated in 10CFR50.55.

50% Code coverage was obtained.

Previous data was reviewed prior to this summary.

Examination results were compared to data report RRU-158 from PSI (1979) outage with No Change

These examinations were performed under Work Order: 01044925-01 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

Prepared By: Charles R. Barrett II Date: 05/19/03 Utility Reviewed By: [Signature] Date: 5/25/03
 Reviewed By: [Signature] III Date: 05/20/03 ANII Reviewed By: [Signature] Date: 5/24/03



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station
Outage: R16

Data Report Number: R16-062
Data Sheet Number: UT-077
Linearity Sheet: L-02

Calibration Data for Block: UT-7

SS	24"	1.140"	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>1913</u>
<u>Ultragel II</u>	<u>00325</u>		Cal Check:	<u>2250</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>225088</u>	<u>77° F</u>		Final Cal:	<u>0132</u>
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction: Ax
 Cal Reflector: ID Notch
 Signal Amplitude: 80%
 Signal Sweep: 5.1 Div
 Signal dB: 35.0 dB
 Sweep 0-10 = 4.0 in. Metal Path

Calibration Verification

Field Simulator Block S/N: CAL-RHOM-068

Reflector	<u>1" Radius</u>	<u>2" Radius</u>
Amplitude	<u>80%</u>	<u>72%</u>
Gain (dB)	<u>25.0</u>	<u>25.0</u>
Sweep (SD)	<u>2.5</u>	<u>5.0</u>

Acceptable Linearity performed : 4/7/2003

Exam Data for Weld: 24RRC(1)B-16

PIPE TO VALVE

Configuration:

OD 75° F 225088
 Exam Surface: Exam Temp. Exam Thermometer

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>Axial</u>	<u>UPST</u>	<u>49.0</u>	<u>NRI</u>	<u>45°</u>
<u>Circ</u>	<u>UPST</u>	<u>52.0</u>	<u>NRI</u>	<u>45°</u>

Procedure: PDI-UT-2/Site Specific

Ver / Rev: C/1 DRR: N/A

Search Unit Data

KBA 00L6YV 0.50"/Round
 Manufacturer: Serial Number Size/Shape:
0.3 in. 45° 45°
 Incident Point: Nominal Angle: Measured Angle:
1.5 MHz Comp-G Shear 1
 Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 6' 0
 Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 136P1106C031364
 Manufacturer/Model: Serial Number:
0.265 in. 0.12in./usec. 1 4KHz
 Delay: Velocity: Filter: Rep Rate:
4.0 in. 334 ns 500 Ohms
 Range: Pulser: Damping:
Off 2.25 MHz P/E
 Reject: Frequency: Mode:

Exam Comments / Limitations:

Exams performed to maintain 5% to 20% ID roll.
ID root geometry observed below recordable levels.
No exam performed from downstream side due to component configuration.
Actual Cal Block "T" is 1.410".

Exam Start: 2250 Exam End: 2320

CAB Charles Barrett II
 Initials: Examiner: Level:
N/A N/A
 Initials: Examiner 2: Level:
 Cal/Exam Date: 5/19/2003

Arnold Mada III 05/20/03
 GE Reviewed By: Level: Date:
[Signature] 5/25/03
 Utility Reviewed By: Date:
[Signature] 5/24/03
 ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station
Outage: R16

Data Report Number: R16-062
Data Sheet Number: UT-078
Linearity Sheet: L-02

Calibration Data for Block: UT-7

<u>SS</u>	<u>24"</u>	<u>1.140"</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>1937</u>
<u>Ultragel II</u>	<u>00325</u>		Cal Check:	<u>2322</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>225088</u>	<u>77° F</u>		Final Cal:	<u>0140</u>
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction: Ax
 Cal Reflector: ID Notch
 Signal Amplitude: 80%
 Signal Sweep: 4.3 Div
 Signal dB: 80.8 dB
 Sweep 0-10 = 6.0 in. Metal Path

Calibration Verification

Field Simulator Block S/N: CAL-RHOM-068

Reflector	<u>1" Radius</u>	<u>2" Radius</u>
Amplitude	<u>30%</u>	<u>80%</u>
Gain (dB)	<u>47.4</u>	<u>47.4</u>
Sweep (SD)	<u>1.6</u>	<u>3.3</u>

Acceptable Linearity performed: 4/7/2003

Exam Data for Weld: 24RRC(1)B-16

PIPE TO VALVE

Configuration:

OD 75° F 225088
 Exam Surface: Exam Temp. Exam Thermometer

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>Axial</u>	<u>UPST</u>	<u>74.8</u>	<u>Yes</u>	<u>60°</u>

Procedure: PDI-UT-2/Site Specific

Ver / Rev: C/1 DRR: N/A

Search Unit Data

RTD 00-369 2(15x25) mm/Rect.
 Manufacturer: Serial Number Size/Shape:
0.6 in. 60° 62°
 Incident Point: Nominal Angle: Measured Angle:
2.0 MHz TRL 2-Aust Long 2
 Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 6' 0
 Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 136P1106C031364
 Manufacturer/Model: Serial Number:
1.33 in. 0.231in./µsec. 2 4KHz
 Delay: Velocity: Filter: Rep Rate:
6.0 in. 250 ns 500 Ohms
 Range: Pulser: Damping:
Off 2.25 MHz Dual
 Reject: Frequency: Mode:

Exam Comments / Limitations:

Exams performed at below reference sensitivity to maintain 5% to 20% noise level.

ID root geometry recorded. See attached data sheet.

No exam performed from downstream side due to valve configuration.

Actual Cal Block "T" is 1.410".

Exam Start: 2322 Exam End: 2350

Charles Barrett II
 Initials: Examiner: Level:
N/A N/A
 Initials: Examiner 2: Level:
 Cal/Exam Date: 5/19/2003

[Signature] II 05/20/03
 GE Reviewed By: Level: Date:
[Signature] 5/25/03
 Utility Reviewed By: Date:
[Signature] 5/26/03
 ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Ultrasonic Examination Indication Report

Data Report Number: R16-062

Cal / Data Sheet Number UT-078

Site: Columbia Generating Station

Procedure: PDI-UT-2/Site Specific / C/1

Weld ID: 24RRC(1)B-16

Drawing: RRC-102-2

Size: 24" Thickness: 1.45"

Exam Start: 2322

Lo Location: Top Dead Center

Wo Location: Weld Centerline

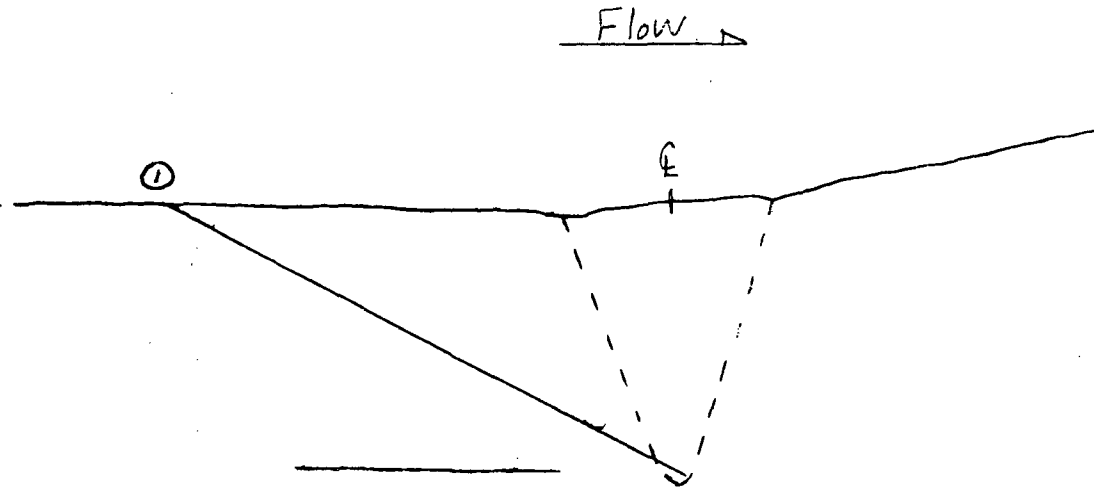
Weld Width: 1.1"

Weld Height: Flush

Exam End: 2350

Ind No.	Angle Used	% of DAC	Indication Length			W Distance			Metal Path			Ax / Circ	Upst/ Dnst	Comments:
			L1	L Max	L 2	W1	W Max	W 2	MP 1	MP Max	MP 2			
1	60°	125	N/A	6.5"	N/A	N/A	2.6"	N/A	N/A	3.1"	N/A	Ax	Upst	ID root geometry observed intermittently 360° throughout exam.

Sketch



Charles Barrett II 5/19/03
Charles Barrett II 5/19/2003
 Examiner Level: Date:

Arnold West III 05/20/03
 GE Reviewed By: Level: Date:

Paul White 5/25/03
 Utility Reviewed By: Date:

H.M. East 5/26/03
 ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: N/A

Report No.:

Project: 16423

R16-062

System: RRC

Component ID Number: 24RRC(1)B-16

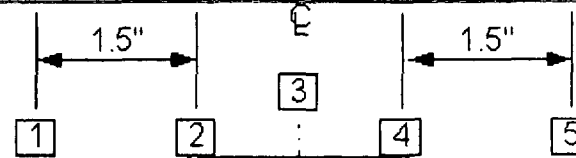
Position	0°	90°	180°	270°
1	1.30"	N/A	N/A	N/A
2	1.30"	N/A	N/A	N/A
3	1.45"	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A

Crown Height: FLUSH

Crown Width: 1.1"

Nominal Diameter: 24.0"

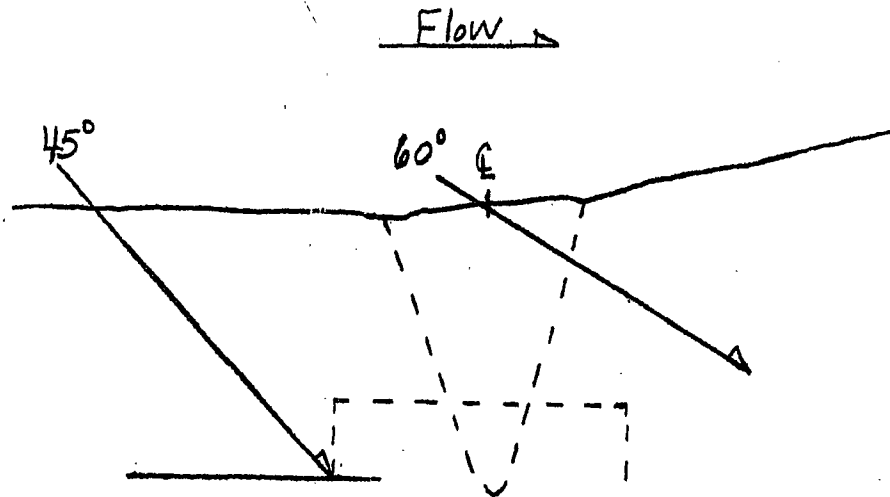
Weld Length: 75.5"



PIPE
UPST Component:

VALVE
DNST Component:

FLOW →



CRB Charles Barrett II 5/19/03
Initials: Examiner: Level: Date:

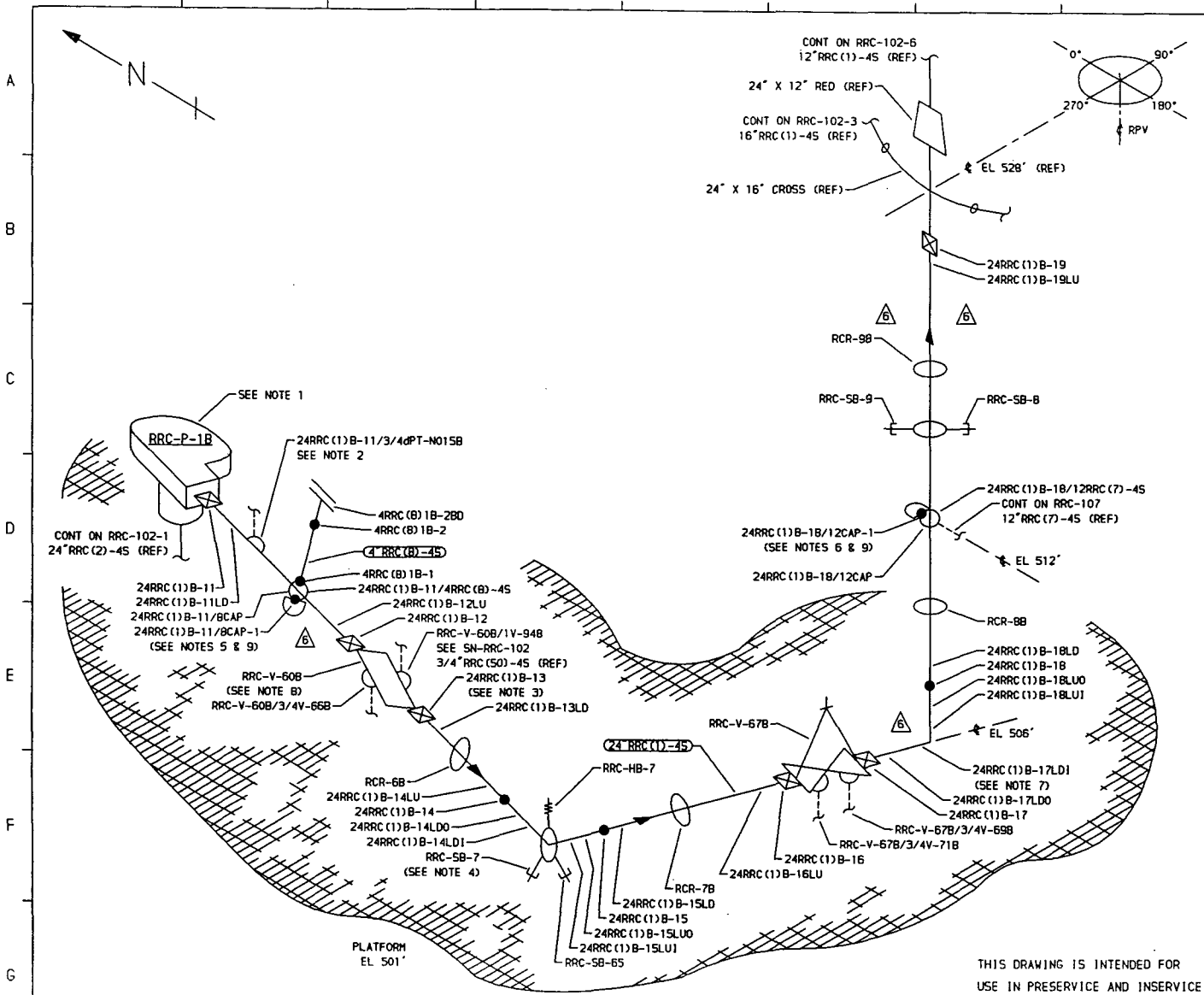
[Signature] III 05/20/03
GE Reviewed By: Level: Date:

[Signature] 5/20/03
Utility Reviewed By: Date:

[Signature] 5/20/03
ANII Reviewed By: Date:

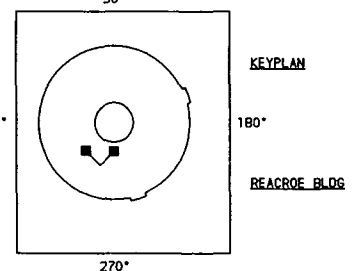
REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-13



- NOTES.**
1. SEE RRC-P-1B DETAIL, DWG RRC-103, FOR PUMP SUPPORT DETAILS.
 2. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-41D) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 3. ACCESS TO WELD 24RRC(1)B-13 REQUIRES REMOVAL OF RCR-6B.
 4. SPECIAL CLAMP WITH HB-7 & SB-7 ATTACHMENTS.
 5. WELD 24RRC(1)B-11/BCAP-1 IS FITTING TO FITTING.
 6. WELD 24RRC(1)B-1B/12CAP-1 IS FITTING TO FITTING.
 7. WELD 24RRC(1)B-17 IS FITTING TO FITTING.
 8. RRC-V-60B HAS TWELVE (12) 2 3/4" X 15" BODY TO BONNET STUDS.
 9. CAP TO NOZZLE WELDS ARE CLAD ON THE ID IN THE WELD AREA. SEE REFERENCE DWGS 131 C 758B & 131 C 7589.
 10. PIPING FROM PUMP DISCHARGE TO RRC-V-67B IS MIN WALL 1.218. PIPING FROM RRC-V-67B TO WELD 24RRC(1)B-19 IS MIN WALL 1.140.
 11. RRC-SB-15, RRC-SB-17, RRC-SB-18 & RRC-SB-66 WERE DELETED PER BDC 87-0244-OJ-026.

- REFERENCES.**
- ISI - 230-2
 GENERAL ELECTRIC DRAWINGS
 761 E 424 REV 2
 762 E 538 SH 1 REV 3
 762 E 538 SH 2 REV 3
 761 E 735 REV 6
 131 C 7588 REV 3
 131 C 7589 REV 5
 131 C 7592 REV 3
- CB1 NUCLEAR CO.
 4B REV 4 N1 NOZZLE ASSEMBLY
 BOVEE CRAIL/GERI
 BC/G-218 REV 9



QUALITY CLASS, 1	ASME CODE CLASS, 1
ENGR. D TIMMINS	DRAWN, K-McA DATE, 3-30-78

WASHINGTON PUBLIC POWER
 SUPPLY SYSTEM
 RICHLAND, WASHINGTON 99352

WNP-2
 WELD & COMPONENT
 IDENTIFICATION DIAGRAM

TITLE, REACTOR RECIRCULATION LOOP B
DWG NO. RRC-102-2
REV 6

NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
6	9-22-94	ADDED NOTE 11, MODIFIED ACCORDINGLY.	K-McA	DPR	DW							
5	12-9-92	ADDED 'B' TO ALL RCR'S.	K-McA	DPR	DRW	24RRC(1)-45	24	XXX	SEE NOTE 10	SA 358 GR 304 CL 1	SS	UT-7
4	10-16-87	ADDED RRC-SB-66, 1" CONN & CONT AT RRC-V-60B. CHG RRC-HB-7 TO SPR, RRC-SB-8 & RRC-SB-9 TO SMOOTHERS. MOD KEYPLAN. REDRAWN	K-McA	DPR	TFH	4RRC(B)-45	4	80	0.337	SA 312 TP 304	SS	UT-29
3	10-13-83	REVISED AS NOTED ADDED KEYPLAN	K-McA	DPR	TFH	CAP	12	80	0.688	SA 403 GR WP 304	SS	UT-19
2	11-5-80	REVISED AS NOTED	K-McA	TFH	DWP	CAP	8	80	0.500	SA 403 GR WP 304	SS	UT-26

THIS DRAWING IS INTENDED FOR USE IN PRESERVICE AND INSERVICE INSPECTIONS PROGRAMS ONLY.



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.:
R16-063

Site and Unit: **Columbia Generating Station** Component ID: **24RRC(1)B-17**

Outage: **R16** **VALVE TO ELL**

System **RRC** ASME Cat.: **B-J** ASME Item **B9.11** Aug Requirements: **N/A**

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
60° Long	UT-088	N/A	PDI-UT-2/Site Specific	UT-7	Andre' Rachal	II	5/21/2003
45° Shear	UT-087	N/A	PDI-UT-2/Site Specific	UT-7	Andre' Rachal	II	5/21/2003

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no reportable indications were recorded utilizing the 45° and 60°RL search unit.

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, no Addenda and the 1995 Edition, 1996 Addenda with modifications as stated in 10CFR10.55

50% Code coverage was obtained.

Previous data was reviewed prior to this summary.

Examination results were compared to data report RRU-140 from PSI(1979) outage with No Change

These examinations were performed under Work Order: 01044925 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

<u>Andre' Rachal</u>	<u>II</u>	<u>5/21/03</u>	<u>[Signature]</u>	<u>5/23/03</u>
Prepared By:	Level:	Date:	Utility Reviewed By:	Date:
<u>[Signature]</u>	<u>III</u>	<u>5/22/03</u>	<u>[Signature]</u>	<u>5/23/03</u>
Reviewed By:	Level:	Date:	ANII Reviewed By:	Date:



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station
Outage: R16

Data Report Number: R16-063
Data Sheet Number: UT-087
Linearity Sheet: L-06

Calibration Data for Block: UT-7

<u>SS</u>	<u>24"</u>	<u>1.140"</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>1148</u>
<u>Ultragel II</u>	<u>00325</u>		Cal Check:	<u>1315</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>225316</u>	<u>75° F</u>		Final Cal:	<u>1505</u>
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction	<u>Ax</u>	<u>N/A</u>	<u>N/A</u>
Cal Reflector	<u>ID Notch</u>	<u>N/A</u>	<u>N/A</u>
Signal Amplitude	<u>80%</u>	<u>%</u>	<u>%</u>
Signal Sweep:	<u>5.0 Div</u>	<u>.0 Div</u>	<u>.0 Div</u>
Signal dB:	<u>31.4 dB</u>	<u>.0 dB</u>	<u>.0 dB</u>
Sweep 0-10 =	<u>4.0 in.</u>	<u>Metal Path</u>	

Calibration Verification

Field Simulator Block S/N: CAL-RHOM-069

Reflector	<u>1" Radius</u>	<u>2" Radius</u>
Amplitude	<u>80%</u>	<u>80%</u>
Gain (dB)	<u>20.6</u>	<u>20.6</u>
Sweep (SD)	<u>2.5</u>	<u>5.0</u>

Acceptable Linearity performed : 4/7/2003

Exam Data for Weld: 24RRC(1)B-17

VALVE TO ELL

Configuration:

OD 72° F 225316
Exam Surface: Exam Temp. Exam Thermometer

Axial	UPST	Scan dB	Recordable	Exam
Circ	DNST		Indications	Angle
<u>Axial</u>	<u>DNST</u>	<u>47.0</u>	<u>NRI</u>	<u>45°</u>
<u>Circ</u>	<u>DNST</u>	<u>47.0</u>	<u>NRI</u>	<u>45°</u>

Procedure: PDI-UT-2/Site Specific

Ver / Rev: C/1 DRR: N/A

Search Unit Data

KBA 00MPX8 0.50"/Round
Manufacturer: Serial Number Size/Shape:

0.5 in. 45° 46°
Incident Point: Nominal Angle: Measured Angle:

1.5 MHz Comp-G Shear 1
Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 6' 0
Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 717H
Manufacturer/Model: Serial Number:

0.408 in. 0.124in./usec. 2 4KHz
Delay: Velocity: Filter: Rep Rate:

4.0 in. 334 ns 500 Ohms
Range: Pulser: Damping:

Off 2.25 MHz P/E
Reject: Frequency: Mode:

Exam Comments / Limitations:

Exams performed to maintain 5% to 20% ID roll.
ID geometry observed below recordable levels.
No exam performed from upst side due to component configuration.
Actual Cal block "T" is 1.410"

Exam Start: 1317 Exam End: 1330

Amr Andre' Rachal II
Initials: Examiner: Level:

N/A
Initials: Examiner 2: Level:

Cal/Exam Date: 5/21/2003

[Signature]
GE Reviewed By:

III 5/22/03
Level: Date:

[Signature]
Utility Reviewed By:

5/23/03
Date:

[Signature]
ANII Reviewed By:

5/23/03
Date:



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station
Outage: R16

Data Report Number: R16-063
Data Sheet Number: UT-088
Linearity Sheet: L-08

Calibration Data for Block: UT-7

<u>SS</u>	<u>24"</u>	<u>1.140"</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>1133</u>
<u>Ultragel II</u>	<u>00325</u>		Cal Check:	<u>1332</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>225316</u>	<u>75° F</u>		Final Cal:	<u>1500</u>
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction	<u>Ax</u>	<u>N/A</u>	<u>N/A</u>
Cal Reflector	<u>ID Notch</u>	<u>N/A</u>	<u>N/A</u>
Signal Amplitude	<u>80%</u>	<u>%</u>	<u>%</u>
Signal Sweep:	<u>4.7 Div</u>	<u>.0 Div</u>	<u>.0 Div</u>
Signal dB:	<u>69.2 dB</u>	<u>.0 dB</u>	<u>.0 dB</u>
Sweep 0-10 =	<u>6.0 in.</u>	<u>Metal Path</u>	

Calibration Verification

Field Simulator Block S/N: CAL-RHOM-069

Reflector	<u>1" Radius</u>	<u>2" Radius</u>
Amplitude	<u>34%</u>	<u>80%</u>
Gain (dB)	<u>39.6</u>	<u>39.6</u>
Sweep (SD)	<u>1.7</u>	<u>3.33</u>

Acceptable Linearity performed : 4/7/2003

Exam Data for Weld: 24RRC(1)B-17

VALVE TO ELL

Configuration:

OD 72° F 225316
Exam Surface: Exam Temp. Exam Thermometer

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>Axial</u>	<u>DNST</u>	<u>69.2</u>	<u>Yes</u>	<u>60°</u>

Procedure: PDI-UT-2/Site Specific

Ver / Rev: C/1 DRR: N/A

Search Unit Data

RTD 98-172 2(10x18) mm/Rect
Manufacturer: Serial Number Size/Shape:

0.45 in. 60° 59°
Incident Point: Nominal Angle: Measured Angle:

2.0 MHz TRL 2-Aust Long 2
Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 6' 0
Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 717H
Manufacturer/Model: Serial Number:

1.2 in. 0.233in./usec. 2 4KHz
Delay: Velocity: Filter: Rep Rate:

6.0 in. 250 ns 500 Ohms
Range: Pulser: Damping:

Off 2.25 MHz Dual
Reject: Frequency: Mode:

Exam Comments / Limitations:

Exams performed to maintain 5% to 20% noise level. Supplemental 60°RL examination due to single side access. No exam performed from upst side due to component configuration. Scanned at reference dB to maintain 5% to 20% noise level. ID root geometry 360° intermittently above and below recorded levels. Actual Cal block "T" is 1.410"

Exam Start: 1334 Exam End: 1354

AR Andre' Rachal II
Initials: Examiner: Level:

N/A
Initials: Examiner 2: Level:

Cal/Exam Date: 5/21/2003

[Signature] III 5/22/03
GE Reviewed By: Level: Date:

[Signature] 5/23/03
Utility Reviewed By: Date:

[Signature] 5/23/03
ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Ultrasonic Examination Indication Report

Data Report Number: R16-063

Cal / Data Sheet Number UT-088

Site: Columbia Generating Station

Procedure: PDI-UT-2/Site Specific / C1 / N/A

Weld ID: 24RRC(1)B-17

Drawing: RRC-102-02

Size: 24" Thickness: 1.58"

Exam Start: 1334

Lo Location: TDC

Wo Location: WELD CL

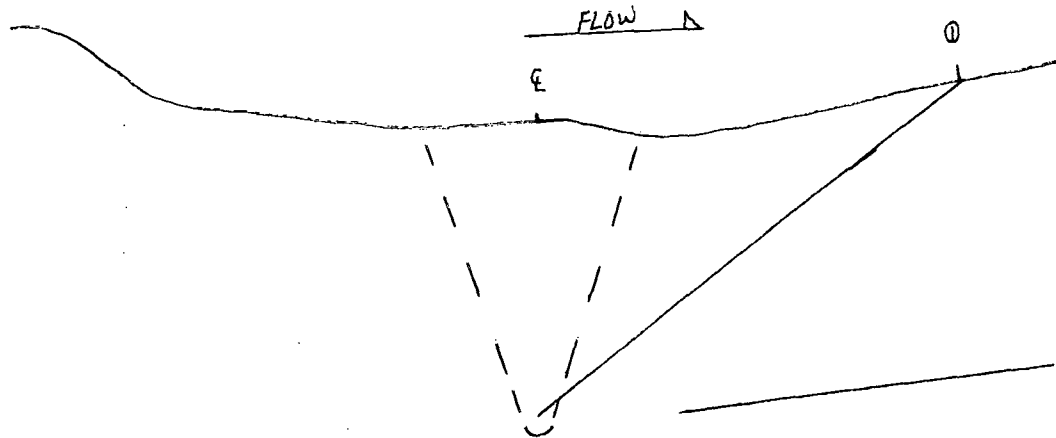
Weld Width: 1.15

Weld Height: FLUSH

Exam End: 1354

Ind No.	Angle Used	% of DAC	Indication Length			W Distance			Metal Path			Ax / Circ	Upst / Dnst	Comments:
			L1	L Max	L 2	W1	W Max	W 2	MP 1	MP Max	MP 2			
1	60°	200	N/A	58.0"	N/A	N/A	2.25	N/A	N/A	2.76	N/A	Ax	Dnst	ID Root Geometry 360° Intermittently above and below recorded levels.

Sketch



Amr
Examiner Andre' Rachal

II 5/21/2003
Level: Date:

III
GE Reviewed By:

5/22/03
Level: Date:

[Signature]
Utility Reviewed By:

5/23/03
Date:

[Signature]
ANII Reviewed By:

5/25/03
Date:



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: N/A

Report No.:

Project: 16423

R16-063

System: RRC

Component ID Number: 24RRC(1)B-17

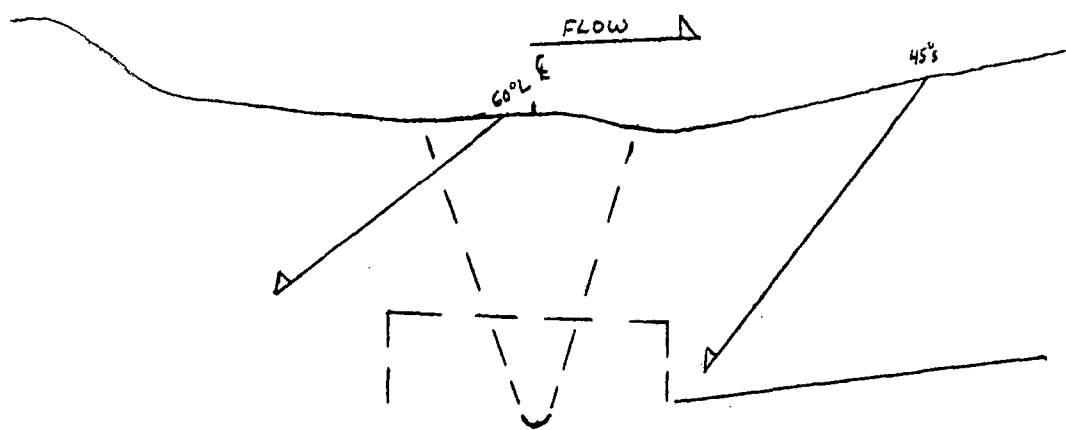
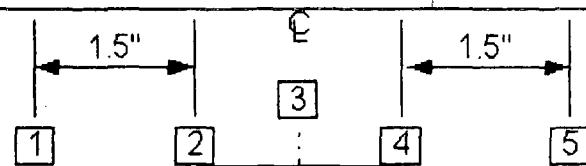
Position	0°	90°	180°	270°
1	N/A	N/A	N/A	N/A
2	1.46	N/A	N/A	N/A
3	1.58	N/A	N/A	N/A
4	1.4	N/A	N/A	N/A
5	1.52	N/A	N/A	N/A

Crown Height: FLUSH

Crown Width: 1.15"

Nominal Diameter: 24.0"

Weld Length: 77.5"



AMR Andre' Rachal II 05/21/03
Initials: Examiner: Level: Date:

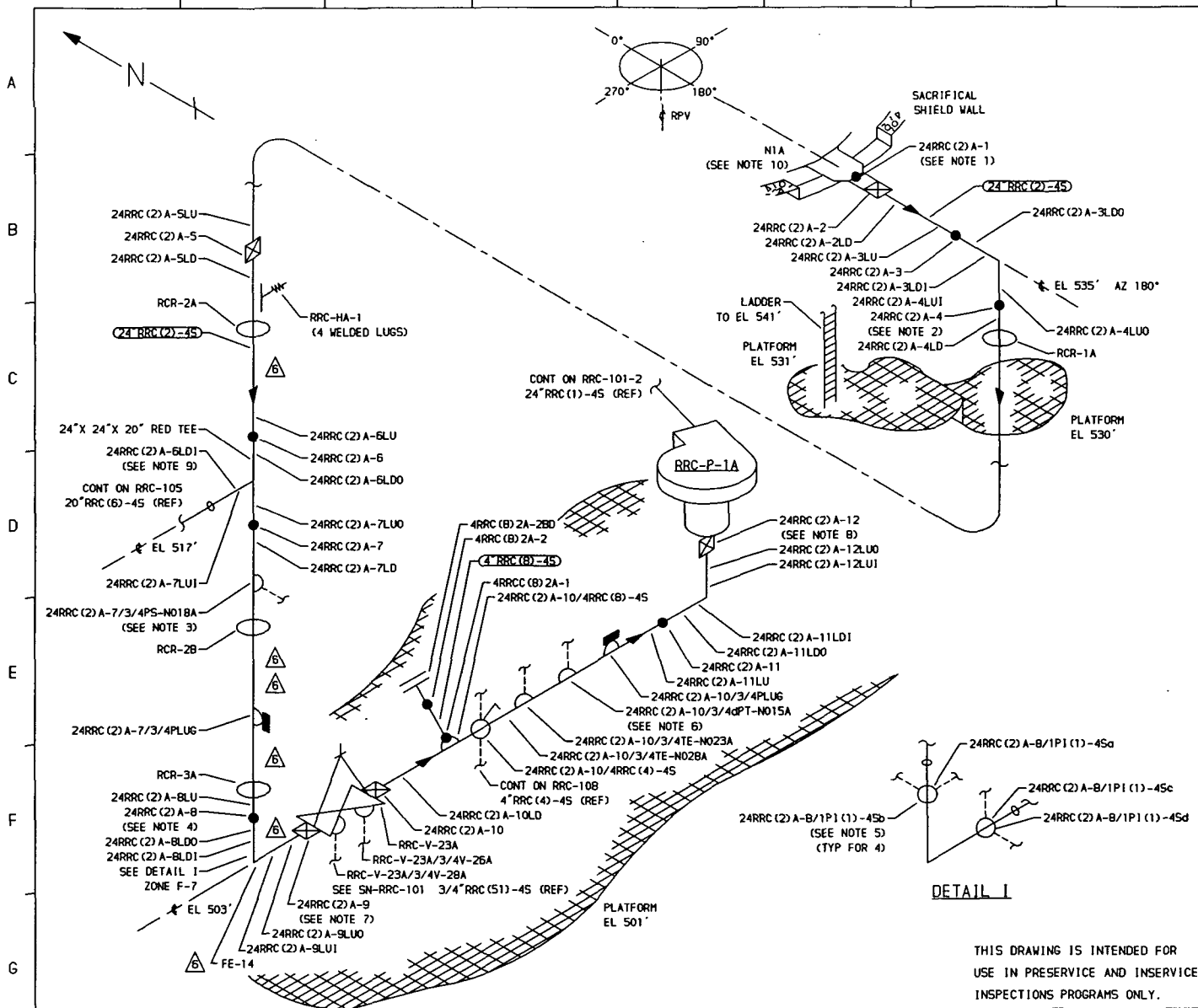
J. Howard III 5/22/03
GE Reviewed By: Level: Date:

[Signature] 5/23/03
Utility Reviewed By: Date:

[Signature] 5/23/03
ANII Reviewed By: Date:

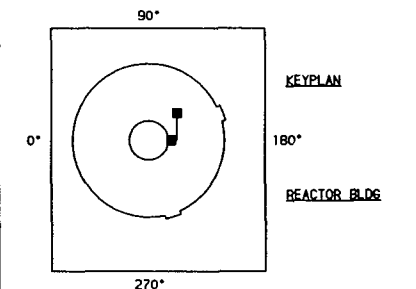
REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-14



- NOTES:**
1. WELD 24RRC(2)A-1 UTILIZES CAL BLOCK UT-101.
 2. ACCESS TO WELD 24RRC(2)A-4 REQUIRES REMOVAL OF RCR-1A.
 3. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATIONS (X-78F) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 4. ACCESS TO WELD 24RRC(2)A-8 REQUIRES REMOVAL OF RCR-3A.
 5. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATIONS (X-40c), (X-40d), (X-61a) & (X-61b) THROUGH EXCESS FLOW CHECK VALVES TO INSTRUMENT TUBING CONNECTION.
 6. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATIONS (X-70F) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 7. WELD 24RRC(2)A-9 IS FITTING TO FITTING.
 8. WELD 24RRC(2)A-12 IS FITTING TO FITTING.
 9. LONGITUDINAL WELDS LOCATED INBOARD & OUTBOARD ON THE RED TEE, WITH RESPECT TO THE RPV, ARE 90° FROM THE BRANCH CONNECTION.
 10. FOR NOZZLE ASSEMBLY DETAIL SEE DWG RPV-105.
 11. PIPING PURCHASED TO MIN WALL SPEC - 0.910".
 12. RRC-SA-1, RRC-SA-2, RRC-SA-16, RRC-SA-19, RRC-SA-20 & RRC-SA-25 WERE DELETED PER BDC B7-0244-OJ-024.
 13. ADDED FE-14 PER BDC 55-0753-0A-302.

- REFERENCES:**
- ISI - 230-1
 GENERAL ELECTRIC DRAWINGS
 761 E 424 REV 2
 762 E 538 SH 1 REV 3
 762 E 538 SH 2 REV 3
 761 E 735 REV 6
 131 C 7586 REV 4
 131 C 7587 REV 3
- CBI NUCLEAR CO.
 4B REV 4 N1 NOZZLE ASSEMBLY
- BOVEE CRAIL/GERI
 BC/G-215 REV 910



QUALITY CLASS, 1	ASME CODE CLASS, 1
ENGR, D TIMMINS	DRAWN, K-McA
DATE, 4-5-78	

WASHINGTON PUBLIC POWER
 SUPPLY SYSTEM
 RICHLAND, WASHINGTON 99352

THIS DRAWING IS INTENDED FOR
 USE IN PRESERVICE AND INSERVICE
 INSPECTIONS PROGRAMS ONLY.

NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
6	9-22-94	ADDED NOTES 12 & 13, MODIFIED ACCORDINGLY.	K-McA	DPR	DW							
5	11-13-92	ADDED 'A' TO RRC-1 & INSTRUMENT CONNECTIONS. PLUGGED TWO INSTRUMENT CONNECTIONS. DELETED UT-47.	K-McA	DPR	DRW	24" RRC (2) -45	24	XXX	SEE NOTE 10	SA 358 GR 304 CL 1	SS	UT-7
4	10-16-87	ADDED SHIMMER, RRC-SA-19, ISI DWG REF, DWG CONT ZH D-4. MODIFIED KEYPLAN. REDRAWN.	K-McA	DPR	TFH	4" RRC (8) -45	4	80	0.337	SA 312 TP 304	SS	UT-29
3	12-14-83	REVISED AS NOTED. ADDED KEYPLAN & LUGS.	K-McA	DPR	TFH							
2	11-5-80	ADDED NOTE 10, REVISED AS NOTED.	K-McA	TFH	DWP							
NO	DATE	REVISION	BY	CHKD	APVD							

WNP-2
 WELD & COMPONENT
 IDENTIFICATION DIAGRAM

TITLE: REACTOR RECIRCULATION LOOP A

DWG NO. RRC-101-1

REV 6



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.: R15-049

Site and Unit: Columbia Generating Station Component ID: 24RRC(2)A-10

Outage: RFO-15 VALVE TO PIPE

System: RRC ASME Cat.: B-J ASME Item B9.11 Aug Requirements: N/A

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
60° RL	UT-R15-042	N/A	PDI-UT-2	UT-7	BRET FLESNER	II	5/24/01
45° Shear	UT-R15-041	N/A	PDI-UT-2	UT-7	BRET FLESNER	II	5/24/01
60° Shear	UT-R15-044	N/A	PDI-UT-2	UT-7	BRET FLESNER	II	5/24/01

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no reportable indications were recorded utilizing the 45° shear wave search unit. Root geometry was recorded with the 60° RL and confirmed using a 60° shear wave.

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, no Addenda and the 1995 Edition, 1996 Addenda with modifications as stated in 10CFR50.55.

Examined from the pipe side only due to valve configuration. 50% code coverage obtained.

Previous data was reviewed prior to this summary.

Examination results were compared to data report RRU-078 from 1979 outage with No Change

These examinations were performed under Work Order: 01011024 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

Bret Flesner II 5-24-01 [Signature] NDE Lead 5/29/01
 Prepared By: Level: Date: Utility Reviewed By: Title: Date:
[Signature] II 5/27/01 [Signature] A-II 5/29/01
 GE Reviewed By: Level: Date: ANII Reviewed By: Title: Date:

RWP: N/A
Dose: N/A mr.



GE NUCLEAR ENERGY

Indication / Coverage Plot Sheet

Site: Columbia Generating Station Unit: N/A

Report No.:

Project: RFO-15

R15-049

System: RRC

Component ID Number: 24RRC(2)A-10

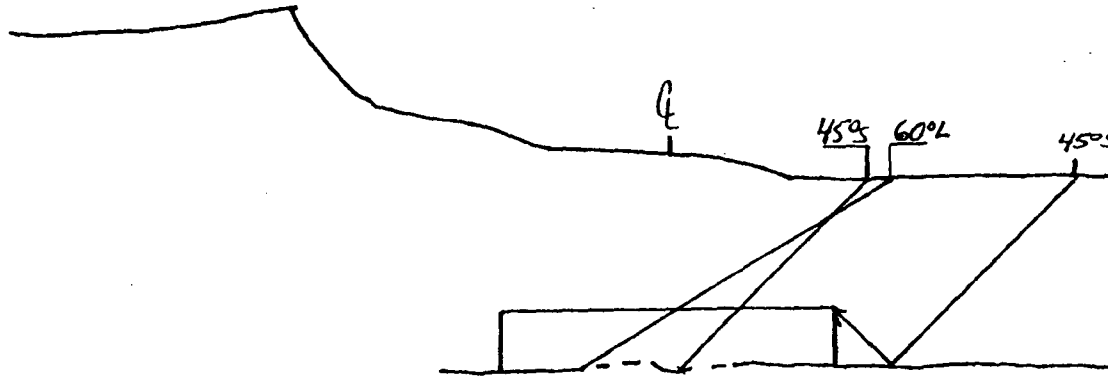
Configuration: Valve

Pipe

VALVE

FLOW →

PIPE



COVERAGE PLOT

BF BRET FLESNER II 5/24/01
 Initials: Examiner: Level: Date:

Amthaly III 5/26/01
 GE Reviewed By: Level: Date:

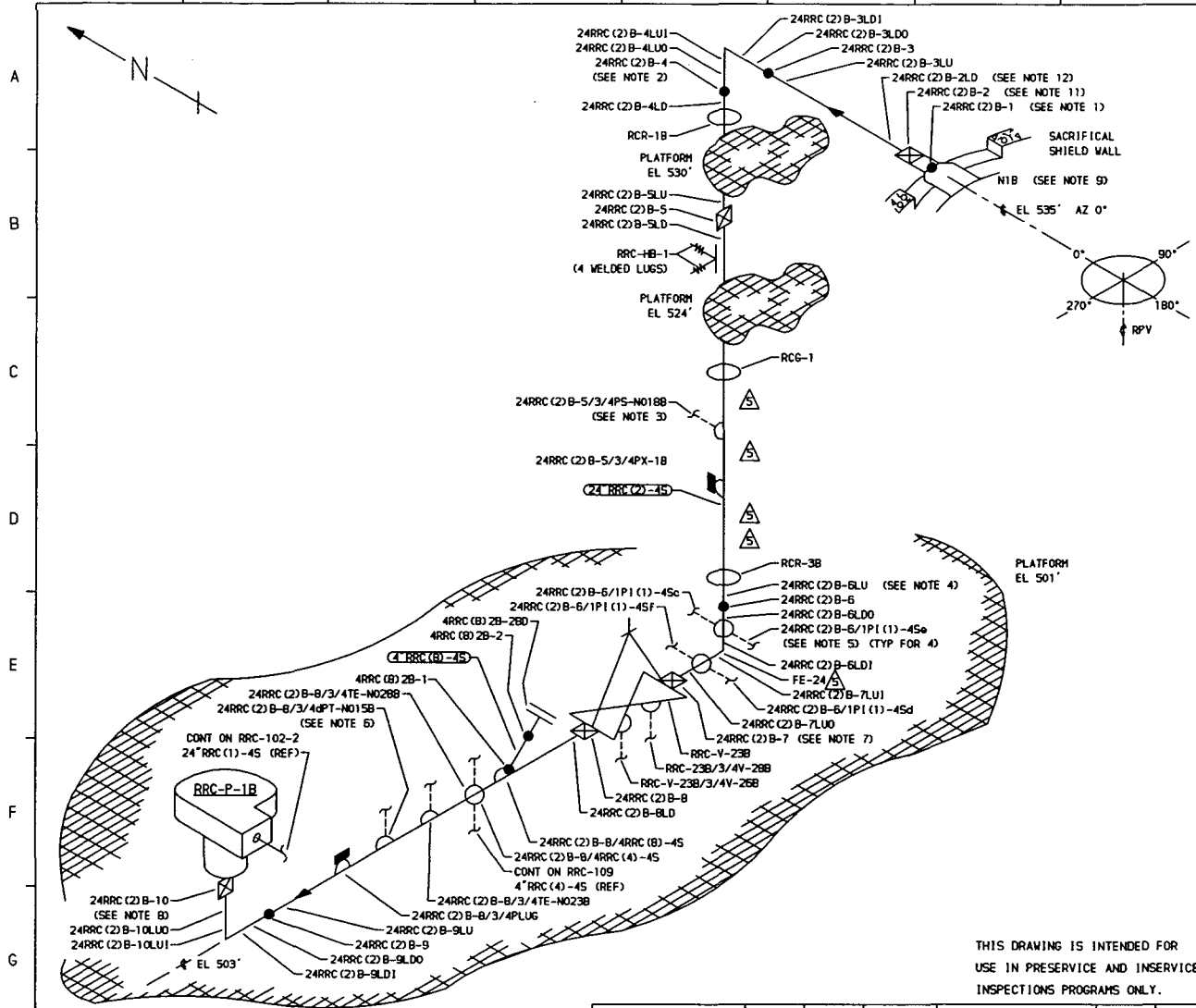
Ben Bluh 5/29/01
 Utility Reviewed By: Date:

A. J. ... 5/24/01
 ANII Reviewed By: Date:

**REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment**

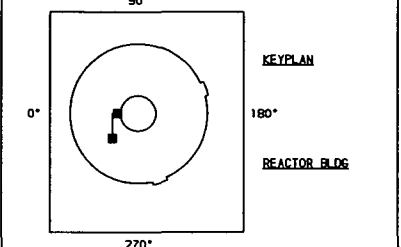
2ISI-32-15

1 2 3 4 5 6 7 8 9 10



- NOTES:**
1. WELD 24RRC(2)B-1 UTILIZES CAL BLOCK UT-101.
 2. ACCESS TO WELD 24RRC(2)B-4 REQUIRES REMOVAL OF RCR-1B.
 3. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-69a) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 4. ACCESS TO WELD 24RRC(2)B-6 REQUIRES REMOVAL OF RRC-3B.
 5. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATIONS (X-62c), (X-62d), (X-75a) & (X-75f) THROUGH EXCESS FLOW CHECK VALVES TO INSTRUMENT TUBING CONNECTION.
 6. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-41c) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 7. WELD 24RRC(1)B-7 IS FITTING TO FITTING.
 8. WELD 24RRC(1)B-10 IS FITTING TO FITTING.
 9. FOR NOZZLE ASSEMBLY DETAIL SEE DWG RPV-105.
 10. PIPING PURCHASED TO MIN WALL SPEC-0.910.
 11. WELD IS STAMPED 24RRC(1)B-2.
 12. WELD IS STAMPED 24RRC(1)B-2LD.
 13. RRC-SB-1, RRC-SB-2, RRC-SB-16 & RRC-SB-25 WERE DELETED PER BDC 87-0244-OJ-026.
 14. ADDED FE-24 PER BDC 55-0753-OA-303.

- REFERENCES:**
- 151 - 230-2
 GENERAL ELECTRIC DRAWINGS
 761 E 424 REV 2
 762 E 538 SH 1 REV 3
 762 E 538 SH 2 REV 3
 761 E 735 REV 6
 131 C 7586 REV 4
 131 C 7587 REV 3
- CBI NUCLEAR CO.
 4B REV 4 N1 NOZZLE ASSEMBLY
 BOVEE CRAIL/GERI
 BC/G-217 REV 10



QUALITY CLASS, 1 ASME CODE CLASS, 1
 ENGR. D TIMMINS DRAWN, K-McA DATE, 3-29-78

WASHINGTON PUBLIC POWER
 SUPPLY SYSTEM
 RICHLAND, WASHINGTON 99352

WNP-2
 WELD & COMPONENT
 IDENTIFICATION DIAGRAM

TITLE, REACTOR RECIRCULATION LOOP B
 DWG NO. RRC-102-1 REV 5

THIS DRAWING IS INTENDED FOR
 USE IN PRESERVICE AND INSERVICE
 INSPECTIONS PROGRAMS ONLY.

NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
5	9-22-94	ADDED NOTES 13 & 14, MODIFIED ACCORDINGLY.	K-McA	DPR	DW	24" RRC(2)-45	24	XXX	SEE NOTE 10	SA 358 GR 304 CL 1	SS	UT-7
4	11-13-92	ADDED 'B' TO RRC-1 NOTES 11, 12 & INST CONN. PLUGGED TWO INST CONN. FOR RRC-SB-1, RRC-HB-1 & NOTE 3. DELETED UT-47. MODIFIED KEYPLAN & LOGS. REDRAWN	K-McA	DPR	DRW	4" RRC(8)-45	4	80	0.337	SA 312 TP 304	SS	UT-29
3	10-16-87	ADDED (S) DWG REFERENCE. CHANGED RRC-HB-1 TO SPRING CORRECTED NOTE 5 & P1 CONNECTIONS ON 90° ELBOW 2N E-5.	K-McA	DPR	TFH							
2	11-14-83	REVISED AS NOTED. ADDED KEYPLAN & LUGS.	K-McA	DPR	TFH							
1	11-5-80	ADDED NOTE 9	K-McA	DPR	DWP							



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.: R16-066

Site and Unit: **Columbia Generating Station** Component ID: **24RRC(2)B-8**
 Outage: **R16** **VALVE TO PIPE**
 System: **RRC** ASME Cat.: **B-J** ASME Item **B9.11** Aug Requirements: **N/A**

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
45° Shear	UT-119	N/A	PDI-UT-2/Site Specific	UT-7	Charles Barrett	II	5/21/2003
60° Long	UT-120	N/A	PDI-UT-2/Site Specific	UT-7	Charles Barrett	II	5/21/2003

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no reportable indications were recorded utilizing the 45° and 60° search units.

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, no Addenda and the 1995 Edition, 1996 Addenda with modifications as stated in 10CFR50.55.

50% Code coverage was obtained.

Previous manual UT data and construction radiographs were reviewed prior to this summary.

This weld was identified during construction as BC/G 217 Weld B-4.

Examination results were compared to data report RRU-069 from PSI (1979) outage with No Change

These examinations were performed under Work Order: 01044925-01 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

Prepared By: *Charles Barrett* Level: II Date: 5/21/03 Utility Reviewed By: *[Signature]* Date: 5/25/03
 Reviewed By: *[Signature]* Level: III Date: 05/22/03 ANII Reviewed By: *[Signature]* Date: 5/24/03



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station
Outage: R16

Data Report Number: R16-066
Data Sheet Number: UT-119
Linearity Sheet: L-02

Calibration Data for Block: UT-7

<u>SS</u>	<u>24"</u>	<u>1.140"</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>1901</u>
<u>Ultragel II</u>	<u>00325</u>		Cal Check:	<u>2202</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>225088</u>	<u>78° F</u>		Final Cal:	<u>2308</u>
Thermometer S/N	Cal Temp.			

Procedure: PDI-UT-2/Site Specific

Ver / Rev: C/1 DRR: N/A

Search Unit Data

KBA 00L6YV 0.50"/Round
 Manufacturer: Serial Number Size/Shape:

0.35 in. 45° 45°
 Incident Point: Nominal Angle: Measured Angle:

1.5 MHz Comp-G Shear 1
 Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 6' 0
 Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 136P1106C031364
 Manufacturer/Model: Serial Number:

0.265 in. 0.12in/μsec. 1 4KHz
 Delay: Velocity: Filter: Rep Rate:

4.0 in. 334 ns 500 Ohms
 Range: Pulser: Damping:

Off 2.25 MHz P/E
 Reject: Frequency: Mode:

DAC Construction

Scan Direction Ax
 Cal Reflector ID Notch
 Signal Amplitude 80%
 Signal Sweep: 5.1 Div
 Signal dB: 35.0 dB
 Sweep 0-10 = 4.0 in. Metal Path

Calibration Verification

Field Simulator Block S/N: CAL-RHOM-068

Reflector	<u>1" Radius</u>	<u>2" Radius</u>
Amplitude	<u>80%</u>	<u>76%</u>
Gain (dB)	<u>24.0</u>	<u>24.0</u>
Sweep (SD)	<u>2.5</u>	<u>5.0</u>

Acceptable Linearity performed : 4/7/2003

Exam Comments / Limitations:

Exams performed to maintain 5% to 20% ID roll.
No exam performed from upstream side due to valve configuration.
Actual Cal Block "T" is 1.410".

Exam Data for Weld: 24RRC(2)B-8

VALVE TO PIPE

Configuration:

OD 81° F 225088
 Exam Surface: Exam Temp. Exam Thermometer

Axial	UPST	Scan dB	Recordable	Exam
Circ	DNST		Indications	Angle
<u>Axial</u>	<u>DNST</u>	<u>49.0</u>	<u>NRI</u>	<u>45°</u>
<u>Circ</u>	<u>DNST</u>	<u>53.0</u>	<u>NRI</u>	<u>45°</u>

Exam Start: 2202 Exam End: 2222

CB

Charles Barrett

Initials: Examiner:

Level: II

Umanwarth

GE Reviewed By:

Level: III Date: 05/22/03

N/A

Initials: Examiner 2:

Level: N/A

W. M. East

Utility Reviewed By:

Date: 5/25/03

Cal/Exam Date: 5/21/2003

ANII Reviewed By:

Date: 5/26/03



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: **Columbia Generating Station**
Outage: **R16**

Data Report Number: **R16-066**
Data Sheet Number: **UT-120**
Linearity Sheet: **L-02**

Calibration Data for Block: **UT-7**

SS	24"	1.140"	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	1915
Ultrage! II	00325		Cal Check:	2224
Couplant:	Couplant batch		Cal Check:	N/A
225088	78° F		Final Cal:	2310
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction: **Ax**
Cal Reflector: **ID Notch**
Signal Amplitude: **80%**
Signal Sweep: **4.6 Div**
Signal dB: **80.4 dB**
Sweep 0-10 = **6.0 in. Metal Path**

Calibration Verification

Field Simulator Block S/N: **CAL-RHOM-088**

Reflector	1" Radius	2" Radius
Amplitude	30%	80%
Gain (dB)	46.8	46.8
Sweep (SD)	1.6	3.3

Acceptable Linearity performed: **4/7/2003**

Exam Data for Weld: **24RRC(2)B-8**

VALVE TO PIPE

Configuration:

OD **81° F** **225088**
Exam Surface: Exam Temp. Exam Thermometer

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
Axial	DNST	80.4	Yes	60°

Procedure: **PDI-UT-2/Site Specific**

Ver / Rev: **C/1** DRR: **N/A**

Search Unit Data

RTD **00-369** **2(15x25) mm/Rect.**
Manufacturer: Serial Number Size/Shape:
0.6 in. **60°** **60°**
Incident Point: Nominal Angle: Measured Angle:
2.0 MHz **TRL 2-Aust** **Long** **2**
Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 **6'** **0**
Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P **136P1106C031364**
Manufacturer/Model: Serial Number:
1.33 in. **0.231 in./usec.** **2** **4KHz**
Delay: Velocity: Filter: Rep Rate:
6.0 in. **250 ns** **500 Ohms**
Range: Pulser: Damping:
Off **2.25 MHz** **Dual**
Reject: Frequency: Mode:

Exam Comments / Limitations:

Exams performed at reference sensitivity to maintain 5% to 20% noise level.

No exam performed from upstream side due to valve configuration.

Reference attached indication report for examination results.

Actual Cal Block "T" is 1.410".

Exam Start: **2224** Exam End: **2255**

CB

Charles Barrett

II

Initials: Examiner:

Level:

N/A

N/A

Initials: Examiner 2:

Level:

Cal/Exam Date: **5/21/2003**

GE Reviewed By:

Level: Date:

Utility Reviewed By:

Date:

ANII Reviewed By:

Date:



GE NUCLEAR ENERGY

Ultrasonic Examination Indication Report

Data Report Number: R18-066

Cal / Data Sheet Number: UT-120

Site: Columbia Generating Station

Procedure: PDI-UT-2/Site Specific / C/1

Weld ID: 24RRC(2)B-8

Drawing: RRC-102-01

Size: 24" Thickness: 1.20"

Exam Start: 2224

Lo Location: Top Dead Center

Wo Location: Weld Centerline

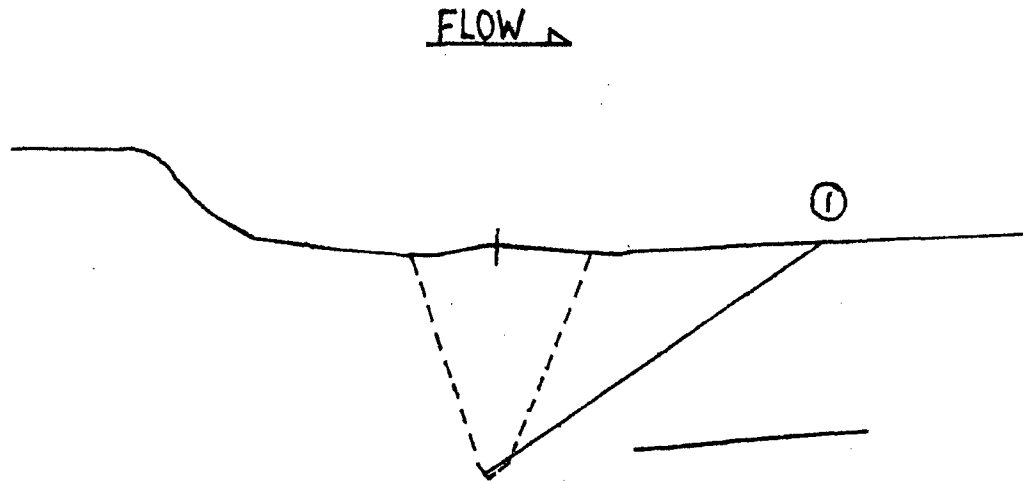
Weld Width: 1.0"

Weld Height: Flush

Exam End: 2255

Ind No.	Angle Used	% of DAC	Indication Length			W Distance			Metal Path			Ax / Circ	Upst / Dnst	Comments:
			L1	L Max	L 2	W1	W Max	W 2	MP 1	MP Max	MP 2			
1	60°	125	N/A	72.0"	N/A	N/A	1.75"	N/A	N/A	2.2"	N/A	Ax	Dnst	ID root geometry observed intermittently 360° throughout exam.

Sketch



Charles Barrett II 5/21/03
 Examiner Level: Date: 5/21/2003

[Signature] III 05/22/03
 GE Reviewed By: Level: Date:

[Signature] 5/25/03
 ANII Reviewed By: Date:

[Signature] 5/26/03
 ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: N/A

Report No.:

Project: 16423

R16-066

System: RRC

Component ID Number: 24RRC(2)B-8

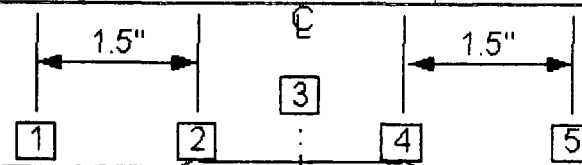
Position	0°	90°	180°	270°
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	1.20"	N/A	N/A	N/A
4	1.05"	N/A	N/A	N/A
5	1.03"	N/A	N/A	N/A

Crown Height: FLUSH

Crown Width: 1.0"

Nominal Diameter: 24.0"

Weld Length: 75.5"

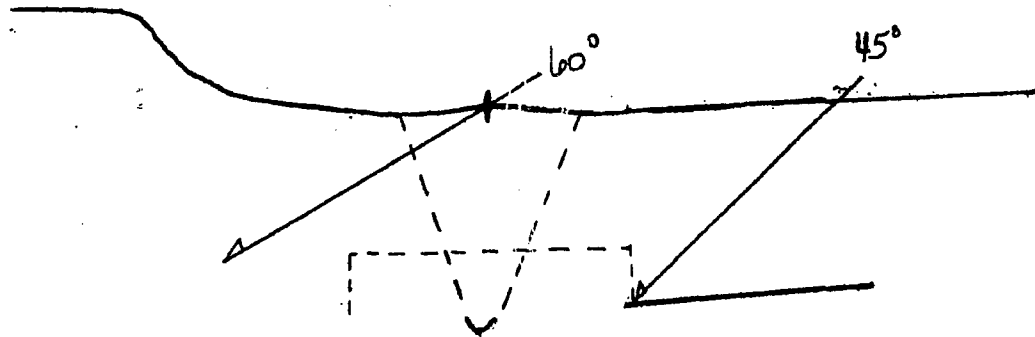


VALVE
UPST Component:

PIPE
DNST Component:

FLOW →

Flow →



Charles Barrett II 5/21/03
Initials: Examiner: Level: Date:

[Signature] III 05/22/03
GE Reviewed By: Level: Date:

[Signature] 5/25/03
Utility Reviewed By: Date:

[Signature] 5/26/03
ANII Reviewed By: Date:

**REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment**

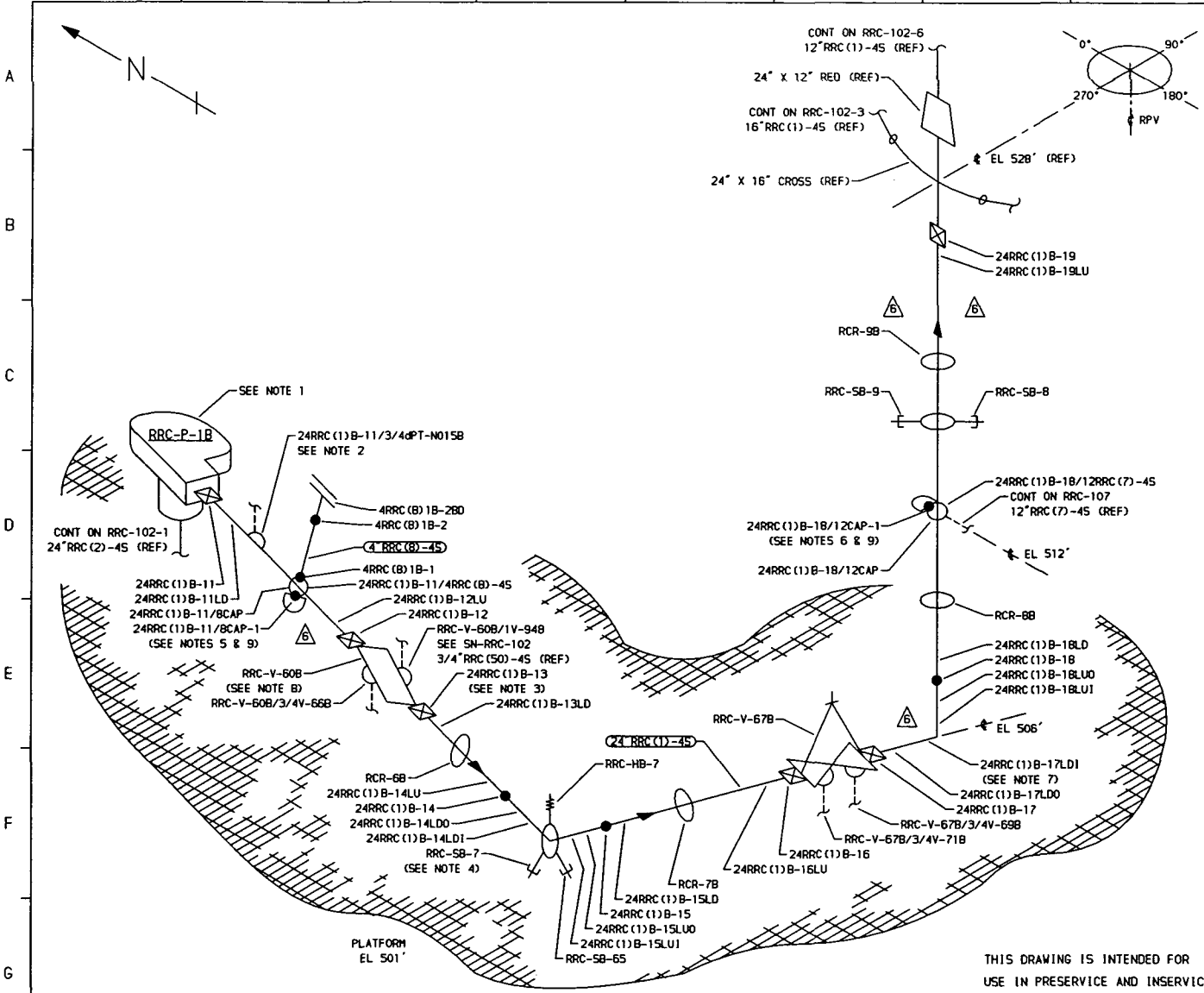
Attachment E

2ISI-32-16

Weld Identification 24RRC(1)B-10

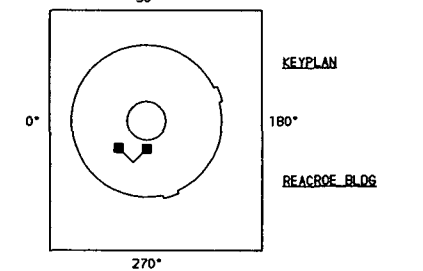
ISI Diagram RRC-101-2

NDE Data Report R16-064



- NOTES:**
1. SEE RRC-P-1B DETAIL, DWG RRC-103, FOR PUMP SUPPORT DETAILS.
 2. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-41d) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 3. ACCESS TO WELD 24RRC(1)B-13 REQUIRES REMOVAL OF RCR-6B.
 4. SPECIAL CLAMP WITH HB-7 & SB-7 ATTACHMENTS.
 5. WELD 24RRC(1)B-11/BCAP-1 IS FITTING TO FITTING.
 6. WELD 24RRC(1)B-18/12CAP-1 IS FITTING TO FITTING.
 7. WELD 24RRC(1)B-17 IS FITTING TO FITTINGS.
 8. RRC-V-60B HAS TWELVE (12) 2 3/4" X 15" BODY TO BONNET STUDS.
 9. CAP TO NOZZLE WELDS ARE CLAD ON THE ID IN THE WELD AREA. SEE REFERENCE DWGS 131 C 7588 & 131 C 7589.
 10. PIPING FROM PUMP DISCHARGE TO RRC-V-67B IS MIN WALL 1.21B. PIPING FROM RRC-V-76B TO WELD 24RRC(1)B-19 IS MIN WALL 1.140.
 11. RRC-SB-15, RRC-SB-17, RRC-SB-18 & RRC-SB-66 WERE DELETED PER BOC 87-0244-0J-026.

- REFERENCES:**
- 151 - 230-2
 - GENERAL ELECTRIC DRAWINGS
 - 761 E 424 REV 2
 - 762 E 538 SH 1 REV 3
 - 762 E 538 SH 2 REV 3
 - 761 E 735 REV 6
 - 131 C 7588 REV 3
 - 131 C 7589 REV 5
 - 131 C 7592 REV 3
 - CBI NUCLEAR CO.
 - 4B REV 4 N1 NOZZLE ASSEMBLY
 - BOVEE CRAIL/GERI
 - BC/6-218 REV 9



QUALITY CLASS, 1	ASME CODE CLASS, 1
ENGR, D TIMMINS	DRAWN, K-McA DATE, 3-30-78

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM
 RICHLAND, WASHINGTON 99352

WNP-2
 WELD & COMPONENT
 IDENTIFICATION DIAGRAM

TITLE: REACTOR RECIRCULATION LOOP B

DWG NO: RRC-102-2 REV 6

THIS DRAWING IS INTENDED FOR USE IN PRESERVICE AND INSERVICE INSPECTIONS PROGRAMS ONLY.

					PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
6	9-22-94	ADDED NOTE 11, MODIFIED ACCORDINGLY.	K-McA	DPR	DW						
5	12-9-92	ADDED "B" TO ALL RCR'S.	K-McA	DPR	DRW	24"RRC(1)-45	24	XXX	SEE NOTE 10	SA 358 GR 304 CL 1	SS UT-7
4	10-16-87	ADDED RRC-SB-66, 1" CONN & CONT AT RRC-V-60B. CHG RRC-HB-7 TO SPR, RRC-SB-B & RRC-SB-9 TO SMOOTHERS. MOD KEYPLAN. REDRAWN	K-McA	DPR	TFH	4"RRC(B)-45	4	80	0.337	SA 312 TP 304	SS UT-29
3	10-13-83	REVISED AS NOTED ADDED KEYPLAN	K-McA	DPR	TFH	CAP	12	80	0.688	SA 403 GR WP 304	SS UT-19
2	11-5-80	REVISED AS NOTED	K-McA	TFH	DWP	CAP	8	80	0.500	SA 403 GR WP 304	SS UT-26
NO	DATE	REVISION	BY	CHKD	APVD						



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.: R16-064

Site and Unit: **Columbia Generating Station** Component ID: **24RRC(2)B-10**

Outage: **R16** **ELL TO PUMP**

System: **RRC** ASME Cat.: **B-J** ASME Item **B9.11** Aug Requirements: **N/A**

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
45° Shear	UT-117	N/A	PDI-UT-2/Site Specific	UT-7	Dickey Michael	II	5/21/2003
60° Long	UT-118	N/A	PDI-UT-2/Site Specific	UT-7	Dickey Michael	II	5/21/2003

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no reportable indications were recorded utilizing the 45° and 60° search units.

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, no Addenda and the 1995 Edition, 1996 Addenda with modifications as stated in 10CFR50.55.

50% Code coverage was obtained.

Previous data was reviewed prior to this summary.

Examination results were compared to data report R-R8-127 from R-8 outage with No Change

These examinations were performed under Work Order: 01044925-01 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

Prepared By: <u>Dickey Michael</u>	Level: <u>II</u>	Date: <u>5-21-03</u>	Utility Reviewed By: <u>[Signature]</u>	Date: <u>5/23/03</u>
Reviewed By: <u>[Signature]</u>	Level: <u>III</u>	Date: <u>05/22/03</u>	ANII Reviewed By: <u>[Signature]</u>	Date: <u>5/24/03</u>



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station
Outage: R16

Data Report Number: R16-064
Data Sheet Number: UT-117
Linearity Sheet: L-04

Calibration Data for Block: UT-7

<u>SS</u>	<u>24"</u>	<u>1.140"</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>1918</u>
<u>Ultragel II</u>	<u>00325</u>		Cal Check:	<u>2204</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>225291</u>	<u>72° F</u>		Final Cal:	<u>2354</u>
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction: Ax
 Cal Reflector: ID Notch
 Signal Amplitude: 80%
 Signal Sweep: 5.1 Div
 Signal dB: 31.0 dB
 Sweep 0-10 = 4.0 in. Metal Path

Calibration Verification

Field Simulator Block S/N: CAL-RHOM-066

Reflector	<u>2" Radius</u>	<u>N/A</u>
Amplitude	<u>80%</u>	<u>N/A</u>
Gain (dB)	<u>19.4</u>	<u>N/A</u>
Sweep (SD)	<u>5.0</u>	<u>N/A</u>

Acceptable Linearity performed: 4/7/2003

Exam Data for Weld: 24RRC(2)B-10

ELL TO PUMP

Configuration:

OD 76° F 225291
 Exam Surface: Exam Temp. Exam Thermometer

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>Axial</u>	<u>UPST</u>	<u>45</u>	<u>NRI</u>	<u>45°</u>
<u>Circ</u>	<u>UPST</u>	<u>48</u>	<u>NRI</u>	<u>45°</u>

Procedure: PDI-UT-2/Site Specific

Ver / Rev: C/1 DRR: N/A

Search Unit Data

KBA 00H8Y3 0.50"/Round
 Manufacturer: Serial Number Size/Shape:
0.35 in. 45° 46°
 Incident Point: Nominal Angle: Measured Angle:
1.5 MHz Comp-G Shear 1
 Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 6' 0
 Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 707H
 Manufacturer/Model: Serial Number:
0.221 in. 0.126in./usec. 1 4KHz
 Delay: Velocity: Filter: Rep Rate:
4.0 in. 334 ns 500 Ohms
 Range: Pulser: Damping:
Off 2.25 MHz P/E
 Reject: Frequency: Mode:

Exam Comments / Limitations:

Exams performed to maintain 5% to 20% ID roll.

Previously recorded geometry observed below recordable levels.

No exam performed from downstream side due to component configuration.

Actual Cal Block "T" is 1.410".

Exam Start: 2205 Exam End: 2222

DEM Dickey Michael II
 Initials: Examiner: Level:

N/A N/A
 Initials: Examiner 2: Level:

Cal/Exam Date: 5/21/2003

[Signature] III 05/22/03
 GE Reviewed By: Level: Date:

[Signature] 5/23/03
 Utility Reviewed By: Date:

[Signature] 5/22/03
 ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: **Columbia Generating Station**
Outage: **R16**

Data Report Number: **R16-064**
Data Sheet Number: **UT-118**
Linearity Sheet: **L-04**

Calibration Data for Block: **UT-7**

SS	24"	1.140"	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	1924
Ultragel II	00325		Cal Check:	2223
Couplant:	Couplant batch		Cal Check:	N/A
225291	72° F		Final Cal:	2355
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction: **Ax**
 Cal Reflector: **ID Notch**
 Signal Amplitude: **80%**
 Signal Sweep: **5.2 Div**
 Signal dB: **64.0 dB**
 Sweep 0-10 = **5.0 in. Metal Path**

Calibration Verification

Field Simulator Block S/N: **CAL-RHOM-066**

Reflector	2" Radius	N/A
Amplitude	80%	N/A
Gain (dB)	33.4	N/A
Sweep (SD)	4.0	N/A

Acceptable Linearity performed : **4/7/2003**

Exam Data for Weld: **24RRC(2)B-10**

ELL TO PUMP

Configuration:

OD **76° F** **225291**
 Exam Surface: Exam Temp. Exam Thermometer

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
Axial	UPST	64	NR	60°

Procedure: **PDI-UT-2/Site Specific**

Ver / Rev: **C/1** DRR: **N/A**

Search Unit Data

RTD **00-407** **2(10x18) mm/Rect.**
 Manufacturer: Serial Number Size/Shape:
0.45 in. **60°** **60°**
 Incident Point: Nominal Angle: Measured Angle:
2.0 MHz **TRL 2-Aust** **Long** **2**
 Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 **6'** **0**
 Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P **707H**
 Manufacturer/Model: Serial Number:
1.08 in. **0.244in./usec.** **1** **4KHz**
 Delay: Velocity: Filter: Rep Rate:
5.0 in. **250 ns** **500 Ohms**
 Range: Pulser: Damping:
Off **2.25 MHz** **Dual**
 Reject: Frequency: Mode:

Exam Comments / Limitations:

Exams performed at reference sensitivity to maintain 5% to 20% noise level.

Previously recorded geometry observed below recordable levels.

No exam performed from downstream side due to component configuration.

Actual Cal Block "T" is 1.410".

Exam Start: **2224** Exam End: **2238**

DEM **Dickey Michael** **II**
 Initials: Examiner: Level:

N/A **N/A**
 Initials: Examiner 2: Level:

 Cal/Exam Date: **5/21/2003**

[Signature] **III** **05/22/03**
 GE Reviewed By: Level: Date:

[Signature] **5/23/03**
 Utility Reviewed By: Date:

[Signature] **5/24/03**
 ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: N/A

Report No.:

Project: 16423

R16-064

System: RRC

Component ID Number: 24RRC(2)B-10

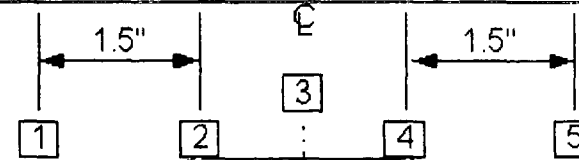
Position	0°	90°	180°	270°
1	N/A	N/A	1.58"	N/A
2	N/A	N/A	1.54"	N/A
3	N/A	N/A	1.44"	N/A
4	N/A	N/A	1.46"	N/A
5	N/A	N/A </td <td>N/A</td> <td>N/A</td>	N/A	N/A

Crown Height: .1"

Crown Width: 1.8"

Nominal Diameter: 24.0"

Weld Length: 77.5"

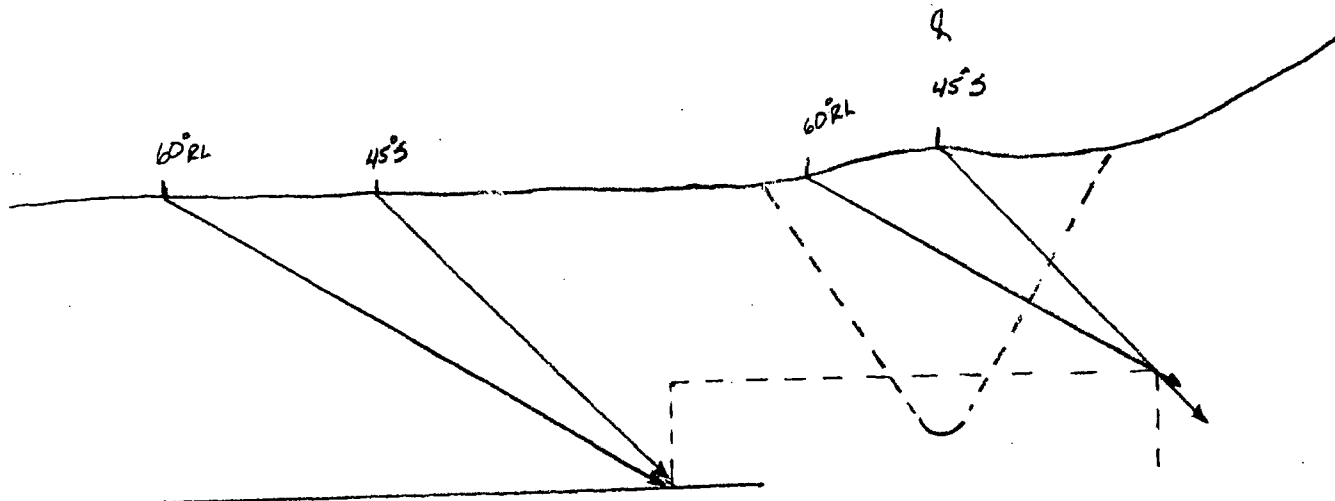


ELBOW
UPST Component:

PIPE
DNST Component:

→
FLOW

CONTOUR TAKEN FROM
PREVIOUS DATA.



DEM Dickey Michael II 5/21/03
Initials: Examiner: Level: Date:

Donald Math II 5/22/03
GE Reviewed By: Level: Date:

Don Math 5/23/03
Utility Reviewed By: Date:

A. M. Estro 5/24/03
ANII Reviewed By: Date:

REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

Attachment F

2ISI-32-17

Weld Identification 24RRC(2)B-11/8CAP-1

ISI Diagram RRC-101-2

NDE Data Report R17-014

2ISI-32-18

Weld Identification 24RRC(2)B-11/4RRC(4)-4S

ISI Diagram RRC-101-2

NDE Data Report R16-058

2ISI-32-19

Weld Identification 24RRC(2)B-8/4RRC(8)-4S

ISI Diagram RRC-101-1

NDE Data Report R16-068

2ISI-32-20

Weld Identification 24RRC(2)B-8/4RRC(4)-4S

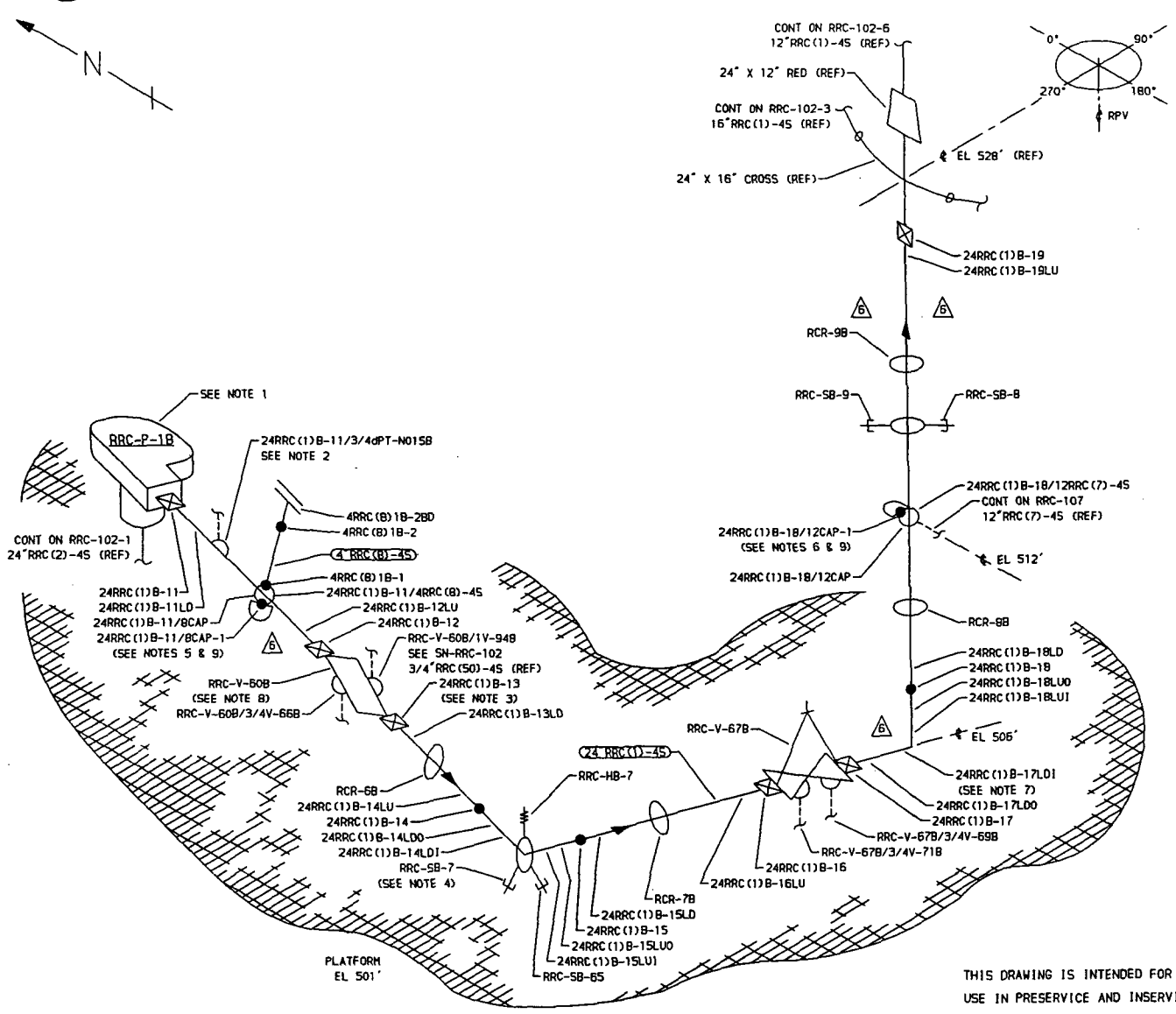
ISI Diagram RRC-101-1

NDE Data Report R16-067

**REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment**

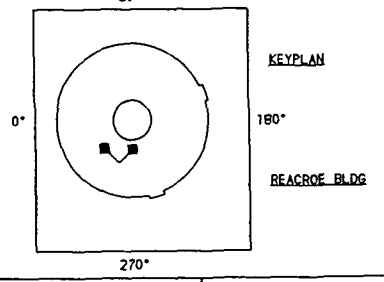
2ISI-32-17

A
B
C
D
E
F
G
H



- NOTES:**
1. SEE RRC-P-1B DETAIL, DWG RRC-103, FOR PUMP SUPPORT DETAILS.
 2. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-41d) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 3. ACCESS TO WELD 24RRC(1)B-13 REQUIRES REMOVAL OF RCR-6B.
 4. SPECIAL CLAMP WITH HB-7 & SB-7 ATTACHMENTS.
 5. WELD 24RRC(1)B-11/BCAP-1 IS FITTING TO FITTING.
 6. WELD 24RRC(1)B-18/12CAP-1 IS FITTING TO FITTING.
 7. WELD 24RRC(1)B-17 IS FITTING TO FITTING.
 8. RRC-V-60B HAS TWELVE (12) 2 3/4" X 15" BODY TO BONNET STUDS.
 9. CAP TO NOZZLE WELDS ARE CLAD ON THE ID IN THE WELD AREA. SEE REFERENCE DWGS 131 C 75BB & 131 C 75B9.
 10. PIPING FROM PUMP DISCHARGE TO RRC-V-67B IS MIN WALL 1.21B. PIPING FROM RRC-V-76B TO WELD 24RRC(1)B-19 IS MIN WALL 1.140.
 11. RRC-SB-15, RRC-SB-17, RRC-SB-18 & RRC-SB-66 WERE DELETED PER BDC 87-0244-OJ-026.

- REFERENCES:**
- ISI - 230-2
- GENERAL ELECTRIC DRAWINGS
- 761 E 424 REV 2
 - 762 E 538 SH 1 REV 3
 - 762 E 538 SH 2 REV 3
 - 761 E 735 REV 6
 - 131 C 7588 REV 3
 - 131 C 7589 REV 5
 - 131 C 7592 REV 3
- CBI NUCLEAR CO.
- 4B REV 4 NI NOZZLE ASSEMBLY
- BOVEE CRAIL/GERI
- BC/G-21B REV 9



QUALITY CLASS.	1	ASME CODE CLASS.	1
ENGR.	D TIMMINS	DRAWN.	K-McA
DATE:	3-30-78		

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM
RICHLAND, WASHINGTON 99352

WNP-2
WELD & COMPONENT
IDENTIFICATION DIAGRAM

TITLE:
REACTOR RECIRCULATION LOOP B

DWG NO: RRC-102-2
REV 6

NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
6	9-22-94	ADDED NOTE 11, MODIFIED ACCORDINGLY.	K-McA	DPR	DW							
5	12-9-92	ADDED 'B' TO ALL RCR'S.	K-McA	DPR	DRW	24"RRC(1)-45	24	XXX	SEE NOTE 10	SA 358 GR 304 CL 1	SS	UT-7
4	10-16-87	ADDED RRC-SB-66, 1" CONN & CONT AT RRC-V-60B. CHG RRC-HB-7 TO SPR, RRC-SB-8 & RRC-SB-9 TO SHARBERS. MOD KEYPLAN. REDRAWN	K-McA	DPR	TFH	4"RRC(8)-45	4	80	0.337	SA 312 TP 304	SS	UT-29
3	10-13-83	REVISED AS NOTED ADDED KEYPLAN	K-McA	DPR	TFH	CAP	12	80	0.688	SA 403 GR WP 304	SS	UT-19
2	11-5-80	REVISED AS NOTED	K-McA	TFH	DWP	CAP	8	80	0.500	SA 403 GR WP 304	SS	UT-26



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.: R17-014

Site: Columbia Generating Station Component ID: 24RRC(1)B-11/8CAP-1

Outage: R17 SWL TO CAP

System REACTOR RECIRC LOOP B ASME Cat.: B-J A ASME Item B9.31 Aug Req N/A

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
60° RL	UT-037	N/A	GE-UT-105	8746	James Bullen	II	5/12/2005
45° Long.	UT-038	N/A	GE-UT-105	8746	James Bullen	II	5/12/2005

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no reportable indications were recorded utilizing 45° and 60° refracted longitudinal wave search units.

This examination meets the requirements of ASME Section XI 1989 and 1995 Edition with the 1996 Addenda.

50% Code coverage was achieved.

Examination results were compared to data report N/A from N/A outage with No Change

These examinations were performed under Work Order: 01082497 01 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

Prepared By: [Signature] Level: III Date: 5/16/05 Utility Review: [Signature] Date: 5/16/05

GE Review By: [Signature] Level: III Date: 5-16-05 ANII Review: [Signature] Date: 5/16/05

RWP: N/A
Dose: N/A mr.



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: **Columbia Generating Station / 2**
Outage: **R17**

Report Number: **R17-014**
Data Sheet Number: **UT-037**
Linearity Sheet: **L-002**

Calibration Data for Block: **8746**

Procedure: **GE-UT-105**

Ver / Rev: **6** DRR: **N/A**

SS304	N/A	0.50" to 2.0"	Calibration	Cal Time
Material	Size	Thickness	Initial Cal:	1022
Ultracel II	00325		Cal Check:	N/A
Couplant:	Couplant batch		Cal Check:	N/A
241980	78° F		Final Cal:	1340
Thermometer S/N	Cal Temp.			

Search Unit Data

RTD **04-304** **2(10x18) mm/Rect.**
 Manufacturer: Serial Number Size/Shape:

0.5 in. **60°** **60°**
 Incident Point: Nominal Angle: Measured Angle:

2.0 MHz **60°TRL 2-Aust** **RL** **2**
 Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 **6'** **0**
 Cable Type: Length: Connectors:

Instrument Settings

Panametrics / Epoch 4 **031573011**
 Manufacturer/Model: Serial Number:

11.88 us **0.2334 in/usec** **0.8 - 3.0 MHz**
 Zero: Velocity: Narrowband Filter:

Auto **Fullwave** **4.0 in** **Sq. / Max**
 Rep Rate: Rectification: Range: Pulser/Energy:

400 Ohms **Off** **2.0 MHz** **P/E**
 Damping: Reject: Frequency: Mode:

DAC Construction

Scan Direction **Ax**
 Cal Reflector **1.0**
 Signal Amplitude **80%**
 Signal Sweep: **4.5 Div**
 Signal dB: **36.8 dB**
 Sweep 0-10 = **4.0 in** **Metal Path**

Calibration Verification

Field Simulator Block S/N: **N/A**

Reflector	N/A	N/A
Amplitude	N/A	N/A
Gain (dB)	N/A	N/A
Sweep (SD)	N/A	N/A

Acceptable Linearity performed : **4/18/2005**

Exam Comments / Limitations:

Exams performed to maintain 5% to 20% noise level.

No exam performed from upstream side due to component configuration.

Achieved 50% Code coverage.

Exam Data for Weld: **24RRC(1)B-11/8CAP-1**

SWL TO CAP

Configuration:

OD **82° F** **241980**
 Exam Surface: Exam Temp. Exam Thermometer

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
Ax	Dnst	42.8	NRI	60°

Exam Start: **1210** Exam End: **1220**

James Bullen **II**
 Initials: Examiner: Level:

5/16/05
 GE Reviewed By: Level: Date:

N/A **N/A**
 Initials: Examiner 2: Level:

5/16/05
 Utility Review: Date:

Initial Cal/Exam Date: **5/12/2005**

5/16/05
 ANII Review: Date:



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: **Columbia Generating Station / 2**
Outage: **R17**

Report Number: **R17-014**
Data Sheet Number: **UT-038**
Linearity Sheet: **L-002**

Calibration Data for Block: **8746**

Procedure: **GE-UT-105**

Ver / Rev: **6** DRR: **N/A**

SS304	N/A	0.50" to 2.0"	Calibration	Cal Time
Material	Size	Thickness	Initial Cal:	1020
Ultraquel II	00325		Cal Check:	N/A
Couplant:	Couplant batch		Cal Check:	N/A
241980	78° F		Final Cal:	1342
Thermometer S/N	Cal Temp.			

Search Unit Data

RTD **98-228** **2(10x18) mm/Rect**
 Manufacturer: Serial Number Size/Shape:

0.5 in. **45°** **45°**
 Incident Point: Nominal Angle: Measured Angle:

1.0 MHz **45°TRL 1-Aust** **Long.** **2**
 Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 **6'** **0**
 Cable Type: Length: Connectors:

Instrument Settings

Panametrics / Epoch 4 **031573011**
 Manufacturer/Model: Serial Number:

10.09 µs **0.2316 in/µsec** **0.8 - 3.0 MHz**
 Zero: Velocity: Narrowband Filter:

Auto **Fullwave** **2.0 in** **Sq. / Max**
 Rep Rate: Rectification: Range: Pulser/Energy:

400 Ohms **Off** **1.0 MHz** **P/E**
 Damping: Reject: Frequency: Mode:

DAC Construction

Scan Direction **Ax**

Cal Reflector **1.0**

Signal Amplitude **80%**

Signal Sweep: **5.0 Div**

Signal dB: **38.1 dB**

Sweep 0-10 = **2.0 in** **Metal Path**

Calibration Verification

Field Simulator Block S/N: **N/A**

Reflector	N/A	N/A
Amplitude	N/A	N/A
Gain (dB)	N/A	N/A
Sweep (SD)	N/A	N/A

Acceptable Linearity performed : **4/18/2005**

Exam Comments / Limitations:

Exams performed to maintain 5% to 20% noise level.

No exam performed upstream side due to component configuration.

Achieved 50% code coverage.

Exam Data for Weld: **24RRC(1)B-11/8CAP-1**

SWL TO CAP

Configuration:

OD **82° F** **241980**
 Exam Surface: Exam Temp. Exam Thermometer

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
Circ	Upst	44.1	NRI	45°
Circ	Dnst	44.1	NRI	45°

Exam Start: **1224** Exam End: **1232**

James Bullen **II**
 Initials: Examiner: Level:

N/A **N/A**
 Initials: Examiner 2: Level:

Initial Cal/Exam Date: **5/12/2005**

JWS **II** **5/14/05**
 GE Reviewed By: Level: Date:

PO **5/16/05**
 Utility Review: Date:

DE **5/16/05**
 ANII Review: Date:



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: 2

Report No.:

Project: 16423

R17-014

System: REACTOR RECIRC LOOP B

Component ID Number: 24RRC(1)B-11/8CAP-1

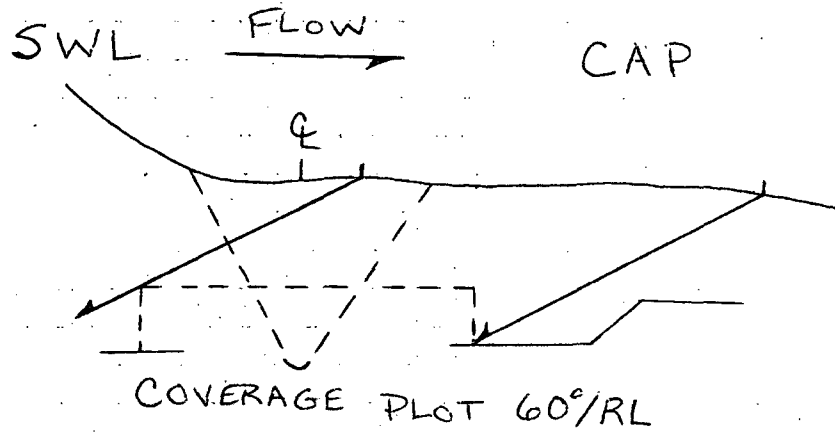
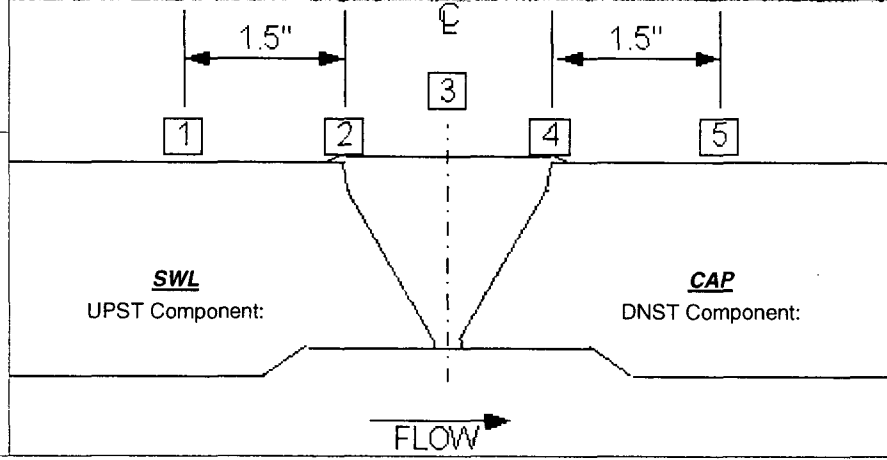
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2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	1
4	N/A	N/A	N/A	0.84
5	N/A	N/A	N/A	0.6

Crown Height: FLUSH

Crown Width: 1.3"

Nominal Diameter: 8.0"

Weld Length: 27.5"



JB James Bullen II 5/12/2005
 Initials: Drawn by: Level: Date:

JWS 5/16/05
 GE Reviewed By: Level: Date:

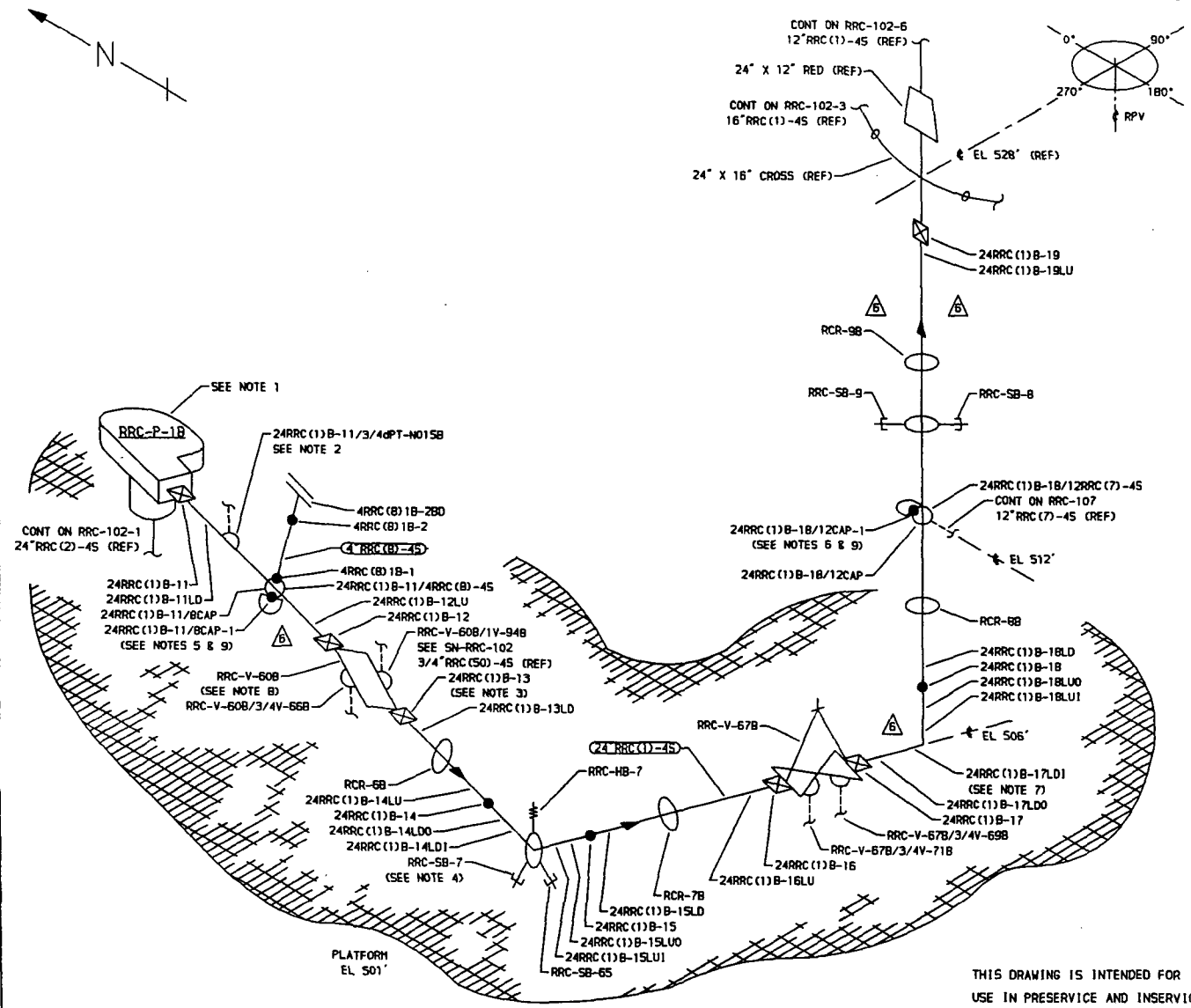
[Signature] 5/16/05
 Utility Review: Date:

[Signature] 5/16/05
 ANIT Review: Date:

**REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment**

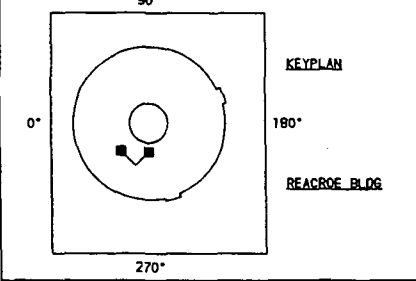
2ISI-32-18

A
B
C
D
E
F
G
H



- NOTES.**
1. SEE RRC-P-18 DETAIL, DWG RRC-103, FOR PUMP SUPPORT DETAILS.
 2. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-410) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 3. ACCESS TO WELD 24RRC(1)B-13 REQUIRES REMOVAL OF RCR-68.
 4. SPECIAL CLAMP WITH HB-7 & SB-7 ATTACHMENTS.
 5. WELD 24RRC(1)B-11/BCAP-1 IS FITTING TO FITTING.
 6. WELD 24RRC(1)B-18/12CAP-1 IS FITTING TO FITTING.
 7. WELD 24RRC(1)B-17 IS FITTING TO FITTING.
 8. RRC-V-608 HAS TWELVE (12) 2 3/4" X 15" BODY TO BONNET STUDS.
 9. CAP TO NOZZLE WELDS ARE CLAD ON THE ID IN THE WELD AREA. SEE REFERENCE DWGS 131 C 7588 & 131 C 7589.
 10. PIPING FROM PUMP DISCHARGE TO RRC-V-678 IS MIN WALL 1.218. PIPING FROM RRC-V-76B TO WELD 24RRC(1)B-19 IS MIN WALL 1.140.
 11. RRC-SB-15, RRC-SB-17, RRC-SB-18 & RRC-SB-65 WERE DELETED PER BDC 07-0244-OJ-026.

- REFERENCES.**
- ISI - 230-2
GENERAL ELECTRIC DRAWINGS
761 E 424 REV 2
762 E 538 SH 1 REV 3
762 E 538 SH 2 REV 3
761 E 735 REV 6
131 C 7588 REV 3
131 C 7589 REV 5
131 C 7592 REV 3
- CBI NUCLEAR CO.
4B REV 4 NI NOZZLE ASSEMBLY
BOVEE CRAIL/GERI
BC/G-218 REV 9



QUALITY CLASS, 1	ASME CODE CLASS, 1
ENGR, D TIMMINS	DRAWN, K-McA DATE, 3-30-78

WASHINGTON PUBLIC POWER
SUPPLY SYSTEM
RICHLAND, WASHINGTON 99352

WNP-2
WELD & COMPONENT
IDENTIFICATION DIAGRAM

TITLE: REACTOR RECIRCULATION LOOP B

DWG NO: RRC-102-2 REV 6

THIS DRAWING IS INTENDED FOR
USE IN PRESERVICE AND INSERVICE
INSPECTIONS PROGRAMS ONLY.

NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
6	9-22-94	ADDED NOTE 11, MODIFIED ACCORDINGLY.	K-McA	DPR	DW	24" RRC(1)-45	24	XXX	SEE NOTE 10	SA 358 GR 304 CL 1	SS	UT-7
5	12-9-92	ADDED 'B' TO ALL RCR'S.	K-McA	DPR	DRW	4" RRC(8)-45	4	80	0.337	SA 312 TP 304	SS	UT-29
4	10-16-87	ADDED RRC-SB-8, 1" CONN & CONT AT RRC-V-608. CHG RRC-HB-7 TO SPR. RRC-SB-8 & RRC-SB-9 TO SUBBERS. ADD KEYPLAN. RESUBM.	K-McA	DPR	TFH	CAP	12	80	0.688	SA 403 GR WP 304	SS	UT-19
3	10-13-83	REVISED AS NOTED ADDED KEYPLAN	K-McA	DPR	TFH	CAP	8	80	0.500	SA 403 GR WP 304	SS	UT-26
2	11-5-80	REVISED AS NOTED	K-McA	TFH	DWP	CAP						



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.: R16-058

Site and Unit: **Columbia Generating Station** Component ID: **24RRC(1)B-11/4RRC(8)-4S**

Outage: **R16** **PIPE TO SWL**

System: **RRC** ASME Cat.: **B-J** ASME Item **B9.31** Aug Requirements: **N/A**

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
45° Shear	UT-069	N/A	PDI-UT-2/Site Specific	UT-7	Dickey Michael	II	5/19/2003
60° Long	UT-070	N/A	PDI-UT-2/Site Specific	UT-7	Dickey Michael	II	5/19/2003

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no reportable indications were recorded utilizing the 45° and 60° search units.

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, no Addenda and the 1995 Edition, 1996 Addenda with modifications as stated in 10CFR50.55.

50% Code coverage was obtained.

Previous data was reviewed prior to this summary.

Examination results were compared to data report 1RRU-079 from R-1 outage with No Change

These examinations were performed under Work Order: 01044925-01 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

<u>Dickey Michael</u>	<u>II</u>	<u>5-19-03</u>	<u>[Signature]</u>	<u>5/23/03</u>
Prepared By:	Level:	Date:	Utility Reviewed By:	Date:
<u>[Signature]</u>	<u>III</u>	<u>05/20/03</u>	<u>[Signature]</u>	<u>5/21/03</u>
Reviewed By:	Level:	Date:	ANII Reviewed By:	Date:



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station
Outage: R16

Data Report Number: R16-058
Data Sheet Number: UT-069
Linearity Sheet: L-04

Calibration Data for Block: UT-7

<u>SS</u>	<u>24"</u>	<u>1.140"</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>2154</u>
<u>Ultragel II</u>	<u>00325</u>		Cal Check:	<u>2352</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>225291</u>	<u>72° F</u>		Final Cal:	<u>0028</u>
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction: Ax
 Cal Reflector: ID Notch
 Signal Amplitude: 80%
 Signal Sweep: 5.1 Div
 Signal dB: 32.2 dB
 Sweep 0-10 = 4.0 in. Metal Path

Calibration Verification

Field Simulator Block S/N: CAL-RHOM-066

Reflector	<u>2" Radius</u>	<u>N/A</u>
Amplitude	<u>80%</u>	<u>N/A</u>
Gain (dB)	<u>20.4</u>	<u>N/A</u>
Sweep (SD)	<u>5.0</u>	<u>N/A</u>

Acceptable Linearity performed: 4/7/2003

Exam Data for Weld: 24RRC(1)B-11/4RRC(8)-4S

PIPE TO SWL

Configuration:

OD 72° F 225291
 Exam Surface: Exam Temp. Exam Thermometer

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>Axial</u>	<u>UPST</u>	<u>44.2</u>	<u>NRI</u>	<u>46°</u>
<u>Circ</u>	<u>UPST</u>	<u>46.2</u>	<u>NRI</u>	<u>46°</u>

Procedure: PDI-UT-2/Site Specific

Ver / Rev: C/1 DRR: N/A

Search Unit Data

KBA 00HBY3 0.50"/Round
 Manufacturer: Serial Number Size/Shape:
0.35 in. 45° 46°
 Incident Point: Nominal Angle: Measured Angle:
1.5 MHz Comp-G Shear 1
 Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 6' 0
 Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 707H
 Manufacturer/Model: Serial Number:
0.279 in. 0.126in./usec. 1 4KHz
 Delay: Velocity: Filter: Rep Rate:
4.0 in. 334 ns 500 Ohms
 Range: Pulser: Damping:
Off 2.25 MHz PIE
 Reject: Frequency: Mode:

Exam Comments / Limitations:

Exams performed to maintain 5% to 20% ID roll.
 ID geometry observed below recordable levels.
 No exam performed from downstream side due to component configuration.

Actual Cal Block "T" is 1.410."

Exam Start: 2353 Exam End: 0004

DEM Dickey Michael II
 Initials: Examiner: Level:

N/A N/A
 Initials: Examiner 2: Level:

Cal/Exam Date: 5/19/2003

[Signature] III 05/20/03
 GE Reviewed By: Level: Date:

[Signature] 5/23/03
 Utility Reviewed By: Date:

[Signature] 5/24/03
 ANII Reviewed By: Date:



GE NUCLEAR ENERGY

**Ultrasonic Calibration and Examination Record
Manual Piping and Components**

Site/Unit: Columbia Generating Station
Outage: R16

Data Report Number: R16-058
Data Sheet Number: UT-070
Linearity Sheet: L-04

Calibration Data for Block: UT-7

<u>SS</u>	<u>24"</u>	<u>1.140"</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>2136</u>
<u>Ultragel II</u>	<u>00325</u>		Cal Check:	<u>0005</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>225291</u>	<u>72° F</u>		Final Cal:	<u>0030</u>
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction: Ax
Cal Reflector: ID Notch
Signal Amplitude: 80%
Signal Sweep: 5.2 Div
Signal dB: 71.0 dB
Sweep 0-10 = 5.0 in. Metal Path

Calibration Verification

Field Simulator Block S/N: CAL-RHOM-066

Reflector	<u>2" Radius</u>	<u>N/A</u>
Amplitude	<u>80%</u>	<u>N/A</u>
Gain (dB)	<u>40.0</u>	<u>N/A</u>
Sweep (SD)	<u>4.0</u>	<u>N/A</u>

Acceptable Linearity performed: 4/7/2003

Exam Data for Weld: 24RRC(1)B-11/4RRC(8)-4S

PIPE TO SWL

Configuration:

OD 72° F 225291
Exam Surface: Exam Temp. Exam Thermometer

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>Axial</u>	<u>UPST</u>	<u>71</u>	<u>NRI</u>	<u>60°</u>

Procedure: PDI-UT-2/Site Specific

Ver / Rev: C/1 DRR: N/A

Search Unit Data

RTD 00-407 2(10x18) mm/Rect.
Manufacturer: Serial Number Size/Shape:
0.45 in. 60° 60°
Incident Point: Nominal Angle: Measured Angle:
2.0 MHz TRL 2-Aust Long 2
Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 6' 0
Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 707H
Manufacturer/Model: Serial Number:
1.08 in. 0.24in/µsec. 1 4KHz
Delay: Velocity: Filter: Rep Rate:
5.0 in. 250 ns 500 Ohms
Range: Pulser: Damping:
Off 2.25 MHz Dual
Reject: Frequency: Mode:

Exam Comments / Limitations:

Exams performed at reference sensitivity to maintain 5% to 20% noise level.
Supplemental 60° RL examination due to single side access
No exam performed from downstream side due to component configuration.
Actual Cal Block "T" is 1.410."

Exam Start: 0006 Exam End: 0015

DEM Dickey Michael II
Initials: Examiner: Level:

N/A N/A
Initials: Examiner 2: Level:

Cal/Exam Date: 5/19/2003

[Signature] III 05/20/03
GE Reviewed By: Level: Date:

[Signature] 5/23/03
Utility Reviewed By: Date:

[Signature] 5/24/03
ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: N/A

Report No.:

Project: 16423

R16-058

System: RRC

Component ID Number: 24RRC(1)B-11/4RRC(8)-4S

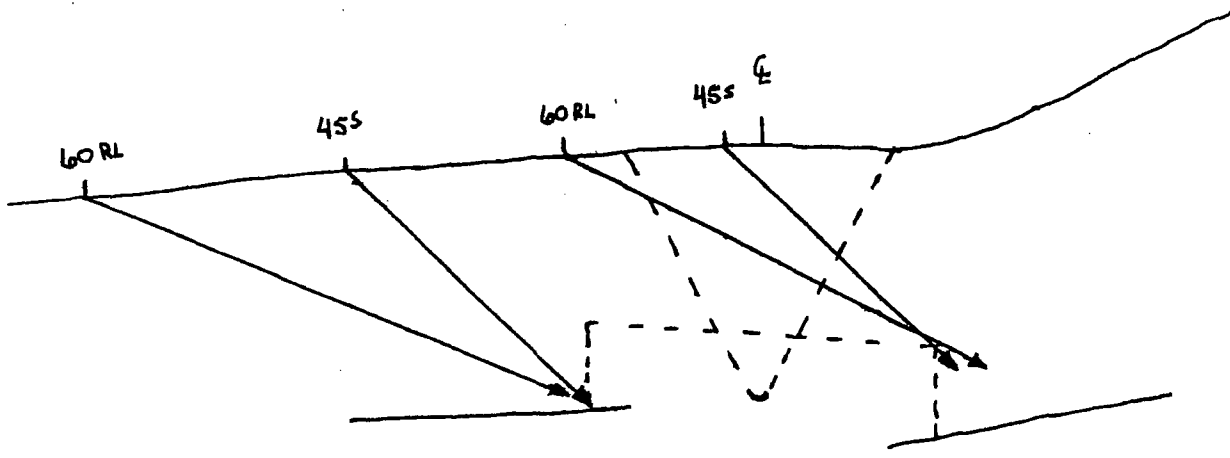
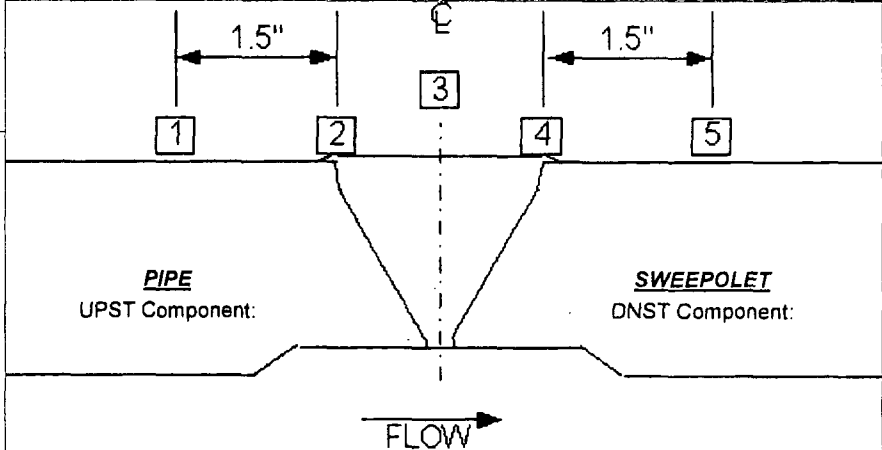
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2	1.3"	N/A	N/A	N/A
3	1.3"	N/A	N/A	N/A
4	1.55"	N/A	N/A	N/A
5	1.85"	N/A	N/A	N/A

Crown Height: FLUSH

Crown Width: 1.4"

Nominal Diameter: 24.0"

Weld Length: 48.0"



DEM Dickey Michael II 5/19/03

Initials: Examiner: Level: Date:

[Signature] III 05/20/03

GE Reviewed By: Level: Date:

[Signature] 5/23/03

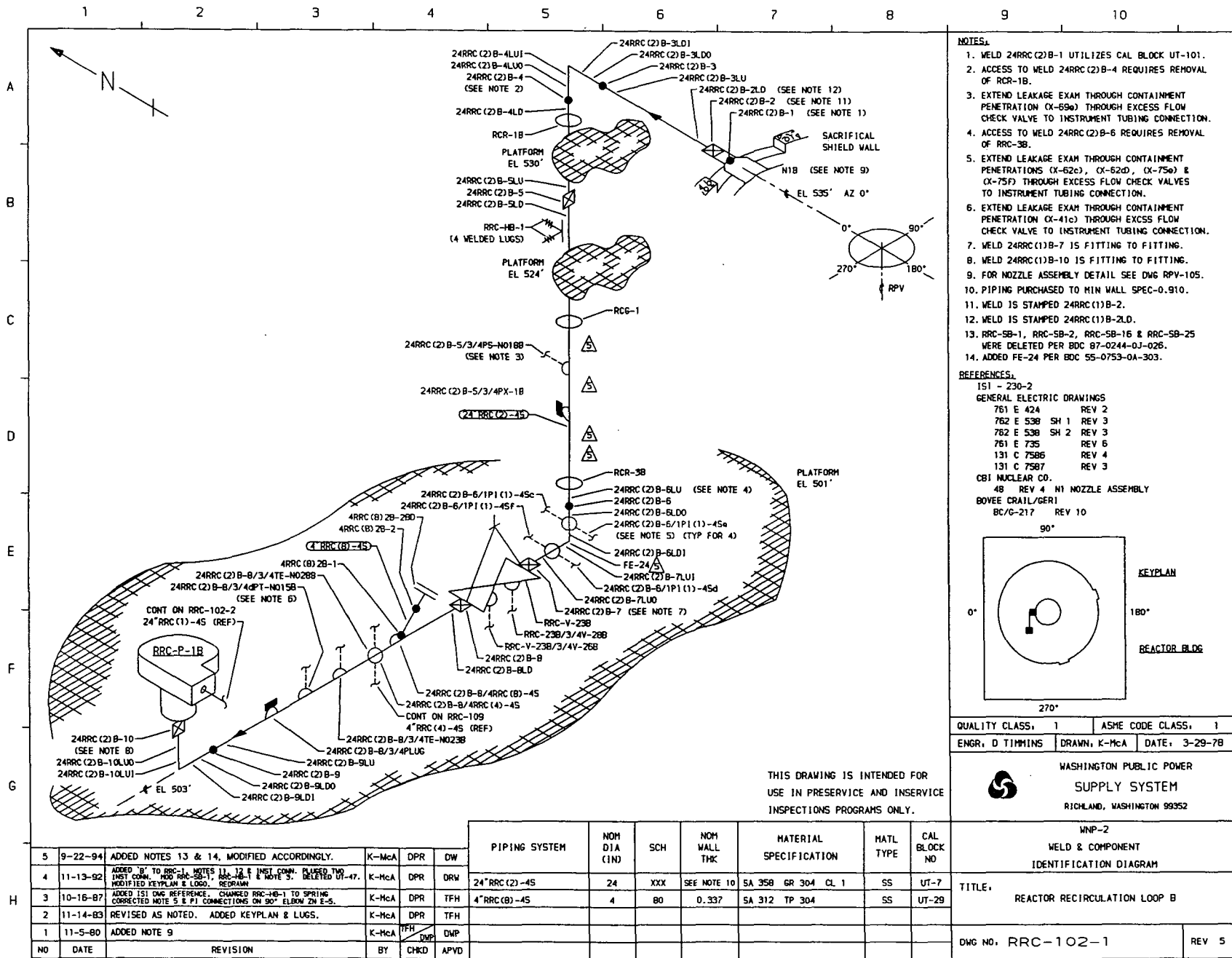
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[Signature] 5/24/03

ANII Reviewed By: Date:

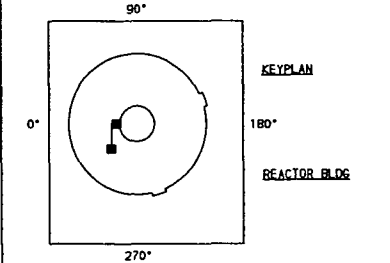
REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-19




- NOTES:**
1. WELD 24RRC(2)B-1 UTILIZES CAL BLOCK UT-101.
 2. ACCESS TO WELD 24RRC(2)B-4 REQUIRES REMOVAL OF RCR-1B.
 3. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-69a) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 4. ACCESS TO WELD 24RRC(2)B-6 REQUIRES REMOVAL OF RRC-3B.
 5. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATIONS (X-62c), (X-62d), (X-75a) & (X-75f) THROUGH EXCESS FLOW CHECK VALVES TO INSTRUMENT TUBING CONNECTION.
 6. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-41c) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 7. WELD 24RRC(1)B-7 IS FITTING TO FITTING.
 8. WELD 24RRC(1)B-10 IS FITTING TO FITTING.
 9. FOR NOZZLE ASSEMBLY DETAIL SEE DWG RPV-105.
 10. PIPING PURCHASED TO MIN WALL SPEC-0.910.
 11. WELD IS STAMPED 24RRC(1)B-2.
 12. WELD IS STAMPED 24RRC(1)B-2LD.
 13. RRC-SB-1, RRC-SB-2, RRC-SB-16 & RRC-SB-25 WERE DELETED PER BDC 87-0244-0J-026.
 14. ADDED FE-24 PER BDC 55-0753-0A-303.

- REFERENCES:**
- ISI - 230-2
 GENERAL ELECTRIC DRAWINGS
 761 E 424 REV 2
 762 E 538 SH 1 REV 3
 762 E 538 SH 2 REV 3
 761 E 735 REV 6
 131 C 7586 REV 4
 131 C 7587 REV 3
 CBI NUCLEAR CO.
 48 REV 4 N1 NOZZLE ASSEMBLY
 BOVEE CRAIL/GERI
 BC/G-217 REV 10



QUALITY CLASS, 1	ASME CODE CLASS, 1
ENGR, D TIMMINS	DRAWN, K-McA DATE, 3-29-78



**WASHINGTON PUBLIC POWER
 SUPPLY SYSTEM**
 RICHLAND, WASHINGTON 99352

THIS DRAWING IS INTENDED FOR
 USE IN PRESERVICE AND INSERVICE
 INSPECTIONS PROGRAMS ONLY.

NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
5	9-22-94	ADDED NOTES 13 & 14, MODIFIED ACCORDINGLY.	K-McA	DPR	DW							
4	11-13-92	ADDED 'B' TO RRC-1, NOTES 11, 12 & INST CONN. PLUSED TWO INST CONN. FOR RRC-SB-1, RRC-SB-1 & NOTE 3. DELETED UT-47. MODIFIED KEYPLAN & LOGS. REDRAWN	K-McA	DPR	DRW	24" RRC(2)-4S	24	XXX	SEE NOTE 10	SA 358 GR 304 CL 1	SS	UT-7
3	10-16-87	ADDED 1ST DWG REFERENCE. CHANGED RRC-HB-1 TO SPRING CORRECTED NOTE 5 & P1 CONNECTIONS ON 30" ELBOW ZN E-5.	K-McA	DPR	TFH	4" RRC(B)-4S	4	B0	0.337	SA 312 TP 304	SS	UT-29
2	11-14-83	REVISED AS NOTED. ADDED KEYPLAN & LUGS.	K-McA	DPR	TFH							
1	11-5-80	ADDED NOTE 9	K-McA	TFH	DWP							

WNP-2 WELD & COMPONENT IDENTIFICATION DIAGRAM	
TITLE:	REACTOR RECIRCULATION LOOP B
DWG NO.	RRC-102-1
	REV 5



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.: R16-068

Site and Unit: **Columbia Generating Station** Component ID: **24RRC(2)B-8/4RRC(8)-4S**

Outage: **R16** **PIPE TO SWL**

System: **RRC** ASME Cat.: **B-J** ASME Item **B9.31** Aug Requirements: **N/A**

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
45° Shear	UT-113	N/A	PDI-UT-2/Site Specific	UT-7	Michael Kemp	II	5/21/2003
60° Long	UT-114	N/A	PDI-UT-2/Site Specific	UT-7	Michael Kemp	II	5/21/2003

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no reportable indications were recorded utilizing the 45° and 60° search units.

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, no Addenda and the 1995 Edition, 1996 Addenda with modifications as stated in 10CFR50.55.

50% Code coverage was obtained.

Previous data was reviewed prior to this summary.

Examination results were compared to data report 1RRU-082 from R-1 outage with No Change

These examinations were performed under Work Order: 01044925-01 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

Prepared By: Michael Kemp Level: II Date: 5/22/03 Utility Reviewed By: [Signature] Date: 5/23/03
 Reviewed By: [Signature] Level: III Date: 05/22/03 ANII Reviewed By: [Signature] Date: 5/24/03



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station
Outage: R16

Data Report Number: R16-068
Data Sheet Number: UT-113
Linearity Sheet: L-12

Calibration Data for Block: UT-7

<u>SS</u>	<u>24"</u>	<u>1.140"</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>2047</u>
<u>Ultragel II</u>	<u>00325</u>		Cal Check:	<u>0030</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>225046</u>	<u>80° F</u>		Final Cal:	<u>0146</u>
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction	<u>Ax</u>	<u>Ax</u>
Cal Reflector	<u>ID Notch</u>	<u>OD Notch</u>
Signal Amplitude	<u>80%</u>	<u>15%</u>
Signal Sweep:	<u>5.1 Div</u>	<u>10.0 Div</u>
Signal dB:	<u>29.8 dB</u>	<u>29.8 dB</u>
Sweep 0-10 =	<u>4.0 in.</u>	<u>Metal Path</u>

Calibration Verification

Field Simulator Block S/N: CAL-RHOM-069

Reflector	<u>1" Radius</u>	<u>2" Radius</u>
Amplitude	<u>80%</u>	<u>60%</u>
Gain (dB)	<u>22.0</u>	<u>22.0</u>
Sweep (SD)	<u>2.5</u>	<u>5.0</u>

Acceptable Linearity performed : 5/5/2003

Exam Data for Weld: 24RRC(2)B-8/4RRC(8)-4S

PIPE TO SWL

Configuration:

OD 78° F 225046
Exam Surface: Exam Temp. Exam Thermometer

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>Axial</u>	<u>UPST</u>	<u>43.8</u>	<u>NRI</u>	<u>45°</u>
<u>Circ</u>	<u>UPST</u>	<u>43.8</u>	<u>NRI</u>	<u>45°</u>

Procedure: PDI-UT-2/Site Specific

Ver / Rev: C/1 DRR: N/A

Search Unit Data

KBA 00MPX8 0.50"/Round
Manufacturer: Serial Number Size/Shape:

0.4 in. 45° 45°
Incident Point: Nominal Angle: Measured Angle:

1.5 MHz Comp-G Shear 1
Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 6' 0
Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 136-766I
Manufacturer/Model: Serial Number:

0.342 in. 0.12in./usec. 1 4KHz
Delay: Velocity: Filter: Rep Rate:

4.0 in. 334 ns 500 Ohms
Range: Pulser: Damping:

Off 2.25 MHz P/E
Reject: Frequency: Mode:

Exam Comments / Limitations:

Exams performed to maintain 5% to 20% ID roll.

ID geometry observed below recordable levels.

No exam performed from downstream side due to component configuration.

No counterbore detected.

Actual Cal Block "T" is 1.410."

Exam Start: 0031 Exam End: 0040

MSK Michael Kemp II

Initials: Examiner: Level:

N/A N/A
Initials: Examiner 2: Level:

Cal/Exam Date: 5/21/2003

[Signature] III 05/22/03
GE Reviewed By: Level: Date:

[Signature] 5/23/03
Utility Reviewed By: Date:

[Signature] 5/24/03
ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: **Columbia Generating Station**
Outage: **R16**

Data Report Number: **R16-068**
Data Sheet Number: **UT-114**
Linearity Sheet: **L-12**

Calibration Data for Block: **UT-7**

SS	24"	1.140"	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	2122
Ultragel II	00325		Cal Check:	0042
Couplant:	Couplant batch		Cal Check:	N/A
225046	80° F		Final Cal:	0147
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction: **Ax**
 Cal Reflector: **ID Notch**
 Signal Amplitude: **80%**
 Signal Sweep: **5.2 Div**
 Signal dB: **71.2 dB**
 Sweep 0-10 = **5.0 in. Metal Path**

Calibration Verification

Field Simulator Block S/N: **CAL-RHOM-069**

Reflector	2" Radius	N/A
Amplitude	80%	N/A
Gain (dB)	43.4	N/A
Sweep (SD)	4.0	N/A

Acceptable Linearity performed: **5/5/2003**

Exam Data for Weld: **24RRC(2)B-8/4RRC(8)-4S**

PIPE TO SWL

Configuration:

OD **78° F** **225046**
 Exam Surface: Exam Temp. Exam Thermometer

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
Axial	UPST	71.2	NRI	60°

Procedure: **PDI-UT-2/Site Specific**

Ver / Rev: **C/1** DRR: **N/A**

Search Unit Data

RTD **98-172** **2(10x18) mm/Rect**
 Manufacturer: Serial Number Size/Shape:
0.45 in. **60°** **60°**
 Incident Point: Nominal Angle: Measured Angle:
2.0 MHz **TRL 2-Aust** **Long** **2**
 Frequency: Style: Mode: Elements:

Search Unit Cable

SG-174 **6'** **0**
 Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P **136-766/**
 Manufacturer/Model: Serial Number:
1.21 in. **0.239in./µsec.** **1** **4KHz**
 Delay: Velocity: Filter: Rep Rate:
5.0 in. **250 ns** **500 Ohms**
 Range: Pulser: Damping:
Off **2.25 MHz** **Dual**
 Reject: Frequency: Mode:

Exam Comments / Limitations:

Exams performed at reference sensitivity to maintain 5% to 20% noise level.

ID geometry observed below recordable levels.

No exam performed from downstream side due to component configuration.

No counterbore detected.

Actual Cal Block "T" is 1.410."

Exam Start: **0042** Exam End: **0051**

MTK **Michael Kemp** **II**
 Initials: Examiner: Level:

N/A **N/A**
 Initials: Examiner 2: Level:

Cal/Exam Date: **5/21/2003**

[Signature] **III** **05/22/03**
 GE Reviewed By: Level: Date:

[Signature] **5/23/03**
 Utility Reviewed By: Date:

[Signature] **5/24/03**
 ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: N/A

Report No.: R16-088

Project: 16423

System: RRC

Component ID Number: 24RRC(2)B-8/4RRC(8)-4S

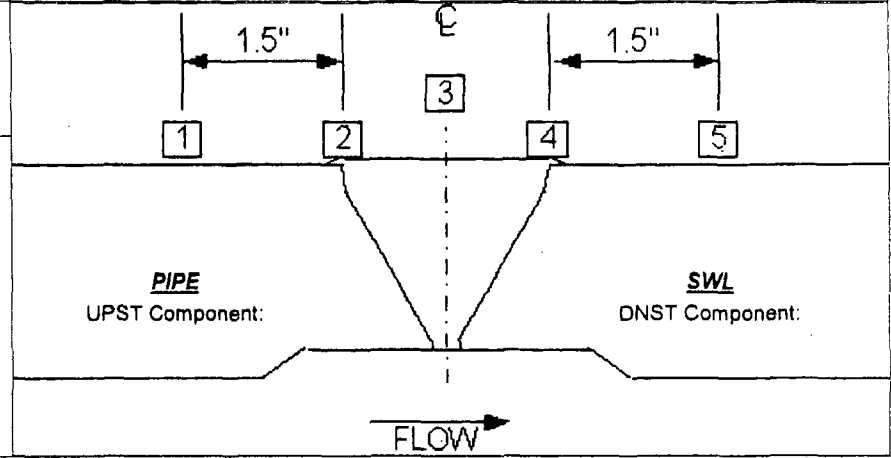
Position	0°	90°	180°	270°
1	1.04"	N/A	N/A	N/A
2	1.02"	N/A	N/A	N/A
3	1.10"	N/A	N/A <td N/A	
4	1.31"	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A

Crown Height: FLUSH

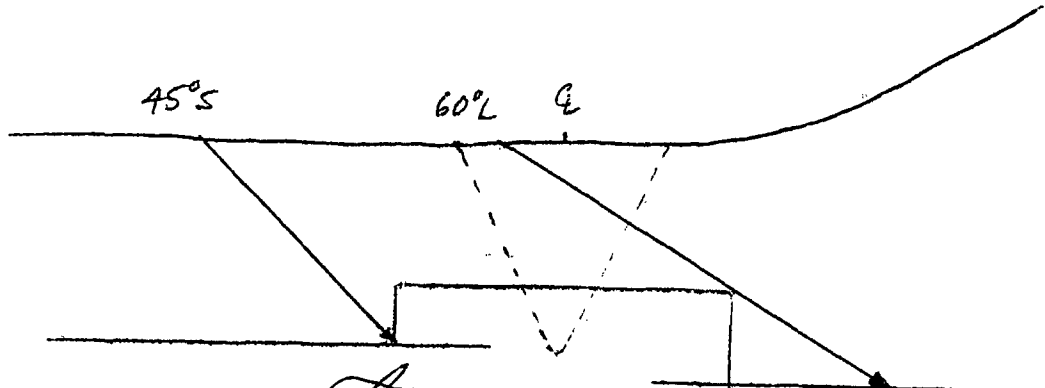
Crown Width: 1.1"

Nominal Diameter: 0.0"

Weld Length: 32.0"



Flow →



Initials: MJK Examiner: Michael Kemp Level: II Date: 5/21/03

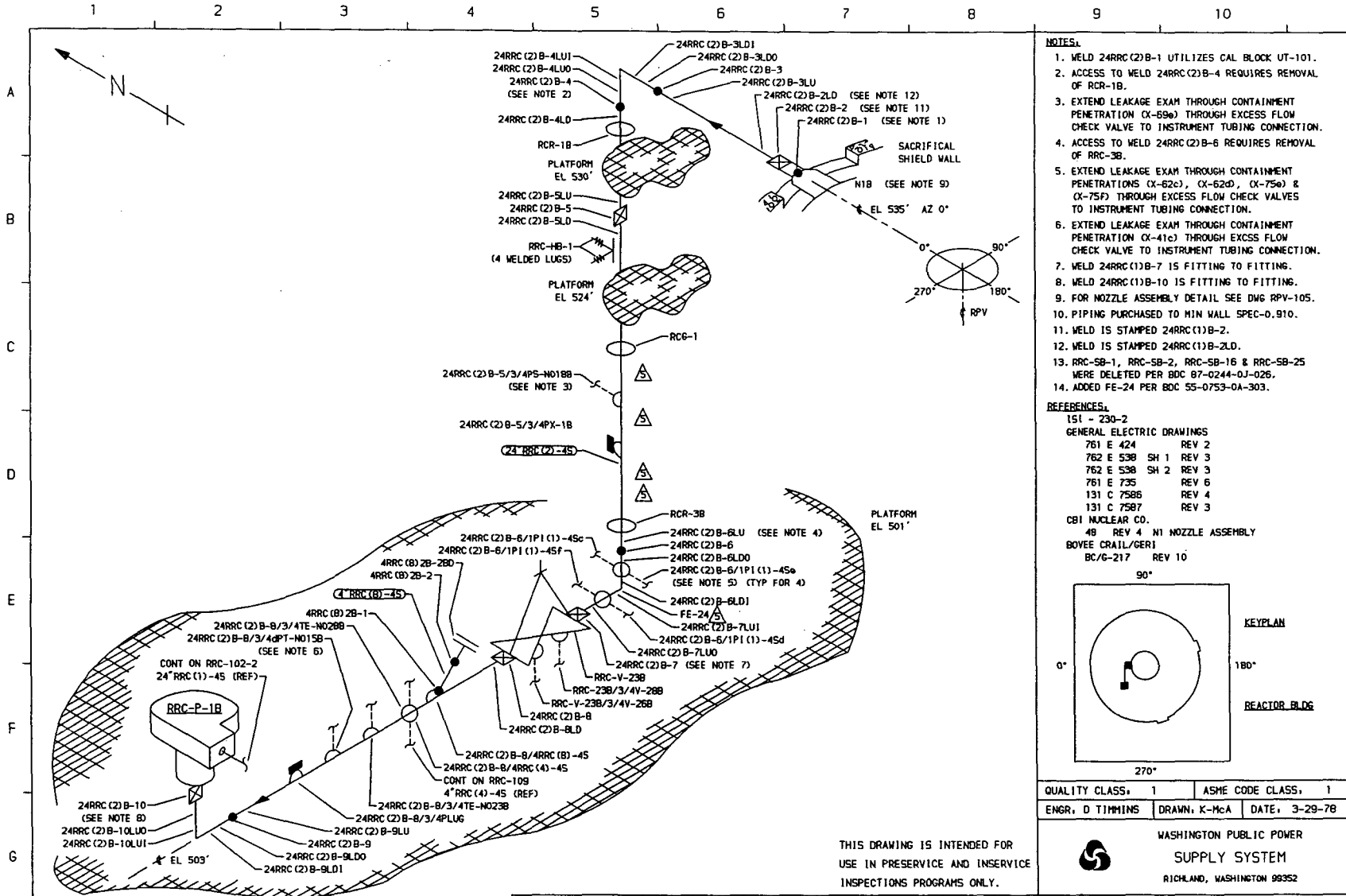
GE Reviewed By: [Signature] Level: II Date: 05/22/03

Utility Reviewed By: [Signature] Date: 5/23/03

ANII Reviewed By: [Signature] Date: 5/24/03

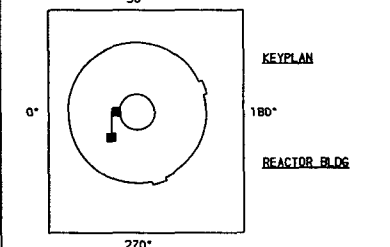
REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

2ISI-32-20



- NOTES:**
1. WELD 24RRC(2)B-1 UTILIZES CAL BLOCK UT-101.
 2. ACCESS TO WELD 24RRC(2)B-4 REQUIRES REMOVAL OF RCR-1B.
 3. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-89e) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 4. ACCESS TO WELD 24RRC(2)B-6 REQUIRES REMOVAL OF RRC-3B.
 5. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATIONS (X-62c), (X-62d), (X-75e) & (X-75f) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 6. EXTEND LEAKAGE EXAM THROUGH CONTAINMENT PENETRATION (X-41c) THROUGH EXCESS FLOW CHECK VALVE TO INSTRUMENT TUBING CONNECTION.
 7. WELD 24RRC(1)B-7 IS FITTING TO FITTING.
 8. WELD 24RRC(1)B-10 IS FITTING TO FITTING.
 9. FOR NOZZLE ASSEMBLY DETAIL SEE DWG RPV-105.
 10. PIPING PURCHASED TO MIN WALL SPEC-0.910.
 11. WELD IS STAMPED 24RRC(1)B-2.
 12. WELD IS STAMPED 24RRC(1)B-2LD.
 13. RRC-SB-1, RRC-SB-2, RRC-SB-16 & RRC-SB-25 WERE DELETED PER BDC 87-0244-0J-026.
 14. ADDED FE-24 PER BDC 55-0753-0A-303.

- REFERENCES:**
- 151 - 230-2
 GENERAL ELECTRIC DRAWINGS
 761 E 424 REV 2
 762 E 538 SH 1 REV 3
 762 E 538 SH 2 REV 3
 761 E 735 REV 6
 131 C 7588 REV 4
 131 C 7587 REV 3
- CBI NUCLEAR CO.
 48 REV 4 N1 NOZZLE ASSEMBLY
 BOYCE CRAIG/GERI
 BC/6-217 REV 10



QUALITY CLASS, 1	ASME CODE CLASS, 1
ENGR, D TIMMINS	DRAWN, K-McA DATE, 3-29-78

WASHINGTON PUBLIC POWER
 SUPPLY SYSTEM
 RICHLAND, WASHINGTON 99352

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NO	DATE	REVISION	BY	CHKD	APVD	PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO	TITLE	
5	9-22-94	ADDED NOTES 13 & 14, MODIFIED ACCORDINGLY.	K-McA	DPR	DW	24"RRC(2)-4S	24	XXX	SEE NOTE 10	SA 358 GR 304 CL 1	SS	UT-7	MNP-2 WELD & COMPONENT IDENTIFICATION DIAGRAM	
4	11-13-92	ADDED 'B' TO RRC-1 NOTES 11, 12 & INST DOWN. PLUGGED TWO INST DOWN. MOD RRC-SB-1, RRC-SB-1 & NOTE 3. DELETED UT-47. MODIFIED KEYPLAN & LOGS. REDRAWN	K-McA	DPR	DRW	4"RRC(2)-4S	4	80	0.337	SA 312 TP 304	SS	UT-29		REACTOR RECIRCULATION LOOP B
3	10-16-87	ADDED 151 DWG REFERENCE. CHANGED RRC-HB-1 TO SPRING CORRECTED NOTE 5 & P1 CONNECTIONS ON 90° ELBOW IN E-5.	K-McA	DPR	TFH									
2	11-14-83	REVISED AS NOTED. ADDED KEYPLAN & LOGS.	K-McA	DPR	TFH									
1	11-5-80	ADDED NOTE 9	K-McA	TFH	DWP									
DWG NO.	RRC-102-1												REV 5	



GE NUCLEAR ENERGY

EXAMINATION SUMMARY SHEET

Report No.: R16-067

Site and Unit: **Columbia Generating Station** Component ID: **24RRC(2)B-8/4RRC(4)-4S**

Outage: **R16** **PIPE TO SWL**

System: **RRC** ASME Cat.: **B-J** ASME Item **B9.31** Aug Requirements: **N/A**

Exams Performed	Data Sheet	Cal Sheet	Procedure	Calibration Block	Examination Personnel	Cert Level	Date
45° Shear	UT-111	N/A	PDI-UT-2/Site Specific	UT-7	Michael Kemp	II	5/21/2003
60° Long	UT-112	N/A	PDI-UT-2/Site Specific	UT-7	Michael Kemp	II	5/21/2003

Examination Results:

During the manual ultrasonic examination of the above referenced weld, no reportable indications were recorded utilizing the 45° and 60° search units.

This examination is acceptable per the requirements of ASME Section XI, 1989 Edition, no Addenda and the 1995 Edition, 1996 Addenda with modifications as stated in 10CFR50.55.

50% Code coverage was obtained.

Previous data was reviewed prior to this summary.

Examination results were compared to data report 1RRU-081 from R-1 outage with No Change

These examinations were performed under Work Order: 01044925-01 Change

This Summary and the following data sheets have been reviewed and accepted by the following personnel:

	II	5/22/03		5/23/03
Prepared By:	Level:	Date:	Utility Reviewed By:	Date:
	III	05/22/03		5/24/03
Reviewed By:	Level:	Date:	ANII Reviewed By:	Date:



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station
Outage: R16

Data Report Number: R16-067
Data Sheet Number: UT-111
Linearity Sheet: L-12

Calibration Data for Block: UT-7

<u>SS</u>	<u>24"</u>	<u>1.140"</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>2047</u>
<u>Ultrageel II</u>	<u>00325</u>		Cal Check:	<u>0059</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>225046</u>	<u>80° F</u>		Final Cal:	<u>0146</u>
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction	<u>Ax</u>	<u>Ax</u>
Cal Reflector	<u>ID Notch</u>	<u>OD Notch</u>
Signal Amplitude	<u>80%</u>	<u>15%</u>
Signal Sweep:	<u>5.1 Div</u>	<u>10.0 Div</u>
Signal dB:	<u>29.8 dB</u>	<u>29.8 dB</u>
Sweep 0-10 =	<u>4.0 in.</u>	<u>Metal Path</u>

Calibration Verification

Field Simulator Block S/N: CAL-RHOM-069

Reflector	<u>1" Radius</u>	<u>2" Radius</u>
Amplitude	<u>80%</u>	<u>60%</u>
Gain (dB)	<u>22.0</u>	<u>22.0</u>
Sweep (SD)	<u>2.5</u>	<u>5.0</u>

Acceptable Linearity performed : 5/5/2003

Exam Data for Weld: 24RRC(2)B-8/4RRC(4)-4S

PIPE TO SWL

Configuration:

OD 78° F 225046
Exam Surface: Exam Temp. Exam Thermometer

Axial Circ	UPST DNST	Scan dB	Recordable Indications	Exam Angle
<u>Axial</u>	<u>UPST</u>	<u>43.8</u>	<u>NRI</u>	<u>45°</u>
<u>Circ</u>	<u>UPST</u>	<u>43.8</u>	<u>NRI</u>	<u>45°</u>

Procedure: PDI-UT-2/Site Specific

Ver / Rev: C/1 DRR: N/A

Search Unit Data

KBA 00MPX8 0.50"/Round
Manufacturer: Serial Number Size/Shape:

0.4 in. 45° 45°
Incident Point: Nominal Angle: Measured Angle:

1.5 MHz Comp-G Shear 1
Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 6' 0
Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 136-766I
Manufacturer/Model: Serial Number:

0.342 in. 0.12in./usec. 1 4KHz
Delay: Velocity: Filter: Rep Rate:

4.0 in. 334 ns 500 Ohms
Range: Pulser: Damping:

Off 2.25 MHz P/E
Reject: Frequency: Mode:

Exam Comments / Limitations:

Exams performed to maintain 5% to 20% ID roll.
ID geometry observed below recordable levels.
No exam performed from downstream side due to component configuration.
No counterbore detected.
Actual Cal Block "T" is 1.410."

Exam Start: 0059 Exam End: 0112

MJK Michael Kemp II

Initials: Examiner: Level:

N/A N/A

Initials: Examiner 2: Level:

Cal/Exam Date: 5/21/2003

[Signature] III 05/22/03
GE Reviewed By: Level: Date:

[Signature] 5/23/03
Utility Reviewed By: Date:

[Signature] 5/24/03
ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Ultrasonic Calibration and Examination Record Manual Piping and Components

Site/Unit: Columbia Generating Station
Outage: R16

Data Report Number: R16-067
Data Sheet Number: UT-112
Linearity Sheet: L-12

Calibration Data for Block: UT-7

<u>SS</u>	<u>24"</u>	<u>1.140"</u>	Calibration	Cal Time
Material	Size	Thick	Initial Cal:	<u>2122</u>
<u>Ultragel II</u>	<u>00325</u>		Cal Check:	<u>0114</u>
Couplant:	Couplant batch		Cal Check:	<u>N/A</u>
<u>225046</u>	<u>80° F</u>		Final Cal:	<u>0147</u>
Thermometer S/N	Cal Temp.			

DAC Construction

Scan Direction: Ax
Cal Reflector: ID Notch
Signal Amplitude: 80%
Signal Sweep: 5.2 Div
Signal dB: 71.2 dB
Sweep 0-10 = 5.0 in. Metal Path

Calibration Verification

Field Simulator Block S/N: CAL-RHOM-069

Reflector	<u>2" Radius</u>	<u>N/A</u>
Amplitude	<u>80%</u>	<u>N/A</u>
Gain (dB)	<u>43.4</u>	<u>N/A</u>
Sweep (SD)	<u>4.0</u>	<u>N/A</u>

Acceptable Linearity performed : 5/5/2003

Exam Data for Weld: 24RRC(2)B-8/4RRC(4)-4S

PIPE TO SWL

Configuration:

OD 78° F 225046
Exam Surface: Exam Temp. Exam Thermometer

Axial	UPST	Scan dB	Recordable	Exam
Circ	DNST		Indications	Angle
<u>Axial</u>	<u>UPST</u>	<u>71.2</u>	<u>NRI</u>	<u>60°</u>

Procedure: PDI-UT-2/Site Specific

Ver / Rev: C/1 DRR: N/A

Search Unit Data

RTD 98-172 2(10x18) mm/Rect
Manufacturer: Serial Number Size/Shape:
0.45 in. 60° 60°
Incident Point: Nominal Angle: Measured Angle:
2.0 MHz TRL 2-Aust Long 2
Frequency: Style: Mode: Elements:

Search Unit Cable

RG-174 6' 0
Cable Type: Length: Connectors:

Instrument Settings

Staveley / Sonic 136P 136-766I
Manufacturer/Model: Serial Number:

1.21 in. 0.239in/μsec. 1 4KHz
Delay: Velocity: Filter: Rep Rate:

5.0 in. 250 ns 500 Ohms
Range: Pulser: Damping:

Off 2.25 MHz Dual
Reject: Frequency: Mode:

Exam Comments / Limitations:

Exams performed at reference sensitivity to maintain 5% to 20% noise level.

ID geometry observed below recordable levels.

No exam performed from downstream side due to component configuration.

No counterbore detected.

Actual Cal Block "T" is 1.410."

Exam Start: 0114 Exam End: 0125

MJK Michael Kemp II
Initials: Examiner: Level:
N/A N/A
Initials: Examiner 2: Level:

Cal/Exam Date: 5/21/2003

[Signature] III 05/22/03
GE Reviewed By: Level: Date:

[Signature] 5/23/03
Utility Reviewed By: Date:

[Signature] 5/24/03
ANII Reviewed By: Date:



GE NUCLEAR ENERGY

Wall Thickness Profile Sheet

Site: Columbia Generating Station Unit: N/A

Report No.:

Project: 16423

R16-067

System: RRC

Component ID Number: 24RRC(2)B-8/4RRC(4)-4S

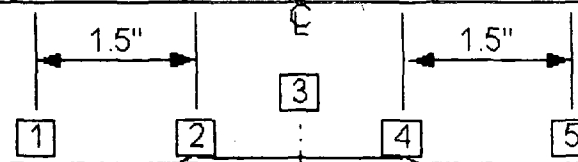
Position	0°	90°	180°	270°
1	1.02"	N/A	N/A	N/A
2	1.0"	N/A	N/A	N/A
3	1.10"	N/A	N/A <td N/A	
4	1.23"	N/A	N/A	N/A
5	1.38"	N/A	N/A	N/A

Crown Height: FLUSH

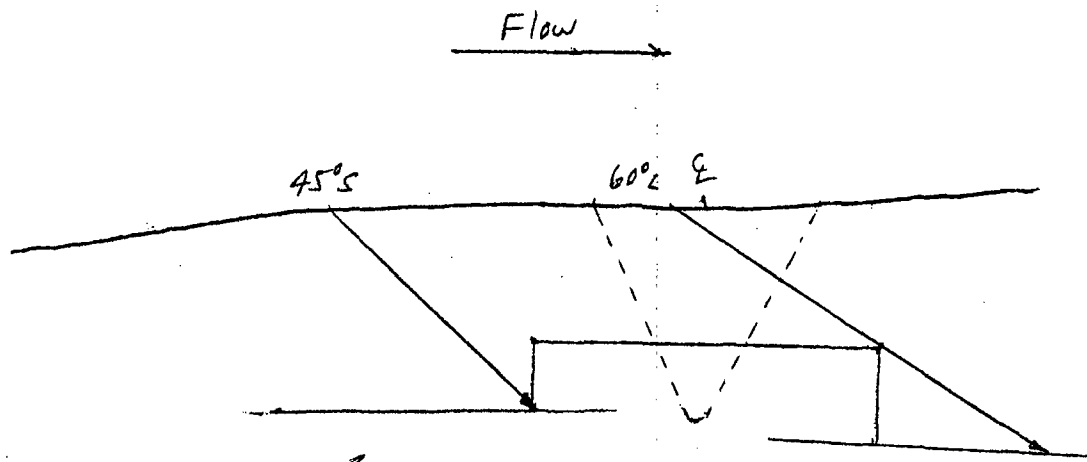
Crown Width: 1.2"

Nominal Diameter: N/A

Weld Length: 44.0"



FLOW →



WTK Michael Kemp II 5/21/03
Initials: Examiner: Level: Date:

[Signature] III 05/22/03
GE Reviewed By: Level: Date:

[Signature] 5/23/03
Utility Reviewed By: Date:

[Signature] 5/24/03
ANII Reviewed By: Date:

REQUEST 2ISI-32 ATTACHMENTS A THROUGH G
Attachment

Attachment G

2ISI-32-21

Weld Identification 6MS(1)B-2

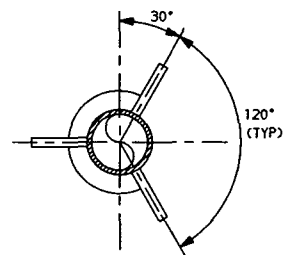
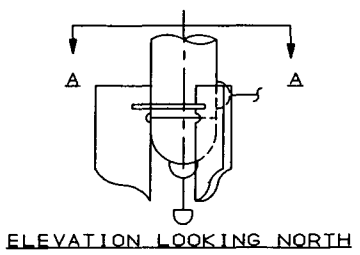
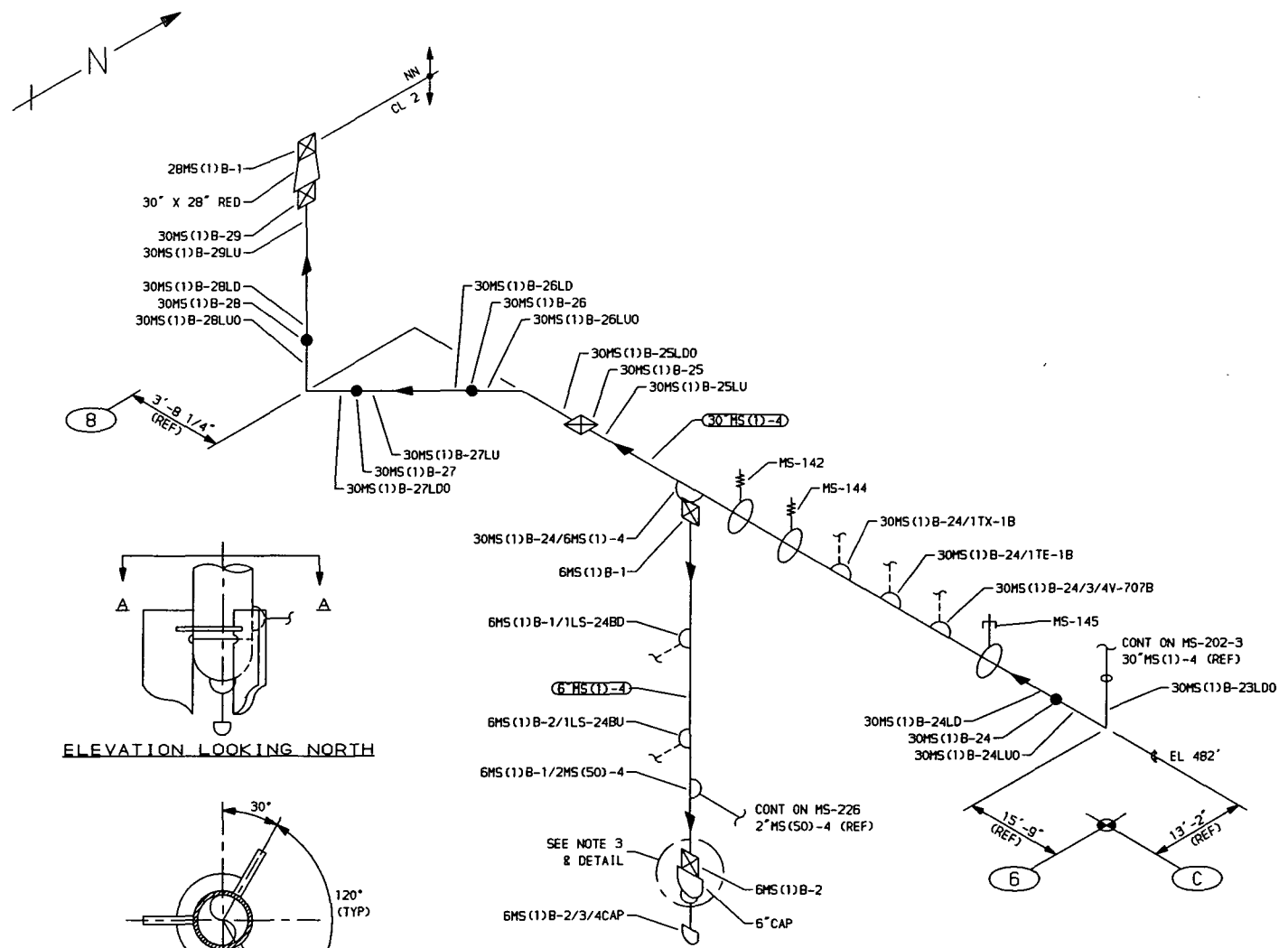
ISI Diagram MS-202-4

Construction Drawing MS-529-1.3 (CVI 215-00, 14362) sheet 2

NDE Data Report 2MSU-005

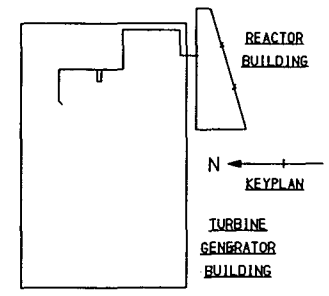
NDE Data Report 2MSM-002

A
B
C
D
E
F
G
H



- NOTES**
1. DELETED.
 2. SCAFFOLDING IS REQUIRED.
 3. VIBRATION DAMPER PREVENTS FULL ASME SECTION XI CODE EXAMINATION COVERAGE OF WELD GMS(1)B-2.

- REFERENCES:**
- ISI - 229-1A & 229-4
 - BOVEE & CRAIL ISOMETRICS
 - MS-529-12 REV 8
 - MS-529-13 SH 1 REV 12
 - MS-529-13 SH 2 REV 1



ZONE T-23

THIS DRAWING IS INTENDED FOR USE IN PRESERVICE AND INSERVICE INSPECTIONS PROGRAMS ONLY.

PIPING SYSTEM	NOM DIA (IN)	SCH	NOM WALL THK	MATERIAL SPECIFICATION	MATL TYPE	CAL BLOCK NO
30"MS(1)-4	30	XXX	1.250	SA 155 CL 1 KCF 70	CS	UT-1
6"MS(1)-4	6	80	0.432	SA 106 GR B	CS	UT-2B
28"MS(1)-4	28	XXX	1.420	SA 155 CL 1 KCF 70	CS	UT-2

QUALITY CLASS. 1 ASME CODE CLASS. 2
ENGR. D TIMMINS DRAWN: K-McA DATE: 1-30-78

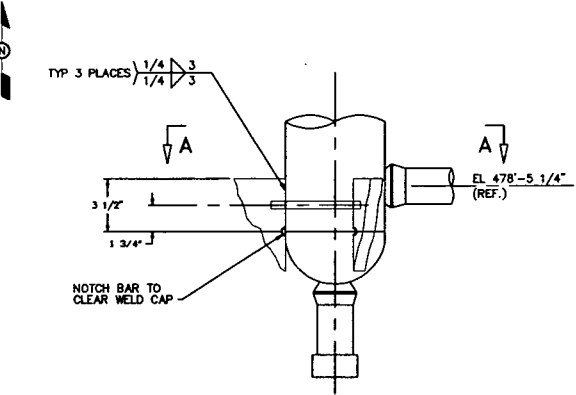
WASHINGTON PUBLIC POWER
SUPPLY SYSTEM
RICHLAND, WASHINGTON 99352

WNP-2
WELD & COMPONENT IDENTIFICATION DIAGRAM
TITLE: MAIN STEAM LINE B

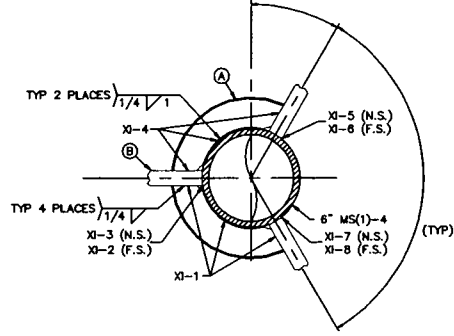
REV	DATE	DESCRIPTION	DWN	CHK	APVD
5	10/18/95	REV PER 93-0048-0A	K-McA	DPR	CMK

DWG NO: MS-202-4 REV 5

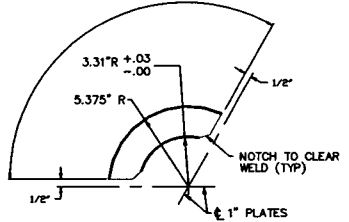
8 7 6 5 4 3 2 1



ELEVATION LOOKING NORTH



SECTION "A-A"



DETAIL "A"

NOTES

1. ITEM "B" (3 PCS) HAS BEEN CUT DOWN IN FIELD PER P.O.C. IMMEDIATE DISPOSITION OF P.E.R. 293-102.

BILL OF MATERIALS

ITEM	QTY	SIZE	DESCRIPTION	MATERIAL	CODE
A	2	—	9/16" THICK CUT TO 10 3/4" DIA (SEE DETAIL A)	SA-36	III/2
B	3	—	1"x6"x1"-10 1/2" (SEE NOTE 1 THIS DRAWING)	SA-36	III/2
C			DELETED		

REV	DATE	DESCRIPTION	DWN	CHK	APV'S	REV	DATE	DESCRIPTION	DWN	CHK	APV'S	REV	DATE	DESCRIPTION	DWN	CHK	APV'S	APPROVED	DATE	TITLE				
0	6-11-91	NEW DRAWING PER BDC 88-0430-1B-200							DRJ	SRP	RLH							RL HEID	6-11-91	STEAM LINE B FROM ISOLATION VALVE TO TG STOP VALVE				
	-91	88-0430-1B-A04, 88-0430-1B-A03.																CO ROMINE	8-7-91					
1	5/21/93	REV PER 93-02-019-0007 (A-D/3-B, C,D/1-3).							KL	PAA	HSM							JR MILLER	4-12-89					
																		DR JACOBSEN	4-8-89					
																		SCALE	NOT TO SCALE	DWG NO.	MS-529-13	SH. 2 OF 2	REV	1



WNP 2

8 7 6 5 4 3 2 1

ULTRASONIC EXAMINATION DATA SHEET

REPORT NO.: 2-MSU-005

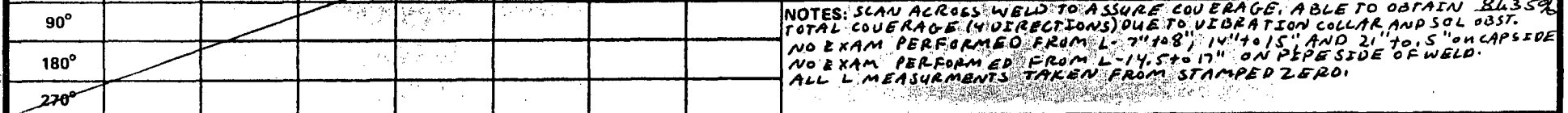
PROJECT: WNP-2 SYSTEM: MS ISI DRAWING NO.: MS 202-4
WELD/PART DESCRIPTION: CAP TO PIPE C/R WELD WELD/PART NO.: 6MSU)B-2

MATERIAL TYPE: CS CAL STANDARD NO.: UT-28 THICKNESS: .432
NO. OF SCAN DIRECTIONS: 4 LIMITED EXAM: NO YES ACCEPTANCE CRITERIA: PER QCI 6-13 REV 7

INSTRUCTION NO.: QCI 6-13 REVISION: 7 ANGLE: 45°s ANGLE: ANGLE:
EXAMINER: DONNA L. HEBERT PL# LEVEL: II DATE: 4-25-95 DATE: DATE:

EXAMINER: JIM O'NEILL LEVEL: II TIME START: 0947 TIME START: N/A TIME START: N/A
THICKNESS MEASUREMENTS: WELD HEIGHT SURFACE ONE WELD WIDTH SURFACE TWO

TIME STOP: 1005 TIME STOP: TIME STOP:
PART TEMP: 77.4 °F PART TEMP: °F PART TEMP: °F
CAL SHEET NO.: 2-003 CAL SHEET NO.: CAL SHEET NO.:
CHART NO.: N/A CHART NO.: CHART NO.:



NOTES: SCAN ACROSS WELD TO ASSURE COVERAGE. ABLE TO OBTAIN 84.35% TOTAL COVERAGE (4 DIRECTIONS) DUE TO VIBRATION COLLAR AND SOL OBST. NO EXAM PERFORMED FROM L-7" TO 8" 14" TO 15" AND 21" TO .5" ON CAP SIDE NO EXAM PERFORMED FROM L-14.5" TO 17" ON PIPE SIDE OF WELD. ALL L MEASUREMENTS TAKEN FROM STAMPED ZERO.

INDICATION NUMBER	LOCATION INTERVAL A-B OR PART NO. A-B	BEAM ANGLE θ	SCAN SURFACE	BEAM DIRECTION AB CD	SOUND PATH	EXTENT	DAMPABLE	MAX AMP %DAC	100 TO 100	50 TO 50	20 TO 20	SEARCH UNIT POSITION AT MAXIMUM AMP L W	THROUGH WALL DATA				SP	SP COS θ	EVALUATION		
									LENGTH				MAXIMUM		MINIMUM				ACCEPT	REJECT	
N/A	O-360	45°	I+2	AB CD					NO RECORDABLE INDICATIONS												

REVIEWED BY LEVEL III: [Signature] DATE: 4-28-95 REVIEWED BY: [Signature] DATE: 4-28-95

MAGNETIC PARTICLE EXAMINATION DATA SHEET

REPORT NO.: 2-msm-002

PROJECT: <u>WNP-2</u>	SYSTEM: <u>MS</u>	ISI DRAWING NO.: <u>MS-202-4</u>
WELD/PART DESCRIPTION: <u>CIRC WELDS</u>		WELD/PART NO.: <u>SEE BELOW</u>
MATERIAL TYPE: <u>CS</u>	THICKNESS: <u>N/A</u>	DATE: <u>4/24/95</u>
EXAMINER: <u>N. LABELLA MSB</u>	LEVEL: <u>II</u>	INSTRUCTION: <u>QCI 4-3</u>
EXAMINER: <u>C. CARLSON CPC</u>	LEVEL: <u>IT</u>	ACCEPTANCE CRITERIA: <u>PER QCI 4-3 REV. 6</u>
CONTROL TEST METER S/N: <u>N/A</u>	LIGHT METER S/N: <u>N/A</u>	LIFT BLOCK S/N: <u>42271-21</u>
EQUIPMENT MANUFACTURER: <u>PARKER RESEARCH</u>	MODEL NO.: <u>B-300</u>	SERIAL NO.: <u>2014</u>
EXAM MEDIUM: <input type="checkbox"/> WET <input checked="" type="checkbox"/> DRY	CURRENT TYPE: <input checked="" type="checkbox"/> AC <input type="checkbox"/> DC	PARTICLE TYPE: <u>CIRCLE 63</u>
		BATCH NO.: <u>8017</u>

MAGNETIZING METHOD

<input checked="" type="checkbox"/> YOKE POLE SPACING <u>6" MAX</u>	<input type="checkbox"/> PRODS PROD SPACING <u>N/A</u> AMPERAGE <u>A</u>	<input type="checkbox"/> DIRECT CONTACT PART DIAMETER <u>N/A</u> AMPERAGE <u>A</u>	<input type="checkbox"/> COIL L/D RATIO <u>N/A</u> COIL TURNS <u>A</u> AMPERAGE <u>A</u>	NOTES: * NO EXAM AT 0° FOR 1", AT 7" FOR 1", AND AT 13" FOR 1" DUE TO SUPPORT RING. 85% Coverage
<input type="checkbox"/> PERMANENT MAGNET POLE SPACING <u>N/A</u>				

INDICATION NUMBER	PART OR WELD NUMBER	LOCATION INTERVAL	INDICATION SHAPE	INDICATION SIZE	EXAM SURFACE	INDICATION POSITION		EVALUATION	
		A-B				L	W	ACCEPT	REJECT
<u>N/A</u>	<u>6MS(1)B-1</u>	<u>0-360</u>	<u>NO RECORDABLE INDICATIONS</u>					<input checked="" type="checkbox"/>	
<u>N/A</u>	<u>6MS(1)B-2</u>	<u>0-360*</u>	<u>NO RECORDABLE INDICATIONS</u>					<input checked="" type="checkbox"/>	
$D = 6.625$ $C = \pi D = 1.5708 \times 6.625 = 20.8$ <p>3" not examined</p> $\% \text{ coverage} = \frac{20.8 - 3}{20.8} \times 100 = 85\%$									

REVIEWED BY LEVEL III: <u>[Signature]</u>	DATE: <u>4-28-95</u>	REVIEWED BY: <u>[Signature]</u>	DATE: <u>4/28/95</u>
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