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April 8, 2011

AEP-NRC-2011-23
10 CFR 50.55a

Docket No.: 50-315
50-316

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

Donald C. Cook Nuclear Plant Units 1 and 2
Relief Requests for Limited Coverage Examinations Performed In
The Third 10-Year Inspection Interval

The third 10-year interval for the inservice inspection program for Donald C. Cook Nuclear Plant (CNP) Units 1 and 2 concluded on April 9, 2010. During this interval, the components identified in Attachments 1 through 10 received less than the required examination coverage. Accordingly, pursuant to 10 CFR 50.55a(g)(5)(iii), Indiana Michigan Power Company (I&M) requests relief on the basis that the required examination coverage is impractical due to physical obstructions and limitations imposed by design, geometry, and materials of construction of the subject components.

Attachments 1 through 10 contain the relief requests and the basis for these requests.

There are no new or revised commitments in this letter. Should you have any questions, please contact Mr. Michael K. Scarpello, Regulatory Affairs Manager at (269) 466-2649.

Sincerely,

Joel P. Gebbie
Site Vice President

MCS/jen

c: J. T. King – MPSC, w/o attachment
S. M. Krawec - AEP Ft. Wayne, w/o attachment
MDNRE – WHMD/RPS, w/o attachment
NRC Resident Inspector
M. A. Satorius – NRC Region III
P. S. Tam – NRC Washington DC
W. Vallance - DLEG/BCCFS/BD

A047
NRR

Attachments:

1. Relief Request ISIR-33 - Examination Category B-A, Pressure Retaining Welds in Reactor Vessels, and Examination Category B-D, Full Penetration Welds of Nozzles in Vessels – Inspection Program B (Reactor Vessel only)

2. Relief Request ISIR-34 - Examination Category B-B, Pressure Retaining Welds in Vessels Other Than Reactor Vessels

3. Relief Request ISIR-35 - Examination Category B-D, Full Penetration Welds of Nozzles in Vessels - Inspection Program B

4. Relief Request ISIR-36 - Examination Category B-F, Pressure Retaining Dissimilar Metal Welds

5. Relief Request ISIR-37 - Examination Category B-J Pressure Retaining Welds in Piping

6. Relief Request ISIR-38, Examination Category C-A, Pressure Retaining Welds in Pressure Vessels

7. Relief Request ISIR-39, Examination Category C-B, Pressure Retaining Nozzle Welds in Vessels

8. Relief Request ISIR-40, Examination Category C-C, Integral Attachments for Vessels, Piping, Pumps, and Valves

9. Relief Request ISIR-41, Examination Category C-F-1, Pressure Retaining Welds in Austenitic Stainless Steel or High Alloy Piping

10. Relief Request ISIR-42, Examination Category R-A, Risk Informed Piping Examinations

ATTACHMENT 1 to AEP-NRC-2011-23

RELIEF REQUEST ISIR-33

EXAMINATION CATEGORY B-A
PRESSURE RETAINING WELDS IN REACTOR VESSEL

And

EXAMINATION CATEGORY B-D
FULL PENETRATION WELDS OF NOZZLES IN VESSELS – INSPECTION PROGRAM B
(Reactor Vessel only)

RELIEF REQUEST ISIR-33

Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii)
Inservice Inspection Impracticality

1. ASME Code Components Affected

ASME Code Class:	Code Class 1
Examination Category:	B-A, Pressure Retaining Welds in Reactor Vessel B-D, Full Penetration Welds of Nozzles in Vessels – Inspection Program B (Reactor Vessel only)
Item Numbers:	B1.11, Shell Welds - Circumferential B1.12, Shell Welds - Longitudinal B1.21, Head Welds - Circumferential B1.22, Head Welds – Meridional B1.30, Shell to Flange Weld B3.90, Reactor Vessel – Nozzle to Vessel Welds
Component Identification:	Listed in Table 1

2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Categories B-A and B-D require volumetric examination of 100 percent of the weld volume as defined in ASME Section XI Table IWB-2500-1 and shown in Figures IWB-2500-1, IWB-2500-2, IWB- 2500-3, and IWB-2500-7. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the weld provided greater than 90 percent of the required volume has been examined.

4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject welds. Due to the design of the reactor vessel, geometric configuration and permanent obstructions limit the volumetric examination coverage of the subject welds.

During the second 10-year reactor pressure vessel examination, the best available technology was utilized in performing the automated ultrasonic examination. The examinations were performed with equipment, procedures, and personnel qualified in accordance with the requirements of ASME Section XI, Appendix VIII, 1995 Edition thru I996 Addenda as modified by the Performance Demonstration Initiative (PDI) program.

Several interferences and vessel geometries prevent full volumetric examination coverage, including the 58 permanent incore instrument nozzles penetrating the bottom head and six core support lugs permanently attached to the vessel interior limiting the access to the lower head welds. The close proximity of the inlet nozzle and outlet nozzle boss limits the ultrasonic scanning of the upper shell longitudinal seam welds. The flange to vessel configuration, specimen slots, and keyways also hinder access. These noted obstructions prevent achieving the essentially 100 percent volumetric examination coverage required by code. Also, Nozzle to Vessel geometry, vessel saddle effect, and adjacent outlet nozzle protrusion limited access for achieving 100 percent volumetric examination coverage for the Nozzle to Vessel welds.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

5. Burden Caused by Compliance

To increase examination coverage on the subject welds requires a significant design modification or replacement of components with a different design to eliminate the noted obstructions. This is impractical due to the cost, additional radiation exposure, and impact to plant equipment.

6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination on the accessible portions of the subject welds to the maximum extent practical given the limitations caused by the geometric configuration and permanent obstructions. Additionally, a visual examination (VT-2) is performed at the end of each refueling outage during the system leakage tests as required by Section XI, IWB-2500-1, Category B-P.

Based upon the examination volumes that were obtained with acceptable results, along with the visual (VT-2) examination performed each refueling outage, it is reasonable to conclude that service induced degradation would be detected. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for CNP Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-RPV-A	Shell to Flange	B1.30	84.44	The completed examination was limited to 84.4% coverage due to the configuration. The limitations are due to flange configuration, specimen slots, and keyways at 0, 90, 180, and 270 degrees. No recordable indications detected.
1-RPV-D	Lower Shell to Bottom Head	B1.11	82.60	The completed examination was limited to 82.60% coverage due to the configuration. The limitations are due to six core support lugs. No recordable indications detected.
1-RPV-E	Dollar Plate	B1.21	38.4	The completed examination was limited to 38.4% coverage due to the configuration. The limitation is due to the bottom mounted instrument penetrations. No recordable indications detected.
1-RPV-VC1	Lower Shell Longitudinal at 60 Degrees	B1.12	78.29	The completed examination was limited to 78.29% coverage due to the configuration. The limitation is due to the core support lug. No recordable indications detected.
1-RPV-VC2	Lower Shell Longitudinal at 180 Degrees	B1.12	78.29	The completed examination was limited to 78.29% coverage due to the configuration. The limitation is due to the core support lug. No recordable indications detected.
1-RPV-VC3	Lower Shell Longitudinal at 300 Degrees	B1.12	78.29	The completed examination was limited to 78.29% coverage due to the configuration. The limitation is due to the core support lug. No recordable indications detected.
1-LHM-01	Lower Head Meridional at 30 Degrees	B1.22	79.0	The completed examination was limited to 79.0% coverage due to the configuration. The limitation is due to bottom mounted instrumentation penetrations. No recordable indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-LHM-02	Lower Head Meridional at 90 Degrees	B1.22	73.26	The completed examination was limited to 73.26% coverage due to the configuration. The limitation is due to bottom mounted instrumentation penetrations. No recordable indications detected.
1-LHM-05	Lower Head Meridional at 270 Degrees	B1.22	88.1	The completed examination was limited to 88.1% coverage due to the configuration. The limitation is due to bottom mounted instrumentation penetrations. No recordable indications detected.
1-LHM-06	Lower Head Meridional at 330 Degrees	B1.22	74.5	The completed examination was limited to 74.5% coverage due to the configuration. The limitation is due to bottom mounted instrumentation penetrations. No recordable indications detected.
1-N3B	Outlet Nozzle to Shell at 22 Degrees	B3.90	71.08	The completed examination was limited to 71.08% coverage due to the configuration. The limitation is due to nozzle geometry, vessel saddle effect, and adjacent outlet nozzle protrusion. Two subsurface indications were detected and evaluated as acceptable to IWB-3512-1.
1-N4B	Outlet Nozzle to Shell at 158 Degrees	B3.90	71.08	The completed examination was limited to 71.08% coverage due to the configuration. The limitation is due to nozzle geometry, vessel saddle effect, and adjacent outlet nozzle protrusion. One subsurface indication was detected and evaluated as acceptable to IWB-3512-1.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-N1B	Outlet Nozzle to Shell at 202 Degrees	B3.90	71.08	The completed examination was limited to 71.08% coverage due to the configuration. The limitation is due to nozzle geometry, vessel saddle effect and adjacent outlet nozzle protrusion. Six subsurface indications were detected and evaluated as acceptable to IWB-3512-1.
1-N2B	Outlet Nozzle to Shell at 338 Degrees	B3.90	71.08	The completed examination was limited to 71.08% coverage due to the configuration. The limitation is due to nozzle geometry, vessel saddle effect and adjacent outlet nozzle protrusion. Eight subsurface indications were detected and evaluated as acceptable to IWB-3512-1.

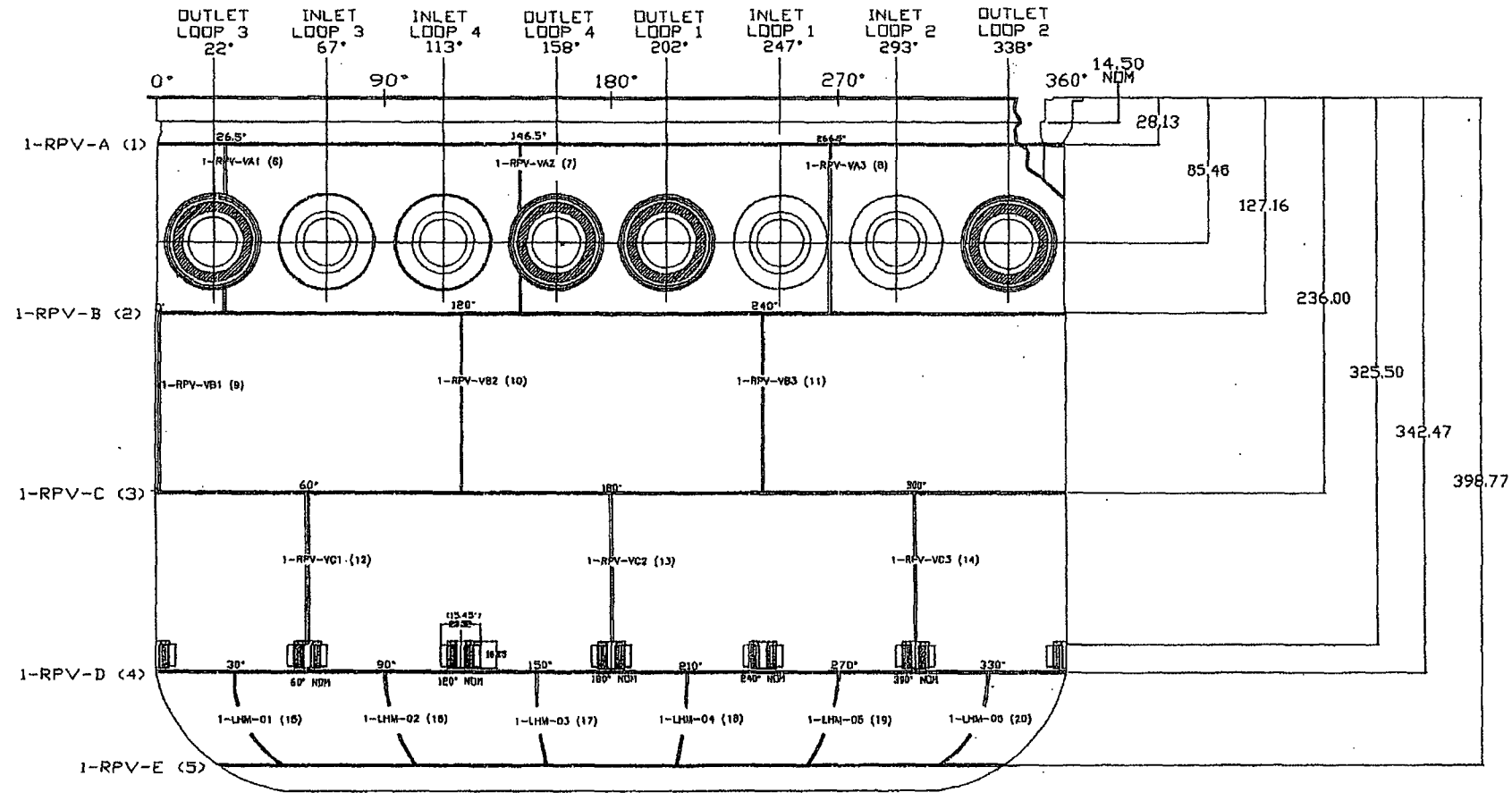
RELIEF REQUEST ISIR-33

EXAMINATION CATEGORY B-A
PRESSURE RETAINING WELDS IN REACTOR VESSEL

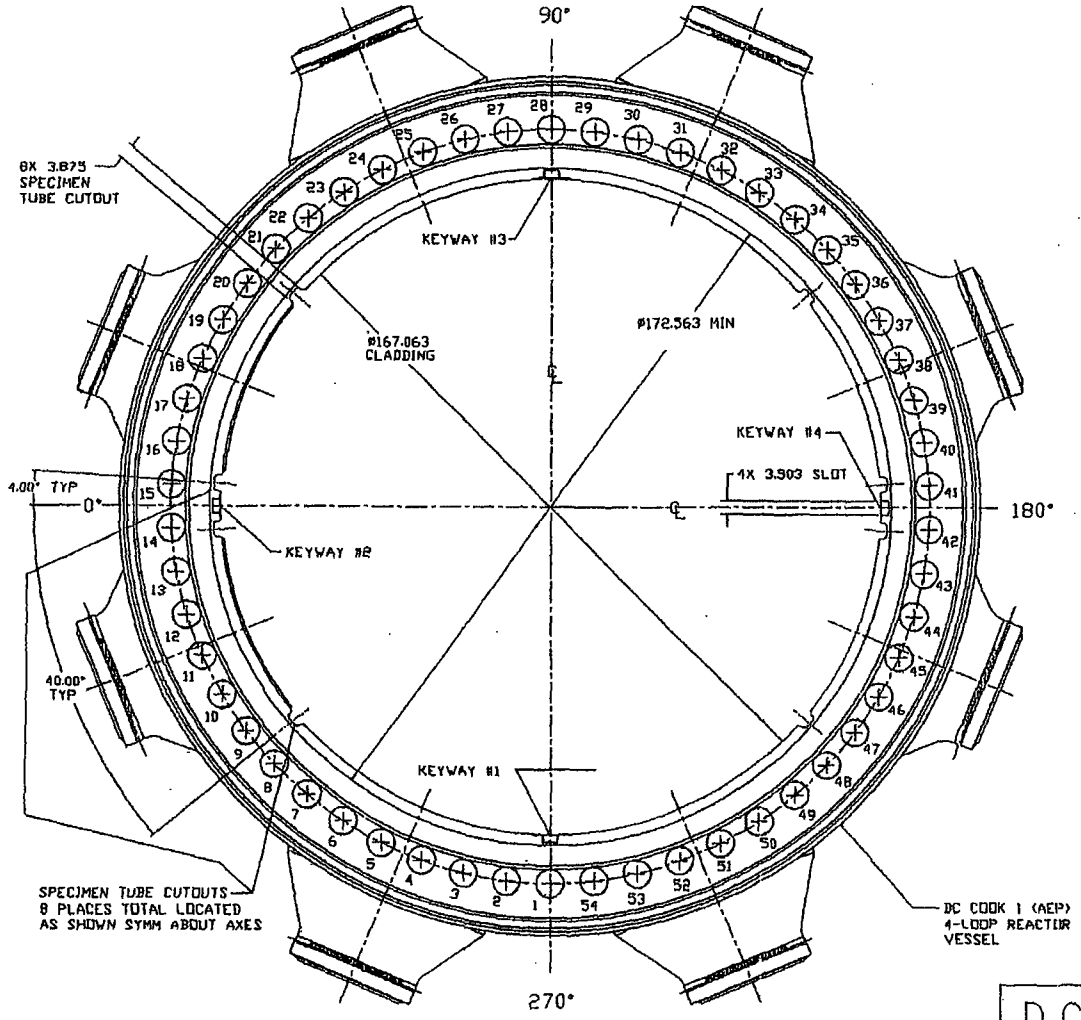
And

EXAMINATION CATEGORY B-D
FULL PENETRATION WELDS OF NOZZLES IN VESSELS – INSPECTION PROGRAM B
(Reactor Vessel only)

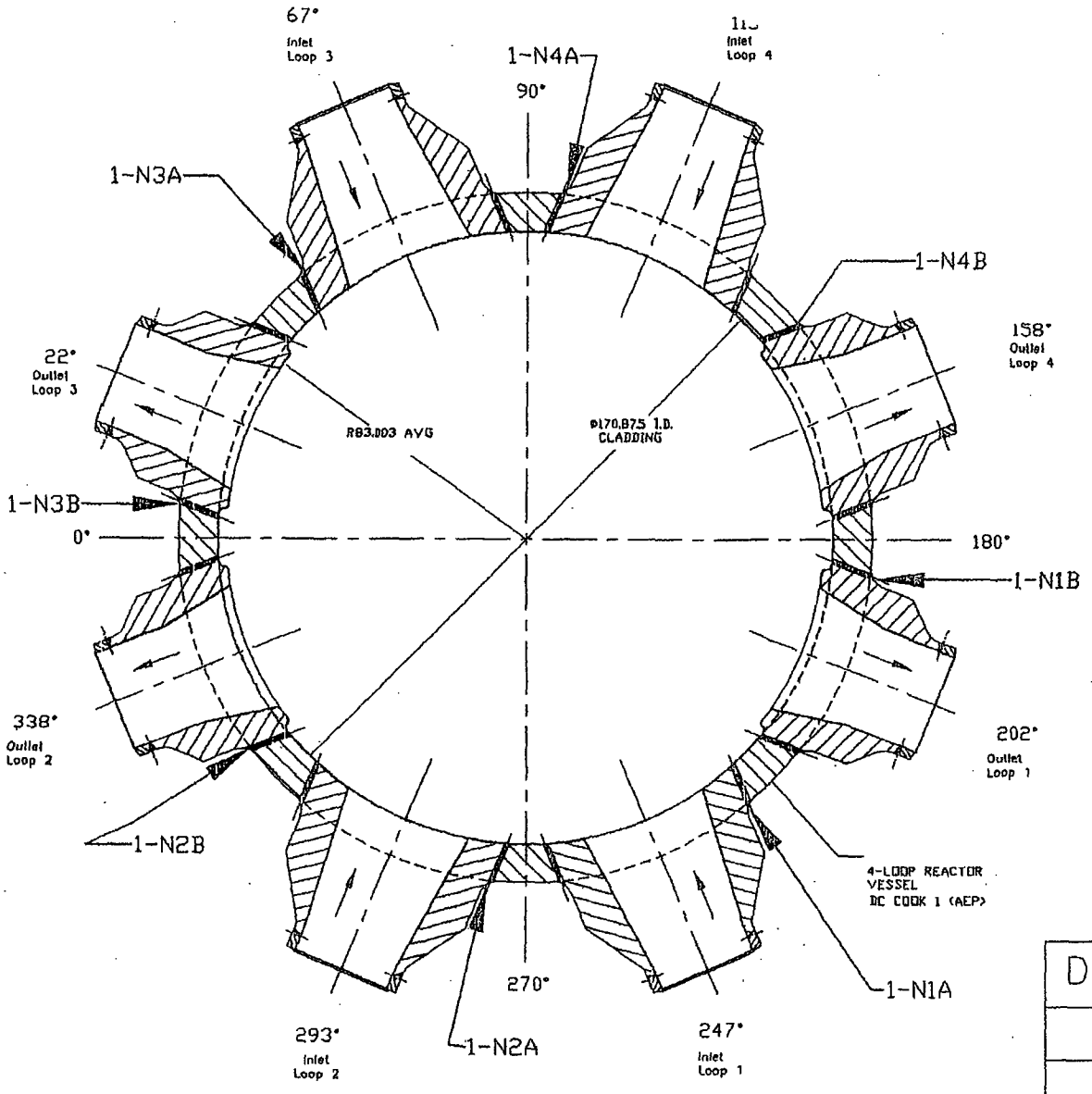
SUPPORTING DOCUMENTATION



D.C. COOK UNIT 1 2010	
WesDyne International	
VESSEL ROLLOUT	
EXAMINATION PROGRAM PLAN	
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED	SHEET 1 OF 21

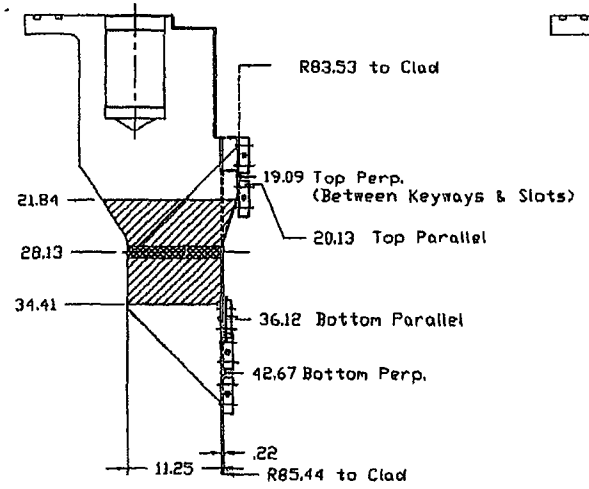


D.C. COOK UNIT 1 2010	
WesDyne International	
VESSEL ORIENTATION	
EXAMINATION PROGRAM PLAN	
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED	SHEET 2 OF 21

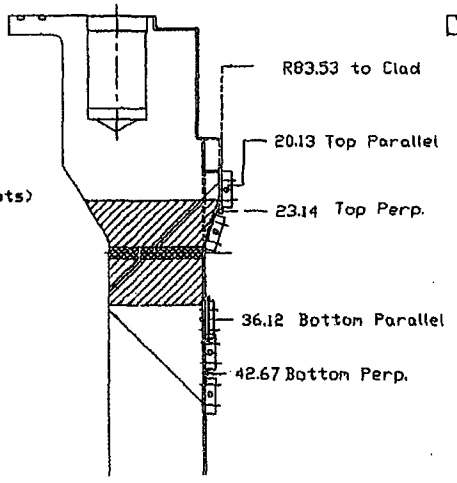


D.C. COOK UNIT 1 2010	
WesDyne International	
Nozzle Orientation	
EXAMINATION PROGRAM PLAN	
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED	SHEET 3 OF 21

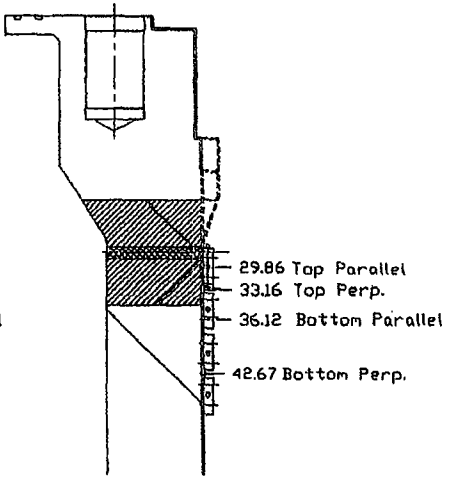
① Scan Boundaries Between Keyways & Irradiation Specimen Slots



② Scan Boundaries Below Keyways



③ Scan Boundaries Below Irradiation Specimen Slots



Perp. Scan Areas (Vessel ⊖)		Scan Limit Configuration
Start	Stop	
353	7	3
7	37	1
37	43	3
43	87.25	1
87.25	92.75	2
92.75	137	1
137	143	3
143	173	1
173	187	3
187	217	1
217	223	3
223	267.25	1
267.25	272.5	2
272.5	317	1
317	323	3
323	353	1

Parallel Scan Areas (Vessel ⊖)		Scan Limit Configuration
Start	Stop	
351.25	8.75	3
8.75	35.25	1
35.25	44.75	3
44.75	85.5	1
85.5	94.5	2
94.5	135.25	1
135.25	144.75	3
144.75	171.25	1
171.25	188.75	3
188.75	215.25	1
215.25	224.75	3
224.75	265.5	1
265.5	274.5	2
274.5	315.25	1
315.25	324.75	3
324.75	351.25	1

Scan Increment = 0.5" for Parallel Scans
= 0.5" (0.335") for Perp. Scans

WELD 1-RPV-A (1)

D.C. COOK UNIT 1

WesDyne International

SHEET TITLE: FLANGE TO UPPER SHELL

2010 EXAMINATION PROGRAM PLAN

ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED | SHEET 4 OF 21

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME: DC Cook Unit: 1

WELD NO.: 1-RPV-A COMPONENT: Shell to Flange Weld

LIMITATIONS: NO ☐ YES ☒

84.44 % Complete

See Coverage Breakdown Sheet

RESULTS

NI: X

RI:

NO. OF INDICATIONS: 0

STATUS:

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
☒ PARAGON ANALYSIS LOG	☐ ASSESSMENT SHEET
☒ PARAGON ACQUISITION LOG	☐ PARAGON HARD COPY
☒ SCAN PRINT OUT	☐ OTHER (Specify)
☒ COVERAGE BREAKDOWN	

Comments:

Limited due to Flange Configuration,Specimen Slots, and Keyways at 0, 90, 180 and 270 degrees.

Analyst: [signature] Date: 3/25/10

R.V. COVERAGE EST[illegible].TE BREAKDOWNS

PLANT NAME: DC Cook

WELD NO.: 1-RPV-A

COMPONENT: Shell to Flange Weld

WesDyne International

BEAM ANGLE BREAK DOWN

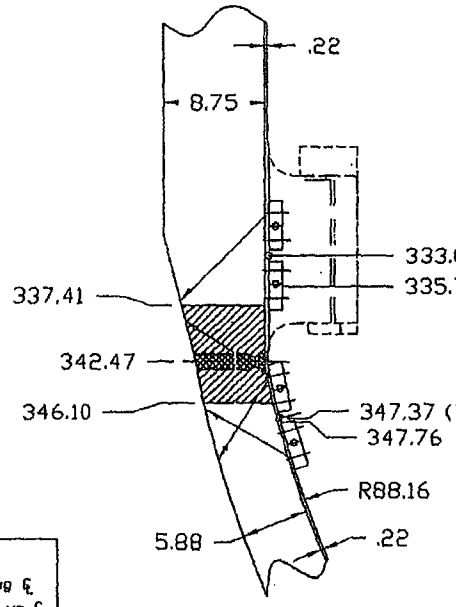
BEAM DIRECTION	45 Shear VOLUME		45 L Single VOLUME		45 L Dual VOLUME			
Perpendicular	UP	DN	UP	DN	UP	DN		
	99.87	45.74	94.61	72.78	90.73	87.14		
Parallel	CW	CCW	CW	CCW	CW	CCW		
	89.01	89.03	89.03	85.11	85.11	85.11		
AVERAGE	80.91		85.38		87.02			

Comments: Limited due to Flange Configuration,Specimen Slots, and Keyways at 0, 90, 180 and 270 degrees.

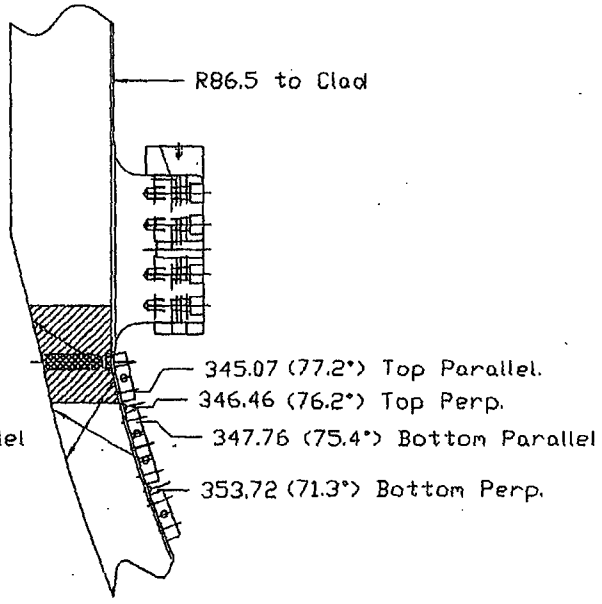
Combined Perp. 81.81 Combined Para. 87.07 Combined Average 84.44

Analyst [signature] Date 3/25/10

SCANS BETWEEN LUGS



SCANS BELOW LUGS



SCAN LIMITS AROUND LUGS

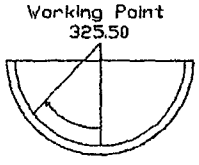
Perp Scans +/- 10.5° from Lug ℄

Parallel Scans +/- 11.5° from Lug ℄

Note: Perform scans between Lugs first then expand scans below Lugs to maximize coverage.

For Perp. Below Lug scans perform both -90° (Standard) and +90°(Reverse) axis 6 rotation scans

For Parallel Below scans perform both 0° (Standard) and 180° (Reverse) axis 6 rotation scans



Calculation of Angular Positions

WELD 1-RPV-D (4)

SUPREEM SCAN INCREMENT

Perp Scans & Parallel Scans = 0.5° Surface Index

PARAGON SCAN INCREMENTS

Perp and Parallel Scans Below Lugs = 0.325° (using Head Radius of 88.16")

Perp Scans Between Lugs = 0.33° (using Vessel Radius of 85.5")

Parallel Scans Between Lugs = 0.5°

D.C. COOK UNIT 1

WesDyne International

SHEET TITLE LOWER SHELL TO LOWER HEAD

2010 EXAMINATION PROGRAM PLAN

ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED

SHEET 9 OF 21

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME: DC Cook Unit: 1

WELD NO.: 1-RPV-D COMPONENT: Lower Shell to Bottom Head

LIMITATIONS: NO [ ] YES [X] 82.60 % Complete

See Coverage Breakdown Sheet

RESULTS NO. OF INDICATIONS: 0

NI: X STATUS:

RI:

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
[X] PARAGON ANALYSIS LOG	[ ] ASSESSMENT SHEET
[X] PARAGON ACQUISITION LOG	[ ] PARAGON HARD COPY
[X] SCAN PRINT OUT	[ ] OTHER (Specify)
[X] COVERAGE BREAKDOWN	

Comments: Limited due to 6 core support lugs

Analyst: [signature] Date: 3/25/10

R.V. COVERAGE EST[illegible]TE BREAKDOWNS

PLANT NAME: DC Cook

WELD NO.: 1-RPV-D

COMPONENT: Lower Shell to Bottom Head

WesDyne International

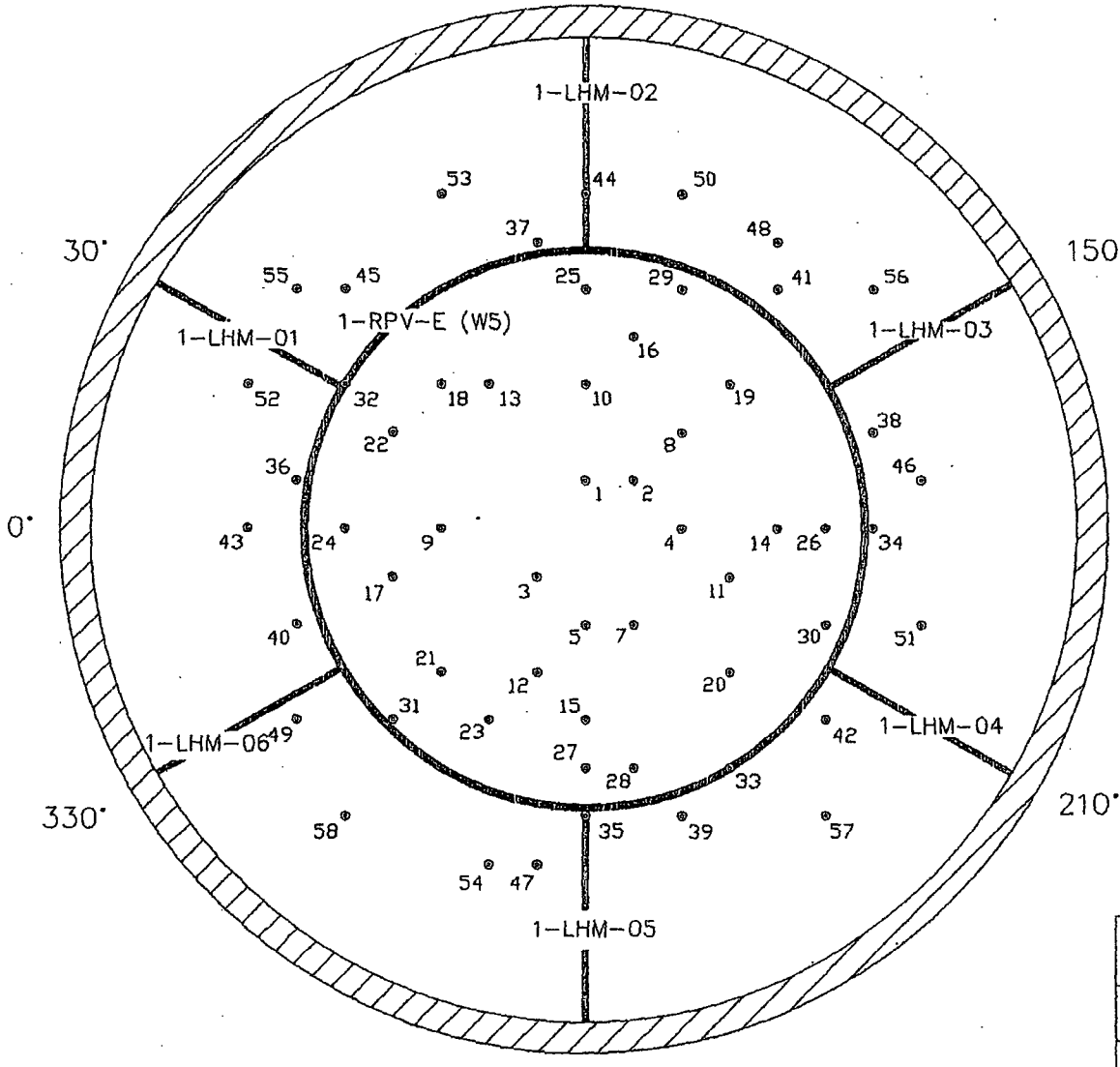
BEAM ANGLE BREAK DOWN

BEAM DIRECTION	45 Shear VOLUME		45 L Single VOLUME		45 L Dual VOLUME			
Perpendicular	UP	DN	UP	DN	UP	DN		
	99.86	65.71	81.20	64.99	89.48	68.03		
Parallel	CW	CCW	CW	CCW	CW	CCW		
	86.98	86.98	86.98	86.98	86.98	86.98		
AVERAGE	84.88		80.04		82.87			

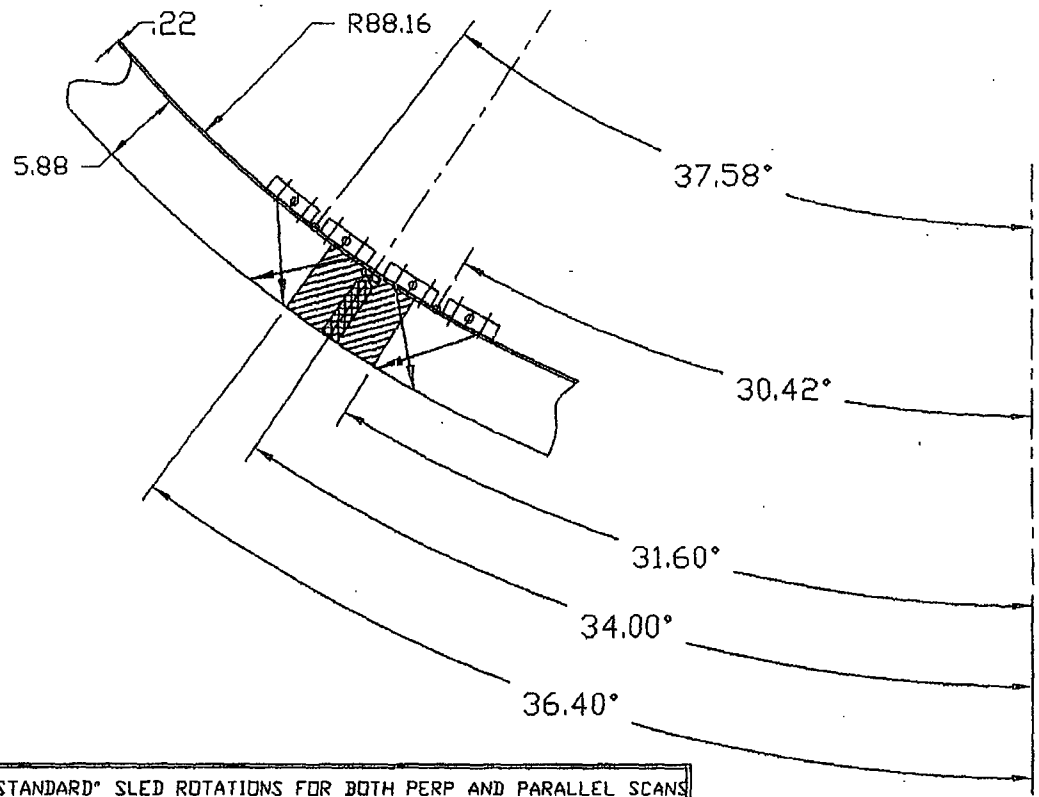
Comments: Limited due to 6 core support lugs

Combined Perp. 78.21 Combined Para. 86.98 Combined Average 82.60

Analyst [signature] Date 3/25/10

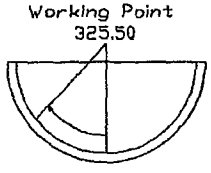


D. C. COOK UNIT 1 2010	
WesDyne International	
Bottom Head Layout	
EXAMINATION PROGRAM PLAN	
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED	SHEET 13 OF 21



USE "STANDARD" SLED ROTATIONS FOR BOTH PERP AND PARALLEL SCANS

WELD 1-RPV-E (5)



Calculation of Angular Positions

SUPREEM SCAN INCREMENT

Perp Scans & Parallel Scans = 0.5" Surface Index

PARAGON SCAN INCREMENT

Perp Scans = 0.86° (using Weld ℄ Radius of 49.3")

Parallel Scans = 0.325° (using Head Radius of 88.16")

D.C. COOK UNIT 1

WesDyne International

SHEET TITLE: BOTTOM HEAD TO DOLLAR PLATE

2010 EXAMINATION PROGRAM PLAN

ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED

SHEET 12 OF 21

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME: DC Cook Unit: 1

WELD NO.: 1-RPV-E COMPONENT: Bottom Head Dollar Weld

LIMITATIONS: NO [ ] YES [X] 38.40 % Complete
See Coverage Breakdown Sheet

RESULTS

NI: X

RI:

NO. OF INDICATIONS: 0

STATUS:

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
[X] PARAGON ANALYSIS LOG	[ ] ASSESSMENT SHEET
[X] PARAGON ACQUISITION LOG	[ ] PARAGON HARD COPY
[X] SCAN PRINT OUT	[ ] OTHER (Specify)
[X] COVERAGE BREAKDOWN	

Comments: Limited due to bottom head instrumentation tubing

Analyst: [signature] Date: 3/23/10

R.V. COVERAGE EST\ \TE BREAKDOWNS

PLANT NAME: DC Cook

WELD NO.: 1-RPV-E

COMPONENT: Bottom Head Dollar Weld

WesDyne International

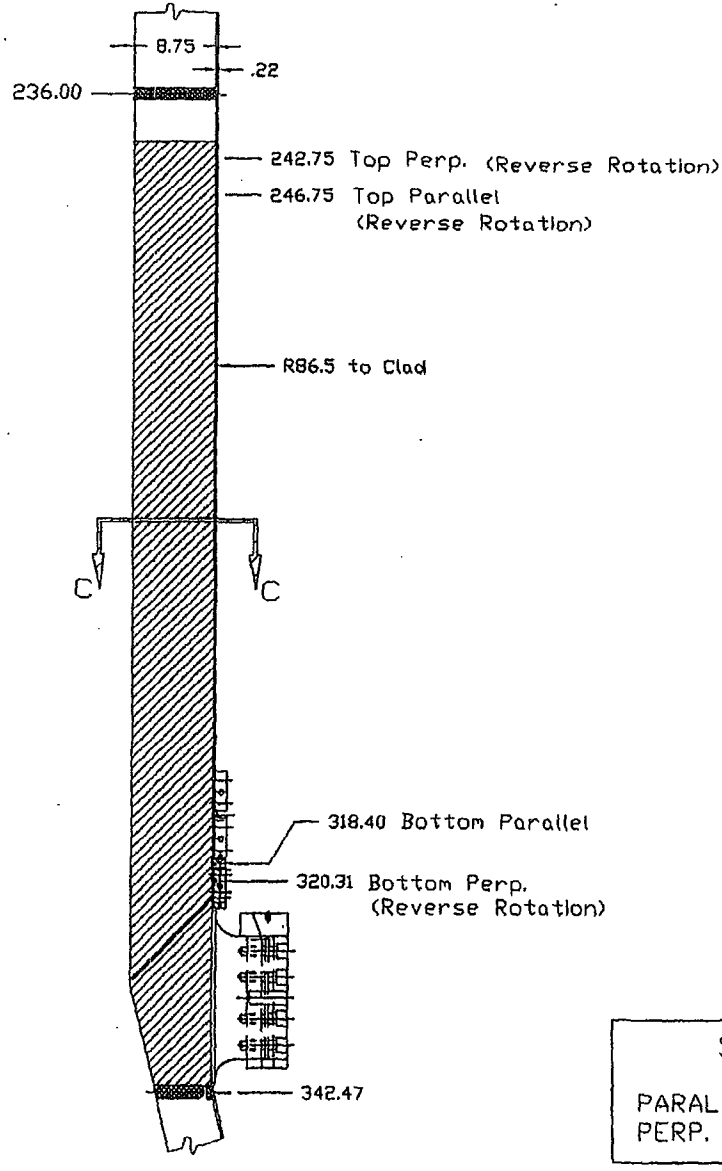
BEAM ANGLE BREAK DOWN

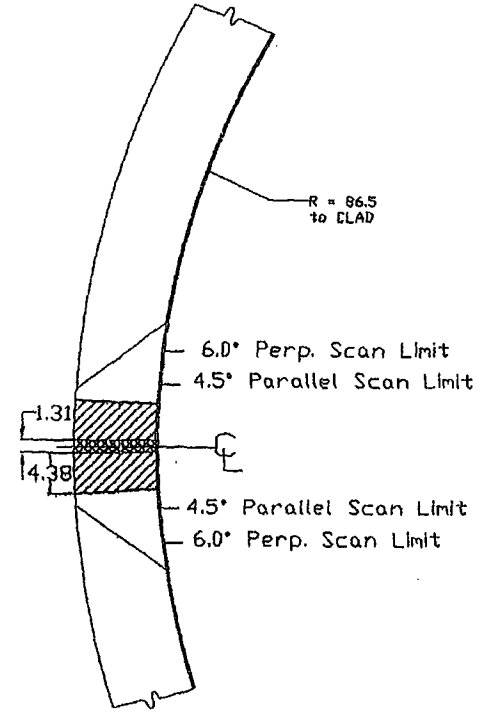
BEAM DIRECTION	45 Shear VOLUME		45 L Single VOLUME		45 L Dual VOLUME			
Perpendicular	UP	DN	UP	DN	UP	DN		
	39.50	39.50	39.50	39.50	39.50	39.50		
Parallel	CW	CCW	CW	CCW	CW	CCW		
	37.30	37.30	37.30	37.30	37.30	37.30		
AVERAGE	38.40		38.40		38.40			

Comments: Limited due to bottom head instrumentation tubing

Combined Perp. 39.50 Combined Para. 37.30 Combined Average 38.40

Analyst [signature] Date 3/25/10





SECTION C-C

1-RPV-VC1 @ 60° (12)
1-RPV-VC2 @ 180° (13)
1-RPV-VC3 @ 300° (14)

SCAN INCREMENTS
PARALLEL SCANS = 0.5" (0.331")
PERP. SCANS = 0.5"

D.C. COOK UNIT 1	
WesDyne International	
SHEET TITLE	LOWER SHELL LONG SEAMS
2010 EXAMINATION PROGRAM PLAN	
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED	SHEET 10 OF 21

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME DC Cook Unit 1

WELD NO. 1-RPV-VC1 COMPONENT Lower Shell Long Seams

LIMITATIONS: NO ☐ YES ☒ 78.29 % Complete

See Coverage Breakdown Sheet

RESULTS

NI X

RI

NO. OF INDICATIONS

STATUS

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
☒ PARAGON ANALYSIS LOG	☐ ASSESSMENT SHEET
☒ PARAGON ACQUISITION LOG	☐ PARAGON HARD COPY
☒ SCAN PRINT OUT	☐ OTHER (Specify)
☒ COVERAGE BREAKDOWN	

Comments: Limited due to core support lug

Analyst [signature] Date: 3/23/11

R.V. COVERAGE ESTI TE BREAKDOWNS

PLANT NAME DC Cook

WELD NO. 1-RPV-VC1

COMPONENT Lower Shell Long Seams

WesDyne International

BEAM ANGLE BREAK DOWN

BEAM DIRECTION	45 Shear		45 L Single		45 L Dual			
	VOLUME		VOLUME		VOLUME			
Perpendicular	UP	DN	UP	DN	UP	DN		
	79.18	79.18	79.18	79.18	79.18	79.18		
Parallel	CW	CCW	CW	CCW	CW	CCW		
	77.39	77.39	77.39	77.39	77.39	77.39		
AVERAGE	78.29		78.29		78.29			

Comments: Limited due to core support lug

Combined Perp. 79.18 Combined Para. 77.39 Combined Average 78.29

Analyst [signature] Date 3/25/10

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME DC Cook Unit 1

WELD NO. 1-RPV-VC2 COMPONENT Lower Shell Long Seams

LIMITATIONS: NO ☐ YES ☒ 78.29 % Complete
See Coverage Breakdown Sheet

RESULTS

NI X

RI

NO. OF INDICATIONS

STATUS

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
☒ PARAGON ANALYSIS LOG	☐ ASSESSMENT SHEET
☒ PARAGON ACQUISITION LOG	☐ PARAGON HARD COPY
☒ SCAN PRINT OUT	☐ OTHER (Specify)
☒ COVERAGE BREAKDOWN	

Comments: Limited due to core support lug

Analyst [signature] Date: 3/25/10

R.V. COVERAGE ESTI[illegible]TE BREAKDOWNS

PLANT NAME: DC Cook

WELD NO.: 1-RPV-VC2

COMPONENT: Lower Shell Long Seams

WesDyne International

BEAM ANGLE BREAK DOWN

BEAM DIRECTION	45 Shear VOLUME		45 L Single VOLUME		45 L Dual VOLUME			
Perpendicular	UP	DN	UP	DN	UP	DN		
	79.18	79.18	79.18	79.18	79.18	79.18		
Parallel	CW	CCW	CW	CCW	CW	CCW		
	77.39	77.39	77.39	77.39	77.39	77.39		
AVERAGE	78.29		78.29		78.29			

Comments: Limited due to core support lug

Combined Perp. 79.18 Combined Para. 77.39 Combined Average 78.29

Analyst [signature] Date 3/25/10

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME DC Cook Unit 1

WELD NO. 1-RPV-VC3 COMPONENT Lower Shell Long Seams

LIMITATIONS: NO ☐ YES ☒ 78.29 % Complete

See Coverage Breakdown Sheet

RESULTS

NI X

RI

NO. OF INDICATIONS

STATUS

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
☒ PARAGON ANALYSIS LOG	☐ ASSESSMENT SHEET
☒ PARAGON ACQUISITION LOG	☐ PARAGON HARD COPY
☒ SCAN PRINT OUT	☐ OTHER (Specify)
☒ COVERAGE BREAKDOWN	

Comments: Limited due to core support lug

Analyst [signature] Date: 3/25/10

R.V. COVERAGE EST[illegible]TE BREAKDOWNS

PLANT NAME: DC Cook

WELD NO.: 1-RPV-VC3

COMPONENT: Lower Shell Long Seams

WesDyne International

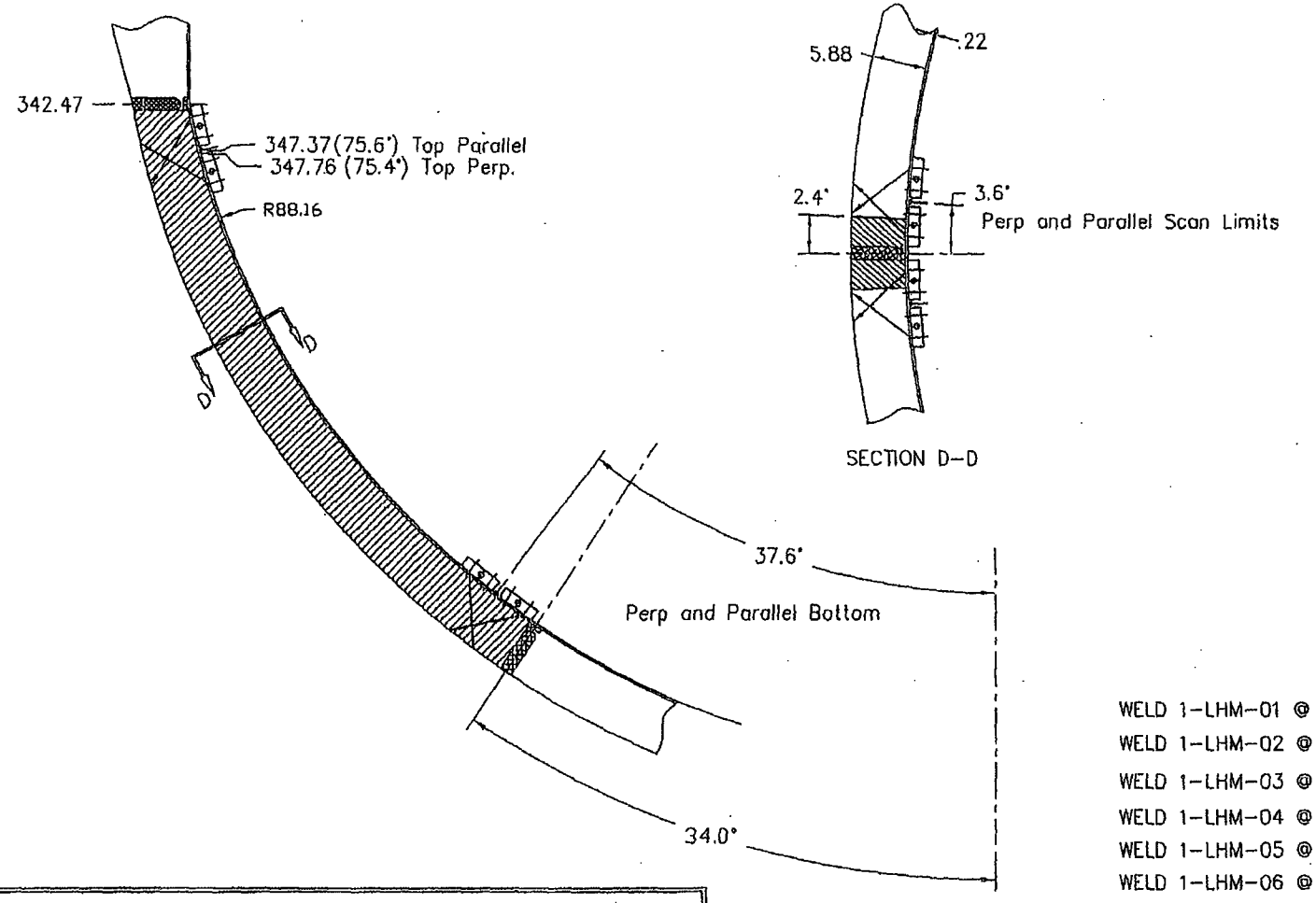
BEAM ANGLE BREAK DOWN

BEAM DIRECTION	45 Shear		45 L Single		45 L Dual			
	VOLUME		VOLUME		VOLUME			
Perpendicular	UP	DN	UP	DN	UP	DN		
	79.18	79.18	79.18	79.18	79.18	79.18		
Parallel	CW	CCW	CW	CCW	CW	CCW		
	77.39	77.39	77.39	77.39	77.39	77.39		
AVERAGE	78.29		78.29		78.29			

Comments: Limited due to core support lug

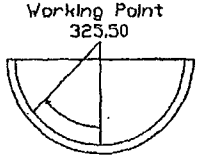
Combined Perp. 79.18 Combined Para. 77.39 Combined Average 78.29

Analyst [signature] Date 3/25/16



WELD 1-LHM-01 @ 30° (15)
WELD 1-LHM-02 @ 90° (16)
WELD 1-LHM-03 @ 150° (17)
WELD 1-LHM-04 @ 210° (18)
WELD 1-LHM-05 @ 270 (19)
WELD 1-LHM-06 @ 330° (20)

USE "REVERSE" SLED ROTATIONS FOR BOTH PERP AND PARALLEL SCANS



Calculation of Angular Positions

SUPREEM SCAN INCREMENT

Perp Scans & Parallel Scans = 0.5" Surface Index

PARAGON SCAN INCREMENTS

Perp and Parallel Scans = 0.325" (using Head Radius of 88.16")

D.C. COOK UNIT 1

WesDyne International

SHEET TITLE: Meridional Welds

2010 EXAMINATION PROGRAM PLAN

ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED

SHEET 11 OF 21

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME: DC Cook Unit: 1

WELD NO.: 1-LHM-01 COMPONENT: Bottom Head Meridionals

LIMITATIONS: NO [ ] YES [X] 79.00 % Complete

See Coverage Breakdown Sheet

RESULTS

NI: X

RI:

NO. OF INDICATIONS: 0

STATUS:

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
[X] PARAGON ANALYSIS LOG	[ ] ASSESSMENT SHEET
[X] PARAGON ACQUISITION LOG	[ ] PARAGON HARD COPY
[X] SCAN PRINT OUT	[ ] OTHER (Specify)
[X] COVERAGE BREAKDOWN	

Comments: Limited due to bottom head instrumentation tubing

Analyst: [signature] Date: 2/25/10

R.V. COVERAGE ESTI .TE BREAKDOWNS

PLANT NAME: DC Cook

WELD NO.: 1-LHM-01

COMPONENT: Bottom Head Meridionals

WesDyne International

BEAM ANGLE BREAK DOWN

BEAM DIRECTION	45 Shear		45 L Single		45 L Dual			
	VOLUME		VOLUME		VOLUME			
Perpendicular	UP	DN	UP	DN	UP	DN		
	84.00	84.00	84.00	84.00	84.00	84.00		
Parallel	CW	CCW	CW	CCW	CW	CCW		
	74.00	74.00	74.00	74.00	74.00	74.00		
AVERAGE	79.00		79.00		79.00			

Comments: Limited due to bottom head instrumentation tubing

Combined Perp. 84.00 Combined Para. 74.00 Combined Average 79.00

Analyst [signature] Date 3/25/10

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME: DC Cook Unit: 1

WELD NO.: 1-LHM-02 COMPONENT: Bottom Head Meridionals

LIMITATIONS: NO [ ] YES [X] 73.26 % Complete
See Coverage Breakdown Sheet

RESULTS

NI: X

RI:

NO. OF INDICATIONS: 0

STATUS:

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
[X] PARAGON ANALYSIS LOG	[ ] ASSESSMENT SHEET
[X] PARAGON ACQUISITION LOG	[ ] PARAGON HARD COPY
[X] SCAN PRINT OUT	[ ] OTHER (Specify)
[X] COVERAGE BREAKDOWN	

Comments: Limited due to bottom head instrumentation tubing

Analyst: [signature] Date: 3/25/11

R.V. COVERAGE ESTI TE BREAKDOWNS

PLANT NAME: DC Cook

WELD NO.: 1-LHM-02

COMPONENT: Bottom Head Meridionals

WesDyne International

BEAM ANGLE BREAK DOWN

BEAM DIRECTION	45 Shear VOLUME		45 L Single VOLUME		45 L Dual VOLUME			
Perpendicular	UP	DN	UP	DN	UP	DN		
	74.30	74.30	74.30	74.30	74.30	74.30		
Parallel	CW	CCW	CW	CCW	CW	CCW		
	72.20	72.20	72.20	72.20	72.27	72.20		
AVERAGE	73.25		73.25		73.27			

Comments: Limited due to bottom head instrumentation tubing

Combined Perp. 74.30 Combined Para. 72.21 Combined Average 73.26

Analyst [signature] Date 3/25/10

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME: DC Cook Unit: 1

WELD NO.: 1-LHM-05 COMPONENT: Bottom Head Meridionals

LIMITATIONS: NO [ ] YES [X] 88.10 % Complete
See Coverage Breakdown Sheet

RESULTS

NI: X

RI:

NO. OF INDICATIONS: 0

STATUS:

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
[X] PARAGON ANALYSIS LOG	[ ] ASSESSMENT SHEET
[X] PARAGON ACQUISITION LOG	[ ] PARAGON HARD COPY
[X] SCAN PRINT OUT	[ ] OTHER (Specify)
[X] COVERAGE BREAKDOWN	

Comments: Limited due to bottom head instrumentation tubing

Analyst: [signature] Date: 3/25/16

R.V. COVERAGE ESTIM. .E BREAKDOWNS

PLANT NAME: DC Cook

WELD NO.: 1-LHM-05

COMPONENT: Bottom Head Meridionals

WesDyne International

BEAM ANGLE BREAK DOWN

BEAM DIRECTION	45 Shear		45 L Single		45 L Dual			
	VOLUME		VOLUME		VOLUME			
Perpendicular	UP	DN	UP	DN	UP	DN		
	87.70	87.70	87.70	87.70	87.70	87.70		
Parallel	CW	CCW	CW	CCW	CW	CCW		
	88.50	88.50	88.50	88.50	88.50	88.50		
AVERAGE	88.10		88.10		88.10			

Comments: Limited due to bottom head instrumentation tubing

Combined Perp. 87.70 Combined Para. 88.50 Combined Average 88.10

Analyst [signature] Date 3/25/10

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME: DC Cook Unit: 1

WELD NO.: 1-LHM-06 COMPONENT: Bottom Head Meridionals

LIMITATIONS: NO [ ] YES [X] 74.50 % Complete
See Coverage Breakdown Sheet

RESULTS

NI: X

RI:

NO. OF INDICATIONS: 0

STATUS:

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
[X] PARAGON ANALYSIS LOG	[ ] ASSESSMENT SHEET
[X] PARAGON ACQUISITION LOG	[ ] PARAGON HARD COPY
[X] SCAN PRINT OUT	[ ] OTHER (Specify)
[X] COVERAGE BREAKDOWN	

Comments: Limited due to bottom head instrumentation tubing

Analyst: [signature] Date: 3/25/10

R.V. COVERAGE EST[illegible] TE BREAKDOWNS

PLANT NAME: DC Cook

WELD NO.: 1-LHM-06

COMPONENT: Bottom Head Meridionals

WesDyne International

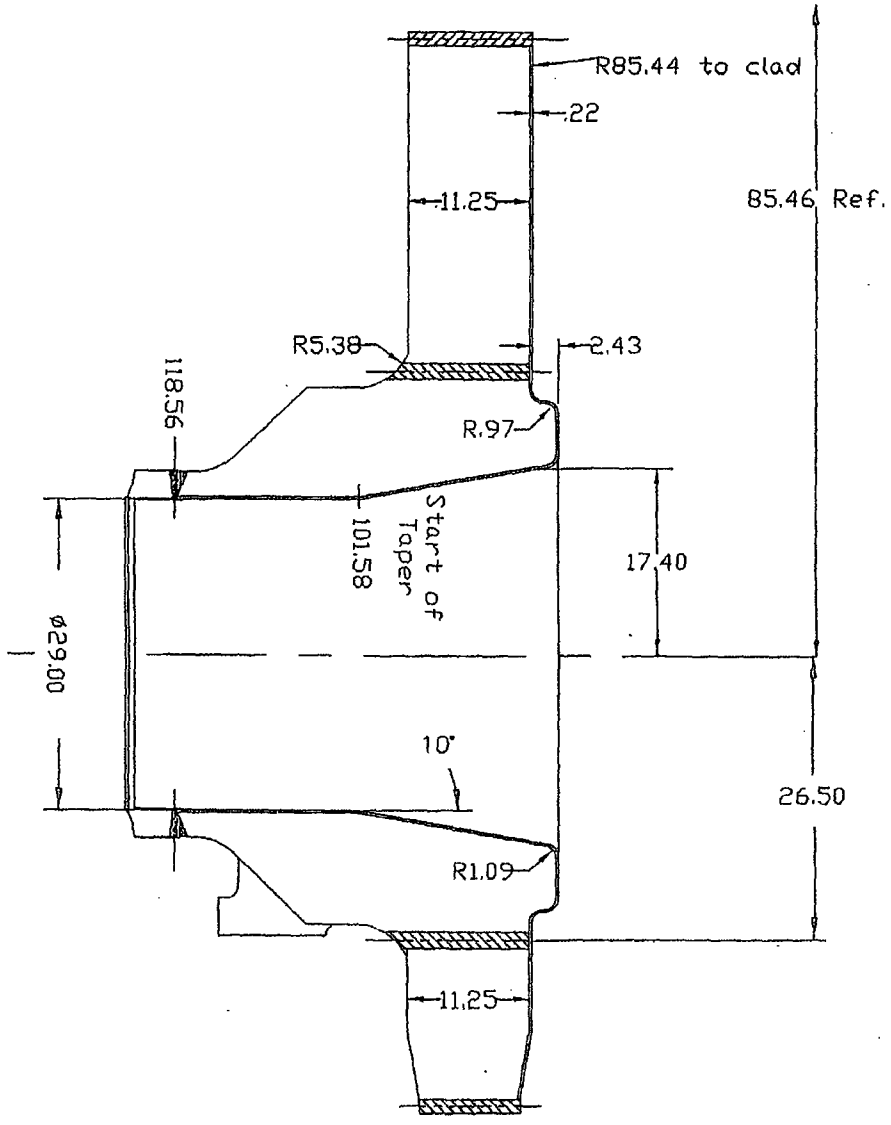
BEAM ANGLE BREAK DOWN

BEAM DIRECTION	45 Shear		45 L Single		45 L Dual			
	VOLUME		VOLUME		VOLUME			
Perpendicular	UP	DN	UP	DN	UP	DN		
	74.00	74.00	74.00	74.00	74.00	74.00		
Parallel	CW	CCW	CW	CCW	CW	CCW		
	75.00	75.00	75.00	75.00	75.00	75.00		
AVERAGE	74.50		74.50		74.50			

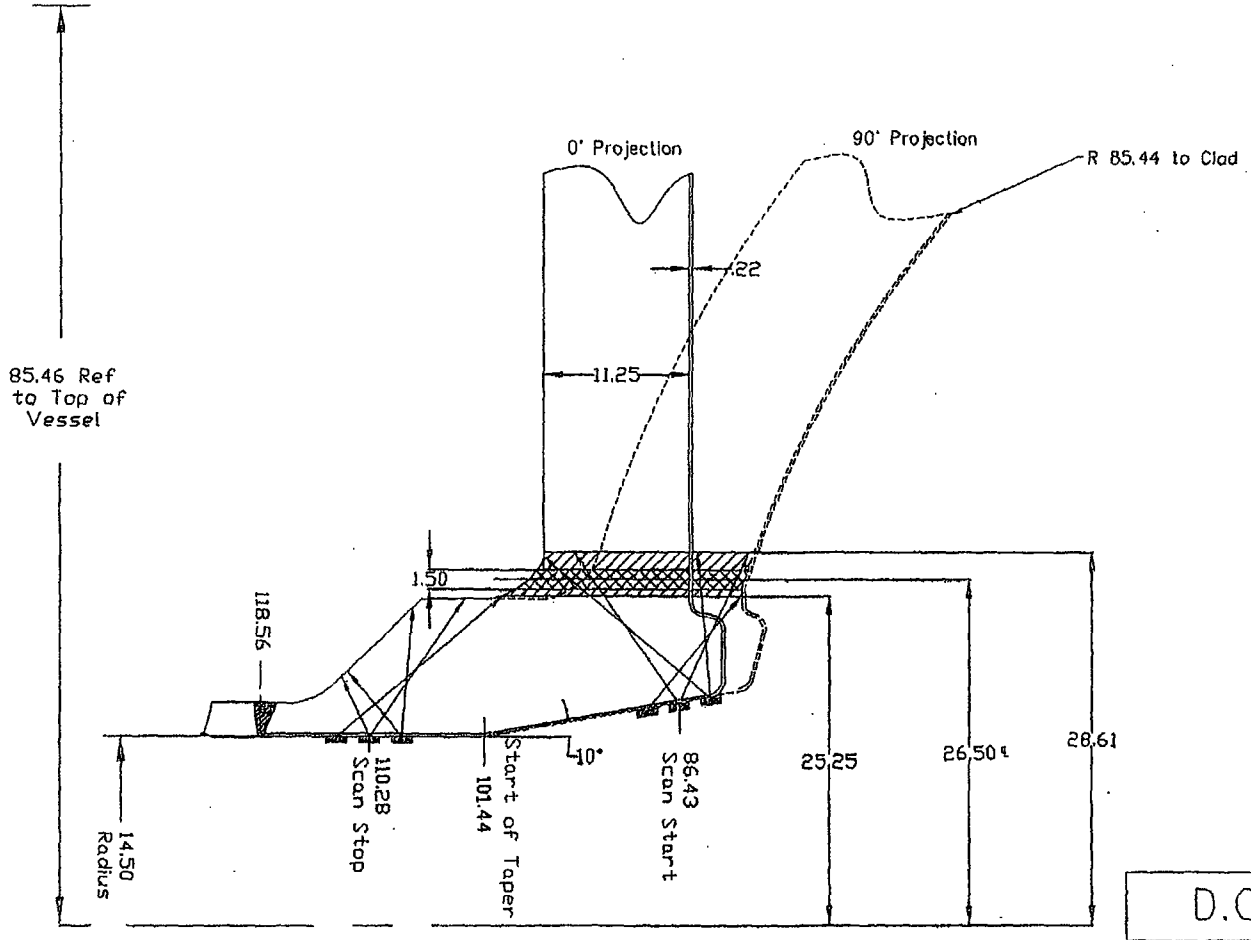
Comments: Limited due to bottom head instrumentation tubing

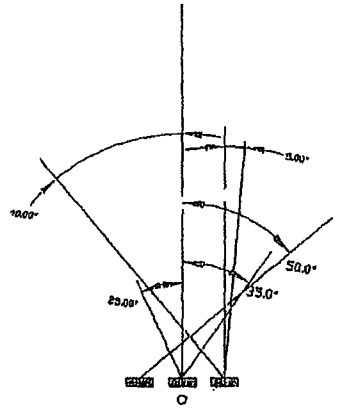
Combined Perp. 74.00 Combined Para. 75.00 Combined Average 74.50

Analyst [signature] Date 3/25/10



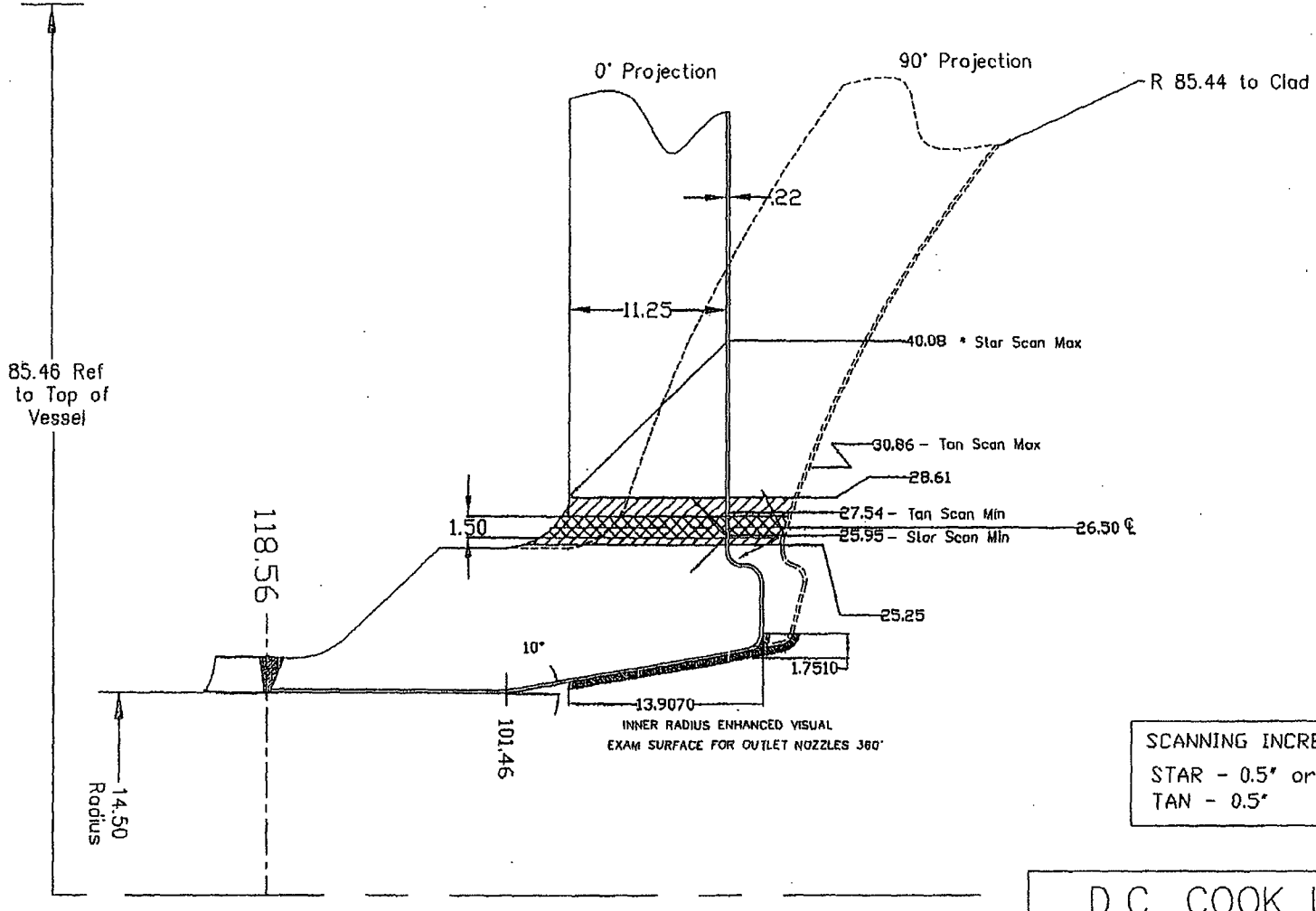
D.C. COOK UNIT 1	
WesDyne International	
SHEET TITLE	Outlet Nozzle Configuration
2010 EXAMINATION PROGRAM PLAN	
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED	SHEET 14OF 21





Scan Increment = 0.541" (0.25" @ weld centerline)

D.C. COOK UNIT 1	
WesDyne International	
SHEET TITLE: Outlet Nozzle Bore Scans	
2010 EXAMINATION PROGRAM PLAN	
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED	SHEET 15 OF 21



SCANNING INCREMENT
STAR - 0.5° or 1.08°
TAN - 0.5°

* Note: The Star Scan MAX dimension shall be reduced to 35.50° as follows:
Nozzle @ 22° - 239° to 301°
Nozzle @ 158° - 59° to 122°
Nozzle @ 202° - 239° to 301°
Nozzle @ 338° - 59° to 122°

D.C. COOK UNIT 1

WesDyne International

SHEET TITLE: Outlet Star, Tan, IR Exams

2010 EXAMINATION PROGRAM PLAN

ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED | SHEET 16OF 21

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME: DC Cook Unit: 1

WELD NO.: 1-N3B COMPONENT: Outlet Nozzle To Shell Weld @ 22 Deg.

LIMITATIONS: NO [ ] YES [X] 71.08 % Complete
See Coverage Breakdown Sheet

RESULTS

NI [ ]

RI [X]

NO. OF INDICATIONS: 2

STATUS: Code Allowable

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
[X] PARAGON ANALYSIS LOG	[X] ASSESSMENT SHEET
[X] PARAGON ACQUISITION LOG	[X] PARAGON HARD COPY
[X] SCAN PRINT OUT	[ ] OTHER (Specify)
[X] COVERAGE BREAKDOWN	

Comments:
Limitation is due to nozzle geometry, vessel saddle effect, and adjacent outlet nozzle protrusion

Analyst E.R. Zollman Date: 3/25/10

R.V. COVERAGE ESTIMATE BREAKDOWNS

PLANT NAME: DC Cook

WELD NO.: 1-N3B

COMPONENT: Outlet Nozzle To Shell Weld @ 22 Deg.

WesDyne International

BEAM ANGLE BREAK DOWN

BEAM DIRECTION	Tan Scan 45° L Dual, 45° L Single, 45° Shear	Star Scan 45° L Dual, 45° L Single, 45° Shear	Bore Scan 15° 30°, 45°, 60°	
CW	42.54			
CCW	42.54			
Out (away from bore)			100.00	
In (toward bore)		99.23		

Comments: Limitation is due to nozzle geometry, vessel saddle effect, and adjacent outlet nozzle protrusion

Combined Avg. 71.08

Analyst E. R. Zollinger Date 3/25/10

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME: DC Cook Unit: 1

WELD NO.: 1-N4B COMPONENT: Outlet Nozzle To Shell Weld @ 158 Deg.

LIMITATIONS: NO [ ] YES [X] 71.08 % Complete
See Coverage Breakdown Sheet

RESULTS

NI

RI X

NO. OF INDICATIONS 1

STATUS Code Allowable

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
[X] PARAGON ANALYSIS LOG	[X] ASSESSMENT SHEET
[X] PARAGON ACQUISITION LOG	[X] PARAGON HARD COPY
[X] SCAN PRINT OUT	[ ] OTHER (Specify)
[X] COVERAGE BREAKDOWN	

Comments:
Limitation is due to nozzle geometry, vessel saddle effect, and adjacent outlet nozzle protrusion

Analyst [signature] Date: 3/25/10

R.V. COVERAGE ESTIMATE BREAKDOWNS

PLANT NAME: DC Cook

WELD NO.: 1-N4B

COMPONENT: Outlet Nozzle To Shell Weld @ 158 Deg.

WesDyne International

BEAM ANGLE BREAK DOWN

BEAM DIRECTION	Tan Scan 45° L Dual, 45° L Single, 45° Shear	Star Scan 45° L Dual, 45° L Single, 45° Shear	Bore Scan 15°, 30°, 45°, 60°	
CW	42.54			
CCW	42.54			
Out (away from bore)			100.00	
In (toward bore)		99.23		

Comments: Limitation is due to nozzle geometry, vessel saddle effect, and adjacent outlet nozzle protrusion

Combined Avg. 71.08

Analyst [signature]

Date 3/25/02

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME: DC Cook Unit: 1

WELD NO.: 1-N1B COMPONENT: Outlet Nozzle To Shell Weld @ 202 Deg.

LIMITATIONS: NO [ ] YES [X] 71.08 % Complete
See Coverage Breakdown Sheet

RESULTS

NI

RI X

NO. OF INDICATIONS 6

STATUS Code Allowable

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
[X] PARAGON ANALYSIS LOG	[X] ASSESSMENT SHEET
[X] PARAGON ACQUISITION LOG	[X] PARAGON HARD COPY
[X] SCAN PRINT OUT	[ ] OTHER (Specify)
[X] COVERAGE BREAKDOWN	

Comments:
Limitation is due to nozzle geometry, vessel saddle effect, and adjacent outlet nozzle protrusion

Analyst: [signature] Date: 3/25/10

R.V. COVERAGE ESTIMATE BREAKDOWNS

PLANT NAME: DC Cook

WELD NO.: 1-N1B

COMPONENT: Outlet Nozzle To Shell Weld @ 202 Deg.

WesDyne International

BEAM ANGLE BREAK DOWN

BEAM DIRECTION	Tan Scan 45° L Dual, 45° L Single, 45° Shear	Star Scan 45° L Dual, 45° L Single, 45° Shear	Bore Scan 15° 30°, 45°, 60°	
CW	42.54			
CCW	42.54			
Out (away from bore)			100.00	
In (toward bore)		99.23		

Comments: Limitation is due to nozzle geometry, vessel saddle effect, and adjacent outlet nozzle protrusion

Combined Avg. 71.08

Analyst [signature]

Date 3/23/10

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME: DC Cook Unit: 1

WELD NO.: 1-N2B COMPONENT: Outlet Nozzle To Shell Weld @ 338 Deg.

LIMITATIONS: NO ☐ YES ☒ 71.08 % Complete
See Coverage Breakdown Sheet

RESULTS

NI: ____

RI: X

NO. OF INDICATIONS: 8

STATUS: Code Allowable

EXAM DOCUMENTATION	INDICATION DOCUMENTATION
☒ PARAGON ANALYSIS LOG	☒ ASSESSMENT SHEET
☒ PARAGON ACQUISITION LOG	☒ PARAGON HARD COPY
☒ SCAN PRINT OUT	☐ OTHER (Specify)
☒ COVERAGE BREAKDOWN	

Comments:
Limitation is due to nozzle geometry, vessel saddle effect, and adjacent outlet nozzle protrusion

Analyst: E L Zalm Date: 3/24/10

R.V. COVERAGE ESTIMATE BREAKDOWNS

PLANT NAME: DC Cook

WELD NO.: 1-N2B

COMPONENT: Outlet Nozzle To Shell Weld @ 338 Deg.

WesDyne International

BEAM ANGLE BREAK DOWN

BEAM DIRECTION	Ten Scan 45° L Dual, 45° L Single, 45° Shear	Star Scan 45° L Dual, 45° L Single, 45° Shear	Bore Scan 15°, 30°, 45°, 60°	
CW	42.54			
CCW	42.64			
Out (away from bore)			100.00	
In (toward bore)		99.23		

Comments: Limitation is due to nozzle geometry, vessel saddle effect, and adjacent outlet nozzle protrusion

Combined Avg. 71.08

Analyst E. R. Zollman Date 3/24/10

ATTACHMENT 2 to AEP-NRC-2011-23

RELIEF REQUEST ISIR-34

EXAMINATION CATEGORY B-B
PRESSURE RETAINING WELDS IN VESSELS OTHER THAN REACTOR VESSELS

RELIEF REQUEST ISIR-34

Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii)
Inservice Inspection Impracticality

1. ASME Code Components Affected

ASME Code Class:	Code Class 1
Examination Category:	B-B, Pressure Retaining Welds in Vessels Other Than Reactor Vessels
Item Numbers:	B2.40, Steam Generators (Primary Side) – Tubesheet to Head
Component Identification:	Listed in Table 1

2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category B-B requires volumetric examination of 100 percent of the weld volume as defined in Table IWB-2500-1 and shown in Figures IWB-2500-1 and IWB-2500-6. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject welds due to the geometric configuration and permanent obstructions which limit the volumetric examination coverage of the subject welds.

The Steam Generator Tubesheet to Head Weld (2-24-01) was limited to 72% coverage due to the configuration. Examination coverage was limited due to the proximity of welded pads, nozzles, adjacent piping, hand-hole openings, permanent support brackets, and permanent electrical conduits.

These noted obstructions prevent achieving the essentially 100 percent volume examination coverage required by code.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

5. Burden Caused by Compliance

To increase the examination coverage for STM-24-01 requires removal and reinstallation of insulation support ring mounting pads by cutting the mounting pad welds and then reinstalling the mounting pads by welding following completion of the examination. Additionally, to increase examination coverage on the subject weld would require a significant design modification or replacement of components with a different design to eliminate the noted obstructions. This is impractical due to the cost, additional radiation exposure, and impact to plant equipment.

6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination on the accessible portions of the subject welds to the maximum extent practical given the limitations caused by the geometric configuration and permanent obstructions. Additionally, a visual examination (VT-2) is performed at the end of each refueling outage during the system leakage tests as required by Section XI, IWB-2500-1, Category B-P.

Based upon the examination volumes that were obtained with acceptable results, along with the visual (VT-2) examination performed each refueling outage, it is reasonable to conclude that service induced degradation would be detected. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
STM-24-01	Lower Shell to Tubesheet	B2.40	72.0	The completed examination was limited to 72% coverage due to the configuration. Examination coverage was limited due to the proximity of welded pads, nozzles, adjacent piping, hand-hole openings, permanent support brackets, and permanent electrical conduits. One subsurface indication was detected and evaluated as acceptable to IWB-3512-1.

RELIEF REQUEST ISIR-34

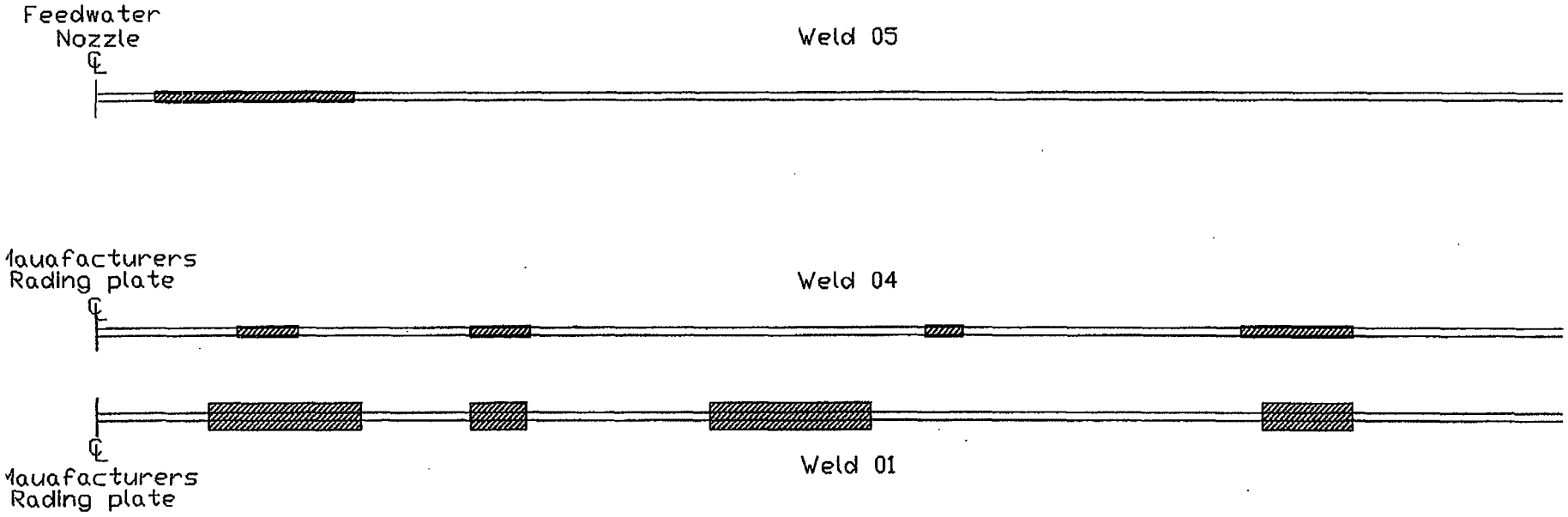
EXAMINATION CATEGORY B-B
PRESSURE RETAINING WELDS IN VESSELS OTHER THAN REACTOR VESSELS

SUPPORTING DOCUMENTATION

D. C. COOK UNIT2
CYCLE 14
COVERAGE REPORT

Weld No.	Exam Type	Exam No.	X"		Y"		Square Inches Scanned Per Exam	Total Square Inches Scanned	Square Inches Required	Percent	Total Coverage	Remarks
			Start	Stop	Start	Stop						
STM-24-01	Parallel (Axial scan)	3A1-UP	404.00	414.64	441.70	451.66	106				72%	Limited exams due to proximity of welded pads and adjecent piping.
Lower shell -to- Tube Sheet			414.64	421.81	438.36	451.66	95					
			421.81	427.00	442.50	451.66	48					
			0.00	2.09	442.50	451.66	19					
		3A2-UP	6.00	16.26	442.70	451.66	92					
			16.26	24.24	441.70	451.66	79					
			24.24	37.16	438.98	451.66	164					
		3A3-UP	37.40	41.96	141.98	451.66	1412					
		3A-DN	405.00	427.00	443.25	461.00	391					
			0.00	37.66	443.25	461.00	668					
		3B1-UP	65.00	69.94	441.46	451.66	50					
			69.94	84.38	433.10	451.66	268					
			84.38	94.26	411.18	451.66	400					
			94.26	102.24	433.10	451.66	148					
		3B2-UP	102.20	113.22	442.35	451.66	103					
			113.22	115.50	443.10	451.66	20					
			115.50	118.92	442.10	451.66	33					
		3B1-DN	65.00	84.38	443.25	461.33	350					
		3B2-DN	84.38	98.44	458.69	461.29	37					
		3B3-DN	98.44	120.94	443.25	461.33	407					
		3C-UP	138.00	143.70	433.10	451.66	106					
			143.70	153.20	441.98	451.66	92					
			153.20	168.40	433.10	451.66	282					
			168.40	177.52	441.98	451.66	88					
			177.52	193.10	433.10	451.66	289					
			193.10	198.42	441.98	451.66	51					
		3C-DN	138.00	198.42	443.25	461.41	1097					
		3D1-UP	198.42	248.56	440.80	451.68	546					
		3D2-UP	204.00	210.84	433.10	440.80	53					
		3D3-UP	241.55	249.15	433.10	440.80	59					
		3D1-DN	198.40	249.32	443.25	461.09	908					
		3D2-DN	249.32	258.42	446.60	461.44	135					
		3E1-UP	279.75	340.17	443.15	451.75	520					
		3E2-UP	286.10	300.16	433.10	443.15	141					
		3E3-UP	310.70	319.01	433.10	443.15	84					
		3E-DN	279.75	339.41	443.25	461.41	1083					
		3F1-UP	340.00	375.72	443.10	451.74	309					
		3F2-UP	347.85	360.39	433.10	443.10	125					
		3F-DN	340.00	375.72	443.25	461.24	643					
								11500	15767	73%		
	Transverse (Circ scan)	4A-CW	405.00	427.30	443.75	452.49	97					Limited exam due to welded pads, permanent support braces, and electrical conduit.
			0.00	36.66	443.75	452.49	160					
		4A-CCW	405.00	427.30	443.75	452.49	97					
			0.00	36.66	443.75	452.49	160					
		4B-CW	85.00	120.64	443.75	452.87	163					
		4B-CCW	85.00	120.64	443.75	452.87	163					
		4C-CW	138.00	197.72	443.75	452.87	272					
		4C-CCW	138.00	197.72	443.75	452.87	272					
		4D1-CW	249.30	258.70	446.60	452.68	29					
		4D2-CW	198.40	249.30	443.75	452.87	232					
		4D1-CCW	249.30	258.70	446.60	452.68	29					
		4D2-CCW	198.40	249.30	443.75	452.87	232					
		4E-CW	279.75	339.43	443.75	452.87	272					
		4E-CCW	279.75	339.43	443.75	452.87	272					
		4F-CW	340.00	375.84	443.75	452.87	163					
		4F-CCW	340.00	375.84	443.75	452.87	163					
								2777	3897	71%		

X is the dimension in the cirvuferential direction meassured in inches from vessel 0 degerees.
Y is the dimension in elevation meassured in inches from vessel 0".



Areas of limitations

D.C.Cook Unit 2 - Generator 24
Weld 2-GEN-24-01, 04, & 05
May 2003
coverage gen24.dwg

ATTACHMENT 3

RELIEF REQUEST ISIR-35

EXAMINATION CATEGORY B-D
FULL PENETRATION WELDS OF NOZZLES IN VESSELS – INSPECTION PROGRAM B

RELIEF REQUEST ISIR-35

Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii)
Inservice Inspection Impracticality

1. ASME Code Components Affected

ASME Code Class:	Code Class 1
Examination Category:	B-D, Full Penetration Welds of Nozzles in Vessels – Inspection Program B
Item Numbers:	B3.110, Pressurizer, Nozzle to Vessel Welds B3.140, Steam Generators (Primary Side) – Nozzle Inside Radius Section (IRS)
Component Identification:	Listed in Table 1

2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category B-D requires volumetric examination of 100 percent of the weld volume as defined in Table IWB-2500-1 and shown in Figures IWB-2500-7(a) thru (d) as applicable. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject welds due to the geometric configuration and permanent obstructions which limit the volumetric examination coverage of the subject welds.

The Steam Generator Inner Radius examinations (STM-12-I-IRS, STM-12-O-IRS, STM-14-I-IRS and STM-14-0-IRS) were limited to 34.9%, 36.8%, 40.9% and 25% coverage, respectively. Due to the component geometry, no coverage of the inner radius region can be effectively obtained by scanning from the shell side. No contact could be maintained in the blend radius area.

Additionally, the pressurizer Nozzle to Vessel welds (2-RC-26 and 2-RC-27) were each limited to 75% coverage. Examination limitations were due to the contour of the weld on the nozzle side, where 50% coverage was achieved for both the 45 and 60 degree axial scans.

These noted obstructions prevent achieving the essentially 100 percent volumetric examination coverage required by code.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

5. Burden Caused by Compliance

To increase examination coverage on the subject weld would require a significant design modification or replacement of components with a different design to eliminate the noted obstructions. This is impractical due to the cost, additional radiation exposure, and impact to plant equipment.

6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination on the accessible portions of the subject welds to the maximum extent practical. Additionally, a visual examination (VT-2) is performed at the end of each refueling outage during the system leakage tests as required by Section XI, IWB-2500-1, Category B-P.

Based upon the examination volumes that were obtained with acceptable results, along with the visual (VT-2) examination performed each refueling outage, it is reasonable to conclude that service induced degradation would be detected. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
STM-14-I-IRS	Inlet Nozzle Inside Radius Section	B3.140	40.9	The completed examination was limited to 40.9% coverage due to the configuration. Due to the component geometry, no coverage of the inner radius region can be effectively obtained by scanning from the shell side. No contact could be maintained in the blend radius area. No recordable indications detected.
STM-14-O-IRS	Outlet Nozzle Inside Radius Section	B3.140	25.0	The completed examination was limited to 25% coverage due to the configuration. Due to the component geometry, no coverage of the inner radius region can be effectively obtained by scanning from the shell side. No contact could be maintained in the blend radius area. No recordable indications detected.
STM-12-I-IRS	Inlet Nozzle Inside Radius Section	B3.140	34.9	The completed examination was limited to 34.9% coverage due to the configuration. Due to the component geometry, no coverage of the inner radius region can be effectively obtained by scanning from the shell side. No contact could be maintained in the blend radius area. No recordable indications detected.
STM-12-O-IRS	Outlet Nozzle Inside Radius Section	B3.140	36.8	The completed examination was limited to 36.8% coverage due to the configuration. Due to the component geometry, no coverage of the inner radius region can be effectively obtained by scanning from the shell side. No contact could be maintained in the blend radius area. No recordable indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
2-RC-26	Upper Head to Relief Nozzle	B3.110	75.0	The completed examination was limited to 75% coverage due to the configuration. Exam limitations were due to the contour of the weld on the nozzle side, where 50% coverage was achieved for both the 45 and 60 degree axial scans. No recordable indications detected.
2-RC-27	Upper Head to Relief Nozzle	B3.110	75.0	The completed examination was limited to 75% coverage due to the configuration. Exam limitations were due to the contour of the weld on the nozzle side, where 50% coverage was achieved for both the 45 and 60 degree axial scans. No recordable indications detected.

RELIEF REQUEST ISIR-35

EXAMINATION CATEGORY B-D
FULL PENETRATION WELDS OF NOZZLES IN VESSELS – INSPECTION PROGRAM B

SUPPORTING DOCUMENTATION

UT Calibration/ mination

Site/Unit:	DC Cook / 1	Procedure:	54-ISI-132	Outage No.:	C1-C20
Summary No.:	015000	Procedure Rev.:	01	Report No.:	UT-05-010
Workscope:	ISI	Work Order No.:	04145023-03	Page:	1 of 8

Code:	ASME XI 1989	Cat./Item:	B-D/B3.140	Location:	CONT. L4
Drawing No.:	A-6	Description:	INLET NOZZLE INSIDE RADIUS SECTION		
System ID:	14				
Component ID:	STM-14-I-IRS	Size/Length:	167" circ	Thickness/Diameter:	6 1/8" / 53 9/32"
Limitations:	INSULATION SUPPORT RING & COMPONENT CONFIGURATION -	Start Time:	1300	Finish Time:	1430

Instrument Settings

Serial No.:	VH-9075		
Manufacturer:	KRAUTKRAMER		
Model:	USN-58L		
Delay:	16.5822 uS	Range:	20.0"
M'tl Cal/Vel:	0.1273 in/uS	Pulser:	N/A
Damping:	1 KHZ	Reject:	0
Rep. Rate:	AUTO HIGH	Freq.:	2.25 MHZ
Filter:	N/A	Mode:	SINGLE
Voltage:	HIGH		
Ax. Gain (dB):	N/A	Circ. Gain (dB):	64.6

1.0 Screen Div. = 2.0 in. of Sound Path

Linearity Report No.: L-05-002

Calibration Block

Cal. Block No.:	IR-CSCL-24-DCC		
Thickness:	N/A	Dia.:	FLAT
Cal. Blk. Temp.:	89 F	Temp. Tool:	VH-8048
Comp. Temp.:	86 F	Temp. Tool:	VH-8048

Search Unit

Serial No.:	0111PK DB# 35694		
Manufacturer:	KBA		
Size:	0.60" X 1.0"	Shape:	RECTANGLE
Freq.:	2.25 Mhz	Style:	Benchmark
Exam Angle:	35	# of Elements:	1
Mode:	SHEAR		
Measured Angle:	38 DEGREES		
Wedge Style:	FLAT		

Search Unit Cable

Type:	RG174		
Length:	12'	No. Conn.:	0

Scan Coverage

Upstream ☑	Downstream ☑	Scan dB:	74
CW ☑	CCW ☑	Scan dB:	74
Exam Surface:	NOZZLE & SHELL OD		
Surface Condition:	MACHINED		

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Cal. Checks	Time	Date
Initial Cal.	1030	4/1/2005
Inter. Cal.		
Inter. Cal.		
Inter. Cal.		
Final Cal.	1600	4/1/2005

Couplant

Cal. Batch:	04325
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	04325
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.:	037405
Type:	Rompus Steel

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
NOTCH 7	85%	5.3	10.59"
NOTCH 8	65%	6.4	12.73"

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
24.3	2"	80%	1.0	2.005"
52.2	14"	80%	5.5	13.95"
65.3	20"	80%	8.5	20.00"

Results: Accept ☑ Reject ☐ Info ☐

Comments: SDCN #30-5062334 REV. 00
SEE ATTACHED SHEET FOR NOTES.

Percent Of Coverage Obtained > 90%: No Reviewed Previous Data: No

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Flesner, Bret T.		Bret Flesner	4/1/2005	N/A			
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A					RE Nulle		4/26/05
Other	Level III	Signature	Date	ANII Review		Signature	Date
Key, Michael W.			4/21/2005				4/27/05

Supplemental Report

Report No.: UT-05-010

Page: 2 of 8

Summary No.: 015000

Examiner:	Flesner, Bret T.	Level: II	Reviewer:	N/A	Date:
Examiner:	N/A	Level: N/A	Site Review:	RE No 00	Date: 4/26/05
Other:	Key, Michael W.	Level: III	ANII Review:		Date: 4/27/05

Comments:

Limitations from nozzle configuration:
Due to the component geometry no coverage of the inner radius region can be effectively obtained by scanning from the shell side. Scanning from the nozzle side was performed and 40.9% of the coverage of the inner radius region can be effectively obtained. The limitations are documented below and pictures are attached.

NOTE: With the component configuration detailed in the drawing provided by the utility, the technique in procedure 54-ISI-132-1 would result in skew angles of ±80° to cover the examination volume. It is the examiner's opinion that this high degree of skew angle results in misorientation angles too high for probable flaw detection. Scans from the shell side with skew angles from 0° - ±45° were performed to meet requirements of 7.2 of the procedure. Scanning was also performed from the nozzle side since lower skew angles are needed to cover the inner radius region. Without scanning from the blend, effective coverage of the entire inner-radius region can not be achieved with skew angles low enough for probable flaw detection. Scans from the nozzle boss with skew angles of ±0° to ±45° were performed, although coverage was calculated for only skew angles ranging from 0° to ±10°.

It should be noted that the ASME Section XI examination requirement figures IWB-2500-7(a) – (d) do not represent the ID geometry of the inner radius detailed in the provided drawing. The drawing provided indicates a "Keyway" type feature located in the inner radius examination volume. For coverage calculation the examiner "best fit" the requirements of Figure IWB-2500-7(a) to this examination.

Scan limitations:
1. 154" to 8" due to the insulation support ring. (Total limitation 21")
2. 23" to 32" due to support attachment. (Total limitation 9")
No contact could be maintained in the blend radius area. This liftoff was in an 4" area centered 2" on each side of the blend radius centerline.

Coverage Calculations:
Inner Radius exam volume= 4.88182 square inches
2.44382 square inches of this area could not be achieved due to component configuration.
2.44382 square inches ÷ 4.88182 square inches= 49.9% cross-sectional exam volume achieved.
30" of limited scan circumference ÷ 167" total circumference = 82% of total inner radius circumference scanned.
49.9% X 82.0% = 40.9% total coverage obtained by scanning from the nozzle side.
0% coverage obtained by scanning from the shell side.

Examiner: Flesner, Bret T **Date: 04/01/2005**

Supplemental Report

Report No.: UT-05-010

Page: 4 of 8

.mary No.: 015000

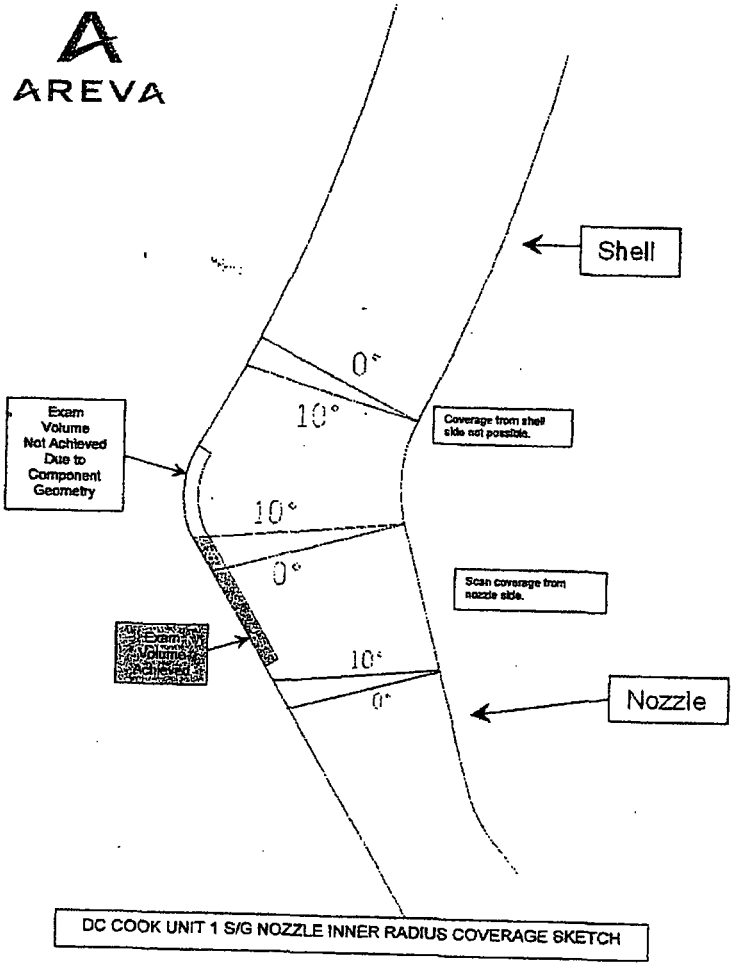
Examiner: Flesner, Bret T. Level: II Reviewer: NA Date:

Examiner: Level: Site Review: Date: 4/26/05

Other: Level: III ANII Review: Date: 4/27/05

Comments:

Sketch or Photo: X:\U1C20-Framatome Info\STM-14-I-IRS-G1.jpg



DC COOK UNIT 1 S/G NOZZLE INNER RADIUS COVERAGE SKETCH

UT Calibration / mination

Site/Unit:	DC Cook / 1	Procedure:	54-ISI-132	Outage No.:	-C20
Summary No.:	016100	Procedure Rev.:	01	Report No.:	UT-05-019
Workscope:	ISI	Work Order No.:	04145023-04	Page:	1 of 10

Code: ASME XI 1989 | Cat./Item: B-D/B3.140 | Location: CONT. L4

Drawing No.: A-6 | Description: OUTLET NOZZLE INSIDE RADIUS SECTION

System ID: 14

Component ID: STM-14-O-IRS | Size/Length: 167.39" CIRC | Thickness/Diameter: 6 1/8" / 53 9/32"

Limitations: INSULATION SUPPORT RING & COMPONENT CONFIGURATION. | Start Time: 1430 | Finish Time: 1600

Instrument Settings

Serial No.:	VH-9075		
Manufacturer:	KRAUTKRAMER		
Model:	USN-58L		
Delay:	16.5822 uS	Range:	20.0"
M'tl Cal/Vel:	0.1273 In/uS	Pulser:	N/A
Damping:	1 KHZ	Reject:	0
Rep. Rate:	AUTO HIGH	Freq.:	2.25 MHZ
Filter:	N/A	Mode:	SINGLE
Voltage:	HIGH		
Ax. Gain (dB):	N/A	Circ. Gain (dB):	64.6

1.0 Screen Div. = 2 In. of Sound Path

Linearity Report No.: L-05-002

Calibration Block

Cal. Block No.:	IR-CSCL-24-DCC		
Thickness:	N/A	Dia.:	FLAT
Cal. Blk. Temp.:	89	Temp. Tool:	VH-8048
Comp. Temp.:	86	Temp. Tool:	VH-8048

Search Unit

Serial No.:	0111PK DB# 36694		
Manufacturer:	KBA		
Size:	0.50" X 1.0"	Shape:	RECTANGLE
Freq.:	2.25 Mhz	Style:	Benchmark
Exam Angle:	35	# of Elements:	1
Mode:	SHEAR		
Measured Angle:	38 DEGREES		
Wedge Style:	FLAT		

Search Unit Cable

Type: RG174 | Length: 12' | No. Conn.: 0

Scan Coverage

Upstream ☑ Downstream ☑ Scan dB: 74

CW ☑ CCW ☑ Scan dB: 74

Exam Surface: NOZZLE & SHELL OD

Surface Condition: MACHINED

Cal. Checks	Time	Date
Initial Cal.	1050	4/1/2005
Inter. Cal.		
Inter. Cal.		
Inter. Cal.		
Final Cal.	1600	4/1/2005

Couplant

Cal. Batch:	04325
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	04325
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.: 037405

Type: Rompus Steel

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
NOTCH 7	85%	5.3	10.59"
NOTCH 8	65%	6.4	12.73"

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
24.3	2"	80%	1.0	2.005"
52.2	14"	80%	5.5	13.95"
65.3	20"	80%	8.5	20.00"

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Comments: SDCN#30-5062334 REV. 00
SEE ATTACHED SHEET FOR NOTES.

Percent Of Coverage Obtained > 90%: No | Reviewed Previous Data: No

Examiner	Level II	Signature	Date	Reviewer	N/A	Signature	Date
Flesner, Bret T.		Bret Flesner	4/1/2005				
Examiner	Level N/A	Signature	Date	Site Review	RE Wall	Signature	Date
N/A							4/27/05
Other	Level III	Signature	Date	ANII Review		Signature	Date
Key, Michael W.			4/21/2005				4/27/05

Supplemental Report

Report No.: UT-05-019

Page: 2 of 10

Summary No.: 015100

Examiner:	Flesner, Bret T.	Level: II	Reviewer:	N/A	Date:
Examiner:	N/A	Level: N/A	Site Review:	RE Nadd	Date: 4/27/05
Other:	Key, Michael W.	Level: III	ANII Review:		Date: 4/27/05

Comments:

Limitations from nozzle configuration:
Due to the component geometry no coverage of the inner radius region can be effectively obtained by scanning from the shell side. Scanning from the nozzle side was performed using the techniques in procedure S4-ISI-132-1 and 25.0% of the coverage of the inner radius region can be effectively obtained. The limitations are documented below and pictures are attached.

NOTE:
With the component configuration detailed in the drawing provided by the utility, the technique in procedure 54-ISI-132-1 would result in skew angles of ±80° to cover the examination volume. It is the examiner's opinion that this high degree of skew angle results in misorientation angles too high for probable flaw detection. Scans from the shell side with skew angles from 0° - ±45° were performed to meet requirements of 7.2 of the procedure. Scanning was also performed from the nozzle side since lower skew angles are needed to cover the inner radius region. Without scanning from the blend, effective coverage of the entire inner-radius region can not be achieved with skew angles low enough for probable flaw detection. Scans from the nozzle boss with skew angles of ±0° to ±45° were performed, although coverage was calculated for only skew angles ranging from 0° to ±10°.

It should be noted that the ASME Section XI examination requirement figures IWB-2500-7(a) – (d) do not represent the ID metry of the inner radius detailed in the provided drawing. The drawing provided indicates a "Keyway" type feature ed in the inner radius examination volume. For coverage calculation the examiner "best fit" the requirements of Figure B-2500-7(a) to this examination.

Scan limitations:
1. 115" to 30" due to the insulation and its support ring. (Total limitation 82")
No contact could be maintained in the blend radius area. This liftoff was in an 4" area centered 2" on each side of the blend radius centerline.

Coverage Calculations:
Inner Radius exam volume= 4.88182 sq in
2.44382 sq in of this area could not be achieved due to component configuration.
2.44382 sq in ÷ 4.88182 sq in = 49.9% cross-sectional exam volume achieved.
82" of limited scan circumference ÷ 167" total circumference = 50.1% of total inner radius circumference scanned.
49.9% X 50.1% = 25.0% total coverage obtained by scanning from the nozzle side.
0% coverage obtained by scanning from the shell side.

Examiner: Bret T Flesner, Level II **Date: 4/1/05**

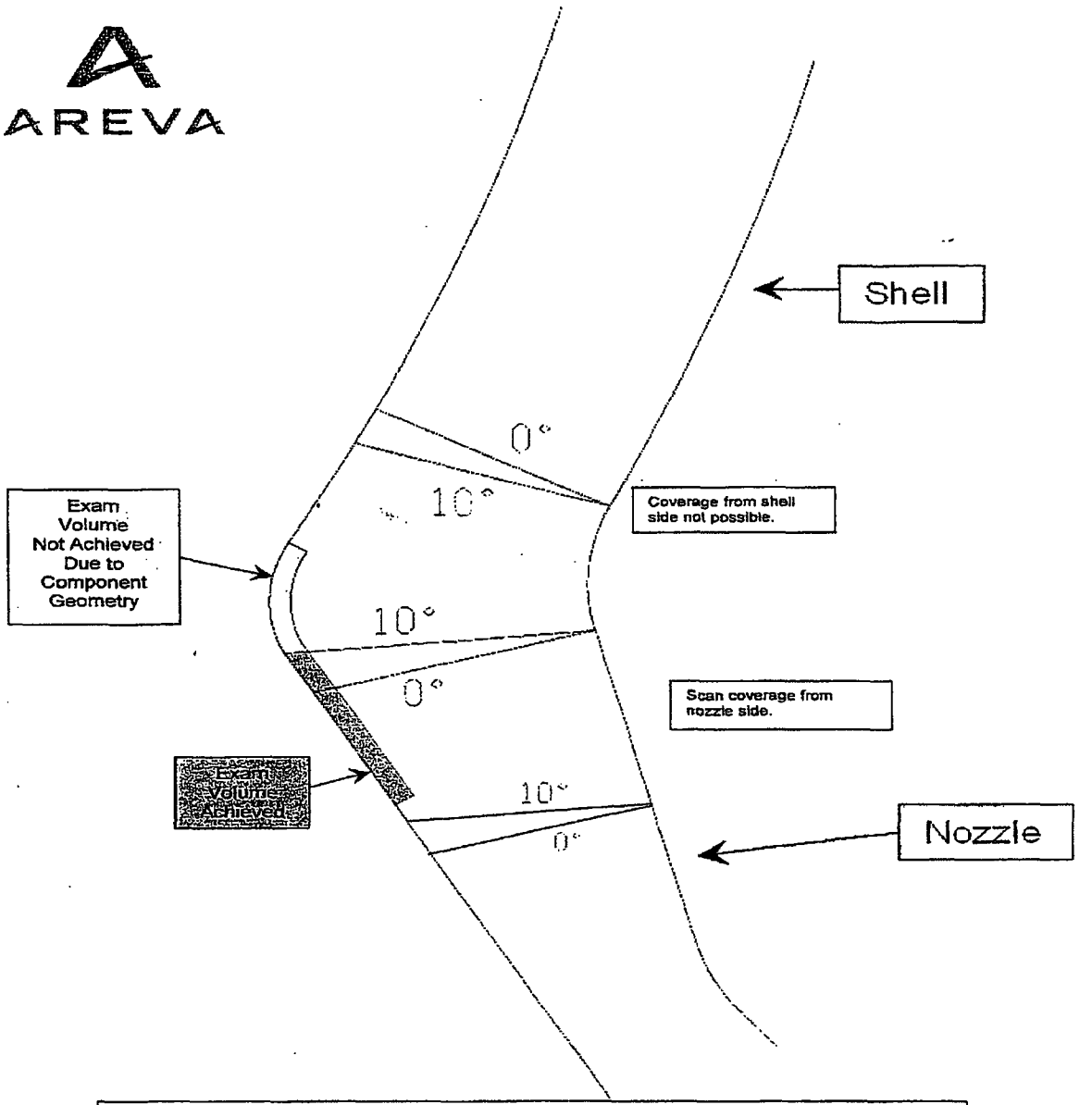
Supplemental Report

Report No.: UT-05-019

Page: 5 of 10

mary No.: 015100

Sketch or Photo: X:\U1C20-Framatome Info\STM-14-O-IRS-G1.jpg



DC COOK UNIT 1 S/G NOZZLE INNER RADIUS COVERAGE SKETCH

Additional - Supplemental Reports <edit from Setup>

UT Calibration/ mination

Site/Unit:	DC Cook / 1	Procedure:	54-ISI-132	Outage No.:	U1-C20
Summary No.:	012900	Procedure Rev.:	01	Report No.:	UT-05-021
Workscope:	ISI	Work Order No.:	04145016-04	Page:	1 of 8

Code: ASME XI 1989 | Cat./Item: B-D/B3.140 | Location: CONT. L2

Drawing No.: A-6 | Description: INLET NOZZLE INSIDE RADIUS SECTION

System ID: 12

Component ID: STM-12-I-IRS | Size/Length: 167.39" circ | Thickness/Diameter: 6 1/8" / 53 9/32"

Limitations: INSULATION SUPPORT RINGS & COMPONENT CONFIGURATION | Start Time: 0830 | Finish Time: 1030

Instrument Settings

Serial No.:	VH-9075		
Manufacturer:	KRAUTKRAMER		
Model:	USN-58L		
Delay:	16.5822 uS	Range:	20.0"
M'tl Cal/Vel:	0.1273 in/uS	Pulser:	N/A
Damping:	1 KHZ	Reject:	0
Rep. Rate:	AUTO HIGH	Freq.:	2.25 MHZ
Filter:	N/A	Mode:	SINGLE
Voltage:	HIGH		
Ax. Gain (dB):	N/A	Circ. Gain (dB):	69.3

1.0 Screen Div. = 2.0 in. of Sound Path

Linearity Report No.: L-05-002

Calibration Block

Cal. Block No.:	IR-CSCL-24-DCC		
Thickness:	N/A	Dia.:	FLAT
Cal. Blk. Temp.:	86	Temp. Tool:	VH-8048
Comp. Temp.:	86	Temp. Tool:	VH-8048

Search Unit

Serial No.:	0111PK DB# 35694		
Manufacturer:	KBA		
Size:	0.50" X 1.0"	Shape:	RECTANGLE
Freq.:	2.25 Mhz	Style:	Benchmark
Exam Angle:	35	# of Elements:	1
Mode:	SHEAR		
Measured Angle:	38 DEGREES		
Wedge Style:	FLAT		

Search Unit Cable

Type: RG174 | Length: 12' | No. Conn.: 0

Scan Coverage

Upstream ☑ Downstream ☑ Scan dB: 79.5

CW ☑ CCW ☑ Scan dB: 79.5

Exam Surface: NOZZLE & SHELL OD

Surface Condition: MACHINED

Cal. Checks	Time	Date
Initial Cal.	0715	3/31/2005
Inter. Cal.		
Inter. Cal.		
Inter. Cal.		
Final Cal.	1220	3/31/2005

Couplant

Cal. Batch:	98225
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	98225
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.: 037405

Type: Rompus Steel

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
NOTCH 7	85%	5.3	10.59"
NOTCH 8	55%	6.5	12.83"

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
28.6	2"	80%	1.0	2.005"
56.5	14"	80%	5.5	13.96"
67.9	20"	80%	8.5	20.00"

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Comments: SDCN #30-5062334 REV. 00
SEE ATTACHED SHEETS FOR COMMENTS.

Percent Of Coverage Obtained > 90%: NO | Reviewed Previous Data: No

Examiner	Level II	Signature	Date	Reviewer	N/A	Signature	Date
Flesner, Bret T.		Bret Flesner	3/31/2005				
Examiner	Level N/A	Signature	Date	Site Review	R E Nall	Signature	Date 4/26/05
N/A							
Other	Level III	Signature	Date	ANII Review		Signature	Date 4/26/05
Key, Michael W.			4/21/2005				

Supplemental Report

Report No.: UT-05-021

Page: 2 of 8

Summary No.: 012900

Examiner:	Flesner, Bret T.	Level: II	Reviewer:	N/A	Date:
Examiner:	N/A	Level: N/A	Site Review:	[signature]	Date: 4/26/05
Other:	Key, Michael W. [signature]	Level: III	ANII Review:	[signature]	Date: 4/26/05

Comments:

Limitations from nozzle configuration:
Due to the component geometry no coverage of the inner radius region can be effectively obtained by scanning from the shell side. Scanning from the nozzle side was performed and 34.9% of the coverage of the inner radius region can be effectively obtained. The limitations are documented below and pictures are attached.

NOTE: With the component configuration detailed in the drawing provided by the utility, the technique in procedure 54-ISI-132-1 would result in skew angles of ±80° to cover the examination volume. It is the examiner's opinion that this high degree of skew angle results in misorientation angles too high for probable flaw detection. Scans from the shell side with skew angles from 0° - ±45° were performed to meet requirements of 7.2 of the procedure. Scanning was also performed from the nozzle side since lower skew angles are needed to cover the inner radius region. Without scanning from the blend, effective coverage of the entire inner-radius region can not be achieved with skew angles low enough for probable flaw detection. Scans from the nozzle boss with skew angles of ±0° to ±45° were performed, although coverage was calculated for only skew angles ranging from 0° to ±10°.

It should be noted that the ASME Section XI examination requirement figures IWB-2500-7(a) – (d) do not represent the ID geometry of the inner radius detailed in the provided drawing. The drawing provided indicates a "Keyway" type feature ated in the inner radius examination volume. For coverage calculation the examiner "best fit" the requirements of Figure -2500-7(a) to this examination.

Scan limitations:
1. 143" to 14" due to the insulation support ring. (total limitation 38")
2. 25" to 37" due to support attachment. (total limitation 12")
No contact could be maintained in the blend radius area. This liftoff was in an ~4" area centered ~2" on each side of the blend radius centerline.

Coverage Calculations:
Inner Radius exam volume= 4.88182 sq in
2.44382 sq in of this area could not be achieved due to component configuration.
2.44382 sq in ÷ 4.88182 sq in = 49.9% cross-sectional exam volume achieved.
50" of limited scan circumference ÷ 167" total circumference = 70.0% of total inner radius circumference scanned.
49.9% X 70.0% = 34.9% total coverage obtained by scanning from the nozzle side.
0% coverage obtained by scanning from the shell side.

Examiner: Bret T. Flesner, Level II [signature] **Date: March 31, 2005**

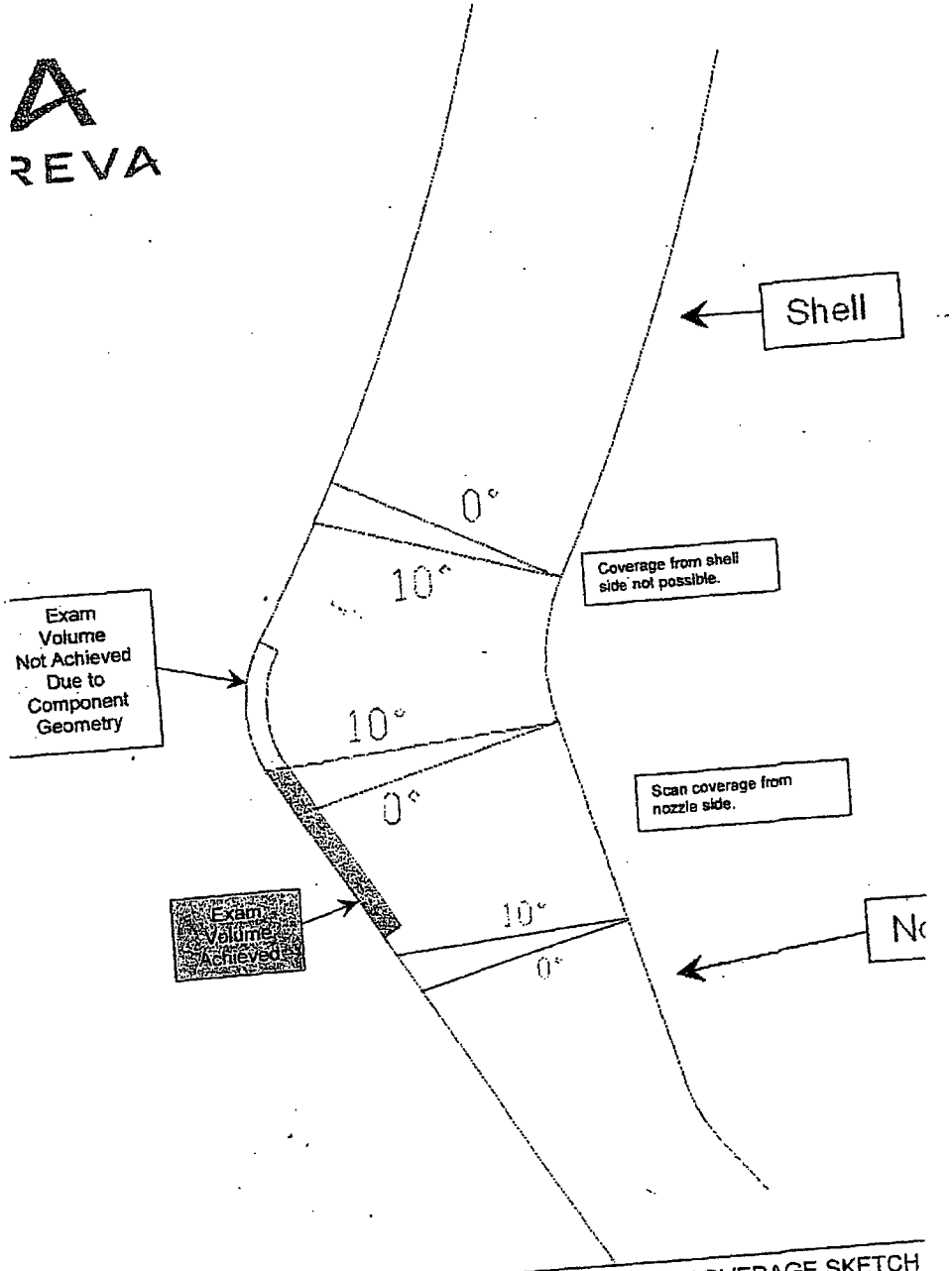
Supplemental Report

Report No.: UT-05-021

Page: 8 of 8

nmary No.: 012900

Sketch or Photo: X:\U1C20-Framatome Info\STM-12-I-IRS-G1.jpg



DC COOK UNIT 1 S/G NOZZLE INNER RADIUS COVERAGE SKETCH

Additional - Supplemental Reports <edit from Setup>

UT Calibration/ nination

Site/Unit:	DC Cook / 1	Procedure:	54-ISI-132	Outage No.:	U1-C20
Summary No.:	013000	Procedure Rev.:	01	Report No.:	UT-05-020
Workscope:	ISI	Work Order No.:	04145016-05	Page:	1 of 8

Code: ASME XI 1989 | Cat./Item: B-D/B3.140 | Location: CONT. L2

Drawing No.: A-6 | Description: OUTLET NOZZLE INSIDE RADIUS SECTION

System ID: 12

Component ID: STM-12-O-IRS | Size/Length: 167.39" circ | Thickness/Diameter: 6 1/8"/ 53 9/32"

Limitations: INSULATION SUPPORT RING & COMPONENT CONFIGURATION - | Start Time: 1030 | Finish Time: 1210

Instrument Settings

Serial No.:	VH-9075		
Manufacturer:	KRAUTKRAMER		
Model:	USN-58L		
Delay:	16.5822 uS	Range:	20.0"
M'tl Cal/Vel:	0.1273 in/uS	Pulser:	N/A
Damping:	1 KHZ	Reject:	0
Rep. Rate:	AUTO HIGH	Freq.:	2.25 MHZ
Filter:	N/A	Mode:	SINGLE
Voltage:	HIGH		
Ax. Gain (dB):	N/A	Circ. Gain (dB):	69.3

1.0 Screen Div. = 2.0 In. of Sound Path

Linearity Report No.: L-05-002

Calibration Block

Cal. Block No.:	IR-CSCL-24-DCC		
Thickness:	N/A	Dia.:	FLAT
Cal. Blk. Temp.:	85	Temp. Tool:	VH-8048
Comp. Temp.:	86	Temp. Tool:	VH-8048

Search Unit

Serial No.:	0111PK DB# 35694		
Manufacturer:	KBA		
Size:	0.50" X 1.0"	Shape:	RECTANGLE
Freq.:	2.25 Mhz	Style:	Benchmark
Exam Angle:	35	# of Elements:	1
Mode:	SHEAR		
Measured Angle:	38 DEGREES		
Wedge Style:	FLAT		

Search Unit Cable

Type: RG174 | Length: 12' | No. Conn.: 0

Scan Coverage

Upstream ☑ Downstream ☑ Scan dB: 79.5

CW ☑ CCW ☑ Scan dB: 79.5

Exam Surface: NOZZLE & SHELL OD

Surface Condition: MACHINED

Cal. Checks	Time	Date
Initial Cal.	0715	3/31/2005
Inter. Cal.		
Inter. Cal.		
Inter. Cal.		
Final Cal.	1220	3/31/2005

Couplant

Cal. Batch:	98225
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	98225
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.: 037405

Type: Rompus Steel

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
NOTCH 7	85%	5.3	10.59"
NOTCH 8	55%	6.5	12.83"

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
28.6	2"	80%	1.0	2.005"
55.5	14"	80%	5.5	13.95"
67.9	20"	80%	8.5	20.00"

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Comments: SDCN #30-5062334 REV. 00
SEE ATTACHED SHEETS FOR COMMENTS.

Percent Of Coverage Obtained > 90%: No | Reviewed Previous Data: No

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Flesner, Bret T.		Bret Flesner	3/31/2005	N/A			
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A				RE Hall			4/27/05
Other	Level III	Signature	Date	ANII Review		Signature	Date
Key, Michael W.			4/21/2005				4/27/05

Supplemental Report

Report No.: UT-05-020

Page: 2 of 8

Summary No.: 013000

Examiner:	Flesner, Bret T.	Level: II	Reviewer:	N/A	Date:
Examiner:	N/A	Level: N/A	Site Review:		Date: 4/27/05
Other:	Key, Michael W.	Level: III	ANII Review:		Date: 4/27/05

Comments:

Limitations from nozzle configuration:
Due to the component geometry no coverage of the inner radius region can be effectively obtained by scanning from the shell side. Scanning from the nozzle side was performed and 36.8% of the coverage of the inner radius region can be effectively obtained. The limitations are documented below and pictures are attached.

NOTE: With the component configuration detailed in the drawing provided by the utility, the technique in procedure 54-ISI-132-1 would result in skew angles of ±80° to cover the examination volume. It is the examiner's opinion that this high degree of skew angle results in misorientation angles too high for probable flaw detection. Scans from the shell side with skew angles from 0° - ±45° were performed to meet requirements of 7.2 of the procedure. Scanning was also performed from the nozzle side since lower skew angles are needed to cover the inner radius region. Without scanning from the blend, effective coverage of the entire inner-radius region can not be achieved with skew angles low enough for probable flaw detection. Scans from the nozzle boss with skew angles of ±0° to ±45° were performed, although coverage was calculated for only skew angles ranging from 0° to ±10°.

It should be noted that the ASME Section XI examination requirement figures IWB-2500-7(a) – (d) do not represent the ID geometry of the inner radius detailed in the provided drawing. The drawing provided indicates a "Keyway" type feature located in the inner radius examination volume. For coverage calculation the examiner "best fit" the requirements of Figure IWB-2500-7(a) to this examination.

Scan limitations:
1. 149" to 8" due to the insulation and its support ring. (total limitation 26")
2. 24" to 36" due to support attachment. (total limitation 12")
3. 52" to 58" due to ID plate. (total limitation 6")
No contact could be maintained in the blend radius area. This liftoff was in an 4" area centered 2" on each side of the blend radius centerline.

Coverage Calculations:
Inner Radius exam volume= 4.88182 square inches
2.44382 square inches of this area could not be achieved due to component configuration.
2.44382 square inches ÷ 4.88182 square inches = 49.9% cross-sectional exam volume achieved.
44" of limited scan circumference ÷ 167" total circumference = 73.7% of total inner radius circumference scanned.
49.9% X 73.7% = 36.8% total coverage obtained by scanning from the nozzle side.
0% coverage obtained by scanning from the shell side.

Examiner: Flesner, Bret T. Level II **Date: March 31, 2005**

AMATOME ANP

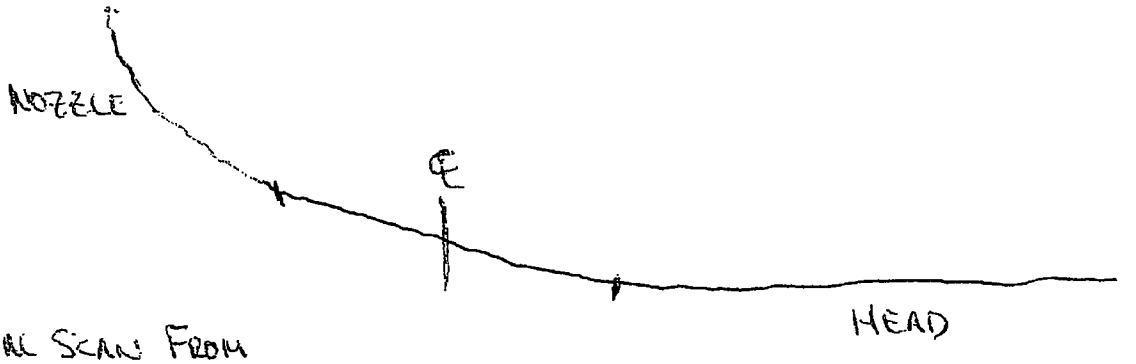
ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

tomer: DC Cook Unit 2	Component: Branch Connection Weld	Summary No.: 006950

Weld No.: 6"-2-RC-26	Percent Of Exam Completed (Calculations Or Comments Below)
Reference Point: See below	45 degree Axial scan – 50% Coverage
1) Interfering Condition	45 degree circumferential scan – 100% Coverage
Distance From Centerline To	60 degree axial scan – 50% Coverage
Distance From Ref. Point To	60 degree circumferential scan – 100% Coverage
2) Interfering Condition	Total Coverage – 75%
Distance From Centerline To	
Distance From Ref. Point To	
3) Interfering Condition	
Distance From Centerline To	
Distance From Ref. Point To	
(For All Measurements Indicate: US, DS, CW, CCW)	

Sketch Of Limitation(s):

Examination was limited due to component configuration.



NO AXIAL SCAN FROM NOZZLE SIDE OF WELD DUE TO CONFIGURATION.

(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Level III: RA Kellerhall Date: 10/23/04	Examiner: Julien Stanford Date: 10-15-04
ver: NA	Date:
Customer: Ray E Nall	Date: 10/25/04

416/490 4/6

ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

AMATOME ANP

Customer: DC Cook Unit 2	Component: Branch Connection Weld	Summary No.: 006960

Weld No.: 6"-2-RC-27		Percent Of Exam Completed (Calculations Or Comments Below)
Reference Point: See below		45 degree Axial scan – 50% Coverage 45 degree circumferential scan – 100% Coverage 60 degree axial scan – 50% Coverage 60 degree circumferential scan – 100% Coverage Total Coverage – 75%
1) Interfering Condition		
Distance From Centerline	To	
Distance From Ref. Point	To	
2) Interfering Condition		
Distance From Centerline	To	
Distance From Ref. Point	To	
3) Interfering Condition		
Distance From Centerline	To	
Distance From Ref. Point	To	
(For All Measurements Indicate: US, DS, CW, CCW)		

Sketch Of Limitation(s):

Examination was limited due to component configuration.

No Scan From Nozzle Side of Weld (Axial) Due To Configuration.

(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Level III: RA Kellerhall Date: 10/23/04	Examiner: Julien Stanford Date: 10-15-04
Reviewer: NA	Date:
Customer: Ray E Nall	Date: 10/25/04

422/490 6/6

ATTACHMENT 4

RELIEF REQUEST ISIR-36

EXAMINATION CATEGORY B-F
PRESSURE RETAINING DISSIMILAR METAL WELDS

RELIEF REQUEST ISIR-36

Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii)
Inservice Inspection Impracticality

1. ASME Code Components Affected

ASME Code Class:	Code Class 1
Examination Category:	B-F, Pressure Retaining Dissimilar Metal Welds
Item Numbers:	B5.70, Steam Generator, Nozzle to Safe End Butt Welds
Component Identification:	Listed in Table 1

2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category B-F requires volumetric examination of 100 percent of the weld volume as defined in Table IWB-2500-1 and shown in Figure IWB-2500-8. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject welds due to the geometric configuration and permanent obstructions which limit the volumetric examination coverage of the subject welds.

The Steam Generator Nozzle to Safe End examinations (STM-12-02R, STM-12-03R, STM-14-02R, and STM-14-03R) were limited to 25.72%, 23.92%, 25.72%, and 23.9% coverage respectively due to the component geometry. Coverage was limited due to tapers, weld contours, and depressions on some of the nozzles.

The Safe End to Elbow examinations (STM-22-02, STM-22-03, STM-23-02, and STM-23-03) were limited to 19.5%, 19.5%, 19.5% and 19.5% coverage respectively due to limitations encountered with the contour of the weld along with depressions on the nozzle side of the weld and the CASS Elbow material.

These noted obstructions prevent achieving the essentially 100 percent volume examination coverage required by code.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

5. Burden Caused by Compliance

Class 1 piping and components are often designed with welded joints such as nozzle-to-pipe, pipe-to valve, and pipe-to-pump which can physically obstruct a large portion of the required examination volume. For the welds listed in Table 1, the examinations were performed after the 10 CFR 50.55a mandatory implementation date (November 22, 2002) for Appendix VIII of Section XI. The provided code coverage percentages reflect what is currently allowed by qualified Appendix VIII techniques. Appendix VIII qualified (PDI) procedures have demonstrated that sound beams may potentially be attenuated and distorted when required to pass through austenitic weld metal. However, the PDI qualified methods employ the best available technology for maximizing examination coverage of these types of welds. For the components listed in this relief request, examination was extended to the far side of the weld to the extent permitted by geometry as qualified through PDI. Indiana Michigan Power Company (I&M) has used the best available techniques to examine the subject piping welds. To improve upon these examination coverage percentages, modification and/or replacement of the component would be required. No alternative testing is proposed at this time. I&M has examined the subject welds to the extent practical and will continue to perform pressure testing on the subject welds as required by the Code. I&M also performed surface examinations of 100% of the required area without limitations.

Additionally, for the welds consisting of CASS Elbow material (STM-22-02, STM-22-03, STM-23-02 and STM-23-03), there are currently no Appendix VIII PDI qualified procedures to inspect Cast Austenitic Stainless Steel (CASS) materials. The Steam Generator Inlet and Outlet nozzle configuration includes an austenitic stainless steel safe-end welded to a cast austenitic stainless steel elbow. The Appendix VIII procedure qualified for the examination of austenitic stainless steel welds from the Outside Diameter surface was used to perform a best effort examination of the CASS elbow material.

To increase examination coverage on the subject weld would require a significant design modification or replacement of components with a different design or material to eliminate the noted obstructions or material limitations. This is impractical due to the cost, additional radiation exposure, and impact to plant equipment.

6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination on the accessible portions of the subject welds to the maximum extent practical. Each weld also received a surface examination without limitations. Additionally, a visual examination (VT-2) is performed at the end of each refueling outage during the system leakage tests as required by Section XI, IWB-2500-1, Category B-P.

Based upon the examination volumes that were obtained with acceptable results along with the completed surface examination and the visual (VT-2) examination performed each refueling outage, it is reasonable to conclude that service induced degradation would be

detected. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds. .

7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
STM-12-02R	Safe End to Inlet Nozzle	B5.70	25.72	The completed examination was limited to 25.72% coverage due to the configuration. The limited coverage of this weld is due to the configuration of the taper transition of the safe end. No recordable indications detected.
STM-12-03R	Safe End to Inlet Nozzle	B5.70	23.92	The completed examination was limited to 23.92% coverage due to the configuration. The limited coverage of this weld is due to the configuration of the taper transition of the safe end. No recordable indications detected.
STM-14-02R	Safe End to Inlet Nozzle	B5.70	25.72	The completed examination was limited to 25.72% coverage due to the configuration. The limited coverage of this weld is due to the configuration of the taper transition of the safe end. No recordable indications detected.
STM-14-03R	Safe End to Inlet Nozzle	B5.70	23.9	The completed examination was limited to 23.9% coverage due to the configuration. The limited coverage of this weld is due to the configuration of the taper transition of the safe end. No recordable indications detected.
STM-22-02	Elbow to Inlet Nozzle	B5.70	19.5	The completed examination was limited to 19.5% coverage due to the configuration. Limitations were encountered due the contour of the weld along with depressions on the nozzle side of the weld and the CASS Elbow material. No relevant indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
STM-22-03	Elbow to Inlet Nozzle	B5.70	19.5	The completed examination was limited to 19.5% coverage due to the configuration. Limitations were encountered due the contour of the weld along with depressions on the nozzle side of the weld and the CASS Elbow material. No relevant indications detected.
STM-23-02	Elbow to Inlet Nozzle	B5.70	19.5	The completed examination was limited to 19.5% coverage due to the configuration. Limitations were encountered due the contour of the weld along with depressions on the nozzle side of the weld and the CASS Elbow material. No relevant indications detected.
STM-23-03	Outlet Nozzle to Elbow	B5.70	19.5	The completed examination was limited to 19.5% coverage due to the configuration. Limitations were encountered due the contour of the weld along with depressions on the nozzle side of the weld and the CASS Elbow material. No relevant indications detected.

RELIEF REQUEST ISIR-36

EXAMINATION CATEGORY B-F
PRESSURE RETAINING DISSIMILAR METAL WELDS

SUPPORTING DOCUMENTATION

Supplemental Report

STM-12-02R Rev 4/5/2011

Summary No.: 013100

Examiner:	Anderson, Paul S.	Level: II	Reviewer:	N/A	Date:
Examiner:	N/A	Level: N/A	Site Review:	REVIEWED	Date: 4/25/05
Other:	Key, Michael W.	Level: III	ANII Review:		Date: 4/26/05

Comments:

Procedure 54-ISI-829-02 was used as guidance to perform a best effort examination.

Component configuration and contour prevented completing the examination in accordence with 54-ISI-829-02.

45 Shear:
- Gain adjusted to maintain a 5-20% ID Roll throughout exam
- Exam limited to safe end side only due to nozzle configuration
- Axial scan limited on safe end due to taper transition (see coverage) and / or safe end to elbow weld

35 Shear:
- Gain adjusted to maintain a 5-20% ID Roll throughout exam
- Axial scan performed only to help interigate near side
- Scan limited on safe end side due to taper transition and / or safe end to elbow weld.

45RL:
- Gain adjusted to maintain a 5-20% noise level throughout exam
- Exam limited to safe end side only due to nozzle configuration
- Axial scan limited on safe end due to taper transition and / or safe end to elbow weld.

60 RL:
- Gain adjusted to maintain a 5-20% noise level throughout exam
- Exam limited to safe end side only due to nozzle configuration
- Scan limited on safe end due to taper transition
- Procedure 54-ISI-829-02 was used for guidance to perform a best effort examination.
- Component configuration and contour prevented completing the examination in accordance to 54-ISI-829-02

Axial Examination Coverage (CODE)

Total Area		1.5" (width) x 1.25" (height) =	1.8 SQ IN
45 Degree S	area examined	0.6175" SQ IN	% exam complete = 34.3%
35 Degree S	area examined	1.3 SQ IN	% exam complete = 72.2%
45 RL	area examined	0.097 SQ IN	% exam complete = 6.4%
60 RL	area examined	0	% exam complete = 0.0%

TOTAL COVERAGE

	AX DN		CIRC DN		CIRC UP		AX UP	
45 S =	0%	+	0%	+	100%	+	34.7%	= 134.3% / 4 = 33.5%
35 S =	0%	+	0%	+	0%	+	72.2%	= 72.2% / 4 = 18.05%
45RL=	0%	+	0%	+	100%	+	5.4%	= 105.4% / 4 = 26.35%
60RL=	0%	+	0%	+	100%	+	0%	= 100 % / 4 = 25.0%

102.9 / 4 = 25.725% REV 4/5/2011

Examiner: Paul S. Anderson Date: 3/31/05

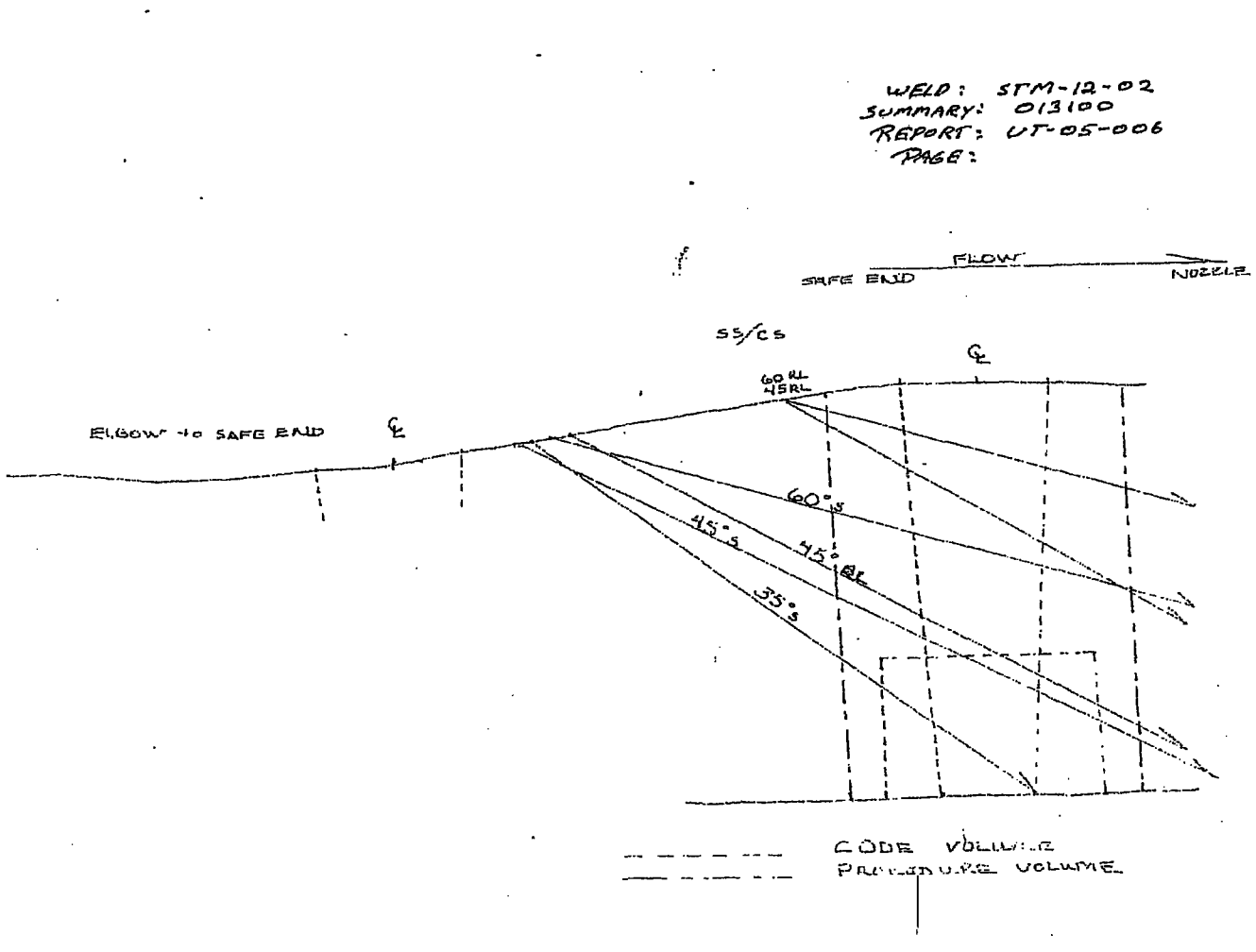
Supplemental Report

Report No.: UT-05-006

Page: 3 of 5

Summary No.: 013100

Sketch or Photo: X:\U1C20-Framatome Info\STM-12-O2.jpg



Additional - Supplemental Reports <edit from Setup>

Supplemental Report

Report No.: UT-05-022

Page: 2 of 5

Summary No.: 013200 STM-12-03R Rev 4/5/2011

Examiner:	Anderson, Paul S.	Level: II	Reviewer:	N/A	Date:
Examiner:	N/A	Level: N/A	Site Review:	RE HWK	Date: 4/25/05
Other:	Key, Michael W.	Level: III	ANII Review:		Date: 4/26/05

Comments:

Procedure 54ISI-829-02 was used for guidance to perform a best effort examination.

Component configuration and contour prevented completing the examination in accordance to 54-ISI-829-02.

45 Degree S:
- Gain adjusted to maintain a 5-20% ID Roll throughout exam
- Exam limited to safe end side only due to nozzle configuration
- Axial scan limited on safe end due to taper transition (see coverage) and / or safe end to elbow weld

35 Degree S
- Gain adjusted to maintain a 5-20% ID Roll throughout exam
- Axial scan performed only to help interigate near side
- Scan limited on safe end side due to taper transition and / or safe end to elbow weld.

45 RL
- Gain adjusted to maintain a 5-20% noise level throughout exam
- Exam limited to safe end side only due tonozzle configuration
- Axial scan limited on safe end due to taper transition and / or safe end to elbow weld.

60 RL
- Gain adjusted to maintain a 5-20% noise level throughout exam
- Exam limited to safe end side only due to nozzle configuration
- Scan limited on safe end due to taper transition

Axial Examination Coverage (CODE)
Total Area 1.3" x 1.5" = 1.95 sq in

45 Degree Shear - Area Examined	0.325 sq in	% Exam Complete = 16.6%
35 Degree Shear - Area Examined	1.3 sq in	% Exam Complete = 66.6%
45 Degree RL - Area Examined	0	% Exam Complete = 0%
60 Degree RL - Area Examined	0	% Exam Complete = 0%

TOTAL COVERAGE

		AX UP	CIRC UP	AX DN	CIRC DN	
45 S	=	0%	0%	16.6%	100%	= 29.1%
35 S	=	0%	0%	66.6%	0%	= 16.6%
45 RL	=	0%	0%	0%	100%	= 25%
60 RL	=	0%	0%	0%	100%	= 25%

95.7/4 = 23.925%

Examiner: Paul S. Anderson, Level II Date: March 31, 2005

Rev 4/5/2011

Supplemental Report

Report No.: UT-05-022

Page: 4 of 5

Summary No.: 013200

Sketch or Photo: X:\U1C20-Framatome Info\STM-12-03-G1.jpg

WELD PROFILE AND THICKNESS

AREVA

Exam Date: 03/31/2005

Summary No.: 013200

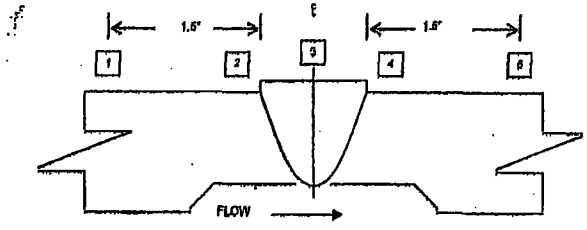
Site: DC Cook Unit 1, C20

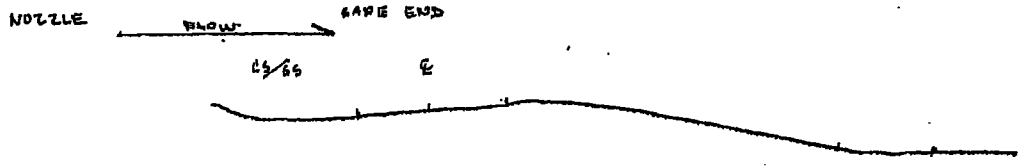
Examination Method: UT

System: STM 12

Identification / Weld ID: STM-12-03

POSITION	0	90	180	270	
1	0				CROWN HEIGHT: FLUSH
2	3.8				CROWN WIDTH: 1.2
3	3.8				NOM. DIAMETER: 36
4	3.8				WELD LENGTH: 122.75
5	3.6				





DATUM "0" @ TDC AND C STEEL TO S STEEL INTERFACE

Paul S Anderson — Prepared By — 3/21/05 Date

Reviewed By — Date

RE Nall 4/25/05 — Utility Review By — Date

Additional - Supplemental Reports <edit from Setup>

Supplemental Report

Report No.: UT-05-015

Summary No.: 015200 STM-14-02R Rev# 4/5/2011

Examiner:	Anderson, Paul S.	Level:	II	Reviewer:	N/A	Date:
Examiner:	N/A	Level:	N/A	Site Review:	[signature]	Date: 4/25/05
Other:	Key, Michael W.	Level:	III	ANII Review:	[signature]	Date: 4/26/05

Comments:

Due to the procedures limitation with scans conducted from tapers, procedure 54-ISI-829-02 was used for guidance to perform a best effort examination. In addition, component configuration and contour prevented completing the examination in accordence to 54-ISI-829-02. Axial cal used in circ scan.

45 Degree S:
- Gain adjusted to maintain a 5-20% ID Roll throughout exam
- Exam limited to safe end side only due to nozzle configuration
- Axial scan limited on safe end due to taper transition (see coverage) and / or safe end to elbow weld.

35 Degree S:
- Gain adjusted to maintain a 5-20% ID Roll throughout exam.
- Axial scan performed only to help interigate near side
- Scan limited on safe end side due to taper transition and / or safe end to elbow weld.

45 RL:
- Gain adjusted to maintain a 5-20% noise level throughout exam
- Exam limited to safe end side only due to nozzle configuration
- Axial scan limited on safe end due to taper transition and / or safe end to elbow weld.

60 RL:
- Gain adjusted to maintain a 5-20% noise level throughout exam
- Exam limited to safe end side only due to nozzle configuration
- Scan limited on safe end due to taper transition

Axial Examination Coverage (CODE)

Total Area	1.5" (width) x 1.25" (Height) = 1.8 SQ IN	
45 Degrees S Area Examined	0.6175 SQ IN	% Exam Complete = 34.3%
35 Degrees S Area Examined	1.3 SQ IN	% Exam Complete = 72.2%
45 RL Area Examined	0.097 SQ IN	% Exam Complete = 5.4%
60 RL Area Examined	0	% Exam Complete = 0.%

TOTAL COVERAGE

		AX UP		CIRC UP		CIRC DN		AX DN				
45S	=	0%	+	0%	+	100%	+	34.7%	=	134.3% / 4	=	33.5%
35S	=	0%	+	0%	+	0%	+	72.2%	=	72.2% / 4	=	18.05%
45RL	=	0%	+	0%	+	100%	+	5.4%	=	105.4% / 4	=	26.35%
60RL	=	0%	+	0%	+	100%	+	0%	=	100% / 4	=	25.0%

102.9/4 = 25.725%

Examiner: Paul Anderson Date: 4/1/2005 Rev# 4/7/2011

Supplemental Report

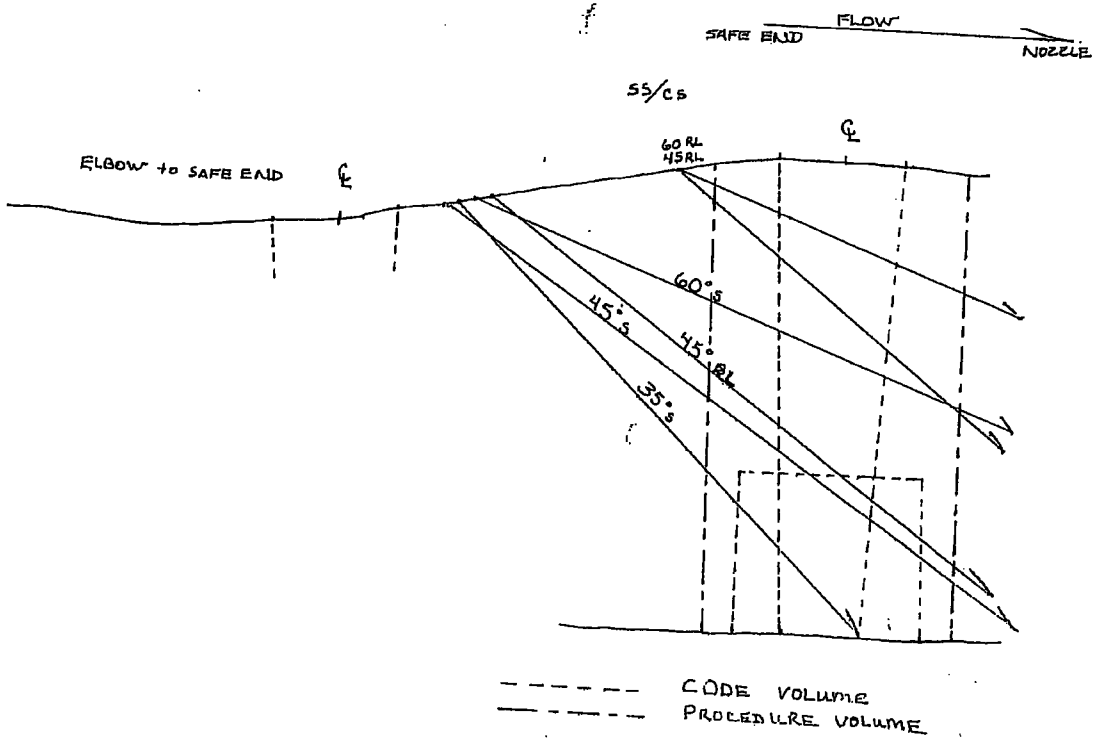
Report No.: UT-05-015

Page: 4 of 5

Summary No.: 015200

Sketch or Photo: X:\U1C20-Framatome Info\STM-14-02.jpg

WELD: STM-14-02
SUMMARY: 015200
REPORT: UT-05-015
PAGE:



Additional - Supplemental Reports <edit from Setup>

Supplemental Report

Report No.: UT-05-011

Page: 2 of 5

Summary No.: 015300

Examiner:	Anderson, Paul S.	Level: II	Reviewer:	N/A	Date:
Examiner:	N/A	Level: N/A	Site Review:		Date: 4/26/05
Other:	Key, Michael W.	Level: III	ANII Review:		Date: 4/26/05

Comments:

Procedure 54-ISI-829-02 was used for guidance to perform a best effort examination. The following issues prevented performing a complete examination in accordance with 54-ISI-829-02.

- **Component configuration**
- **Transitional of OD taper at safe end to elbow weld**

45 Degree S:

- **Gain adjusted to maintain a 5-20% ID Roll throughout exam**
- **Exam limited to safe end side only due to nozzle configuration**
- **Axial scan limited on safe end due to taper transition (see coverage) and / or safe end to elbow weld**

35 Degree S: (Supplemental)

- **Gain adjusted to maintain a 5-20% ID Roll throughout exam**
- **Axial scan performed only to help interigate near side**
- **Scan limited on safe end side due to taper transition and / or safe end to elbow weld.**

45 RL:

Gain adjusted to maintain a 5-20% noise level throughout exam.
Exam limited to safe end side only due to nozzle configuration

- **Axial scan limited on safe end due to taper transition and / or safe end to elbow weld.**
- **Transducer does not meet freq. requirements for circ scans**
- **Focal depth = 2.7", squint angle = 3 degrees**

60 RL

- **Gain adjusted to maintain a 5-20% noise level throughout exam**
- **Exam limited to safe end side only due to nozzle configuration**
- **Scan limited on safe end due to taper transition**
- **Focal depth = 2.1", squint angle = 3 degrees**

Axial Examination Coverage (CODE)

TOTAL AREA 1.3" x 1.5" = 1.95 SQ IN

45 Degree SHEAR - AREA Examined	**0.325 SQ IN**	**% Exam Complete = 16.6%**
35 Degree SHEAR - AREA Examined	**1.3 SQ IN**	**% Exam Complete = 66.6%**
45 Degree RL - AREA Examined	**0**	**% Exam Complete = 0%**
60 Degree RL - AREA Examined	**0**	**% Exam Complete = 0%**

TOTAL COVERAGE

		AX UP	CIRC UP	AX DN	CIRC DN		
45S	=	0%	0%	16.6%	100%	=	29.1%
35S	=	0%	0%	66.6%	0%	=	16.6%
45RL	=	0%	0%	0%	100%	=	25%
60RL	=	0%	0%	0%	100%	=	25%
					TOTAL	=	23.9% (Code Coverage NOT PDI)

Examiner: Paul Anderson Level II Date: 4/1/05

Additional - Supplemental Reports <edit from Setup>

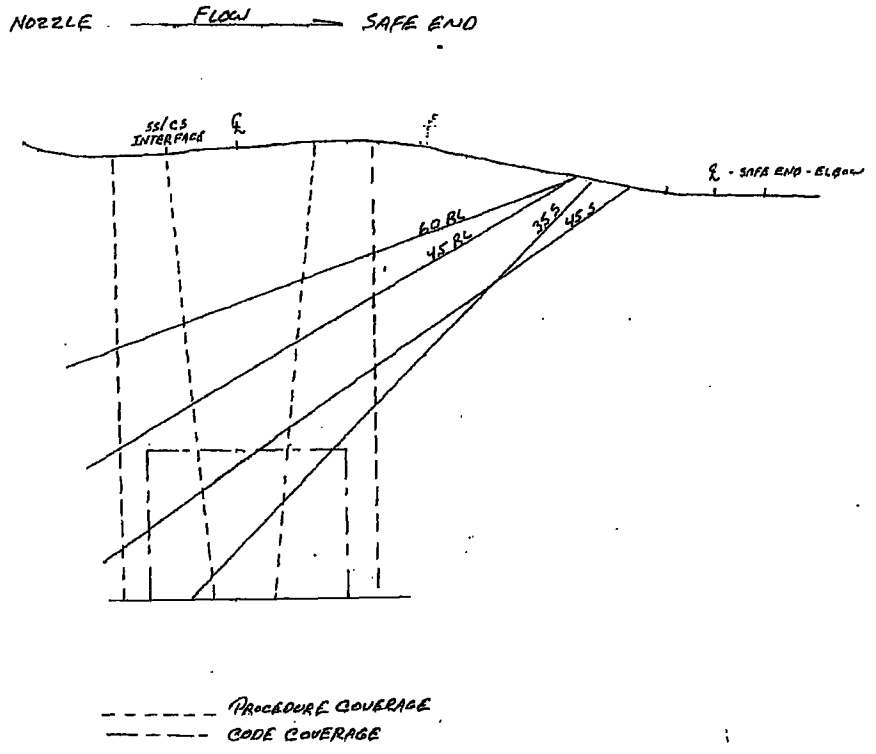
Supplemental Report

Report No.: UT-05-011

Page: 4 of 5

Summary No.: 015300

Sketch or Photo: X:\U1C20-Framatome Info\STM-14-03-G4.jpg



Additional - Supplemental Reports <edit from Setup>

EXAMINATION SUMMARY

FRAMATOME ANP

.nary No.:009800	Data Package: N/A	Exam Date: 10/13/2004

Customer: DC Cook 2	Examination Methods: UT and PT
System / Component ID: Steam Generator / STM-22-02	Examination Procedures: 54-ISI-829-02 and 54-ISI-240-40
Component Description: ELBOW TO INLET NOZZLE	Calibration Sheets No(s): U2C15-Cal-011, U2C15-Cal-012, U2C15-Cal-013, U2C15-Cal-014
Examination Category: B-F	Examination Results: ☐ No Reportable Indications ☐ Reportable Indications ☒ Geometric
ISO / Drawing:A-6	

Summary:

A PT and UT exam was performed on weld STM-22-02.

The PT examination was performed with no recordable indications and no limitations.

The UT examination revealed recordable geometric indications and scan limitations. Geometric indications were noted in the root area intermittently 360 degrees. See the attached indication data sheets.

Scan limitations were encountered due to cast stainless elbow, weld contour, and depressions on the nozzle side of the weld. For the 45 degree shear wave, 37.5% of the base material in the area of interest was scanned. For the 45 degree refracted longitudinal wave (RL), 10.2% of the required examination volume was covered. For the 60 degree RL, 10.8% of the required examination was covered. See ached Ultrasonic Examination Scan Limitation Report for areas and percentages of coverage.

above procedure was used to provide guidance to perform a best effort examination. Weld crown configurations and the cast stainless material prevented performing a complete examination in accordance with the above procedure.

Thickness and profiles were taken and are included in the data package. .

Prepared By: John Langdon Sign: John Langdon	Date: 10/18/2004	Reviewed By: RA Kellerhall Sign: RA Kellerhall	Date: 10/20/04
Customer: Sign: Ray E. Noll	Date: 10/21/04		Page 1 of 12

223/490

FRAMATOME ANP

ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

Customer: DC Cook Unit 2	Component: STM-22-02	Summary No.: 009800

Weld No.: STM-22-02			
Reference Point			
1) Interfering Condition	Weld Ground area (depression in weld)		
Distance From Centerline	1.25" DS	To	1.75" DS
Distance From Ref. Point	100.5" CW	To	104.8" CW
2) Interfering Condition			
Distance From Centerline		To	
Distance From Ref. Point		To	
3) Interfering Condition			
Distance From Centerline		To	
Distance From Ref. Point		To	
(For All Measurements Indicate: US, DS, CW, CCW)			

Percent Of Exam Completed
(Calculations Or Comments Below)

Scanning of the weld could not be performed due to the irregular contour of the weld.

Scanning of the elbow side of the weld was not performed due to the material being cast stainless steel.

Coverage was achieved as follows.

Nozzle side scans

- 45 degree shear wave– 37.5%
- 45 degree RL 10.2%
- 60 degree RL 10.8%

$\overline{58.5}/3 = 19.5\%$

RH 4/7/2011

Sketch Of Limitation(s):

See attached coverage plot for limitations.

(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Level III: RA Kellerhall	Date: 10/20/04	Examiner: Edward P. Mazyck	Date: 10/13/2004
Owner: N/A		Date: N/A	
Customer:	Date: 10/21/04	Date:	

10/12

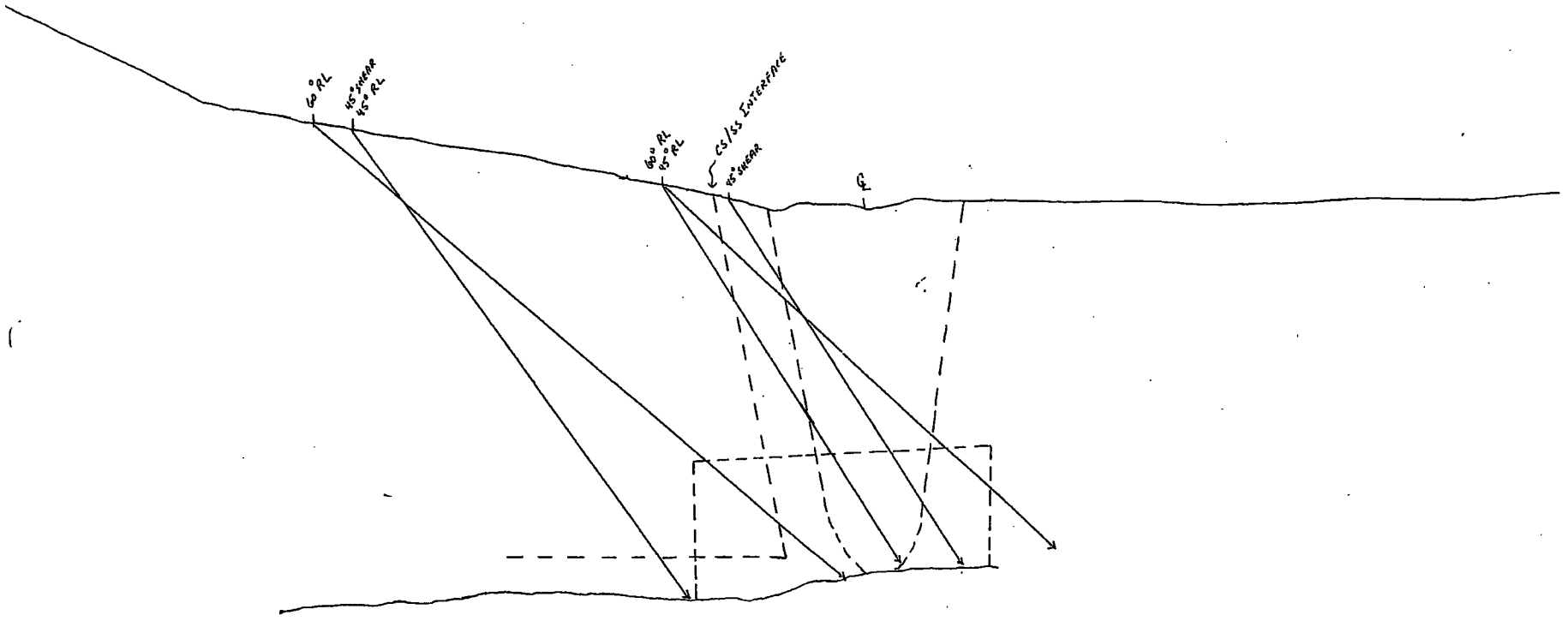
232/490

COVERAGE PLOT
STM-22-02
INLET NOZZLE
(TOWARD RPV)

NOZZLE
VESSEL

FLOW

ELBOW



Edward P. Mrozek
LEVEL II 10/13/2004

Paul 12/12
234/490

FRAMATOME ANP

EXAMINATION SUMMARY

ary No.:009900	Data Package: N/A	Exam Date: 10/13/2004

Customer: DC Cook 2	Examination Methods: UT and PT
System / Component ID: Steam Generator / STM-22-03	Examination Procedures: 54-ISI-829-02 and 54-ISI-240-40
Component Description: Outlet Nozzle to Elbow	Calibration Sheets No(s): U2C15-Cal-011, U2C15-Cal-012, U2C15-Cal-013, U2C15-Cal-014
Examination Category: B-F	Examination Results: ☐ No Reportable Indications ☐ Reportable Indications ☒ Geometric
ISO / Drawing:A-6	

Summary:

A PT and UT exam was performed on weld STM-22-03.

The PT examination was performed with no recordable indications and no limitations.

The UT examination revealed recordable geometric indications and scan limitations. Geometric indications were noted in the root area intermittently 360 degrees. See the attached indication data sheets.

Scan limitations were encountered due to cast stainless elbow, weld contour, and depressions on the nozzle side of the weld. For the 45 degree shear wave, 37.5% of the base material in the area of interest was scanned. For the 45 degree refracted longitudinal wave (RL), 10.2% of the required examination volume was covered. For the 60 degree RL, 10.8% of the required examination was covered. See attached Ultrasonic Examination Scan Limitation Report for areas and percentages of coverage.

...ove procedure was used to provide guidance to perform a best effort examination. Weld crown configurations and the cast stainless material prevented performing a complete examination in accordance with the above procedure.

Thickness and profiles were taken and are included in the data package. .

Prepared By: JW Langdon	Date: 10/18/2004	Reviewed By: RA Kellerhall	Date:
Sign: JW Langdon		Sign: RA Kellerhall	10/19/04
...iner:	Date:		
Sign: Peg E Hall	10/25/04	Page 1 of 11	

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FRAMATOME ANP

ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

ner: DC Cook Unit 2	Component: STM-22-03	Summary No.: 009900

Weld No.: STM-22-03			
Reference Point			
1) Interfering Condition	Weld Ground area (depression in weld)		
Distance From Centerline	0.5" US	**To**	1.4" US
Distance From Ref. Point	47.25" CW	**To**	51" CW
2) Interfering Condition	Weld Ground area (depression in weld)		
Distance From Centerline	0.4" US	**To**	1.4" US
Distance From Ref. Point	52.25" CW	**To**	55" CW
3) Interfering Condition			
Distance From Centerline		**To**	
Distance From Ref. Point		**To**	
(For All Measurements Indicate: US, DS, CW, CCW)			

Percent Of Exam Completed

(Calculations Or Comments Below)

Scanning of the weld could not be performed due to the irregular contour of the weld.

Scanning of the elbow side of the weld was not performed due to the material being cast stainless steel.

Coverage was achieved as follows.

Nozzle side scans

- 45 degree shear wave– 37.5%
- 45 degree RL 10.2%
- 60 degree RL 10.8%

Sketch Of Limitation(s):

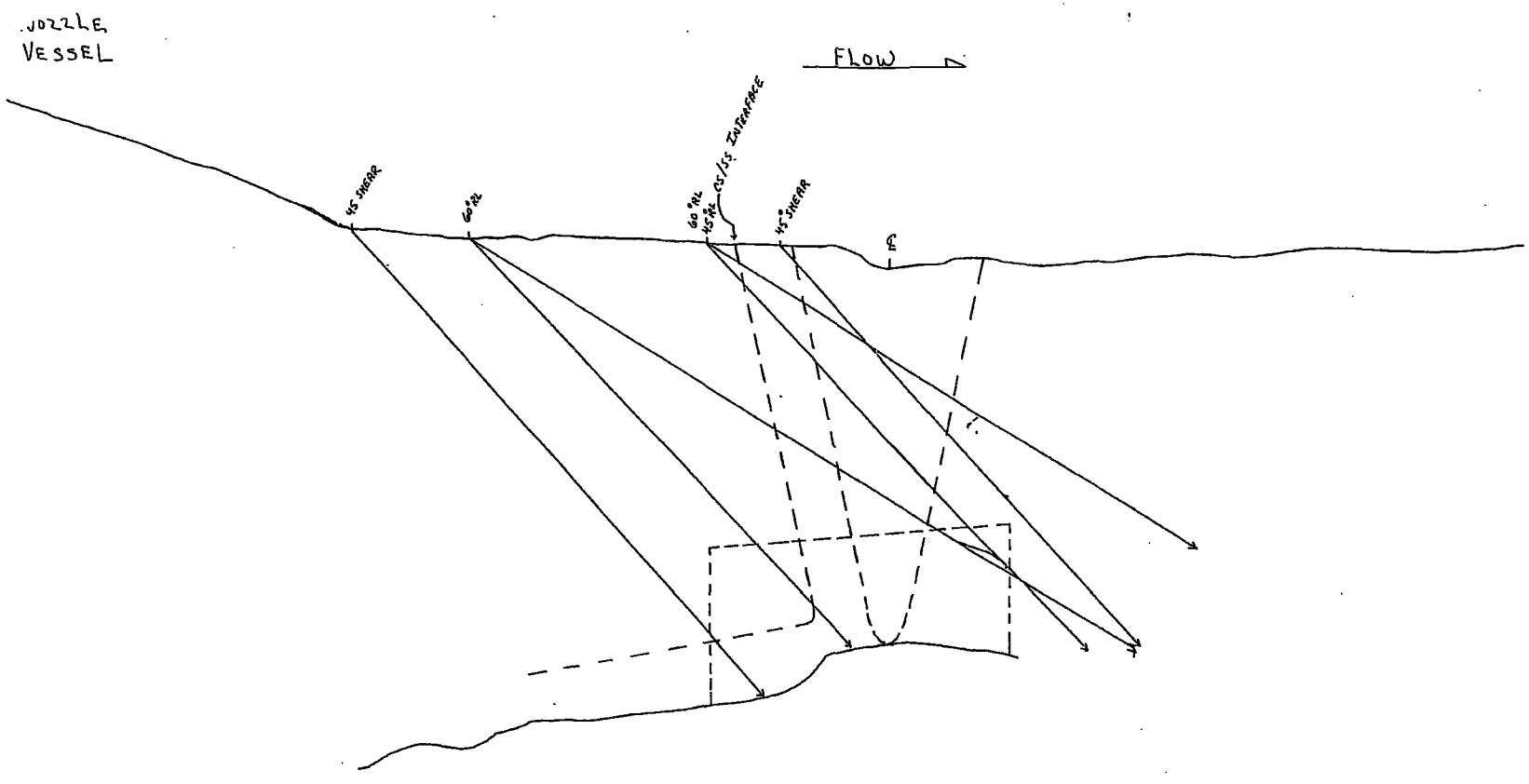
See attached coverage plot for limitations.

(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Level III: RA Kellerhall R A Kellerhall III	Date: 10/19/04	Examiner: Edward P. Mazyck Edward P. Mazyck	Date: 10/13/2004
wer: N/A		Date: N/A	
ner: Kyle E. Nell		Date: 10/25/04	

264/490 7/11

COVERAGE PLOT
STM-22-03
OUTLET NOZZLE
(TOWARD PUMP)



Ryan E Noll
10/05/04

Edward P. Mayrath
LEVEL III 10/13/2004

Rave 10/19/04
267/490

10/11

EXAMINATION SUMMARY

RAMATOME ANP

..mary No.:010700	Data Package: N/A	Exam Date: 10/12/2004

Customer: DC Cook 2	Examination Methods: UT and PT
System / Component ID: Steam Generator / STM-23-02	Examination Procedures: 54-ISI-829-02 and 54-ISI-240-40
Component Description: ELBOW TO INLET NOZZLE	Calibration Sheets No(s): U2C15-Cal-011, U2C15-Cal-012, U2C15-Cal-013, U2C15-Cal-014
Examination Category: B-F	Examination Results: ☐ No Reportable Indications ☐ Reportable Indications ☒ Geometric
ISO / Drawing:A-6	

Summary:

A PT and UT exam was performed on weld STM-23-02.

The PT examination was performed with no recordable indications and no limitations.

The UT examination revealed recordable geometric indications and scan limitations. Geometric indications were noted in the root area intermittently 360 degrees. See the attached indication data sheets.

Scan limitations were encountered due to cast stainless elbow, weld contour, and depressions on the nozzle side of the weld. For the 45 degree shear wave, 37.5% of the base material in the area of interest was scanned. For the 45 degree refracted longitudinal wave (RL), 10.2% of the required examination volume was covered. For the 60 degree RL, 10.8% of the required examination was covered. See ..hed Ultrasonic Examination Scan Limitation Report for areas and percentages of coverage.

The above procedure was used to provide guidance to perform a best effort examination. Weld crown configurations and the cast stainless material prevented performing a complete examination in accordance with the above procedure.

Thickness and profiles were taken and are included in the data package. .

Prepared By: John Langdon	Date: 10-18-2004	Reviewed By: RA Kellerhall	Date:
Sign: John Langdon		Sign: RA Kellerhall	10/21/04
Customer:	Date:		
Sign: Ray E Hall	10/24/04	Page 1 of 12	

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ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

AMATOME ANP

tomer: DC Cook Unit 2	Component: STM-23-02	Summary No.: 010700

Weld No.: STM-23-02			
Reference Point			
1) Interfering Condition	Weld Ground area (depression in weld)		
Distance From Centerline	1.0" DS	**To**	1.5" DS
Distance From Ref. Point	97" CW	**To**	115" CW
2) Interfering Condition			
Distance From Centerline		**To**	
Distance From Ref. Point		**To**	
3) Interfering Condition			
Distance From Centerline		**To**	
Distance From Ref. Point		**To**	
(For All Measurements Indicate: US, DS, CW, CCW)			

Percent Of Exam Completed

(Calculations Or Comments Below)

Scanning of the weld could not be performed due to the irregular contour of the weld.

Scanning of the elbow side of the weld was not performed due to the material being cast stainless steel.

Coverage was achieved as follows.

Nozzle side scans

- 45 degree shear wave– 37.5%
- 45 degree RL 10.2%
- 60 degree RL 10.8%

Sketch Of Limitation(s):

See attached coverage plot for limitations.

(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Level III: RA Kellerhall RA Kellerhall Date: 10/21/04	Examiner: Edward P. Mazyck Edward P. Mazyck Date: 10/13/2004
wer: N/A	Date: N/A
Customer: Roger Wall 10/24/04	Date:

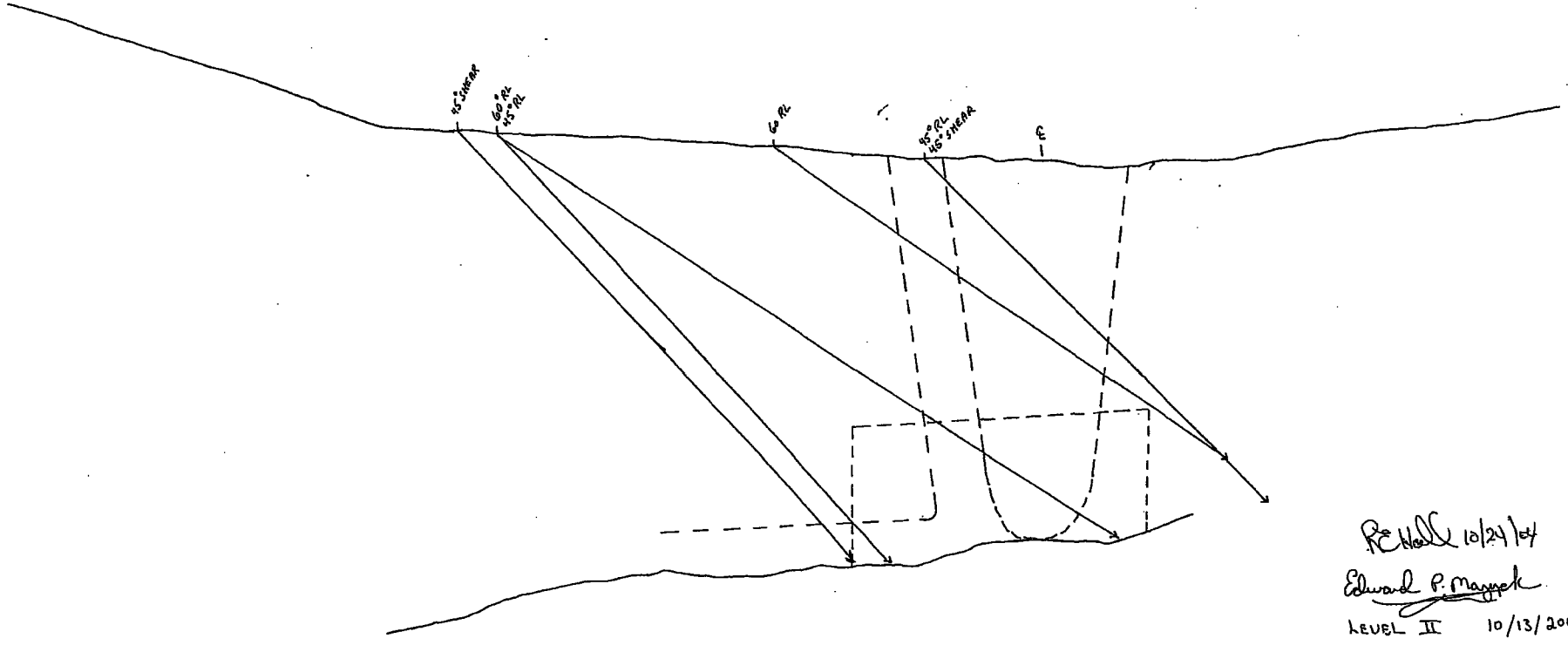
244/490 10/12

COVERAGE PLOT
STM-23-02
INLET NOZZLE
(TOWARD RPV)

NOZZLE
VESSEL

FLOW

ELBOW



RC Hall 10/24/04
Edward P. Maynard
LEVEL II 10/13/2004

RAK 12/12
2416/449

FRAMATOME ANP

EXAMINATION SUMMARY

ıary No.:010800	Data Package: N/A	Exam Date: 10/12/2004

Customer: DC Cook 2	**Examination Methods: UT and PT**
System / Component ID: Steam Generator / STM-23-03	**Examination Procedures: 54-ISI-829-02 and 54-ISI-240-40**
Component Description: OUTLET NOZZLE TO ELBOW	**Calibration Sheets No(s): U2C15-Cal-011, U2C15-Cal-012, U2C15-Cal-013, U2C15-Cal-014**
Examination Category: B-F	**Examination Results:** ☐ No Reportable Indications ☐ Reportable Indications ☒ Geometric
ISO / Drawing:A-6	

Summary:

A PT and UT exam was performed on weld STM-23-03.

The PT examination was performed with no recordable indications and no limitations.

The UT examination revealed recordable geometric indications and scan limitations. Geometric indications were noted in the root area intermittently 360 degrees. See the attached indication data sheets.

Scan limitations were encountered due to cast stainless elbow, weld contour, and depressions on the nozzle side of the weld. For the 45 degree shear wave, 37.5% of the base material in the area of interest was scanned. For the 45 degree refracted longitudinal wave (RL), 10.2% of the required examination volume was covered. For the 60 degree RL, 10.8% of the required examination was covered. See attached Ultrasonic Examination Scan Limitation Report for areas and percentages of coverage.

above procedure was used to provide guidance to perform a best effort examination. Weld crown configurations and the cast stainless material prevented performing a complete examination in accordance with the above procedure.

Thickness and profiles were taken and are included in the data package. .

Prepared By: John Langdon	Date: 10/18/2004	Reviewed By: RA Kellerhall	Date: 10/21/04
Sign: JW Langdon		Sign: RA Kellerhall	
ɔmer: Sign: Ruy E Hall	Date: 10/25/04		Page 1 of 12

269/490

FRAMATOME ANP

ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

mer: DC Cook Unit 2	Component: STM-23-03	Summary No.: 010800

Weld No.: STM-23-03			
Reference Point			
1) Interfering Condition	Weld Ground area (depression in weld)		
Distance From Centerline	0.5" US	**To**	1.8" US
Distance From Ref. Point	114" CW	**To**	117" CW
2) Interfering Condition	Weld Ground area (depression in weld)		
Distance From Centerline	0.5" US	**To**	1.8" US
Distance From Ref. Point	118" CW	**To**	10.5" CW
3) Interfering Condition			
Distance From Centerline		**To**	
Distance From Ref. Point		**To**	
(For All Measurements Indicate: US, DS, CW, CCW)			

Percent Of Exam Completed

(Calculations Or Comments Below)

Nozzle side of weld was limited from 114" to 117" and 118" to 10.5", with a W of 0.5" to 1.80", due to grind out areas.

Scanning of the weld could not be performed due to the irregular contour of the weld.

Scanning of the elbow side of the weld was not performed due to the material being cast stainless steel.

Coverage was achieved as follows.

Nozzle side scans

- 45 degree shear wave– 37.5%
- 45 degree RL 10.2%
- 60 degree RL 10.8%

Sketch Of Limitation(s):

See attached Coverage Plot for contours causing scan limitations

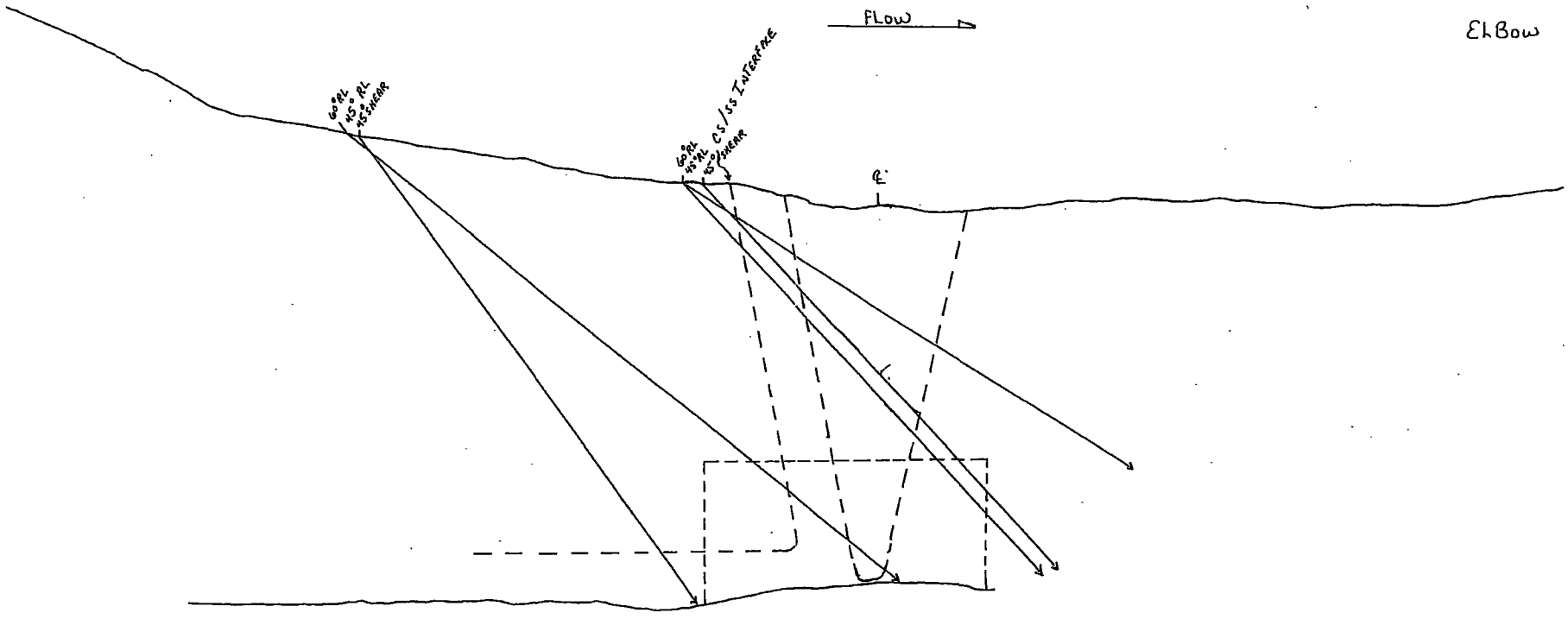
(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Level III: RA Kellerhall RA Kellerhall Date: 10/21/04	Examiner: Edward P. Mazyck Edward P. Mazyck Date: 10/12/2004
ver: N/A	Date: N/A
mer: Roy E. Noll 10/25/04	Date:

278/490 10/12

COVERAGE PLOT
STM-23-03
OUT NOZZLE
(TOWARD PUMP)

NOZZLE
VESSEL



Page E Hall
10/05/04

Edward P. Mazzak
LEVEL II 10/13/2004
280/490 Rev 12/12

ATTACHMENT 5

RELIEF REQUEST ISIR-37

EXAMINATION CATEGORY B-J
PRESSURE RETAINING WELDS IN PIPING

RELIEF REQUEST ISIR-37

Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii)
Inservice Inspection Impracticality

1. ASME Code Components Affected

ASME Code Class:	Code Class 1
Examination Category:	B-J, Pressure Retaining Welds in Piping
Item Numbers:	B9.11, NPS 4 and Larger, Circumferential Welds B9.31, Branch Pipe Connection Welds, NPS 4 or Larger
Component Identification:	Listed in Table 1

2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category B-J requires volumetric examination of 100 percent of the weld volume as defined in Table IWB-2500-1 and shown in Figures IWB-2500-8, or IWB-2500-9, -10 or -11. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject welds due to the geometric configuration and permanent obstructions which limit the volumetric examination coverage of the subject welds.

Due to the component geometry coverage was limited due to tapers, bevels, weld contours, and joint configurations.

These noted obstructions prevent achieving the essentially 100 percent volume examination coverage required by code.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

5. Burden Caused by Compliance

During ultrasonic examination of the piping welds listed in Table 1 of this relief request, 100 percent coverage of the required examination volume could not be obtained. Class 1 piping and components are often designed with welded joints such as nozzle-to-pipe, pipe-to-valve, and pipe-to-pump which can physically obstruct a large portion of the required examination volume. For the welds listed in Table 1, the examinations were performed using Appendix VIII of Section XI as modified by the PDI program. The provided code coverage percentages reflect what is allowed by qualified Appendix VIII techniques. Appendix VIII qualified PDI procedures have demonstrated that sound beams may potentially be attenuated and distorted when required to pass through austenitic weld metal. However, the PDI qualified methods employ the best available technology for maximizing examination coverage of these types of welds. For all the components listed in this relief request, examination was extended to the far side of the weld to the extent permitted by geometry, but this portion of the examination is not included in the reported coverage for welds examined under PDI and Appendix VIII rules. Indiana Michigan Power Company (I&M) has used the best available techniques to examine the subject piping welds. To improve upon these examination coverage percentages, modification and/or replacement of the component would be required. No alternative testing is proposed at this time. I&M has examined the subject welds to the extent practical and will continue to perform pressure testing on the subject welds as required by the Code.

To increase examination coverage on the subject weld would require a significant design modification or replacement of components with a different design or material to eliminate the noted obstructions or material limitations. This is impractical due to the cost, additional radiation exposure and impact to plant equipment.

6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination on the accessible portions of the subject welds to the maximum extent practical. Each weld also received a surface examination without limitations. Additionally, a visual examination (VT-2) is performed at the end of each refueling outage during the system leakage tests as required by Section XI, IWB-2500-1, Category B-P.

Based upon the examination volumes that were obtained with acceptable results along with the completed surface examination and the visual (VT-2) examination performed each refueling outage, it is reasonable to conclude that service induced degradation would be detected if present. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-RH-28-05F	Pipe to Pipe	B9.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the penetration side due to the bevel and the contour of the ID and OD. No relevant indications detected.
1-SI-22-18F	Pipe to Valve	B9.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The coverage limitation was due to the OD bevel configuration on the valve side of the weld. No relevant indications detected.
1-SI-23-17F	Pipe to Valve	B9.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The coverage limitation was due to the OD bevel configuration on the valve side of the weld. No relevant indications detected.
1-RC-5-01F	Branch to Pipe	B9.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The exam limitation was due to the proximity of the branch connection to the branch side weld. No relevant indications detected.
1-SI-33-23S	Tee to Pipe	B9.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
2-RC-22-01	Safe End to Elbow	B9.11	65.0	The completed examination was limited to 65% coverage due to the configuration. The configuration prevents examination due to the geometry of the safe end. No relevant indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
2-RC-28-23	Tee to Pipe	B9.11	66.7	The completed examination was limited to 66.7% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
2-SI-56-19	Tee to Pipe	B9.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
2-RH-33-01	Branch to Pipe	B9.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
2-RC-17-08N	Branch to Pipe	B9.31	34.0	The completed examination was limited to 34% coverage due to the configuration. Limitations were based on the joint configuration. No axial scans were performed on the downstream side of the weld along with no circumferential scans on the branch connection weld due to the contour of the weld. In addition, circumferential scans could only be performed on the branch connection base material. No relevant indications detected.

RELIEF REQUEST ISIR-37

EXAMINATION CATEGORY B-J
PRESSURE RETAINING WELDS IN PIPING

SUPPORTING DOCUMENTATION

INCOMPLETE EXAMINATION REPORT

REPORT NO: MC18-UT-015
PAGE 4 OF 4
DATA PKG: N/A
PROCEDURE: 83A6228 REV2

PLANT/UNIT: D.C. COOK / UNIT 1 WELD NO: 1-RH-28-05F SYSTEM: RH

CONFIGURATION: PIPE TO PENETRATION

ASME CODE CLASS: C-F-1

CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE TO 1989 SECTION XI, FIGURE IWC-2500-7(a)

INTERFERING CONDITION: SINGLE-SIDED ACCESS DUE TO CONFIGURATION. SINGLE SIDED ACCESS EXAMINATION PERFORMED IN ACCORDACE WITH PROCEDURE PARAGRAPH 2.3. PENETRATION SIDE LIMITED BY BASE WD ID/OD CONTOUR.

ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES ____ NO X

PARTIAL EXAMINATION PERFORMED: YES X NO ____

EXAMINATION ANGLE AFFECTED:

0 DEGREE WRV YES 0 DEGREE BASE MATERIAL N/A

45 DEGREE AXIAL YES 45 DEGREE CIRCUMFERENTAIL YES

OTHER: * 70° AXIAL

ALTERNATE METHOD RECOMMENDED: YES ____ NO X

EXPLANATION: *EXAMINATION PERFORMED IN ACCORDANCE TO 83A6228, REV 2

PREPARED BY: Dennis P. Stickdorn DATE: 5-15-02

REVIEWED: [signature] DATE: 5/17/02

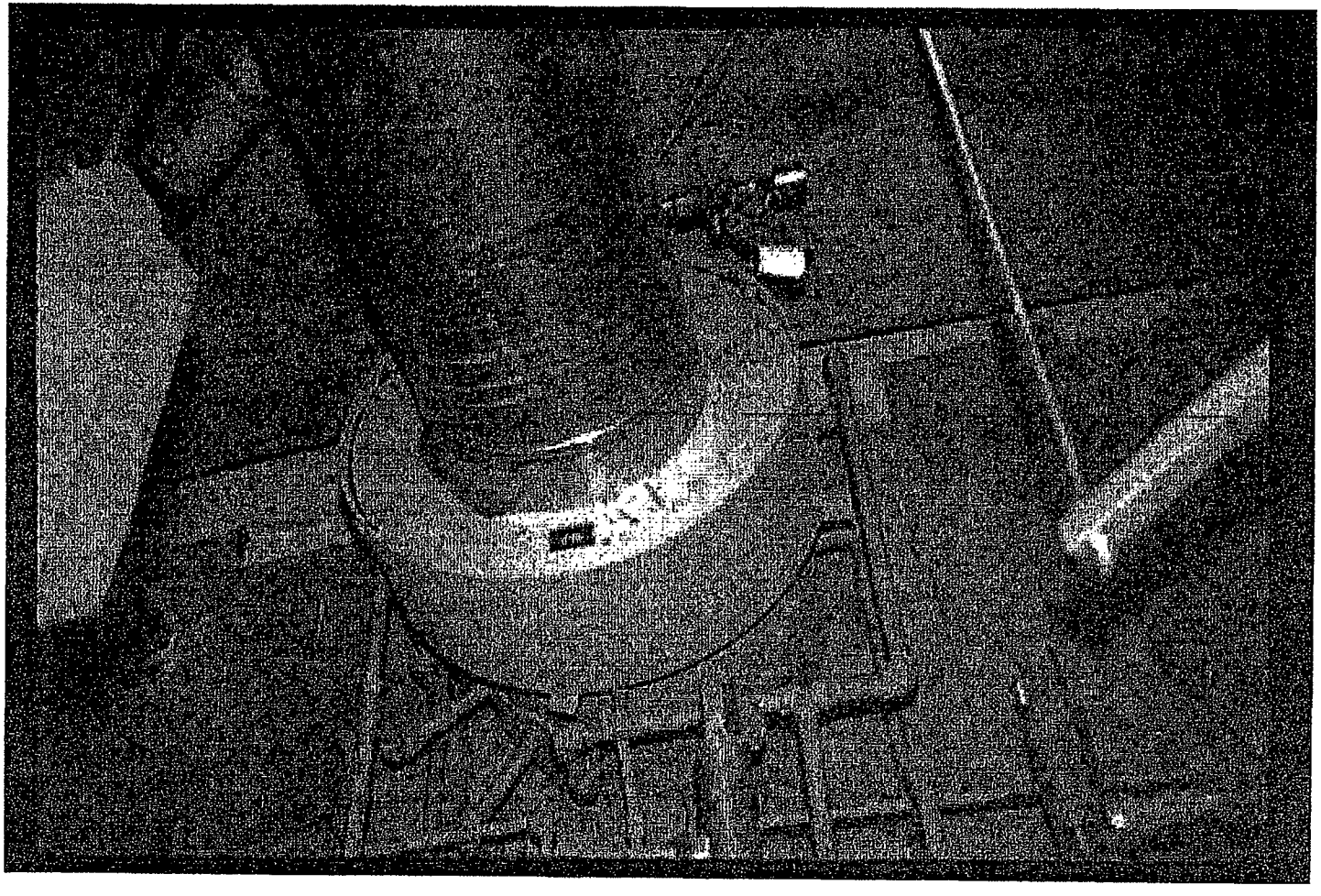
[signature] 5/18/02

Visual Component Database

Component Number: 1-CPN-47

Image Title: 1-CPN-47

Image Date: 04/15/1985



Date Printed: 05/30/2002 11:38 AM

INCOMPLETE EXAMINATION REPORT

REPORT NO: U1C18-UT-019
PAGE 8 OF 8
DATA PKG: N/A
PROCEDURE: 03A6220 R/2

PLANT/UNIT: D.C. Cook #1 WELD NO: 1-SI-22-18F SYSTEM: SI

CONFIGURATION: PIPE TO VALVE

ASME CODE CLASS: B-J, B9.11

CODE EXAMINATION REQUIREMENTS: EXAMINED IN ACCORDANCE WITH ASME SEC. XI, 1989 ED., IWB-2500 REQUIREMENTS.

INTERFERING CONDITION: A SINGLE SIDED ACCESS EXAMINATION WAS PERFORMED IN ACCORDANCE WITH PROCEDURE PARAGRAPH 2.3. ACCESS WAS LIMITED DUE TO THE OD BEVEL CONFIGURATION ON THE VALVE SIDE OF THE WELD.

ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES ____ NO ✓

PARTIAL EXAMINATION PERFORMED: YES ✓ NO ____

EXAMINATION ANGLE AFFECTED:

0 DEGREE WRV ✓ 0 DEGREE BASE MATERIAL N/A

45 DEGREE AXIAL ✓ 45 DEGREE CIRCUMFERENTAIL ✓

OTHER: * 70° R.L.

ALTERNATE METHOD RECOMMENDED: YES ____ NO ✓

EXPLANATION: * EXAMINATION PERFORMED IN ACCORDANCE WITH PROCEDURE PARAGRAPH 5.1.8.2.

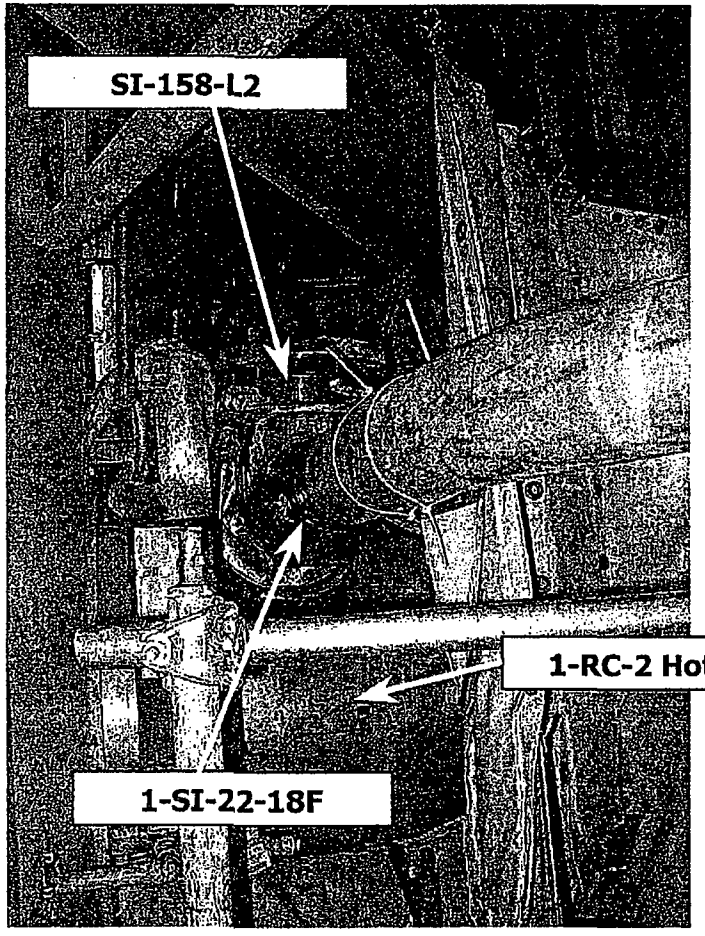
PREPARED BY: [signature] DATE: 5.11.02

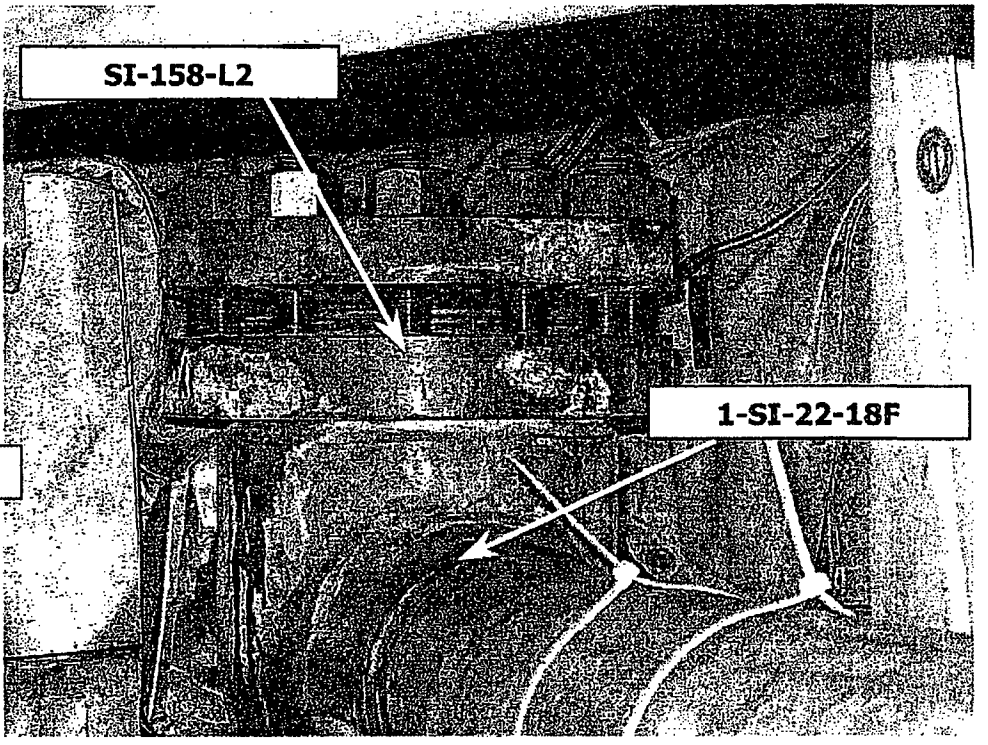
REVIEWED: [signature] DATE: 5.20.02

[signature] 5/08/02

1-SI-22-18F

Lower Containment, just off 29" I.D. 1-RC-2 Hot Leg (Steam Generator #12). Scaffold required. Insulated. High contact dose rate (≈ 200 to 300 mr). Done from Steam Generator manway scaffold.





INCOMPLETE EXAMINATION REPORT

REPORT NO: UIC18-UT-020
PAGE 4 OF 4
DATA PKG: N/A
PROCEDURE: 83A6228 R/2

PLANT/UNIT: D.C. Cook #1 WELD NO: 1-SI-23-17F SYSTEM: SI

CONFIGURATION: PIPE TO VALVE

ASME CODE CLASS: B-J, B9.11

CODE EXAMINATION REQUIREMENTS: EXAMINED IN ACCORDANCE WITH ASME SEC. XI, 1989 ED., IWB-2500 REQUIREMENTS.

INTERFERING CONDITION: A SINGLE SIDED ACCESS EXAMINATION WAS PERFORMED IN ACCORDANCE WITH PROCEDURE PARAGRAPH 2.3. ACCESS WAS LIMITED DUE TO THE OD BEVEL CONFIGURATION ON THE VALVE SIDE OF THE WELD.

ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES ____ NO ✓

PARTIAL EXAMINATION PERFORMED: YES ✓ NO ____

EXAMINATION ANGLE AFFECTED:

0 DEGREE WRV ✓ 0 DEGREE BASE MATERIAL N/A

45 DEGREE AXIAL ✓ 45 DEGREE CIRCUMFERENTAIL ✓

OTHER: *70° R.L.

ALTERNATE METHOD RECOMMENDED: YES ____ NO ✓

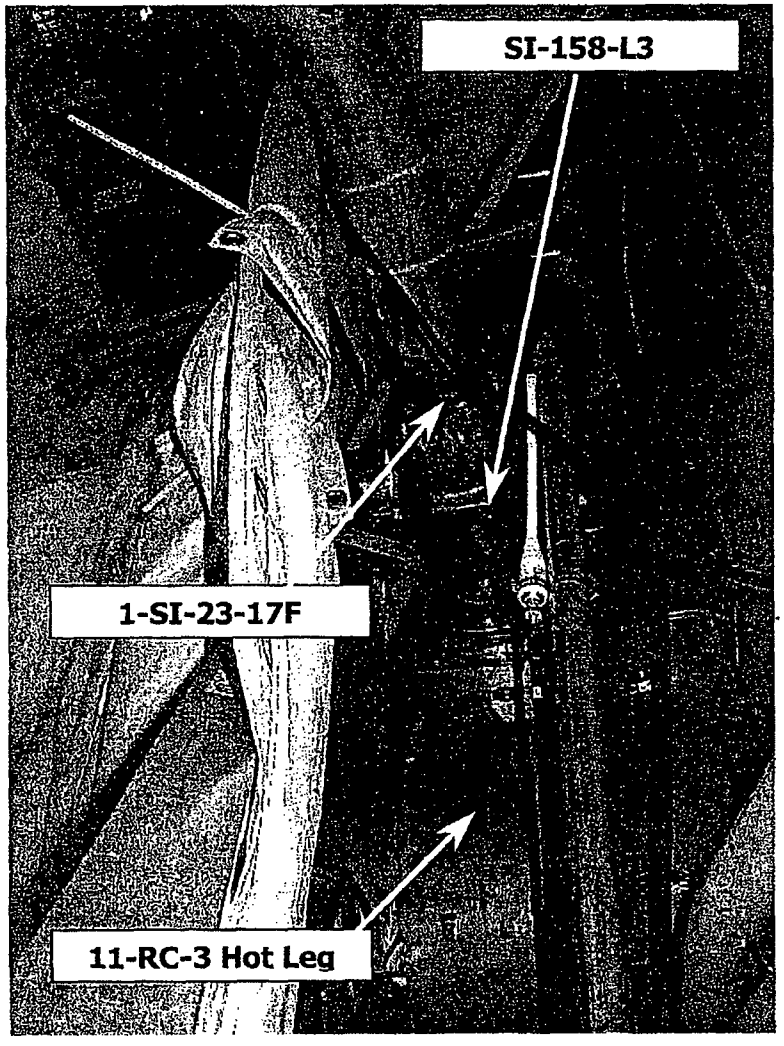
EXPLANATION: * EXAMINATION PERFORMED IN ACCORDANCE WITH PROCEDURE PARAGRAPH 5.1.B.2.

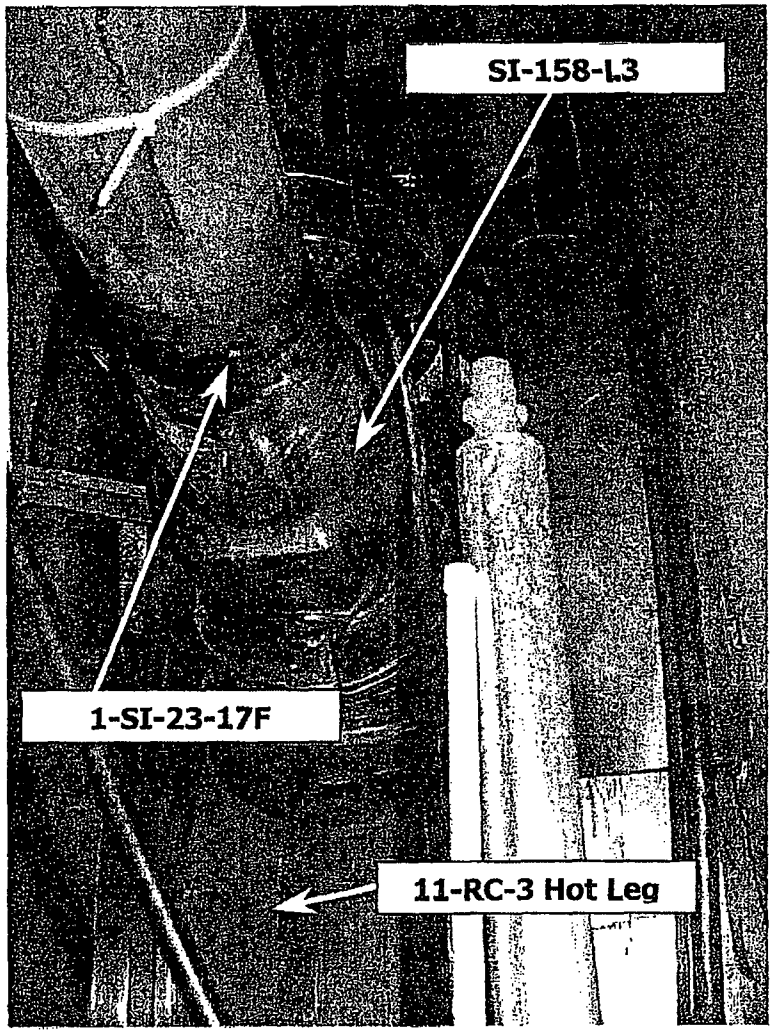
EPARED BY: [signature] DATE: 5.11.02

REVIEWED: Dennis P. Stuchell DATE: 5.20.02

1-SI-23-17F

Lower Containment, just off 29" I.D. 1-RC-3 Hot Leg (Steam Generator #13). Scaffold required. Insulated. High contact dose rate (≈ 200 to 300 mr). Done from Steam Generator manway scaffold.





UT Calibration/Examination

Site/Unit:	AEP / 1	Procedure:	ISI-PDI-UT-2	Outage No.:	
Summary No.:	030900	Procedure Rev.:	4	Report No.:	UT-06-046
Workscope:	ISI	Work Order No.:	55247776-01	Page:	1 of 3

Code:	ASME XI 1989	Cat./Item:	B-J/B9.11	Location:	CONT. L3
Drawing No.:	A-19	Description:	BRANCH CONNECTION TO PIPE		
System ID:	RC				
Component ID:	1-RC-5-01F			Size/Length:	Size: 14" Thickness/Diameter Thickness:1.406
Limitations:	No exam upstream due to component configuration			Start Time:	1304 Finish Time: 1323

Instrument Settings

Serial No.:	105205		
Manufacturer:	GEIT		
Model:	USN-60 SW		
Delay:	5.8588 µsec	Range:	4.0 "
M'tl Cal/Vel:	0.1220 "/µsec	Pulser:	Square
Damping:	500 Ω	Reject:	0%
Rep. Rate:	Auto High	Freq.:	2.0 MHz
Filter:	N/A	Mode:	Fullwave
Voltage:	450v		
Ax. Gain (dB):	18.5	Circ. Gain (dB):	N/A

1 Screen Div. = .40 In. of Sound Path

Linearity Report No.: L-06-011

Calibration Block

Cal. Block No.:	CB-02-184		
Thickness:	0.5" - 2.0"	Dia.:	Flat
Cal. Blk. Temp.:	89°	Temp. Tool:	0506533
Comp. Temp.:	82°	Temp. Tool:	0506533

Search Unit

Serial No.:	01D6NM		
Manufacturer:	KBA		
Size:	0.375"	Shape:	ROUND
Freq.:	1.5 MHZ	Style:	Comp-G
Exam Angle:	45°	# of Elements:	1
Mode:	Shear		
Measured Angle:	45°		
Wedge Style:	MSWQC		

Search Unit Cable

Type:	RG174		
Length:	12'	No. Conn.:	0

Scan Coverage

Upstream ☐ Downstream ☑ Scan dB: 28.5

CW ☑ CCW ☑ Scan dB: 28.5

Exam Surface:	OD
Surface Condition:	AS WELDED

Cal. Checks	Time	Date
Initial Cal.	1016	10/17/2006
Inter. Cal.	1303	10/17/2006
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Final Cal.	1455	10/17/2006

Couplant

Cal. Batch:	06225
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	06225
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.:	A20250
Type:	Rompus SS

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
1.5" Notch	80%	05.4	2.16"
N/A	N/A	N/A	N/A

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
N/A	N/A	N/A	N/A

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
18.5	FSDH	46%	4.5	1.8"

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: 50% * Reviewed Previous Data: Yes

Comments: *=Best effort exam per procedure due to branch connection to pipe configuration.Pulse Width (330). See report UT-06-70 for 60° report.

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Snyder, Steven C.			10/17/2006	Feige, Edward			10/21/06
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A				Donavin, Paul			10/21/06
Other	Level III	Signature	Date	ANII Review		Signature	Date
Orihuela, Miguel			10/20/06	Longenberger, James A.			10-22-06

INFORMATION ONLY

ABS INC

Supplement Report

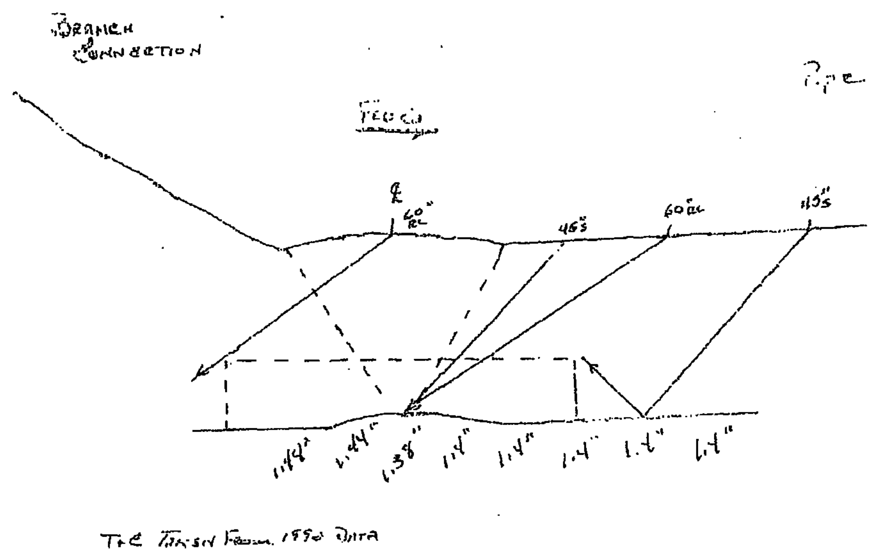
Report No.: UT-06

Summary No.: **030900**

Examiner:	**Snyder, Steven C.**	Level:	**II**	Reviewer:	**Feige, Edward J.**	Date:	
Examiner:	**N/A**	Level:	**N/A**	Site Review:	**Donavin, Paul**	Date:	
Other:	**Orihuela, Miguel** MO	Level:	**III**	ANII Review:	**Longenberger, James A.**	Date:	

Comments: **1-RC-5-01F COVERAGE PLOT**

Sketch or Photo: X:\IDDEAL\U1-C21 Inspection Documentation and Photos\WesDyne Examinations\CompID 1-RC-5-01F WO 55247776-01 SN 030900 Rpt UT-06-046\Coverage Plot
CompID 1RC-5-01F TC A.jpg



INFORMATION ONLY

UT Calibration/Examination

Site/Unit:	AEP / 1	Procedure:	ISI-PDI-UT-2	Outage No.:	U
Summary No.:	030900	Procedure Rev.:	4	Report No.:	UT-06-070
Workscope:	ISI	Work Order No.:	55247776-01	Page:	1 of 1

Code: ASME XI 1989 | Cat./Item: B-J/B9.11 | Location: CONT. L3

Drawing No.: A-19 | Description: BRANCH CONNECTION TO PIPE

System ID: RC

Component ID: 1-RC-5-01F | Size/Length: Size: 14" | Thickness/Diameter: Thickness:1.406

Limitations: No exam upstream due to component configuration | Start Time: 1243 | Finish Time: 1301

Instrument Settings

Serial No.:	105205		
Manufacturer:	GEIT		
Model:	USN-60 SW		
Delay:	9.0141 µ sec	Range:	4.0"
M'tl Cal/Vel:	0.2283 "/µsec	Pulser:	Square
Damping:	500 Ω	Reject:	0%
Rep. Rate:	Auto High	Freq.:	2.0 MHz
Filter:	N/A	Mode:	Full Wave
Voltage:	460v		
Ax. Gain (dB):	68.5	Circ. Gain (dB):	N/A
1 Screen Div. =	.40	In. of	Sound Path
Linearity Report No.:	L-06-011		

Calibration Block

Cal. Block No.:	CB-02-184		
Thickness:	0.6" - 2.0"	Dia.:	Flat
Cal. Blk. Temp.:	89°	Temp. Tool:	0606533
Comp. Temp.:	82°	Temp. Tool:	0606533

Search Unit

Serial No.:	06-483		
Manufacturer:	RTD		
Size:	2(8 X 14)mm	Shape:	Rectangular
Freq.:	2 Mhz	Style:	TRL2-Aust
Exam Angle:	60°	# of Elements:	2
Mode:	Longitudinal		
Measured Angle:	60°		
Wedge Style:	Integral		

Search Unit Cable

Type:	RG174		
Length:	6'	No. Conn.:	0

Scan Coverage

Upstream ☐	Downstream ☑	Scan dB:	65.5
CW ☐	CCW ☐	Scan dB:	N/A
Exam Surface:	OD		
Surface Condition:	AS WELDED		

Cal. Checks	Time	Date
Initial Cal.	1020	10/17/2006
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Final Cal.	1452	10/17/2006

Couplant

Cal. Batch:	06226
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	06226
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.:	A20250
Type:	Rompus SS

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
1.5" Notch	80%	06.3	2.5"
N/A	N/A	N/A	N/A

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
N/A	N/A	N/A	N/A

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
N/A	N/A	N/A	N/A	N/A

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: 60% * | Reviewed Previous Data: Yes

Comments: **Pulse Width (250) *=Best effort exam per procedure due to branch connection to pipe configuration. Reference 45° report UT-06-046 for photo and coverage plot.**

Examiner: Snyder, Steven C.	Level II	Signature	Date: 10/17/2006
Examiner: N/A	Level N/A	Signature	Date
Other: Orihuela, Miguel	Level III	Signature	Date: 10/20/06

Reviewer: Feige, Edward J.	Signature		Date: 10/21/06
Site Review: Donavin, Paul	Signature		Date: 10/21/06
ANII Review: Longenberger, James A.	Signature		Date: 10-22-06

INFORMATION ONLY

UT Calibration/Examination

ABS INC

UT Calibration/Examination

Site/Unit:	AEP / 1	Procedure:	ISI-PDI-UT-2	Outage No.:	L
Summary No.:	108600	Procedure Rev.:	4	Report No.:	UT-06-049
Workscope:	ISI	Work Order No.:	55247782-03	Page:	1 of 1

Code:	ASME XI 1989	Cat./Item:	B-J/B9.11	Location:	CONT. L3
Drawing No.:	A-55	Description:	TEE TO PIPE		
System ID:	SI				
Component ID:	1-SI-33-23S			Size/Length:	Size: 10" Thickness/Diameter: Thickness:1.312"
Limitations:	No exam upstream due to component configuration			Start Time:	1119 Finish Time: 1131

Instrument Settings

Serial No.:	105206		
Manufacturer:	GE/IT		
Model:	USN-60 SW		
Delay:	9.0141 µ sec	Range:	4.0"
M'tl Cal/Vel:	0.2203 "/µsec	Pulser:	Square
Damping:	500 Ω	Reject:	0%
Rep. Rate:	Auto High	Freq.:	2.0 MHz
Filter:	N/A	Mode:	Full Wave
Voltage:	400v		
Ax. Gain (dB):	68.9	Circ. Gain (dB):	N/A
1 Screen Div. =	.40	In. of	Sound Path
Linearity Report No.:	L-06-011		

Calibration Block

Cal. Block No.:	CB-02-184		
Thickness:	0.5" - 2.0"	Dia.:	Flat
Cal. Blk. Temp.:	80°	Temp. Tool:	0606533
Comp. Temp.:	78°	Temp. Tool:	0606533

Search Unit

Serial No.:	06-483		
Manufacturer:	RTD		
Size:	2(8 X 14)mm	Shape:	Rectangular
Freq.:	2 Mhz	Style:	TRL2-Aust
Exam Angle:	60°	# of Elements:	2
Mode:	Longitudinal		
Measured Angle:	60°		
Wedge Style:	Integral		

Search Unit Cable

Type:	RG174		
Length:	6'	No. Conn.:	0

Scan Coverage

Upstream ☐	Downstream ☑	Scan dB:	58.6
CW ☐	CCW ☐	Scan dB:	N/A
Exam Surface:	OD		
Surface Condition:	AS WELDED		

Cal. Checks	Time	Date
Initial Cal.	1047	10/14/2006
Inter. Cal.	1118	10/14/2006
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Final Cal.	1659	10/14/2006

Couplant

Cal. Batch:	06225
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	06225
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.:	A20260
Type:	Rompus SS

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
1.5" Notch	80%	06.0	2.3"
N/A	N/A	N/A	N/A

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
N/A	N/A	N/A	N/A

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
45	FSDH	80%	3.0	1.2"
N/A	N/A	N/A	N/A	N/A

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: 50% Reviewed Previous Data: INFORMATION ONLY

Comments: **Pulse Width (250). ID Geometry observed below recordable levels. Scanned at reference due to excessive noise level. Ref 45° rpt UT-06-055 for Coverage Plot/Photo.**

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Snyder, Steven C.			10/11/2006	Feige, Edward J.			10/21/06
Examiner	Level I	Signature	Date	Site Review		Signature	Date
Frana, Jeremy R.			10/11/2006	Donavin, Paul			10/21/06
Other	Level III	Signature	Date	ANII Review		Signature	Date
Orihuela, Miguel			10/20/06	Longenberger, James A.			10-21-06

ABS INC

UT Calibration/E mination

Site/Unit:	AEP / 1	dure:	ISI-PDI-UT-2	Outage No.:	U
Summary No.:	108500	Procedure Rev.:	4	Report No.:	UT-06-056
Workscope:	ISI	Work Order No.:	55247782-03	Page:	1 of 3

Code: ASME XI 1989 | Cat./Item: B-J/B9.11 | Location: CONT. L3

Drawing No.: A-56 | Description: TEE TO PIPE

System ID: SI

Component ID: 1-SI-33-23S | Size/Length: Size:10" | Thickness/Diameter: Thickness:1.312

Limitations: No exam upstream due to component configuration. | Start Time: 1103 | Finish Time: 1117

Instrument Settings

Serial No.:	106205		
Manufacturer:	GEIT		
Model:	USN-60 SW		
Delay:	0.8688 µsec	Range:	4.0"
M'tl Cal/Vel:	0.1220 "/µsec	Pulser:	Square
Damping:	600 Ω	Reject:	0%
Rep. Rate:	Auto High	Freq.:	2.0 MHz
Filter:	N/A	Mode:	Fullwave
Voltage:	460v		
Ax. Gain (dB):	18.5	Circ. Gain (dB):	N/A

1 Screen Div. = .4 In. of Sound Path

Linearity Report No.: L-06-011

Calibration Block

Cal. Block No.:	CB-02-184		
Thickness:	0.5" - 2.0"	Dia.:	Flat
Cal. Blk. Temp.:	88°	Temp. Tool:	0606533
Comp. Temp.:	80°	Temp. Tool:	0606533

Search Unit

Serial No.:	01D6NM		
Manufacturer:	KBA		
Size:	0.375"	Shape:	ROUND
Freq.:	1.5 MHZ	Style:	Comp-G
Exam Angle:	45°	# of Elements:	1
Mode:	Shear		
Measured Angle:	45°		
Wedge Style:	MSWQC		

Search Unit Cable

Type: RG174 | Length: 6' | No. Conn.: 0

Scan Coverage

Upstream ☐ Downstream ☑ Scan dB: 28.5

CW ☑ CCW ☑ Scan dB: 28.5

Exam Surface: OD

Surface Condition: AS WELDED

Cal. Checks	Time	Date
Initial Cal.	1043	10/14/2006
Inter. Cal.	1100	10/14/2006
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Final Cal.	1656	10/14/2006

Couplant

Cal. Batch:	06226
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	06226
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.: A20250

Type: Rompus SS

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
1.6" Notch	80%	05.4	2.16"
N/A	N/A	N/A	N/A

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
N/A	N/A	N/A	N/A

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
18.5	FSDH	45%	04.5	1.8"

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Comments: **Pulse Width (330). ID Geometry observed below recordable levels. 60° exam on report UT-06-049.**

Percent Of Coverage Obtained > 90%: 80% | Reviewed Previous Data: Yes

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Snyder, Steven C.			10/14/2006	Feige, Edward J.			10/21/06
Examiner	Level I	Signature	Date	Site Review		Signature	Date
Frana, Jeremy R.		For Jeremy Frana	10/14/2006	Donavin, Paul			10/21/06
Other	Level III	Signature	Date	ANI Review		Signature	Date
Orihuela, Miguel			10/20/06	Longenberger, James A.		INFORMATION ONLY	10-21-06

ABS WMS

Supplemental Report

Report No.: UT-06

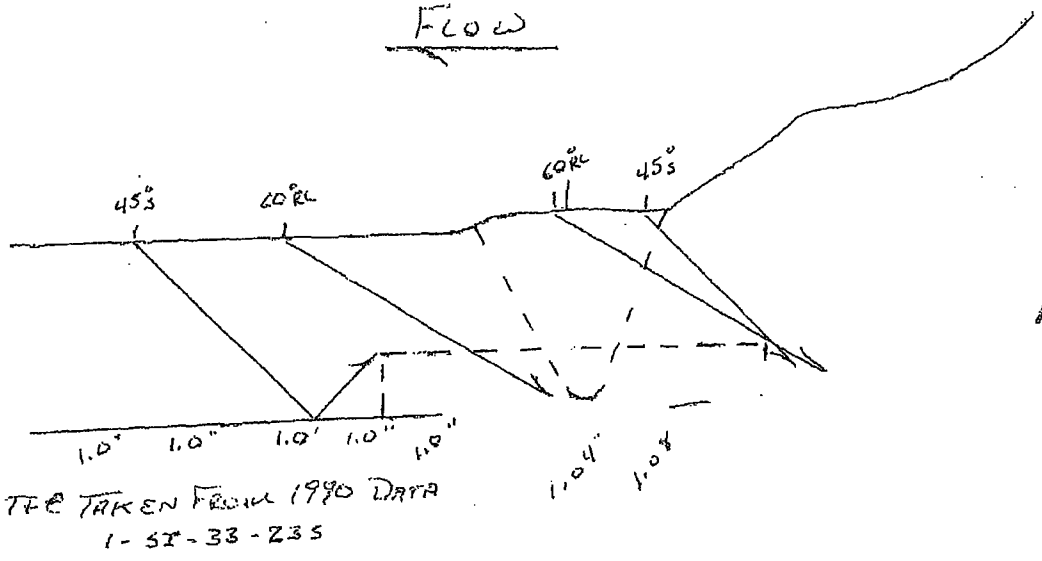
Page: 2 of 3

Summary No.: 108500

Examiner:	Snyder, Steven C.	Level:	II	Reviewer: Felge, Edward J.	Date:
Examiner:	Frana, Jeremy R.	Level:	I	Site Review: Donavin, Paul	Date:
Other:	Orihuela, Miguel	Level:	III	ANII Review: Longenberger, James A.	Date:

Comments: 1-SI-33-23S Coverage Plot

Sketch or Photo: X:\IDDEAL\U1-C21 Inspection Documentation and Photos\WesDyne Examinations\CompID 1-SI-33-23S WO 55247782-03 SN 108500 Rpt UT-06-049\Coverage plot 1-33-23S with TC D.jpg



Additional - Supplemental Reports <edit from Setup>

EXAMINATION SUMMARY

FRAMATOME ANP

ımary No.:025700	Data Package: NA	Exam Date: 10/16/2004

Customer: DC Cook 2	Examination Methods: PT and UT
System / Component ID: Reactor Coolant / 2-RC-22-01	Examination Procedures: 54-ISI-240-40 and 54-ISI-836-08
Component Description: Safe End to Elbow Weld	Calibration Sheets No(s): U2C15-Cal-049, U2C15-Cal-051
Examination Category: B-~~F~~J / B5.130 DPT 12-10-04	Examination Results: ☒ No Reportable Indications
ISO / Drawing:A-~~19~~ 20 DPT 12-10-04	☐ Reportable Indications
	☐ Geometric

Summary:

A PT examination was performed on 100% of weld 2-RC-22-01 with no indications noted.

A UT examination was performed from one side of weld 2-RC-22-01 with no indications noted. See attached Scan Limitations Report for areas coverage could not be obtained.

Prepared By: JW Langdon Date: 10-25-04	Reviewed By: RA Kellerhall Date:10-25-04
JW Langdon	Sign: RA Kellerhall
Customer Sign: Date: 10/26/04	Page 1 of 7

453/490

ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

FRAMATOME ANP

tomer: DC Cook Unit 2	Component: Reactor Coolant	Summary No.: 025700

Weld No.: 2-RC-22-01			
Reference Point 0"			
1) Interfering Condition	Surface Geometry		
Distance From Centerline	0.25" US	To	0.55 US
Distance From Ref. Point	0"	To	20.4"
2) Interfering Condition			
Distance From Centerline		To	
Distance From Ref. Point		To	
3) Interfering Condition			
Distance From Centerline		To	
Distance From Ref. Point		To	
4) Interfering Condition			
Distance From Centerline		To	
Distance From Ref. Point		To	
(For All Measurements Indicate: US, DS, CW, CCW)			

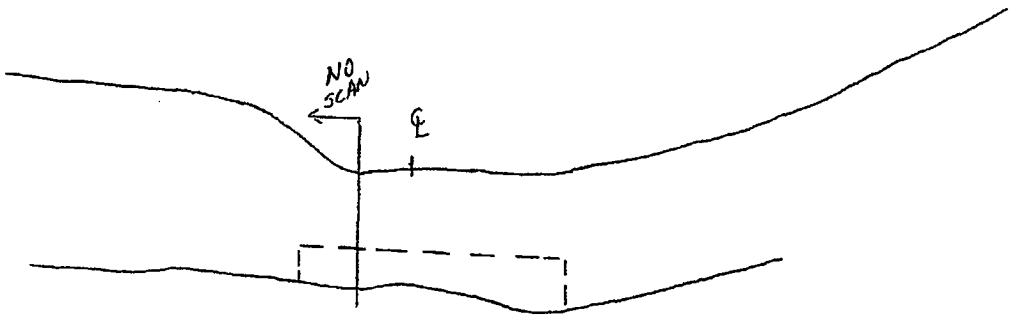
Percent Of Exam Completed 65.0%
(Calculations Or Comments Below)

45 degree circumferential coverage
Total area:
1.5" width
0.25 height
20.4" length
1.5W x 0.25H x 20.4L = 7.65

Obstructed area
0.3" obstructed width
0.25" obstructed height
20.4" obstructed length
0.3W x 025H x 20.4L = 1.53
45 degree circumferential coverage = 80.0%

45 degree axial coverage = 100%

'ch Of Limitation(s):



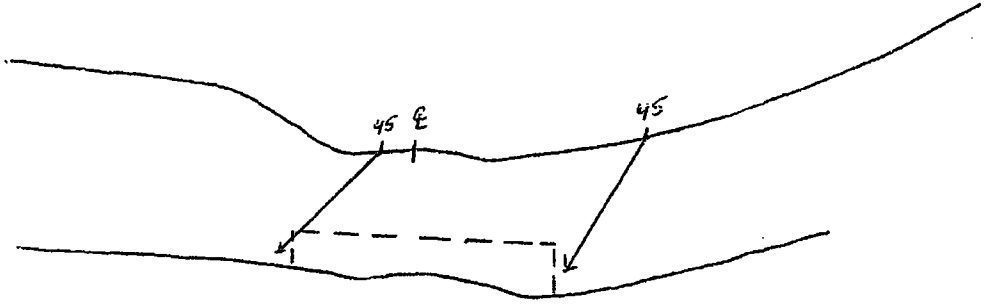
(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Level III: Robert Kellerhall Date: 10-25-04	Examiner: George Chapman Date:10-16-04
ewer: N/A	Date: N/A
stomer:	Date: 10/26/04

457/490

FRAMATOME ANP

UT COVERAGE PLOT



0687/454

COMPONENT: 2-RC-22-01

10/26/04

FRAMATOME ANP

EXAMINATION SUMMARY

Summary No.:034300	Data Package: NA	Exam Date: 10/20/2004

Customer: DC Cook 2	Examination Methods: PT and UT
System / Component ID: Reactor Coolant / 2-RC-28-23	Examination Procedures: 54-ISI-240-40 and 54-ISI-836-08
Component Description: Tee to Pipe Weld	Calibration Sheets No(s): U2C15-Cal-056, U2C15-Cal-057
Examination Category: B-J / B9.11	Examination Results: ☒ No Reportable Indications ☐ Reportable Indications ☐ Geometric
ISO / Drawing:A-257 DPL 12-10-04	

Summary:

A PT and UT examination was performed on weld 2-RC-28-23 with no indications noted.

The PT exam covered 100% of the weld.

The UT exam was limited to the pipe side. See attached Scan Limitation Report for areas and percentages of coverage.

Prepared By: JW Langdon Date: 10-25-04	Reviewed By: RA Kellerhall Date:10-25-04
Sign: JW Langdon	Sign: RA Kellerhall
Customer Sign: Ray E Hall Date: 10/26/04	Page 1 of 7

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ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

AMATOME ANP

omer: DC Cook Unit 2	Component: Reactor Coolant	Summary No.: 034300

Weld No.: 2-RC-28-23			
Reference Point 0" Weld CL			
1) Interfering Condition	Surface Geometry		
Distance From Centerline	0.2" US	To	0.6" US
Distance From Ref. Point	0.0" CW	To	14.5" CW
2) Interfering Condition			
Distance From Centerline		To	
Distance From Ref. Point		To	
3) Interfering Condition			
Distance From Centerline		To	
Distance From Ref. Point		To	
4) Interfering Condition			
Distance From Centerline		To	
Distance From Ref. Point		To	
(For All Measurements Indicate: US, DS, CW, CCW)			

Percent Of Exam Completed
(Calculations Or Comments Below)

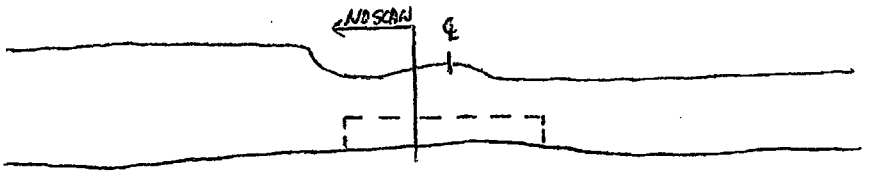
45S Circumferential coverage

Weld length 14.3"
Coverage Height = 0.15" Obstructed
Coverage Width = 0.4" Obstructed
Coverage Length = 14.5" Obstructed
0.15H x 0.4W x 14.5L = 0.87

Coverage Height = 0.15"
Coverage Width = 1.2"
Coverage Length = 14.5"
0.15H x 1.2W x 14.5L = 2.61 for Complete Coverage
4.8/108.6 = percent obstructed area

66.7% Coverage Achieved

:h Of Limitation(s):



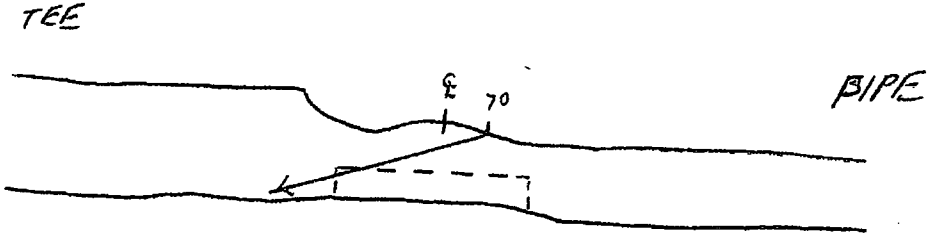
(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Level III: Robert Kellerhall Date: 10-25-04	Examiner: George Chapman Date:10-20-04
wer: N/A	Date: N/A
ustomer: Roy E Neal	Date: 10/26/04

483/490 5/7

FRAMATOME ANP

UT COVERAGE PLOT



0611/498

COMPONENT: 2-RC-28-23

10-20-04

10/26/04

PAGE 12 OF 17

UT Calibration/Examination

Site/Unit:	AEP / 2	Procedure:	54-ISI-836	Outage No.:	16
Summary No.:	089750	Procedure Rev.:	09	Report No.:	UT-06-018
Workscope:	ISI	Work Order No.:	05144018	Page:	1 of 5

Code:	ASME XI 1989	Cat./Item:	B-J/B9.11	Location:	CONT. L1
Drawing No.:	A-47	Description:	TEE TO PIPE		
System ID:	SI				
Component ID:	2-SI-56-19	Size/Length:	N/A / 34.375	Thickness/Diameter:	1.1" / 10.0"
Limitations:	Tee configuration	Start Time:	2245	Finish Time:	2345

Instrument Settings

Serial No.:	01040X		
Manufacturer:	KBA		
Model:	USN-68L		
Delay:	5.79	Range:	2.828
M'tl Cal/Vel:	0.124	Pulser:	High
Damping:	1K	Reject:	Off
Rep. Rate:	AutoHigh	Freq.:	2.25
Filter:	Full Wave	Mode:	N/A
Voltage:	Fixed		
Ax. Gain (dB):	24.8	Circ. Gain (dB):	N/A
1 Screen Div. =	0.20	in. of	Depth
Unearity Report No.:	L-06-002		

Calibration Block

Cal. Block No.:	CB-02-44		
Thickness:	0.5" - 2.0"	Dia.:	Flat
Cal. Blk. Temp.:	86	Temp. Tool:	JC24395 / VH-9567
Comp. Temp.:	81	Temp. Tool:	JC24395 / VH-9567

Search Unit

Serial No.:	00HRX9		
Manufacturer:	KBA		
Size:	0.375"	Shape:	ROUND
Freq.:	2.25 MHZ	Style:	COMP-G
Exam Angle:	45	# of Elements:	1
Mode:	Shear		
Measured Angle:	45		
Wedge Style:	MSWQC		

Search Unit Cable

Type:	RG174		
Length:	6'	No. Conn.:	0

Scan Coverage

Upstream ☐	Downstream ☑	Scan dB:	41
CW ☑	CCW ☑	Scan dB:	46
Exam Surface:	OD		
Surface Condition:	GROUND		

Cal. Checks	Time	Date
Initial Cal.	2200	4/12/2006
Inter. Cal.	2300	4/12/2006
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Final Cal.	0030	4/13/2006

Couplant

Cal. Batch:	04325
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	04325
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.:	N/A
Type:	N/A

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Depth
1.5"	80%	7.5	1.5"
ID ROLL	10%	5.0	1.0"
N/A			
			N/A

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Depth
N/A			
			N/A

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Depth
N/A				
				N/A

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Comments: NCD

Percent Of Coverage Obtained > 90%: No Reviewed Previous Data: Yes

	Level	Signature	Date
Examiner: Chapman, George G	II-PDI	GGC	4/13/2006
Examiner: Bauman, Nathan M.	II	NMB	4/13/2006
Other: Blum, William E.	III	WEB	4/14/2006

	Signature	Date
Reviewer: Nicholas Shearer, Level III	RGH/NS	4/14/2006
Site Review: Roy E. Hall		4/18/2006
ANII Review		4/19/06

Limitation Record

Site/Unit:	AEP / 2	Procedure:	54-ISI-836	Outage No.:	U2-C16
Summary No.:	089750	Procedure Rev.:	09	Report No.:	UT-06-018
Workscope:	ISI	Work Order No.:	05144018	Page:	2 of 5

Description of Limitation:

One sided exam due to configuration of T to pipe. 50% coverage achieved. See supplemental report for limitation description.

Sketch of Limitation: X:\IDDEAL\U2-C16 Inspection Documentation and photos\U2-C16 Framatome Pictures\2-SI-56-19a.jpg

Limitations removal requirements:

Radiation field:

Examiner	Level II-PDI	Signature	Date	Reviewer		Signature	Date
Chapman, George G			4/13/2006	Nicholas Shearer, Level III			4/14/2006
Examiner	Level II	Signature	Date	Site Review		Signature	Date
[illegible]uman, Nathan M.			4/13/2006	Roy E. Hall			4/18/2006
[illegible]ner	Level III	Signature	Date	ANII Review		Signature	Date
Blum, William E.			4/14/2006				

Additional - Limitation <edit from Setup>

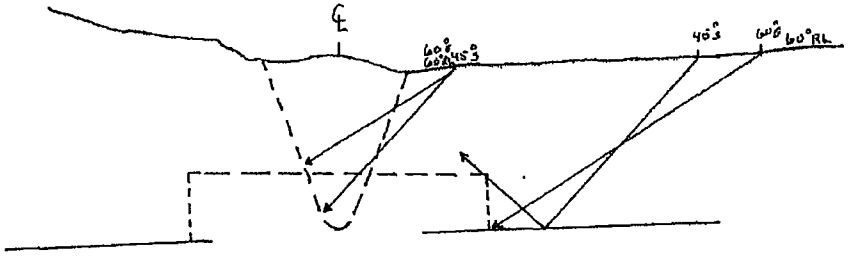
Summary No.: 089750

Sketch or Photo: X:\IDDEAL\U2-C16 Inspection Documentation and photos\U2-C16 Framatome Pictures\coveragePlotsummary# 089750.jpg

AREVA

UT COVERAGE PLOT

TEE



PIPE

Coverage plot shows 45°, 60° shear and 60° RL angles.
Coverage Plot for Safety Injection System weld# 2-SI-56-19

COMPONENT: Summary# 089750

PAGE ___ OF ___

Additional - Supplemental Reports <edit from Setup>

Supplemental Report

Report No.: UT-06-018

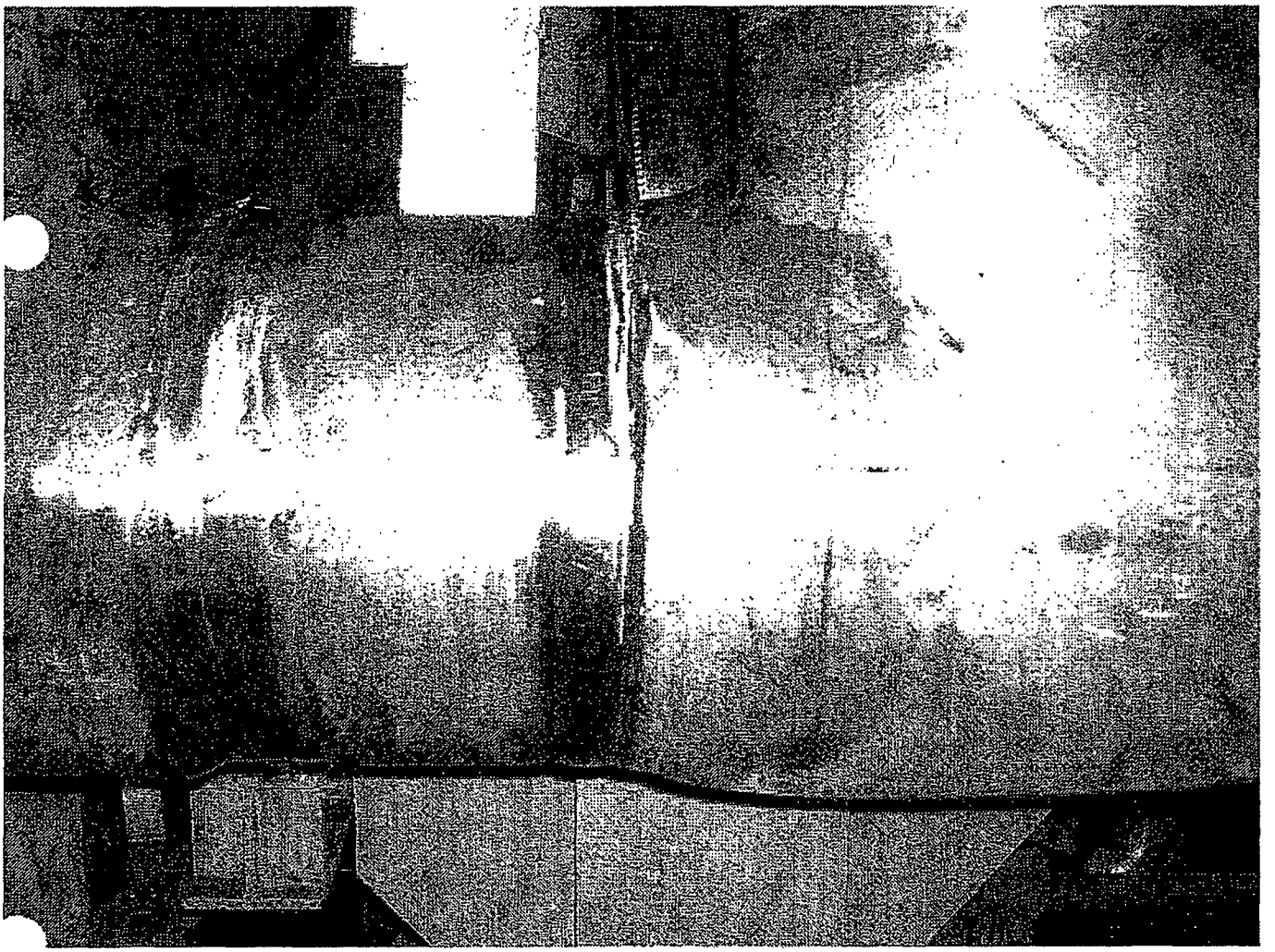
Page: 5 of 5

Summary No.: 089750

Examiner:	Chapman, George G		Level:	II-PDI	Reviewer:	Nicholas Shearer, Level III	Date: 4/14/2006
Examiner:	Bauman, Nathan M.		Level:	II	Site Review:	Roy E. Hall	Date: 4/18/2006
Other:	Blum, William E.		Level:	III	ANII Review:		Date: 4/14/06

Comments: None

Sketch or Photo: X:\IDDEAL\U2-C16 Inspection Documentation and photos\U2-C16 Framatome Pictures\2-SI-56-19a.jpg



Additional - Supplemental Reports <edit from Setup>

UT Calibration/Examination

Site/Unit:	AEP / 2	Procedure:	ISI-PDI-UT-2	Outage No.:	U2-C17
Summary No.:	148800	Procedure Rev.:	4	Report No.:	UT-07-133
Workscope:	ISI	Work Order No.:	55289182	Page:	1 of 3

Code:	ASME XI 1989	Cat./Item:	B-J/B9.11	Location:	CONT. L2
Drawing No.:	A-77	Description:	BRANCH CONNECTION TO PIPE		
System ID:	RH				
Component ID:	2-RH-33-01			Size/Length:	1.5"/44.5"
Thickness/Diameter:	1.41"/14"Sch160				
Limitations:	50% coverage due to configuration.			Start Time:	1005
Finish Time:	1030				

Instrument Settings

Serial No.:	102344		
Manufacturer:	KBA		
Model:	USN-50		
Delay:	6.609 µsec	Range:	3.00"
M'tl Cal/Vel:	.1237/µsec	Pulser:	High
Damping:	Fixed	Reject:	0%
Rep. Rate:	Fixed	Freq.:	Fixed
Filter:	N/A	Mode:	Fullwave
Voltage:	Fixed	Other:	N/A
Ax. Gain (dB):	17.5	Circ. Gain (dB):	17.5

10 Screen Div. = 3.0 in. of Sound Path

Linearity Report No.: L-07-002

Calibration Block

Cal. Block No.:	105255		
Thickness:	0.5" - 2.0"	Dia.:	0
Cal. Blk. Temp.:	82°	Temp. Tool:	105379
Comp. Temp.:	69°	Temp. Tool:	105379

Search Unit

Serial No.:	008J9H		
Manufacturer:	KBA		
Size:	0.50"	Shape:	ROUND
Freq.:	1.5 MHZ	Style:	COMP-G
Exam Angle:	45°	# of Elements:	1
Mode:	Shear		
Measured Angle:	45°		
Wedge Style:	Non-Integral		

Search Unit Cable

Type:	RG174		
Length:	6'	No. Conn.:	0

Scan Coverage

Upstream ☑ Downstream ☑ Scan dB: 37.5

CW ☑ CCW ☑ Scan dB: 37.5

Exam Surface: OD

Surface Condition: FLAT TOPPED

Cal. Checks	Time	Date
Initial Cal.	0905	9/28/2007
Inter. Cal.	1005	9/28/2007
Inter. Cal.		
Inter. Cal.		
Final Cal.	1130	9/28/2007

Couplant

Cal. Batch:	07125
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	07125
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.:	103434
Type:	Rompas

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
1.5" Notch	80%	7.1	2.13"

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
1.5" Notch	80%	7.1	2.13"

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
17.5	FSDH	20%	3.5	1.06"

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Comments: **Previously recorded indications observed at below recordable levels. 50% coverage due to configuration.**

Percent Of Coverage Obtained > 90%: No Reviewed Previous Data: N/A

Examiner	Level	II-PDI	Signature	Date	Reviewer	Signature	Date
Cox, Stephen R.				9/28/2007	Feige, Edward J.		9/30/07
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Donavin, Paul		10/1/07
Other	Level	III-PDI	Signature	Date	ANII Review	Signature	Date
Siever, Theodore J.				9-29-07	Jackson, Charles		10/1/07

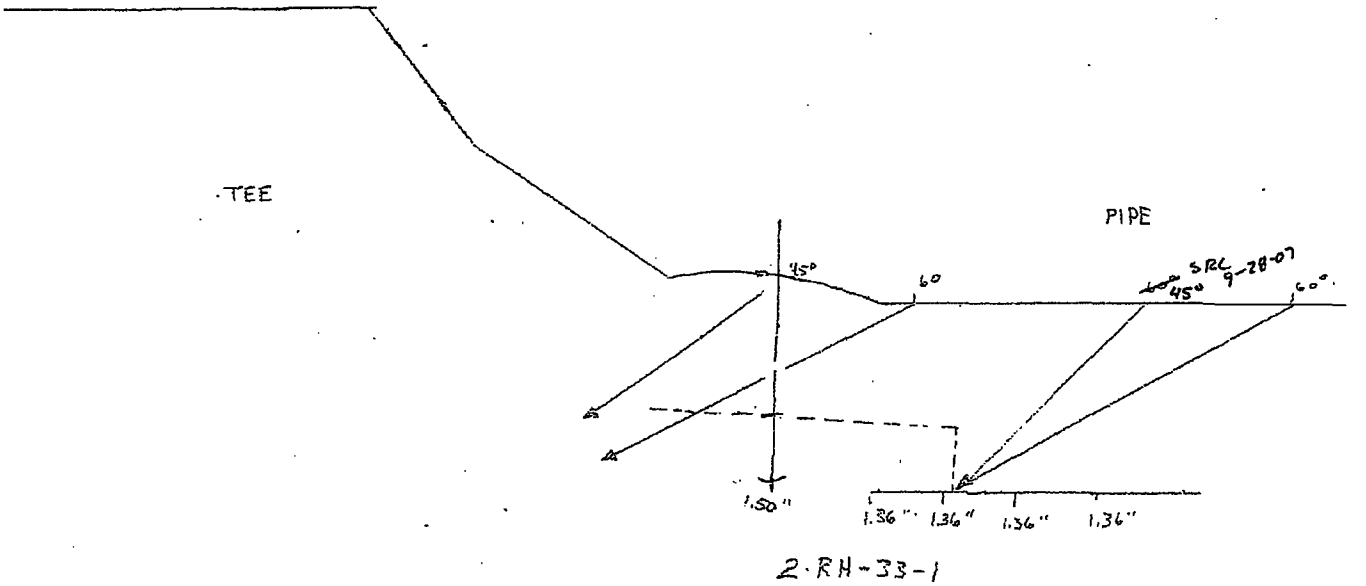
Supplemental Report

...mary No.: 148800

Examiner:	Cox, Stephen R. SRC	Level:	II-PDI	Reviewer:	Feige, Edward J.	Date:	9/30/07
Examiner:	N/A	Level:	N/A	Site Review:	Donavin, Paul PRD	Date:	10/1/07
Other:	Siever, Theodore J. TS	Level:	III-PDI	ANII Review:	Jackson, Charles	Date:	10/1/07

Comments: Component # 2-RH-33-01

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\2-RH-33-01 Dwg..jpg



2-RH-33-1

Supplemental Report

Report No.: UT-07-133

Page: 3 of 3

Summary No.: 148800

Examiner:	Cox, Stephen R. SRC	Level:	II-PDI	Reviewer:	Feige, Edward J. EJF	Date:	9/30/07
Examiner:	N/A	Level:	N/A	Site Review:	Donavin, Paul PRD	Date:	10/1/07
Other:	Siever, Theodore J. TJS	Level:	III-PDI	ANII Review:	Jackson, Charles CM	Date:	10/1/07

Comments: **Component # 2-RH-33-01**

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\2-RH-33-01 Photo.jpg

2-RH-33-01

Additional - Supplemental Reports <edit from Setup>

AMATOME ANP

EXAMINATION SUMMARY

mary No.:015800	Data Package: NA	Exam Date: 10/21/2004

Customer: DC Cook 2	Examination Methods: UT and PT
System / Component ID: Reactor Coolant / 2-RC-17-08N	Examination Procedures: 54-ISI-836-08, 54-ISI-240-40
Component Description: Branch Connection to Pipe	Calibration Sheets No(s): U2C15-Cal-029
Examination Category: B-J	Examination Results: ☒ No Reportable Indications ☐ Reportable Indications ☐ Geometric
ISO / Drawing:A-9	

Summary:

A UT and PT examination was performed on weld 2-RC-17-08N with no indications noted. Component geometry prevented scanning on the downstream side in the axial direction. The weld geometry prevented performing circumferential scanning on the weld.

Prepared By: JW Langdon Date: 10-22-04	Reviewed By: RA Kellerhall Date:10/24/04
Sign: JW Langdon	Sign: RA Kellerhall
Customer: Sign: Ray E Hall Date: 10/25/04	Page 1 of 7

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AMATOME ANP

ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

Customer: DC Cook Unit 2	Component: Branch Connection Weld	Summary No.: 015800

Weld No.: 2-RC-17-08N	Percent Of Exam Completed (Calculations Or Comments Below)
Reference Point: Weld Toe @ Main Loop	Axial, Upstream – 100%
1) Interfering Condition	Axial, Downstream – 0%
Distance From Centerline To	Circumferential, Clockwise – 18%
Distance From Ref. Point To	Circumferential, Counter Clockwise – 18%
2) Interfering Condition	Total Coverage – 34%
Distance From Centerline To	
Distance From Ref. Point To	
3) Interfering Condition	
Distance From Centerline To	
Distance From Ref. Point To	
(For All Measurements Indicate: US, DS, CW, CCW)	

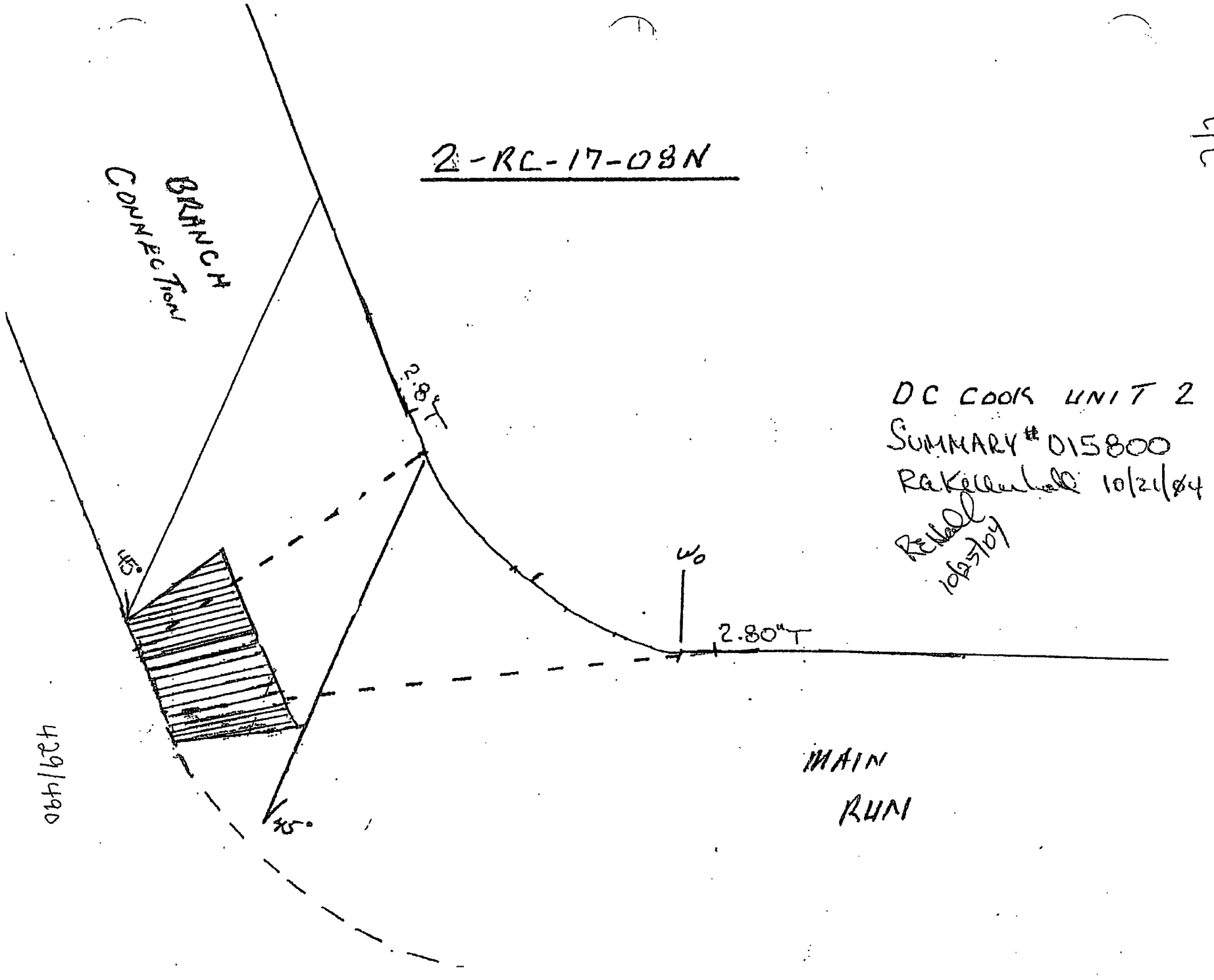
Sketch Of Limitation(s):

See attached Coverage Plot. Circumferential scans were limited to the ¼" of base material on the branch connection side of the weld. Weld configuration prevented scanning on or across the weld.

(INCLUDED THE EXTENT OF % COMPLETED OF EXAM AND REASON FOR LIMITED REPORT, AND SKETCH SHOWING AREA OF LIMITATION.)

Level III: NA Date:	Examiner: RA Kellerhall Date: 10-21-04
Reviewer: Edward P. Mazyck 10-23-04	Date:
Customer:	Date: 10/25/04

427/490 5/7


2-RC-17-08N
BRANCH CONNECTION
2.8"T
45°
45°
W0
2.80"T
MAIN RUN
DC COOK UNIT 2
SUMMARY # 015800
RaKellenbeck 10/21/04
ReNeal 10/25/04
4/29/1990
4/4

ATTACHMENT 6

RELIEF REQUEST ISIR-38

EXAMINATION CATEGORY C-A
PRESSURE RETAINING WELDS IN PRESSURE VESSELS

RELIEF REQUEST ISIR-38

Relief Requested
In Accordance with 10 CFR 50.55a(g)(5)(iii) -
Inservice Inspection Impracticality

1. ASME Code Components Affected

ASME Code Class:	Code Class 2
Examination Category:	C-A, Pressure Retaining Welds in Pressure Vessels
Item Numbers:	C1.10, Shell Circumferential Welds C1.20, Head Circumferential Welds C1.30, Tubesheet to Shell Weld
Component Identification:	Listed in Table 1

2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category C-A requires volumetric examination of 100 percent of the weld volume as defined in Table IWC-2500-1 and shown in Figures IWC-2500-1 or IWC-2500-2 as applicable. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject weld due to the geometric configuration and permanent obstructions which limit the volumetric examination coverage of the subject welds.

These noted obstructions prevent achieving the essentially 100 percent volume examination coverage required by code.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

5. Burden Caused by Compliance

To increase examination coverage on the subject welds requires removal of the permanently welded pads, supports, electrical supports, adjacent piping and nozzles or replacement of the heat exchanger with a design that would allow for complete examination coverage of the subject weld. This option to meet the 100 percent code examination requirement is considered impractical due to the cost, increased radiation exposure and impact to plant equipment.

6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination utilizing the best available techniques on the accessible portions of welds to the extent practical. Additionally, a visual (VT-2) examination is performed during each inspection period during the system leakage tests as required by Section XI, Table IWC-2500-1, Category C-H.

Based upon the examination volumes that were attained with acceptable results along with the visual (VT-2) examination performed each inspection period, it is reasonable to conclude that service induced degradation would be detected. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
W-CTSHEX-2	Shell to Flange	C1.10	48.1	The completed examination was limited to 48.1% coverage due to the configuration. The examination was single sided due to the proximity of the flange and its associated bolting. Exam limitation on the accessible side was due to the inlet and outlet nozzles restricting access for an 11" area of the weld. No relevant indications detected.
2-BIT-A	Shell to Lower Head	C1.20	80.5	The completed examination was limited to 80.5% coverage due to the configuration. The examination limitation was due to four leg supports located along the weld from 0 degrees at 18"-26", 62"-70", 99"-107", and 142"-150". No relevant indications detected.
STM-24-04	Tube Sheet to Stub Barrel	C1.30	85.0	The completed examination was limited to 85% coverage due to the configuration. Examination coverage was limited due to the proximity of welded pads, nozzles, adjacent piping, hand hole openings, permanent support brackets and permanent electrical conduits. No relevant indications detected.

RELIEF REQUEST ISIR-38

EXAMINATION CATEGORY C-A
PRESSURE RETAINING WELDS IN PRESSURE VESSELS

SUPPORTING DOCUMENTATION

UT Calibration/Examination

Site/Unit:	AEP / 2	Procedure:	ISI-PDI-UT-2	Outage No.:	[illegible]17
Summary No.:	300680	Procedure Rev.:	4	Report No.:	UT-07-036
Workscope:	ISI	Work Order No.:	55289193	Page:	1 of 1

Code:	ASME XI 1989	Cat./Item:	C-A/C1.10	Location:	W CTS HXRM
Drawing No.:	B-8	Description:	SHELL TO FLANGE		
System ID:	CTSHEX				
Component ID:	W-CTSHEX-2			Size/Length:	2.0"/192.5"
Thickness/Diameter:	0.5"/61"				
Limitations:	Single sided exam due to flange and bolting configuration.			Start Time:	1215
Finish Time:	1245				

Instrument Settings

Serial No.:	101304		
Manufacturer:	Staveley		
Model:	SONIC 136		
Delay:	1.09 µsec	Range:	1.50"
Mtl Cal/Vel:	0.223/µsec	Pulser:	126ns
Damping:	500 Ω	Reject:	Off
Rep. Rate:	4 Khz	Freq.:	5 Mhz
Filter:	1	Mode:	Dual
Voltage:	Fixed	Other:	N/A
Ax. Gain (dB):	51.4	Circ. Gain (dB):	N/A

10 Screen Div. = 1.50 In. of Depth

Linearity Report No.: L-07-001

Calibration Block

Cal. Block No.:	105256		
Thickness:	0.5" - 2.0"	Dia.:	0
Cal. Blk. Temp.:	75	Temp. Tool:	105379
Comp. Temp.:	88	Temp. Tool:	105379

Search Unit

Serial No.:	574629679		
Manufacturer:	KBA		
Size:	3.5 X 10mm	Shape:	ROUND
Freq.:	4.0 Mhz	Style:	MSEB4E
Exam Angle:	0°	# of Elements:	2
Mode:	LONGITUDINAL		
Measured Angle:	0°		
Wedge Style:	Integral		

Search Unit Cable

Type: RG174 Length: 6' No. Conn.: 0

Scan Coverage

Upstream ☐ Downstream ☑ Scan dB: 57.4

CW ☐ CCW ☐ Scan dB: N/A

Exam Surface: OD (BM & Weld)

Surface Condition: AS WELDED

Cal. Checks	Time	Date
Initial Cal.	1130	8/28/2007
Inter. Cal.	1216	8/28/2007
Inter. Cal.		
Inter. Cal.		
Final Cal.	1615	8/28/2007

Couplant

Cal. Batch:	05225
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	05225
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.: 105256

Type: Alt. Block

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Depth
ALT .50"	80%	3.3	0.5"
ALT 1.0"	60%	6.6	1.0"
ALT 1.5"	40%	9.9	1.5"

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Depth
N/A	N/A	N/A	N/A

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Depth
51.4	0.50"	80%	3.3	0.5"

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: N/A Reviewed Previous Data: Yes

Comments: **NRI. Single sided, limited exam due to flange and bolting configuration. Limited exam referenced on UT-07-036. ISI-UT-350 used to obtain T&C's and perform lamination scan.**

Examiner	Level II-PDI	Signature	Date	Reviewer		Signature	Date
Cox, Stephen R.			8/28/2007	Feige, Edward J.		Edward J. Feige	9/26/07
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A				Donavin, Paul		Paul Donavin	9/26/07
Other	Level III-PDI	Signature	Date	ANII Review		Signature	Date
Siever, Theodore J.		Ed Siever	9-2307	Jackson, Charles			9/28/07

Supplemental Report

Report No.: UT-07-036

Summary No.: 300680

Examiner: Cox, Stephen R. SRC Level: II-PDI Reviewer: Feige, Edward J. EJF Date: 9/26/07

Examiner: N/A Level: N/A Site Review: Donavin, Paul PRD Date: 9/26/07

Other: Siever, Theodore J. TS Level: III-PDI ANII Review: Charles Jackson CM Date: 9/28/07

Comments: **Inlet and outlet nozzles restricted access for 11" and one sided exam.**

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\W-CTSHEX-2 Coverage 1.jpg

Determination of Percent Coverage for UT Examinations

Component ID: W-CTSHEX-2

0 deg Planar

	Examine Length (inches)	/ Weld Length (inches)		
LKUP Scan 1	0	/ 192.5	X 100 = 0	% total for Scan 1
LKDN Scan 2	181.5	/ 192.5	X 100 = 94.3	% total for Scan 2

Add totals of percentages and divide by # scans = ~~60.15~~ 47.15 % total for 0 deg TS 9-28-07

45 deg

LKUP Scan 1	0 / 192.5	X 100 = 0	% total for Scan 1
LKDN Scan 2	181.5 / 192.5	X 100 = 94.3	% total for Scan 2
CW Scan 3	96.25 / 192.5	X 100 = 50.0	% total for Scan 3
CCW Scan 4	96.25 / 192.5	X 100 = 50.0	% total for Scan 4

Add totals of percentages and divide by # scans = 48.58 % total for 45 deg

Other deg 60RL

LKUP Scan 1	0 / 192.5	X 100 = 0	% total for Scan 1
LKDN Scan 2	181.5 / 192.5	X 100 = 94.3	% total for Scan 2
CW Scan 3	96.25 / 192.5	X 100 = 50.0	% total for Scan 3
CCW Scan 4	96.25 / 192.5	X 100 = 50.0	% total for Scan 4

Add totals of percentages and divide by # scans = 48.58 % total for 60RL deg

Percent complete coverage

Add totals for each angle and divide by # of angles to determine:

48.10 % Total for complete exam

Supplemental Report

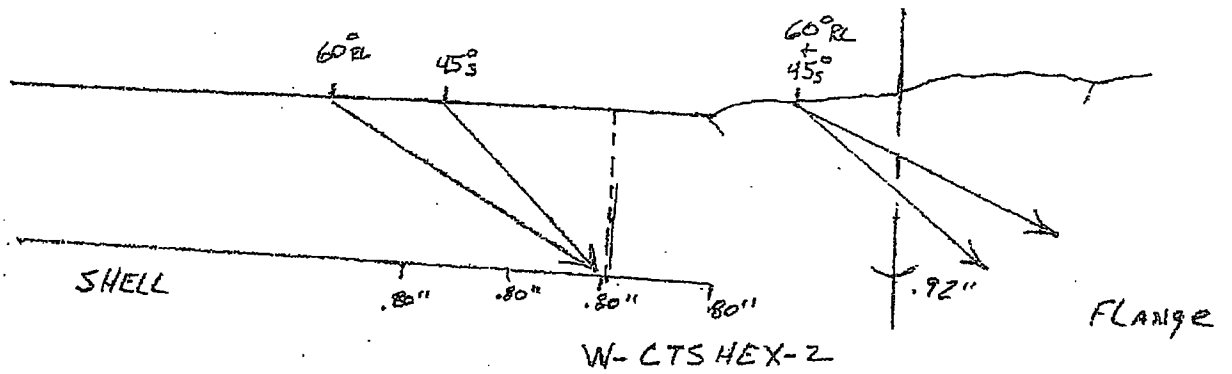
Report No.: UT-07-036

Summary No.: 300680

Examiner:	Cox, Stephen R. SRC	Level:	II-PDI	Reviewer:	Feige, Edward J.	Date:	9/26/07
Examiner:	N/A	Level:	N/A	Site Review:	Donavin, Paul PRD	Date:	9/26/07
Other:	Siever, Theodore J.	Level:	III-PDI	ANII Review:	Jackson, Charles	Date:	9/24/07

Comments: W-CTSHEX-2

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\W-CTSHEX-2 Dwg 1.jpg



W-CTSHEX-2

UT Calibration / Examination

Site/Unit:	AEP / 2	Procedure:	ISI-PDI-UT-2	Outage No.:	U2-C17
Summary No.:	300680	Procedure Rev.:	4	Report No.:	UT-07-037
Workscope:	ISI	Work Order No.:	55289193	Page:	1 of 1

Code:	ASME XI 1989	Cat./Item:	C-A/C1.10	Location:	W CTS HXRM
Drawing No.:	B-8	Description:	SHELL TO FLANGE		
System ID:	CTSHEX				
Component ID:	W-CTSHEX-2			Size/Length:	2.0"/192.5"
				Thickness/Diameter:	0.5"/61"
Limitations:	Single sided exam due to flange and bolting configuration.			Start Time:	1330
				Finish Time:	1415

Instrument Settings

Serial No.:	101304		
Manufacturer:	Staveley		
Model:	SONIC 136		
Delay:	1.02 µsec	Range:	2.5"
M'tl Cal/Vel:	0.225/µsec	Pulser:	250ns
Damping:	500 Ω	Reject:	Off
Rep. Rate:	4 KHz	Freq.:	2.25 Mhz
Filter:	1	Mode:	Dual
Voltage:	Fixed	Other:	N/A
Ax. Gain (dB):	53.0	Circ. Gain (dB):	53.0

10 Screen Div. = 2.5 in. of Sound Path

Linearity Report No.: L-07-001

Calibration Block

Cal. Block No.:	105256		
Thickness:	0.5" - 2.0"	Dia.:	0
Cal. Blk. Temp.:	75°	Temp. Tool:	105379
Comp. Temp.:	88°	Temp. Tool:	105379

Search Unit

Serial No.:	F1013		
Manufacturer:	Megasonics		
Size:	0.38"x0.75"	Shape:	Rectangular
Freq.:	2.0 Mhz	Style:	CGD-60L
Exam Angle:	60°	# of Elements:	Dual
Mode:	Longitudinal		
Measured Angle:	60°		
Wedge Style:	Integral		

Search Unit Cable

Type: RG174 Length: 6' No. Conn.: 0

Scan Coverage

Upstream ☐ Downstream ☑ Scan dB: 59

CW ☑ CCW ☑ Scan dB: 59

Exam Surface: OD

Surface Condition: AS WELDED

Cal. Checks	Time	Date
Initial Cal.	1145	8/28/2007
Inter. Cal.	1330	8/28/2007
Inter. Cal.		
Inter. Cal.		
Final Cal.	1620	8/28/2007

Couplant

Cal. Batch:	05225
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	05225
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.: 103772

Type: Rompas

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
ALT 1.0"	80%	8.0	2.00"

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
ALT 1.0"	80%	8.0	2.00"

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
53.0	FSDH	60%	6.0	1.5"

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: No Reviewed Previous Data: Yes

Comments: **Single sided, limited exam due to flange and bolting configuration. Limited exam referenced on UT-07-036. No recordable indications.**

Examiner	Level	Signature	Date	Reviewer		Signature	Date
Cox, Stephen R.	II-PDI		8/28/2007	Feige, Edward J.		Edward J Feige	9/26/07
Examiner	Level	Signature	Date	Site Review		Signature	Date
N/A	N/A			Donavin, Paul		Paul Donavin	9/26/07
Other	Level	Signature	Date	ANII Review		Signature	Date
Siever, Theodore J.	III-PDI	Ted Siever	9-23-07	Charles Jackson		Charles Jackson	9/28/07

UT Calibration / Examination

Site/Unit:	AEP / 2	Procedure:	ISI-UT-208	Outage No.:	U2-C17
Summary No.:	300840	Procedure Rev.:	0	Report No.:	UT-07-003
Workscope:	ISI	Work Order No.:	55289186	Page:	1 of 3

Code:	ASME XI 1989	Cat./Item:	C-A/C1.20	Location:	BIT RM
Drawing No.:	B-11	Description:	SHELL TO LOWER HEAD		
System ID:	BIT				
Component ID:	2-BIT-A			Size/Length:	2"/164"
				Thickness/Diameter:	2.5"/52"
Limitations:	Obstruction due to 4 support legs equally spaced.			Start Time:	1150
				Finish Time:	1215

Instrument Settings

Serial No.:	102344		
Manufacturer:	KBA		
Model:	USN-50		
Delay:	11.04 µsec	Range:	5.3"
M'tl Cal/Vel:	.1320/µsec	Pulser:	High
Damping:	Fixed	Reject:	0%
Rep. Rate:	Fixed	Freq.:	Fixed
Filter:	N/A	Mode:	~~PE~~ FS FULL WAVE 9-23-07
Voltage:	~~Fixed N/A~~ 9/24/07	Other:	N/A
Ax. Gain (dB):	33	Circ. Gain (dB):	33
10 Screen Div. =	3.75"	in. of	Depth
Linearity Report No.:	L-07-002		

Calibration Block

Cal. Block No.:	PL-3.0-CSCL-4-DCC		
Thickness:	3"	Dia.:	0
Cal. Blk. Temp.:	88°	Temp. Tool:	105379
Comp. Temp.:	103°	Temp. Tool:	105379

Search Unit

Serial No.:	40003		
Manufacturer:	PANAMETRICS		
Size:	0.5"	Shape:	ROUND
Freq.:	2.25 MHZ	Style:	Gamma
Exam Angle:	45°	# of Elements:	1
Mode:	Shear		
Measured Angle:	45°		
Wedge Style:	Non-Integral		

Search Unit Cable

Type:	RG174		
Length:	12'	No. Conn.:	0

Scan Coverage

Upstream ☑	Downstream ☑	Scan dB:	39
CW ☑	CCW ☑	Scan dB:	39
Exam Surface:	OD		
Surface Condition:	FLUSH		

Cal. Checks	Time	Date
Initial Cal.	1050	8/29/2007
Inter. Cal.	1150	8/29/2007
Inter. Cal.		
Inter. Cal.		
Final Cal.	1615	8/29/2007

Couplant

Cal. Batch:	05225
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	05225
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.:	103768
Type:	Rompus

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Depth
1/4 SDH	80%	2.0	0.75"
2/4 SDH	60%	4.0	1.50"
3/4 SDH	40%	6.0	2.25"
5/4 Hole	4%	10.0	3.75"
ID Notch	10%	8.0	3.00"

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Depth
1/4 SDH	80%	2.0	0.75"
2/4 SDH	60%	4.0	1.50"
3/4 SDH	40%	6.0	2.25"
ID Notch	10%	8.0	3.00"

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Depth
N/A	N/A	N/A	N/A	N/A

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Comments: **Limited exam. No recordable indications. Zero: 6.542**

Percent Of Coverage Obtained > 90%: No Reviewed Previous Data: Yes

Examiner	Level II-PDI	Signature	Date	Reviewer		Signature	Date
Cox, Stephen R.			8/29/2007	Feige, Edward J.		Edward J. Feige	9/24/07
Examiner	Level I	Signature	Date	Site Review		Signature	Date
Wright, Gary D.			8/29/2007	Donavin, Paul		Paul Donavin	9/24/07
Other	Level III-PDI	Signature	Date	ANII Review		Signature	Date
Siever, Theodore J.		Ted Siever 9-23-07 9/24/07	92007	Charles Jackson			9/25/07

Supplemental Report

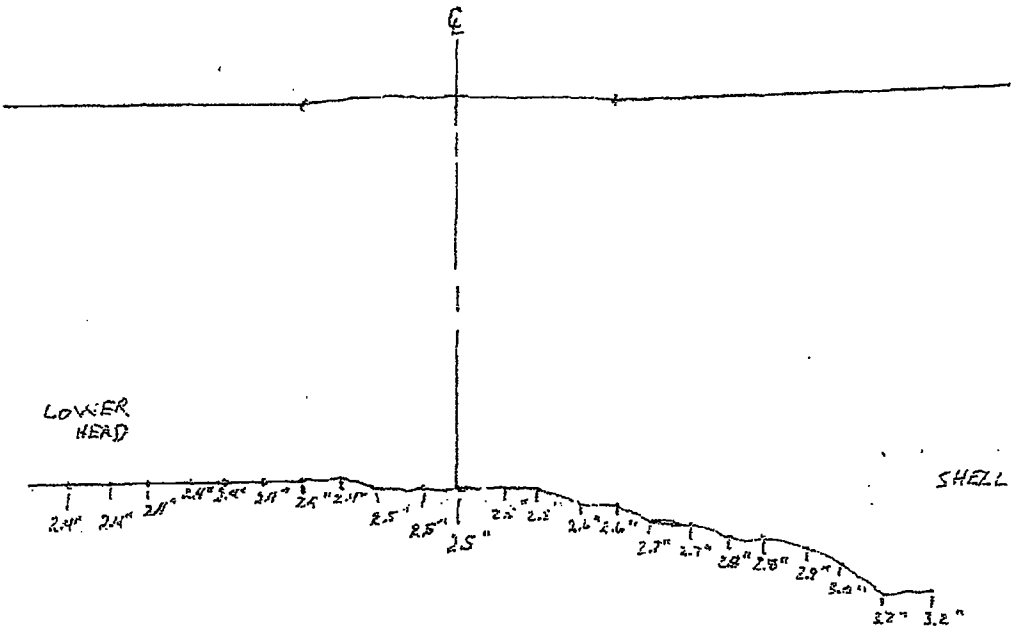
Report No.: UT-07-003

Summary No.: 300840

Examiner:	Cox, Stephen R.	Level:	II-PDI	Reviewer:	Feige, Edward J.	Date: 9/25/07
Examiner:	Wright, Gary D.	Level:	I	Site Review:	Donavin, Paul	Date: 9/25/07
Other:	Sievert, Theodore J.	Level:	III-PDI	ANII Review:	Charles Jackson	Date: 9/25/07

Comments:

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\2-BIT-A.jpg



2-BIT-A

Additional - Supplemental Reports <edit from Setup>

Supplemental Report

Report No.: UT-07-003

Page: 3 of 3

Summary No.: 300840

Examiner:	Cox, Stephen R.	Level: II-PDI	Reviewer:	Feige, Edward J.		Date: 9/25/07
Examiner:	Wright, Gary D.	Level: I	Site Review:	Donavin, Paul		Date: 9/25/07
Other:	Siever, Theodore J.	Level: III-PDI	ANII Review:	Charles Jackson		Date: 9/26/07

Comments: **4 Leg Supports located from 0 degree @ 18"-26", 62"-70", 99"-107", 142"-150"**
8" X 4 legs = 32", 164" - 32" = 132"
No scan looking down from Shell. No Circ scan on Shell side.
Weld Length 164", Weld Width 2", Weld Thickness 2.5"

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\2-BIT-A Coverage.jpg

Determination of Percent Coverage for
UT Examinations

Component ID: 2-BIT-A

0 deg Planar

	Examine Length (Inches)	/ Weld Length (Inches)			
Scan 1	132	/ 164	X 100 =	80.5	% total for Scan 1
Scan 2	132	/ 164	X 100 =	80.5	% total for Scan 2

Add totals of percentages and divide by # scans = 80.5 % total for 0 deg

45 deg

Scan 1	132	/ 164	X 100 =	80.5	% total for Scan 1
Scan 2	132	/ 164	X 100 =	80.5	% total for Scan 2
Scan 3	132	/ 164	X 100 =	80.5	% total for Scan 3
Scan 4	132	/ 164	X 100 =	80.5	% total for Scan 4

Add totals of percentages and divide by # scans = 80.5 % total for 45 deg

Other deg 60

Scan 1	132	/ 164	X 100 =	80.5	% total for Scan 1
Scan 2	132	/ 164	X 100 =	80.5	% total for Scan 2
Scan 3	132	/ 164	X 100 =	80.5	% total for Scan 3
Scan 4	132	/ 164	X 100 =	80.5	% total for Scan 4

Add totals of percentages and divide by # scans = 80.5 % total for 60 deg

Percent complete coverage

Add totals for each angle and divide by # of angles to determine:

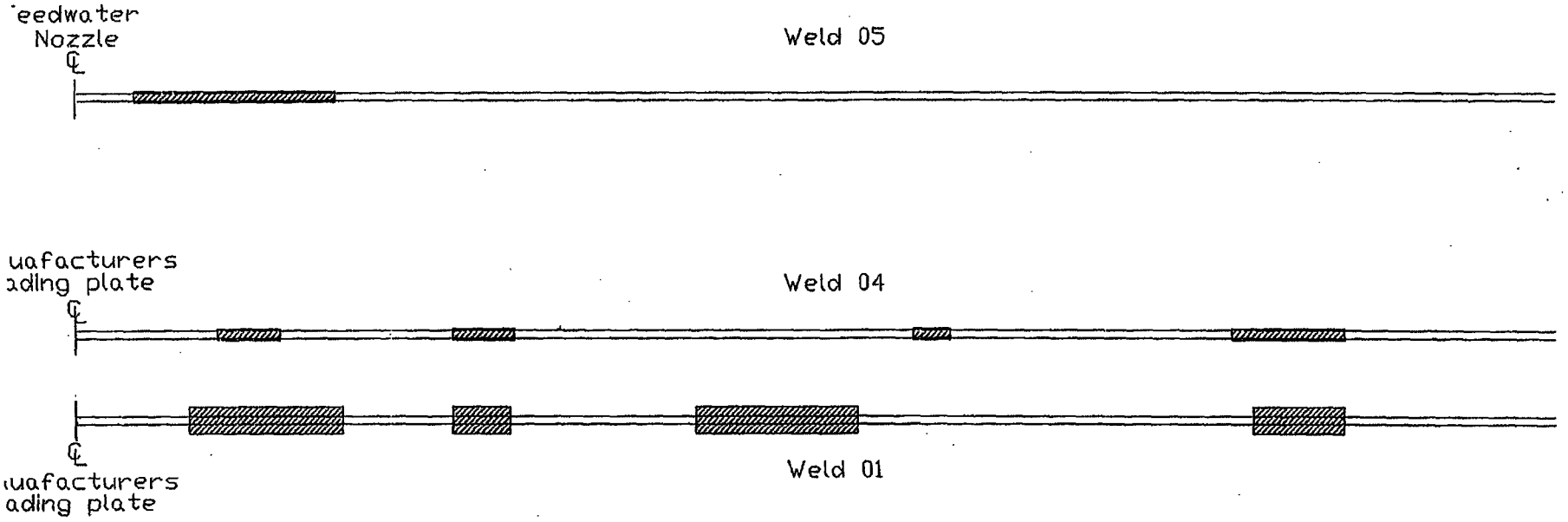
80.5 % Total for complete exam

Additional - Supplemental Reports <edit from Setup>

D. C. COOK UNIT2
CYCLE 14
COVERAGE REPORT

Weld No.	Exam Type	Exam No.	X"		Y"		Square Inches Scanned Per Exam	Total Square Inches Scanned	Square Inches Required	Percent	Total Coverage	Remarks
			Start	Stop	Start	Stop						
STM-24-04		5A-UP	405.00	427.30	464.05	477.65	303				85%	Limited exam due to proximity of manway nozzle, welded pads and adjacent piping.
			0.00	18.70	464.05	477.65	254					
		5A-DN	405.00	464.66	472.70	486.34	814					
			0.00	18.70	472.70	486.34	255					
Tube Sheet -to- Stub Barrel		5B-UP	65.00	120.86	466.78	477.66	608					
		5B-DN	65.00	67.28	472.70	479.98	17					
			67.28	120.86	472.70	483.58	583					
		5C1-UP	139.48	147.08	466.28	477.66	86					
		5C2-UP	147.08	155.26	466.78	475.18	69					
		5C3-UP	155.26	172.45	466.78	474.62	135					
		5C4-UP	174.45	198.28	466.78	477.66	259					
	Parallel (Axial scan)	5C-DN	139.48	148.98	472.70	483.58	103					
			148.98	164.18	472.70	474.78	32					
			164.18	173.30	472.70	477.62	45					
			173.30	198.38	472.70	483.58	273					
		5D1-UP	198.38	224.98	466.78	477.46	284					
		5D2-UP	229.52	261.44	466.78	477.66	347					
		5D1-DN	198.38	227.70	472.70	483.58	319					
		5D2-DN	232.88	259.86	473.30	483.38	272					
		5E-UP	279.50	339.92	466.78	477.70	660					
		5E1-DN	279.00	319.02	319.02	472.70	484					
		5E2-DN	319.02	340.20	472.70	483.58	484					
		5F-UP	339.92	365.46	466.78	477.66	278					
		5F-DN	339.92	365.16	472.70	483.50	273					
								7235	9341	77%		
		6A-CW	405.00	427.30	472.60	477.92	59					
			0.00	45.00	472.60	477.92	120					
		6A-CCW	405.00	427.30	472.60	477.92	59					
			0.00	45.00	472.60	477.92	120					
		6B-CW	65.00	120.08	472.60	478.29	157					
		6B-CCW	65.00	120.08	472.60	478.29	157					
		6C-CW	139.48	198.04	472.60	478.29	167					
	Transverse (Circ scan)	6C-CCW	139.48	198.04	472.60	478.29	167					
		6D1-CW	198.04	224.90	472.60	478.29	76					
		6D2-CW	231.56	266.84	472.60	478.29	100					
		6D1-CCW	198.04	224.90	472.60	478.29	76					
		6D2-CCW	231.56	478.30	472.60	478.29	702					
		6E-CW	279.75	340.15	472.60	478.29	172					
		6E-CCW	279.75	340.15	472.60	478.29	172					
		6F-CW	340.15	369.16	472.60	478.29	83					
		6F-CCW	340.15	368.84	472.60	478.29	82					
								2468	2692	92%		

X is the dimension in the cirvuferential direction meassured in inches from vessel 0 degerees.
Y is the dimension in elevation meassured in inches from vessel 0".



Areas of limitations

D.C.Cook Unit 2 - Generator 24
Weld 2-GEN-24-01, 04, & 05
May 2003
coverage gen24.dwg

ATTACHMENT 7

RELIEF REQUEST ISIR-39

EXAMINATION CATEGORY C-B
PRESSURE RETAINING NOZZLE WELDS IN VESSELS

RELIEF REQUEST ISIR-39

Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii)
Inservice Inspection Impracticality

1. ASME Code Components Affected

ASME Code Class:	Code Class 2
Examination Category:	C-B, Pressure Retaining Nozzle Welds in Vessels
Item Numbers:	C2.21, Nozzles Without Reinforcing Plate in Vessels > ½ inch Nominal Thickness, Nozzle to Shell (or Head) Weld
Component Identification:	Listed in Table 1

2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category C-B requires volumetric examination of 100 percent of the weld volume as defined in Table IWC-2500-1 and shown in Figures IWC-2500-4(a) or IWC-2500-4(b) as applicable. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject welds due to the geometric configuration and permanent obstructions which limits the volumetric examination coverage of the subject welds.

Due to the component geometry, coverage was limited due to tapers, bevels, weld contours, and joint configurations.

These noted obstructions prevent achieving the essentially 100 percent volume examination coverage required by code.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

5. Burden Caused by Compliance

To increase examination coverage on the subject welds requires removal of significant portions of insulation and its supporting elements and redesign of the blend radius of the nozzle to shell weld with a design that would allow for complete examination coverage of the subject weld. This option to meet the 100 percent code examination requirement is considered impractical due to the cost, increased radiation exposure and impact to plant equipment.

6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination utilizing the best available techniques on the accessible portions of welds to the extent practical. Additionally, a surface examination without any limitations was performed along with a visual (VT-2) examination that is performed during each inspection period during the system leakage tests as required by Section XI, Table IWC-2500-1, Category C-H.

Based upon the examination volumes that were attained along with acceptable results and the acceptable surface examination that was performed and the visual (VT-2) examination performed each inspection period, it is reasonable to conclude that service induced degradation would be detected. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
STM-14-FWN	Nozzle to Shell	C2.21	46.5	The completed examination was limited to 46.5% coverage due to the configuration. The coverage limitation was due to the proximity of insulation and a metal strap at top-dead-center and at bottom-dead-center due to the shell weld. No relevant indications detected.

RELIEF REQUEST ISIR-39

EXAMINATION CATEGORY C-B
PRESSURE RETAINING NOZZLE WELDS IN VESSELS

SUPPORTING DOCUMENTATION

UT Calibration/Examination

Site/Unit:	DC Cook / 1	Procedure:	54-ISI-130	Outage No.:	U1-C20
Summary No.:	300400	Procedure Rev.:	38	Report No.:	UT-05-049
Workscope:	ISI	Work Order No.:	04145023-12	Page:	1 of 7

Code:	ASME XI 1989	Cat./Item:	C-B/C2.21	Location:	CONT. L4
Drawing No.:	B-4	Description:	NOZZLE TO SHELL		
System ID:	14				
Component ID:	STM-14-FWN	Size/Length:	106.0"	Thickness/Diameter:	3.7"
Limitations:	INSULATION, METAL STRAPS, & SHELL CONFIGURATION	Start Time:	10:00	Finish Time:	10:40

Instrument Settings

Serial No.:	VH-9075		
Manufacturer:	KRAUTKRAMER		
Model:	USN-58L		
Delay:	1.1181"	Range:	5.0"
M'tl Cal/Vel:	0.2310 in/uS	Pulser:	N/A
Damping:	1 KHZ	Reject:	0
Rep. Rate:	AUTO HIGH	Freq.:	2.25 MHZ
Filter:	N/A	Mode:	SINGLE
Voltage:	HIGH		
Ax. Gain (dB):	24.5	Circ. Gain (dB):	N/A

1 Screen Div. = 0.4 in. of Sound Path

Linearity Report No.: L-05-006

Calibration Block

Cal. Block No.:	PL-3.0-CS-22-DCC		
Thickness:	3.0"	Dia.:	FLAT
Cal. Blk. Temp.:	86 F	Temp. Tool:	VH-8556
Comp. Temp.:	87 F	Temp. Tool:	VH-8556

Search Unit

Serial No.:	014LWR/ DB#36029		
Manufacturer:	KBA		
Size:	1.0"	Shape:	ROUND
Freq.:	2.25 Mhz	Style:	Gamma
Exam Angle:	0	# of Elements:	1
Mode:	LONGITUDINAL		
Measured Angle:	N/A		
Wedge Style:	N/A		

Search Unit Cable

Type:	RG174		
Length:	6'	No. Conn.:	0

Scan Coverage

Upstream ☑	Downstream ☑	Scan dB:	38.5
CW ☐	CCW ☐	Scan dB:	N/A
Exam Surface:	OD SHELL		
Surface Condition:	GROUND		

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Cal. Checks	Time	Date
Initial Cal.	08:45	4/13/2005
Inter. Cal.		
Inter. Cal.		
Inter. Cal.		
Final Cal.	13:40	4/13/2005

Couplant

Cal. Batch:	04325
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	04325
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.:	N/A
Type:	N/A

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
1/4 T	59%	1.4	0.690"
1/2 T	85%	2.9	1.435"
3/4 T	73%	4.4	2.18"

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path

Results: Accept ☑ Reject ☐ Info ☐

Comments: SDCN: 5050201-00
SEE ATTACHED SHEET FOR COMMENTS

Percent Of Coverage Obtained > 90%: NO Reviewed Previous Data: No

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Flesner, Bret T.		Bret Flesner	4/13/2005	N/A			
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A					RE Hall		4/26/05
Other	Level III	Signature	Date	ANII Review		Signature	Date
Key, Michael W.			4/20/2005				4/27/05

Supplemental Report

Report No.: UT-05-049

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Summary No.: 300400

Examiner:	Flesner, Bret T.	Level: II	Reviewer:	N/A	Date:
Examiner:	N/A	Level: N/A	Site Review:		Date: 4/26/05
Other:	Key, Michael W.	Level: III	ANII Review:		Date: 4/27/05

Comments:

Notes for Lamination Scan:
Gain adjusted while scanning to maintain ~80% FSH backwall response.
No Laminations were noted in the area scanned.
The lamination and weld examination scans were limited at TDC from -17" to +17" due to insulation and a metal strap.

Notes for weld volume inspection:

Total weld length is 106".
Scan limitation at TDC from -17" to +17" due to insulation and metal strap.
Scan limitation at BDC from 43" to 63" due to shell weld.

Both of the above limitations affected the 60° transducer, but only the limitation at TDC affected the 0° and 45° transducers.

60° coverage:
54" of scan area limited or 52" of area covered
52" ÷ 106"= 49% coverage obtained in axial down, CW, and CCW directions.

coverage:
of scan area limited or 72" of area covered
72" ÷ 106"= 67.9% coverage obtained in the axial down, CW and CCW directions.

0° coverage:
34" of scan area limited or 72" of area covered
72" ÷ 106"= 67.9% coverage obtained.

Total coverage obtained:
[(60° axup + 60° axdwn + 60° ccw + 60° cw) + (45° axup + 45° axdwn + 45° ccw + 45° cw) + (0°)] ÷ 9 scan directions = total coverage obtained.

[(0% + 49% + 49% + 49%) + (0% + 67.9% + 67.9% + 67.9%) + 67.9%] ÷ 9 = 46.5% coverage obtained.

Maintained 5% ID roll with 45° which resulted in a scan gain exceeding +14 dB.

Maintained 5% to 10% weld noise with 60° which resulted in a scan gain exceeding + 14 dB.

One indication at ~180° and one at ~270° were noted within the weld material at scan gain. These two indications are far below recordable levels and noted for future information only.

Intermittent responses from internal attachments were also noted with all three transducers. These attachments are outside the examination volume.

Supplemental Report

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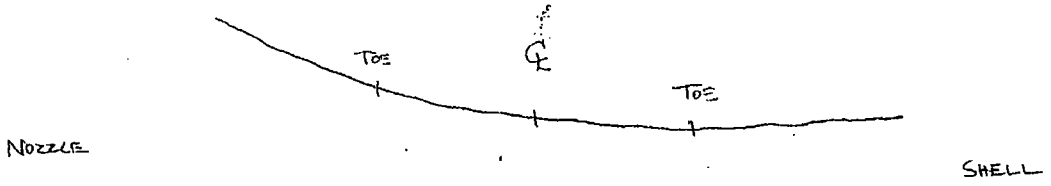
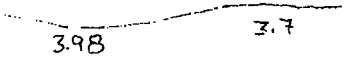
Summary No.: 300400

Sketch or Photo: X:\U1C20-Framatome Info\STM-14-FWN-G1.jpg

AREVA	PROFILE AND THICKNESS			
	Component ID: STM-14-FWN	Summary No.: 300400	Report No.:	
	Crown Height: Flush to 1/16"	Crown Width: 2.85"	Diameter: ~25" Boss	Weld Length: 106" circ.





Profile taken at BDC (180°)

Prepared By:	Reviewed By:

Additional - Supplemental Reports <edit from Setup>

ATTACHMENT 8

RELIEF REQUEST ISIR-40

EXAMINATION CATEGORY C-C
INTEGRAL ATTACHMENTS FOR VESSELS, PIPING, PUMPS AND VALVES

RELIEF REQUEST ISIR-40

Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii)
Inservice Inspection Impracticality

1. ASME Code Components Affected

ASME Code Class:	Code Class 2
Examination Category:	C-C, Integral Attachments for Vessels, Piping, Pumps and Valves
Item Numbers:	C3.20, Pumps, Integrally Welded Attachments C3.40, Valves, Integrally Welded Attachments
Component Identification:	Listed in Table 1

2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category C-C requires volumetric examination of 100 percent of the weld volume as defined in Table IWC-2500-1 and shown in Figure IWC-2500-5. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent surface examination coverage requirement for the subject weld due to the permanently attached support orientation and permanently embedded bolting obstructions which limits the surface examination coverage of the subject weld.

These noted obstructions prevent achieving the essentially 100 percent volume examination coverage required by code.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

5. Burden Caused by Compliance

To increase the examination coverage on the subject weld requires removal of the permanent structural steel support member by physically cutting the support members apart and replacing the support members by re-welding following the completion of the surface

examination. Removal of the permanently welded support members is considered to be impractical based due to increased cost, potential for increased radiation exposure, and impact to plant equipment.

6. Proposed Alternative and Basis for Use

The subject welds received a surface examination utilizing the best available techniques on the accessible portions of welds to the extent practical. Additionally, a visual (VT-2) examination is performed during each inspection period during the system leakage tests as required by Section XI, Table IWC-2500-1, Category C-H.

Based upon the examination volumes that were attained along with acceptable results and the acceptable visual (VT-2) examination performed each inspection period, it is reasonable to conclude that service induced degradation would be detected. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-MS-6-11S-PS	Integrally Welded Pipe Attachment	C3.20	64	The completed examination was limited to 64% due to configuration. Base metal examinations were limited due to inner and outer cooler interference. No relevant indications detected.
MSIV-MRV-230-S2	Integrally Welded Support	C3.40	83.3	The completed examination was limited to 83.3% coverage due to the configuration. The limitation on the extent of the coverage for the bottom horizontal attachment weld was based on the orientation of the attached support in relation to the weld. No relevant indications detected.

RELIEF REQUEST ISIR-40

EXAMINATION CATEGORY C-C
INTEGRAL ATTACHMENTS FOR VESSELS, PIPING, PUMPS AND VALVES

SUPPORTING DOCUMENTATION

Liquid Penetrant Examination

Site/Unit:	AEP / 1	Procedure:	12-QHP-5050-NDE-001	Outage No.:	U1-C23
Summary No.:	313800	Procedure Rev.:	6	Report No.:	PT-10-001
Workscope:	ISI	Work Order No.:	55321209-02	Page:	1 of 4

Code: ASME XI 1989 Cat./Item: C-C/C3.20 Location: ANNULUS

Drawing No.: B-63 Description: PENETRATION SUPPORT WELD

System ID: MS

Component ID: 1-MS-6-11S-PS Mat./Thickness: SA350 / 1.688

Limitations: Base Material on both sides of weld inaccessible due to attached coolers

Light Meter Mfg.: Sylvania Serial No.: CQC-275 Illumination: 473 fc

Temp. Tool Mfg.: Fluke Corp Serial No.: CQC-357 Surface Temp.: 69 °F

Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used

Lo/Wo Location: Surface Condition: As Found

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-SP1	SKC-S	SKD-S2
Batch No.	09E01K	05M068	09E01K	06J05K
Time	Evap.	Dwell	Evap.	Develop
Time Exam Started:	02:30	Time Exam Completed:	03:30	

Indication No.	Loc L	Loc W	Diameter	Length	Type R/L	Remarks

Comments:

No Reportable Indications Noted. Extent of Coverage per IWC-2500-5.
Reference attached Limitation record for more information.

Results: Accept ☑ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: No Reviewed Previous Data: Yes

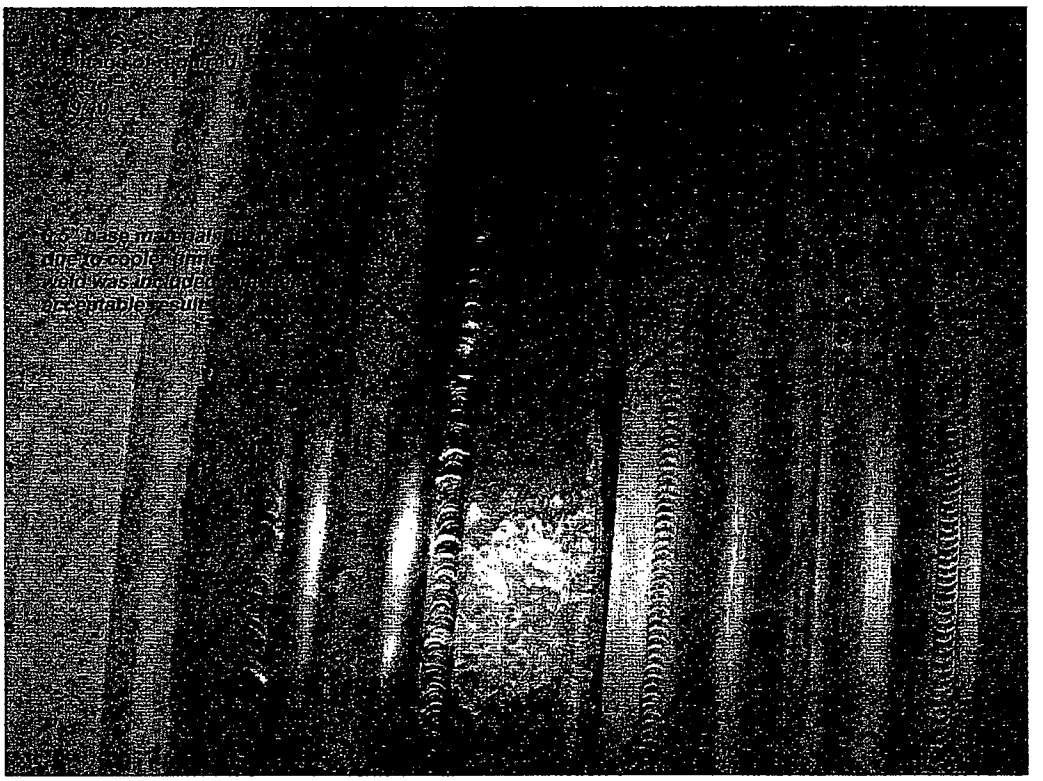
Examiner	Level	Signature	Date	Reviewer	Signature	Date
Blamer, Eric J.	IIL		3/19/2010	N/A		
Examiner A	N/A			Site Review		
				Roy E. Hall		3/21/2010
Other	Level III	Signature	Date	ANII Review	Signature	Date
Vargo, Stephen R.			3/21/2010	Reuel K. Schenck		3/22/2010

Limitation Record

Site/Unit:	AEP / 1	Procedure:	12-QHP-5050-NDE-001	Outage No.:	U1-C23
Summary No.:	313800	Procedure Rev.:	6	Report No.:	PT-10-001
Workscope:	ISI	Work Order No.:	55321209-02	Page:	4 of 4

Description of Limitation:

Inner and outer coolers are within the area of interest, circumference = 164.148". Total sq/in of required coverage = 451.407" (1.75 x 164.148 + 82.074 + 82.074). Total sq/in of exam surface NOT examined = 164.148" (1.0 x 164.148). Total sq/in of exam surface examined = 287.259" (1.75 x 164.148). Calculated percentage of required coverage = 64% (287.259 ÷ 451.407)



Limitations removal requirements:

Radiation field:

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Blamer, Eric J.	IIL		**3/19/2010**	**N/A**		
Examiner	Level	Signature	Date	Site Review	Signature	Date
[illegible]	**N/A**			**Roy E. Hall**		**3/21/2010**
[illegible]er	Level III	Signature	Date	ANII Review	Signature	Date
Vargo, Stephen R.			**3/21/2010**	**Reuel K. Schenck**		**3/22/2010**

Additional - Limitation <edit from Setup>

Magnetic Particle Examination

Site/Unit: AEP / 1 Procedure: 12-QHP-5050-NDE-002 Outage No.: U1-C21

Summary No.: 317180 Procedure Rev.: 3 Report No.: MT-06-004

Workscope: ISI Work Order No.: 55247775-02 Page: 1 of 3

Code: ASME XI 1989 Cat./Item: C-C/C3.40 Location: W MS ENC

Drawing No.: B-76 Description: Integrally Welded Support

System ID: MRV

Component ID: MSIV-MRV-230-S2 Size/Length: Ref.Limitation Rec.

Limitations: Bottom horizontal attachment weld inaccessible due to support geometry.

Light Meter Mfg.: N/A Serial No.: N/A Illumination: Yoke Light

Temp. Tool Mfg.: N/A Serial No.: Surface Temp.: Ambient °F

Resolution: N/A

Lift Block Serial No.: WT-2 Surface Condition: As Welded

Lo/Wo Location: N/A Field Orientation: N/A

Magnetic Particle Material

Brand: Magnaflux Wet ☐ Mixed: Yes ☐ Applied By: Dusting ☑

Type: Red #8A Dry ☑ No ☐ Spraying ☐

Batch No.: 01K085 Fluorescent ☐ With: N/A Flooding ☐

Equipment: Parker - B300 Serial No.: 4675

Head Shot ☐ N/A Amperes Fixed Spacing ☐ AC ☑ DC ☐

Adj. Spacing ☑ 3"-6" inches Encircling Coils ☐ N/A Turns

Prods. Spacing ☐ N/A inches Current (machine setting) ☐ N/A Amperes

Indication No.	Loc L	Loc W	Diameter	Length	Type R/L	Remarks

Comments:

No Relevant Indications Noted.
Reference "Limitation Record" for examination limitations.

Results: Accept ☑ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: No Reviewed Previous Data: Exam Time:

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Vargo, Stephen R.	III		9/21/2006	Feige, Edward J.		10/16/2006
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			Donavin, Paul		10/19/2006
Other	Level	Signature	Date	ANII Review	Signature	Date
Ouellette, John	II		9/25/2006	Longenberger, James A.		10/19/2006

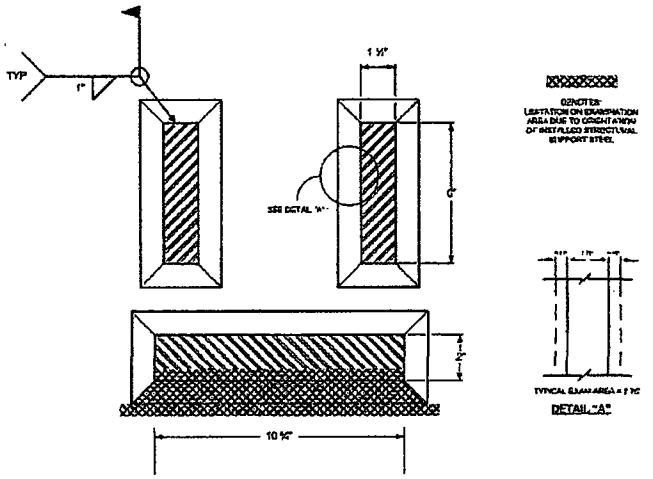
Limitation Record

Site/Unit:	AEP / 1	Procedure:	12-QHP-5050-NDE-002	Outage No.:	U1-C21
Summary No.:	317180	Procedure Rev.:	3	Report No.:	MT-06-004
Workscope:	ISI	Work Order No.:	55247775-02	Page:	3 of 3

Description of Limitation:

Limitation on the extent of coverage due to orientation of installed support steel. Calculated that 83.3% of the required exam area was examined.

MSIV-MRV-230-S2
SUMMARY NO. 317180
55247775-02



Total Sq/in. of required coverage = 204.375
Total Sq/in. of Exam Surface NOT Examined = 34.125
Total Sq/in. Examined = 170.25
Total coverage attained = 83.30%

Limitations removal requirements:

Radiation field:

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Vargo, Stephen R.	III		**9/21/2006**	**Feige, Edward J.**		**10/16/2006**
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	**N/A**			**Donavin, Paul**		**10/19/2006**
Ouellette, John	II		**9/25/2006**	**Longenberger, James A.**		**10/19/2006**

Additional - Limitation <edit from Setup>

ATTACHMENT 9

RELIEF REQUEST ISIR-41

EXAMINATION CATEGORY C-F-1
PRESSURE RETAINING WELDS IN AUSTENITIC STAINLESS STEEL OR HIGH ALLOY PIPING

RELIEF REQUEST ISIR-41

Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii)
Inservice Inspection Impracticality

1. ASME Code Components Affected

ASME Code Class:	Code Class 2
Examination Category:	C-F-1,
Item Numbers:	C5.11, Piping Welds ≥ 3/8 inch Nominal Wall Thickness for Piping > NPS 4, Circumferential Weld C5.21, Piping Welds ≥ 1/5 inch Nominal Wall Thickness for Piping ≥ NPS 2 and ≤ NPS 4, Circumferential Weld
Component Identification:	Listed in Table 1

2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

Austenitic piping welds with single side access subject to ultrasonic examination with Supplement 2 of Appendix VIII to the 1995 Edition with 1996 Addenda of ASME Section XI.

3. Applicable Code Requirement

ASME Section XI, 1989 Edition, Examination Category C-F-1 requires volumetric examination of 100 percent of the weld volume as defined in Table IWC-2500-1 and shown in Figure IWC-2500-7. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allows credit for essentially 100 percent coverage of the welds provided greater than 90 percent of the required volume has been examined.

10 CFR 50.55a(b)(2)(xv)(A), requires the following examination coverage criteria when applying Supplement 2 to Appendix VIII:

(1) Piping must be examined in two axial directions and when examination in the circumferential direction is required, the circumferential examination must be performed in two directions, provided access is available.

(2) Where examination from both sides is not possible, full coverage credit may be claimed from a single side for ferritic welds. Where examination from both sides is not possible on austenitic welds, full coverage credit from a single side may be claimed only after completing a successful single sided Appendix VIII demonstration using flaws on the opposite side of the weld.

10 CFR 50.55a(b)(2)(xvi)(B), requires that examinations performed from one side of a ferritic or stainless steel pipe weld must be conducted with equipment, procedures, and personnel that have demonstrated proficiency with single side examinations. To demonstrate equivalency to the two sided examinations, the demonstration must be performed to the requirements of Appendix VIII as modified by this paragraph and 10 CFR 50.55a(b)(2)(xv)(A).

4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for austenitic piping welds with single side access.

There are currently no Performance Demonstration Initiative (PDI) qualified single side examination procedures that demonstrate equivalency to two-sided examination procedures on austenitic piping welds. Current technology, is not capable of reliably detecting or sizing flaws on the far side of an austenitic weld for configurations common to United States nuclear applications.

PDI Performance Demonstration Qualification Summary (PDQS) certificates for austenitic piping list the limitation that single side examination is performed on a best effort basis. The best effort qualification is provided in place of a complete single side qualification to demonstrate that the examiners qualification and the subsequent weld examination is based on application of the best available technology.

When the examination area is limited to one side of an austenitic weld, examination coverage does not comply with 10 CFR 50.55a(b)(2)(xv)(A) and proficiency demonstrations do not comply with 10 CFR 50.55a(b)(2)(xvi)(B) and full coverage credit may not be claimed.

Based on the configuration limited to single side access, relief is requested from the essentially 100 percent surface examination coverage requirements for the subject piping welds listed in Table 1. Note that examination coverage listed is that attained during examination with no credit taken for the far side of each weld in which examination from that side could not be performed.

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the essentially 100 percent volumetric examination coverage requirement for the subject welds due to the geometric configuration and permanent obstructions which limit the volumetric examination coverage of the subject welds.

The limitations and the actual examination coverage attained for each weld for which relief is requested are noted in Table 1.

5. Burden Caused by Compliance

Compliance with code requirements requires extensive modification or replacement of components with a design that allows examination from both sides of the weld. This option to meet the required 100 percent volume examination coverage is considered impractical based on the cost, additional radiation exposure and impact to plant equipment.

6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination to the maximum extent practical utilizing the best available techniques, as qualified through the Performance Demonstration Initiative (PDI) for Supplement 2 with demonstrated best effort for single sided examination, from the accessible side of the weld. Additionally, a surface examination without limitations was performed on each weld. Further, a visual (VT-2) examination is performed each inspection period during the system leakage tests as required by Section XI, Table IWC-2500-1, Category C-H.

Based upon the examination volumes that were obtained with acceptable results along with the completed surface examination and the visual (VT-2) examination performed each inspection period, it is reasonable to conclude that service induced degradation would be detected if present. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-CTS-2-18F	Pipe to Flange	C5.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The flange side is limited by the O.D. contour and flange bolting. No relevant indications detected.
1-SI-2-42S	Pipe to Pump Casing	C5.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the pump side due to its severe taper and the proximity of the pump casing to the weld. No relevant indications detected.
1-RH-27-05S	Pipe to Elbow	C5.11	78.0	The completed examination was limited to 78% coverage due to the configuration. The configuration prevents examination due to the welds location inside of the box restraint surrounding the pipe. No relevant indications detected.
1-SI-24-06F	Pipe to Tee	C5.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
1-SI-30-08F	Valve to Pipe	C5.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The examination limitation is caused by the OD bevel on the valve, which is in proximity to the weld toe on the valve side. No relevant indications detected.
1-SI-34-11F	Elbow to Valve	C5.11	50.0	The completed examination was limited to 50% coverage due to the configuration. Full coverage was not obtainable due to the bevel at the weld toe on the valve side of the weld. No relevant indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
2-CTS-13-04F	Pipe to Valve	C5.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the valve side due to its severe taper and close proximity of the valve to the weld. No relevant indications detected.
1-SI-11A-01S	Flange to Elbow	C5.21	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration of the reducing elbow to flange leads to a limited examination based on the taper of the flange face and its proximity to the weld. No relevant indications detected.
1-SI-11-01S	Flange to Elbow	C5.21	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration of the elbow to flange leads to a limited examination based on the taper of the flange face and its proximity to the weld. No relevant indications detected.
1-SI-11-05F	Pipe to Valve	C5.21	49.0	The completed examination was limited to 49% coverage due to the configuration. The configuration prevents examination from the valve side due to its severe taper and the close proximity of the valve. A portion of the pipe side is obstructed due to the proximity of the integrally welded pipe support. No relevant indications detected.
1-SI-74-01F	Penetration to Elbow	C5.21	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the penetration side due to the OD surface contour and the proximity of the penetration. No relevant indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
2-SI-42-01S	Flange to Elbow	C5.21	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the flange side due to its severe taper and close proximity of the flange taper to the weld. No relevant indications detected.
2-SI-42-03F	Pipe to Valve	C5.21	46.5	The completed examination was limited to 46.5% coverage due to the configuration. The configuration prevents examination from the valve side due to its severe taper and close proximity of the valve to the weld. Additionally, a portion of the examination area was obstructed due to a branch connection in the piping. No relevant indications detected.
2-SI-73-02S	Elbow to Pipe	C5.21	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the elbow side due to its severe taper and close proximity of the elbow to the weld. No relevant indications detected.
2-SI-81-01F	Valve to Elbow	C5.21	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the valve side due to its severe taper and close proximity of the valve to the weld. No relevant indications detected.

RELIEF REQUEST ISIR-41

EXAMINATION CATEGORY C-F-1
PRESSURE RETAINING WELDS IN AUSTENITIC STAINLESS STEEL OR HIGH ALLOY PIPING

SUPPORTING DOCUMENTATION

INCOMPLETE EXAMINATION REPORT

REPORT NO: UICIB-UT-008
PAGE 4 OF 4
DATA PKG: N/A
PROCEDURE: 83A6228 Rev.2

PLANT/UNIT: D.C. Cook/Unit 1 WELD NO: 1-CTS-2-18F SYSTEM: CTS

CONFIGURATION: FLANGE to Elbow

ASME CODE CLASS: C-F-1, C5.11

CODE EXAMINATION REQUIREMENTS: In Accordance to 1989 Section XI, Figure IWC-2500-7(c)

INTERFERING CONDITION: Single-Sided Access Due to Configuration. PIPE TO FLANGE, FLANGE SIDE IS LIMITED BY O.D. CONTOUR & FLANGE BOLTING, SINGLE SIDED ACCESS CLAIMED IN ACCORDANCE WITH PROCEDURE PARAGRAPH 2.3.

ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES ____ NO X

PARTIAL EXAMINATION PERFORMED: YES X NO ____

EXAMINATION ANGLE AFFECTED:

0 DEGREE WRV Yes 0 DEGREE BASE MATERIAL N/A

45 DEGREE AXIAL Yes 45 DEGREE CIRCUMFERENTAIL Yes

OTHER: 70° Axial Scan*

ALTERNATE METHOD RECOMMENDED: YES ____ NO X

EXPLANATION: *EXAMINATION PERFORMED IN ACCORDANCE TO 83A6228 REV 2

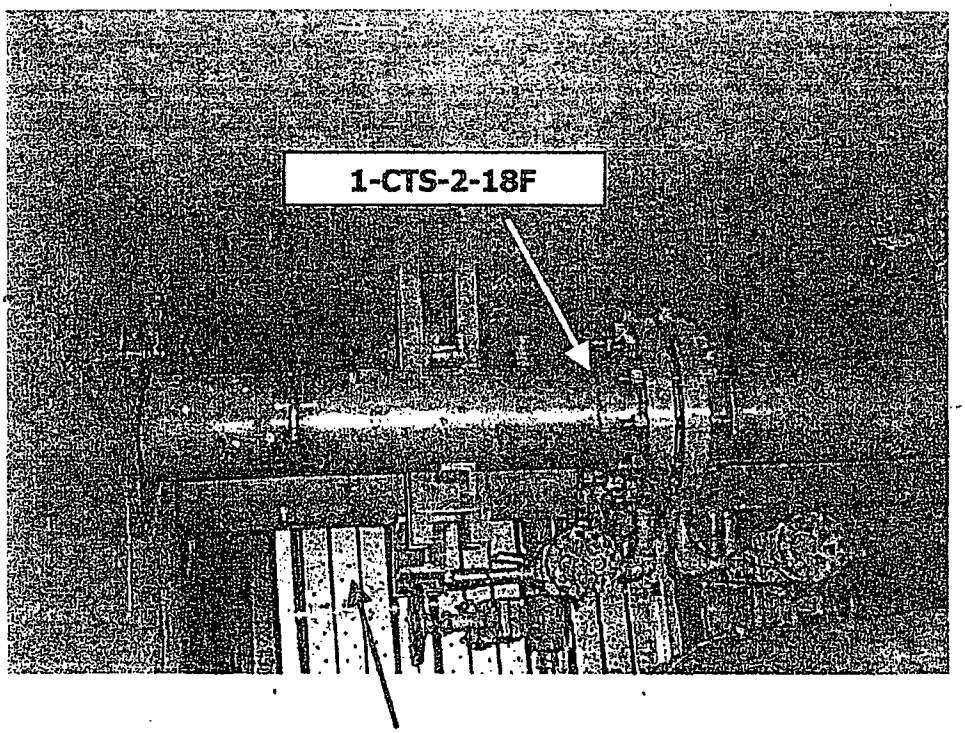
PREPARED BY: Dennis P. Strickland DATE: 4.30.02

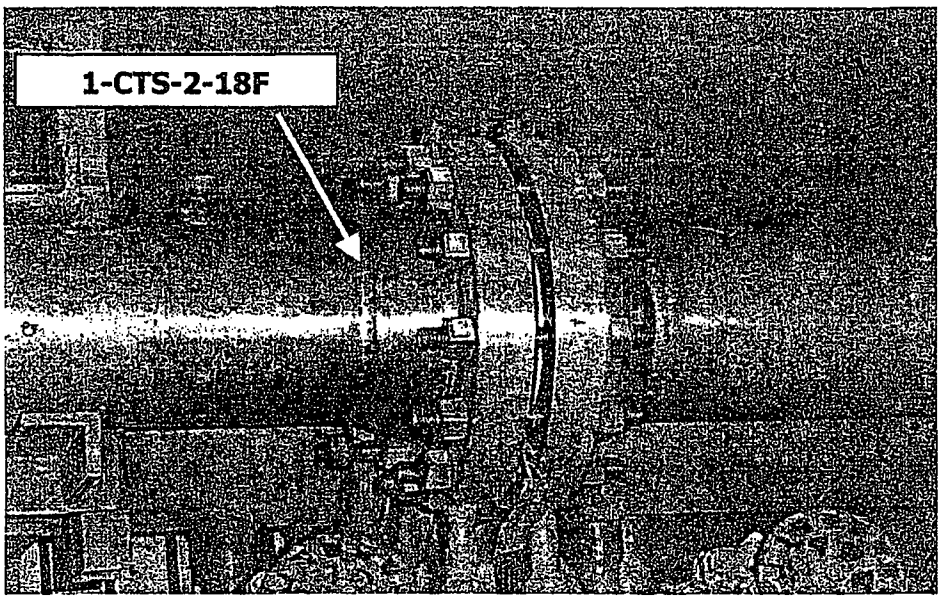
REVIEWED: [signature] DATE: 5-4-02

RE Nell 5/17/02

1-CTS-2-18F

Elevation 609', rear of CTS Heat Exchanger Room. Approximately 6' of scaffold. Non-insulated.





INCOMPLETE EXAMINATION REPORT

REPORT NO: WCIG-UT-011
PAGE 4 OF 4
DATA PKG: N/A
PROCEDURE: 83A6228 REV. 2

PLANT/UNIT: D.C. COOK / UNIT 1 WELD NO: 1-SI-2-425 SYSTEM: SI

CONFIGURATION: PIPE TO PUMP

ASME CODE CLASS: C-F-1, C 5.11

CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE WITH 1989 SECTION XI, FIGURE IWC-2500-7(a)

INTERFERING CONDITION: SINGLE-SIDE ACCESS DUE TO CONFIGURATION. PUMP SIDE CONFIGURATION IS LIMITED BY A SHARP BEVEL AT THE WELD EDGE. PROCEDURE 83A6228 IS QUALIFIED FOR DETECTION ON THE NEAR SIDE OF SINGLE SIDED ACCESS WELDS ONLY (PARA. 2.3)

ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES _____ NO X

PARTIAL EXAMINATION PERFORMED: YES X NO _____

EXAMINATION ANGLE AFFECTED:

0 DEGREE WRV YES 0 DEGREE BASE MATERIAL N/A

45 DEGREE AXIAL YES 45 DEGREE CIRCUMFERENTAIL YES

OTHER: * 70° AXIAL

ALTERNATE METHOD RECOMMENDED: YES _____ NO X

EXPLANATION: *EXAMINATION PERFORMED IN ACCORDANCE TO 83A6228 REV 2

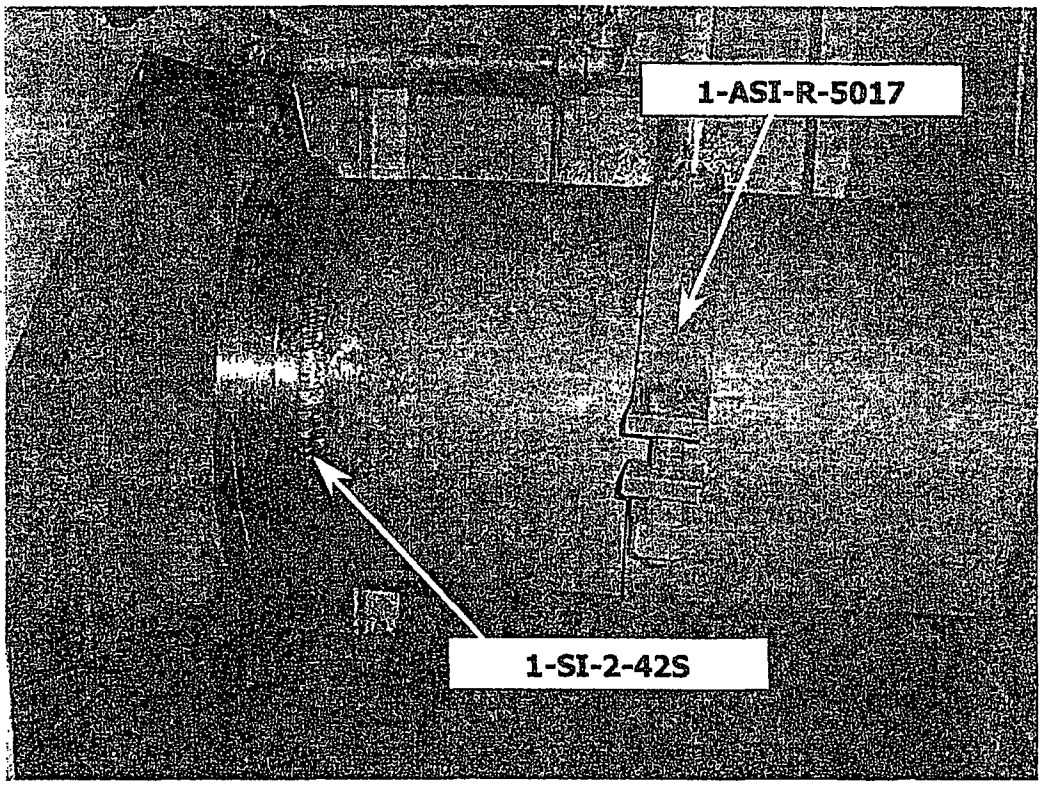
PREPARED BY: Dennis P. Hall DATE: 5.3.02

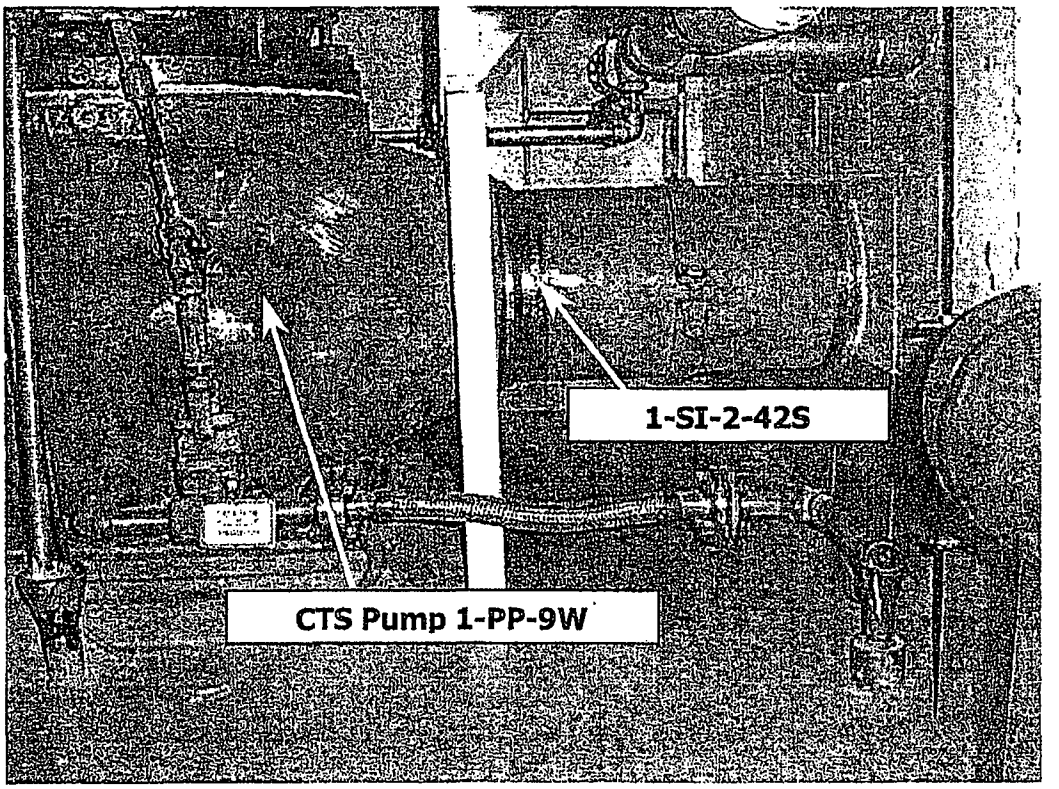
REVIEWED: Shep Swap DATE: 5.6.02

R E Hall 5/17/02

1-SI-2-42S (F on Fig. B-12)

Auxiliary building, 577' elevation. West CTS pump room. No scaffold required. Non-insulated.





Ultrasonic Examination Limitation Report

DATA SHEET # U1C18-UT-021

Weld location is within the area of the box restraint surrounding the pipe.

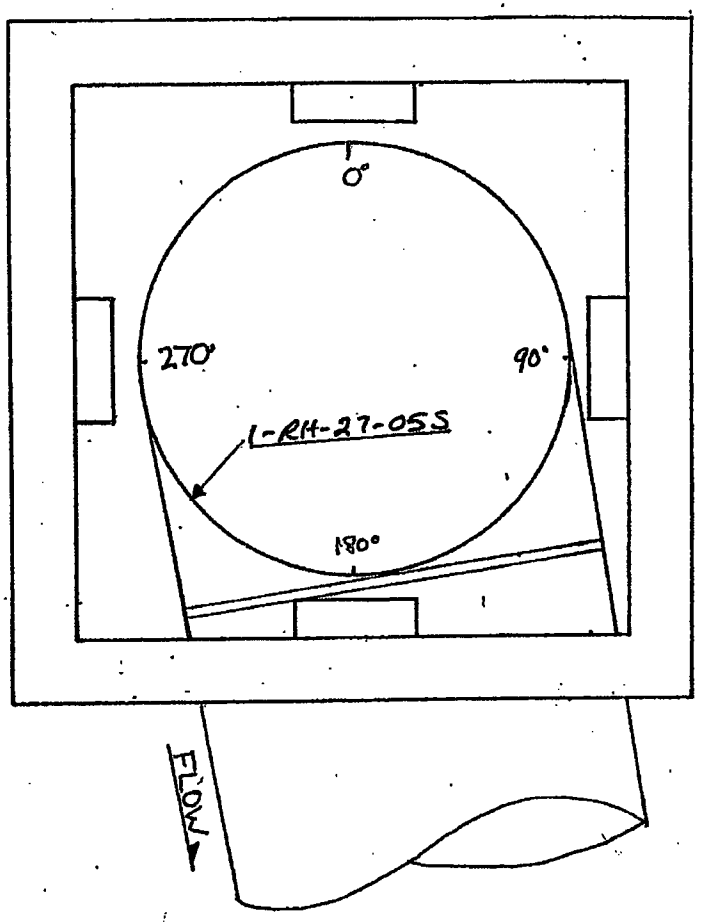
0" location = top dead center of upstream horizontal run of pipe.

Total circumferential length of weld = 40.0

Of the total 40 inches of circumferential weld length, the following was not examined with the 45° scan.

Lug @ 0° - 0.0"
Lug @ 90° - 6.5"
Lug @ 180° - 0.0"
Lug @ 270° - 2.5"
Total Length 9.0"

40.0" – 9.0"= 31.0" examined
31.0" / 40.0"= 78% of weld inspected



Examiners:

1. _____ Level: ____ Date: _____
2. _____ Level: ____ Date: _____

Reviewers:

1. [signature] Level: III Date: 5-21-02
2. _____ Level: ___ Date: _____
3. _____ Level: ___ Date: _____

INCOMPLETE EXAMINATION REPORT

REPORT NO: WC18-UT-021
PAGE 4 OF 4
DATA PKG: N/A
PROCEDURE: 83A-G228 REV 2

PLANT/UNIT: D.C. COOK / UNIT 1 WELD NO: 1-RH-27-05S SYSTEM: RH

CONFIGURATION: PIPE TO ELBOW

ASME CODE CLASS: C-F-1

CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE TO 1989 SECTION XI, FIGURE IWC-2500-7(a)

INTERFERING CONDITION: WELD LOCATED INSIDE OF BOX RESTRAINT

ESTIMATE OF TOTAL % CODE COMPLETE: _____ SKETCH ATTACHED: YES X NO _____

PARTIAL EXAMINATION PERFORMED: YES X NO _____

EXAMINATION ANGLE AFFECTED:

0 DEGREE WRV YES 0 DEGREE BASE MATERIAL N/A

45 DEGREE AXIAL YES 45 DEGREE CIRCUMFERENTAIL YES

OTHER: N/A

ALTERNATE METHOD RECOMMENDED: YES _____ NO X

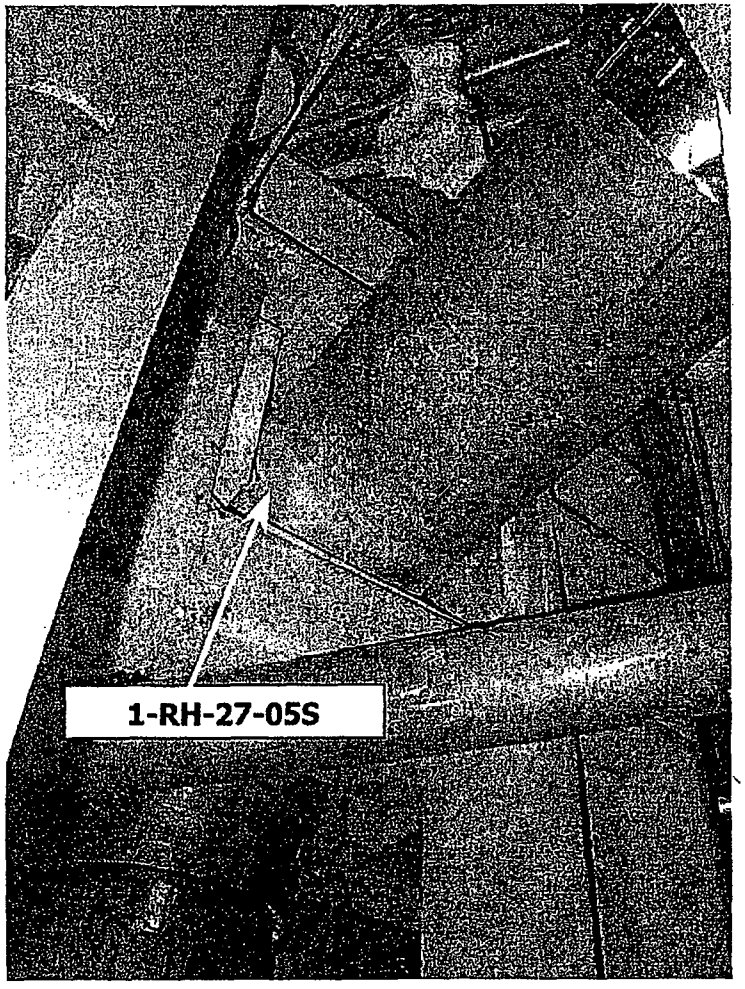
EXPLANATION: EXAMINATION PERFORMED IN ACCORDANCE TO 83A6228, REV 2. ALTERNATE METHODS WILL NOT INCREASE COVERAGE DUE TO THE PHYSICAL LOCATION OF THE WELD IN RELATION TO THE BOX RESTRAINT.

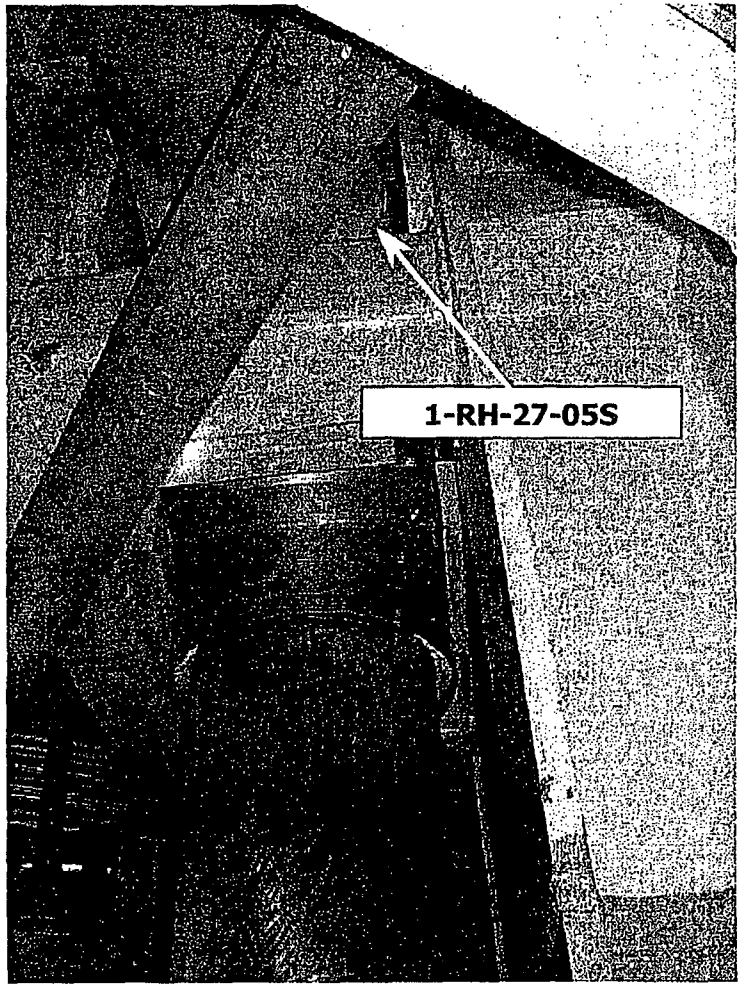
PREPARED BY: James P. Streibel DATE: 5-15-02

REVIEWED: S W Doug DATE: 5-21-02
RE Hall 5/28/02

1-RH-27-05S

Annulus Area, elevation 608'. No scaffold required. Insulated. Limited UT examinations due to box restraint. Need ladder to access steel - sit on steel for exam.





INCOMPLETE EXAMINATION REPORT

REPORT NO: WC18-UT-014
PAGE 3 OF 3
DATA PKG: N/A
PROCEDURE: 83A6228 REV2

PLANT/UNIT: D.C. COOK WELD NO: 1-SI-24-06F SYSTEM: SI

CONFIGURATION: PIPE TO TEE

ASME CODE CLASS: C-F-1

CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE TO 1989 SECTION XI, FIGURE IWC-2500-7(a)

INTERFERING CONDITION: SINGLE-SIDED ACCESS DUE TO CONFIGURATION. SINGLE SIDED ACCESS EXAMINATION PERFORMED IN ACCORDANCE WITH PROCEDURE PARAGRAPH 2-3. O.D. CONFIGURATION OF TEE SIDE LIMITS EXAM DUE TO SHARP BEVEL ADJACENT TO TEE SIDE WELD TOE.

ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES ____ NO X

PARTIAL EXAMINATION PERFORMED: YES X NO ____

EXAMINATION ANGLE AFFECTED:

0 DEGREE WRV N/A 0 DEGREE BASE MATERIAL N/A

45 DEGREE AXIAL YES 45 DEGREE CIRCUMFERENTAIL YES

OTHER: * 70° RL AXIAL SCAN

ALTERNATE METHOD RECOMMENDED: YES ____ NO X

EXPLANATION: *EXAMINATION PERFORMED IN ACCORDANCE TO 83A6228, REV2

PREPARED BY: Dennis P. Stuckle DATE: 5-16-02

REVIEWED: [signature] DATE: 5-17-02

[signature] 5/16/02 [signature] 5/16/02

Visual Component Database

Component Number: 1-SI-152N

Image Title: 1-SI-152N

Image Date: 12/30/1899

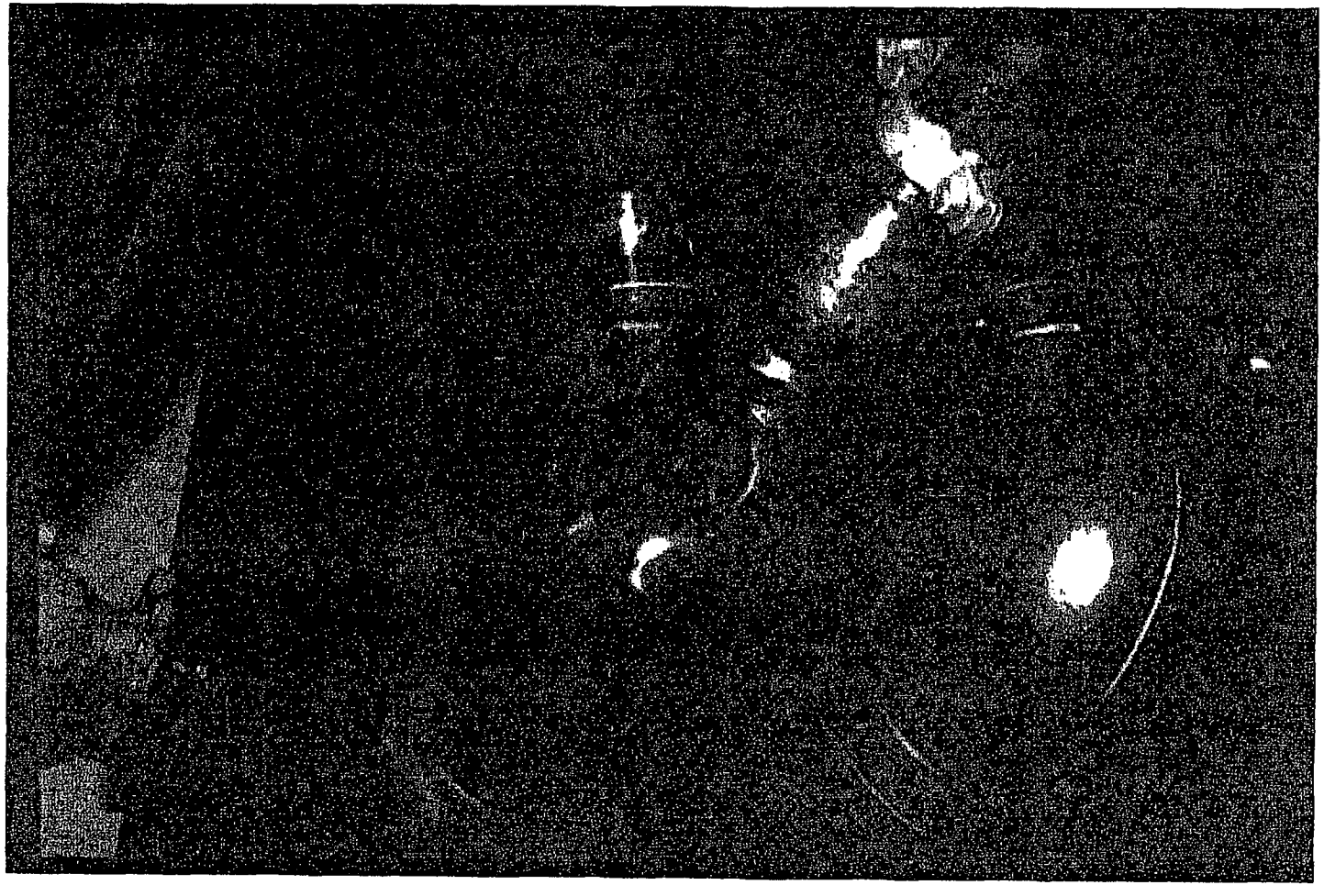
Date Printed: 05/30/2002 09:37 AM

Visual Component Database

Component Number: 1-SI-152N

Image Title: 1-SI-152N

Image Date: 04/14/1997



Date Printed: 05/30/2002 09:37 AM

INCOMPLETE EXAMINATION REPORT

REPORT NO: UICIO-UT-012
PAGE 4 OF 4
DATA PKG:
PROCEDURE: 83A6228 REV. 2

PLANT/UNIT: D.C. COOK / UNIT 1 WELD NO: 1-SI-30-08F SYSTEM: SI

CONFIGURATION: VALVE TO PIPE

ASME CODE CLASS: C-F-1

CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE TO 1989 SECTION XI, FIGURE IWC-2500-7(a)

INTERFERING CONDITION: SINGLE-SIDED ACCESS DUE TO CONFIGURATION. PIPE TO VALVE CONFIGURATION LIMITED TO PIPE SIDE ACCESS AND SINGLE SIDED EXAM IN ACCORDANCE WITH PARAGRAPH 2.3 of PROCEDURE. THE LIMITATION IS CAUSED BY THE O.D. BEVEL ON THE VALVE ADJACENT TO THE WELD TOE, VALVE SIDE.

ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES ____ NO X

PARTIAL EXAMINATION PERFORMED: YES X NO ____

EXAMINATION ANGLE AFFECTED:

0 DEGREE WRV X 0 DEGREE BASE MATERIAL N/A

45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL X

OTHER: 70° RL AXIAL

ALTERNATE METHOD RECOMMENDED: YES ____ NO X

EXPLANATION: EXAMINATION PERFORMED IN ACCORDANCE TO 83A6228 REV 2.

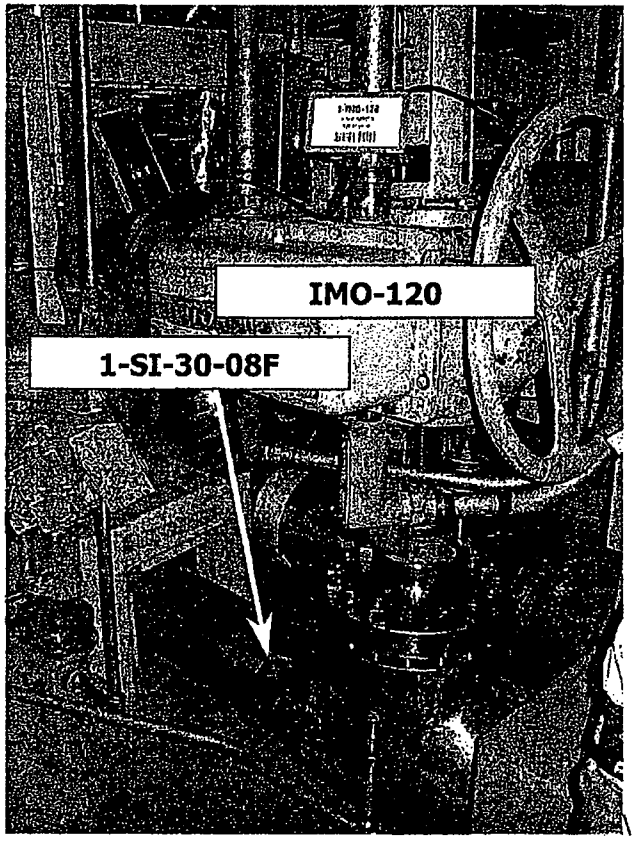
PREPARED BY: Dennis P. Strickland DATE: 5-11-02

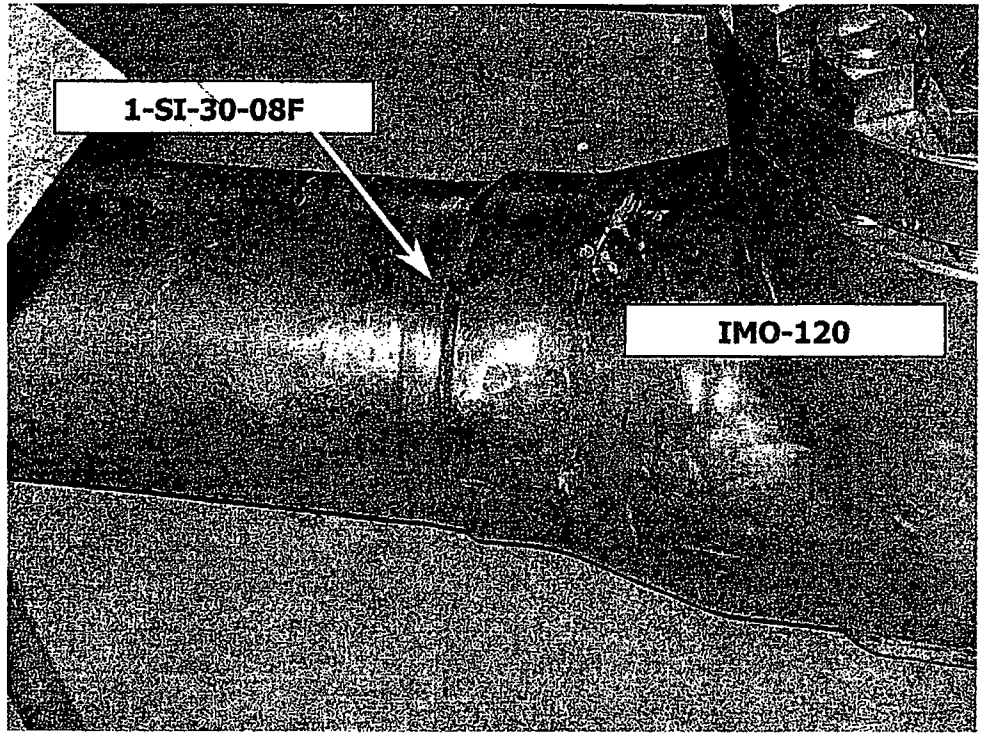
REVIEWED: Shep Berry DATE: 5-11-02

Rick Hall 5/17/02

1-SI-30-08F

Annulus Area, elevation 599'. No scaffold required. Not Insulated. Right above floor.





Ultrasonic Examination Limitation Report

SCIENTECH

DATA SHEET # UUB-UT-022

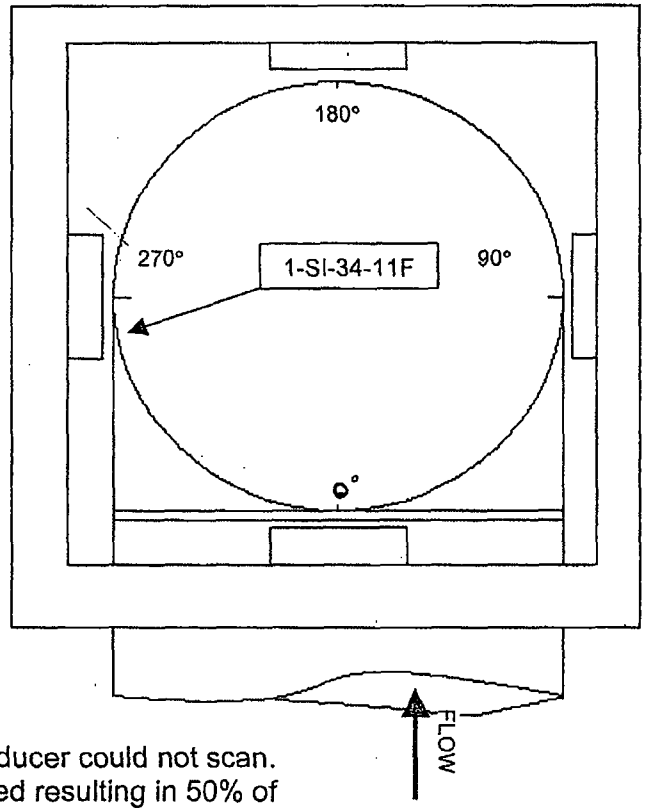
Weld located approximately 1" downstream from the top of the lugs.

0" location = inside radius of the upstream elbow.

Total circumferential length of weld = 33.75

Of the total 33.75 inches of circumferential weld length, the following was not examined with the 45° scan on the upstream side of the weld.

Lug @ 0° - 0.0"
Lug @ 90° - 5.0"
Lug @ 180° - 3.5"
Lug @ 270° - 5.5"
Total Length 14.0"



33.75" – 14.0"= 19.75" examined
19.75" / 40.0"= 58.5% of weld inspected
A 70° RL examination was conducted in the areas that the 45° transducer could not scan. Because of this, 100% of the upstream side of the weld was examined resulting in 50% of the total required being completed.

The downstream side of the weld could not be examined because of the valve. See Incomplete Examination Report for total coverage achieved on this exam.

Examiners:

1. Daniel P. Stuckey Level: II Date: 5-11-02
2. _____ Level: _____ Date: _____

Reviewers:

1. [signature] Level: III Date: 5-21-02
2. [signature] Level: — Date: 5/28/02
3. [signature] Level: ___ Date: 5/21/02

INCOMPLETE EXAMINATION REPORT

REPORT NO: UICIB-UT-022
PAGE 5 OF 5
DATA PKG: N/A
PROCEDURE: 83A6228 REV2

PLANT/UNIT: D.C. COOK / UNIT 1 WELD NO: 1-SI-34-11F SYSTEM: SI

CONFIGURATION: ELBOW TO VALVE

ASME CODE CLASS: C-F-1

CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE TO 1989 SECTION XI, FIGURE IWC-2500-7(a)

INTERFERING CONDITION: SINGLE-SIDED ACCESS DUE TO CONFIGURATION. SINGLE SIDED EXAMINATION PERFORMED IN ACCORDANCE WITH PROCEDURE PARAGRAPH 2.3. VALVE SIDE SCANNING IS NOT POSSIBLE DUE TO BEVEL AT THE WELD TOE ON THE VALVE SIDE.

ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES X NO ____

PARTIAL EXAMINATION PERFORMED: YES X NO ____

EXAMINATION ANGLE AFFECTED:

0 DEGREE WRV X 0 DEGREE BASE MATERIAL N/A

45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL X

OTHER: *70° RL AXIAL

ALTERNATE METHOD RECOMMENDED: YES ____ NO X

EXPLANATION: *EXAMINATION PERFORMED IN ACCORDANCE TO 83A6228, REV. 2.

PREPARED BY: Dennis P. Stiehl DATE: 5.11.02

REVIEWED: Stephen Long DATE: 5.21.02
RE Nall 5/28/02

EXAMINATION SUMMARY

AMATOME ANP

mary No.:317310	Data Package: U2C14-0007	Exam Date: 5/9/2003

Customer: DC COOK U2C14	Examination Methods: UT, PT
System / Component ID: CONTAINMENT SPRAY / 2-CTS-13-04F	Examination Procedures: 54-ISI-836-04, 54-ISI-240-40
Component Description: PIPE TO VALVE	Calibration Sheets No(s): 00018, 00019, 00020
Examination Category: C-F-1	Examination Results: ☒ No Reportable Indications
ISO / Drawing:B-49	☐ Reportable Indications
	☒ Geometric

Summary:

COMPONENT NUMBER 2-CTS-13-04F, PIPE TO VALVE WAS EXAMINED USING THE PT AND UT METHODS.

ID GEOMETRY WAS RECORDED WITH THE 60 & 70 DEGREE TRANSDUCERS.

THE UT WAS LIMITED TO SINGLE SIDED ACCESS, DUE TO PIPE TO VALVE CONFIGURATION, RESULTING IN 50% EXAM COVERAGE.

CA# DC-03-001 REVISION 00 APPLIES TO PROCEDURE 54-ISI-836-04

ared By: Simon Crothers	Date: 5-9-03	Reviewed By: Jerry Newgard	Date:
Sign: Simon Crothers		Sign: Jerry Ng	5-17-03
Customer:	Date:		
Sign: Roy E Nell	5/20/03		

FRAMATOME ANP

PROFILE AND THICKNESS

Exam Date: 5-9-03

Summary No.: 317310

Site: DC COOK U2C14

Examination Method: UT

System: CONTAINMENT SPRAY

Identification: 2-CTS-13-04F

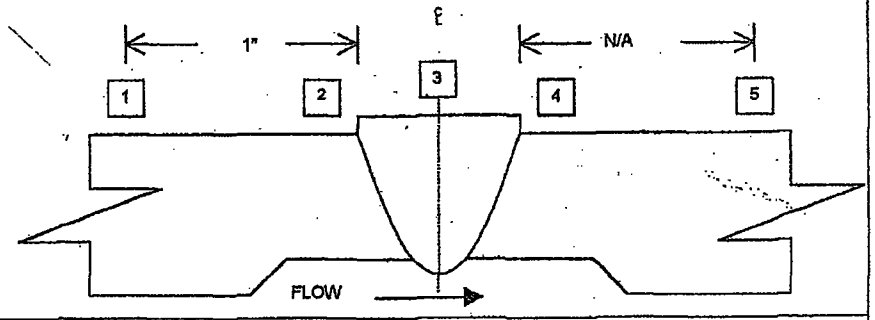
POSITION	0	90	180	270
1	0.38"	N/A	N/A	N/A
2	0.35"	N/A	N/A	N/A
3	0.45"	N/A	N/A	N/A
4	N/A	N/A	N/A	N/A
5	N/A	N/A	N/A	N/A

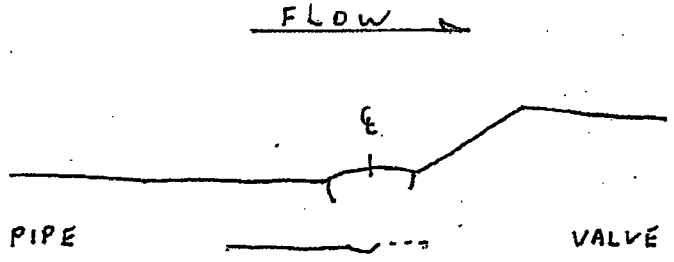
CROWN HEIGHT: 0.05"

CROWN WIDTH: 0.5"

NOM DIAMETER: 4"

WELD LENGTH: 34"





Simon Crothers 5-9-03
Prepared By Date

Reviewed By 5-17-03
Date

Utility Review By 5/20/03
Date

INCOMPLETE EXAMINATION REPORT

REPORT NO: U1C18-UT-004
PAGE 4 OF 4
DATA PKG: N/A
PROCEDURE: 83A6228 Rev. 2

PLANT/UNIT: D.C. Cook / Unit 1 WELD NO: 1-SI-11A-015 SYSTEM: SI

CONFIGURATION: Flange to Elbow

ASME CODE CLASS: C-F-1

CODE EXAMINATION REQUIREMENTS: In Accordance with 1989 Section XI, Figure IWC-2500-7(a)

INTERFERING CONDITION: Single-Sided Acces Due to Configuration. REDUCING ELBOW TO FLANGE CONFIGURATION IS LIMITED TO SINGLE SIDED EXAMINATION FROM THE ELBOW SIDE IN ACCORDANCE WITH PROCEDURE PARAGRAPH 2.3. THE LIMITATION IS THE OD CONTOUR (BEVEL) OF THE FLANGE FACE.

ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES ___ NO X

PARTIAL EXAMINATION PERFORMED: YES X NO ___

EXAMINATION ANGLE AFFECTED:

0 DEGREE WRV Yes 0 DEGREE BASE MATERIAL N/A

45 DEGREE AXIAL N/A 45 DEGREE CIRCUMFERENTAIL Yes

OTHER: 70° Axial

ALTERNATE METHOD RECOMMENDED: YES ___ NO X

EXPLANATION: Examination Performed in Accordance 83A6228 Rev 2
70° Axial Scan Perfored Due to Pipe Wall Demension (.203), Weld Crown Condition (As Welded) And Elbow to Flange Configuration.

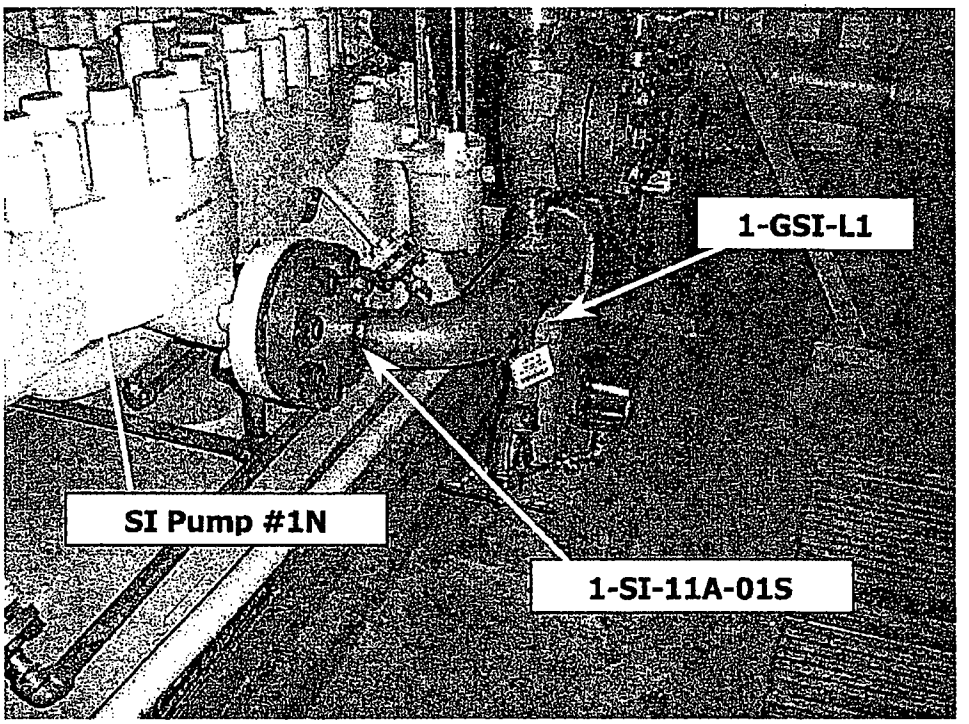
PREPARED BY: [signature] DATE: 4.30.02

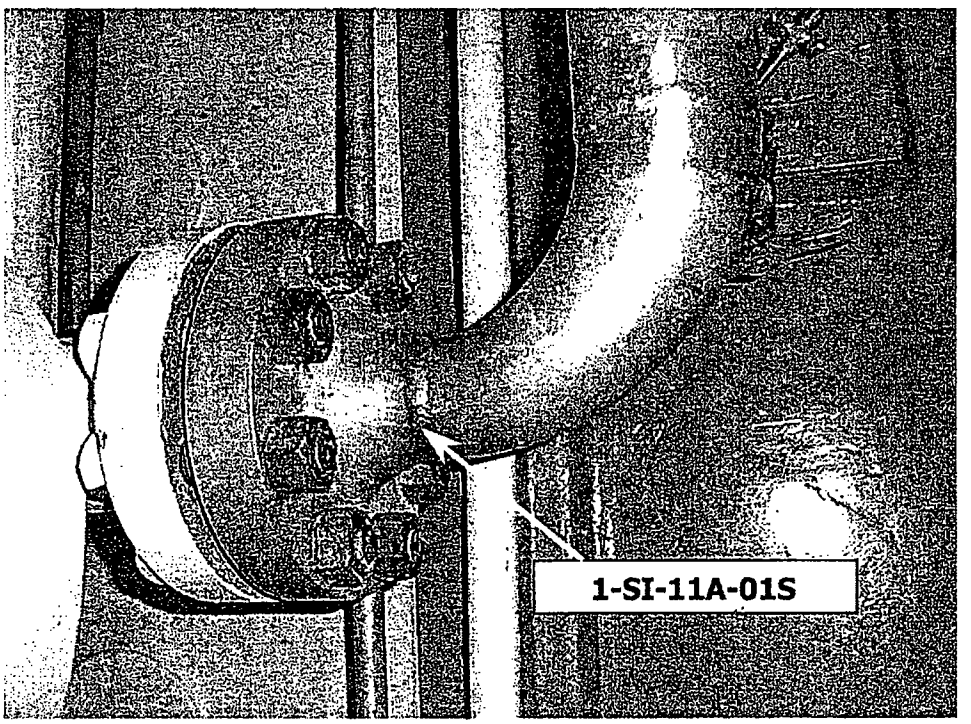
REVIEWED: [signature] DATE: 5.4.02

[signature] RE Hall 5/17/02

1-SI-11A-01S

Auxiliary building 587' elevation. North Safety Injection Pump Room. No scaffold required. Non-insulated.





INCOMPLETE EXAMINATION REPORT

REPORT NO: UICIB-UT-005
PAGE 4 OF 4
DATA PKG: N/A
PROCEDURE: 83A6228 Rev 2

PLANT/UNIT: D.C. Cook / Unit 1 WELD NO: 1-SI-11A-015 SYSTEM: SI

CONFIGURATION: Flange to Elbow

ASME CODE CLASS: C-F-1

CODE EXAMINATION REQUIREMENTS: In Accordance to 1989 Section XI, Figure IWC-2500-7-(a)

INTERFERING CONDITION: Single-sided Access Due to Configuration. Reducing Elbow to FLANGE Configuration is Limited to single sided access from the Elbow side in accordance with Procedure paragraph 2.3. The Limitation is the O.D. contour (bevel) of the flange face.

ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES ____ NO X

PARTIAL EXAMINATION PERFORMED: YES X NO ____

EXAMINATION ANGLE AFFECTED:

0 DEGREE WRV Yes 0 DEGREE BASE MATERIAL N/A

45 DEGREE AXIAL N/A 45 DEGREE CIRCUMFERENTAIL Yes

OTHER: 70° Axial

ALTERNATE METHOD RECOMMENDED: YES ____ NO X

EXPLANATION: Examination Performed in Accordance with 83A6228 Rev. 2 70° Axial Scan Perfored Due to Pipe Wall Demension (.203), weld crown condition (As welded) and Elbow to Flange Configuration.

PREPARED BY: Dennis P Stickle DATE: 4-30-02

REVIEWED: [signature] DATE: 5.4.02

[signature] 5/17/02

INCOMPLETE EXAMINATION REPORT

REPORT NO: UICIB-UT-005
PAGE 4 OF 4
DATA PKG: N/A
PROCEDURE: 83A6228 Rev 2

PLANT/UNIT: D.C. Cook / Unit 1 WELD NO: 1-SI-11A-015 Ref 4/6/2011 SYSTEM: SI

CONFIGURATION: Flange to Elbow

ASME CODE CLASS: C-F-1

CODE EXAMINATION REQUIREMENTS: In Accordance to 1989 Section XI, Figure IWC-2500-7-(a)

INTERFERING CONDITION: Single-sided Access Due to Configuration. Reducing Elbow to FLANGE Configuration is Limited to SINGLE SIDED ACCESS FROM THE ELBOW SIDE in ACCORDANCE WITH PROCEDURE PARAGRAPH 2.3. The Limitation is the O.D. CONTOUR (BEVEL) OF THE FLANGE FACE.

ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES ____ NO X

PARTIAL EXAMINATION PERFORMED: YES X NO ____

EXAMINATION ANGLE AFFECTED:

0 DEGREE WRV Yes 0 DEGREE BASE MATERIAL N/A

45 DEGREE AXIAL N/A 45 DEGREE CIRCUMFERENTAIL Yes

OTHER: 70° Axial

ALTERNATE METHOD RECOMMENDED: YES ____ NO X

EXPLANATION: Examination Performed in Accordance with 83A6228 Rev. 2 70° Axial Scan Perfored Due to Pipe Wall Demension (.203), weld crown condition (As welded) and Elbow to Flange Configuration.

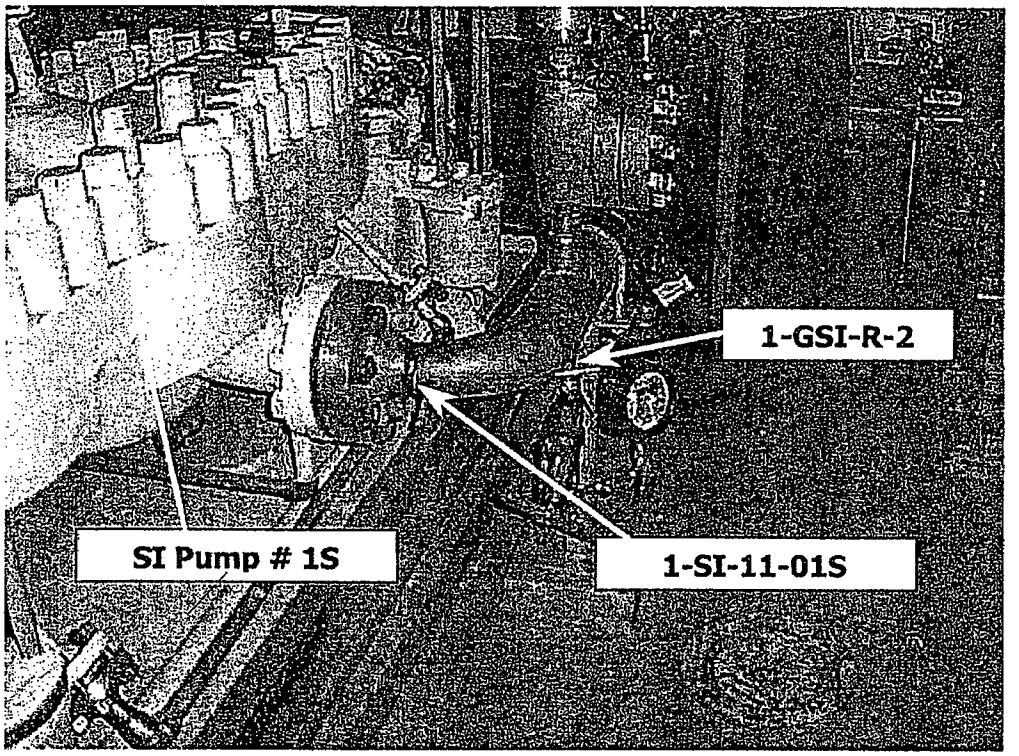
PREPARED BY: Dennis P Stickle DATE: 4-30-02

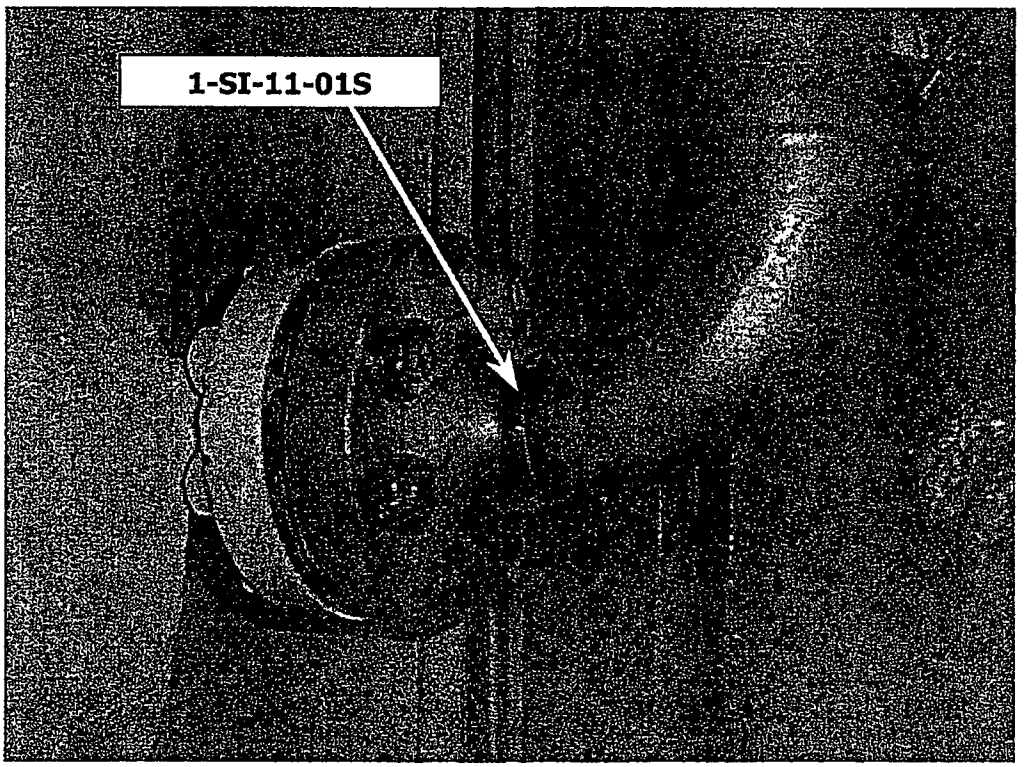
REVIEWED: [signature] DATE: 5-4-02

[signature] 5/17/02

1-SI-11-01S

Auxiliary building 587' elevation. South Safety Injection Pump Room. No scaffold required. Non-insulated.





INCOMPLETE EXAMINATION REPORT

REPORT NO: UCIB-UT-006
PAGE 4 OF 6
DATA PKG: N/A
PROCEDURE: 83A6228 R/2

PLANT/UNIT: D.C. Cook Unit 1 WELD NO: 1-SI-11-05F SYSTEM: SI

CONFIGURATION: FLANGE TO ELBOW

ASME CODE CLASS: C-F-1, C5.21

CODE EXAMINATION REQUIREMENTS: 1989 Ed., ASME Section XI, Figure IWC-2500-7(a)

INTERFERING CONDITION: SINGLE SIDE ACCESS DUE TO CONFIGURATION AND PIPE Support 1-GSI-R-2. PIPE TO VALVE, VALVE SIDE IS LIMITED DUE TO O.D. BEVEL ADJACENT to WELD AND ON PIPE SIDE BY Support INTEGRAL ATTACHMENT. (SEE SKETCH)

ESTIMATE OF TOTAL % CODE COMPLETE: 49% SKETCH ATTACHED: YES ✓ NO ____

PARTIAL EXAMINATION PERFORMED: YES ✓ NO ____

EXAMINATION ANGLE AFFECTED:

0 DEGREE WRV YES 0 DEGREE BASE MATERIAL N/A

45 DEGREE AXIAL YES 45 DEGREE CIRCUMFERENTAIL YES

OTHER: * 70 DEGREE AXIAL

ALTERNATE METHOD RECOMMENDED: YES ____ NO ✓

EXPLANATION: *EXAMINATION PERFORMED IN ACCORDANCE WITH 83A6228 R/2.

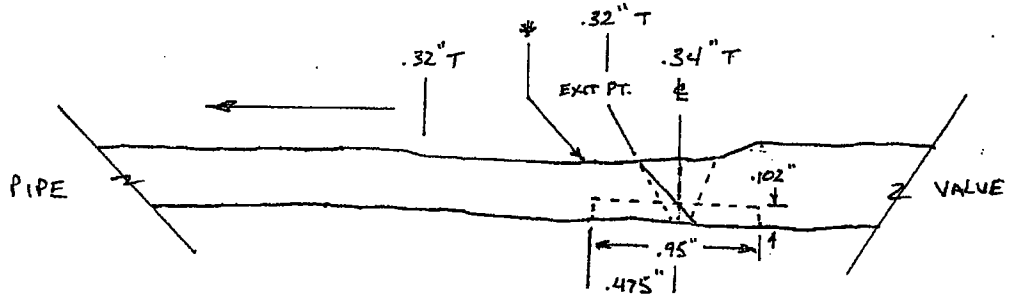
PREPARED BY: Dennis L. Stuckey DATE: 4.30.02

REVIEWED: Steve Young DATE: 5.6.02

Rehall 5/17/02

1-SI-11-05F LIMITATION

DATA SHEET # UCIB-UT-006



* OBSTRUCTION, .30" FROM WELD TOE, .20" LONG CIRCUMFERENTIALLY, 2 PLACES, SUPPORT # 1-GSI-R2. SEE ATTACHED SKETCH.

REQUIRED VOLUME = .95" X .102" X 14.25" (CIRCUMFERENCE) = 1.38"^{3}

VOLUME NOT EXAMINED = 50% NOT EXAMINED ON VALVE SIDE DUE TO SINGLE SIDED ACCESS.

PLUS

.475" X .102" X .20" X 2 (PLACES) = .00969"^{3}

PERCENTAGE NOT EXAMINED = .00969"^{3} ÷ 1.38"^{3} =

.70 % + 50% = 50.7% = 51%

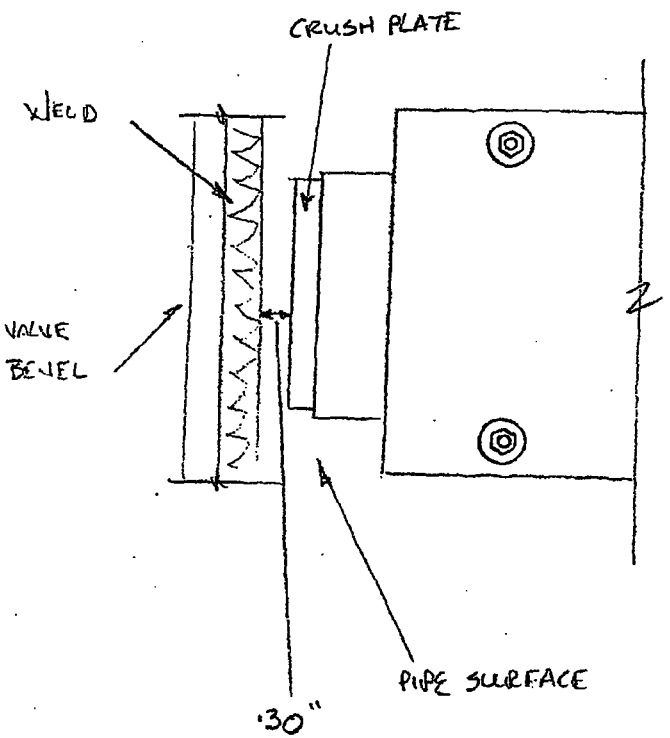
EXAMINERS	1 Dennis L. Stiff	LEVEL	II	DATE	4.22.02
	2 N/A	LEVEL	N/A	DATE	N/A
REVIEWERS	1	LEVEL	III	DATE	5-6-02
	2	LEVEL	—	DATE	5/17/02
	3	LEVEL	—	DATE	5/17/02

nes

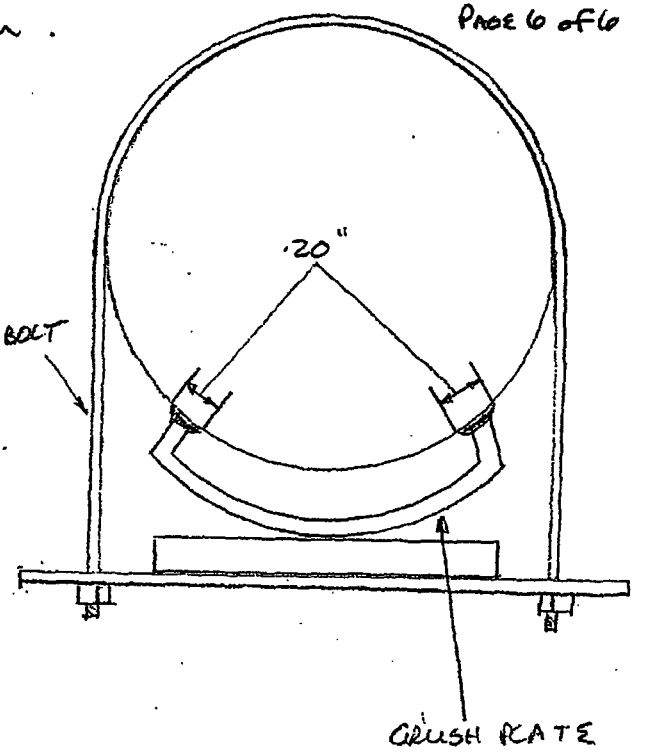
DATA SHEET # UCAB-UT-006

PAGE 6 of 6

SUPPORT # 1-GSI-R-2 OBSTRUCTION.



VIEW LOOKING UP



END VIEW

EXAMINERS	1	[signature]	LEVEL II	DATE	4-30-02
	2	N/A	LEVEL N/A	DATE	N/A
REVIEWERS	1	[signature]	LEVEL III	DATE	5-6-02
	2	[signature]	LEVEL —	DATE	5/17/02
	3	[signature]	LEVEL	DATE	5/17/02

NES

INCOMPLETE EXAMINATION REPORT

REPORT NO: UIC18-UT-013
PAGE 4 OF 4
DATA PKG: N/A
PROCEDURE: 83A6228 R/2

PLANT/UNIT: D.C. Cook Unit #1 WELD NO: 1-SI-74-01F SYSTEM: SI

CONFIGURATION: PENETRATION TO ELBOW

ASME CODE CLASS: C-F-1, C5.21

CODE EXAMINATION REQUIREMENTS: IN ACCORDANCE WITH 1989 ASME SECTION XI, IWC-2500-7(a)

INTERFERING CONDITION: SINGLE SIDED ACCESS DUE TO CONFIGURATION. PENETRATION TO ELBOW ALLOWS EXAMINATION FROM ELBOW SIDE only DUE TO O.D. SURFACE CONTOUR AND PENETRATION PROXIMITY ON PENETRATION SIDE.

ESTIMATE OF TOTAL % CODE COMPLETE: 50% SKETCH ATTACHED: YES ____ NO ✓

PARTIAL EXAMINATION PERFORMED: YES ✓ NO ____

EXAMINATION ANGLE AFFECTED:

0 DEGREE WRV X 0 DEGREE BASE MATERIAL N/A

45 DEGREE AXIAL X 45 DEGREE CIRCUMFERENTAIL X

OTHER: 70° AXIAL +

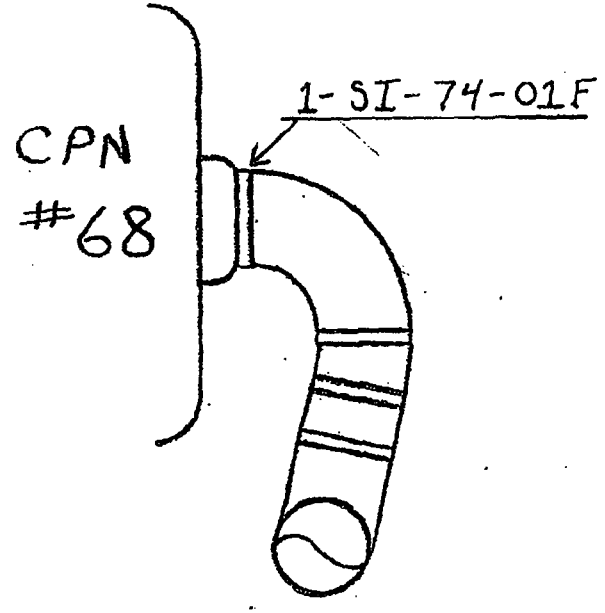
ALTERNATE METHOD RECOMMENDED: YES ____ NO ✓

EXPLANATION: * EXAMINATION PERFORMED IN ACCORDANCE WITH 83A6228 R/2.

PREPARED BY: Dennis A. Stubbs DATE: 5-11-02

REVIEWED: Shelby DATE: 5-11-02

Rec Hall 5/17/02



EXAMINERS	1	[signature]	LEVEL II	DATE 5-11-02
	2	N/A	LEVEL N/A	DATE N/A
REVIEWERS	1	[signature]	LEVEL III	DATE 5-11-02
	2	[signature]	LEVEL —	DATE 5/17/02
	3		LEVEL	DATE

NES

FRAMATOME ANP

EXAMINATION SUMMARY

Summary No.:325500	Data Package: U2C14-0004	Exam Date: 5/8/2003

Customer: DC COOK U2C14	Examination Methods: UT , PT
System / Component ID: ECCS (SI) / 2-SI-42-01S	Examination Procedures: 54-ISI-836-04 , 54-ISI-240-40
Component Description: FLANGE TO ELBOW	Calibration Sheets No(s): 00010, 00011
Examination Category: C-F-1	Examination Results: ☒ No Reportable Indications ☐ Reportable Indications ☒ Geometric
ISO / Drawing:B-83	

Summary:

COMPONENT NUMBER 2-SI-42-01S , VALVE TO ELBOW WAS EXAMINED USING THE PT, AND UT METHODS.

COUNTERBORE WAS OBSEVED WITH THE 70 DEGREE TRANSDUCER , SEE THE ATTACHED UT INDICATION DATA SHEET.

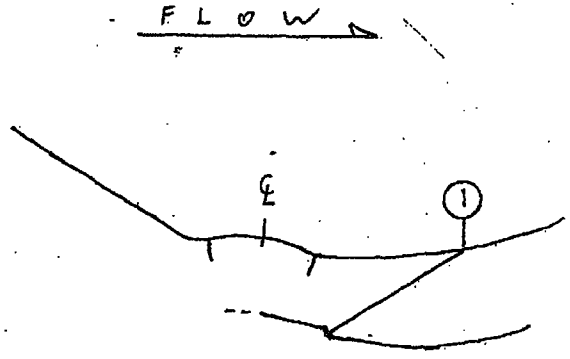
CA NO: DC-03-001 REVISION 00 APPLIES TO 54-ISI-836-04

THE UT EXAM WAS LIMITED TO SINGLE SIDED ACCESS , DUE TO FLANGE TO ELBOW CONFIGURATION, RESULTING IN 50% COVERAGE.

Prepared By: Simon Crothers Date: 5-8-03	Reviewed By: Jerry Newgard Date: 5-12-03
Sign: Simon Crothers	Sign: Jerry Ng
Customer: Date:	
Sign: Roy E. Hall 5/13/03	Page 1 of 7

FRAMATOME ANP

UT INDICATION PLOT



(1) 67° COUNTERBORE SEEN THROUGHOUT ELBOW INTRADOS.

Simon Crothers 5-8-03

FIGURE NO.: IWC-2500-7
COMPONENT ID: 2-SI-42-01S
COMPONENT: FLANGE TO ELBOW

RAMATOME ANP

EXAMINATION SUMMARY

Summary No.:325520	Data Package: U2C14-0005	Exam Date: 5/9/2003

Customer: DC COOK U2C14	Examination Methods: UT , PT
System / Component ID: ECCS (SI) / 2-SI-42-03F	Examination Procedures: 54-ISI-836-04 , 54-ISI-240-40
Component Description: PIPE TO VALVE	Calibration Sheets No(s): 00012, 00013, 00014
Examination Category: C-F-1	Examination Results: ☒ No Reportable Indications
	☐ Reportable Indications
ISO / Drawing:B-83	☒ Geometric

Summary:

COMPONENT NUMBER 2-SI-42-03F PIPE TO VALVE WAS EXAMINED USING THE UT, AND PT METHODS.

ID ROOT GEOMETRY WAS OBSERVED WITH THE 60 DEGREE TRANSDUCER INTERMITTENT 360 DEGREES.

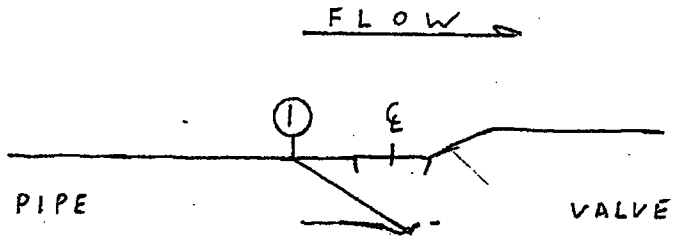
THE UT EXAM WAS LIMITED TO SINGLE SIDED ACCESS , DUE TO PIPE TO VALVE CONFIGURATION. THE AXIAL UT EXAM WAS OBSTRUCTED BY BRANCH CONNECTION FOR 2" @ 180 DEGREES.
EXAM COVERAGE =46.5%

CA NO: DC-03-001 REVISION 00 APPLIES TO 54-ISI-836-04

Prepared By: Simon Crothers	Date: 5-9-03	Reviewed By: Jerry Newgard	Date:
Sign: Simon Crothers		Sign: Jerry Newgard	5-12-03
Customer:	Date:		
Sign: Troy E Noll	5/16/03	Page 1 of 8	

FRAMATOME ANP

UT INDICATION PLOT



(1) 58° ROOT GEOMETRY SEEN INTERMITTENT 360°

Simon Crothers 5-9-03

FIGURE NO.: IWC-2500-7
COMPONENT ID: 2-SI-42-03F
COMPONENT: PIPE TO VALVE

RAMATOME ANP

EXAMINATION SUMMARY

Summary No.:330010	Data Package: U2C14-0013	Exam Date: 5/16/2003

Customer: DC COOK U2C14	Examination Methods: UT , PT
System / Component ID: ECCS (SI) / 2-SI-73-02S	Examination Procedures: 54-ISI-836-04 , 54-ISI-240-40
Component Description: ELBOW TO PIPE	Calibration Sheets No(s): 00032,00033,00034
Examination Category: C-F-1	Examination Results: ☒ No Reportable Indications ☐ Reportable Indications ☒ Geometric
ISO / Drawing:B-89	

Summary:

COMPONENT NUMBER 2-SI-73-02S, ELBOW TO PIPE WAS EXAMINED USING THE PT, AND UT METHODS.

ID ROOT GEOMETRY WAS RECORDED WITH THE 70 DEGREE TRANSDUCER.

THE EXAM WAS LIMITED TO SINGLE-SIDED ACCESS, DUE TO ELBOW TO PIPE CONFIGURATION, RESULTING IN 50 % EXAM COVERAGE,

CA NO: DC-03-001 REVISION 00 APPLIES TO 54-ISI-836-04

pared By: Simon Crothers Date: 5-16-03	Reviewed By: Jerry Newgard Date:
Sign: Simon Crothers	Sign: Jerry Newgard 5-19-03
Customer: Date:	
Sign: Roy E Hall 5/20/03	Page 1 of 8

FRAMATOME ANP

PROFILE AND THICKNESS

Exam Date: 5-16-03

Summary No.: 330010

Site: DC COOK U2C14

Examination Method: UT

System: ECCS(SI)

Identification: 2-SI-73-02S

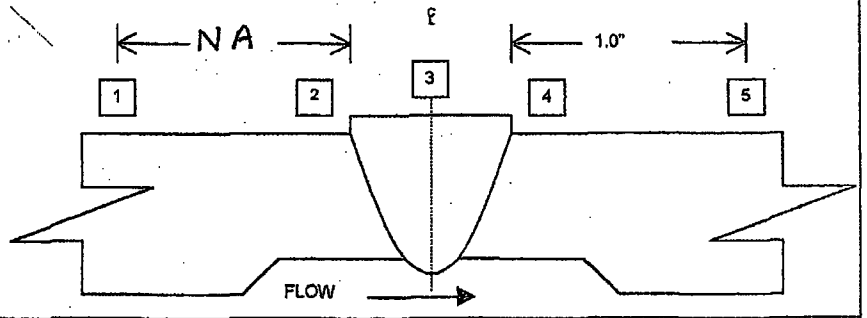
POSITION	0	90	180	270
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	0.57"	N/A	N/A	N/A
4	0.42"	N/A	N/A	N/A
5	0.42"	N/A	N/A	N/A

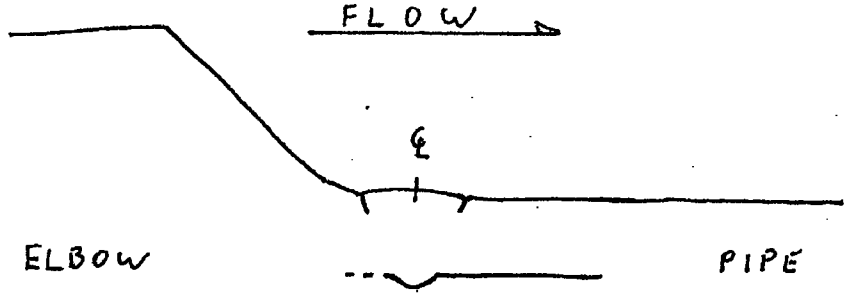
CROWN HEIGHT: 0.05"

CROWN WIDTH: 0.6"

NOM DIAMETER: 4.0"

WELD LENGTH: 14.25"





Simon Crothers 5-16-03
Simon Crothers
Prepared By Date

Reviewed By 5-19-03 Date

Utility Review By Roy E Hall 5/20/03 Date

RAMATOME ANP

EXAMINATION SUMMARY

Summary No.:331000	Data Package: U2C14-0002	Exam Date: 5/6/2003

Customer: DC COOK U2C14	**Examination Methods: UT , PT**
System / Component ID: ECCS (SI) / 2-SI-81-01F	**Examination Procedures: 54-ISI-836-04 , 54-ISI-240-40**
Component Description: VALVE TO ELBOW	**Calibration Sheets No(s): 00005, 00006, 00007**
Examination Category: C-F-1	**Examination Results:** ☒ No Reportable Indications ☐ Reportable Indications ☒ Geometric
ISO / Drawing:B-92	

Summary:

COMPONENT NUMBER 2-SI-81-01F , VALVE TO ELBOW WAS EXAMINED USING THE PT, AND UT METHODS

ID ROOT GEOMETRY WAS RECORDED WITH THE 60 & 70 DEGREE TRANSDUCERS,

THE UT EXAM WAS LIMITED TO SINGLE SIDED ACCESS, DUE TO VALVE TO ELBOW CONFIGURATION, RESULTING IN 50% EXAM COVERAGE.

CA NO: DC-03-001 REVISION OO APPLIES TO 54-ISI-836-04

Prepared By: George G Chapman	Date: 5-6-03	Reviewed By: Jerry Newgard	Date: 5-7-03
Sign: George G Chapman		Sign: Jerry Newgard	
Customer:	Date:		
Sign: Terry E. Hall	5/10/03		Page 1 of 9

FRAMATOME ANP

PROFILE AND THICKNESS

Exam Date: 5-6-03

Summary No.: 331000

Site: DC COOK U2C14

Examination Method: UT

System: SAFETY INJECTION

Identification: 2-SI-81-01F

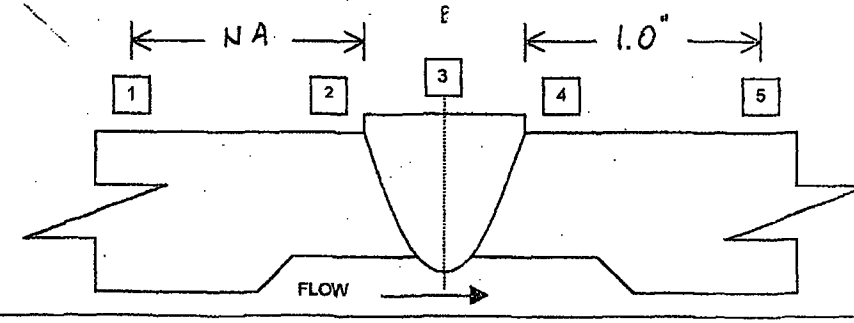
POSITION	0	90	180	270
1	N/A	N/A	N/A	N/A
2	N/A	N/A	N/A	N/A
3	N/A	N/A	N/A	N/A
4	0.49"	N/A	N/A	N/A
5	0.55"	N/A	N/A	N/A

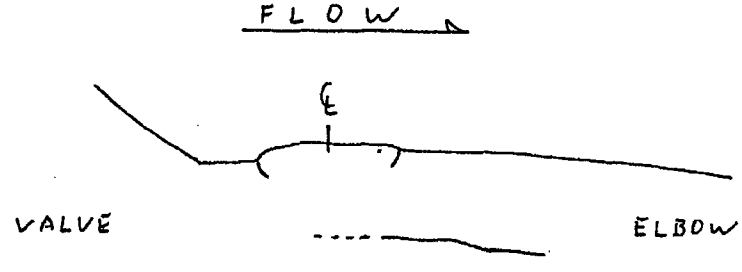
CROWN HEIGHT: 0.10"

CROWN WIDTH: 0.8"

NOM DIAMETER: 4.0"

WELD LENGTH: 14.5"





Simon Gothers 5-6-03
Prepared By Date

Jerry Ty L-III 5-7-03
Reviewed By Date

for E. Null 5/10/03
Utility Review By Date

ATTACHMENT 10

RELIEF REQUEST ISIR-42

EXAMINATION CATEGORY R-A
RISK INFORMED PIPING EXAMINATIONS

RELIEF REQUEST ISIR-42

Relief Request In Accordance with 10 CFR 50.55a(g)(5)(iii)
Inservice Inspection Impracticality

1. ASME Code Components Affected

ASME Code Class:	Code Class 1 and 2
Examination Category:	R-A, Risk Informed Piping Examinations
Item Numbers:	R1.11, Elements Subject to Thermal Fatigue R1.16, Elements Subject to Intergranular or Transgranular Stress Corrosion Cracking (IGSCC or TGSCC) R1.20, Elements Not Subject to a Degradation Mechanism
Component Identification:	Listed in Table 1

2. Applicable Code Edition and Addenda

ASME Section XI, 1989 Edition, No addenda

Austenitic piping welds with single side access subject to ultrasonic examination with Supplement 2 of Appendix VIII to the 1995 Edition with 1996 Addenda of ASME Section XI.

3. Applicable Code Requirement

The examination requirements for Class 1 and 2 piping welds are governed by the Risk Informed Inservice Inspection program that was approved by the NRC in a Safety Evaluation Report dated September 28, 2007 (ADAMS Accession No. ML072620553). This program was developed in accordance with ASME Section XI Code Case N-716, Alternative Piping Classification and Examination Requirements. Table 1, Examination Category R-A, of Code Case N-716 requires 100 percent of the examination location to be examined. The alternative requirements of ASME Section XI, Code Case N-460, approved for use in Regulatory Guide 1.147, Revision 15, allow credit for essentially 100 percent coverage of the weld provided greater than 90 percent of the required volume has been examined. 10 CFR 50.55a(b)(2)(xv)(A), requires the following examination coverage when applying Supplement 2 to Appendix VIII:

> (1) Piping must be examined in two axial directions and when examination in the circumferential direction is required, the circumferential examination must be performed in two directions, provided access is available.
>
> (2) Where examination from both sides is not possible, full coverage credit may be claimed from a single side for ferritic welds. Where examination from both sides is not possible on austenitic welds, full coverage credit from a single side may be claimed only

after completing a successful single side Appendix VIII demonstration using flaws on the opposite side of the weld.

10 CFR 50.55a(b)(2)(xvi)(B), requires that examinations performed from one side of a stainless steel pipe weld must be conducted with equipment, procedures, and personnel that have demonstrated proficiency with single side examinations. To demonstrate equivalency to the two sided examinations, the demonstration must be performed to the requirements of Appendix VIII as modified by this paragraph and 10 CFR 50.55a(b)(2)(xv)(A).

4. Impracticality of Compliance

Pursuant to 10 CFR 50.55a(g)(5)(iii), relief is requested from the 100 percent volumetric examination coverage requirement for austenitic piping welds with single side access.

There are currently no Performance Demonstration Initiative (PDI) qualified single side examination procedures that demonstrate equivalency to two-sided examination procedures on austenitic piping welds. Current technology is not capable of reliably detecting or sizing flaws on the far side of an austenitic weld for configurations common to United States nuclear applications.

PDI Performance Demonstration Qualification Summary (PDQS) certificates for austenitic piping list the limitation that single side examination is performed on a best effort basis. The best effort qualification is provided in place of a complete single side qualification to demonstrate that the examiners qualification and the subsequent weld examination is based on application of the best available technology.

When the examination area is limited to one side of an austenitic weld, examination coverage does not comply with 10 CFR 50.55a(b)(2)(xv)(A) and proficiency demonstrations do not comply with 10 CFR 50.55a(b)(2)(xvi)(B) and full coverage credit may not be claimed.

Based on the configuration limited to single side access, relief is requested on complying with the 100 percent required examination coverage for the piping welds listed in Table 1. Note that examination coverage listed is that which was obtained during examination with no credit taken for the far side of each weld when only single-sided access was attainable.

Other welds in Table 1 have physical limitations that prevented full access from both sides of the weld. These limitations include pipe support members, transition areas on elbows, tapers and other geometric interferences. Compliance with code requirements would require extensive modification or replacement of components with a design that allows examination from both sides of the weld.

5. Burden Caused by Compliance

Compliance with code requirements requires extensive modification or replacement of components with a design that allows examination from both sides of the weld.

This option to meet the required 100 percent volume examination coverage is considered impractical based on the cost, additional radiation exposure and impact to plant equipment

6. Proposed Alternative and Basis for Use

The subject welds received a volumetric examination to the maximum extent practical utilizing the best available techniques, as qualified through the Performance Demonstration Initiative (PDI) for Supplement 2 with demonstrated best effort for single sided examination, from the accessible side of the weld. Additionally, a surface examination without limitations was performed on each weld. Further, a visual (VT-2) examination is performed each inspection period during the system leakage tests as required by Section XI, Table IWC-2500-1, Category C-H.

Based upon the examination volumes that were obtained with acceptable results along with the completed surface examination and the visual (VT-2) examination performed each inspection period, it is reasonable to conclude that service induced degradation would be detected if present. Therefore, these proposed alternatives provide an acceptable level of quality and safety by providing reasonable assurance of structural integrity of the subject welds.

7. Period for Which Relief is Requested

The relief is requested for the Third 10-year inspection interval for Donald C. Cook Nuclear Plant Units 1 and 2, which began on July 1, 1996, and ended April 9, 2010, at the conclusion of the Unit 1 Cycle 23 Refueling Outage. Significant long-term outages (greater than six months) occurred multiple times during the interval and the interval was extended as allowed by IWA-2430(e) and by IWA-2430(d) to accommodate interval planning and scheduling.

Table 1

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-CS-96-60F (Class 1)	Elbow to Branch	R1.11	50.0	The completed examination was limited to 50% coverage due to the configuration. The exam limitation was due to the geometry of the branch limiting access from the downstream side. No relevant indications detected.
1-SI-29-19S (Class 1)	Pipe to Tee	R1.16	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side, downstream, due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
1-SI-29-20S (Class 1)	Elbow to Tee	R1.16	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
1-SI-29-23S (Class 1)	Tee to Pipe	R1.16	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
1-SI-31-21S (Class 1)	Elbow to Tee	R1.16	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe. No relevant indications detected.
2-SI-57-19 (Class 1)	Pipe to Tee	R1.16	36.8	The completed examination was limited to 36.8% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe (single side exam = 50.0%). Additional coverage was missed due to the weld contour (13.2%). No relevant indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
2-SI-57-21 (Class 1)	Elbow to Tee	R1.16	50.0	The completed examination was limited to 50.0% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe (single side exam = 50.0%). No relevant indications detected.
2-SI-56-18 (Class 1)	Elbow to Tee	R1.16	50.0	The completed examination was limited to 50.0% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe (single side exam = 50.0%). No relevant indications detected.
1-SI-548-45S (Class 1)	Valve to Pipe	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. Full coverage was not obtainable due to the bevel at the weld toe on the valve side of the weld. No relevant indications detected.
1-RH-30-06F (Class 2)	Elbow to Valve	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. Full coverage was not obtainable due to the bevel at the weld toe on the valve side of the weld. No relevant indications detected.
1-RC-8-02S (Class 1)	Elbow to Pipe	R1.20	89.7	The completed examination was limited to 89.7% coverage due to the configuration. Full coverage was not obtainable due to the bevel at the weld toe on the valve side of the weld. No relevant indications detected.
1-SI-29-26F (Class 1)	Elbow to Pipe	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. Full coverage was not obtainable due to the bevel at the weld toe on the valve side of the weld. No relevant indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
1-SI-33-26F (Class 1)	Nozzle to Elbow	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. Full coverage was not obtainable due to the Nozzle taper at the weld toe. No relevant indications detected.
2-RC-22-24 (Class 1)	Elbow to Valve	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the valve side due to the close proximity of the valve body to the weld. No relevant indications detected.
2-RC-23-12 (Class 1)	Elbow to Valve	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the valve side due to the close proximity of the valve body to the weld. No relevant indications detected.
2-RC-24-09 (Class 1)	Elbow to Valve	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the valve side due to the close proximity of the valve body to the weld. No relevant indications detected.
2-SI-569-49S (Class 1)	Tee to Pipe	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the Socket Welded fitting side. No relevant indications detected.
2-SI-569-53S (Class 1)	Elbow to Pipe	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the Socket Welded fitting side. No relevant indications detected.

Table 1 (continued)

Component ID	Weld Description	Item Number	Ultrasonic Examination Coverage Attained (%)	Remarks
2-SI-569-54S (Class 1)	Elbow to Pipe	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the Socket Welded fitting side. No relevant indications detected.
2-SI-57-22 (Class 1)	Tee to Pipe	R1.16	48.4	The completed examination was limited to 48.4% coverage due to the configuration. The configuration prevents examination on the tee side due to the sharp bevel adjacent to the tee side weld toe (single side exam = 50.0%). Additional coverage was missed due to the weld contour (1.6%). No relevant indications detected.
2-SI-56-10 (Class 1)	Pipe to Elbow	R1.20	66.2	The completed examination was limited to 66.2% coverage due to the configuration. The configuration prevents examination of 100% of the required area due to the presence of a permanent support which limited access. No relevant indications detected.
2-SI-78-01 (Class 1)	Valve to Elbow	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The configuration prevents examination from the valve side due to its severe taper and close proximity of the valve to the weld. No relevant indications detected.
2-SI-56-22 (Class 1)	Elbow to Branch	R1.20	50.0	The completed examination was limited to 50% coverage due to the configuration. The exam limitation was due to the geometry of the branch limiting access from the upstream side. No relevant indications detected.

RELIEF REQUEST ISIR-42

EXAMINATION CATEGORY R-A
RISK INFORMED PIPING EXAMINATIONS

SUPPORTING DOCUMENTATION

WESDYNE INTERNATIONAL

Plant: D.C. Cook Unit: 1 UT No. U1C22-UT-08-025

Comp/System: 1-CS-96-60F / CVCS Procedure No. WDI-STD-1026, Rev. 0

ISO #: AEP 1-CS-96 Cal Block No. 3378027

Summary No.: 129300 Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105231 Block/Comp Temp 84° / 75° F

SEARCH UNIT

Scan Angle:	45°	Mode:	Shear
Serial No.:	010XT9	Mfg.	KBA
Fixturing:	Non-Integral	Model:	Comp-G
Size:	0.25"	Shape:	Round
Frequency:	5.0 MHz		
Measured Angle:	45°		
Cable Type:	RG-174	Length:	6'
Couplant Brand:	Ultragel II		
Couplant Batch:	07125		

Rompas 102268

SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
|| To Weld	

Connectors 0

Exit Pnt Dim: = 0.3"

☑ Yes Contoured

IDENT	0° or ⊥ TO WELD			|| TO WELD		
	Sweep Pos	AMPL %	ATTEN dB	Sweep Pos	AMPL %	ATTEN dB
ID Notch	6.0	80	40.3	N/A	N/A	N/A

INSTRUMENT SETTINGS

Mfg/Model No.:	Krautkramer USN 60		
Serial/SAP No.:	102176		
Damping:	1000	Display St:	IP
Mode Select:	Dual Off	Reject:	0%
Frequency:	5.0 MHz	Rep. Rate:	AUTO HIGH
Energy: High		Rectify: Full Wave	
Filter: Fixed	Volt:Fixed	Jack:	"T"
Range	1.0"	Vel.	0.122
Swp Delay	3.648	Zero	0.000

CAL CHECKS	TIME
Initial Cal.	9:21
Intermediate	N/A
Intermediate	N/A
Intermediate	N/A
Final Cal.	12:26

Gain 0° or ⊥	dB	40.3	
Gain ||	dB	N/A	

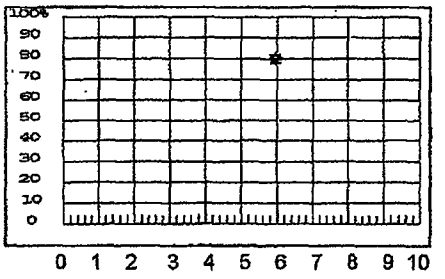
Scan Sensitivity	Axial =	61.3	
	Circ =	N/A	

INSTR. LINEARITY CAL.

	High	Low		High	Low
1	N/A	N/A	6	N/A	N/A
2			7		
3			8		
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	N/A
80	-12	
40	+6	
20	+12	



Screen Divisions, 10 = 1.0"

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
1-CS-96-60F		X		X	No exam DNST due to component configuration. Examined from weld to weld. 50% Coverage Rev 1 4/6/2011

Examiner Steve Snyder Level II Date 4/6/2008

Examiner N/A Level N/A Date N/A

Reviewer Phil Lancaster Level III Date 4/7/2008

Utility Review Edward J. Jary Date 4/8/08

Authorized Inspection Agency Revel IC. Schenck Date 4-8-2008

Horizontal Linearity Performed

☑ N/A Acceptable

ADDITIONAL SHEETS? (Check Box)			
Continuation	X	Beam Plot	
Supplements		Other	

WESDYNE INTERNATIONAL

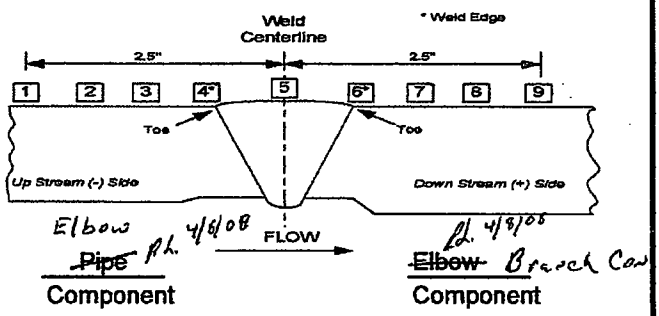
A Westinghouse NDE Company

UT No. U1C22-UT-08-025

WALL THICKNESS PROFILE SHEET

WELD NO. : 1-CS-96-60F

	Position	0°	90°	180°	270°
	1	0.44			
	2	0.44			
	3	0.44			
TOE*	4	0.50			
C_L	5	0.52			
TOE*	6	0.45			
	7	0.44			
	8	0.43			
	9	0.43			

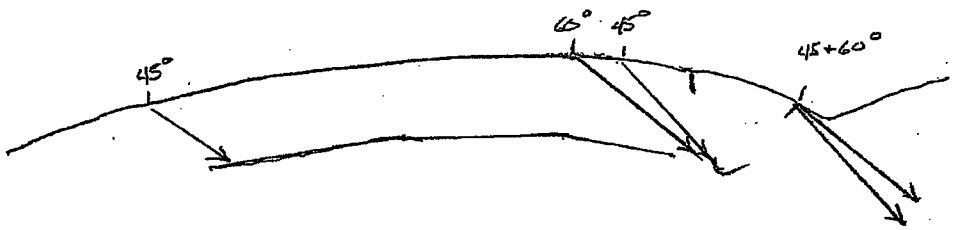


Elbow ~~Pipe~~ Pl. 4/8/08 — Component

~~Elbow~~ Branch Conn. 4/8/08 — Component

Crown Height:	Flush	Diameter:	3.0"
Crown Width:	0.6"	Weld Length:	11.25"
Longseam:	N/A	Iso Drawing:	AEP 1-CS-96

PROFILE AREA



Examiner:	Steven Snyder	Level:	II	Date:	4/6/2008
Examiner:	N/A	Level:	N/A	Date:	N/A
Reviewer:	Phil Lancaster	Level:	III	Date:	4/7/2008
Utility Review:		Level:	III	Date:	4/8/08
Authorized Inspection Agency:	Reuel C. Schenck			Date:	4-8-2008

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WESDYNE INTERNATIONAL

A Westinghouse NDE Company

ULTRASONIC CALIBRATION DATA SHEET

Client: D.C. Cook Unit: 1 UT No. U1C22-UT-08-021

Comp/System: 1-SI-29-19S / Safety Injection System Procedure No. ISI-PDI-UT-2, Rev. 4

ISO #: AEP 1-SI-29 Cal Block No. 102915

Summary No.: 102400 Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105231 Block/Comp Temp 82° / 86° F

SEARCH UNIT

Scan Angle:	60°	Mode:	RL
Serial No.:	01-049	Mfg.	RTD
Fixturing:	Integral	Model:	TRL2
Size:	2(8x14)	Shape:	Rect.
Frequency:	2.0 MHz		
Measured Angle:	60°		
Cable Type:	RG-174	Length:	6'
Couplant Brand:	Ultragel II		
Couplant Batch:	07125		

Rompas 103774

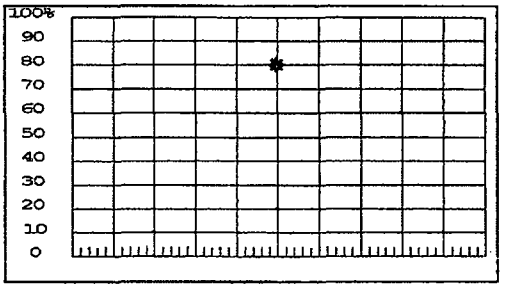
SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
|| To Weld	

Connectors 0

Exit Pnt Dim: = 0.4"

☐ N/A Contoured

IDENT	0° or ⊥ TO WELD Sweep Pos	AMPL %	ATTEN dB	|| TO WELD Sweep Pos	AMPL %	ATTEN dB
2.0" Notch	5.0	80	49	N/A	N/A	N/A



Screen Divisions, 10 = 8.0"

INSTRUMENT SETTINGS

Mfg/Model No.:	Krautkramer USN 58 Lsw		
Serial/SAP No.:	104391		
Damping:	500	Puls Wth:	250
Mode Select:	Dual On	Reject:	0%
Frequency:	2.0 MHz	Rep. Rate:	Auto High
Pulser Type:	Square	Voltage:	450
Rectify:	Full Wave		
Filter:	Fixed	Jack:	"T & R"
Range	8"	Vel.	0.224
Swp Delay	0	Zero	7.153

Gain 0° or ⊥	dB	49
Gain ||	dB	N/A

Scan Sensitivity	Axial =	54
	Circ =	N/A

CAL. CHECKS	TIME
Initial Cal.	8:45
Intermediate	11:45
Intermediate	12:36
Intermediate	N/A
Final Cal.	16:33

INSTR. LINEARITY CAL.

	High	Low		High	Low
1	N/A	N/A	6	N/A	N/A
2			7		
3			8		
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	N/A
80	-12	
40	+6	
20	+12	

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
1-SI-29-19S		X	X		Scanned to maintain a 5
					- 20% ID roll. 50%
					coverage due to
					geometric configuration.

Examiner [signature] Level II Date 4/3/2008

Print Matt Schmalz

Examiner N/A Level N/A Date N/A

Print

Reviewer [signature] Level III Date 4/6/2008

Phil Lancaster

Utility Review [signature] Date 4/7/08

Authorized Inspection Agency [signature] Date 4-8-2008

Reuel K Schenck

ADDITIONAL SHEETS? (Check Box)			
Continuation	X	Beam Plot	
Supplements		Other	

Horizontal Linearity Performed

☐ N/A **Acceptable**

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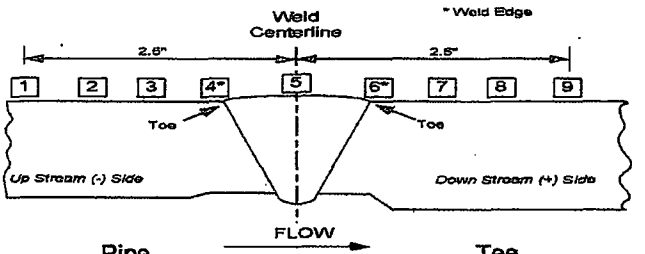
A Westinghouse NDE Company

UT No. U1C22-UT-08-021

WALL THICKNESS PROFILE SHEET

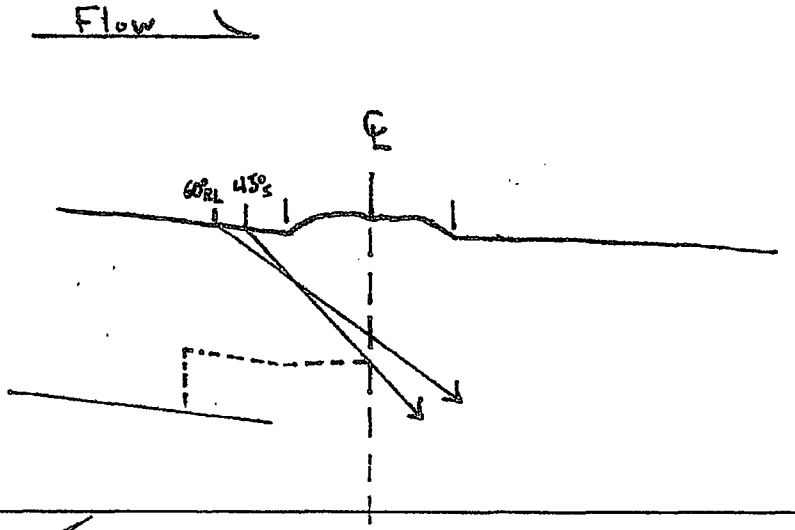
WELD NO. : 1-SI-29-19S

	Position	0°	90°	180°	270°
	1	N/A			
	2	N/A			
	3	1.087			
TOE*	4	1.083			
C_L	5	1.000			
TOE*	6	N/A			
	7	N/A			
	8	N/A			
	9	N/A			



Pipe Component		Tee Component	
Crown Height:	0.15"	Diameter:	10.0"
Crown Width:	0.95"	Weld Length:	31.4"
Longseam:	N/A	Iso Drawing:	AEP 1-SI-29

PROFILE AREA



Examiner:	Matt Schmalz	Level:	II	Date:	4/3/2008
Examiner:	N/A	Level:	N/A	Date:	N/A
Reviewer:	Phil Lancaster	Level:	III / III	Date:	4/6/08 / 4/6/2008
Utility Review:	Edward J. Day	Level:	III	Date:	4/7/08
Authorized Inspection Agency:	Reuel K. Schenck			Date:	4-8-2008

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WESDYNE INTERNATIONAL

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ULTRASONIC CALIBRATION DATA SHEET

Plant: D.C. Cook Unit: 1 UT No. U1C22-UT-08-022

Comp/System: 1-SI-29-20S / Safety Injection System Procedure No. ISI-PDI-UT-2, Rev. 4

ISO #: AEP 1-SI-29 Cal Block No. 102915

Summary No.: 102500 Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105231 Block/Comp Temp 82° / 86° F

SEARCH UNIT

Scan Angle:	60°	Mode:	RL
Serial No.:	01-049	Mfg.	RTD
Fixturing:	Integral	Model:	TRL2
Size:	2(8x14)	Shape:	Rect.
Frequency:	2.0 MHz		
Measured Angle:	60°		
Cable Type:	RG-174	Length:	6'
Couplant Brand:	Ultragel II		
Couplant Batch:	07125		

Rompas 103774

SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
∥ To Weld	

Connectors 0

Exit Pnt Dim: = 0.4"

☐ N/A Contoured

IDENT	0° or ⊥ TO WELD Sweep Pos	AMPL %	ATTEN dB	∥ TO WELD Sweep Pos	AMPL %	ATTEN dB
2.0" Notch	5.0	80	49	N/A	N/A	N/A

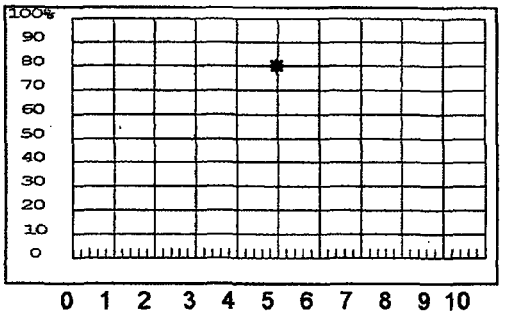
INSTRUMENT SETTINGS

Mfg/Model No.:	Krautkramer USN 58 Lsw		
Serial/SAP No.:	104391		
Damping:	500	Puls Wth:	250
Mode Select:	Dual On	Reject:	0%
Frequency:	2.0 MHz	Rep. Rate:	Auto High
Pulser Type:	Square	Voltage:	450
ctify:	Full Wave		
..er:	Fixed	Jack:	"T & R"
Range	8"	Vel.	0.224
Swp Delay	0	Zero	7.153

Gain 0° or ⊥	dB	49
Gain ∥	dB	N/A

Scan Sensitivity	Axial =	54
	Circ =	N/A

CAL. CHECKS	TIME
Initial Cal.	8:45
Intermediate	11:45
Intermediate	12:36
Intermediate	N/A
Final Cal.	16:33



INSTR. LINEARITY CAL.

	High	Low		High	Low
1	N/A	N/A	6	N/A	N/A
2			7		
3			8		
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	N/A
80	-12	
40	+6	
20	+12	

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
1-SI-29-20S		X	X		Scanned to maintain a 5
					- 20% ID roll. 50%
					coverage due to
					geometric configuration.

Examiner [signature] Level II Date 4/3/2008
Print Matt Schmalz

Examiner N/A Level N/A Date N/A
Print

Reviewer [signature] Level III Date 4/6/2008
Phil Lancaster

Utility Review [signature] Date 4/7/08

Authorized Inspection Agency [signature] Date 4-8-2008
Reuel K. Schenck

ADDITIONAL SHEETS? (Check Box)			
Continuation	X	Beam Plot	
Supplements		Other	

Horizontal Linearity Performed
☐ N/A **Acceptable**

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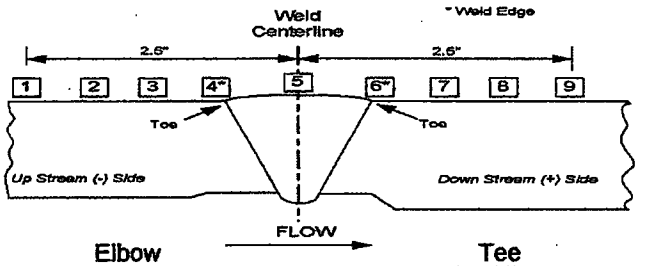
UT No. U1C22-UT-08-022

WALL THICKNESS PROFILE SHEET

WELD NO. : 1-SI-29-20S

	Position	0°	90°	180°	270°
	1	N/A			
	2	N/A			
	3	1.319			
TOE*	4	1.326			
C_L	5	1.125			
TOE*	6	N/A			
	7	N/A			
	8	N/A			
	9	N/A			

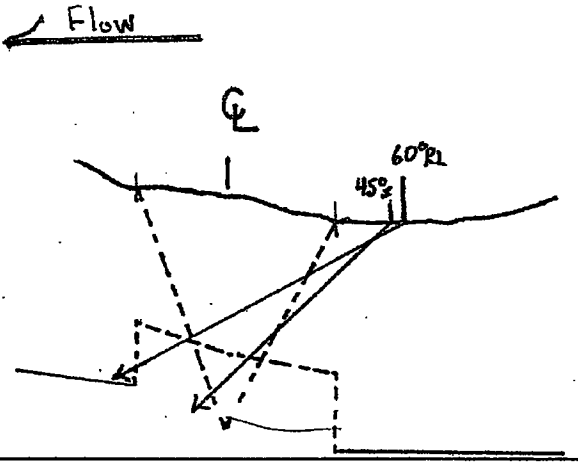


Elbow Component

Tee Component

Crown Height:	0.05"	Diameter:	10.0"
Crown Width:	1.15"	Weld Length:	31.4"
Longseam:	N/A	Iso Drawing:	AEP 1-SI-29

PROFILE AREA



Examiner:	Matt Schmalz	Level:	II	Date:	4/3/2008
Examiner:	N/A	Level:	N/A	Date:	N/A
Reviewer:	Phil Lancaster	Level:	III / III	Date:	4/7/08 ~~4/6/08~~ 4/6/2008
Utility Review:	Edward J Davis	Level:	III	Date:	4/7/08
Authorized Inspection Agency:	Reuel K. Schenck			Date:	4-8-2008

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ULTRASONIC CALIBRATION DATA SHEET

Plant: D.C. Cook Unit: 1 UT No. U1C22-UT-08-023

Comp/System: 1-SI-29-23S / Safety Injection System Procedure No. ISI-PDI-UT-2, Rev. 4

ISO #: AEP 1-SI-29 Cal Block No. 102915

Summary No.: 102700 Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105231 Block/Comp Temp 82° / 86° F

SEARCH UNIT

Scan Angle:	60°	Mode:	RL
Serial No.:	01-049	Mfg.	RTD
Fixturing:	Integral	Model:	TRL2
Size:	2(8x14)	Shape:	Rect.
Frequency:	2.0 MHz		
Measured Angle:	60°		
Cable Type:	RG-174	Length:	6'
Couplant Brand:	Ultragel II		
Couplant Batch:	07125		

Rompas 103774

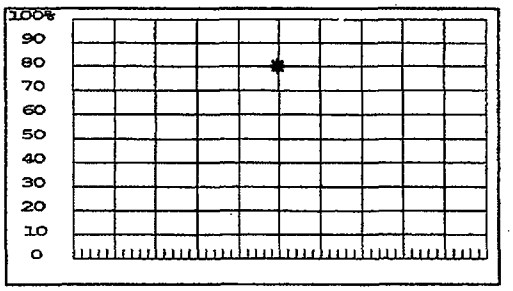
SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
|| To Weld	

Connectors 0

Exit Pnt Dim: = 0.4"

☐ N/A Contoured

IDENT	0° or ⊥ TO WELD Sweep Pos	AMPL %	ATTEN dB	|| TO WELD Sweep Pos	AMPL %	ATTEN dB
2.0" Notch	5.0	80	49	N/A	N/A	N/A



INSTRUMENT SETTINGS

Mfg/Model No.:	Krautkramer USN 58 Lsw		
Serial/SAP No.:	104391		
Damping:	500	Puls Wth:	250
Mode Select:	Dual On	Reject:	0%
Frequency:	2.0 MHz	Rep. Rate:	Auto High
Pulser Type:	Square	Voltage:	450
ctify:	Full Wave		
ter:	Fixed	Jack:	"T & R"
Range	8"	Vel.	0.224
Swp Delay	0	Zero	7.153

Gain 0° or ⊥	dB	49
Gain ||	dB	N/A

Scan Sensitivity	Axial =	54
	Circ =	N/A

CAL. CHECKS	TIME
Initial Cal.	8:45
Intermediate	11:45
Intermediate	12:36
Intermediate	N/A
Final Cal.	16:33

INSTR. LINEARITY CAL.

	High	Low		High	Low
1	N/A	N/A	6	N/A	N/A
2			7		
3			8		
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	N/A
80	-12	
40	+6	
20	+12	

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
1-SI-29-23S		X	X		Scanned to maintain a 5
					- 20% ID roll. 50%
					coverage due to
					geometric configuration.

Examiner [signature] Level II Date 4/3/2008
Print Matt Schmalz

Examiner N/A Level N/A Date N/A
Print

Reviewer [signature] Level III Date 4/6/2008
Phil Lancaster

Utility Review [signature] Date 4/7/08

Authorized Inspection Agency [signature] Date 4-8-2008
Revel K. Schenck

ADDITIONAL SHEETS? (Check Box)			
Continuation	X	Beam Plot	
Supplements		Other	

Horizontal Linearity Performed
☐ N/A **Acceptable**

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WESDYNE INTERNATIONAL

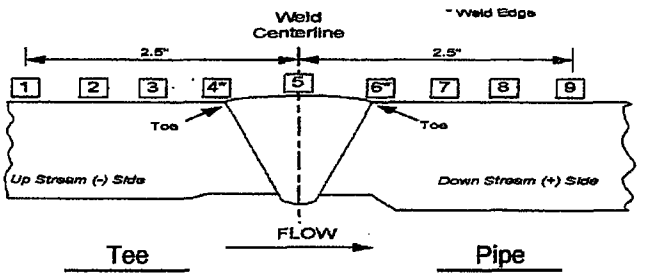
A Westinghouse NDE Company

UT No. U1C22-UT-08-023

WALL THICKNESS PROFILE SHEET

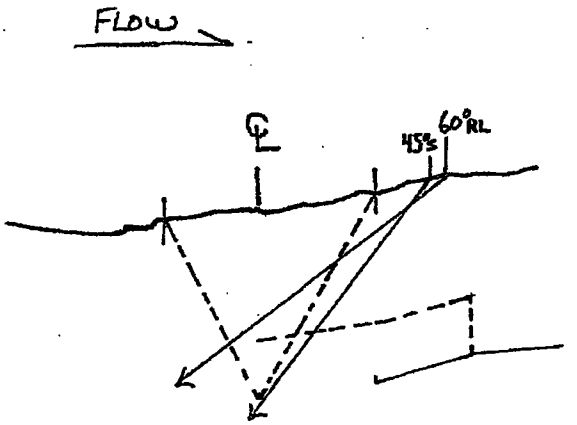
WELD NO. : 1-SI-29-23S

	Position	0°	90°	180°	270°
	1	N/A			
	2	N/A			
	3	1.080			
TOE*	4	1.078			
C_L	5	1.016			
TOE*	6	N/A			
	7	N/A			
	8	N/A			
	9	N/A			



Tee Component		Pipe Component	
Crown Height:	0.05"	Diameter:	10.0"
Crown Width:	1.2"	Weld Length:	31.4"
Longseam:	N/A	Iso Drawing:	AEP 1-SI-29

PROFILE AREA



Examiner:	Matt Schmalz	Level:	II	Date:	4/3/2008
Examiner:	N/A	Level:	N/A	Date:	N/A
Reviewer:	Phil Lancaster / Phil Lancaster	Level:	III / III	Date:	4/6/08 / 4/6/2008
Utility Review:	Edward J. Jaye	Level:	III	Date:	4/7/08
Authorized Inspection Agency:	Reuel C. Schenck			Date:	4-8-2008

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WESDYNE INTERNATIONAL

A Westinghouse NDE Company

ULTRASONIC CALIBRATION DATA SHEET

.ant: D.C. Cook | Unit: 1 | UT No. U1C22-UT-08-028

Comp/System: 1-SI-31-21S / Safety Injection System | Procedure No. ISI-PDI-UT-2, Rev. 4

ISO #: AEP 1-SI-31 | Cal Block No. 102915

Summary No.: 105300 | Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105231 | Block/Comp Temp 82° / 86° F

SEARCH UNIT

Scan Angle:	60°	Mode:	RL
Serial No.:	01-049	Mfg.	RTD
Fixturing:	Integral	Model:	TRL2
Size:	2(8x14)	Shape:	Rect.
Frequency:	2.0 MHz		
Measured Angle:	60°		
Cable Type:	RG-174	Length:	6'
Couplant Brand:	Ultragel II		
Couplant Batch:	07125		

Rompas 103774

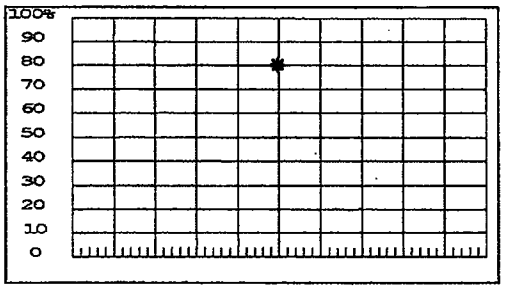
SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
|| To Weld	

Connectors 0

Exit Pnt Dim: = 0.4"

☐ N/A Contoured

IDENT	0° or ⊥ TO WELD Sweep Pos	AMPL %	ATTEN dB	|| TO WELD Sweep Pos	AMPL %	ATTE N dB
2.0" Notch	5.0	80	49	N/A	N/A	N/A



Screen Divisions, 10 = 8.0"

INSTRUMENT SETTINGS

Mfg/Model No.:	Krautkramer USN 58 Lsw		
Serial/SAP No.:	104391		
Damping:	500	Puls Wth:	250
Mode Select:	Dual On	Reject:	0%
Frequency:	2.0 MHz	Rep. Rate:	Auto High
Pulser Type:	Square	Voltage:	450
ctify:	Full Wave		
.er:	Fixed	Jack:	"T & R"
Range	8"	Vel.	0.224
Swp Delay	0	Zero	7.153

Gain 0° or ⊥	dB	49
Gain ||	dB	N/A

Scan Sensitivity	Axial =	54
	Circ =	N/A

CAL. CHECKS	TIME
Initial Cal.	8:45
Intermediate	11:45
Intermediate	12:36
Intermediate	N/A
Final Cal.	16:33

INSTR. LINEARITY CAL.

	High	Low		High	Low
1	N/A	N/A	6	N/A	N/A
2			7		
3			8		
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	N/A
80	-12	
40	+6	
20	+12	

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
1-SI-31-21S		X	X		Scanned to maintain a 5
					- 20% ID roll. 50%
					coverage due to
					geometric configuration.

Examiner [signature] Level II Date 4/3/2008
Print Matt Schmalz

Examiner N/A Level N/A Date N/A
Print

Reviewer [signature] Level III Date 4/7/2008
Phil Lancaster

Utility Review [signature] Date 4/7/08

Authorized Inspection Agency [signature] Date 4-8-2008
Reuelle Schence

ADDITIONAL SHEETS? (Check Box)			
Continuation	X	Beam Plot	
Supplements		Other	

Horizontal Linearity Performed
☐ N/A · **Acceptable**

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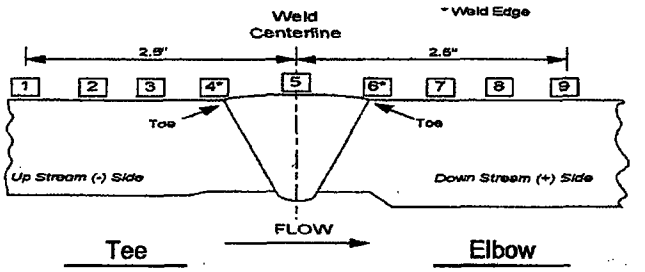
A Westinghouse NDE Company

UT No. U1C22-UT-08-028

WALL THICKNESS PROFILE SHEET

WELD NO. : 1-SI-31-21S

	Position	0°	90°	180°	270°
	1	N/A			
	2	N/A			
	3	N/A			
TOE*	4	N/A			
C_L	5	1.152			
TOE*	6	1.312			
	7	1.308			
	8	N/A			
	9	N/A			

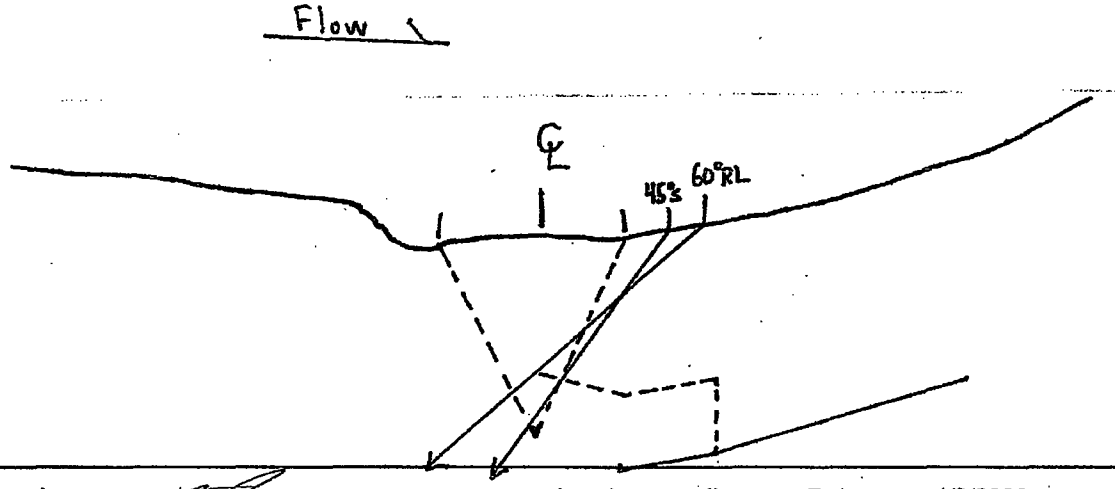


Tee Component

Elbow Component

Crown Height:	0.05"	Diameter:	10.0"
Crown Width:	1.10"	Weld Length:	31.4"
Longseam:	N/A	Iso Drawing:	AEP 1-SI-31

PROFILE AREA



Examiner:	Matt Schmalz	Level:	II	Date:	4/3/2008
Examiner:	N/A	Level:	N/A	Date:	N/A
Reviewer:	Phil Lancaster	Level:	III / III	Date:	4/7/08 / 4/7/2008
Utility Review:	Edward J. Joyce	Level:	III	Date:	4/7/08
Authorized Inspection Agency:	Reuel E. Schenck			Date:	4-8-2008

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ULTRASONIC CALIBRATION DATA SHEET

Plant: D.C. Cook Unit: 2

Comp/System: 2-SI-57-19

ISO #: A-48

Summary No.: 092900

UT No.: U2C18-UT-09-037

Procedure No.: ISI-PDI-UT-2 Rev 4

Cal Block No.: 102917

Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105547

Block/Comp Temp 88 ° F/ 68 ° F

SEARCH UNIT

Scan Angle:	60 ° RL	Mode:	Long
Serial No.:	05-483	Mfg.	RTD
Fixturing:	Integral	Model:	TRL-2
Size:	2(8x14)	Shape:	Rect
Frequency:	2 MHz		
Measured Angle:	60 °		
Cable Type:	RG-174	Length:	6'
Couplant Brand:		Ultragel II	
Couplant Batch:		07125	

IIW / Rompas S/N - Step Wedge 102268

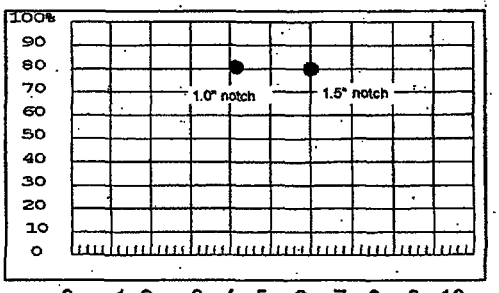
SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
|| To Weld	

Connectors 0

Exit Pnt Dim: = N/A

N/A Contoured

IDENT	0° or ⊥ TO WELD Sweep Pos	AMPL %	ATTEN dB	|| TO WELD Sweep Pos	AMPL %	ATTEN dB
1.0" notch	4.2	80	47.2			
1.5" notch	6.0	80	47.2			
	N			N	A	
		A				



Screen Divisions, 10 = 5"

INSTRUMENT SETTINGS

Mfg/Model No.:	GEIT	USN 60 SW	
Serial/SAP No.:	105420	Display Start = IP	
Damping:	500	Pulse Width	250
Pulser Type:	Dual	Reject:	0%
Frequency:	2 MHz	PRF Mode: Auto High	
Display Mode (RECTIF):	Full Wave		
Filter: Fixed	Voltage: 450	Jack:	T&R
Range	5.0	Vel.	.2279
Swp Delay	7.6509	Zero	0.00

CAL CHECKS	TIME
Initial Cal.	11:00
Intermediate	
Intermediate	
Intermediate	
Final Cal.	13:30

Gain 0° or ⊥	dB	47.2
Gain ||	dB	N/A

Scan Sensitivity Axial = 59.0

Circ = N/A

INSTR. LINEARITY CAL.

	High	Low		High	Low
1			6		
2	N		7	N	
3		A	8		A
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	
80	-12	N
40	+6	A
20	+12	

Horizontal Linearity Performed

N/A **Acceptable**

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
2-SI-57-19		X	X		Single sided exam due to configuration of component. Maintained 20% ID roll.

Examiner _____ Level II Date 04/02/2009

Print Matthew Schmalz

Examiner _____ Level _____ Date _____

Print

Reviewer _____ Level III Date 4/3/09

Utility Review _____ Date 4/3/09

Authorized Inspection Agency _____ Date 4-4-2009

Reuel K. Schenck

ADDITIONAL SHEETS? (Check Box)			
Continuation		Beam Plot	X
Supplements	X	Other	

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ULTRASONIC EXAMINATION SUPPLEMENT SHEET

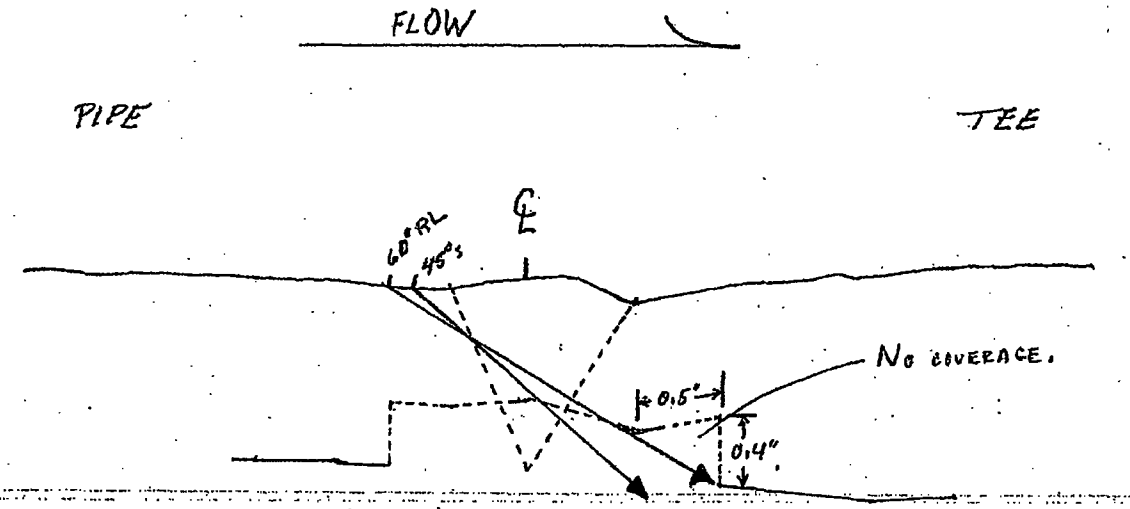
UT No. U2C18-UT-09-037

Plant/Unit: DC. COOK / UNIT 2

Comp/System: 2-SI-57 -

Weld / Component ID Number: 2-SI-57-19

Crown Height:	.1
Crown Width:	1.1
Diameter:	10
Weld Length:	31.4



No COVERAGE = $\frac{1}{2}(0.4")(0.5") = 0.1 in^2$

TOTAL = $(1.9")(0.4") = 0.76 in^2$

MISSED COVERAGE (%) = $\frac{0.1}{0.76} * 100\% = 13.2\%$

SINGLE SIDED EXAM COVERAGE = 50%

TOTAL COVERAGE = $50 - 13.2 = 36.8\%$

Comments: SINGLE SIDED EXAM DUE TO COMPONENT CONFIGURATION

Examiner: Matt Schmalz Level: II Date: 4-2-09 Examiner: _____ Level: ___ Date: _____

Reviewer: M. O Level: III Date: 4/3/09 Utility Reviewer: Paul Bowman NPD 4/3/09 Level: ___ Date: 4/3/09

Authorized Inspection Agency: TUVS / Reuel K. Scherer Date: 4-4-2009

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A Westinghouse NDE Company

ULTRASONIC CALIBRATION DATA SHEET

Plant: D.C. Cook Unit: 2

Comp/System 2-SI-57-21

ISO #: A-48

Summary No.: 093100

UT No. U2C18-UT-09-038

Procedure No. ISI-PDI-UT-2 Rev 4

Cal Block No. 102917

Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105547

Block/Comp Temp 88 ° F/ 68 ° F

SEARCH UNIT

Scan Angle:	60 ° RL	Mode:	Long
Serial No.:	05-483	Mfg:	RTD
Fixturing:	Integral	Model:	TRL-2
Size:	2(8x14)	Shape:	Rect
Frequency:	2 MHz		
Measured Angle:	60 °		
Cable Type:	RG-174	Length:	6'
Couplant Brand:		Ultragel II	
Couplant Batch:		07125	

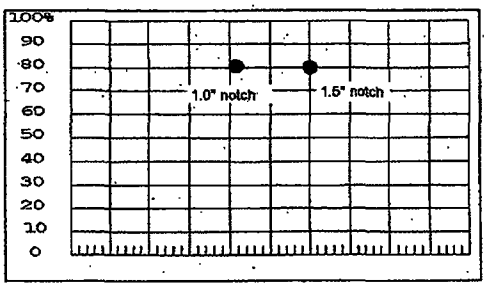
IIW / Rompas S/N - Step Wedge 102268

SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
|| To Weld	
Connectors	0

Exit Pnt Dim: = N/A

N/A Contoured

IDENT	0° or ⊥ TO WELD Sweep Pos	AMPL %	ATTEN dB	|| TO WELD Sweep Pos	AMPL %	ATTEN dB
1.0" notch	4.2	80	47.2			
1.5" notch	6.0	80	47.2			
	N			N	A	
		A				



Screen Divisions, 10 = 5"

INSTRUMENT SETTINGS

Mfg/Model No.:	GEIT	USN 60 SW	
Serial/SAP No.:	105420	Display Start = IP	
Damping:	500	Pulse Width	250
Pulser Type:	Dual	Reject:	0%
Frequency:	2 MHz	PRF Mode: Auto High	
Display Mode (RECTIF): Full Wave			
Filter: Fixed	Voltage: 450	Jack:	T&R
Range	5.0	Vel.	.2279
Swp Delay	7.6509	Zero	0.00

CAL. CHECKS	TIME
Initial Cal.	11:00
Intermediate	
Intermediate	
Intermediate	
Final Cal.	13:30

Gain 0° or ⊥	dB	47.2
Gain ||	dB	N/A

Scan Sensitivity Axial = 59.0

Circ = N/A

INSTR. LINEARITY CAL.

	High	Low		High	Low
1			6		
2	N		7	N	
3		A	8		A
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	
60	-12	N
40	+6	A
20	+12	

Horizontal Linearity Performed

N/A **Acceptable**

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
2-SI-57-21		X	X		Single sided exam due to configuration of component. Maintained 20% ID roll.

Examiner _____ Level II Date 04/02/2009

Print Matthew Schmalz

Examiner _____ Level _____ Date _____

Print

Reviewer _____ Level III Date 4/3/09

Utility Review _____ Date 4/3/09

Authorized Inspection Agency _____ Date 4-4-2009

Reuel C. Schenck

ADDITIONAL SHEETS? (Check Box)			
Continuation		Beam Plot	X
Supplements	X	Other	

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ULTRASONIC EXAMINATION SUPPLEMENT SHEET

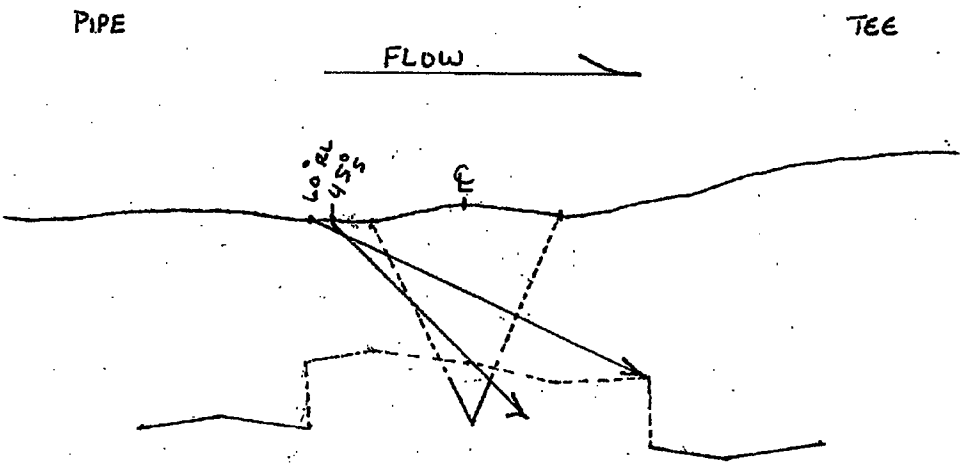
UT No. U2C18-UT-09-038

Plant/Unit: DC COOK / UNIT 2

Comp/System: 2-51-57

Weld / Component ID Number: 2-51-57-21

Crown Height:	.1
Crown Width:	1.1
Diameter:	10"
Weld Length:	31.4



SINGLE SIDED EXAM COVERAGE = 50%.

Comments: SINGLE SIDED EXAM DUE TO COMPONENT CONFIGURATION.

Examiner: MATT SCHMALZ Level: II Date: 4-2-09 Examiner: _____ Level: ____ Date: _____

Reviewer: [signature] Level: III Date: 4/3/09 Utility Reviewer: [signature] Level: ____ Date: 4/3/09

Authorized Inspection Agency: RVCS O/Reuel C Schaller Date: 4-4-2009

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ULTRASONIC CALIBRATION DATA SHEET

Plant: D.C. Cook Unit: 2
Comp/System 2-SI-56-18
ISO #: A-47
Summary No.: 089700

UT No.: U2C18-UT-09-062
Procedure No.: ISI-PDI-UT-2 Rev 4
Cal Block No.: 102917
Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105547
Block/Comp Temp 80 ° F/ 79 ° F

SEARCH UNIT

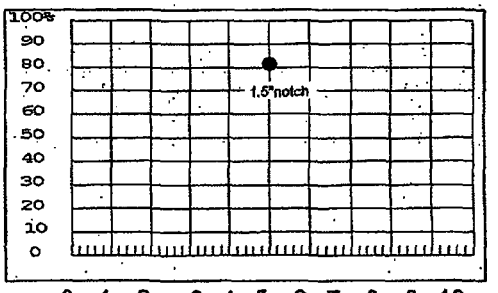
Scan Angle:	60 °	Mode:	Long
Serial No.:	05-483	Mfg.	RTD
Fixturing:	Integral	Model:	TRL-2
Size:	2(8x14)	Shape:	Rect
Frequency:	2.0 MHz		
Measured Angle:	60 °		
Cable Type:	RG-174	Length:	6'
Couplant Brand:		Ultra Gel II	
Couplant Batch:		07125	

IIW / Rompas S/N - Step Wedge 102268

SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
|| To Weld	

Connectors 0
Exit Pnt Dim: = N/A
☐ N/A Contoured

IDENT	0° or ⊥ TO WELD Sweep Pos	AMPL %	ATTEN dB	|| TO WELD Sweep Pos	AMPL %	ATTE N dB
1.5" notch	5	80	45			
					N	
						A
	N					
	A					



Screen Divisions, 10 = 5.9116"

INSTRUMENT SETTINGS

Mfg/Model No.:	GEIT	USN 60 SW	
Serial/SAP No.:	105420	Display Start:	IP
Damping:	500	Pulser Width:	250
Mode Select	Square	Reject:	Off
Frequency:	2.0	PRF Mode:	Auto High
Display Mode (RECTIF):	Full Wave		
Filter: Fixed	Voltage: 450	Jack:	T&R
Range	5.9116	Vel.	.2245
Swp Delay	7.5034	Zero	N/A

CAL. CHECKS	TIME
Initial Cal.	08:15
Intermediate	
Intermediate.	
Intermediate	
Final Cal.	11:45

Gain 0° or ⊥	dB	45
Gain ||	dB	N/A

Scan Sensitivity Axial = 55
Circ = 59

INSTR. LINEARITY CAL.

	High	Low		High	Low
1			6		
2	N		7	N	
3		A	8		A
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	
80	-12	N
40	+6	A
20	+12	

Horizontal Linearity Performed
N/A **Acceptable**

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
2-SI-56-18		X	X		Maintained 10 to 20%
					ID roll.
					See scan limitation
					report.
					50% Coverage Obtained
					RL 4/30/09

Examiner Print James Galica Level II Date 04/03/2009

Examiner Print Patrick Langreck Level I Date 04/03/2009

Reviewer M.O Level III Date 4/7/09

Utility Review Paul Donnini Date 4/7/09

Authorized Inspection Agency Reuel K. Schenck Date 4-7-2009

ADDITIONAL SHEETS? (Check Box)			
Continuation		Beam Plot	X
Supplements	X	Other	

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WESTINGHOUSE INTERNATIONAL

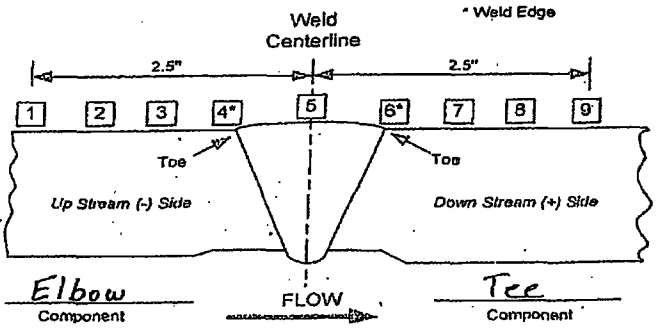
A Westinghouse NDE Company

UT No. U2C18-UT-09-062

WALL THICKNESS PROFILE SHEET

WELD NO.: 2-SI-56-18

	Position	0°	90°	180°	270°
	1	1.194			
	2	1.167			
	3	1.138			
TOE*	4	1.150			
C_L	5	1.179	NA	NA	NA
TOE*	6	1.168			
	7	1.562			
	8	X			
	9	X			



Crown Height: .02"

Diameter: 10"

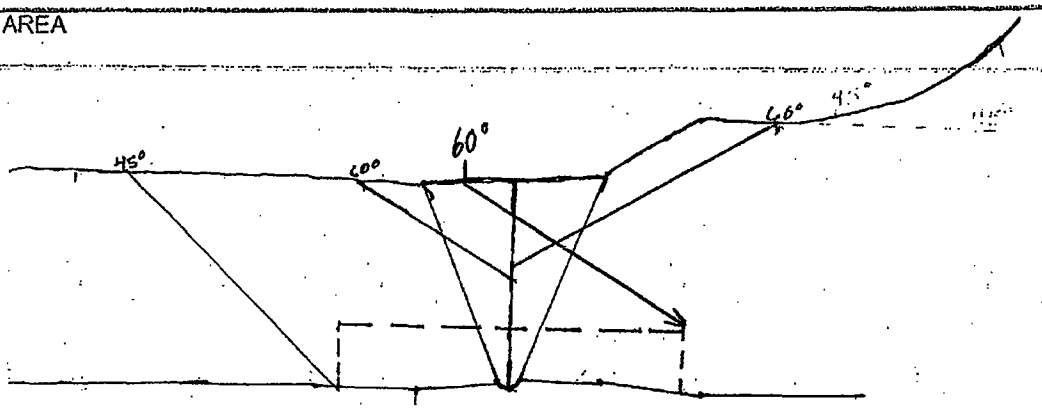
Crown Width: 1.05"

Weld Length: 34"

Longseam: N/A

Iso Drawing: A-47

PROFILE AREA



SINGLE SIDED COVERAGE 50% Coverage

RL 4/30/09

FLOW →

Examiner:		Level:	II	Date:	4/3/09
Examiner:		Level:	I	Date:	4/3/09
Reviewer:	M.O	Level:	III	Date:	4/7/09
Utility Review:		Level:		Date:	4/7/09
Authorized Inspection Agency:	PDIC O / Reuel K Schenck			Date:	4-7-2009

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A Westinghouse NDE Company

WESDYNE INTERNATIONAL, LLC

UT Sheet No. U2C18-UT-09-062

ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

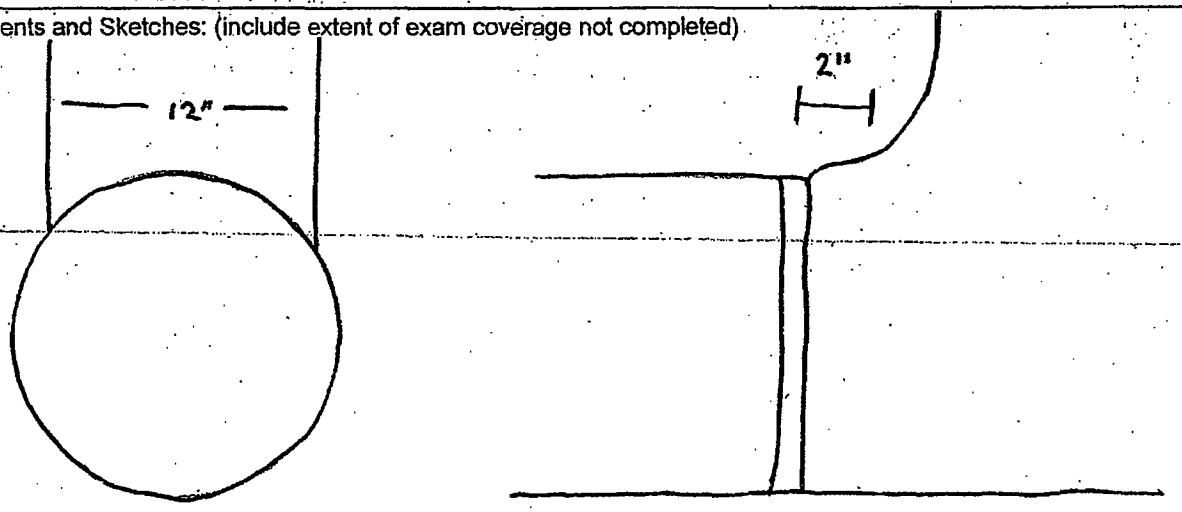
Weld Number: 2-SI-56-18 Interfering Condition: TEE CONFIGURATION

Size of Interfering Condition: 12"

Distance from Weld Centerline: 2" Distance from Datum Point 0.0: 0"

Reference Drawing Number:

Comments and Sketches: (include extent of exam coverage not completed)



50% Coverage Obtained
RL. 4/30/09

Examiner: [signature] Level: II Date: 4/3/09

Examiner: [signature] Level: I Date: 4/3/09

Reviewer: [signature] Level: III Date: 4/7/09

Utility Review: [signature] Level: ——— Date: 4/7/09

Authorized Inspection Agency: Reliks O/ Reuel K. Schanen Date: 4-7-2009

owerful part of your team"

WESDYNE INTERNATIONAL

Plant: D.C. Cook Unit: 1 UT No. U1C22-UT-08-031

Comp/System: 1-SI-548-45S / Safety Injection Procedure No. WDI-STD-1026, Rev. 0

ISO #: AEP 1-SI-548 Cal Block No. 1.5-SS-160-.281-1-DCC

Summary No.: 122200 Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105231 Block/Comp Temp 80° / 76° F

SEARCH UNIT

Scan Angle:	60°	Mode:	Shear
Serial No.:	010XT9	Mfg.	KBA
Fixturing:	Non-Integral	Model:	Comp-G
Size:	0.25"	Shape:	Round
Frequency:	5.0 MHz		
Measured Angle:	60°		
Cable Type:	RG-174	Length:	6'
Couplant Brand:	Ultragel II		
Couplant Batch:	07125		

Rompas 102268

SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
|| To Weld	

Connectors 0

Exit Pnt Dim: = 0.3"

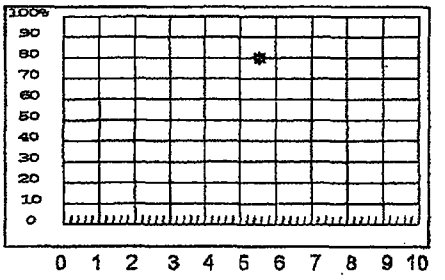
☑ Yes Contoured

IDENT	0° or ⊥ TO WELD Sweep Pos	AMPL %	ATTEN dB	|| TO WELD Sweep Pos	AMPL %	ATTEN dB
ID Notch	5.6	80	47.2	N/A	N/A	N/A

INSTRUMENT SETTINGS

Mfg/Model No.:	Krautkramer USN 60		
Serial/SAP No.:	102176		
Damping:	1000	Display St:	IP
Mode Select:	Dual Off	Reject:	0%
Frequency:	5.0 MHz	Rep. Rate:	AUTO HIGH
Energy:	High	Rectify:	Full Wave
Filter:	Fixed	Volt:	Fixed
Jack:	"T"		
Range	1.0"	Vel.	0.122
Swp Delay	4.76	Zero	0.000

CAL. CHECKS	TIME
Initial Cal.	14:52
Intermediate	N/A
Intermediate	N/A
Intermediate	N/A
Final Cal.	15:59



Screen Divisions, 10 = 1.0"

Gain 0° or ⊥	dB 61.6
Gain ||	dB N/A

Scan Sensitivity	Axial = 67.6
	Circ = N/A

INSTR. LINEARITY CAL.

	High	Low		High	Low
1	N/A	N/A	6	N/A	N/A
2			7		
3			8		
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	N/A
80	-12	
40	+6	
20	+12	

Horizontal Linearity Performed
☑ N/A Acceptable

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
1-SI-548-45S		X	X		Single sided exam due to check valve. NRI
					50% COVERAGE REV 4/6/2011

Examiner [signature] Level II Date 4/6/2008
Steven Snyder

Examiner N/A Level N/A Date N/A

Reviewer [signature] Level III Date 4/8/2008
Phil Lancaster

Utility Review [signature] Date 4/8/08

Authorized Inspection Agency [signature] Date 4-8-2008
Reuel K. Schencel

ADDITIONAL SHEETS? (Check Box)			
Continuation	X	Beam Plot	
Supplements		Other	

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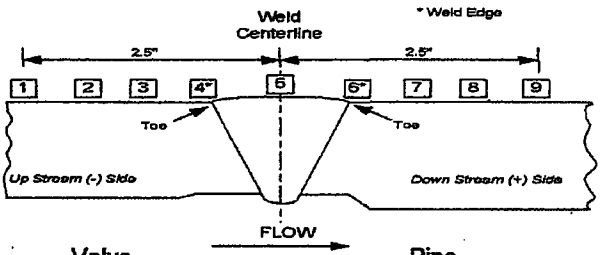
UT No. U1C22-UT-08-029

WALL THICKNESS PROFILE SHEET

WELD NO. : 1-SI-548-45S

	Position	0°	90°	180°	270°
	1	N/A			
	2	N/A			
	3	N/A			
TOE*	4	N/A			
C_L	5	N/A			
TOE*	6	0.28			
	7	0.28			
	8	0.28			
	9	0.28			

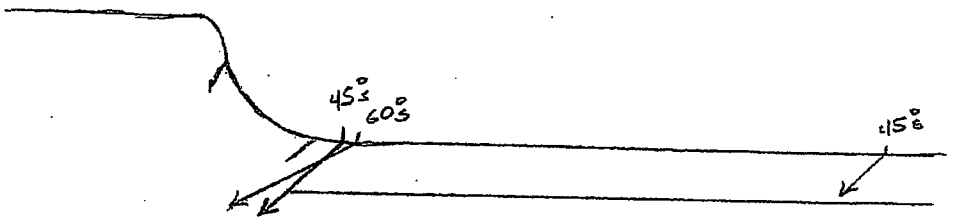


Valve Component

Pipe Component

Crown Height:	Flush	Diameter:	1.5"
Crown Width:	0.6"	Weld Length:	6.5"
Longseam:	N/A	Iso Drawing:	AEP 1-SI-548

PROFILE AREA



Examiner:	Steven Snyder	Level:	II	Date:	4/6/2008
Examiner:	N/A	Level:	N/A	Date:	N/A
Reviewer:	Phil Lancaster	Level:	III	Date:	4/8/2008
Utility Review:	Edward J. Day	Level:	N/A	Date:	4/8/08
Authorized Inspection Agency:	Reuel C. Schenck			Date:	4-8-2008

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ULTRASONIC EXAMINATION REPORT

Data Pkg # U1C23-UT-10-022

Plant: Cook Nuclear Plant Unit: 1 Procedure No.: ISI-PDI-UT-2 Rev.: 4

FCN # N/A

Comp/ System: Emergency Core Cooling Cal. Blk. # SAP 105255 Ref. Blk.# SAP 102272 "T" Nom. 0.812" Nom. Pipe Ø 8.0"

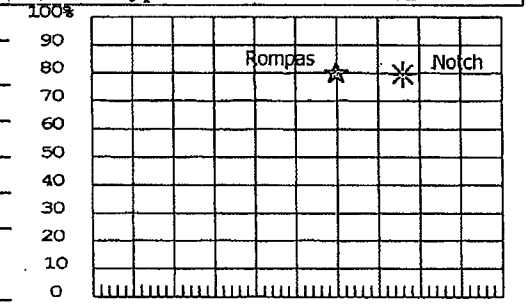
Isometric Dwg # 1-RH-30, Rev. 13 Thermometer S/N: SAP 105378 Block / Comp Temp: 69 °F / 81 °F

SEARCH UNIT

Scan Angle: 60° RL Mode: Long.
Serial No.: 08-376 Mfr. RTD
Fixturing: Non-Integral Model: TRLA
Size: 2(7x10) Shape: Rect.
Frequency: 2.0 MHz # Elem: 2
Measured Angle: 60° Exit Pnt. 0.3
Couplant Type/Batch #: UltraGel II / 07125
Cable / Length / # Conn: RG-174 / 6' / 0

Contoured Wedge ☑ N/A ☐ Ax ☐ Circ

Examination Surface ☑ OD ☐ ID
Material Type ☐ CS ☑ SS ☐ Other



Screen Divisions, 10 = 2.5"

INSTRUMENT SETTINGS

Mfr/Model No. GE / KrautKramer USN 60 SW
Serial No.: SAP 104389
Pulser: Square ☑ Dual On ☐ Dual Off Puls Wth : 250
Damping: 500 Reject: 0%
Freq : 2.0 MHz Rectify: Full Wave
PRF: Auto High Volt: 450 Jack: T&R

Range: 2.5000 Velocity 0.2340
Probe Delay: 8.2400 Dsp Delay: 0.0000

	Cal	Scan	
Gain 0° or ⊥	64.0	68.0	dB
Gain ||	N/A	N/A	dB

SCAN AREA

0° WRV	☐
0° BM	☐
⊥ To Weld	☑
|| To Weld	☐

CAL CHECKS	TIME
Initial Cal.	0720
Intermediate	1250
Intermediate	N/A
Intermediate	N/A
Final Cal.	1625

DAC

Reflector ID	% FSH	Swp Pos	dB
1.0" Notch Tip	80	7.6	64.0
Rompas FSDH	80	6.0	55.0

EXAMINATION WELD/AREA

1-RH-30-06F

Recordable Indications ☐ YES ☑ NO
Scan Limitations ☑ YES ☐ NO

Remarks: Scanned elbow side (UPST) only, due to valve configuration.

Code Coverage Achieved 50 %

Risk Informed ☑ YES ☐ NO C'Bore ☐ Y ☑ N
Exam is Acceptable ☑ YES ☐ NO

Examiner [signature] Lv. III Date: 3/5/2010
Print Wade Holasek
Examiner [signature] Lv. IT Date: 3/5/2010
Print Jordan Taylor

Reviewer: Michael McKaig Lv III Date: 3/6/10
Reviewer: [signature] Date: 3/8/10

Authorized Inspection Agency [signature] Reuel C. Schenck 3-9-2010

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ULTRASONIC EXAMI TION SKETCH SHEET

Data Pkg. #: U1C23-UT-10-(

Plant/Unit : Cook Nuclear Plant / 1 **Comp / System** Emergency Core Cooling

Iso. Drwg: 1-RH-30, Rev. 13

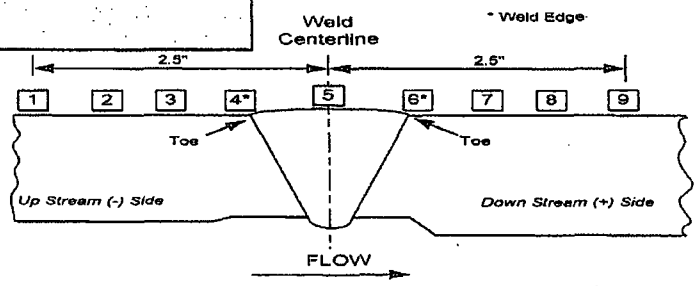
ATTACHED TO: N/A

UT Sheet No. N/A

Weld / Component ID Number: 1-RH-30-06F

Crown Height:	Ground Smooth
Crown Width:	1.500"
Diameter:	8.625"
Weld Length:	27.600"

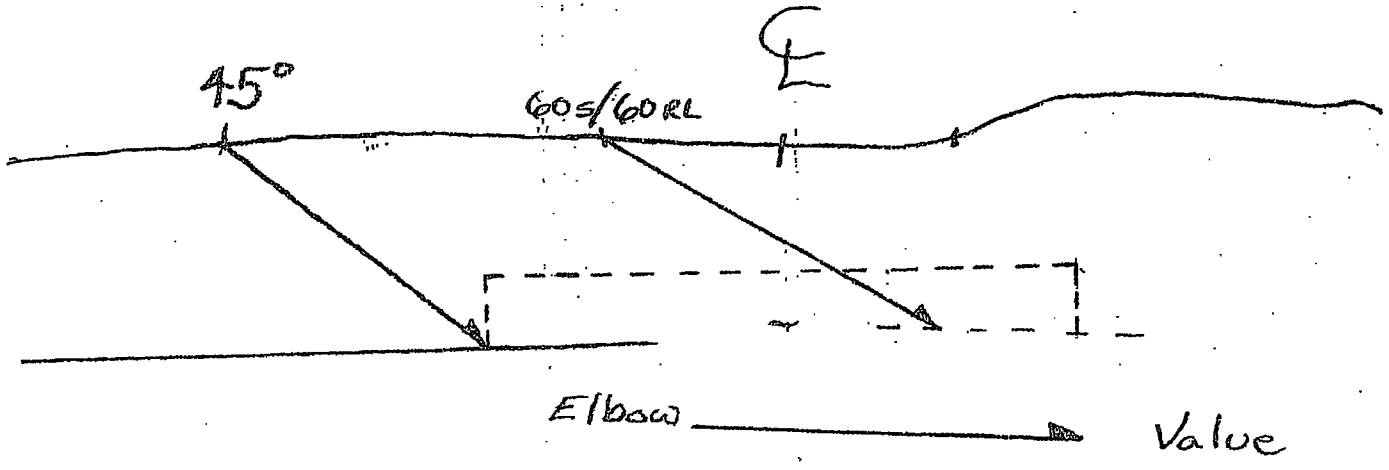
Position	0	90	180	270
1	0.914"			
2	0.918"			
3	0.930"			
4	0.937"			
5	0.801"			
6	0.810"			
7	N/A			
8	N/A			
9	N/A			



Elbow Component

Valve Component

Not to scale



COMMENTS:

EXAMINER: [signature] Lv. III DATE: 3/5/2010 EXAMINER: [signature] Lv. IT DATE: 3/5/2010

Print Wade Holasek Print Jordan Taylor

REVIEWER: Michael McKaig Lv. III DATE 3/6/10 REVIEWER: [signature] Lv. N/A DATE: 3/8/10

Authorized Inspection Agency Travelers Rene K. Schen DATE 3-10-2010

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ULTRASONIC EXAMINATION REPORT

Data Pkg # U1C23-UT-10-029

Plant: Cook Nuclear Plant Unit: 1 Procedure No.: ISI-PDI-UT-2 Rev.: 4

FCN # N/A

Comp/ System: Reactor Coolant Cal. Blk. # SAP 105256 Ref. Blk.# SAP 102268 "T" Nom. 0.718" Nom. Pipe Ø 6.0"

Isometric Dwg # 1-RC-8 Thermometer S/N: SAP 105547 Block / Comp Temp: 98 °F / 103 °F

SEARCH UNIT

Scan Angle: 60° Mode: Shear

Serial No.: 00X1R9 Mfr. KBA

Fixturing: Non-Integral Model: Comp-G

Size: 0.25" Shape: Round

Frequency: 2.25 MHz # Elem: 1

Measured Angle: 58° Exit Pnt. 0.25

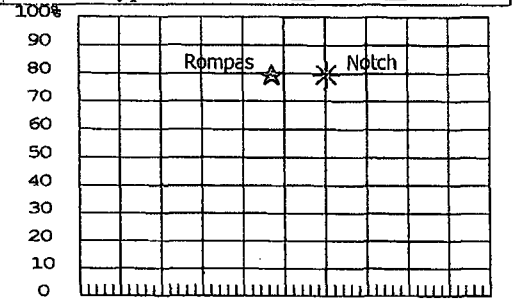
Couplant Type/Batch #: UltraGel II / 07125

Cable / Length / # Conn: RG-174 / 6' / / 0

Contoured Wedge ☑ N/A ☐ Ax ☐ Circ

Examination Surface ☑ OD ☐ ID

Material Type ☐ CS ☑ SS ☐ Other



Screen Divisions, 10 = 3.0"

INSTRUMENT SETTINGS

Mfr/Model No. GE / KrautKramer USN 58 L

Serial No.: SAP 104765

Pulser: Square ☑ Dual On ☐ Dual Off Puls Wth : 220

Damping: 500 Reject: 0%

Freq : 2.25 MHz Rectify: Full Wave

PRF: Auto High Volt: 450 Jack: T

Range:	3.0000	Velocity	0.1220
Swp Delay:	2.5000	Zero:	0.0000

	Cal	Scan	
Gain 0° or ⊥	54.0	60.0	dB
Gain ||	N/A	N/A	dB

SCAN AREA

0° WRV	☐
0° BM	☐
⊥ To Weld	☑
|| To Weld	☐

CAL CHECKS	TIME
Initial Cal.	1030
Intermediate	N/A
Intermediate	1250
Intermediate	N/A
Final Cal.	1500

DAC

Reflector ID	% FSH	Swp Pos	dB
1.0" Notch Tip	80	6.0	54.0
FSDH Rompas	80	4.8	59.0

EXAMINATION WELD/AREA

1-RC-8-02S

Recordable Indications ☐ YES ☑ NO

Scan Limitations ☑ YES ☐ NO

Remarks: Limited scan on pipe side due to proximity of weld 1-RC-8-03S.

Code Coverage Achieved 89.7 %

Risk Informed ☑ YES ☐ NO C'Bore ☐ Y ☑ N

Exam is Acceptable ☑ YES ☐ NO

Examiner [signature] Lv. II Date: 3/7/2010

Print Patrick Mahoney

Examiner [signature] Lv. IT Date: 3/7/2010

Print Jordan Taylor

Reviewer: Michael McKay Lv III Date: 3/10/10

Reviewer: R E Hall Date: 3/11/10

Authorized Inspection Agency RVOS Renel K. Schenck 3-11-2010

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ULTRASONIC EXAM ATION SKETCH SHEET

Data Pkg. #: U1C23-UT-10

Plant/Unit : Cook Nuclear Plant / 1 **Comp./System** Reactor Coolant

Iso. Drwg: 1-RC-8

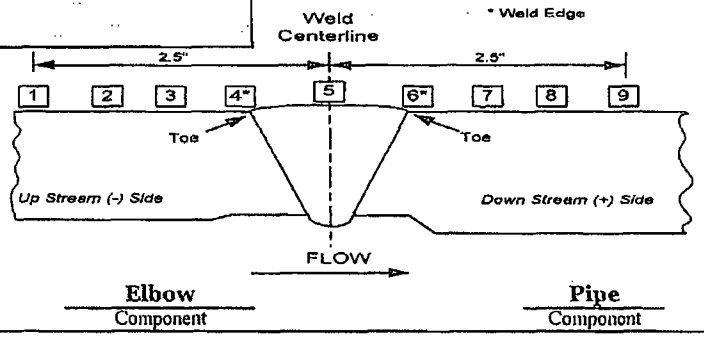
ATTACHED TO: N/A

UT Sheet No. N/A

Weld / Component ID Number: 1-RC-8-02S

Crown Height:	≤0.100"
Crown Width:	1.100"
Diameter:	6.625"
Weld Length:	21.250"

Position	0	90	180	290
1	0.75"			
2	0.75"			
3	0.75"			
4	0.75"			
5	0.86"			
6	0.82"			
7	0.82"			
8	N/A			
9	N/A			



Not to Scale

Pipe Side Limitation

(.27x1.05) = 0.28" (Total Exam Volume)

.27 x.30 = .081"

\+ (.27 x.25) ÷ 2 = .034"

= 0.115" (Missed Volume)

.115" / .28" = .41" or 41%

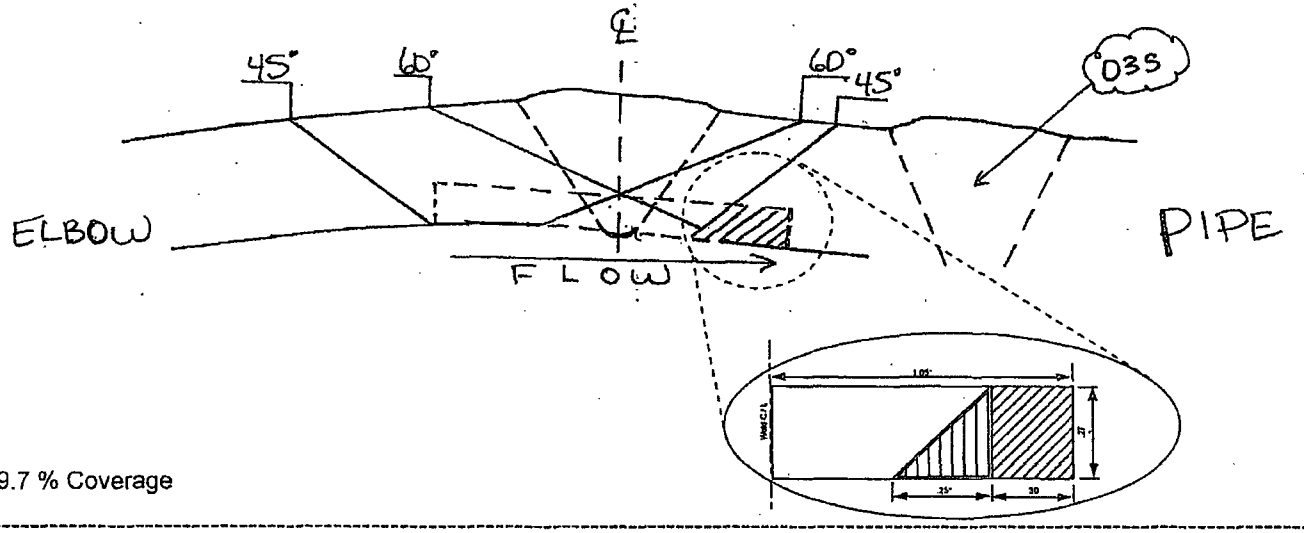
US Ax - 100%

DS Ax - 59%

US Circ - 100%

DS Circ - 100%

359 359 / 4 = 89.7 % Coverage



COMMENTS: N/A

EXAMINER: Lv. II DATE 3/7/2010 EXAMINER: Lv. IT DATE: 3/7/2010

Print Patrick Mahoney Print Jordan Taylor

REVIEWER: Lv. III DATE 3/10/10 REVIEWER: Lv. N/A DATE: 3/11/10

Authorized Inspection Agency RICSI Reuel K. Schenck DATE 3-11-2010

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ULTRASONIC EXA NATION REPORT

Data Pkg # U1C23-UT-10-036

Plant: Cook Nuclear Plant Unit: 1 Procedure No.: ISI-PDI-UT-2 Rev.: 4

FCN # N/A

Comp/ System: Safety Injection Cal. Blk. # SAP 105256 Ref. Blk.# SAP 102268 "T" Nom. 1.312" Nom. Pipe Ø 10.0"

Isometric Dwg # 1-SI-29 Thermometer S/N: SAP 105547 Block / Comp Temp: 72 °F / 85 °F

SEARCH UNIT

Scan Angle: 60° RL Mode: Long.

Serial No.: 08-374 Mfr. RTD

Fixturing: Integral Model: TRL-2

Size: 2(7x10) Shape: Rect.

Frequency: 2.0 MHz # Elem: 2

Measured Angle: 60° Exit Pnt. 0.3

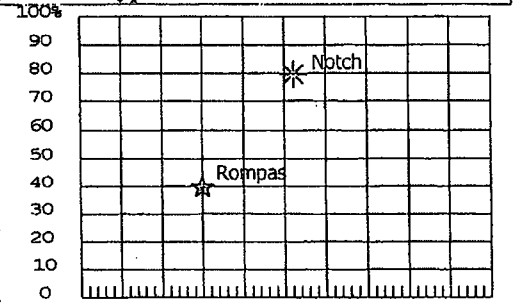
Couplant Type/Batch #: UltraGel II / 07125

Cable / Length / # Conn: RG-174 / 6' / / 0

Contoured Wedge ☑ N/A ☐ Ax ☐ Circ

Examination Surface ☑ OD ☐ ID

Material Type ☐ CS ☑ SS ☐ Other



Screen Divisions, 10 = 5.0"

INSTRUMENT SETTINGS

Mfr/Model No. GE / KrautKramer USN 60 SW

Serial No.: SAP 105420

Pulser: Square ☑ Dual On ☐ Dual Off Puls Wth : 250

Damping: 500 Reject: 0%

Freq : 2.0 MHz Rectify: Full Wave

PRF: Auto High Volt: 450 Jack: T &R

Range: 5.0000 Velocity 2.8800

Swp Delay: 7.2438 Zero: 0.0000

	Cal	Scan	
Gain 0° or ⊥	60.0	62.6	dB
Gain ||	N/A	N/A	dB

SCAN AREA

0° WRV	☐
0° BM	☐
⊥ To Weld	☑
|| To Weld	☐

CAL CHECKS	TIME
Initial Cal.	0825
Intermediate	N/A
Intermediate	1115
Intermediate	N/A
Final Cal.	1228

DAC

Reflector ID	% FSH	Swp Pos	dB
1.5" Notch	80	5.2	60.0
FSDH Rompas	40	3.0	49.0

EXAMINATION WELD/AREA

1-SI-29-26F

Recordable Indications ☐ YES ☑ NO

Scan Limitations ☑ YES ☐ NO

Remarks: Scanned elbow (UPST) side only due to nozzle.

Scanned 0.5" beyond counterbore.

Observed counterbore below recordable levels.

Code Coverage Achieved 50 %

Risk Informed ☑ YES ☐ NO C'Bore ☑ Y ☐ N

Exam is Acceptable ☑ YES ☐ NO

Examiner [signature] Lv. II Date: 3/9/2010

Print Matt Schmalz

Examiner [signature] Lv. IT Date: 3/9/2010

Print David Frye

Reviewer: [signature] Lv III Date: 3/11/10

Reviewer: [signature] Date: 3/12/10

Authorized Inspection Agency [signature] 3-12-2010

ESDYNE NATIONAL

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ULTRASONIC EXAMI TION SKETCH SHEET

Data Pkg. #: U1C23-UT-10-0

Plant/Unit : Cook Nuclear Plant / 1 **Comp / System** Safety Injection

Iso. Drwg: 1-SI-29

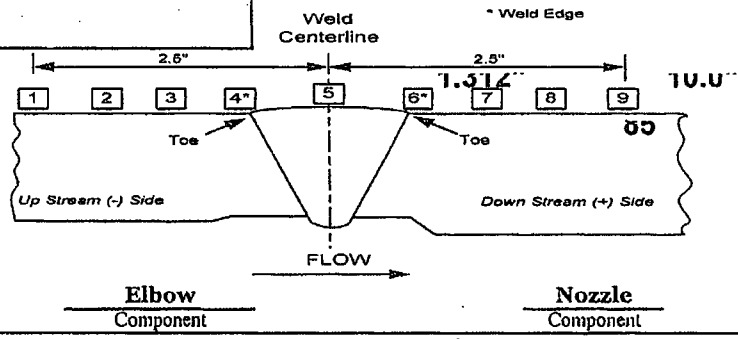
ATTACHED TO: N/A

UT Sheet No. N/A

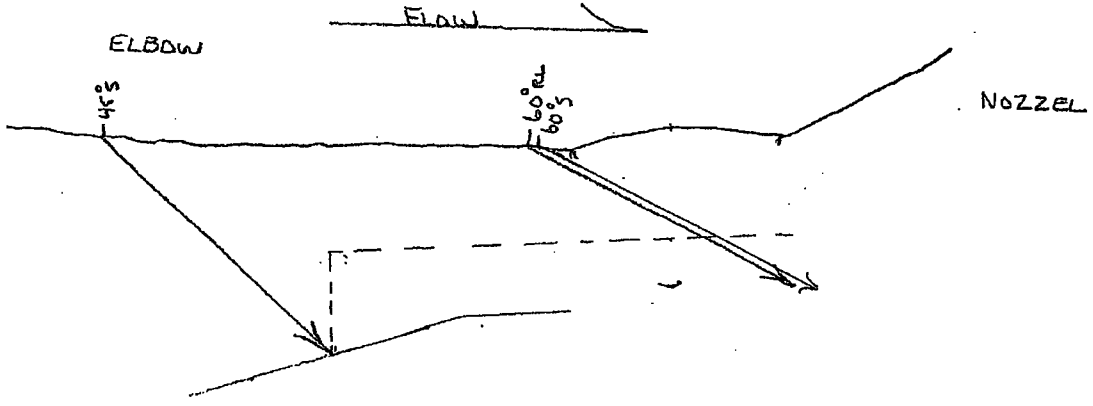
Weld / Component ID Number: 1-SI-29-26F

Crown Height:	0.100"
Crown Width:	1.250"
Diameter:	10.750"
Weld Length:	31.400"

Position	0	90	180	290
1	N/A			
2	1.480"			
3	1.155"			
4	1.156"			
5	1.006"			
6	N/A			
7	N/A			
8	N/A			
9	N/A			



Not to Scale



COMMENTS: N/A

EXAMINER: _____ Lv. II DATE 3/9/2010 EXAMINER: _____ Lv. IT DATE: 3/9/2010

Print Matt Schmalz Print David Frye

REVIEWER: _____ Lv. III DATE 3/11/10 REVIEWER: _____ Lv. N/A DATE: 3/12/10

Authorized Inspection Agency _____ DATE 3-12-2010

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ULTRASONIC EXA' 'NATION REPORT

Data Pkg # U1C23-UT-10-042

Plant: Cook Nuclear Plant Unit: 1 Procedure No.: ISI-PDI-UT-2 Rev.: 4

FCN # N/A

Comp/ System: Safety Injection Cal. Blk. # SAP 105255 Ref. Blk.# SAP 102268 "T" Nom. 1.312" Nom. Pipe Ø 10.0"

Isometric Dwg # 1-SI-33 Thermometer S/N: SAP 105547 Block / Comp Temp: 72 °F / 86 °F

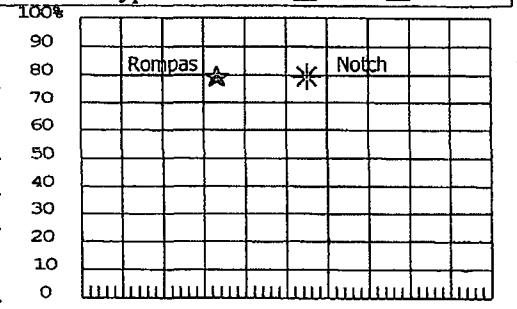
SEARCH UNIT

Scan Angle: 60° RL Mode: Long.
Serial No.: 08-374 Mfr. RTD
Fixturing: Integral Model: TRL2
Size: 2(7x10) Shape: Rect.
Frequency: 2.0 MHz # Elem: 1
Measured Angle: 60° Exit Pnt. 0.3
Couplant Type/Batch #: UltraGel II / 07125

Cable / Length / # Conn: RG-174 / 6' / / 0

Contoured Wedge ☑ N/A ☐ Ax ☐ Circ

Examination Surface ☑ OD ☐ ID
Material Type ☐ CS ☑ SS ☐ Other



Screen Divisions, 10 = 5.0"

INSTRUMENT SETTINGS

Mfr/Model No. GE / KrautKramer USN 58 L
Serial No.: SAP 104766
Pulser: Square ☑ Dual On ☐ Dual Off Puls Wth : 250
Damping: 500 Reject: 0%
Freq : 2.0 MHz Rectify: Full Wave
PRF: Auto High Volt: 450 Jack: T&R

Range: 5.0000 Velocity 0.2230
Swp Delay: 6.0000 Zero: 0.0000

	Cal	Scan	
Gain 0° or ⊥	59.0	65.0	dB
Gain ||	N/A	N/A	dB

SCAN AREA

0° WRV	☐
0° BM	☐
⊥ To Weld	☑
|| To Weld	☐

CAL CHECKS	TIME
Initial Cal.	0745
Intermediate	N/A
Intermediate	1010
Intermediate	N/A
Final Cal.	1100

DAC

Reflector ID	% FSH	Swp Pos	dB
1.5" Notch Tip	80	5.5	59.0
FSDH Rompas	80	3.2	53.0

EXAMINATION WELD/AREA

1-SI-33-26F

Recordable Indications ☐ YES ☑ NO
Scan Limitations ☑ YES ☐ NO

Remarks: Single sided exam due to nozzle to elbow configuration.
Scanned elbow (DNST) side only.

Code Coverage Achieved 50 %

Risk Informed ☑ YES ☐ NO C'Bore ☐ Y ☑ N
Exam is Acceptable ☑ YES ☐ NO

Examiner [signature] Lv. II Date: 3/12/2010
Print Patrick Mahoney
Examiner [signature] Lv. IT Date: 3/12/2010
Print Jordan Taylor

Reviewer: [signature] LV III Date: 3/13/10

Authorized Inspection Agency

Reviewer: [signature] Date: 3/17/10

[signature] 3-17-2010
Reuel K. Schenck

ESDYNE NATIONAL

A Westinghouse NDE Company

ULTRASONIC EXAMI[illegible]TION SKETCH SHEET

Data Pkg. #: U1C23-UT-10-0

Plant/Unit : Cook Nuclear Plant / 1 **Comp / System** Safety Injection

Iso. Drwg: 1-SI-33

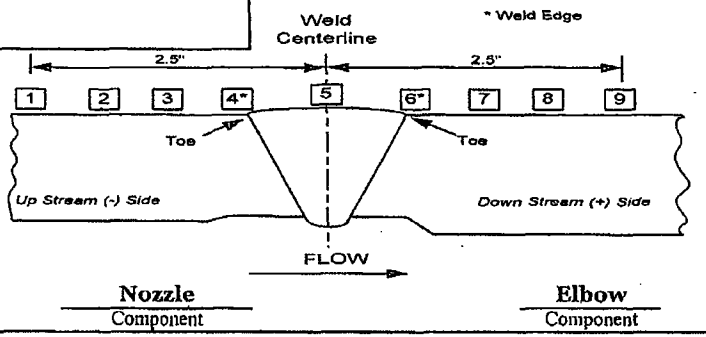
ATTACHED TO: N/A

UT Sheet No. N/A

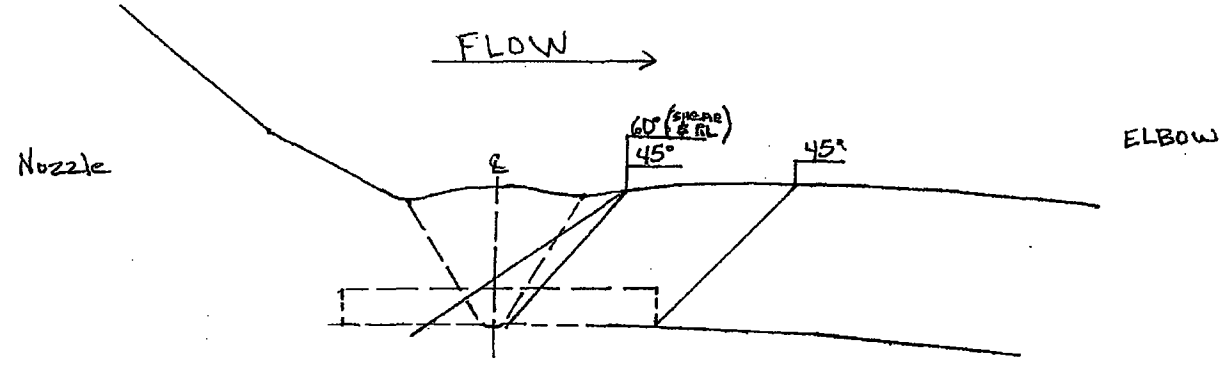
Weld / Component ID Number: 1-SI-33-26F

Crown Height:	≤0.100"
Crown Width:	1.250"
Diameter:	10.750"
Weld Length:	34.500"

Position	0	90	180	290
1	N/A			
2	N/A			
3	N/A			
4	N/A			
5	1.08"			
6	1.03"			
7	1.11"			
8	1.15"			
9	1.17"			



Not to Scale



COMMENTS: Exam was a single sided exam with 50% coverage achieved. A 45° shear and 60° shear as well as a 60°RL were used for this exam.

EXAMINER: [signature] Lv. II DATE 3/12/2010

Print Patrick Mahoney

EXAMINER: [signature] Lv. IT DATE: 3/12/2010

Print Jordan Taylor

REVIEWER: Michael McKeig Lv. III DATE 3/13/10

REVIEWER: [signature] Lv. N/A DATE: 3/17/10

Authorized Inspection Agency [signature] DATE 3-17-2010

Reuel K. Schenck

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UT Calibration / Examination

Site/Unit:	AEP / 2	Procedure:	ISI-PDI-UT-2	Outage No.:	U2-C17
Summary No.:	027420	Procedure Rev.:	4	Report No.:	UT-07-052
Workscope:	ISI	Work Order No.:	55246120	Page:	1 of 3

Code: ASME XI 1989 | Cat./Item: R-A/R1.20 | Location: PRESS. DH

Drawing No.: A-20 | Description: ELBOW TO VALVE

System ID: PRZ

Component ID: 2-RC-22-24 | Size/Length: 3"/11" | Thickness/Diameter: 0.45"/3"

Limitations: ~~None~~ TS 92507 50% coverage due to component configuration | Start Time: 1115 | Finish Time: 1330

Instrument Settings

Serial No.:	102342		
Manufacturer:	KBA		
Model:	USN-50		
Delay:	4.125 µsec	Range:	1.4"
M'tl Cal/Vel:	.123/µsec	Pulser:	High
Damping:	Fixed	Reject:	0%
Rep. Rate:	Fixed	Freq.:	Fixed
Filter:	Fixed	Mode:	Fullwave
Voltage:	Fixed	Other:	Jack: R
Ax. Gain (dB):	22.5	Circ. Gain (dB):	22.5

10 Screen Div. = 1.25 In. of Depth

Linearity Report No.: L-07-003

Calibration Block

Cal. Block No.: 105256

Thickness: 0.5" - 2.0" | Dia.: 0

Cal. Blk. Temp.: 76° | Temp. Tool: 105543

Comp. Temp.: 78° | Temp. Tool: 105543

Search Unit

Serial No.:	00X1R9		
Manufacturer:	KBA		
Size:	0.25"	Shape:	ROUND
Freq.:	2.25 Mhz	Style:	COMP-G
Exam Angle:	45°	# of Elements:	1
Mode:	Shear		
Measured Angle:	44°		
Wedge Style:	Non-Integral		

Search Unit Cable

Type: RG174

Length: 6' | No. Conn.: 0

Scan Coverage

Upstream ☑ | Downstream ☒ | Scan dB: 34.5

CW ☑ | CCW ☑ | Scan dB: 34.5

Exam Surface: OD

Surface Condition: FLUSH

Cal. Checks	Time	Date
Initial Cal.	1115	8/28/2007
Inter. Cal.		
Inter. Cal.		
Inter. Cal.		
Final Cal.	1330	8/28/2007

Couplant

Cal. Batch: 05225

Type: Ultragel II

Mfg.: Sonotech

Exam Batch: 05226

Type: Ultragel II

Mfg.: Sonotech

Reference Block

Serial No.: N/A

Type: N/A

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Depth
0.5" Notch	80%	4.0	0.5"
1.0" Notch	80%	8.0	1.0"

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Depth
N/A	N/A	N/A	N/A

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Depth
N/A	N/A	N/A	N/A	N/A

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: No | Reviewed Previous Data: N/A

Comments: **No recordable indications. ID Geometry observed at less than recordable levels and verified visually i.e. root. See USN-52L Table for transducer selection.**

Examiner	Level	Signature	Date	Reviewer		Signature	Date
Lancaster, Philip L.	III-PDI		8/28/2007	Feige, Edward J.			9/24/07
Examiner	Level	Signature	Date	Site Review		Signature	Date
N/A	N/A			Donavin, Paul			9/24/07
Other	Level	Signature	Date	ANII Review		Signature	Date
Siever, Theodore J.	III-PDI		9-23-07	Charles Jackson			9/25/07

Supplemental Report

Report No.: UT-07-052

Summary No.: 027420

Examiner: Lancaster, Philip L. PL Level: III-PDI Reviewer: Feige, Edward J. EJF Date: 9/25/07

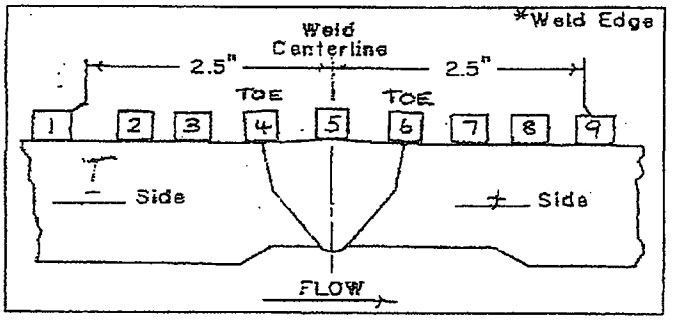
Examiner: N/A Level: N/A Site Review: Donavin, Paul PMD Date: 9/25/07

Other: Siever, Theodore J. TJS Level: III-PDI ANII Review: Charles Jackson CM Date: 9/25/07

Comments: **T&C for Component 2-RC-22-24**
50% coverage obtained due to geometric configuration (elbow to valve).

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\2-RC T&C 3.jpg

	Position	0°	90°	180°	270°
	1	N/A	N/A	N/A	N/A
	2	N/A	N/A	N/A	N/A
	3	N/A	N/A	N/A	N/A
TOE*	4	N/A	N/A	N/A	N/A
C_L	5	0.57"	0.56"	0.59"	0.58"
TOE*	6	0.59"	0.6"	0.63"	0.63"
	7	0.59"	0.62"	0.6"	0.62
	8	0.54"	0.59"	0.55"	0.54"
	9	0.56"	0.62"	0.55"	0.54"

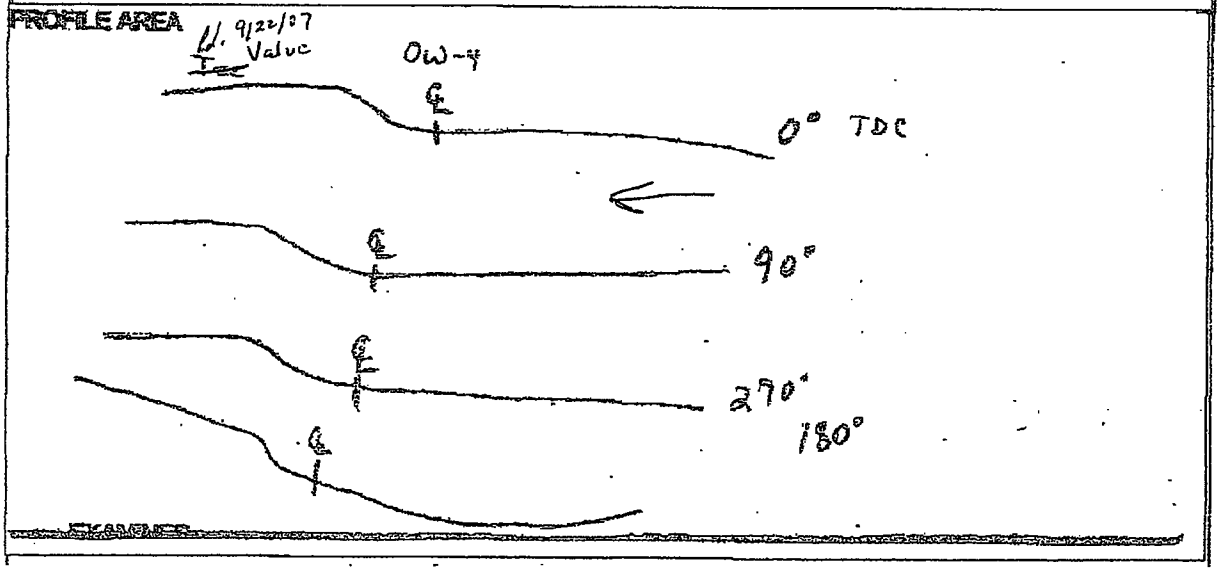


CROWN HEIGHT: Flush DIAMETER: 3.0"

CROWN WIDTH: 0.5" WELD LENGTH: 11.0"

LONG SEAM @: N/A ISO. DRWG. # 22 PL 9/27/07 INT-2-RC-~~23~~-SH-1-12

PROFILE AREA PL 9/22/07



UT Calibration / Examination

Site/Unit:	AEP / 2	Procedure:	ISI-PDI-UT-2	Outage No.:	U2-C17
Summary No.:	027420	Procedure Rev.:	4	Report No.:	UT-07-085
Workscope:	ISI	Work Order No.:	55246120	Page:	1 of 1

Code:	ASME XI 1989	Cat./Item:	R-A/R1.20	Location:	PRESS. DH
Drawing No.:	A-20	Description:	ELBOW TO VALVE		
System ID:	PRZ				
Component ID:	2-RC-22-24			Size/Length:	3"/11"
Thickness/Diameter:	0.45"/3"				
Limitations:	One sided examination due to geometric configuration elbow to valve.			Start Time:	1400
Finish Time:	1530				

Instrument Settings

Serial No.:	102342		
Manufacturer:	KBA		
Model:	USN-60		
Delay:	18.3 µsec	Range:	1.62"
M'tl Cal/Vel:	0.123/µsec	Pulser:	High
Damping:	Fixed	Reject:	0%
Rep. Rate:	Fixed	Freq.:	Fixed
Filter:	Fixed	Mode:	Fullwave
Voltage:	Fixed	Other:	N/A
Ax. Gain (dB):	46.6	Circ. Gain (dB):	N/A

10 Screen Div. = 1 In. of Depth

Linearity Report No.: L-07-003

Calibration Block

Cal. Block No.:	105266		
Thickness:	0.5" - 2.0"	Dia.:	0
Cal. Blk. Temp.:	76°	Temp. Tool:	105543
Comp. Temp.:	78°	Temp. Tool:	105643

Search Unit

Serial No.:	010R01		
Manufacturer:	KBA		
Size:	0.25"	Shape:	ROUND
Freq.:	2.25 Mhz	Style:	Comp-G
Exam Angle:	70°	# of Elements:	1
Mode:	Shear		
Measured Angle:	68°		
Wedge Style:	Non-Integral		

Search Unit Cable

Type: RG174 Length: 6' No. Conn.: 0

Scan Coverage

Upstream ☑ Downstream ☐ Scan dB: 52.5

CW ☐ CCW ☐ Scan dB: N/A

Exam Surface: OD

Surface Condition: FLUSH

Cal. Checks	Time	Date
Initial Cal.	1400	8/28/2007
Inter. Cal.		
Inter. Cal.		
Inter. Cal.		
Final Cal.	1530	8/28/2007

Couplant

Cal. Batch: 05225 Type: Ultragel II Mfg.: Sonotech

Exam Batch: 05225 Type: Ultragel II Mfg.: Sonotech

Reference Block

Serial No.: N/A Type: N/A

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Depth
0.5" Notch	80%	5.0	0.5"
1.0" Notch	60%	10.0	1.0"

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Depth
N/A	N/A	N/A	N/A

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Depth
N/A	N/A	N/A	N/A	N/A

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Comments: One-sided exam. No recordable indications. See USN-52L Table for transducer selection.

Percent Of Coverage Obtained > 90%: No Reviewed Previous Data: N/A

Examiner	Level	Signature	Date	Reviewer		Signature	Date
Lancaster, Philip L.	III-PDI	P L Lancaster	8/28/2007			Edward J Doty	9/24/07
Examiner	Level	Signature	Date	Site Review		Signature	Date
N/A	N/A					Paul Bonavia	9/24/07
Other	Level	Signature	Date	ANII Review		Signature	Date
Siever, Theodore J.	III-PDI	Ed Siever	9-29-07	Charles Jackson			9/28/07

Supplemental Report

Report No.: UT-07-052

Page: 3 of 3

Summary No.: 027420

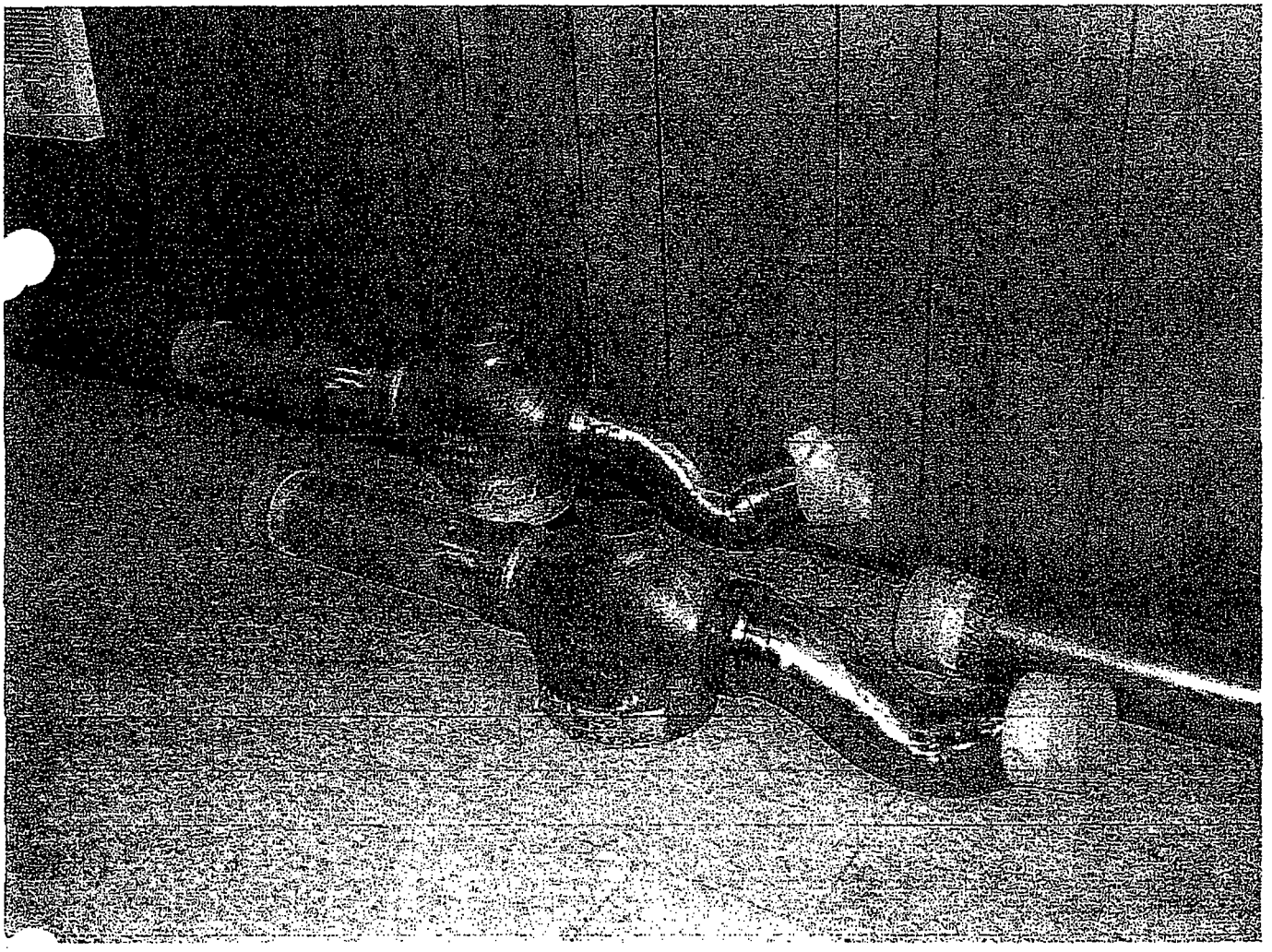
Examiner: Lancaster, Philip L. PL Level: III-PDI Reviewer: Feige, Edward J. EJF Date: 9/25/07

Examiner: N/A Level: N/A Site Review: Donavin, Paul PRD Date: 9/25/07

Other: Siever, Theodore J. TS Level: III-PDI ANII Review: Charles Jackson CJ Date: 9/25/07

Comments: **Typical spool piece.**
Component ID 2-RC-22-24

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\DSCN0162.JPG



Additional - Supplemental Reports <edit from Setup>

UT Calibration/Examination

Site/Unit:	AEP / 2	Procedure:	ISI-PDI-UT-2	Outage No.:	2R-C17
Summary No.:	028220	Procedure Rev.:	4	Report No.:	UT-07-059
Workscope:	ISI	Work Order No.:	55246120	Page:	1 of 3

Code:	ASME XI 1989	Cat./Item:	R-A/R1.20	Location:	PRESS DH
Drawing No.:	A-21	Description:	ELBOW TO VALVE		
System ID:	RC				
Component ID:	2-RC-23-12			Size/Length:	3"/11"
Thickness/Diameter:	0.45"/3"				
Limitations:	One sided examination due to geometric configuration elbow to valve. 50% COVERAGE RCH 9/6/2007			Start Time:	1115
Finish Time:	1330				

Instrument Settings

Serial No.:	102342		
Manufacturer:	KBA		
Model:	USN-50		
Delay:	4.125 µsec	Range:	1.4"
Mtl Cal/Vel:	.123/µsec	Pulser:	High
Damping:	Fixed	Reject:	0%
Rep. Rate:	Fixed	Freq.:	Fixed
Filter:	Fixed	Mode:	Fullwave
Voltage:	Fixed	Other:	Jack: R
Ax. Gain (dB):	22.5	Circ. Gain (dB):	22.5

10 Screen Div. = 1.25 in. of Depth

Linearity Report No.: L-07-003

Calibration Block

Cal. Block No.:	105266		
Thickness:	0.5" - 2.0"	Dia.:	0
Cal. Blk. Temp.:	76°	Temp. Tool:	105643
Comp. Temp.:	78°	Temp. Tool:	105643

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: No Reviewed Previous Data: N/A

Search Unit

Serial No.:	00X1R9		
Manufacturer:	KBA		
Size:	0.25"	Shape:	ROUND
Freq.:	2.25 Mhz	Style:	COMP-G
Exam Angle:	45°	# of Elements:	1
Mode:	Shear		
Measured Angle:	44°		
Wedge Style:	Non-Integral		

Search Unit Cable

Type:	RG174		
Length:	6'	No. Conn.:	0

Scan Coverage

Upstream ☑	Downstream ☐	Scan dB:	34.5
CW ☑	CCW ☑	Scan dB:	34.5
Exam Surface:	OD		
Surface Condition:	FLUSH		

Cal. Checks	Time	Date
Initial Cal.	1115	9/28/2007
Inter. Cal.		
Inter. Cal.		
Inter. Cal.		
Final Cal.	1330	9/28/2007

Couplant

Cal. Batch:	05225
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	05225
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.:	N/A
Type:	N/A

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Depth
0.5" Notch	80%	4.0	0.5"
1.0" Notch	80%	8.0	1.0"

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Depth
N/A	N/A	N/A	N/A

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Depth
N/A	N/A	N/A	N/A	N/A

Comments: One-sided exam. No recordable indications. ID Geometry observed at less than recordable levels and verified visually i.e. root. See USN-52L Table for transducer

Examiner	Level	III-PDI	Signature	Date	Reviewer	Signature	Date
Lancaster, Philip L.			P.L. Lancaster	9/28/2007	Feige, Edward J.	Edward J. Feige	9/27/07
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Donavin, Paul	Paul Donavin	9/27/07
Other	Level	III-PDI	Signature	Date	ANII Review	Signature	Date
Siever, Theodore J.			Ted Siever	9/26/2007	Jackson, Charles		9/9/07

Supplemental Report

Report No.: UT-07-059

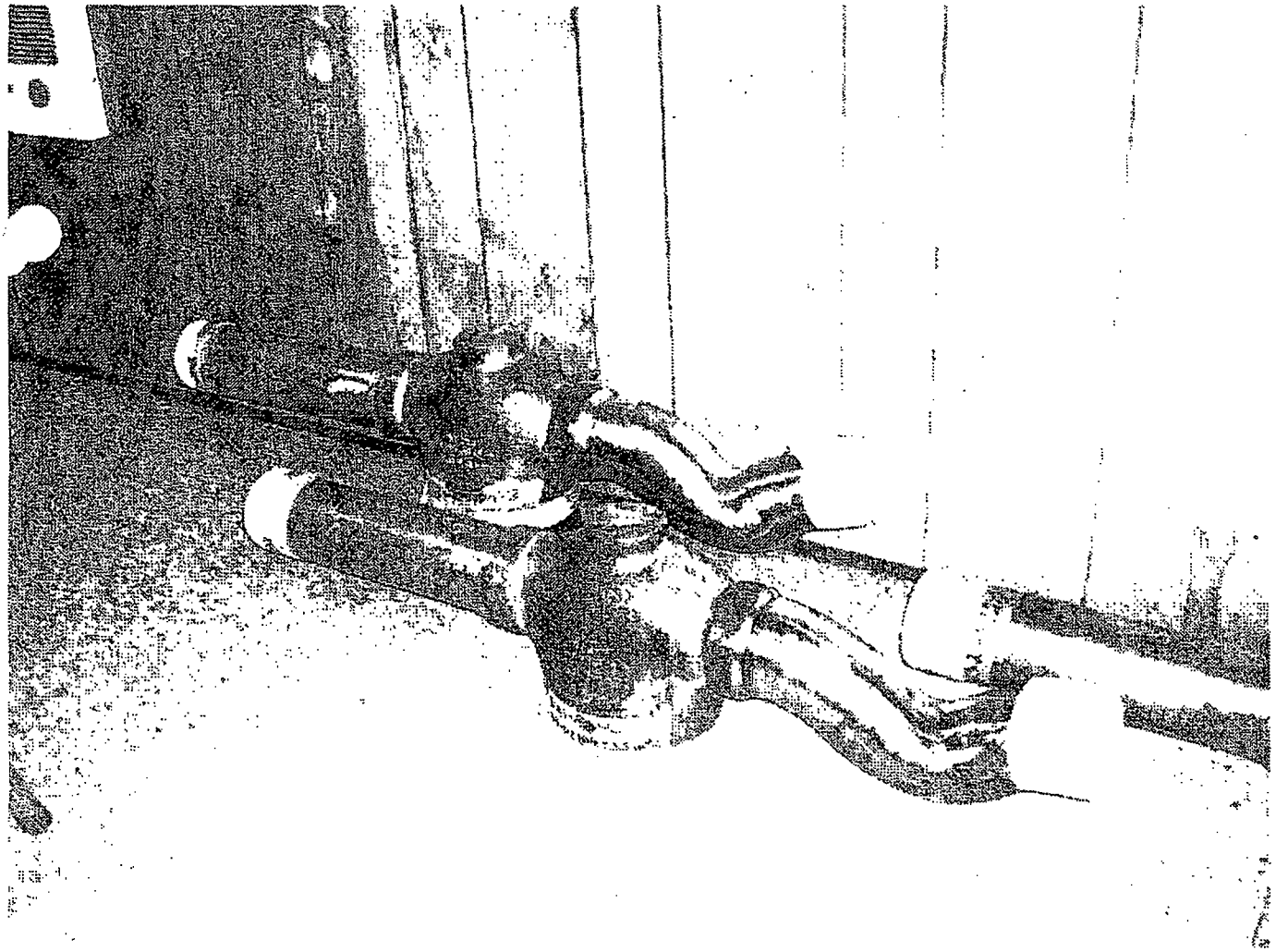
Page: 3 of 3

Summary No.: 028220

Examiner:	Lancaster, Philip L.	Level:	III-PDI	Reviewer:	Feige, Edward J.	Date:	9/27/07
Examiner:	N/A	Level:	N/A	Site Review:	Donavin, Paul	Date:	9/27/07
Other:	Siever, Theodore J.	Level:	III-PDI	ANII Review:	Jackson, Charles	Date:	9/28/07

Comments: **Typical spool piece.**
Component ID 2-RC-23-12

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\DSCN0162.JPG



Additional - Supplemental Reports <edit from Setup>

UT Calibration/Examination

Site/Unit:	AEP / 2	Procedure:	ISI-PDI-UT-2	Outage No.:	U2-C17
Summary No.:	028620	Procedure Rev.:	4	Report No.:	UT-07-066
Workscope:	ISI	Work Order No.:	55246120	Page:	1 of 3

Code:	ASME XI 1989	Cat./Item:	R-A/R1.20	Location:	PRESS. DH
Drawing No.:	A-22	Description:	ELBOW TO VALVE		
System ID:	RC				
Component ID:	2-RC-24-09			Size/Length:	3"/11"
Thickness/Diameter:	0.46"/3"				
Limitations:	One sided examination due to geometric configuration elbow to valve. 50% COVERAGE PER 4/6/2011			Start Time:	1115
Finish Time:	1330				

Instrument Settings

Serial No.:	102342		
Manufacturer:	KBA		
Model:	USN-60		
Delay:	4.125 µsec	Range:	1.4"
M'tl Cal/Vel:	.123/µsec	Pulser:	High
Damping:	Fixed	Reject:	0%
Rep. Rate:	Fixed	Freq.:	Fixed
Filter:	Fixed	Mode:	Fullwave
Voltage:	Fixed	Other:	Jack: R
Ax. Gain (dB):	22.6	Circ. Gain (dB):	22.6

10 Screen Div. = 1.26 In. of Depth

Linearity Report No.: L-07-003

Calibration Block

Cal. Block No.:	106256		
Thickness:	0.5" - 2.0"	Dia.:	0
Cal. Blk. Temp.:	76°	Temp. Tool:	105543
Comp. Temp.:	78°	Temp. Tool:	105543

Recordable Indication(s): Yes ☐ No ☑ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☑ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: No Reviewed Previous Data: N/A

Search Unit

Serial No.:	00X1R9		
Manufacturer:	KBA		
Size:	0.25"	Shape:	ROUND
Freq.:	2.25 Mhz	Style:	COMP-G
Exam Angle:	45°	# of Elements:	1
Mode:	Shear		
Measured Angle:	44°		
Wedge Style:	Non-Integral		

Search Unit Cable

Type:	RG174		
Length:	6'	No. Conn.:	0

Scan Coverage

Upstream ☑ Downstream ☒ Scan dB: 34.6 (4/27/09)

CW ☑ CCW ☑ Scan dB: 34.5

Exam Surface:	OD
Surface Condition:	FLUSH

Cal. Checks	Time	Date
Initial Cal.	1115	9/26/2007
Inter. Cal.		
Inter. Cal.		
Inter. Cal.		
Final Cal.	1330	9/26/2007

Couplant

Cal. Batch:	05225
Type:	Ultragel II
Mfg.:	Sonotech
Exam Batch:	05225
Type:	Ultragel II
Mfg.:	Sonotech

Reference Block

Serial No.:	N/A
Type:	N/A

Axial Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Depth
0.5" Notch	80%	4.0	0.6"
1.0" Notch	80%	8.0	1.0"

Circumferential Orientated Search Unit

Calibration Reflector	Signal Amplitude %	Sweep Division	Depth
N/A	N/A	N/A	N/A

Reference/Simulator Block

Gain dB	Reflector	Signal Amplitude %	Sweep Division	Depth
N/A	N/A	N/A	N/A	N/A

Comments: One-sided exam. No recordable indications. ID Geometry observed at less than recordable levels and verified visually i.e. root. See USN-52L Table for transducer

Examiner	Level	III-PDI	Signature	Date	Reviewer	Signature	Date
Lancaster, Phillip L.			Phil Lancaster	9/28/2007	Felge, Edward J.	Edward J Felge	9/27/07
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Donavin, Paul	Paul Donavin	9/27/07
Other	Level	III-PDI	Signature	Date	ANII Review	Signature	Date
Siever, Theodore J.			Ted Siever	9-26-07	Jackson, Charles		9/29/07

Supplemental Report

Report No.: UT-07-066

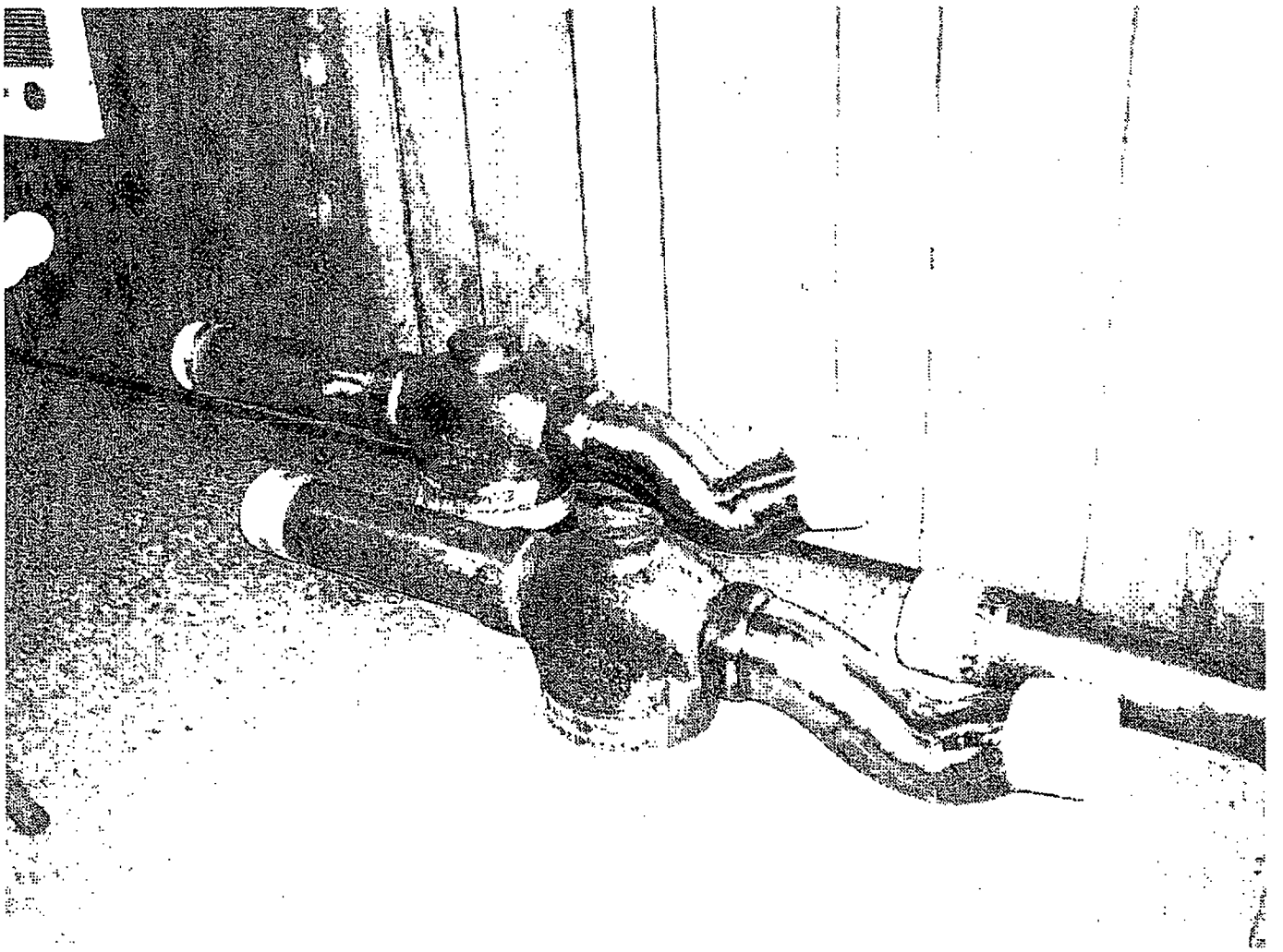
Page: 3 of 3

Summary No.: 028620

Examiner:	Lancaster, Philip L.	PL	Level: III-PDI	Reviewer:	Feige, Edward J.	EJF	Date: 9/27/07
Examiner:	N/A		Level: N/A	Site Review:	Donavin, Paul	PRD	Date: 9/27/07
Other:	Siever, Theodore J.	TS	Level: III-PDI	ANII Review:	Jackson, Charles	CJ	Date: 9/27/07

Comments: **Typical spool piece.**
Component ID 2-RC-24-09

Sketch or Photo: C:\Documents and Settings\S206165\My Documents\My Scans\2007-09 (Sep)\DSCN0162.JPG



Additional - Supplemental Reports <edit from Setup>

WESDYNE INTERNATIONAL

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ULTRASONIC CALIBRATION DATA SHEET

Plant: D.C. Cook Unit: 2

Comp/System: 2-SI-569-49S

ISO #: A-68

Summary No.: 122665

UT No. U2C18-UT-09-021

Procedure No.: WDI-STD-1026 REV 0

Cal Block No.: 1.5-SS-160-.281-1-DCC

Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105547

Block/Comp Temp 74.5° F/ 74° F

SEARCH UNIT

Scan Angle:	45°	Mode:	Shear
Serial No.:	00YHTP	Mfg.	KBA
Fixturing:	Non-Integral	Model:	Comp-G
Size:	.25"	Shape:	Rnd
Frequency:	2.25 MHz		
Measured Angle:	Ax 45° Circ 40°		
Cable Type:	RG-174	Length:	6'
Couplant Brand:		Ultra Gel II	
Couplant Batch:		04225	

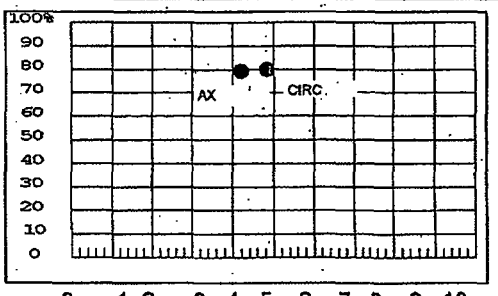
IIW / Rompas S/N - Step Wedge N/A

SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
|| To Weld	X
Connectors	0

Exit Pnt Dim: = N/A

[X] Contoured

IDENT	0° or ⊥ TO WELD Sweep Pos	AMPL %	ATTEN dB	|| TO WELD Sweep Pos	AMPL %	ATTEN dB
ID notch	4.2	80	30	4.9	80	4.0
	N			N	A	
		A				



Screen Divisions 10 = 1.0"

INSTRUMENT SETTINGS

Mfg/Model No.:	Krautkramer	USN 50	
Serial/SAP No.:	102342		
Damping:	Fixed	Puls Wth:	Fixed
Pulser:	High	Reject:	0%
Frequency:	Fixed	Rep. Rate:	Fixed
Display Mode (RECTIF):	Full Wave		
Filter: Fixed	Voltage: Fixed	Jack:	T
Range	1.0"	Vel.	.1220
Swp Delay	3.039	Zero	6.30

Gain 0° or ⊥	dB	30
Gain ||	dB	40

CAL. CHECKS	TIME
Initial Cal.	08:30
Intermediate	10:00
Intermediate	
Intermediate	
Final Cal.	11:25

Scan Sensitivity Axial = 42.5dB

Circ = 55 dB

INSTR. LINEARITY CAL.

	High	Low		High	Low
1			6		
2	N		7	N	
3		A	8		A
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	
80	-12	N
40	+6	A
20	+12	

Horizontal Linearity Performed

N/A **Acceptable**

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
2-SI-569-49S		X	X		Scan limitation due to
					support. Scanned 3"
					DS to support.
					Maintained 20% ID roll.
					50% Coverage Obtained
					4/30/09

Examiner _____ Level II Date 03/31/09

Print Matthew Schmalz

Examiner _____ Level _____ Date _____

Print

Reviewer _____ Level III Date 4/1/09

Utility Review Paul Donavin Date 4/1/09

Authorized Inspection Agency _____ Date 4-1-2009

Reuel K. Schenck

ADDITIONAL SHEETS? (Check Box)			
Continuation		Beam Plot	
Supplements	X	Other	

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WESDYNE INTERNATIONAL

WESDYNE INTERNATIONAL, LLC

A Westinghouse NDE Company

UT Sheet No. U2C18-UT-09-021

ULTRASONIC EXAMINATION
SCAN LIMITATION REPORT

Weld Number: ~~2-SI-58-495~~ 569 Rev 4/7/2011 Interfering Condition: I BEAM SUPPORT

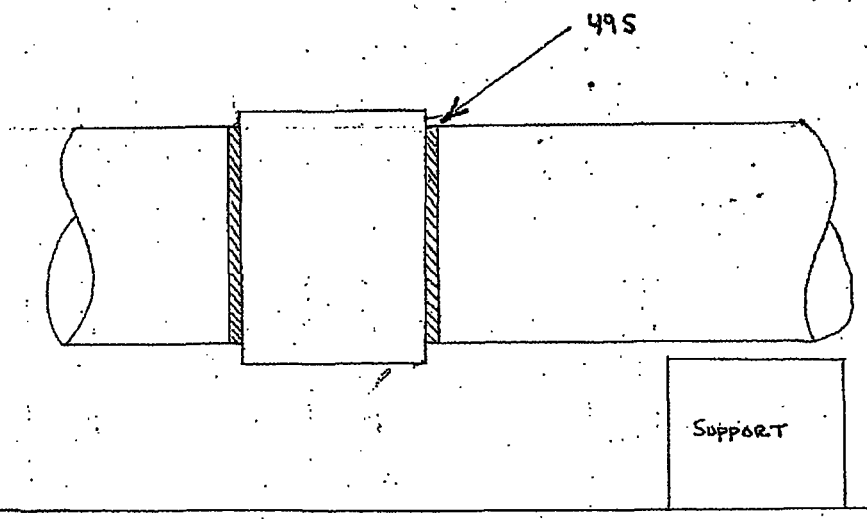
Size of Interfering Condition: 4"

Distance from Weld Centerline: N/A Distance from Datum Point 0.0: N/A

Reference Drawing Number: A-68

Comments and Sketches: (include extent of exam coverage not completed)

50% Coverage Obtained
RL: 4/30/09



Examiner: MATT SCHMALZ Level: II Date: 05-31-09

Examiner: _____ Level: _____ Date: _____

Reviewer: M.O Level: III Date: 4/1/09

Utility Review: Level: _____ Date: 4/1/09

Authorized Inspection Agency: Reuel K. Schenck Date: 4-1-2009

"Powerful part of your team"

WESDYNE INTERNATIONAL

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ULTRASONIC CALIBRATION DATA SHEET

Plant: D.C. Cook Unit: 2

Comp/System 2-SI-569-53S

ISO #: A-68

Summary No.: 122685

UT No. U2C18-UT-09-025

Procedure No. WDI-STD-1026 REV 0

Cal Block No. 1.5-SS-160-.281-1-DCC

Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105547

Block/Comp Temp 74.5° F/ 74° F

SEARCH UNIT

Scan Angle:	45°	Mode:	Shear
Serial No.:	00YHTP	Mfg.	KBA
Fixturing:	Non-Integral	Model:	Comp-G
Size:	.25"	Shape:	Rnd
Frequency:	2.25 MHz		
Measured Angle:	Ax 45° Circ 40°		
Cable Type:	RG-174	Length:	6'
Couplant Brand:	Ultra Gel II		
Couplant Batch:	04225		

IIW / Rompas S/N - Step Wedge N/A

SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
∥ To Weld	X

Connectors 0

Exit Pnt Dim: = N/A

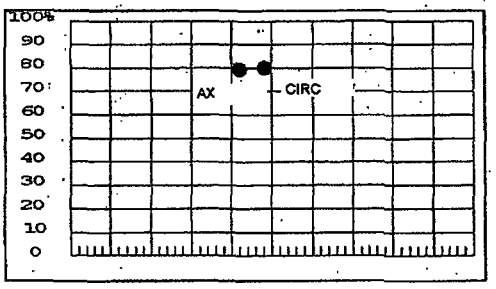
[X] Contoured

IDENT	0° or ⊥ TO WELD Sweep Pos	AMPL %	ATTEN dB	∥ TO WELD Sweep Pos	AMPL %	ATTEN dB
ID notch	4.2	80	30	4.9	80	4.0
	N			N	A	
		A				

INSTRUMENT SETTINGS

Mfg/Model No.:	Krautkramer USN 50		
Serial/SAP No.:	102342		
Damping:	Fixed	Puls Wth:	Fixed
Pulser:	High	Reject:	0%
Frequency:	Fixed	Rep. Rate:	Fixed
Display Mode (RECTIF):	Full Wave		
Filter: Fixed	Voltage: Fixed	Jack:	T
Range	1.0"	Vel.	.1220
Swp Delay	3.039	Zero	6.30

CAL. CHECKS	TIME
Initial Cal.	08:30
Intermediate	10:00
Intermediate	
Intermediate	
Final Cal.	11:25



Screen Divisions 10 = 1.0"

	dB	
Gain 0° or ⊥	dB	30
Gain ∥	dB	40

Scan Sensitivity Axial = 42.5dB

Circ = 55 dB

INSTR. LINEARITY CAL.

	High	Low		High	Low
1			6		
2	N		7	N	
3		A	8		A
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	
80	-12	N
40	+6	A
20	+12	

Horizontal Linearity Performed

N/A **Acceptable**

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
2-SI-569-53S		X	X		Scan limitation due to configuration of part. Performed CIRC scan only. Maintained 20% ID roll. 50% Coverage Obtained AL 4/3/09

Examiner Print Matthew Schmalz Level II Date 03/31/09

Examiner Print _____ Level _____ Date _____

Reviewer M. O. Level III Date 4/1/09

Utility Review Paul Donavin Date 4/1/09

Authorized Inspection Agency Travel Ic Schenck Date 4-1-09

ADDITIONAL SHEETS? (Check Box)			
Continuation		Beam Plot	X
Supplements	X	Other	

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WESDYNE INTERNATIONAL, LLC

UT Sheet No. 42618-UT-09-025

Page 2 of 2

ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

569 - Revised 4/7/2011

Weld Number: 2-SI-~~58~~-535 Interfering Condition: WELD FROM ADJACENT JOINT

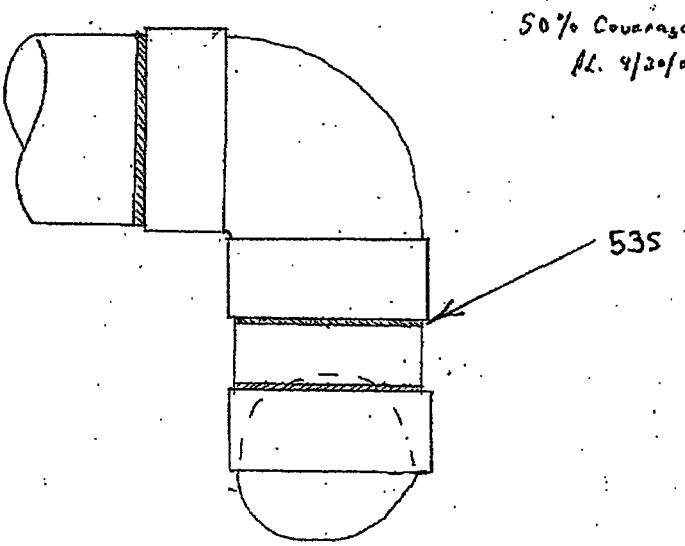
Size of Interfering Condition: 1" - 360°

Distance from Weld Centerline: N/A Distance from Datum Point 0.0: N/A

Reference Drawing Number: A-68

Comments and Sketches: (include extent of exam coverage not completed)

50% Coverage Obtained
AL. 4/20/09



Examiner: MATT SCHMALZ Level: II Date: 03-31-09

Examiner: _____ Level: _____ Date: _____

Reviewer: M.O. Level: III Date: 4/1/09

Utility Review: Paul Donavin Level: _____ Date: 4/1/09

Authorized Inspection Agency: RVICS / Reuel C Schall Date: 4-1-2009

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ULTRASONIC CALIBRATION DATA SHEET

ant: D.C. Cook Unit: 2

Comp/System 2-SI-569-54S

ISO #: A-68

Summary No.: 122687

UT No. U2C18-UT-09-026

Procedure No. WDI-STD-1026 REV 0

Cal Block No. 1.5-SS-160-.281-1-DCC

Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105547

Block/Comp Temp 74.5° F/ 74° F

SEARCH UNIT

Scan Angle:	45°	Mode:	Shear
Serial No.:	00YHTP	Mfg.	KBA
Fixturing:	Non-Integral	Model:	Comp-G
Size:	.25"	Shape:	Rnd
Frequency:	2.25 MHz		
Measured Angle:	Ax 45° Circ 40°		
Cable Type:	RG-174	Length:	6'
Couplant Brand:		Ultra Gel II	
Couplant Batch:		04225	

IIW / Rompas S/N - Step Wedge N/A

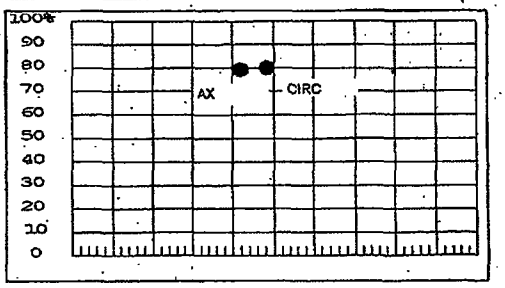
SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
|| To Weld	X

Connectors 0

Exit Pnt Dim: ≒ N/A

X Contoured

IDENT	0° or ⊥ TO WELD Sweep Pos	AMPL %	ATTEN dB	|| TO WELD Sweep Pos	AMPL %	ATTEN dB
ID notch	4.2	80	30	4.9	80	4.0
	N			N	A	
		A				



Screen Divisions 10 = 1.0"

INSTRUMENT SETTINGS

Mfg/Model No.:	Krautkramer USN 50		
Serial/SAP No.:	102342		
Damping:	Fixed	Puls Wth:	Fixed
Pulser:	High	Reject:	0%
Frequency:	Fixed	Rep. Rate:	Fixed
Display Mode (RECTIF):	Full Wave		
Filter: Fixed	Voltage: Fixed	Jack:	T
Range	1.0"	Vel.	.1220
Swp Delay	3.039	Zero	6.30

Gain 0° or ⊥	dB	30
Gain ||	dB	40

CAL. CHECKS	TIME
Initial Cal.	08:30
Intermediate	10:00
Intermediate	
Intermediate	
Final Cal.	11:25

Scan Sensitivity Axial = 42.5dB

Circ = 55 dB

INSTR. LINEARITY CAL.

	High	Low		High	Low
1			6		
2	N		7	N	
3		A	8		A
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	
80	-12	N
40	+6	A
20	+12	

Horizontal Linearity Performed

N/A **Acceptable**

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
2-SI-569-54S		X	X		Scan limitation due to configuration of part. Performed CIRC scan only. Maintained 20% ID roll. 50% Coverage Obtained R2. 4/20/09

Examiner _____ Level II Date 03/31/09

Print Matthew Schmalz

Examiner _____ Level _____ Date _____

Print

Reviewer _____ Level III Date 4/1/09

Utility Review _____ Date 4/1/09

Authorized Inspection Agency _____ Date 4-1-2009

Reviewed Schence

ADDITIONAL SHEETS? (Check Box)			
Continuation		Beam Plot	
Supplements	X	Other	

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UT Sheet No. U2C18-UT-09-026

Page 2 of 2

ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

59- Rev 4/7/2011

Weld Number: 2-SI-~~58~~-545 Interfering Condition: WELD FROM ADJACENT JOINT

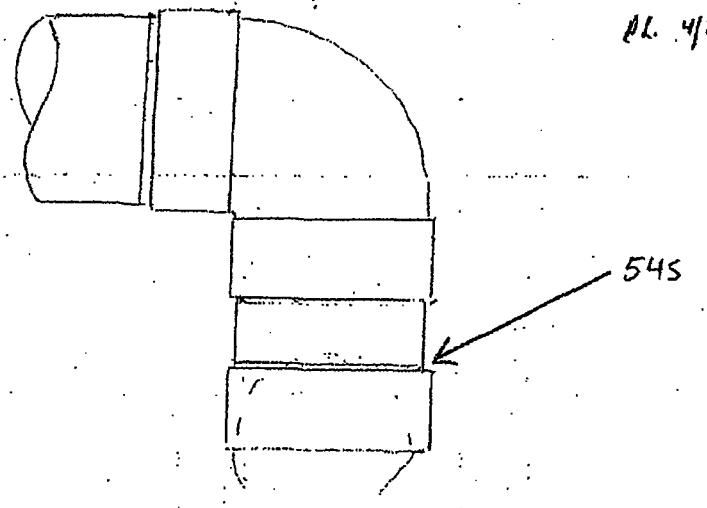
Size of Interfering Condition: 1"-360°

Distance from Weld Centerline: N/A Distance from Datum Point 0.0: N/A

Reference Drawing Number: A-68

Comments and Sketches: (include extent of exam coverage not completed)

56% Coverage Obtained PL. 4/30/09



Examiner: MATT SCHMALZ Level: II Date: 03-31-09

Examiner: Level: Date:

Reviewer: M.O. Level: III Date: 4/1/09

Utility Review: Paul Donavin Level: Date: 4/1/09

Authorized Inspection Agency: R.C.S.O./Reuel K. Schock Date: 4-1-2009

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ULTRASONIC CALIBRATION DATA SHEET

Plant: D.C. Cook Unit: 2

Comp/System: 2-SI-57-22

ISO #: A-48

Summary No.: 093200

UT No. U2C18-UT-09-039

Procedure No. ISI-PDI-UT-2 Rev 4

Cal Block No. 102917

Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105547

Block/Comp Temp 88 ° F/ 68 ° F

SEARCH UNIT

Scan Angle:	60 ° RL	Mode:	Long
Serial No.:	D5-483	Mfg.	RTD
Fixturing:	Integral	Model:	TRL-2
Size:	2(8x14)	Shape:	Rect
Frequency:	2 MHz		
Measured Angle:	60 °		
Cable Type:	RG-174	Length:	6'
Couplant Brand:	Ultragel II		
Couplant Batch:	07125		

IIW / Rompas S/N - Step Wedge 102268

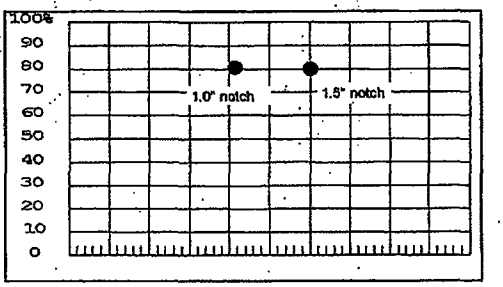
SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
|| To Weld	

Connectors 0

Exit Pnt Dim: = N/A

N/A Contoured

IDENT	0° or ⊥ TO WELD Sweep Pos	AMPL %	ATTEN dB	|| TO WELD Sweep Pos	AMPL %	ATTE N dB
1.0" notch	4.2	80	47.2			
1.5" notch	6.0	80	47.2			
	N			N	A	
		A				



Screen Divisions, 10 = 5"

INSTRUMENT SETTINGS

Mfg/Model No.:	GEIT	USN 60 SW	
Serial/SAP No.:	105420	Display Start = IP	
Damping:	500	Pulse Width	250
Pulser Type:	Dual	Reject:	0%
Frequency:	2 MHz	PRF Mode:	Auto High
Display Mode (RECTIF):	Full Wave		
Filter: Fixed	Voltage: 450	Jack:	T&R
Range	5.0	Vel.	.2279
Swp Delay	7.6509	Zero	0.00

CAL. CHECKS	TIME
Initial Cal.	11:00
Intermediate	
Intermediate	
Intermediate	
Final Cal.	13:30

Gain 0° or ⊥	dB	47.2
Gain ||	dB	N/A

Scan Sensitivity Axial = 59.0

Circ = N/A

INSTR. LINEARITY CAL.

	High	Low		High	Low
1			6		
2	N		7	N	
3		A	8		A
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	
80	-12	N
40	+6	A
20	+12	

Horizontal Linearity Performed

N/A **Acceptable**

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
2-SI-57-22		X	X		Single sided exam due to configuration of component. Maintained 20% ID roll.

Examiner _____ Level II Date 04/02/2009

Print Matthew Schmalz

Examiner _____ Level _____ Date _____

Print

Reviewer _____ Level III Date 4/3/09

Utility Review _____ Date 4/3/09

Authorized Inspection Agency _____ Date 4-4-2009

Reuel W. Schenck

ADDITIONAL SHEETS? (Check Box)			
Continuation		Beam Plot	X
Supplements	X	Other	

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ULTRASONIC EXAMINATION SUPPLEMENT SHEET

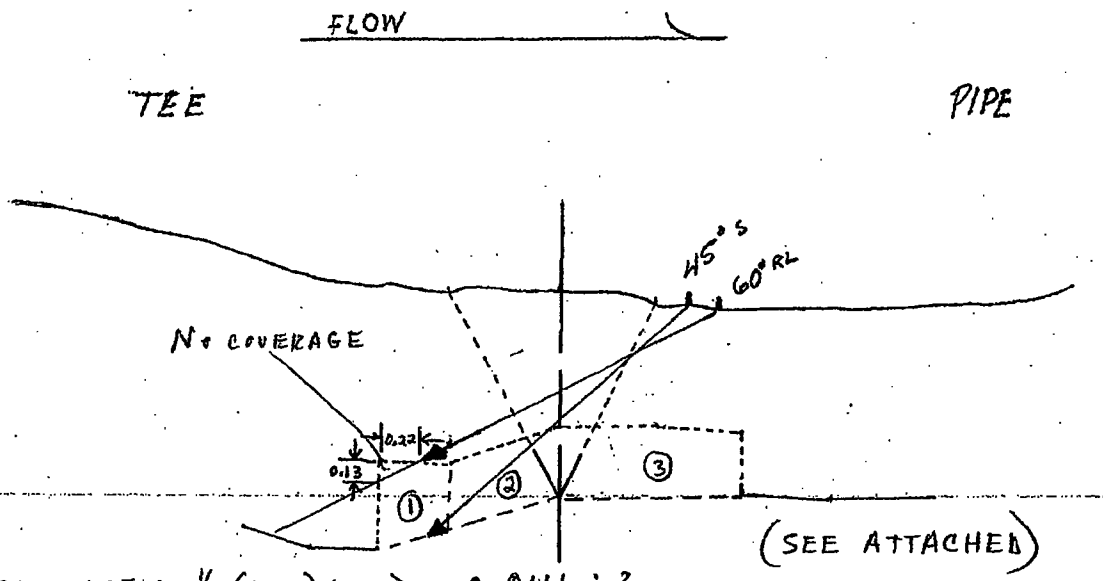
UT No. U2C18-UT-09-039

Plant/Unit: DC COOK / Unit 2

Comp/System: 2-SI-57

Weld / Component ID Number: 2-SI-57-22

Crown Height:	.1"
Crown Width:	1.1"
Diameter:	10"
Weld Length:	31.4"



(SEE ATTACHED)

NO COVERAGE = $\frac{1}{2}(0.22)(0.13) = 0.014\ in^2$

TOTAL = $0.876\ in^2$

MISSED COVERAGE = $\frac{0.014}{0.876} * 100\% = 1.6\%$

SINGLE SIDED EXAMS COVERAGE = 50%

TOTAL COVERAGE = 50 − 1.6 = 48.4%

Comments: SINGLE SIDED EXAM DUE TO Component CONFIGURATION

Examiner: MATT SCHMALZ Level: II Date: 4-2-09 Examiner: _____ Level: ___ Date: _____

Reviewer: M. O. Level: III Date: 4/3/09 Utility Reviewer: [illegible] Level: ___ Date: 4/3/09

Authorized Inspection Agency: RAS O'Reveil & Schenk Date: 4-4-2009

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ULTRASONIC EXAMINATION SUPPLEMENT SHEET

UT No. U2C18-UT-09-039

Plant/Unit: DC COOK / UNIT 2

Comp/System: 2-SI-57

Weld / Component ID Number: 2-SI-57-22

Crown Height:	
Crown Width:	N/A
Diameter:	
Weld Length:	

AREA 1 = $\left(\frac{0.15 + 0.14}{2}\right) * 0.42 = 0.189\ in^2$

AREA 2 = $(0.67)(0.38) = 0.254\ in^2$

AREA 3 = $(1.03)(0.42) = 0.433\ in^2$

TOTAL = $0.876\ in^2$

Comments:

Examiner: N/A Level: N/A Date: N/A Examiner: N/A Level: N/A Date: N/A

Reviewer: M. O. Level: III Date: 4/3/09 Utility Reviewer: Paul Dono Level: — Date: 4/3/09

Authorized Inspection Agency: RVIS / Reuel C. Schenck Date: 4-4-2009

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ULTRASONIC CALIBRATION DATA SHEET

Plant: D.C. Cook Unit: 2

Comp/System 2-SI-56-10

ISO #: A-47

Summary No.: 088900

UT No. U2C18-UT-09-044

Procedure No. ISI-PDI-UT-2 Rev 4

Cal Block No. 102917

Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105547

Block/Comp Temp 80 °F/ 79 °F

SEARCH UNIT

Scan Angle:	60 °	Mode:	Long
Serial No.:	05-483	Mfg.	RTD
Fixturing:	Integral	Model:	TRL-2
Size:	2(6x14)	Shape:	Rect
Frequency:	2.0 MHz		
Measured Angle:	60 °		
Cable Type:	RG-174	Length:	6'
Couplant Brand:	Ultra Gel II		
Couplant Batch:	07125		

IIW / Rompas S/N - Step Wedge 102268

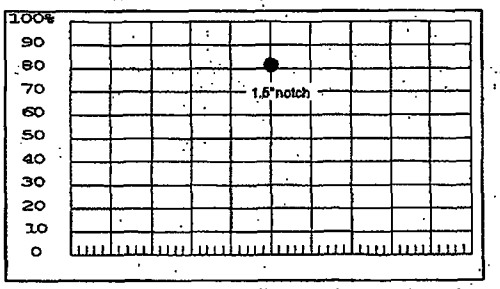
SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
|| To Weld	

Connectors 0

Exit Pnt Dim: = N/A

☐ N/A Contoured

IDENT	⊥ TO WELD Sweep Pos	⊥ TO WELD AMPL %	⊥ TO WELD ATTEN dB	|| TO WELD Sweep Pos	|| TO WELD AMPL %	|| TO WELD ATTEN dB
1.5" notch	5	80	45			
					N	
						A
	N					
		A				



Screen Divisions, 10 = 5.9116"

INSTRUMENT SETTINGS

Mfg/Model No.:	GEIT	USN 60 SW	
Serial/SAP No.:	105420	Display Start:	IP
Damping:	500	Pulser Width:	250
Mode Select	Square	Reject:	Off
Frequency:	2.0	PRF Mode:	Auto High
Display Mode:	(RECTIF): Full Wave		
Filter: Fixed	Voltage: 450	Jack:	T&R
Range	5.9116	Vel.	.2245
Swp Delay	7.5034	Zero	N/A

CAL. CHECKS	TIME
Initial Cal.	12:50
Intermediate	
Intermediate	
Intermediate	
Final Cal.	15:37

Gain 0° or ⊥	dB	45
Gain ||	dB	N/A

Scan Sensitivity Axial = 55

Circ = 59

INSTR. LINEARITY CAL.

	High	Low		High	Low
1			6		
2	N		7	N	
3		A	8		A
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	
80	-12	N
40	+6	A
20	+12	

Horizontal Linearity Performed

N/A **Acceptable**

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
2-SI-56-10		X	X		Maintained 10 to 20%
					ID roll.
					See scan limitation
					report.

Examiner [signature] Level II Date 04/04/2009

Print James Gatica

Examiner [signature] Level I Date 04/04/2009

Print Patrick Langrenk

Reviewer [signature] Level III Date 4/6/09

Utility Review [signature] Date 4/6/09

Authorized Inspection Agency [signature] Date 4-6-2009

Revel K. Schenck

ADDITIONAL SHEETS? (Check Box)			
Continuation		Beam Plot	X
Supplements	X	Other	

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Attachment to :
UT Sheet No. U2C18-UT-09-044

Page 6 of 7

ULTRASONIC EXAMINATION SCAN LIMITATION REPORT

Weld Number: 2-S1-56-10 Interfering Condition: BOX RESTRAINT/SUPPORT

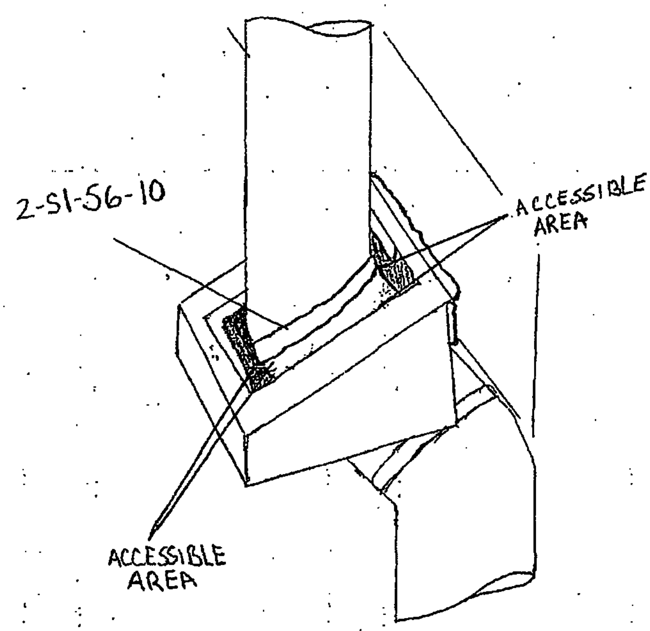
Size of Interfering Condition: 23" TOTAL

Distance from Weld Centerline: -.6" Distance from Datum Point 0.0: 0"

Reference Drawing Number: A-47

Comments and Sketches: (include extent of exam coverage not completed)

Able to ACHIEVE COVERAGE ON upstream SIDE 2"-6.5", 12"-13", 21"-22", 27.5-32" in "L"



EXAMINER [signature] LEVEL II DATE 4/4/09

EXAMINER [signature] LEVEL I DATE 4/4/09

REVIEWER [signature] LEVEL III DATE 4/6/09

Client REVIEW: [signature] LEVEL — DATE 4/6/09

Authorized Inspection Agency [signature] / Reuel K. Schengel DATE 4-6-2009

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ULTRASONIC EXAMINATION SUPPLEMENT SHEET

UT No. U2C18-UT-09-044

Plant/Unit: DC COOK UNIT 2

Comp/System: 2-SI-56

Weld / Component ID Number: 10

Crown Height:	0.07"
Crown Width:	1.1"
Diameter:	10" NOM
Weld Length:	34"

TOTAL WELD LENGTH = 34" X 2SIDES = 68".

TOTAL UNSCANNED LENGTH = 23" ON ONE SIDE.

TOTAL COVERAGE % = $\frac{68-23}{68}$ * 100% = 66.2%

Comments:

Examiner: N/A Level: N/A Date: N/A Examiner: N/A Level: N/A Date: N/A

Reviewer: M.O. Level: III Date: 4/6/09 Utility Reviewer: [signature] Level: — Date: 4/6/09

Authorized Inspection Agency: [signature] / Reuel K. Schaule Date: 4-6-2009

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ULTRASONIC CALIBRATION DATA SHEET

Plant: D.C. Cook Unit: 2 UT No. U2C18-UT-09-048

Comp/System 2-SI-78-01 Procedure No. ISI-PDI-UT-2 Rev 4

ISO #: A-47 Cal Block No. 102917

Summary No.: 090100 Scan Surface: ☐ ID ☑ OD

Thermometer S/N or SAP#: 105547 Block/Comp Temp 80 °F/ 79 °F

SEARCH UNIT

Scan Angle:	60 °	Mode:	Long
Serial No.:	05-483	Mfg.	RTD
Fixturing:	Integral	Model:	TRL-2
Size:	2(8x14)	Shape:	Rect
Frequency:	2.0 MHz		
Measured Angle:	60 °		
Cable Type:	RG-174	Length:	6'
Couplant Brand:		Ultra Gel II	
Couplant Batch:		07125	

IIW / Rompas S/N - Step Wedge 102268

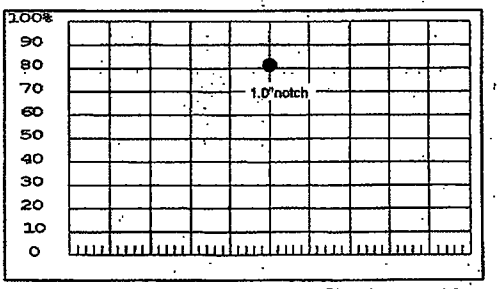
SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
|| To Weld	

Connectors 0

Exit Pnt Dim: = N/A

N/A Contoured

IDENT	0° or ⊥ TO WELD Sweep Pos	AMPL %	ATTEN dB	|| TO WELD Sweep Pos	AMPL %	ATTEN dB
1.0" notch	5	80	50			
					N	
						A
	N					
		A				



Screen Divisions, 10 = 3.9610"

INSTRUMENT SETTINGS

Mfg/Model No.:	GEIT	USN 60 SW	
Serial/SAP No.:	105420	Display Start:	IP
Damping:	500	Pulser Width:	250
Mode Select	Square	Reject:	Off
Frequency:	2.0	PRF Mode:	Auto High
Display Mode (RECTIF):	Full Wave		
Filter: Fixed	Voltage: 450	Jack:	T&R
Range	3.9610	Vel.	.2245
Dwp Delay	7.5034	Zero	N/A

CAL. CHECKS	TIME
Initial Cal.	11:55
Intermediate	
Intermediate	
Intermediate	
Final Cal.	15:45

Gain 0° or ⊥	dB	50
Gain ||	dB	N/A

Scan Sensitivity Axial = 56

Circ = N/A

INSTR. LINEARITY CAL.

	High	Low		High	Low
1			6		
2	N		7	N	
3		A	8		A
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	
80	-12	N
40	+6	A
20	+12	

Horizontal Linearity Performed

N/A **Acceptable**

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
2-SI-78-01		X	X		Single sided access
					downstream due to
					valve configuration.
					Maintained 10 to 20%
					ID roll for exam.
					50% Coverage Obtained R1. 4/3 of 09

Examiner Print James Gatica Level II Date 04/04/2009

Examiner Print Patrick Langrock Level I Date 04/04/2009

Reviewer [signature] Level III Date 4/6/09

Utility Review [signature] Date 4/6/09

Authorized Inspection Agency [signature] Date 4-6-2009

Rene K Schencer

ADDITIONAL SHEETS? (Check Box)			
Continuation		Beam Plot	X
Supplements	X	Other	

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ULTRASONIC EXAMINATION SUPPLEMENT SHEET

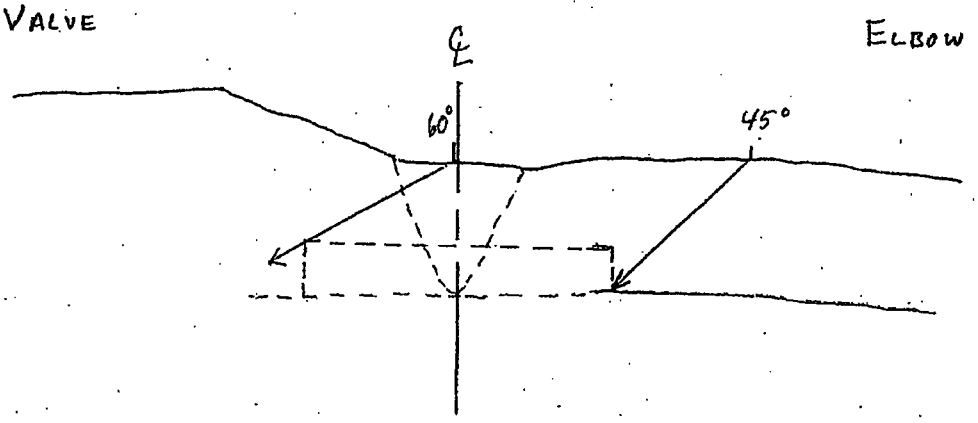
UT No, U2C18-UT-09-048

Plant/Unit: DC COOK UNIT 2

Comp/System: 2-SI-78

Weld / Component ID Number: 01

Crown Height:	N/A
Crown Width:	0.75"
Diameter:	6" NOM
Weld Length:	21.4"



PROFILE TAKEN FROM PREVIOUS EXAM REPORT. (SEE ATTACHED.)
SINGLE SIDE COVERAGE. 50% Coverage Obtained
Rd. 4/30/09

Comments:

Examiner: N/A Level: N/A Date: N/A Examiner: N/A Level: N/A Date: N/A

Reviewer: M.O. Level: III Date: 4/6/09 Utility Reviewer: Paul Bonano Level: Date: 4/6/09

Authorized Inspection Agency: RMCS O/Reuel C. Schenck Date: 4-6-2009

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ULTRASONIC CALIBRATION DATA SHEET

Plant: D.C. Cook Unit: 2
Comp/System: 2-SI-56-22
ISO #: A-47
Summary No.: 090000

UT No. U2C18-UT-09-063
Procedure No. ISI-PDI-UT-2 Rev 4
Cal Block No. 102917
Scan Surface: ☐ ID ☑ OD
Thermometer S/N or SAP#: 105547
Block/Comp Temp 80 °F/ 79 °F

SEARCH UNIT

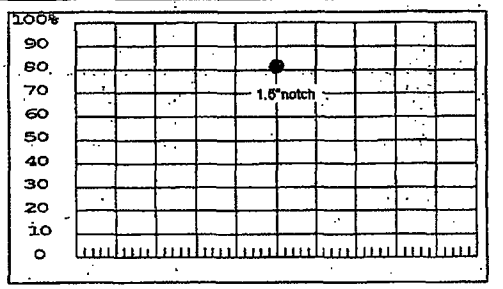
Scan Angle:	60 °	Mode:	Long
Serial No.:	05-483	Mfg.	RTD
Fixturing:	Integral	Model:	TRL-2
Size:	2(8x14)	Shape:	Rect
Frequency:	2.0 MHz		
Measured Angle:	60 °		
Cable Type:	RG-174	Length:	6'
Couplant Brand:		Ultra Gel II	
Couplant Batch:		07125	

IIW / Rompas S/N - Step Wedge 102268

SCAN AREA	
0° WRV	
0° BM	
⊥ To Weld	X
|| To Weld	

Connectors 0
Exit Pnt Dim: = N/A
N/A Contoured

	0° or ⊥ TO WELD			|| TO WELD		
IDENT	Sweep Pos	AMPL %	ATTEN dB	Sweep Pos	AMPL %	ATTEN dB
1.5" notch	5	80	45			
					N	
						A
	N					
		A				



Screen Divisions, 10 = 5.9116"

INSTRUMENT SETTINGS

Mfg/Model No.:	GEIT	USN 60 SW	
Serial/SAP No.:	105420	Display Start:	IP
Damping:	500	Pulser Width:	250
Mode Select	Square	Reject:	Off
Frequency:	2.0	PRF Mode:	Auto High
Display Mode (RECTIF):	Full Wave		
Filter: Fixed	Voltage: 450	Jack:	T&R
Range	5.9116	Vel.	.2245
Swp Delay	7.5034	Zero	N/A

CAL. CHECKS	TIME
Initial Cal.	08:15
Intermediate	
Intermediate	
Intermediate	
Final Cal.	11:45

Gain 0° or ⊥	dB	45
Gain ||	dB	N/A

Scan Sensitivity Axial = 55
Circ = 59

INSTR. LINEARITY CAL.

	High	Low		High	Low
1			6		
2	N		7	N	
3		A	8		A
4			9		
5			10		

AMPL. CONTROL LINEARITY

Initial	Δ dB	Result
80	-6	
80	-12	N
40	+6	A
20	+12	

Horizontal Linearity Performed
N/A **Acceptable**

EXAMINATION WELD/AREA	Recordable Indications Yes	Recordable Indications No	Scan Limitation Yes	Scan Limitation No	COMMENTS
2-SI-56-22		X	X		Maintained 10 to 20%
					ID roll.
					Single sided access
					due to branch connection
					configuration.
					50% Coverage Obtained PL 4/30/09

Examiner [signature] Level II Date 04/03/2009
Print James Gatica

Examiner [signature] Level I Date 04/03/2009
Print Patrick Langreck

Reviewer [signature] Level III Date 4/7/09

Utility Review [signature] Date 4/7/09

Authorized Inspection Agency [signature] Date 4-7-2009
Reuel R Sclera

ADDITIONAL SHEETS? (Check Box)			
Continuation		Beam Plot	X
Supplements	X	Other	

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WESDYNE INTERNATIONAL

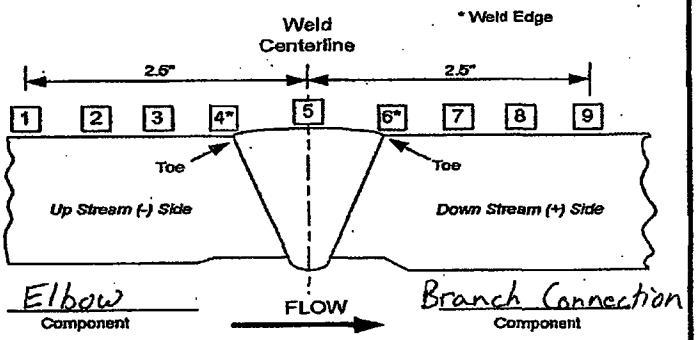
A Westinghouse NDE Company

UT No. U2C18-UT-09-063

WALL THICKNESS PROFILE SHEET

WELD NO.: 2-SI-56-22

	Position	0°	90°	180°	270°
	1	1.123			
	2	1.108			
	3	1"			
TOE*	4	1.023			
C_L	5	1"	NA	NA	NA
TOE*	6	1"			
	7	X			
	8	X			
	9	X			



Crown Height: .09"

Diameter: 10"

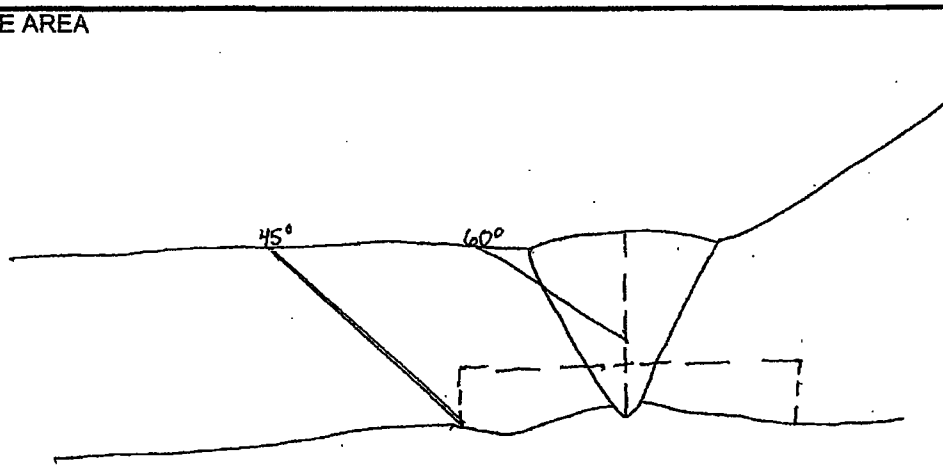
Crown Width: 1.07"

Weld Length: 34.5"

Longseam: N/A

Iso Drawing: A-47

PROFILE AREA



SINGLE SIDED COVERAGE, 50% Coverage
PL 4/30/09

FLOW →

Examiner: [signature] Level: II Date: 4/3/09

Examiner: [signature] Level: I Date: 4/3/09

Reviewer: M.O. Level: III Date: 4/3/09

Utility Review: Paul Donabin Level: — Date: 4/7/09

Authorized Inspection Agency: RUSI / Reed K. Schenck Date: 4-7-2009

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