



Nuclear Management Company, LLC
Prairie Island Nuclear Generating Plant
1717 Wakonade Dr. East • Welch MN 55089

SEP 08 2005

L-PI-05-082
10 CFR 50.55a

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

Prairie Island Nuclear Generating Plant Unit 2
Docket No. 50-306
License No. DPR-60

Request for Relief No. 21, for the Unit 2 3rd 10-year Interval Inservice
Inspection Program

On November 15, 1994 we submitted for review our third 10-year Inservice Inspection Examination Plan for Unit 2 and, on April 19, 1995, relief request revisions associated with that plan. The NRC issued its evaluation of the 3rd 10-year Interval Program Plan on February 22, 1996.

The purpose of this letter is to submit a relief request for "limited examinations" associated with that plan. Attached is Unit 2 Relief Request No. 21, Revision 0 which addresses those limited examinations. We are requesting relief pursuant to 10 CFR Part 50, Section 50.55a(g)(5)(iv) due to the impracticality of obtaining "100%" examination coverage for the affected items.

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.

Thomas J. Palmisano
Site Vice President, Prairie Island Nuclear Generating Plant

cc: (see next page)

1047

Document Control Desk
Page 2

cc: Regional Administrator, USNRC, Region III
Project Manager, Prairie Island Nuclear Generating Plant, USNRC, NRR
NRC Resident Inspector – Prairie Island Nuclear Generating Plant
Chief Boiler Inspector, State of Minnesota

Enclosure



Nuclear Management Company, LLC
Prairie Island Nuclear Generating Plant
1717 Wakonade Dr. East • Welch MN 55089

L-PI-05-082
10 CFR 50.55a

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

Prairie Island Nuclear Generating Plant Unit 2
Docket No. 50-306
License No. DPR-60

Request for Relief No. 21, for the Unit 2 3rd 10-year Interval Inservice
Inspection Program

On November 15, 1994 we submitted for review our third 10-year Inservice Inspection Examination Plan for Unit 2 and, on April 19, 1995, relief request revisions associated with that plan. The NRC issued its evaluation of the 3rd 10-year Interval Program Plan on February 22, 1996.

The purpose of this letter is to submit a relief request for "limited examinations" associated with that plan. Attached is Unit 2 Relief Request No. 21, Revision 0 which addresses those limited examinations. We are requesting relief pursuant to 10 CFR Part 50, Section 50.55a(g)(5)(iv) due to the impracticality of obtaining "100%" examination coverage for the affected items.

Summary of Commitments

This letter contains no new commitments and no revisions to existing commitments.

Thomas J. Palmisano
Site Vice President, Prairie Island Nuclear Generating Plant

cc: (see next page)

Document Control Desk
Page 2

cc: Regional Administrator, USNRC, Region III
Project Manager, Prairie Island Nuclear Generating Plant, USNRC, NRR
NRC Resident Inspector – Prairie Island Nuclear Generating Plant
Chief Boiler Inspector, State of Minnesota

Enclosure

ENCLOSURE

September 2005

ISI Relief Request No. 21 (Rev. 0), Prairie Island Unit 2, 3rd Interval

This enclosure consists of a 7 page write-up, entitled, "ISI Relief Request No. 21 (Rev. 0), Prairie Island Unit 2, 3rd Interval" and the following attachments:

- Attachment 1, Drawing No. 2-ISI-40, 1 page
- Attachment 2, Inspection Report No. 2005VE019, 8 pages
- Attachment 3, Inspection Report No. 2005VE021, 10 pages
- Attachment 4, Inspection Report No. 2005VE023, 12 pages
- Attachment 5, Inspection Report No. 2005VE024, 10 pages
- Attachment 6, Drawing No. 2-ISI-33A, 1 page
- Attachment 7, Inspection Report No. 2005U036, 5 pages
- Attachment 8, Drawing No. 2-ISI-10A, 1 page
- Attachment 9, Inspection Report No. 2005U024, 5 pages
- Attachment 10, Drawing No. 2-ISI-47B, 1 page
- Attachment 11, Inspection Report No. 2005U023, 4 pages
- Attachment 12, Prairie Island Procedure SWI NDE-LTS-1, Rev. 1 "Limitations to NDE" 13 pages

78 pages follow

ISI Relief Request No. 21 (Rev. 0), Prairie Island Unit 2, 3rd Interval

Limited Examination

SYSTEM: Various
CATEGORY: Various

CLASS: 1 and 2
ITEM NO: Various

Impractical Examination Requirements:

American Society of Mechanical Engineers (ASME) Section XI (1989 Edition, no addenda) Code requires full examination coverage of inservice inspection (ISI) components per Table IWB-2500-1, and IWC-2500-1. NRC Regulatory Guide 1.147 endorses the use of Section XI Code Case N-460, "Alternative Examination Coverage for Class 1 and Class 2 Welds." This code case allows greater than 90% coverage of a weld to meet the "essentially 100%" requirement.

In addition, NRC Information Notice 98-42 "Implementation of 10 CFR 50.55a(g) Inservice Inspection requirements" dated Dec. 1, 1998, states, "The NRC has adopted and further refined the definition of 'essentially 100 percent' to mean 'greater than 90 percent' in 10 CFR 50.55a(g)(6)(ii)(A)(2) for required examination coverage of reactor pressure vessel welds. This standard has been applied to all examination of welds or other areas required by ASME Section XI."

The Prairie Island construction permit was issued in 1967. This facility was designed and constructed with limited accessibility due to component configurations and/or physical barriers for which 100% examination coverage is not achievable on some ISI components examined for the Third Ten Year Interval.

Basis for Relief:

This request is submitted pursuant to 10 CFR 50.55a(g)(5)(iv) which states, "Where an examination requirement by the code or addenda is determined to be impractical by the licensee and is not included in the revised inservice inspection program as permitted by paragraph (g)(4) of this section, the basis for this determination must be demonstrated to the satisfaction of the Commission."

The regulation further states in 10 CFR 50.55a(g)(1) that, "For a boiling or pressurized water-cooled nuclear power facility whose construction permit was issued before January 1, 1971, components (including supports) must meet the requirements of paragraphs (g) (4) and (g)(5) of this section to the extent practical." 10 CFR 50.55a(g)(4) states, "Throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components (including supports) which are classified as ASME Code Class 1, Class 2, and Class 3 must meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI of editions of the ASME Boiler and Pressure Vessel Code ... to the extent practical within the limitations of design, geometry and materials of construction of the components."

ISI Relief Request No. 21 (Rev. 0), Prairie Island Unit 2, 3rd Interval

Prairie Island was designed and constructed prior to development of ASME XI, therefore design for accessibility and inspection coverage is not in many cases, sufficient to permit satisfying the current Code requirements. Limitations to inspections are primarily due to design obstructions, component configurations and interference. In the case of circumferential welds a limitation from ultrasonic examination may exist simply because of weld joint configuration as with a pipe to valve or fitting weld.

A summary of the limited examinations are described below and also included in Table 1, "Limited Examinations – Prairie Island Unit 2 – 2005 Refueling Outage."

Part A: Category B-D, "Full Penetration Welds of Nozzles in Vessels"

Reactor Vessel (RV) Nozzle (N-7), Outlet Nozzle to Vessel Loop A:

The Reactor Vessel Nozzle-to-Vessel weld is subject to a volumetric examination. The volumetric examination was performed using personnel and procedures qualified in accordance with Appendix VIII, Supplements 4,6 and 7. The examination was conducted using 45-degree transducers. The nozzle and vessel material are SA 508. The examination was limited in both the parallel and perpendicular scans from the vessel ID to 78.56% due to the proximity of the outlet nozzle protrusion to the nozzle to shell weld. As an alternative to the ultrasonic examination, radiography was considered and determined to be an unacceptable substitute due to no outside access and weld configuration.

The following supporting documentation has been provided:

Attachment 1, ISI Drawing 2-ISI-40

Attachment 2, Examination Report Number 2005VE019 and WesDyne report

Reactor Vessel (RV) Nozzle (N-10), Outlet Nozzle to Vessel Loop B:

The Reactor Vessel Nozzle-to-Vessel weld is subject to a volumetric examination. The volumetric examination was performed using personnel and procedures qualified in accordance with Appendix VIII, Supplements 4, 6, and 7. The examination was conducted using 45-degree transducers. The nozzle and vessel material are SA 508. The examination was limited in both the parallel and perpendicular scans from the vessel ID to 78.56% due to the proximity of the outlet nozzle protrusion to the nozzle to shell weld. As an alternative to the ultrasonic examination, radiography was considered and determined to be an unacceptable substitute due to no outside access and weld configuration.

The following supporting documentation has been provided:

Attachment 1, ISI Drawing 2-ISI-40

Attachment 3, Examination Report Number 2005VE021 and WesDyne report

ISI Relief Request No. 21 (Rev. 0), Prairie Island Unit 2, 3rd Interval

Reactor Vessel (RV) Nozzle (N-8), SI Nozzle to Vessel Loop A:

The Reactor Vessel Nozzle-to-Vessel weld is subject to a volumetric examination. The volumetric examination was performed using personnel and procedures qualified in accordance with Appendix VIII, Supplements 4, 6, and 7. The examination was conducted using 45-degree transducers. The nozzle and vessel material are SA 508. The examination was limited in both the parallel and perpendicular scans from the vessel ID to 59.26% due to the proximity of the outlet nozzle protrusion to the nozzle to shell weld. As an alternative to the ultrasonic examination, radiography was considered and determined to be an unacceptable substitute due to no outside access and weld configuration.

The following supporting documentation has been provided:

Attachment 1, ISI Drawing 2-ISI-40
Attachment 4, Examination Report Number 2005VE023 and WesDyne report

Reactor Vessel (RV) Nozzle (N-11), SI Nozzle to Vessel Loop B:

The Reactor Vessel Nozzle-to-Vessel weld is subject to a volumetric examination. The volumetric examination was performed using personnel and procedures qualified in accordance with Appendix VIII, Supplements 4, 6, and 7. The examination was conducted using 45-degree transducers. The nozzle and vessel material are SA 508. The examination was limited in both the parallel and perpendicular scans from the vessel ID to 59.26% due to the proximity of the outlet nozzle protrusion to the nozzle to shell weld. As an alternative to the ultrasonic examination, radiography was considered and determined to be an unacceptable substitute due to no outside access and weld configuration.

The following supporting documentation has been provided:

Attachment 1 ISI Drawing ISI-40
Attachment 5, Examination Report Number 2005VE024 and WesDyne report

Part B: Category B-F, "Pressure Retaining Dissimilar Metal Welds"

Reactor Coolant (RC) Weld (W-5), Nozzle to Safe End:

This dissimilar metal weld joint configuration is not currently covered by the demonstrated samples at the Electric Power Research Institute (EPRI) Performance Demonstration Initiative (PDI) center. Due to the design of the joint, no mockup could be created to examine this ultrasonically to meet Appendix VIII, Supplement 10.

ISI Relief Request No. 21 (Rev. 0), Prairie Island Unit 2, 3rd Interval

Therefore a supplemental ultrasonic (UT) exam was performed with the following results:

The Elbow to Safe End weld is subject to a volumetric examination and surface examination. The volumetric examination was performed using personnel and procedures qualified in accordance with Appendix III. The examination was conducted using 45-degree refracted longitudinal transducers. The elbow and safe end material are SA 351-CF8 cast austenitic stainless and 308L stainless (this joint contains no Alloy 82/182 or 600). The examination was limited to 78.46% due to the OD profile of the cast stainless steel elbow. The UT examination is further hindered from the elbow side of the weld for obtaining meaningful ultrasonic data because of the elbow material being cast austenitic stainless steel. UT sound beam attenuation and propagation properties in cast stainless steel are extremely difficult. The ASME Code Committee and the industry Performance Demonstration Initiative (PDI) recognized that such examinations are difficult. ASME Section XI, Appendix VIII, Supplement 9 has been in "course of preparation" for several years, hence, there are no qualified examination procedures or personnel to conduct the required examinations. As an alternative to the ultrasonic examination, radiography was considered and determined to be an unacceptable substitute due to radiological constraints, the reactor vessel level would be required to be at reduced inventory below the center line of the hot leg, weld configuration, and the undue hardship imposed without offering any commensurate increase in safety with cost benefit.

The required surface examination was performed using liquid penetrant and was not limited. 100% of the required surface area was inspected (Inspection Report No. 2005P032). No relevant indications were detected.

The weld is included in the boundary examined by VT-2 during pressure testing (SP 2070, Reactor Coolant System Integrity Test, completed on 6/9/2005). No leakage was identified in the vicinity of the weld.

The following supporting documentation has been provided:

Attachment 6, ISI Drawing 2-ISI-33A

Attachment 7, Examination Report Number 2005U036

Part C: Category B-J, "Pressure Retaining Welds in Piping"

Residual Heat Removal (RH) Weld (W-11) Valve to Pipe:

This piping weld is subject to be examined by both volumetric and surface examination methods. The volumetric examination was performed using personnel and procedures qualified in accordance with Appendix VIII, Supplement 2. The examination was conducted using 45 and 60-degree transducers. The valve and piping material are austenitic stainless steel. The examination is limited to 50% in both the axial and circumferential directions from the piping side of the weld due to the weld joint configuration connection to the valve. The credited volumetric examination of the Weld

ISI Relief Request No. 21 (Rev. 0), Prairie Island Unit 2, 3rd Interval

Required Volume (WRV) was limited to 47.77% and only a single-sided examination could be performed. It should be noted that the volumetric examination was performed through 100% of the Code WRV; however, the PDI Appendix VIII procedure used is not qualified for the detection of flaws on the far side of single sided access examinations on austenitic stainless steel piping welds. The techniques employed for the examination provide for a best effort examination. As an alternative to the ultrasonic examination, radiography was considered and determined to be an unacceptable substitute due to radiological constraints, weld configuration, and the undo hardship imposed without offering any commensurate increase in safety with cost benefit.

The required surface examination was performed using liquid penetrant and was not limited. 100% of the required surface area was inspected (Inspection Report No. 2005P019). No relevant indications were detected.

The weld is included in the boundary examined by VT-2 during pressure testing (SP 2070, Reactor Coolant System Integrity Test, completed on 6/9/2005). No leakage was identified in the vicinity of the weld.

The following supporting documentation has been provided:

Attachment 8, ISI Drawing 2-ISI-10A

Attachment 9, Examination Report Numbers 2005U024

Part D: Category C-F-2 "Pressure Retaining Welds in Carbon or Low Alloy Steel Piping"

Main Steam (MS) Weld (W-14), Tee to Flange:

This tee to flange pipe weld is subject to be examined by both volumetric and surface examination methods. The reducer tee and pipe materials are carbon steel. The volumetric examination was performed using personnel and procedures qualified in accordance with Appendix VIII, Supplement 3. The examination was conducted using 45 and 60-degree transducers. The piping materials are A155 KC70 . The credited volumetric examination of the WRV was limited to 74.85%. As an alternative to the ultrasonic examination, radiography was considered and determined to be an unacceptable substitute due to radiological constraints, weld configuration, and the undo hardship imposed without offering any commensurate increase in safety with cost benefit.

The required surface examination was performed using Dye Penetrant and 95.8% of the required surface area was inspected (Inspection Report No. 2005P043). No relevant indications were detected.

ISI Relief Request No. 21 (Rev. 0), Prairie Island Unit 2, 3rd Interval

The weld is included in the boundary examined by VT-2 during pressure testing (SP 2168.11, completed 9/13/2003). No leakage was identified in the vicinity of the weld.

The following supporting documentation has been provided:

Attachment 10, ISI Drawing 2-ISI-47B

Attachment 11, Examination Report Number 2005U023

Additional Means of Establishing Component Integrity:

System integrity is monitored during normal operation by many direct and indirect methods, e.g., containment radiation monitoring, containment air monitoring, containment sump monitoring, containment temperature monitoring, system walk downs, surveillance testing, etc.

Alternate Examination:

The limitations have been noted on the ISI examination reports and are included in the 2005 ISI Outage Summary Report. NMC will continue to document limitations.

All in-service inspections at Prairie Island Unit 2 have been completed to the greatest extent practical. When limitations to required inspections are encountered, Prairie Island's "Limitations to NDE" procedure SWI NDE-LTS-1 was applied. SWI NDE-LTS-1 (Attachment 12) is used when an ASME Section XI Code required examination results in less than 90% coverage. It requires a review of the procedures to obtain maximum coverage and documentation of the limitation. The procedure also examines whether an alternative method could be used to obtain better coverage as allowed by the Code. This procedure was used for all the items identified above and the maximum inspection coverage was achieved.

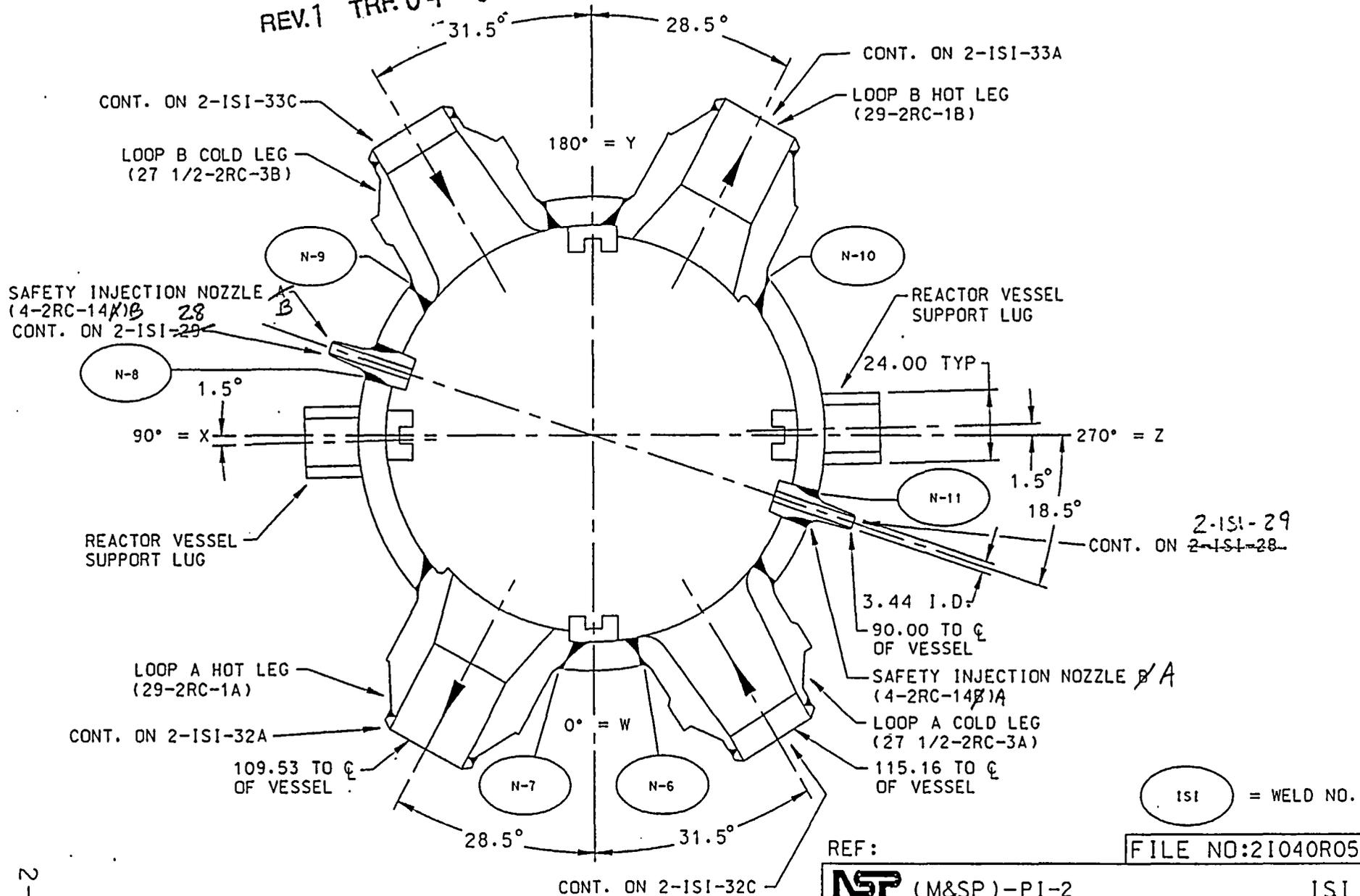
Limitations are due to design, geometry, and materials of construction of the components. NMC will continue to utilize the most current techniques available for future examinations.

ISI Relief Request No. 21 (Rev. 0), Prairie Island Unit 2, 3rd Interval

Table 1. Limited Examinations - Prairie Island Unit 2 – 2005 Refueling Outage

Category	Item No.	SYSTEM	ISO	Comp ID Summary #	Description	Method	% Coverage	Report #	Limitation
B-D	B3.90	Reactor Vessel	2-ISI-40	N-7 505018	Outlet Nozzle to Vessel Weld Loop A	UT	78.56%	2005VE019	Limited due to configuration.
B-D	B3.90	Reactor Vessel	2-ISI-40	N-10 505020	Outlet Nozzle to Vessel Weld Loop B	UT	78.56%	2005VE021	Limited due to configuration.
B-D	B3.90	Reactor Vessel	2-ISI-40	N-8 505727	SI Nozzle to Vessel Weld Loop A	UT	59.26%	2005VE023	Limited due to configuration.
B-D	B3.90	Reactor Vessel	2-ISI-40	N-11 505726	SI Nozzle to Vessel Weld Loop B	UT	59.26%	2005VE024	Limited due to configuration.
B-F	B5.70	Reactor Coolant	2-ISI-33A	W-5 501137	50 degree Elbow to Nozzle	UT	* 0% 58.84%	2005U036	* No Demonstrated technique at PDI for PI configuration
B-J	B9.11	Residual Heat Removal	2-ISI-10A	W11 501953	Valve to Pipe	UT	44.77%	2005U024	Single side access
C-F-2	C5.80	Main Steam	2-ISI-47B	W-14 500818	Tee to Flange	UT	74.85%	2005U023	Flange configuration and support adjacent to weld

REV.1 TRF.04-018



REACTOR VESSEL NOZZLES

ISI = WELD NO.

REF:	FILE NO:21040R05
NSP (M&SP)-PI-2	
DWN: DMN	CHKD: LCB APPD: <i>[Signature]</i>
SYSTEM: REACTOR VESSEL NOZZLES	
LINE: NA	
DWG: 2-ISI-40	REV: 06

2-ISI-40



Ultrasonic Examination

Site/Unit: PINGP / PI2 Procedure: UT-Vendor Outage No.: EO3I
 Summary No.: 505018 Procedure Rev.: 0 Report No.: 2005VE019
 Workscope: ISI Work Order No.: 0406670 Page: 1 of 5

Code: 1989 Edition Cat./Item: B-D/B3.90 Location: _____
 Drawing No.: 2-ISI-40 Description: Outlet Nozzle to Vessel Weld Loop A
 System ID: RV
 Component ID: N-7 Size/Length: NA Thickness/Diameter: 9.17"/53"
 Limitations: See WesDyne exam report

Comments:

See supplements and
Refer to the applicable WesDyne report found in the book:

Prairie Island Nuclear Power Plant / Unit 2
10-Year Reactor Vessel
Inservice Examinations
Interval 3, Period 3, Outage RFO23
2005

* 78.56%, See WesDyne final report

Results: NAD IND GEO Indications allowable by Code

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
VENDOR, WESDYNE	II		5/15/2005	Jones, Thomas	<i>Thomas Jones</i>	5/15/05
N/A	N/A			Site Review Wren, Jerry P	<i>Jerry P. Wren</i>	8-8-05
N/A	N/A			ANII Review Daly, Gerald	<i>Gerald Daly</i>	15AUG05



Supplemental Report

Report No.: 2005VE019

Page: 2 of 5

Summary No.: 505018

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>gjm</i>	Date: <u>8/5/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>gjm</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>gjm</i>	Date: <u>15AUG05</u>

Comments:

Sketch or Photo: J:\ISIData\IS\PI2_05 outage\ScansWeDyne Vessel Flaws\505018 N-7\Flaw Sizing 1.bmp

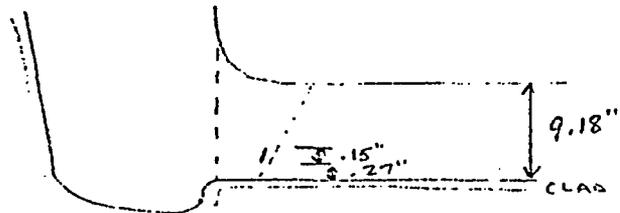


ISI Flaw Sizing Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-N2</u>	Outage No.: <u>E031</u>
Summary No.: <u>505018</u>	Procedure Rev.: <u>0</u>	Report No.: <u>PI2RF2005</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u>2005VE019</u>
		of <u> </u>

1) Flaw Number <u>1</u>	3) ISI Interval <u>3-R</u>	OK Reviewer <u>gjm</u>
2) Item Number <u>B 3.90</u>	4) Code Edition & Addenda <u>1989 No Add.</u>	OK Reviewer <u>gjm</u>
	5) Method <u>UT</u>	OK Reviewer <u>gjm</u>
	6) Flaw Sketch (See Below)	

weld # N-7
Flaw View



$a = 2 1/2$
 $a = 1 1/2$
 $a = .10$
 $.4d = 2 1/2 \times 0.4$
 $.4d = 1 1/2 \times 0.4$
 $.1d = 0.03$
 if $s > .4d$ flaw = surface
 $.27 > 0.03 = \text{sub surface}$

7) Calculations OK Reviewer gjm

Show determination of Surface or Subsurface

Show determination of type of "a" to use

SWIND-FC-1 7.2 "Sizing of Front Depth..."
 8) Paragraph 20 "Rounding off Method" was used Yes Preparer gjm OK Reviewer gjm

9) Code Flaw Dimensions OK Reviewer gjm
 "l" = .75 "a" = .10 "t nominal" = 9.2 "t measured" = N/A "s" = .27 "w" = N/A

10) Flaw Type OK Reviewer gjm Subsurface Flaw

11) Flaw Characterization Figure OK Reviewer gjm IWA-3320-1

12) Flaw Characterization Figure Number #1

13) Was IWA-3300 Flaw Characterization followed? Yes No If no, why?

14) The correct Code Edition and Addenda was available and used. Yes Preparer gjm OK Reviewer gjm

15) Prepared by and date gjm 5/28/05

16) Review by and date gjm 6-29-05

The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

The review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Size <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE019

Page: 3 of 5

Summary No.: 505018

Examiner: VENDOR, WESDYNE Level: II Reviewer: Jones, Thomas *TMJ* Date: 8/5/05
 Examiner: N/A Level: N/A Site Review: Wren, Jerry P *JW* Date: 8-8-05
 Other: N/A Level: N/A ANII Review: Daly, Gerald *JRD* Date: 15 AUG 05

Comments:

Sketch or Photo: J:\ISIData\SI\P12_05 outage\Scans\WeDyne Vessel Flaws\505018 N-7\Flaw Disposition 1.bmp



ISI Flaw Disposition Worksheet

Site/Unit: P12 Procedure: PDI-ISI-254-N2 Outage No.: E031 P12RF2005
 Summary No.: 505018 Procedure Rev.: 0 Report No.: 2005VE019
 Workscope: ISI Work Order No.: 0406670 Page: of

- | | | |
|-----------------------------|---|---|
| 1) Flaw Number <u>1</u> | 3) ISI Interval <u>3-2</u> | <input checked="" type="radio"/> OK Reviewer <u>JPW</u> |
| 2) Item Number <u>B3.90</u> | 4) Code Edition & Addenda <u>1989 NO ADD.</u> | <input checked="" type="radio"/> OK Reviewer <u>JPW</u> |
| | 5) Acceptance Standard <u>IWB-3512</u> | <input checked="" type="radio"/> OK Reviewer <u>JPW</u> |
| | 6) Calculations (See Below) | <input checked="" type="radio"/> OK Reviewer <u>JPW</u> |

weld # 7
 $a = .010$ $t = 9.2$
 $l = 0.75$ $a/t = 0.0109$
 $a/l = 0.133$ $a/t \cdot t = 1.09$

$Y = s/a = 0.27 / 0.10 = 2.7$ use 1.0

7) Results OK Reviewer JPW
 $a/l = 0.133$ Code allowable $a/t\% = 2.5 LWR$ Calculated $a/t\% = 1.09$ Laminar flaw surface area: $(0.75 | w) = N/A$

8) Table used for analysis OK Reviewer JPW IWB-3512-1 & 2

9) Was linear interpolation used? Yes No If no, why?
ACCEPTABLE USING LOWER a/l of 2.5

10) Was IWA-3200 Significant Digits For Limiting Values followed? Yes No If no, why?

11) The correct Code Edition and Addenda was available and used. Yes Preparer TMJ OK Reviewer JPW

12) Statement of acceptability or rejectability with basis. OK Reviewer JPW Accept Reject
 (a/t) Code allowable > (a/t) calculated
 OEM flaw evaluation handbook (see attached analysis)
 (a/t) Code allowable < (a/t) calculated

13) Prepared by and date
Tom Jara 5/29/05
 The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

14) Engineering review by and date
James E. Wren 6-29-05
 This review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

15) Approved by and date
Tom Jara 8/5/05
 This approval assures that all involved with this flaw sizing and flaw disposition were aware of the necessity that the results and the methodology are correct and in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Disposition <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE019

Page: 4 of 5

Summary No.: 505018

Examiner: VENDOR, WESDYNE Level: II Reviewer: Jones, Thomas *cmj* Date: 8/5/05
 Examiner: N/A Level: N/A Site Review: Wren, Jerry P *jr* Date: 8-8-05
 Other: N/A Level: N/A ANII Review: Daly, Gerald *gd* Date: ISAUG05

Comments:

Sketch or Photo: J:\ISIData\ISI\PI2_05 outage\Scans\WeDyne Vessel Flaws\505018 N-7\Flaw Sizing 2.bmp



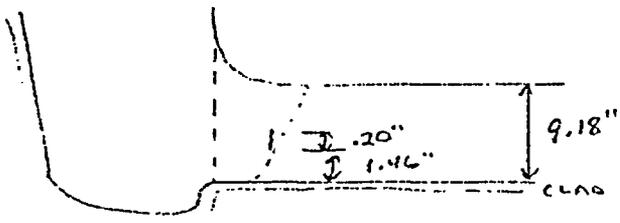
ISI Flaw Sizing Worksheet

Site/Unit: PI 1 2 Procedure: PDI-ISI-254-NZ Outage No.: PI2RF2005 ^{EO31}
 Summary No.: 505018 Procedure Rev.: 0 Report No.: 2005VE019
 Workscope: ISI Work Order No.: 0406670 Page: of

1) Flaw Number 2 3) ISI Interval 3"± OK Reviewer *jr*
 2) Item Number B 3.90 4) Code Edition & Addenda 1989 No Add. OK Reviewer *jr*
 5) Method UT
 6) Flaw Sketch (See Below) OK Reviewer *jr*

weld # N-7

Flaw View



$.4d = 2\frac{1}{2} \times 0.4$
 $.4d = 1 \times 0.4$
 $.4d = 0.4$
 $1.46 > 0.4$ flaw = sub surface
 $a = 2\frac{1}{2}$
 $a = .292$
 $a = .10$

7) Calculations OK Reviewer *jr*
 Show determination of Surface or Subsurface
 Show determination of type of "a" to use
 SWI-NDE-PE-1 7.2 "Significant Dist..."
 8) Paragraph 2.0 "Rounding-off Method" was used Yes Preparer *cmj* OK Reviewer *jr*
 9) Code Flaw Dimensions OK Reviewer *jr*
 "t" = 1.0 "a" = 0.10 "t nominal" = 9.2 "t measured" = N/A "s" = 1.46 "w" = N/A
 10) Flaw Type OK Reviewer *jr* subsurface flaw
 11) Flaw Characterization Figure OK Reviewer *jr* IWA-3320-1
 12) Flaw Characterization Figure Number #1
 13) Was IWA-3300 Flaw Characterization followed? Yes No If no, why?
 14) The correct Code Edition and Addenda was available and used. Yes Preparer *cmj* OK Reviewer *jr*
 15) Prepared by and date cmj 5/22/05
 16) Review by and date Gene P. Wren, Jr. 6-29-05
 The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
 The review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Size <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE019
Page: 5 of 5

Summary No.: 505018

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>TMJ</i>	Date: <u>8/5/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>JPW</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	AII Review: <u>Daly, Gerald</u> <i>GD</i>	Date: <u>15AUG05</u>

Comments:

Sketch or Photo: J:\ISIData\ISNPI2_05 outage\Scans\WeDyne Vessel Flaws\505018 N-7\Flaw Disposition 2.bmp



ISI Flaw Disposition Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-NZ</u>	Outage No.: <u>PI2RF2005</u> ^{E021}
Summary No: <u>505018</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE019</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|-----------------------------|---|------------------------|
| 1) Flaw Number <u>2</u> | 3) ISI Interval <u>3rd</u> | OK Reviewer <u>JPW</u> |
| 2) Item Number <u>B3.90</u> | 4) Code Edition & Addenda <u>1989 No Add.</u> | OK Reviewer <u>JPW</u> |
| <u>WELD # N-7</u> | 5) Acceptance Standard <u>IWB-3512</u> | OK Reviewer <u>JPW</u> |
| | 6) Calculations (See Below) | OK Reviewer <u>JN</u> |

$$a = 0.10 \quad t = 9.2$$

$$l = 1.0 \quad a/t = 0.0108$$

$$a/l = 0.10 \quad a/lt = 1.09$$

$$Y = s/a = 1.46 / 0.10 = 14.6 \quad \text{use } 1.0$$

- 7) Results OK Reviewer JPW
- 8) $a/l = 0.10$ Code allowable $a/t\% = 2.5$ Calculated $a/t\% = 1.09$ Laminar flaw surface area: $(0.75 | w) = N/A$
- 8) Table used for analysis OK Reviewer JN IWB-3512-1 & 2
- 9) Was linear interpolation used? Yes No If no, why? NOT REQUIRED
- 10) Was IWA-3200 Significant Digits For Limiting Values followed? Yes No If no, why?
- 11) The correct Code Edition and Addenda was available and used. Yes Preparer TMJ OK Reviewer JPW
- 12) Statement of acceptability or rejectability with basis. OK Reviewer JPW Accept Reject
- (a/t) Code allowable > (a/l) calculated
 - OEM flaw evaluation handbook (see attached analysis)
 - (a/l) Code allowable < (a/t) calculated
- 13) Prepared by and date Tom Daly 8/28/05
- The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 14) Engineering review by and date Tom Daly 8/29/05
- This review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 15) Approved by and date Tom Daly 8/7/05
- This approval assures that all involved with this flaw sizing and flaw disposition were aware of the necessity that the results and the methodology are correct and in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Disposition <edit from Setup>

Additional - Supplemental Reports <edit from Setup>

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME Prairie Island Unit 2

WELD NO. N7 (505018) COMPONENT Outlet Nozzle to Shell @ 28.5°

LIMITATIONS: NO YES 78.56 % Complete
See Coverage Breakdown Sheet

RESULTS NO. OF INDICATIONS 2

NI STATUS Code Allowable

RI X

EXAM DOCUMENTATION

INDICATION DOCUMENTATION

PARAGON ANALYSIS LOG

ASSESSMENT SHEET

PARAGON ACQUISITION LOG

PARAGON HARD COPY

SCAN PRINT OUT

OTHER (Specify)

COVERAGE BREAKDOWN

Comments: Coverage calculation is based on the Bore and Star scan (combined) as perpendicular, and the Tan Scan (parallel). Figure 1 illustrates the obstruction.

Analyst *[Signature]* Date: 5/13/05

R.V. COVERAGE ESTIMATE BREAKDOWNS

PLANT NAME Prairie Island

WesDyne

WELD NO. N7 (505018)

International

COMPONENT Outlet Nozzle to Shell @ 28.5°

BEAM ANGLE BREAK DOWN

BEAM DIRECTION	45 Shear		45 L Single		45 L Dual		Combined Bore/Star	
	WELD	VOLUME	WELD	VOLUME	WELD	VOLUME	WELD	VOLUME
TAN Scan								
Parallel	54.33	28.52	64.28	56.90	71.82	69.79		
Combined Bore&Star								
Perpendicular							99.68	99.35
AVERAGE		41.42		60.59		70.80		99.52

Comments: Coverage calculation is based on the Bore and Star scan (combined) as perpendicular, and the Tan Scan (parallel). Figure 1 illustrates the obstruction.

Combined Perp. 99.52 Combined Para. 57.61 Combined Average 78.56

Analyst

J. Jones

Date

5/15/05

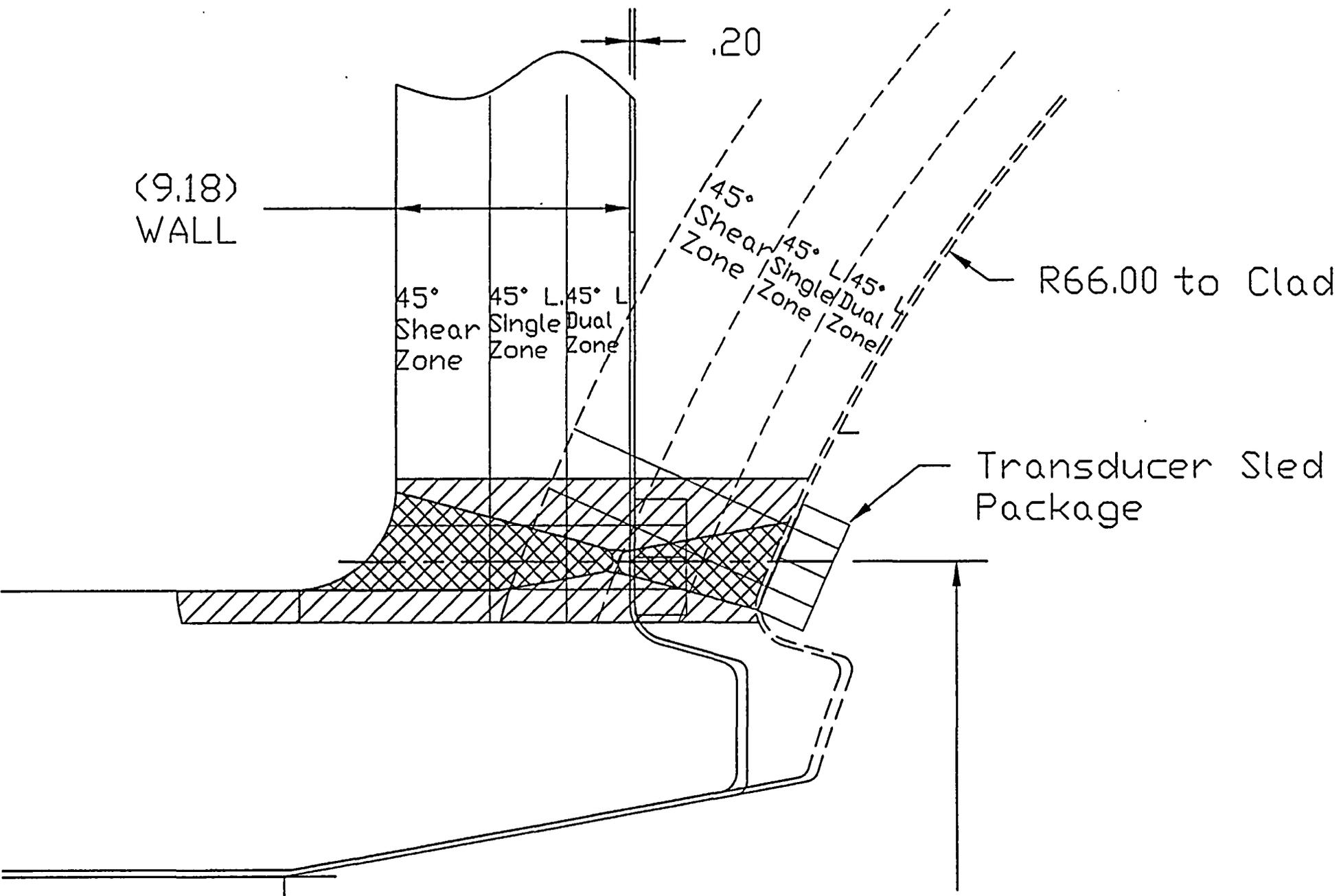


Figure 1
 Tan Coverage Illustration
 Primary Outlet Nozzle
 Protrusion Limitation



Ultrasonic Examination

Site/Unit: PINGP / PI2 Procedure: UT-Vendor Outage No.: EO3I
 Summary No.: 505020 Procedure Rev.: 0 Report No.: 2005VE021
 Workscope: ISI Work Order No.: 0406670 Page: 1 of 7

Code: 1989 Edition Cat./Item: B-D/B3.90 Location: _____
 Drawing No.: 2-ISI-40 Description: Outlet Nozzle to Vessel Weld Loop B
 System ID: RV
 Component ID: N-10 Size/Length: NA Thickness/Diameter: 9.17"/53"
 Limitations: See WesDyne exam report

Comments:

See supplements and
Refer to the applicable WesDyne report found in the book:

Prairie Island Nuclear Power Plant / Unit 2
10-Year Reactor Vessel
Inservice Examinations
Interval 3, Period 3, Outage RFO23
2005

*78.56%, See Wesdyne final report for details.

Results: NAD IND GEO Indications allowable by Code _____
 Percent Of Coverage Obtained > 90%: *No Reviewed Previous Data: N/A

Examiner	Level	Signature	Date	Reviewer	Signature	Date
VENDOR, WESDYNE	II		5/15/2005	Jones, Thomas	<i>Tom Jones</i>	8/15/05
Auer, Robert G.	II			Wren, Jerry P	<i>Jerry P. Wren</i>	8-8-05
Other	N/A			Daly, Gerald	<i>Gerald Daly</i>	15A0605



Supplemental Report

Report No.: 2005VE021

Page: 3 of 7

Summary No.: 505020

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>TMJ</i>	Date: <u>8/5/05</u>
Examiner: <u>Auer, Robert G.</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry P</u> <i>JPW</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>JD</i>	Date: <u>15AUG-05</u>

Comments:

Sketch or Photo: J:\ISIData\ISNPI2_05 outage\Scans\WeDyne Vessel Flaws\505020 N-10\Flaw Disposition 1.bmp



ISI Flaw Disposition Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-NZ</u>	Outage No.: <u>PI2RF2005</u>
Summary No.: <u>505020</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE021</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|-----------------------------|---|------------------------|
| 1) Flaw Number <u>1</u> | 3) ISI Interval <u>3rd</u> | OK Reviewer <u>JM</u> |
| 2) Item Number <u>B3.90</u> | 4) Code Edition & Addenda <u>1989 No Add.</u> | OK Reviewer <u>JM</u> |
| Weld # <u>N-10</u> | 5) Acceptance Standard <u>IWB-3512</u> | OK Reviewer <u>JPW</u> |
| | 6) Calculations (See Below) | OK Reviewer <u>JPW</u> |

$$a = 0.10 \quad t = 9.2$$

$$l = 1.3 \quad a/t = 0.0109$$

$$a/l = 0.077 \quad a/t\% = 1.09$$

$$Y = s/a = 0.45/0.10 = 4.5$$

USE 1.0

- 7) Results OK Reviewer JM
- a/l = 0.077 Code allowable a/t% = 2.2 *Lw* Calculated a/t% = 1.09 Laminar flaw surface area: (0.75 | w) = N/A
- 8) Table used for analysis OK Reviewer JM IWB-3512-1
- 9) Was linear interpolation used? Yes No If no, why?
Acceptable using lower a/l of 2.2
- 10) Was IWA-3200 Significant Digits For Limiting Values followed? Yes No If no, why?
- 11) The correct Code Edition and Addenda was available and used. Yes Preparer TMJ OK Reviewer JM
- 12) Statement of acceptability or rejectability with basis. OK Reviewer JM Accept Reject
- (a/t) Code allowable > (a/t) calculated
 OEM flaw evaluation handbook (see attached analysis)
 (a/t) Code allowable < (a/t) calculated
- 13) Prepared by and date Tom Daly 5/29/05
- 14) Engineering review by and date James P. Wren 6-29-05
- The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- This review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 15) Approved by and date Tom Daly 8-5-05
- This approval assures that all involved with this flaw sizing and flaw disposition were aware of the necessity that the results and the methodology are correct and in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Disposition <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE021

Page: 4 of 7

Summary No.: 505020

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>gms</i>	Date: <u>8/5/05</u>
Examiner: <u>Auer, Robert G.</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry P</u> <i>gms</i>	Date: <u>5-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>gms</i>	Date: <u>15AUG05</u>

Comments:

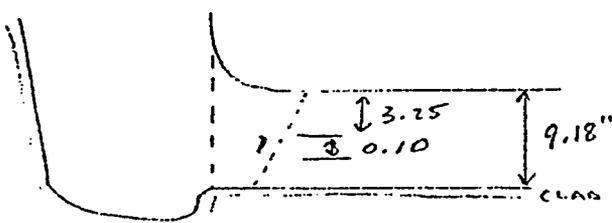
Sketch or Photo: J:\ISIData\ISINPI2_05 outage\ScansWeDyne Vessel Flaws\505020 N-10\Flaw Sizing 2.bmp



ISI Flaw Sizing Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-N2</u>	Outage No.: <u>E031</u>
Summary No.: <u>505020</u>	Procedure Rev.: <u>0</u>	Report No.: <u>PI2RF2005</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u>2005VE021</u> of <u>1</u>

1) Flaw Number <u>2</u>	3) ISI Interval <u>3F</u>	OK Reviewer <u>gms</u>
2) Item Number <u>B3.90</u>	4) Code Edition & Addenda <u>1989 No Add.</u>	OK Reviewer <u>gms</u>
	5) Method <u>UT</u>	OK Reviewer <u>gms</u>
weld # <u>N-10</u>	6) Flaw Sketch (See Below)	
Flaw View		$.4d = 2\frac{1}{2} \times 0.4$ $.4d = 0.10 \times 0.4$ $.4d = 0.02$ <p>if $s > .4d$ flaw = <u>sub surface</u></p> $3.25 > 0.02 = \text{sub surface}$ $a = 2\frac{1}{2}$ $a = 0.10 \times 2$ $a = 0.05$



7) Calculations OK Reviewer gms
 Show determination of Surface or Subsurface

Show determination of type of "a" to use
 SWI-NBE-FE-1 7.2 "Significant Depth..."
 8) ~~FE~~ Paragraph 2.0 - "Rounding off Method" was used Yes Preparator gms OK Reviewer gms

9) Code Flaw Dimensions OK Reviewer gms
 "t" = 1.5 "s" = 0.05 "t nominal" = 9.2 "t measured" = N/A "s" = 3.25 "w" = N/A

10) Flaw Type OK Reviewer gms sub surface Flaw

11) Flaw Characterization Figure OK Reviewer gms IWA-3320-1

12) Flaw Characterization Figure Number #1

13) Was IWA-3300 Flaw Characterization followed? Yes No If no, why?

14) The correct Code Edition and Addenda was available and used. Yes Preparator gms OK Reviewer gms

15) Prepared by and date Tom Jans 5/29/05

16) Review by and date Jerry P. Wren 6-29-05

The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

The review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Size <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE021
Page: 5 of 7

Summary No.: 505020

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>tmj</i>	Date: <u>8/5/05</u>
Examiner: <u>Auer, Robert G.</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry P</u> <i>jr</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>JD</i>	Date: <u>15AUG05</u>

Comments:

Sketch or Photo: J:\ISIData\ISINPI2_05 outage\Scans\WeDyne Vessel Flaws\505020 N-10\Flaw Disposition 2.bmp



ISI Flaw Disposition Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-IST-254-NZ</u>	Outage No.: <u>PI2RF2005</u>
Summary No.: <u>505020</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE 021</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|-----------------------------|---|---|
| 1) Flaw Number <u>2</u> | 3) ISI Interval <u>3rd</u> | <input checked="" type="checkbox"/> OK Reviewer <i>jr</i> |
| 2) Item Number <u>B3.90</u> | 4) Code Edition & Addenda <u>1989 NO ADD.</u> | <input checked="" type="checkbox"/> OK Reviewer <i>jr</i> |
| | 5) Acceptance Standard <u>IWB-3512</u> | <input checked="" type="checkbox"/> OK Reviewer <i>jr</i> |
| | 6) Calculations (See Below) | <input checked="" type="checkbox"/> OK Reviewer <i>jr</i> |

weld # N-10

$$a = 0.05 \quad t = 9.2$$

$$l = 1.5 \quad a/t = 0.0054$$

$$a/l = 0.033 \quad a/t^2 = 0.54$$

$$Y = s/a = 3.25 / 0.05 = 65$$

USE 1.0

- 7) Results OK Reviewer *jr*
 $a/l = 0.033$ Code allowable $a/t\% = 2.04\%$ Calculated $a/t\% = 0.54$ Laminar flaw surface area: $(0.75 | w) = N/A$
- 8) Table used for analysis OK Reviewer *jr* IWB-3512-1
- 9) Was linear interpolation used? Yes No If no, why?
Acceptable using lower a/l of 2.0
- 10) Was IWA-3200 Significant Digits For Limiting Values followed? Yes No If no, why?
- 11) The correct Code Edition and Addenda was available and used. Yes Preparer tmj OK Reviewer *jr*
- 12) Statement of acceptability or rejectability with basis. OK Reviewer *jr* Accept Reject
 (a/t) Code allowable > (a/t) calculated
 OEM flaw evaluation handbook (see attached analysis)
 (a/t) Code allowable < (a/t) calculated
- 13) Prepared by and date Tom Dwyer 5/24/05
 The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 14) Engineering review by and date Don P. Whelan 6-29-05
 This review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 15) Approved by and date Tom Dwyer 8-5-05
 This approval assures that all involved with this flaw sizing and flaw disposition were aware of the necessity that the results and the methodology are correct and in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Disposition <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE021

Page: 6 of 7

Summary No.: 505020

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>THJ</i>	Date: <u>8/5/05</u>
Examiner: <u>Auer, Robert G.</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry P</u> <i>JPW</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>GD</i>	Date: <u>15AUG05</u>

Comments:

Sketch or Photo: J:\ISIData\ISI\PI2_05 outage\Scans\WeDyne Vessel Flaws\505020 N-10\Flaw Sizing 3.bmp

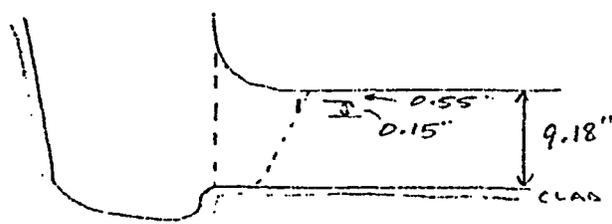


ISI Flaw Sizing Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-N2</u>	Outage No.: <u>PI2RF2005</u>
Summary No.: <u>505020</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE021</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|-----------------------------|---|---|
| 1) Flaw Number <u>3</u> | 3) ISI Interval <u>3²</u> | <input checked="" type="radio"/> OK Reviewer <u>JPW</u> |
| 2) Item Number <u>B3.90</u> | 4) Code Edition & Addenda <u>1989 No Add.</u> | <input checked="" type="radio"/> OK Reviewer <u>JPW</u> |
| | 5) Method <u>UT</u> | <input checked="" type="radio"/> OK Reviewer <u>JPW</u> |
| | 6) Flaw Sketch (See Below) | |

weld # N-10
Flaw View



$0.4d = 2\frac{1}{2} \times 0.4$
 $0.4d = 0.15 \times 0.4$
 $0.4d = 0.03$
 $\therefore 0.55 > 0.4d$ flaw = subsurface
 $0.55 > 0.03 =$ subsurface
 $a = 2\frac{1}{2}$
 $a = 0.15$
 $a = 0.10$

- 7) Calculations OK Reviewer JPW
 Show determination of Surface or Subsurface
- Show determination of type of "a" to use
 SWI-NDE-FE-1 7.2 "Significant Dist..."
 8) ~~FE-1~~ Paragraph 7.0 "Rounding-off Method" was used Yes Preparer THJ OK Reviewer JPW
- 9) Code Flaw Dimensions OK Reviewer JPW
 "l" = 1.8 "a" = 0.10 "t nominal" = 9.2 "t measured" = N/A "s" = 0.55 "w" = N/A
- 10) Flaw Type OK Reviewer JPW subsurface flaw
- 11) Flaw Characterization Figure OK Reviewer JPW IWA-3320-1
- 12) Flaw Characterization Figure Number #1
- 13) Was IWA-3300 Flaw Characterization followed? Yes No If no, why?
- 14) The correct Code Edition and Addenda was available and used. Yes Preparer THJ OK Reviewer JPW
- 15) Prepared by and date Chad Smith 8/2/05
 The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 16) Review by and date Jerry P. Wren 8-19-05
 The review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Size <edit from Setup>



Supplemental Report

Report No.: 2005VE021

Page: 7 of 7

Summary No.: 505020

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>TMS</i>	Date: <u>8/5/05</u>
Examiner: <u>Auer, Robert G.</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry P</u> <i>JW</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>JGD</i>	Date: <u>15AUG05</u>

Comments:

Sketch or Photo: J:\ISIData\ISINP12_05 outage\Scans\WeDyne Vessel Flaws\505020 N-10\Flaw Disposition 3.bmp



ISI Flaw Disposition Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-NZ</u>	Outage No.: <u>PI2RF2005</u>
Summary No.: <u>505020</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE021</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|-----------------------------|---|--|
| 1) Flaw Number <u>3</u> | 3) ISI Interval <u>3rd</u> | <input checked="" type="radio"/> OK Reviewer <i>JW</i> |
| 2) Item Number <u>B3.90</u> | 4) Code Edition & Addenda <u>1989 No Add.</u> | <input checked="" type="radio"/> OK Reviewer <i>JW</i> |
| <u>weld # N-10</u> | 5) Acceptance Standard <u>IWB-3512</u> | <input checked="" type="radio"/> OK Reviewer <i>JW</i> |
| | 6) Calculations (See Below) | <input checked="" type="radio"/> OK Reviewer <i>JW</i> |

$$a = 0.10 \quad t = 9.2$$

$$l = 1.8 \quad a/t = 0.0109$$

$$a/l = 0.056 \quad a/t\% = 1.09$$

$$Y = s/a = 0.55 / 0.10 = 5.5$$

USE 1.0

- 7) Results OK Reviewer *JW*
- a/l = 0.056 Code allowable a/t% = 2.2 *LWR* Calculated a/t% = 1.09 Laminar flaw surface area: (0.75 | w) = N/A
- 8) Table used for analysis OK Reviewer *JW* IWB-3512-1
- 9) Was linear interpolation used? Yes No If no, why?
ACCEPTABLE USING LOWER a/l of 2.2
- 10) Was IWA-3200 Significant Digits For Limiting Values followed? Yes No If no, why?
- 11) The correct Code Edition and Addenda was available and used. Yes Preparer *TMS* OK Reviewer *JW*
- 12) Statement of acceptability or rejectability with basis. OK Reviewer *JW* Accept Reject
- (a/l) Code allowable > (a/l) calculated
 - OEM flaw evaluation handbook (see attached analysis)
 - (a/l) Code allowable < (a/l) calculated
- 13) Prepared by and date
Tom Jock 5/29/05
- The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 14) Engineering review by and date
Tom Jock 6-29-05
- This review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 15) Approved by and date
Tom Jock 8-5-05
- This approval assures that all involved with this flaw sizing and flaw disposition were aware of the necessity that the results and the methodology are correct and in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Disposition <edit from Setup>

Additional - Supplemental Reports <edit from Setup>

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME Prairie Island Unit 2

WELD NO. N10 (505020) COMPONENT Outlet Nozzle to Shell @ 208.5°

LIMITATIONS: NO YES 78.56 % Complete
See Coverage Breakdown Sheet

RESULTS	NO. OF INDICATIONS	<u>3</u>
NI <u> </u>	STATUS	<u>Code Allowable</u>
RI <u> X </u>		

EXAM DOCUMENTATION

INDICATION DOCUMENTATION

- PARAGON ANALYSIS LOG
- PARAGON ACQUISITION LOG
- SCAN PRINT OUT
- COVERAGE BREAKDOWN

- ASSESSMENT SHEET
- PARAGON HARD COPY
- OTHER (Specify)

Comments: Coverage calculation is based on the Bore and Star scan (combined) as perpendicular, and the Tan Scan (parallel). Figure 1 illustrates the obstruction.

Analyst *[Signature]* Date: 5/19/05

R.V. COVERAGE ESTIMATE BREAKDOWNS

PLANT NAME Prairie Island

WesDyne

WELD NO. N10 (505020)

International

COMPONENT Outlet Nozzle to Shell @ 208.5°

BEAM ANGLE BREAK DOWN

BEAM DIRECTION	45 Shear		45 L Single		45 L Dual		Combined Bore/Star	
	WELD	VOLUME	WELD	VOLUME	WELD	VOLUME	WELD	VOLUME
TAN Scan								
Parallel	54.33	28.52	64.28	56.90	71.82	69.79		
Combined Bore&Star								
Perpendicular							99.68	99.35
AVERAGE	41.42		60.59		70.80		99.52	

Comments: Coverage calculation is based on the Bore and Star scan (combined) as perpendicular, and the Tan Scan (parallel). Figure 1 illustrates the obstruction.

Combined Perp. 99.52 Combined Para. 57.61 Combined Average 78.56

Analyst *[Signature]*

Date 5/15/05

(9.18)
WALL

.20

45° Shear Zone
45° Single Zone
L 45° Dual Zone
L

45° Shear Zone
45° Single Zone
L 45° Dual Zone
L

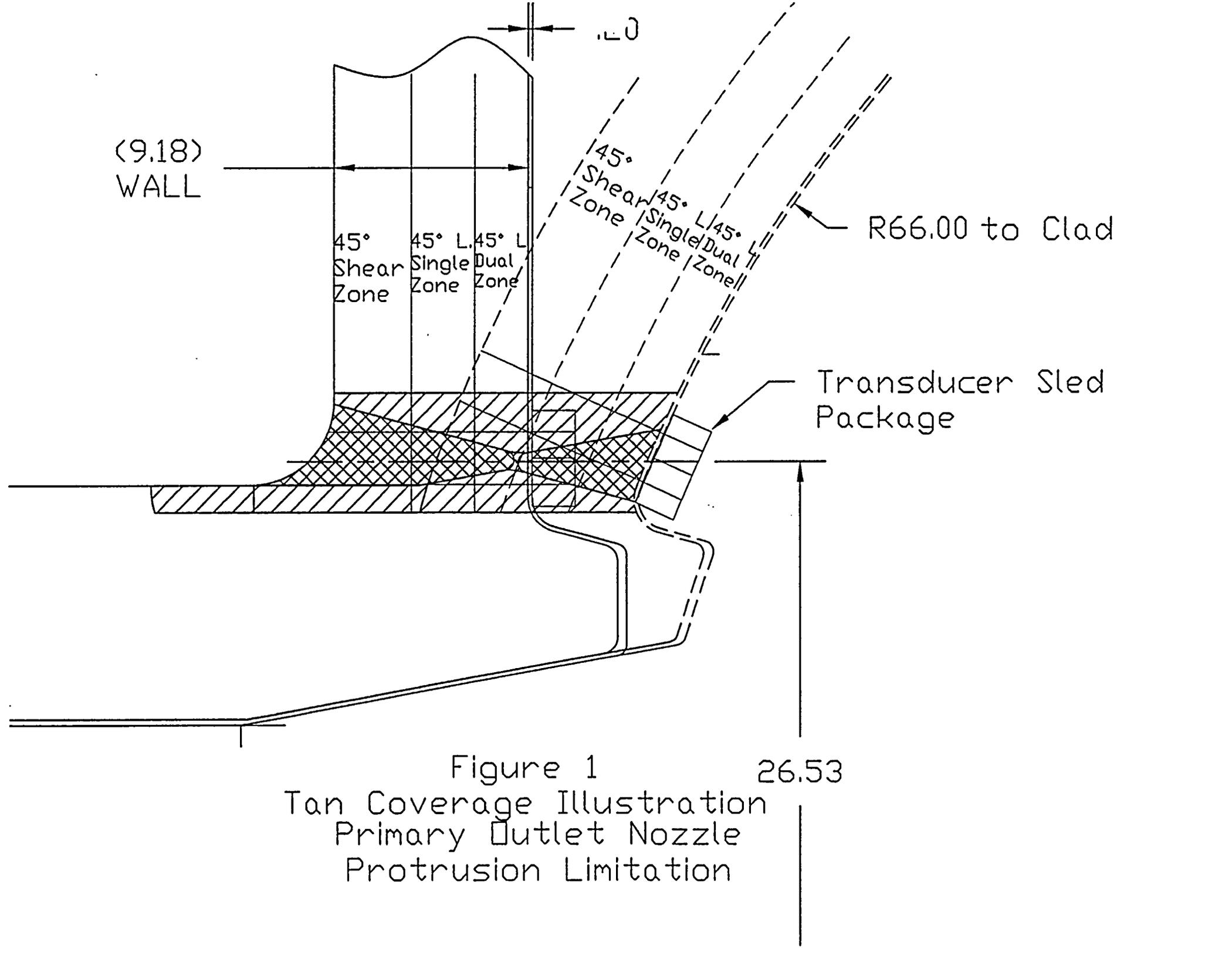
R66.00 to Clad

Transducer Sled Package

Figure 1

26.53

Tan Coverage Illustration
Primary Outlet Nozzle
Protrusion Limitation





Ultrasonic Examination

Site/Unit: PINGP / PI2 Procedure: UT-Vendor Outage No.: EO3I
 Summary No.: 500727 Procedure Rev.: 0 Report No.: 2005VE023
 Workscope: ISI Work Order No.: 0406670 Page: 1 of 9

Code: 1989 Edition Cat./Item: B-D/B3.90 Location: Containment
 Drawing No.: 2-ISI-40 Description: SI Nozzle to Vessel Weld Loop A
 System ID: RV
 Component ID: N-8 Size/Length: NA Thickness/Diameter: 9.17"/11.58"
 Limitations: See WesDyne exam report

Comments:

See supplements and
Refer to the applicable WesDyne report found in the book:

Prairie Island Nuclear Power Plant / Unit 2
10-Year Reactor Vessel
Inservice Examinations
Interval 3, Period 3, Outage RFO23
2005

*59.26%, See WesDyne final report for details

Results: NAD IND GEO Indications allowable by Code

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
VENDOR, WESDYNE	II		5/15/2005	Jones, Thomas	<i>[Signature]</i>	8/15/05
N/A	N/A			Site Review Wren, Jerry P	<i>[Signature]</i>	8-8-05
N/A	N/A			ANII Review Daly, Gerald	<i>[Signature]</i>	15 AUG 05



Supplemental Report

Report No.: 2005VE023

Page: 2 of 9

Summary No.: 500727

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>TMJ</i>	Date: <u>8/5/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>JPW</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>GD</i>	Date: <u>15AUG05</u>

Comments:

Sketch or Photo: J:\ISIData\ISIP12_05 outage\Scans\WeDyne Vessel Flaws\500727 N-8\Flaw Sizing 1.bmp



ISI Flaw Sizing Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-SI-NZ</u>	Outage No.: <u>EO31 P12RF2005</u>
Summary No.: <u>500727</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE023</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|------------------------------|---|------------------------|
| 1) Flaw Number <u>1</u> | 3) ISI Interval <u>3E</u> | OK Reviewer <u>TMJ</u> |
| 2) Item Number <u>B 3.90</u> | 4) Code Edition & Addenda <u>1989 No Add.</u> | OK Reviewer <u>TMJ</u> |
| | 5) Method <u>UT</u> | OK Reviewer <u>TMJ</u> |
| | 6) Flaw Sketch (See Below) | |

weld # N-8
Flaw View



$0.4d = 20/2 \times 0.4$
 $0.4d = 0.40/2 \times 0.4$
 $0.4d = 0.08$
 $2.32 > 0.08 = \text{sub surface}$
 $a = 20/2$
 $a = 0.40/2$
 $a = 0.20$

7) Calculations OK Reviewer TMJ
Slow determination of Surface or Subsurface

Show determination of type of "a" to use

SWI-NDE-FE-1 7.2 "significant Dist..."
B) FE Paragraph 7.0 "Rounding off Method" was used

Yes Preparer JPW OK Reviewer TMJ

9) Code Flaw Dimensions OK Reviewer TMJ
"t" = 0.75 "a" = 0.20 "t nominal" = 9.2 "t measured" = N/A "s" = 2.32 "w" = N/A

10) Flaw Type OK Reviewer TMJ Subsurface Planar

11) Flaw Characterization Figure OK Reviewer TMJ IWA-3320-1

12) Flaw Characterization Figure Number #1

13) Was IWA-3300 Flaw Characterization followed? Yes No If no, why?

14) The correct Code Edition and Addenda was available and used. Yes Preparer JPW OK Reviewer TMJ

15) Prepared by and date JPW L-III 7-18-05 16) Review by and date TMJ 7/21/05

The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

The review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Size <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE023

Page: 3 of 9

Summary No.: 500727

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>TMJ</i>	Date: <u>8/5/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>JPW</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>GD</i>	Date: <u>15AUG05</u>

Comments:

Sketch or Photo: J:\ISIData\ISIP12_05 outage\ScansWeDyne Vessel Flaws\500727 N-8\Flaw Disposition 1.bmp



ISI Flaw Disposition Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-SI-NZ</u>	Outage No.: <u>PI2RF2005</u>
Summary No.: <u>500727</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE023</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|-----------------------------|---|------------------------|
| 1) Flaw Number <u>1</u> | 3) ISI Interval <u>3rd</u> | OK Reviewer <i>TMJ</i> |
| 2) Item Number <u>B3.90</u> | 4) Code Edition & Addenda <u>1989 No Add.</u> | OK Reviewer <i>TMJ</i> |
| <u>WELD # N-8</u> | 5) Acceptance Standard <u>IWB-3512</u> | OK Reviewer <i>TMJ</i> |
| | 6) Calculations (See Below) | OK Reviewer <i>TMJ</i> |

$$\begin{aligned}
 a &= 0.20 & t &= 9.2 \\
 l &= 0.75 & a/t &= 0.0217 \\
 a/l &= .267 & a/t\% &= 2.17
 \end{aligned}$$

$$Y = s/a = 2.32 / 0.20 = 11.6 \quad \text{USE } 1.0$$

- 7) Results OK Reviewer *TMJ*
- 8) $a/l = 0.267$ Code allowable $a/t\% = 3.8$ LWA Calculated $a/t\% = 2.17$ Laminar flaw surface area: $(0.75 | w) = N/A$
- 8) Table used for analysis OK Reviewer *TMJ* IWB-3512-1
- 9) Was linear interpolation used? Yes No If no, why?
Acceptable - by using lower a/l of 3.8
- 10) Was IWA-3200 Significant Digits For Limiting Values followed? Yes No If no, why?
- 11) The correct Code Edition and Addenda was available and used. Yes Preparer *JPW* OK Reviewer *TMJ*
- 12) Statement of acceptability or rejectability with basis. OK Reviewer *TMJ* Accept Reject
- (a/l) Code allowable > (a/t) calculated
 OEM flaw evaluation handbook (see attached analysis)
 (a/l) Code allowable < (a/t) calculated
- 13) Prepared by and date Tom Downing 7-18-05
- 14) Engineering review by and date Tom Downing 7/21/05

The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

This review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

15) Approved by and date Tom Downing 8-5-05

This approval assures that all involved with this flaw sizing and flaw disposition were aware of the necessity that the results and the methodology are correct and in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Disposition <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE023

Page: 4 of 9

Summary No.: 500727

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>TMJ</i>	Date: <u>8/5/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>JPW</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>JPD</i>	Date: <u>ISAUG05</u>

Comments:

Sketch or Photo: J:\ISIData\IS\P12_05 outage\Scans\WeDyne Vessel Flaws\500727 N-8\Flaw Sizing 2.bmp



ISI Flaw Sizing Worksheet

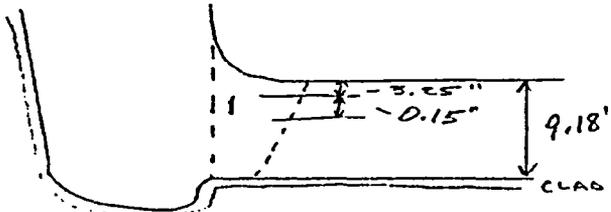
EO31

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-SI-NZ</u>	Outage No.: <u>PI2RF2005</u>
Summary No.: <u>500727</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE023</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|------------------------------|---|---|
| 1) Flaw Number <u>2</u> | 3) ISI Interval <u>3 1/2</u> | <input checked="" type="radio"/> OK Reviewer <i>TMJ</i> |
| 2) Item Number <u>B 3,90</u> | 4) Code Edition & Addenda <u>1989 No Add.</u> | <input checked="" type="radio"/> OK Reviewer <i>TMJ</i> |
| | 5) Method <u>UT</u> | <input checked="" type="radio"/> OK Reviewer <i>TMJ</i> |
| | 6) Flaw Sketch (See Below) | |

weld # N-8

Flaw View



$.4d = 20/2 \times 0.4$
 $.4d = 0.15/2 \times 0.4$
 $.4d = 0.03$
 if $.4d > .4d$ flaw = sub surface
 $3.25 > 0.03 =$ sub surface
 $a = 20/2$
 $a = 0.15/2$
 $a = 0.10$

- 7) Calculations OK Reviewer *TMJ*
 Show determination of Surface or Subsurface

Show determination of type of "a" to use

SWI-NBE-FE-1 7.2 "5.0 - Front Dist..."
 8) IFR-FE-1 Paragraph 7.0 - "Rounding-off Method" was used

- Yes Preparer *JPW* OK Reviewer *TMJ*

9) Code Flaw Dimensions OK Reviewer *TMJ*
 $t = 0.25$ $a = 0.10$ $t_{nominal} = 9.2$ $t_{measured} = N/A$ $s = 3.25$ $w = N/A$

10) Flaw Type OK Reviewer *TMJ* subsurface planar

11) Flaw Characterization Figure OK Reviewer *TMJ* IWA-3320-1

12) Flaw Characterization Figure Number #1

13) Was IWA-3300 Flaw Characterization followed? Yes No If no, why?

14) The correct Code Edition and Addenda was available and used. Yes Preparer *JPW* OK Reviewer *TMJ*

15) Prepared by and date Jerry P. Wren LV III 7-18-05 16) Review by and date Tom Daly 7/21/05

The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

The review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Size <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE023
Page: 5 of 9

Summary No.: 500727

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>THJ</i>	Date: <u>8/5/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>JPW</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>JD</i>	Date: <u>15 AUG 05</u>

Comments:

Sketch or Photo: J:\ISIData\ISNPI2_05 outage\Scans\WeDyne Vessel Flaws\500727 N-8\Flaw Disposition 2.bmp



ISI Flaw Disposition Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-SI-N2</u>	Outage No.: <u>PI2RF2005</u>
Summary No.: <u>500727</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE023</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|-----------------------------|---|---|
| 1) Flaw Number <u>2</u> | 3) ISI Interval <u>3rd</u> | <input checked="" type="radio"/> OK Reviewer <u>THJ</u> |
| 2) Item Number <u>B3.90</u> | 4) Code Edition & Addenda <u>1989 NO ADD.</u> | <input checked="" type="radio"/> OK Reviewer <u>THJ</u> |
| | 5) Acceptance Standard <u>IWB-3512</u> | <input checked="" type="radio"/> OK Reviewer <u>THJ</u> |
| | 6) Calculations (See Below) | <input checked="" type="radio"/> OK Reviewer <u>THJ</u> |

yield #. N-8

$$a = 0.10 \quad t = 9.2$$

$$l = 0.75 \quad a/t = 0.01087$$

$$a/l = .133 \quad a/t\% = 1.09$$

$$Y = s/a = 3.25 / 0.10 = 32.5$$

USE 1.0

- 7) Results OK Reviewer THJ
- 8) Table used for analysis OK Reviewer THJ IWB-3512-1 Laminar flaw surface area: $(0.75 | w) =$ N/A
- 9) Was linear interpolation used? Yes No If no, why?
Acceptable by using lower a/l of 2.5
- 10) Was IWA-3200 Significant Digits For Limiting Values followed? Yes No If no, why?

- 11) The correct Code Edition and Addenda was available and used. Yes Preparer JPW OK Reviewer THJ
- 12) Statement of acceptability or rejectability with basis. OK Reviewer THJ Accept Reject
- (a/t) Code allowable > (a/t) calculated
 - OEM flaw evaluation handbook (see attached analysis)
 - (a/t) Code allowable < (a/t) calculated

13) Prepared by and date
Tom Downing 7-18-05

The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

14) Engineering review by and date
Tom Downing 7/21/05

This review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

15) Approved by and date
Tom Downing 8-5-05

This approval assures that all involved with this flaw sizing and flaw disposition were aware of the necessity that the results and the methodology are correct and in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Disposition <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE023
Page: 6 of 9

Summary No.: 500727

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>TMJ</i>	Date: <u>8/5/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>JPW</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>GD</i>	Date: <u>15 AUG 05</u>

Comments:

Sketch or Photo: J:\ISIData\ISNPI2_05 outage\Scans\WeDyne Vessel Flaws\500727 N-8\Flaw Sizing 3.bmp



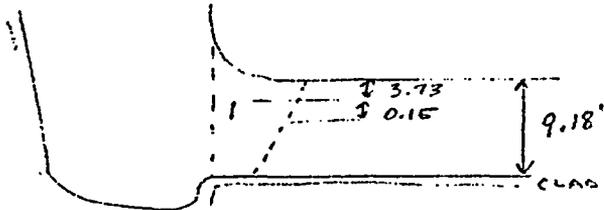
ISI Flaw Sizing Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-SI-NZ</u>	Outage No.: <u>EO31 PIZRF2005</u>
Summary No.: <u>500727</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE023</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|------------------------------|---|------------------------|
| 1) Flaw Number <u>3</u> | 3) ISI Interval <u>3 CL</u> | OK Reviewer <u>TMJ</u> |
| 2) Item Number <u>B 3.90</u> | 4) Code Edition & Addenda <u>1989 No Add.</u> | OK Reviewer <u>TMJ</u> |
| | 5) Method <u>UT</u> | OK Reviewer <u>TMJ</u> |
| | 6) Flaw Sketch (See Below) | |

weld # N-8

Flaw View



$4d = 2\frac{1}{2} \times 0.4$
 $4d = 0.15 \times 0.4$
 $4d = 0.03$
 $3.73 > 0.03 = \text{sub surface}$
 $a = 2\frac{1}{2}$
 $a = .15/2$
 $a = 0.10$

- 7) Calculations OK Reviewer TMJ

Show determination of Surface or Subsurface

Show determination of type of "a" to use

SWI-NDE-FE-1 7.2 "Significant Dist..."
 8) ISI FE-1 Paragraph 7.0 "Rounding off Method" was used

- Yes Preparer JPW OK Reviewer TMJ

9) Code Flaw Dimensions OK Reviewer TMJ
 "t" = 2.50 "a" = 0.10 "t nominal" = 9.2 "t measured" = N/A "s" = 3.73 "w" = N/A

10) Flaw Type OK Reviewer TMJ Subsurface Planar

11) Flaw Characterization Figure OK Reviewer TMJ IWA-3320-1

12) Flaw Characterization Figure Number #1

13) Was IWA-3300 Flaw Characterization followed? Yes No If no, why?

14) The correct Code Edition and Addenda was available and used. Yes Preparer JPW OK Reviewer TMJ

15) Prepared by and date Jerry P. Wren 7-18-05

16) Review by and date Thomas Jones 7/21/05

The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

The review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Size <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE023

Page: 7 of 9

Summary No.: 500727

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>TMJ</i>	Date: <u>8/15/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>J.P.W.</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>GD</i>	Date: <u>15 AUG 05</u>

Comments:

Sketch or Photo: J:\ISIData\ISI\PI2_05 outage\Scans\WeDyne Vessel Flaws\500727 N-8\Flaw Disposition 3.bmp



ISI Flaw Disposition Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-IST-254-SI-N2</u>	Outage No.: <u>E031</u>
Summary No.: <u>500727</u>	Procedure Rev.: <u>0</u>	Report No.: <u>PI2RF2005</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|-----------------------------|---|------------------------|
| 1) Flaw Number <u>3</u> | 3) ISI Interval <u>3rd</u> | OK Reviewer <u>TMJ</u> |
| 2) Item Number <u>B3.90</u> | 4) Code Edition & Addenda <u>1989 No Add.</u> | OK Reviewer <u>TMJ</u> |
| <u>WELD # N-8</u> | 5) Acceptance Standard <u>IWB-3512</u> | OK Reviewer <u>TMJ</u> |
| | 6) Calculations (See Below) | OK Reviewer <u>TMJ</u> |

$$a = 0.10 \quad t = 9.2$$

$$l = 2.5 \quad a/t = 0.01087$$

$$a/l = 0.04 \quad a/lt = 1.09$$

$$Y = s/l = 3.73 / 0.10 = 37.3$$

USE 1.0

- 7) Results OK Reviewer TMJ
 $a/t = .04$ Code allowable $a/t\% = 2.01$ Calculated $a/t\% = 1.09$ Laminar flaw surface area: $(0.75 | w) = N/A$
- 8) Table used for analysis OK Reviewer TMJ IWB-3512-1
- 9) Was linear interpolation used? Yes No If no, why?
ACCEPTABLE by USING LOWER a/l of 2.0
- 10) Was IWA-3200 Significant Digits For Limiting Values followed? Yes No If no, why?
- 11) The correct Code Edition and Addenda was available and used. Yes Preparer SPW OK Reviewer TMJ
- 12) Statement of acceptability or rejectability with basis. OK Reviewer TMJ Accept Reject
 (a/t) Code allowable > (a/t) calculated
 OEM flaw evaluation handbook (see attached analysis)
 (a/t) Code allowable < (a/t) calculated
- 13) Prepared by and date Tom Dowling 7-18-05
 The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 14) Engineering review by and date Tom Dowling 7/21/05
 This review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 15) Approved by and date Tom Dowling 8-5-05
 This approval assures that all involved with this flaw sizing and flaw disposition were aware of the necessity that the results and the methodology are correct and in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Disposition <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE023
Page: 8 of 9

Summary No.: 500727

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>TMJ</i>	Date: <u>8/5/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>JW</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>GD</i>	Date: <u>15 AUG 05</u>

Comments:

Sketch or Photo: J:\ISIData\ISINP12_05 outage\Scans\WeDyne Vessel Flaws\500727 N-8\Flaw Sizing 4.bmp



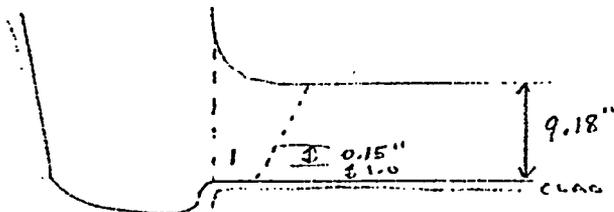
ISI Flaw Sizing Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-SI-NZ</u>	Outage No.: <u>EO31 PIRRF2005</u>
Summary No.: <u>500727</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE023</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|------------------------------|---|---|
| 1) Flaw Number <u>4</u> | 3) ISI Interval <u>3 EB</u> | <input checked="" type="radio"/> OK Reviewer <u>TMJ</u> |
| 2) Item Number <u>B 3.90</u> | 4) Code Edition & Addenda <u>1989 No Add.</u> | <input checked="" type="radio"/> OK Reviewer <u>TMJ</u> |
| | 5) Method <u>UT</u> | <input checked="" type="radio"/> OK Reviewer <u>TMJ</u> |
| | 6) Flaw Sketch (See Below) | |

weld # N-8

Flaw View



$0.4d = 2\frac{1}{2} \times 0.4$
 $0.4d = 1.5 \times 0.4$
 $0.4d = 0.03$
 $1.0 > 0.03 = \text{sub surface}$
 $a = 2\frac{1}{2}$
 $a = 0.15/2$
 $a = 0.10$

- 7) Calculations OK Reviewer TMJ
 Show determination of Surface or Subsurface

Show determination of type of "a" to use

SWI-NDE-FE-1 7.2 "significant Dist..."
 8) ISE-Paragraph 7.0 "Rounding off Method" was used

- Yes Preparer JW OK Reviewer TMJ

- 9) Code Flaw Dimensions OK Reviewer TMJ
 "t" = 1.0 "a" = 0.10 "t nominal" = 9.2 "t measured" = N/A "s" = 1.0 "w" = N/A

- 10) Flaw Type OK Reviewer TMJ Subsurface Flaw

- 11) Flaw Characterization Figure OK Reviewer TMJ IWA-3320-1

- 12) Flaw Characterization Figure Number #1

- 13) Was IWA-3300 Flaw Characterization followed? Yes No If no, why?

- 14) The correct Code Edition and Addenda was available and used. Yes Preparer JW OK Reviewer TMJ

- 15) Prepared by and date Jones, Thomas 7-18-05

- 16) Review by and date TMJ 7/21/05

The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

The review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Size <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE023

Page: 9 of 9

Summary No.: 500727

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>THJ</i>	Date: <u>8/5/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>JW</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>GD</i>	Date: <u>15AUG05</u>

Comments:

Sketch or Photo: J:\ISIData\IS\P12_05 outage\Scans\WeDyne Vessel Flaws\500727 N-8\Flaw Disposition 4.bmp



ISI Flaw Disposition Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-SI-N2</u>	Outage No.: <u>PI2RF2005</u>	^{E031}
Summary No.: <u>500727</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE023</u>	
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: _____ of _____	

- | | | |
|-----------------------------|---|------------------------|
| 1) Flaw Number <u>4</u> | 3) ISI Interval <u>3rd</u> | OK Reviewer <u>THJ</u> |
| 2) Item Number <u>B3.90</u> | 4) Code Edition & Addenda <u>1989 No Add.</u> | OK Reviewer <u>THJ</u> |
| | 5) Acceptance Standard <u>IWB-3512</u> | OK Reviewer <u>THJ</u> |
| | 6) Calculations (See Below) | OK Reviewer <u>THJ</u> |

$$a = 0.10 \quad t = 9.2$$

$$l = 1.0 \quad a/k = 0.0187$$

$$a/l = .10 \quad a/kt = 1.09$$

$$Y = s/a = 1.0 / 0.10 = 10$$

USE 1.0

- 7) Results OK Reviewer THJ
- a/l = 0.10 Code allowable a/l% = 2.5 Calculated a/l% = 1.09 Laminar flow surface area: (0.75 | w) = N/A
- 8) Table used for analysis OK Reviewer THJ IWB-3512-1
- 9) Was linear interpolation used? Yes No If no, why? NOT REQUIRED
- 10) Was IWA-3200 Significant Digits For Limiting Values followed? Yes No If no, why?
- 11) The correct Code Edition and Addenda was available and used. Yes Preparer JW OK Reviewer THJ
- 12) Statement of acceptability or rejectability with basis. OK Reviewer THJ Accept Reject
- (a/l) Code allowable > (a/l) calculated
- OEM flaw evaluation handbook (see attached analysis)
- (n/l) Code allowable < (a/l) calculated
- 13) Prepared by and date Tom Dowling 7-18-05
- The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 14) Engineering review by and date Tom Dowling 7/21/05
- This review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 15) Approved by and date Tom Dowling 8-5-05
- This approval assures that all involved with this flaw sizing and flaw disposition were aware of the necessity that the results and the methodology are correct and in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Disposition <edit from Setup>

Additional - Supplemental Reports <edit from Setup>

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME Prairie Island Unit 2
WELD NO. N8 (500727) COMPONENT Safety Injection Noz-Shell @108.5°

LIMITATIONS: NO YES 59.26 % Complete
See Coverage Breakdown Sheet

RESULTS	NO. OF INDICATIONS	<u>4</u>
NI <u> </u>	STATUS	<u>Code Allowable</u>
RI <u> X </u>		

EXAM DOCUMENTATION

INDICATION DOCUMENTATION

- | | |
|---|---|
| <input checked="" type="checkbox"/> PARAGON ANALYSIS LOG | <input checked="" type="checkbox"/> ASSESSMENT SHEET |
| <input checked="" type="checkbox"/> PARAGON ACQUISITION LOG | <input checked="" type="checkbox"/> PARAGON HARD COPY |
| <input checked="" type="checkbox"/> SCAN PRINT OUT | <input type="checkbox"/> OTHER (Specify) |
| <input checked="" type="checkbox"/> COVERAGE BREAKDOWN | |

Comments:

Coverage calculation is based on the Bore and Star scan (combined) as perpendicular, and the Tan Scan (parallel).

Figure 1 illustrates the obstruction to scanning, the nozzle protrusion.

Analyst *[Signature]* Date: 5/15/85

R.V. COVERAGE ESTIMATE BREAKDOWNS

PLANT NAME Prairie Island

WesDyne

WELD NO. N8 (500727)

International

COMPONENT Safety Injection Noz-Shell @108.5°

BEAM ANGLE BREAK DOWN

BEAM DIRECTION	45 Shear		45 L Single		45 L Dual		Combined Bore/Star	
	WELD	VOLUME	WELD	VOLUME	WELD	VOLUME	WELD	VOLUME
TAN Scan								
Parallel	15.55	57.14	0.00	53.66	0.00	28.10		
Combined Bore&Star								
Perpendicular							97.40	88.15
AVERAGE		36.35		26.83		14.05		92.78

Comments: Coverage calculation is based on the Bore and Star scan (combined) as perpendicular, and the Tan Scan (parallel).

Figure 1 illustrates the obstruction to scanning, the nozzle protrusion.

Combined Perp. 92.78 Combined Para. 25.74 Combined Average 59.26

Analyst *Jerry 2*

Date *5/15/05*

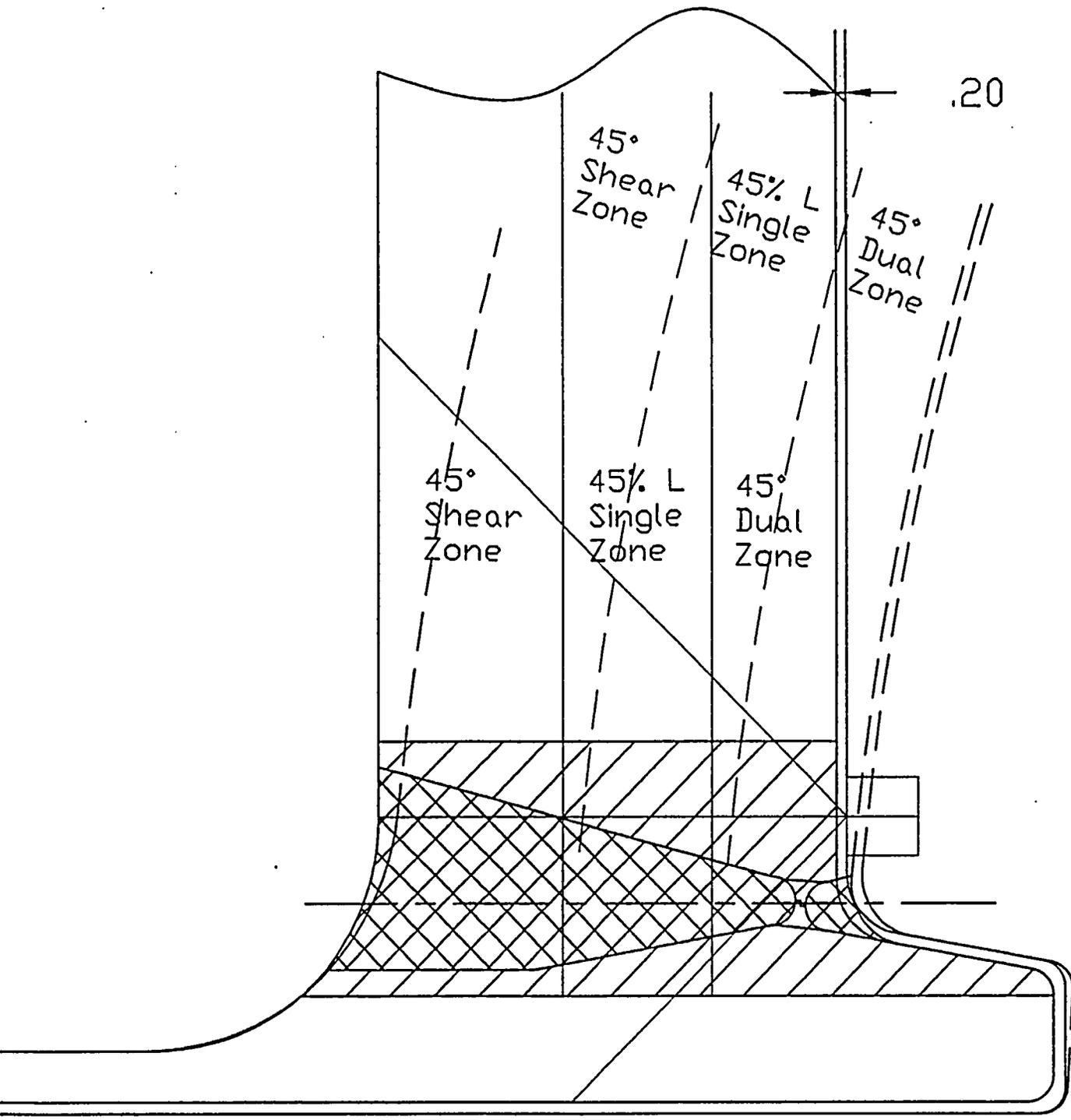


Figure 1
 Tan Coverage Illustration of
 the Safety Injection Nozzle



Ultrasonic Examination

Site/Unit: PI2 / PI2 Procedure: UT-Vendor Outage No.: EO31
 Summary No.: 500726 Procedure Rev.: 0 Report No.: 2005VE024
 Workscope: ISI Work Order No.: 0406670 Page: 1 of 7

Code: 1989 Edition Cat./Item: B-D/B3.90 Location: Containment
 Drawing No.: 2-ISI-40 Description: SI Nozzle to Vessel Weld Loop B
 System ID: RV
 Component ID: N-11 Size/Length: NA Thickness/Diameter: 9.17"/11.58"
 Limitations: None

Comments:

See supplements and
 Refer to the applicable WesDyne report found in the book:

Prairie Island Nuclear Power Plant / Unit 2
 10-Year Reactor Vessel
 Inservice Examinations
 Interval 3, Period 3, Outage RFO23
 2005

*59.26%, See WesDyne final report for details.

Results: NAD IND GEO

Percent Of Coverage Obtained > 90%: *No

Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
VENDOR, WESDYNE	II		5/15/2005	Jones, Thomas	<i>Tom Jones</i>	6/5/05
N/A	N/A			Site Review Wren, Jerry P	<i>Jerry P. Wren</i>	8-8-05
N/A	N/A			ANII Review Daly, Gerald	<i>Gerald P. Daly</i>	16 Aug 05



Supplemental Report

Report No.: 2005VE024

Page: 2 of 7

Summary No.: 500726

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>JM</i>	Date: <u>8/5/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>JPW</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>GD</i>	Date: <u>16AUG05</u>

Comments:

Sketch or Photo: J:\ISIData\IS\PI2_05 outage\Scans\WeDyne Vessel Flaws\500726 N-11\Flaw Sizing 1.bmp



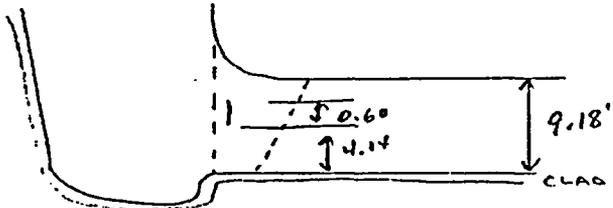
ISI Flaw Sizing Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-SI-NZ</u>	Outage No.: <u>E031</u>
Summary No.: <u>500726</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE024</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|------------------------------|---|-------------------------|
| 1) Flaw Number <u>1</u> | 3) ISI Interval <u>3²</u> | ● OK Reviewer <i>JM</i> |
| 2) Item Number <u>B 3.90</u> | 4) Code Edition & Addenda <u>1989 No Add.</u> | ● OK Reviewer <i>JM</i> |
| | 5) Method <u>UT</u> | ● OK Reviewer <i>JM</i> |
| | 6) Flaw Sketch (See Below) | |

weld # N-11

Flaw View



$4d = 2\frac{1}{2} \times 0.4$
 $4d = 0.60 \times 0.4$
 $4d = 0.12$
 if $s > .4d$ flaw = sub surface
 $4.14 > 0.12 = \text{sub surface}$
 $a = 2\frac{1}{2}$
 $a = 0.692$
 $a = 0.30$

- 7) Calculations ● OK Reviewer *JM*
 Show determination of Surface or Subsurface

Show determination of type of "a" to use

SWI-NBE-FE-1 7.2 "Significant Dist..."
 8) IWA-3300 Paragraph 7.0 - "Rounding-off Method" was used

- Yes Preparer *JPW* ● OK Reviewer *JM*

9) Code Flaw Dimensions ● OK Reviewer *JM*
 "r" = 1.0 "a" = 0.30 "t nominal" = 9.2 "t measured" = N/A "s" = 4.14 "w" = N/A

10) Flaw Type ● OK Reviewer *JM* Subsurface Planar

11) Flaw Characterization Figure ● OK Reviewer *JM* IWA-3320-1

12) Flaw Characterization Figure Number #1

13) Was IWA-3300 Flaw Characterization followed? ● Yes ○ No If no, why?

14) The correct Code Edition and Addenda was available and used. ● Yes Preparer *JPW* ● OK Reviewer *JM*

15) Prepared by and date *JM* 7-18-05 16) Review by and date *JM* 7/21/05

The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

The review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Size <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE024

Page: 3 of 7

Summary No.: 500726

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>STM</i>	Date: <u>8/5/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>JWP</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>GD</i>	Date: <u>16 AUG 05</u>

Comments:

Sketch or Photo: J:\ISIData\ISI\PI2_05 outage\Scans\WeDyne Vessel Flaws\500726 N-11\Flaw Disposition 1.bmp



ISI Flaw Disposition Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-SI-NR</u>	Outage No.: <u>PI2RF2005</u> ^{E031}
Summary No.: <u>500726</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE024</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|-----------------------------|---|------------------------|
| 1) Flaw Number <u>1</u> | 3) ISI Interval <u>3rd</u> | OK Reviewer <u>STM</u> |
| 2) Item Number <u>B3.90</u> | 4) Code Edition & Addenda <u>1989 No Add.</u> | OK Reviewer <u>STM</u> |
| <u>WELD # N-11</u> | 5) Acceptance Standard <u>IWB-3512</u> | OK Reviewer <u>STM</u> |
| | 6) Calculations (See Below) | OK Reviewer <u>STM</u> |

$$a = 0.30 \quad t = 9.2$$

$$l = 1.0 \quad a/t = 0.0326$$

$$a/l = 0.30 \quad a/t\% = 3.26$$

$$Y = s/a = 4.14 / 0.30 = 13.8$$

USE 1.0

- 7) Results OK Reviewer STM
- a/l = 0.30 Code allowable a/t% = 4.4 Calculated a/t% = 3.26 Laminar flow surface area: (0.75 | w) = N/A
- 8) Table used for analysis OK Reviewer STM IWB-3512-1
- 9) Was linear interpolation used? Yes No If no, why? NOT REQUIRED
- 10) Was IWA-3200 Significant Digits For Limiting Values followed? Yes No If no, why?
- 11) The correct Code Edition and Addenda was available and used. Yes Preparer JWP OK Reviewer STM
- 12) Statement of acceptability or rejectability with basis. OK Reviewer STM Accept Reject
- (a/t) Code allowable > (a/t) calculated
 - OEM flaw evaluation handbook (see attached analysis)
 - (a/t) Code allowable < (a/t) calculated
- 13) Prepared by and date Jim Piller 7-18-05
- The results assure that the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 14) Engineering review by and date Tom Daly 7/21/05
- This review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 15) Approved by and date Tom Daly 8-5-05
- This approval assures that all involved with this flaw sizing and flaw disposition were aware of the necessity that the results and the methodology are correct and in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Disposition <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE024

Page: 4 of 7

Summary No.: 500726

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>TMJ</i>	Date: <u>8/5/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>JPW</i>	Date: <u>8-5-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>GD</i>	Date: <u>16 AUG 05</u>

Comments:

Sketch or Photo: J:\ISIData\ISINPI2_05 outage\Scans\WeDyne Vessel Flaws\500726 N-11\Flaw Sizing 2.bmp



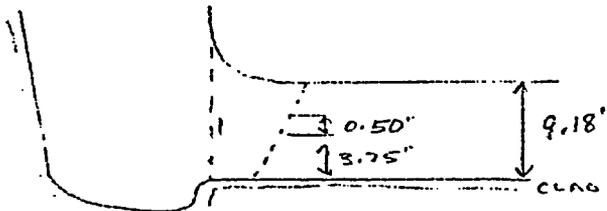
ISI Flaw Sizing Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-SI-NZ</u>	Outage No.: <u>PI2RF2005</u>
Summary No.: <u>500726</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE024</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

1) Flaw Number <u>2</u>	3) ISI Interval <u>32</u>	OK Reviewer <u>TMJ</u>
2) Item Number <u>B 3.90</u>	4) Code Edition & Addenda <u>1989 No Add.</u>	OK Reviewer <u>TMJ</u>
	5) Method <u>UT</u>	OK Reviewer <u>TMJ</u>
	6) Flaw Sketch (See Below)	

weld # N-11

Flaw View



$.4d = 20/2 \times 0.4$
 $.4d = 0.50/2 \times 0.4$
 $.4d = 0.10$
 $.4d > .4d \text{ flaw} = \text{subsurface}$
 $3.75 > 0.10 = \text{subsurface}$
 $a = 20/2$
 $a = 0.50/2$
 $a = 0.25$

7) Calculations OK Reviewer TMJ

Show determination of Surface or Subsurface

Show determination of type of "a" to use

SWI-NDE-FE-1 7.2 "Significant Dist..."
8) FE-1 Paragraph 7.0 "Rounding-off Method" was used

Yes Preparer JPW OK Reviewer TMJ

9) Code Flaw Dimensions OK Reviewer TMJ

"t" = 0.75 "a" = 0.25 "t nominal" = 9.2 "t measured" = N/A "a" = 3.75 "w" = N/A

10) Flaw Type OK Reviewer TMJ subsurface planar

11) Flaw Characterization Figure OK Reviewer TMJ IWA-3320-1

12) Flaw Characterization Figure Number #1

13) Was IWA-3300 Flaw Characterization followed? Yes No If no, why?

14) The correct Code Edition and Addenda was available and used. Yes Preparer JPW OK Reviewer TMJ

15) Prepared by and date Jerry Wren 7-18-05

16) Review by and date Tom Daly 7/21/05

The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

The review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Size <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE024

Page: 5 of 7

Summary No.: 500726

Examiner: VENDOR, WESDYNE Level: II Reviewer: Jones, Thomas *gmj* Date: 8/5/05
 Examiner: N/A Level: N/A Site Review: Wren, Jerry P *gmj* Date: 8-8-05
 Other: N/A Level: N/A ANII Review: Daly, Gerald *gmj* Date: 16AUG05

Comments:

Sketch or Photo: J:\ISIData\ISNPI2_05 outage\Scans\WeDyne Vessel Flaws\500726 N-11\Flaw Disposition 2.bmp



ISI Flaw Disposition Worksheet

Site/Unit: PI 1 2 Procedure: PDI-ISI-254-SI-N2 Outage No.: PI2RF2005
 Summary No.: 500726 Procedure Rev.: 0 Report No.: 2005VE024
 Workscope: ISI Work Order No.: 0406670 Page: of

- | | | |
|-----------------------------|---|------------------------|
| 1) Flaw Number <u>2</u> | 3) ISI Interval <u>3rd</u> | OK Reviewer <u>gmj</u> |
| 2) Item Number <u>B3.90</u> | 4) Code Edition & Addenda <u>1989 NO ADD.</u> | OK Reviewer <u>gmj</u> |
| <u>WELD # N-11</u> | 5) Acceptance Standard <u>IWB-3512</u> | OK Reviewer <u>gmj</u> |
| | 6) Calculations (See Below) | OK Reviewer <u>gmj</u> |

$$a = 0.25 \quad t = 9.2$$

$$l = 0.75 \quad a/t = 0.0272$$

$$a/l = .333 \quad a/t \% = 2.72$$

$$Y = s/a = 3.75 / 0.25 = 15$$

USE 1.0

- 7) Results OK Reviewer gmj
 $a/t = .333$ Code allowable $a/t\% = 4.4$ Lower Calculated $a/t\% = 2.72$ Laminar flaw surface area: $(0.75 | w) = N/A$
- 8) Table used for analysis OK Reviewer gmj IWB-3512-1
- 9) Was linear interpolation used? Yes No If no, why?
ACCEPTABLE BY USING LOWER a/l OF 4.4
- 10) Was IWA-3200 Significant Digits For Limiting Values followed? Yes No If no, why?
- 11) The correct Code Edition and Addenda was available and used. Yes Preparer gmj OK Reviewer gmj
- 12) Statement of acceptability or rejectability with basis. OK Reviewer gmj Accept Reject
 (a/t) Code allowable > (a/t) calculated
 OEM flaw evaluation handbook (see attached analysis)
 (a/t) Code allowable < (a/t) calculated
- 13) Prepared by and date Jim P. Wren 7-18-05
 This approval assures that all involved with this flaw sizing and flaw disposition were aware of the necessity that the results and the methodology are correct and in accordance with applicable codes, standards, specifications and procedures.
- 14) Engineering review by and date Paul Land 7/21/05
 This review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.
- 15) Approved by and date Tom Dowling 8-5-05
 This approval assures that all involved with this flaw sizing and flaw disposition were aware of the necessity that the results and the methodology are correct and in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Disposition <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE024

Page: 6 of 7

Summary No.: 500726

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>ctm</i>	Date: <u>8/5/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>jp</i>	Date: <u>5-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>gd</i>	Date: <u>16 AUG 05</u>

Comments:

Sketch or Photo: J:\ISIData\ISI\PI2_05 outage\Scans\WeDyne Vessel Flaws\500726 N-11\Flaw Sizing 3.bmp



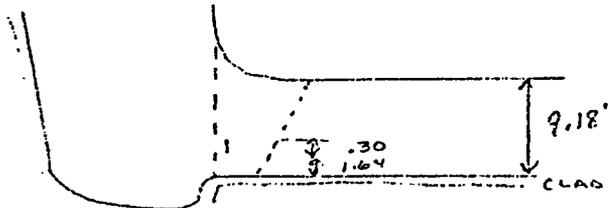
ISI Flaw Sizing Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-SI-NZ</u>	Outage No.: <u>EO31</u>
Summary No.: <u>500726</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE024</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|------------------------------|---|------------------------|
| 1) Flaw Number <u>3</u> | 3) ISI Interval <u>3 CF</u> | OK Reviewer <u>ctm</u> |
| 2) Item Number <u>B 3.90</u> | 4) Code Edition & Addenda <u>1989 No Add.</u> | OK Reviewer <u>ctm</u> |
| | 5) Method <u>UT</u> | |
| | 6) Flaw Sketch (See Below) | OK Reviewer <u>ctm</u> |

weld # N-11

Flaw View



\bullet $4d = 2\theta/2 \times 0.4$
 \bullet $4d = 0.30/2 \times 0.4$
 \bullet $4d = 0.06$
 \bullet if $s > .4d$ flaw = sub surface
 $1.64 > 0.06 =$ sub surface
 $a = 2\theta/2$
 $a = 0.30/2$
 $a = 0.15$

7) Calculations OK Reviewer ctm

Show determination of Surface or Subsurface

Show determination of type of "a" to use

$SWI-NDE-FE-1$ 7.2 "Significant Dist..."
 R) $FE-1$ Paragraph 2.0 "Rounding-off Method" was used

Yes Preparer jp OK Reviewer ctm

8) Code Flaw Dimensions OK Reviewer ctm

"t" = 0.75 "a" = 0.15 "t nominal" = 9.2 "t measured" = N/A "s" = 1.64 "w" = N/A

10) Flaw Type OK Reviewer ctm subsurface planar

11) Flaw Characterization Figure OK Reviewer ctm IWA-3320-1

12) Flaw Characterization Figure Number #1

13) Was IWA-3300 Flaw Characterization followed? Yes No If no, why?

14) The correct Code Edition and Addenda was available and used.

Yes Preparer jp OK Reviewer ctm

15) Prepared by and date Jerry P. Wren 7-18-05

16) Review by and date Thomas Jones 7/21/05

The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

The review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Size <edit from Setup>

Additional - Supplemental Reports <edit from Setup>



Supplemental Report

Report No.: 2005VE024
Page: 7 of 7

Summary No.: 500726

Examiner: <u>VENDOR, WESDYNE</u>	Level: <u>II</u>	Reviewer: <u>Jones, Thomas</u> <i>THJ</i>	Date: <u>8/5/05</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P</u> <i>JW</i>	Date: <u>8-8-05</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u> <i>GD</i>	Date: <u>16 AUG 05</u>

Comments:

Sketch or Photo: J:\ISIData\ISINPI2_05 outage\Scans\WeDyne Vessel Flaws\500726 N-11\Flaw Disposition 3.bmp



ISI Flaw Disposition Worksheet

Site/Unit: <u>PI 1 2</u>	Procedure: <u>PDI-ISI-254-SI-N2</u>	Outage No.: <u>PI2RF2005</u>
Summary No.: <u>500726</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005VE024</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406670</u>	Page: <u> </u> of <u> </u>

- | | | |
|-----------------------------|---|---|
| 1) Flaw Number <u>3</u> | 3) ISI Interval <u>3rd</u> | <input checked="" type="radio"/> OK Reviewer <i>THJ</i> |
| 2) Item Number <u>B3.90</u> | 4) Code Edition & Addenda <u>1989 NO ADD.</u> | <input checked="" type="radio"/> OK Reviewer <i>THJ</i> |
| | 5) Acceptance Standard <u>IWB-3512</u> | <input checked="" type="radio"/> OK Reviewer <i>THJ</i> |
| | 6) Calculations (See Below) | <input checked="" type="radio"/> OK Reviewer <i>THJ</i> |

$$\begin{aligned}
 a &= 0.15 & t &= 9.2 \\
 l &= 0.75 & a/t &= 0.0163 \\
 a/l &= 0.20 & a/t \% &= 1.63 \\
 Y &= s/a = 1.63 / 0.15 = 10.8 \\
 && & \text{USE } 1.0
 \end{aligned}$$

- 7) Results OK Reviewer *THJ*
 $n/l = 0.20$ Code allowable $a/t\% = 3.3$ Calculated $a/t\% = 1.63$ Laminar flaw surface area: $(0.75 | w) = N/A$
- 8) Table used for analysis OK Reviewer *THJ* IWB-3512-1
- 9) Was linear interpolation used? Yes No If no, why? NOT REQUIRED
- 10) Was IWA-3200 Significant Digits For Limiting Values followed? Yes No If no, why?
- 11) The correct Code Edition and Addenda was available and used. Yes Preparer *THJ* OK Reviewer *THJ*
- 12) Statement of acceptability or rejectability with basis. OK Reviewer *THJ* Accept Reject
- (a/t) Code allowable > (a/t) calculated
 - OEM flaw evaluation handbook (see attached analysis)
 - (a/t) Code allowable < (a/t) calculated

13) Prepared by and date
Tom Whelan 7-18-05
 The results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

14) Engineering review by and date
Tom Whelan 7/21/05
 This review assures that the results are correct and the methodology used is in accordance with applicable codes, standards, specifications and procedures.

15) Approved by and date
Tom Whelan 8-5-05
 This approval assures that all involved with this flaw sizing and flaw disposition were aware of the necessity that the results and the methodology are correct and in accordance with applicable codes, standards, specifications and procedures.

Additional - ISI Flaw Disposition <edit from Setup>

REACTOR VESSEL WELD RESULTS SUMMARY

PLANT NAME Prairie Island Unit 2

WELD NO. N11 (500726) COMPONENT Safety Injection Noz-Shell @ 288.5°

LIMITATIONS: NO YES 59.26 % Complete
See Coverage Breakdown Sheet

RESULTS	NO. OF INDICATIONS	<u>3</u>
NI	STATUS	<u>Code Allowable</u>
RI		<u>X</u>

EXAM DOCUMENTATION

INDICATION DOCUMENTATION

- PARAGON ANALYSIS LOG
- PARAGON ACQUISITION LOG
- SCAN PRINT OUT
- COVERAGE BREAKDOWN

- ASSESSMENT SHEET
- PARAGON HARD COPY
- OTHER (Specify)

Comments: _____
Coverage calculation is based on the Bore and Star scan (combined) as perpendicular,
and the Tan Scan (parallel).
Figure 1 illustrates the obstruction to scanning, the nozzle protrusion.

Analyst *[Signature]* Date: 5/15/05

R.V. COVERAGE ESTIMATE BREAKDOWNS

PLANT NAME Prairie Island

WesDyne

WELD NO. N11 (500726)

International

COMPONENT Safety Injection Noz-Shell @ 288.5°

BEAM ANGLE BREAK DOWN

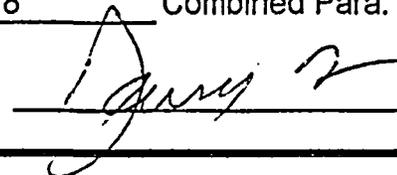
BEAM DIRECTION	45 Shear		45 L Single		45 L Dual		Combined Bore/Star	
	WELD	VOLUME	WELD	VOLUME	WELD	VOLUME	WELD	VOLUME
TAN Scan								
Parallel	15.55	57.14	0.00	53.66	0.00	28.10		
Combined Bore&Star								
Perpendicular							97.40	88.15
AVERAGE		36.35		26.83		14.05		92.78

Comments: Coverage calculation is based on the Bore and Star scan (combined) as perpendicular, and the Tan Scan (parallel).

Figure 1 illustrates the obstruction to scanning, the nozzle protrusion.

Combined Perp. 92.78 Combined Para. 25.74 Combined Average 59.26

Analyst



Date

5/15/05

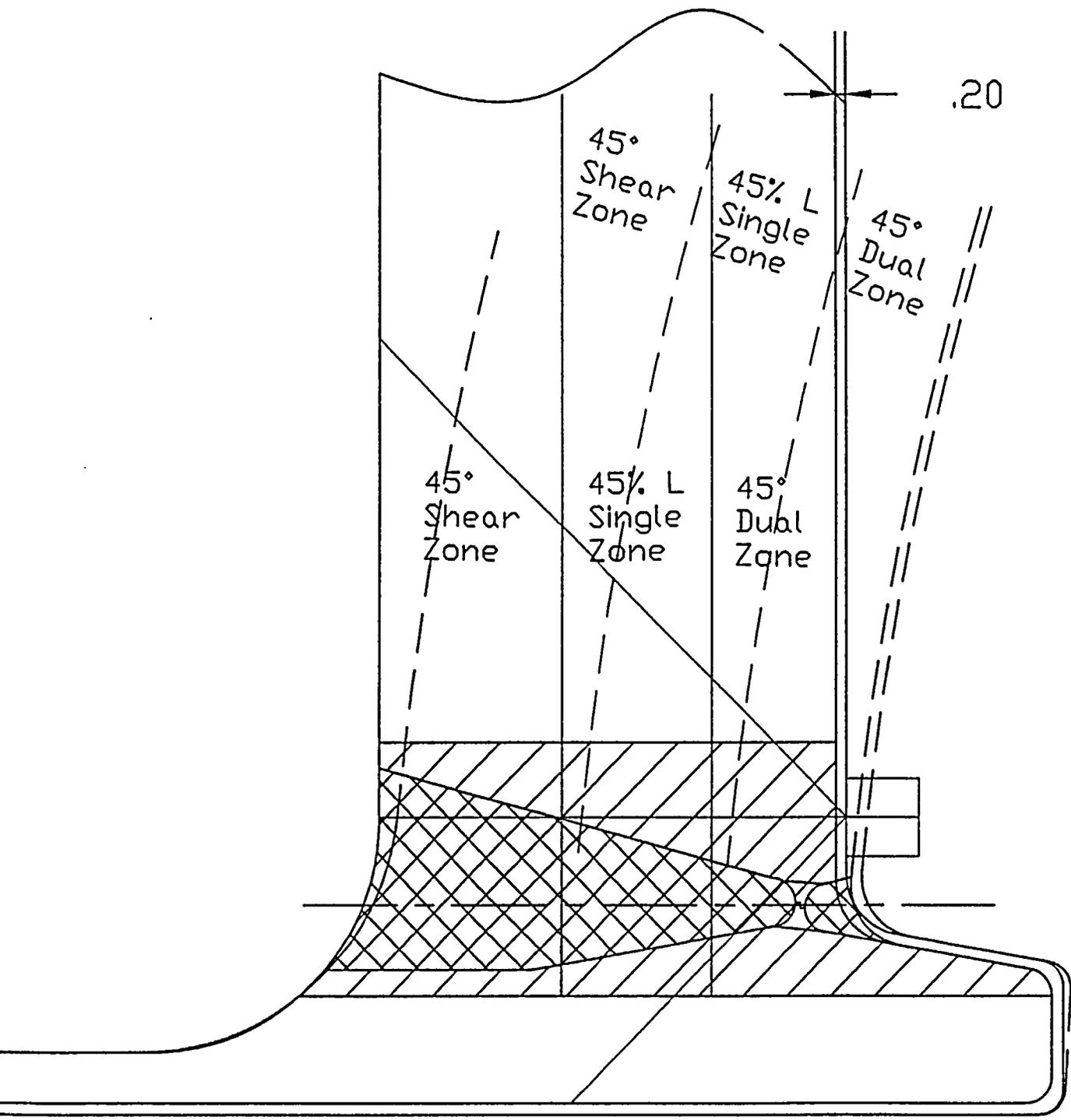
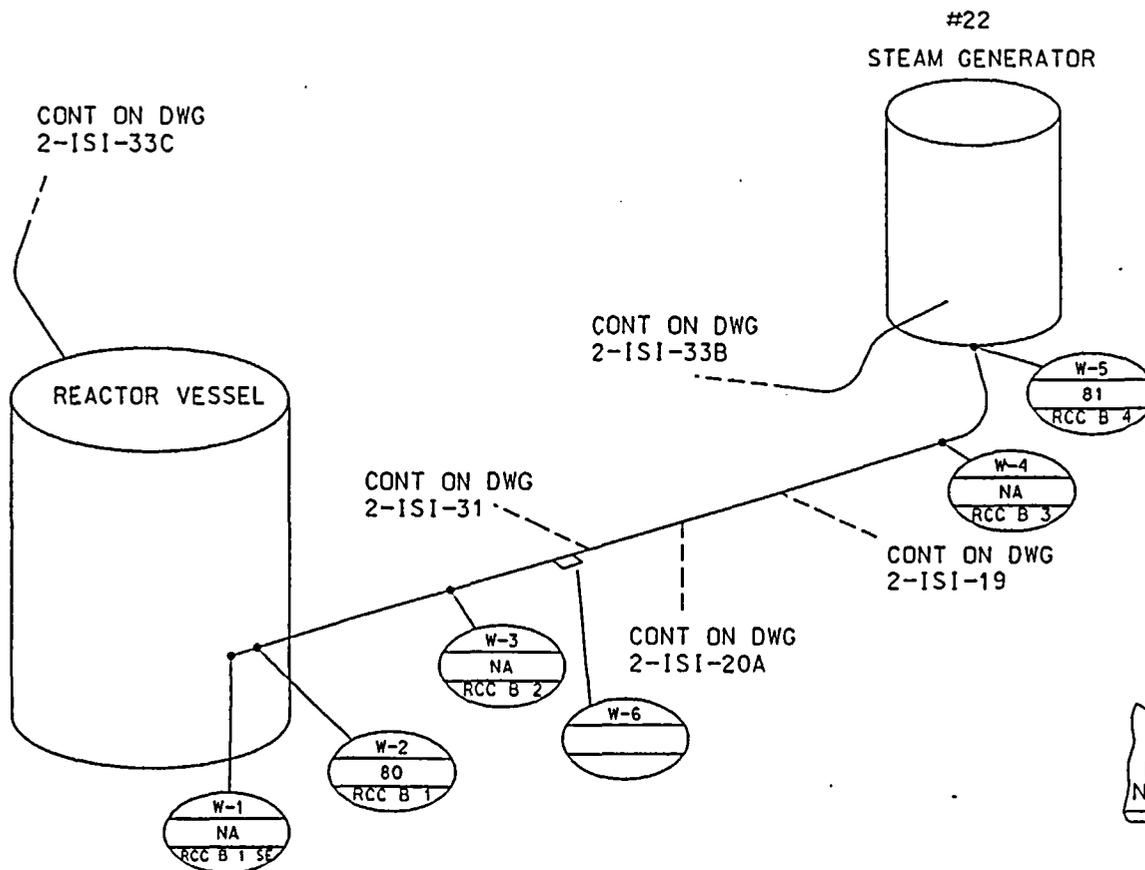


Figure 1
Tan Coverage Illustration of
the Safety Injection Nozzle

REV.1 TRF.04.-018



CONT ON DWG
2-ISI-33C

CONT ON DWG
2-ISI-33B

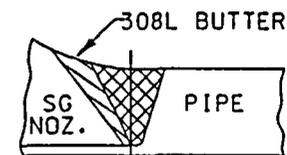
CONT ON DWG
2-ISI-31

#22
STEAM GENERATOR

REACTOR VESSEL

CONT ON DWG
2-ISI-19

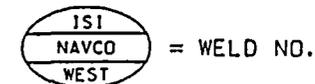
CONT ON DWG
2-ISI-20A



WELD 5 DETAIL



WELD 1 DETAIL



REACTOR COOLANT LOOP "B"

XH-1001-388

XH-1001-1182

REF: XH-1106-7028

FILE NO: 2133AR01

NSP (M&SP)-PI-2		ISI
DWN: DMN	CHKD: LCB	APPD: <i>[Signature]</i>
SYSTEM: REACTOR COOLANT		
LINE: 29-2RC-1B		
DWG: 2-ISI-33A	REV: 02	



UT Pipe Weld Examination

Site/Unit: PINGP / PI2 Procedure: SWINDE-UT-11 Outage No.: EO3I
 Summary No.: 501137 Procedure Rev.: 0 Report No.: 2005U036
 Workscope: ISI Work Order No.: 0406678 Page: 1 of 5

Code: 1989 Edition Cat./Item: B-F/B5.70 Location: Containment
 Drawing No.: 2-ISI-33A Description: 50 Red Elbow-Nozzle
 System ID: RC
 Component ID: W-5 Size/Length: 2.0" / 110" Thickness/Diameter: 2.9" / 29" ID
 Limitations: See Supplements Start Time: 15:20 Finish Time: 16:08

Examination Surface: Inside Outside Surface Condition: Blended

Lo Location: TDC Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #02243

Temp. Tool Mfg.: PTC Instruments Serial No.: PI11 Surface Temp.: 86 °F

Cal. Report No.: 2005CA034, 2005CA035, 2005CA036

Angle Used	0	45	45T	60	N/A	N/A
Scanning dB	42.0	84.0	80.0	N/A	N/A	N/A

Indication(s): Yes No Scan Coverage: Upstream Downstream CW CCW

Comments:

Scanned at reference due to excessive noise @ +6 dB. 0° exam performed by J. Timm - Exam start 00:23, exam end 04:00 on 5/23/05

Results: NAD IND GEO

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Bleching, Todd P.	III		5/22/2005	Halling, David A.		
Examiner	Level	Signature	Date	Site Review	Signature	Date
Timm, Jeremy T.	III		5/23/2005	Wren, Jerry		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Daly, Gerald		



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: <u>PINGP / PI2</u>	Procedure: <u>SWI NDE-UT-11</u>	Outage No.: <u>EO3I</u>
Summary No.: <u>501137</u>	Procedure Rev.: <u>0</u>	Report No.: <u>2005U036</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406678</u>	Page: <u>2</u> of <u>5</u>

45 deg

Scan 1	<u>100.000</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>100.000</u>	% total for Scan 1
Scan 2	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 2
Scan 3	<u>100.000</u>	% Length X	<u>67.690</u>	% volume of length / 100 =	<u>67.690</u>	% total for Scan 3
Scan 4	<u>100.000</u>	% Length X	<u>67.690</u>	% volume of length / 100 =	<u>67.690</u>	% total for Scan 4

Add totals and divide by # scans = 78.460 % total for 45 deg

Other deg - _____ (to be used for supplemental scans)

The data to be listed below is for coverage that was not obtained with the 45 deg scans.

Scan 1	_____	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 1
Scan 2	_____	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 2
Scan 3	_____	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 3
Scan 4	_____	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 4

Percent complete coverage

Add totals for each scan required and divide by # of scans to determine;

78.460 % Total for complete exam

Site Field Supervisor: _____

Date: _____



Supplemental Report

Report No.: 2005U036

Page: 3 of 5

Summary No.: 501137

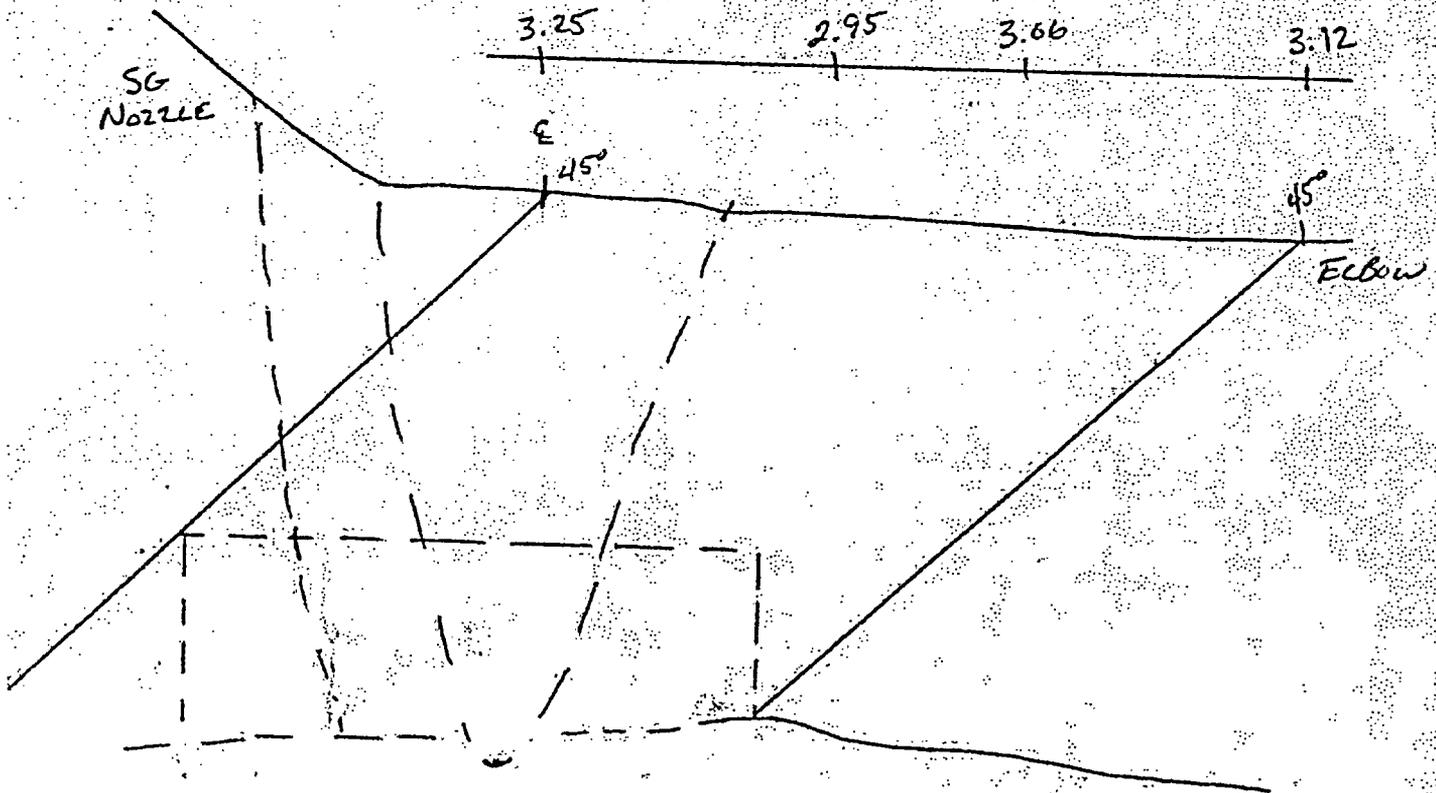
Examiner: Blechinger, Todd P. Level: III Reviewer: Halling, David A. Date: _____

Examiner: Timm, Jeremy T. Level: III Site Review: Wren, Jerry Date: _____

Other: N/A Level: N/A ANII Review: Daly, Gerald Date: _____

Comments: **W-5 Coverage Plot**

Sketch or Photo: J:\ISIData\IS\PI2_05 outage\Scans\2005U036 501137 coverage plot.jpg





Supplemental Report

Report No.: 2005U036

Page: 4 of 5

Summary No.: 501137

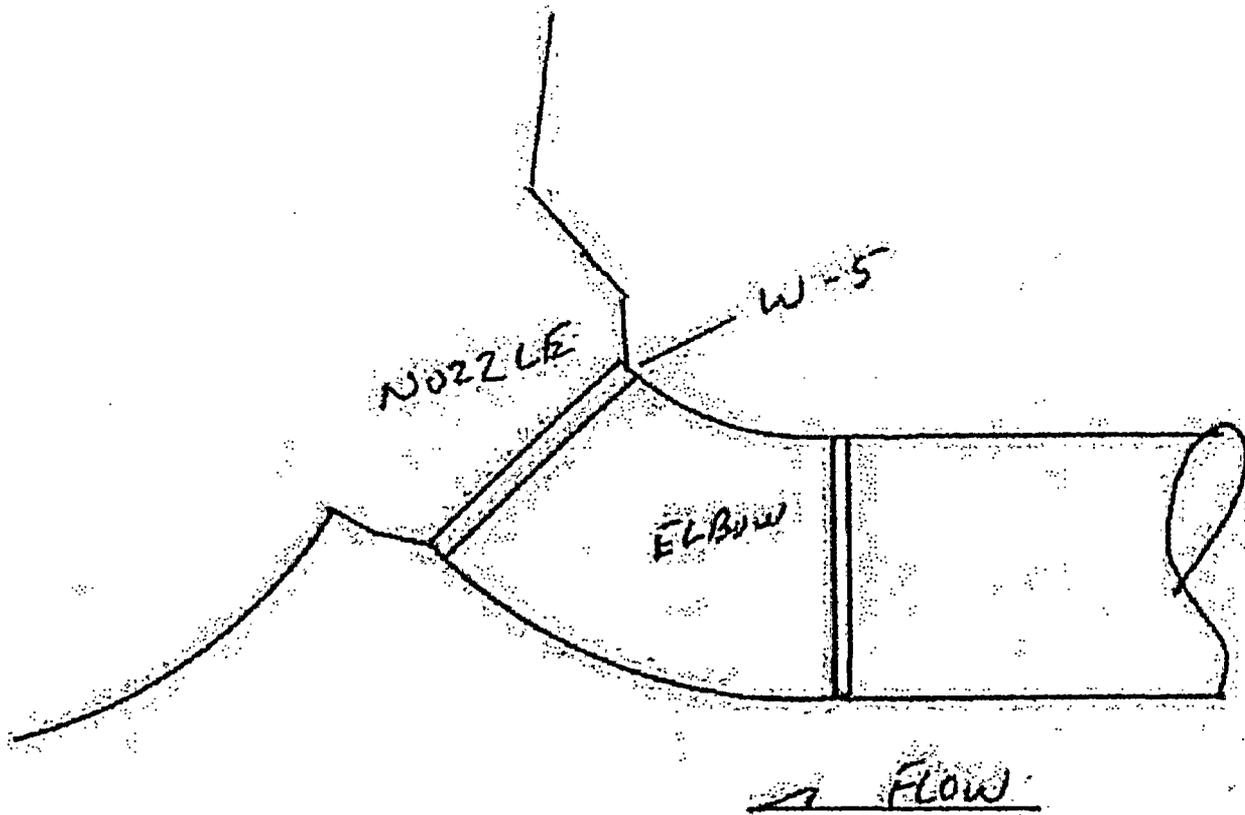
Examiner: Blechinger, Todd P. Level: III Reviewer: Halling, David A. Date: _____

Examiner: Timm, Jeremy T. Level: III Site Review: Wren, Jerry Date: _____

Other: N/A Level: N/A ANII Review: Daly, Gerald Date: _____

Comments: **Limitation sketch W-5. No scans on nozzle side due to configuration.**

Sketch or Photo: J:\ISIData\IS\PI2_05 outage\Scans\2005U036 Limitation Sketch.jpg





Supplemental Report

Report No.: 2005U036

Page: 5 of 5

Summary No.: 501137

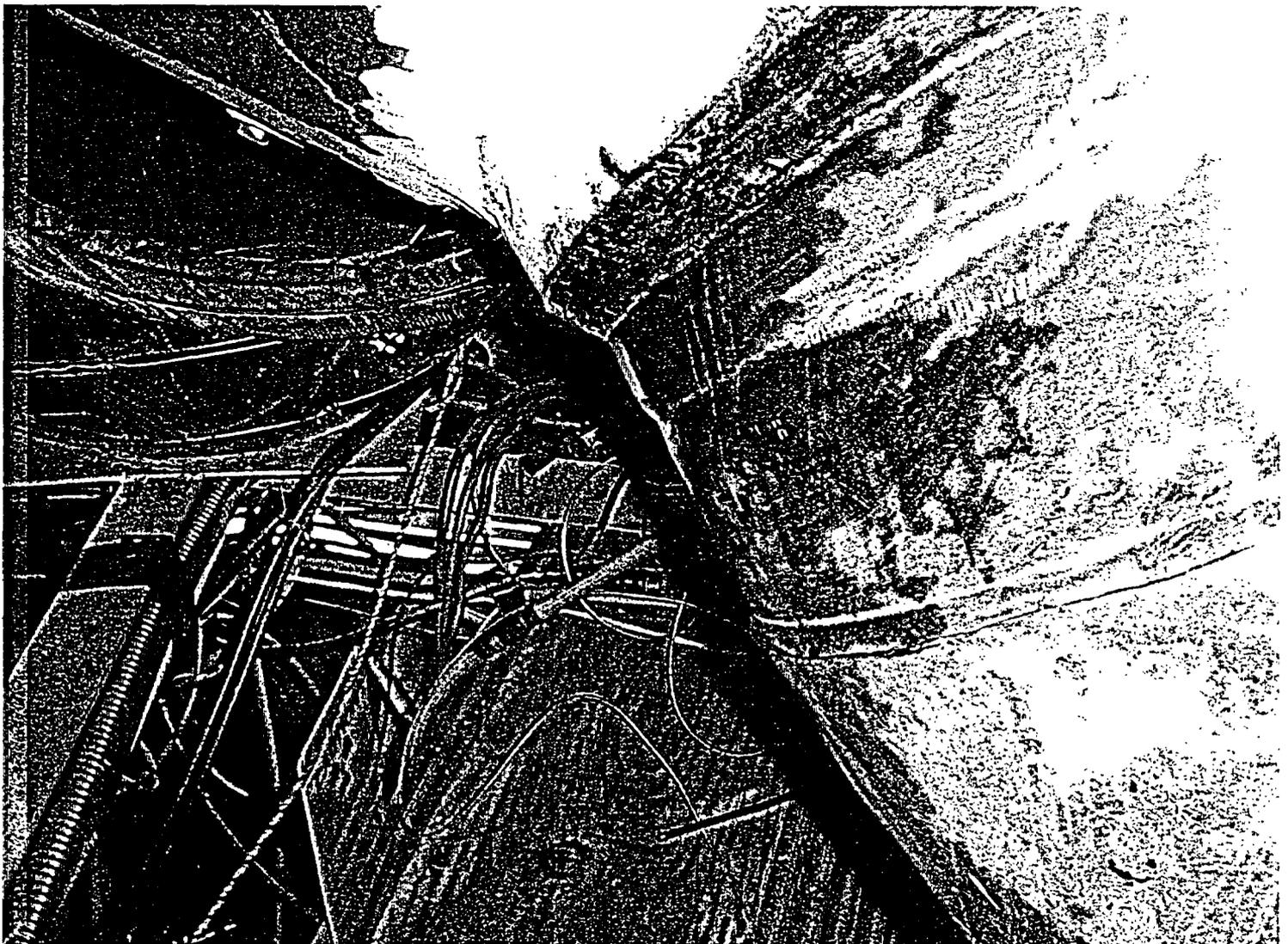
Examiner: Blechinger, Todd P. Level: III Reviewer: Halling, David A. Date: _____

Examiner: Timm, Jeremy T. Level: III Site Review: Wren, Jerry Date: _____

Other: N/A Level: N/A ANII Review: Daly, Gerald Date: _____

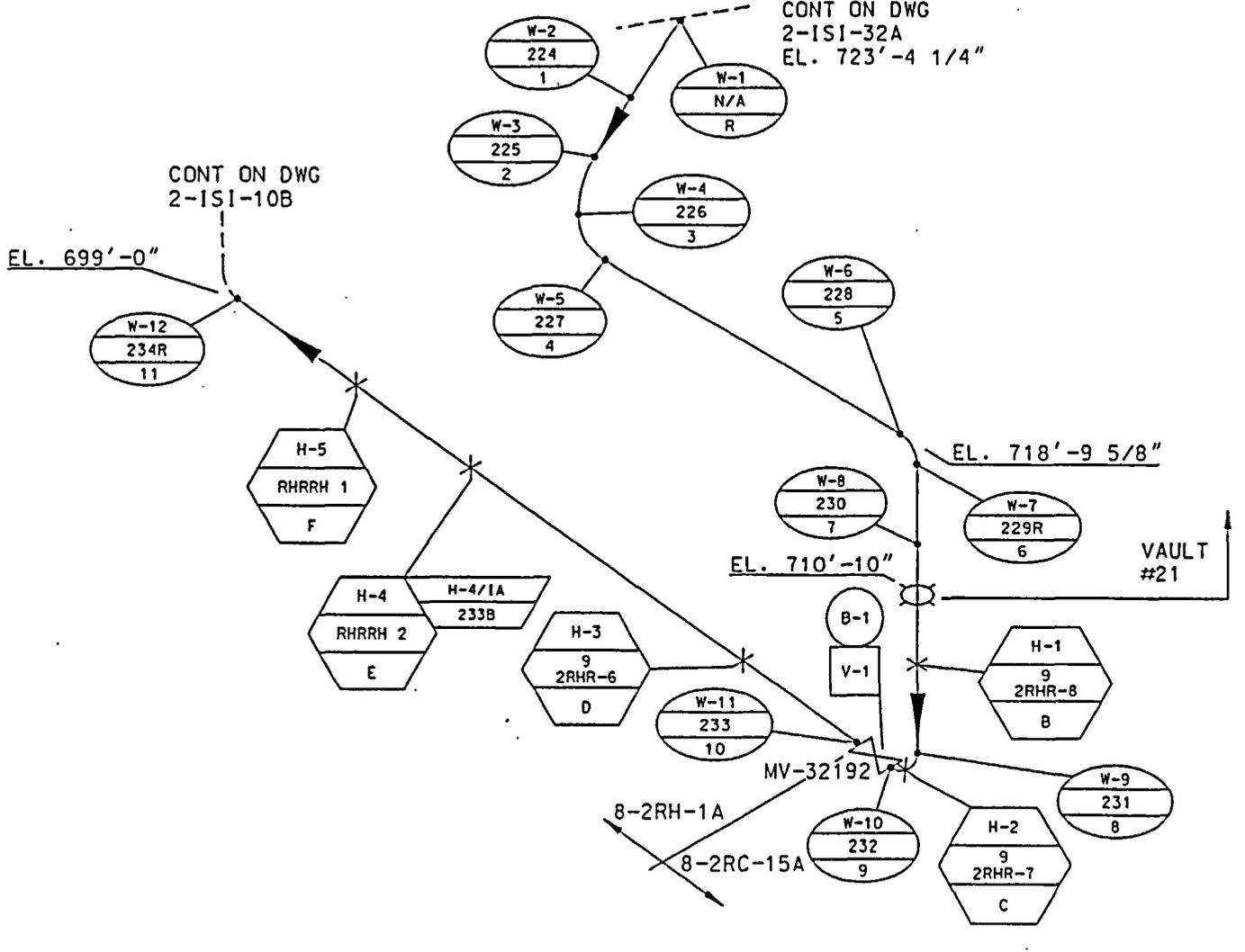
Comments: W-5 Limitation Photo

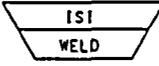
Sketch or Photo: J:\ISIData\IS\PI2_05 outage\Photos\TODD\5-25\DSC01640.JPG



REV: 1 TRF.04-018

HOT LEG
LOOP "A"
CONT ON DWG
2-ISI-32A
EL. 723'-4 1/4"



-  = INTEGRAL ATTACHMENT
-  = HANGER NO.
-  = WELD NO.
-  = BOLT NO.
-  = VALVE NO.

8" RHR TAKEOFF LOOP "A" HOT LEG

REF: XH-1106-2550

FILE NO: 2110AR05

NSP (M&SP)-PI-2		ISI
DWN: CADworksCHKD: LCP	APPD: <i>[Signature]</i>	
SYSTEM: RHR TAKEOFF		
LINE: 8-2RH-1A, 8-2RC-15A		
DWG: 2-ISI-10A	REV: 06	



UT Pipe Weld Examination

Site/Unit: PINGP / PI2

Procedure: SWI NDE-UT-16A

Outage No.: EO3I

Summary No.: 501953

Procedure Rev.: 1

Report No.: 2005U024

Workscope: ISI

Work Order No.: 0406678

Page: 1 of 5

Code: 1989 Edition

Cat./Item: B-J/B9.11

Location: Containment

Drawing No.: 2-ISI-10A

Description: Valve to Pipe

System ID: RH

Component ID: W-11

Size/Length: .9" / 27" Thickness/Diameter: .812" / 8"

Limitations: See Supplements

Start Time: 14:20 Finish Time: 14:40

Examination Surface: Inside Outside

Surface Condition: Flat Topped

Lo Location: TDC

Wo Location: Centerline of Weld

Couplant: Sonotrace 40

Batch No.: #02243

Temp. Tool Mfg.: PTC Instruments

Serial No.: PI11

Surface Temp.: 71 °F

Cal. Report No.: 2005CA025, 2005CA026, 2005CA027

Angle Used	0	45	45T	60	60° RL	N/A
Scanning dB	N/A	36.0	36.0	43.0	59.0	N/A

Indication(s): Yes No

Scan Coverage: Upstream Downstream CW CCW

Comments:

Single sided exam - exam performed through 100% of code volume, however procedure not qualified for detection on far side. Best effort exam on far side volume. No scans on valve side due to configuration.

Results: NAD IND GEO

Percent Of Coverage Obtained > 90%: No

Reviewed Previous Data: N/A

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Blechinger, Todd P.	III		5/19/2005	Halling, David A.		5/23/2005
Examiner	Level	Signature	Date	Site Review	Signature	Date
Jensen, Arlen	II		5/19/2005	Wren, Jerry		5/24/2005
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Daly, Gerald		5/27/2005



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: <u>PINGP / PI2</u>	Procedure: <u>SWI NDE-UT-16A</u>	Outage No.: <u>EO3I</u>
Summary No.: <u>501953</u>	Procedure Rev.: <u>1</u>	Report No.: <u>2005U024</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406678</u>	Page: <u>2</u> of <u>5</u>

45 deg

Scan 1	<u>88.920</u>	% Length X	<u>44.460</u>	% volume of length / 100 =	<u>39.534</u>	% total for Scan 1
Scan 2	<u>88.920</u>	% Length X	<u>44.460</u>	% volume of length / 100 =	<u>39.534</u>	% total for Scan 2
Scan 3	<u>100.000</u>	% Length X	<u>50.000</u>	% volume of length / 100 =	<u>50.000</u>	% total for Scan 3
Scan 4	<u>100.000</u>	% Length X	<u>50.000</u>	% volume of length / 100 =	<u>50.000</u>	% total for Scan 4

Add totals and divide by # scans = 44.767 % total for 45 deg

Other deg - _____ (to be used for supplemental scans)

The data to be listed below is for coverage that was not obtained with the 45 deg scans.

Scan 1	_____	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 1
Scan 2	_____	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 2
Scan 3	_____	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 3
Scan 4	_____	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 4

Percent complete coverage

Add totals for each scan required and divide by # of scans to determine;

44.767 % Total for complete exam

Site Field Supervisor: _____ Date: _____



Supplemental Report

Report No.: 2005U024

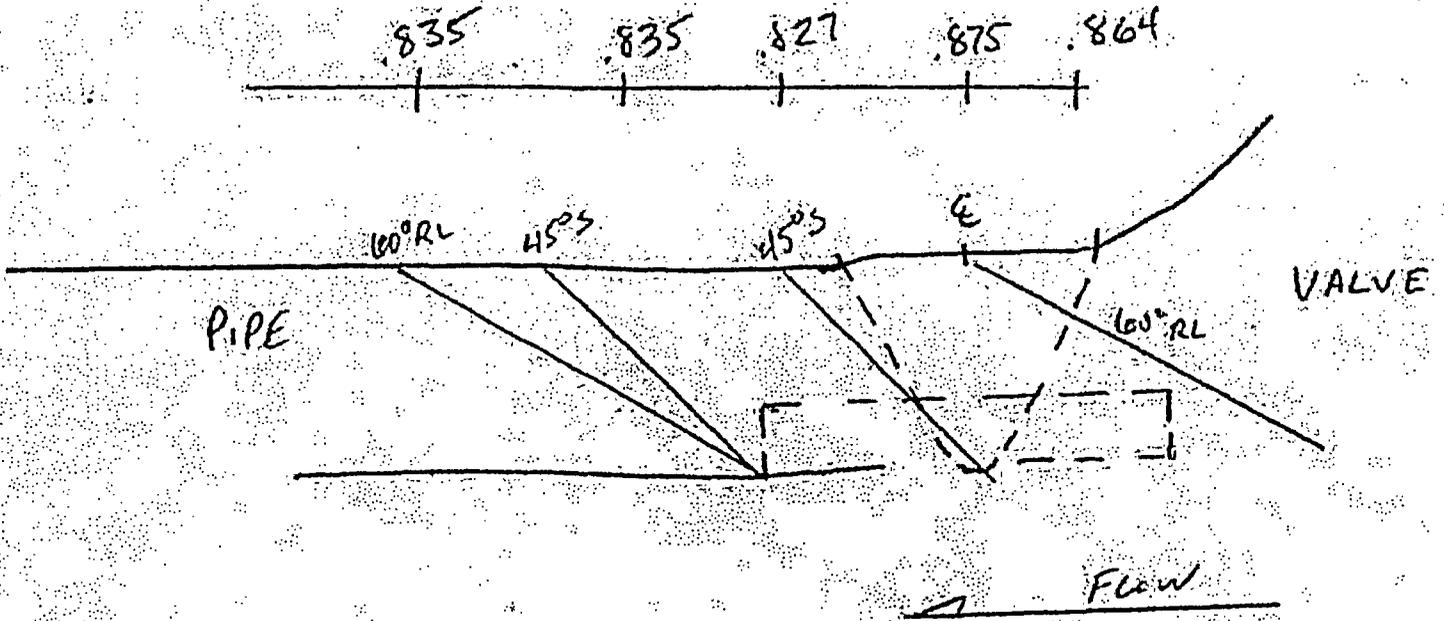
Page: 3 of 5

Summary No.: 501953

Examiner: <u>Blechinger, Todd P.</u>	Level: <u>III</u>	Reviewer: <u>Halling, David A.</u>	Date: <u>5/23/2005</u>
Examiner: <u>Jensen, Arlen</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry</u>	Date: <u>5/24/2005</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u>	Date: <u>5/27/2005</u>

Comments: **W-11 coverage plot**

Sketch or Photo: J:\ISIData\ISNPI2_05 outage\Scans\2005U024 501953 coverage plot.jpg





Supplemental Report

Report No.: 2005U024

Page: 4 of 5

Summary No.: 501953

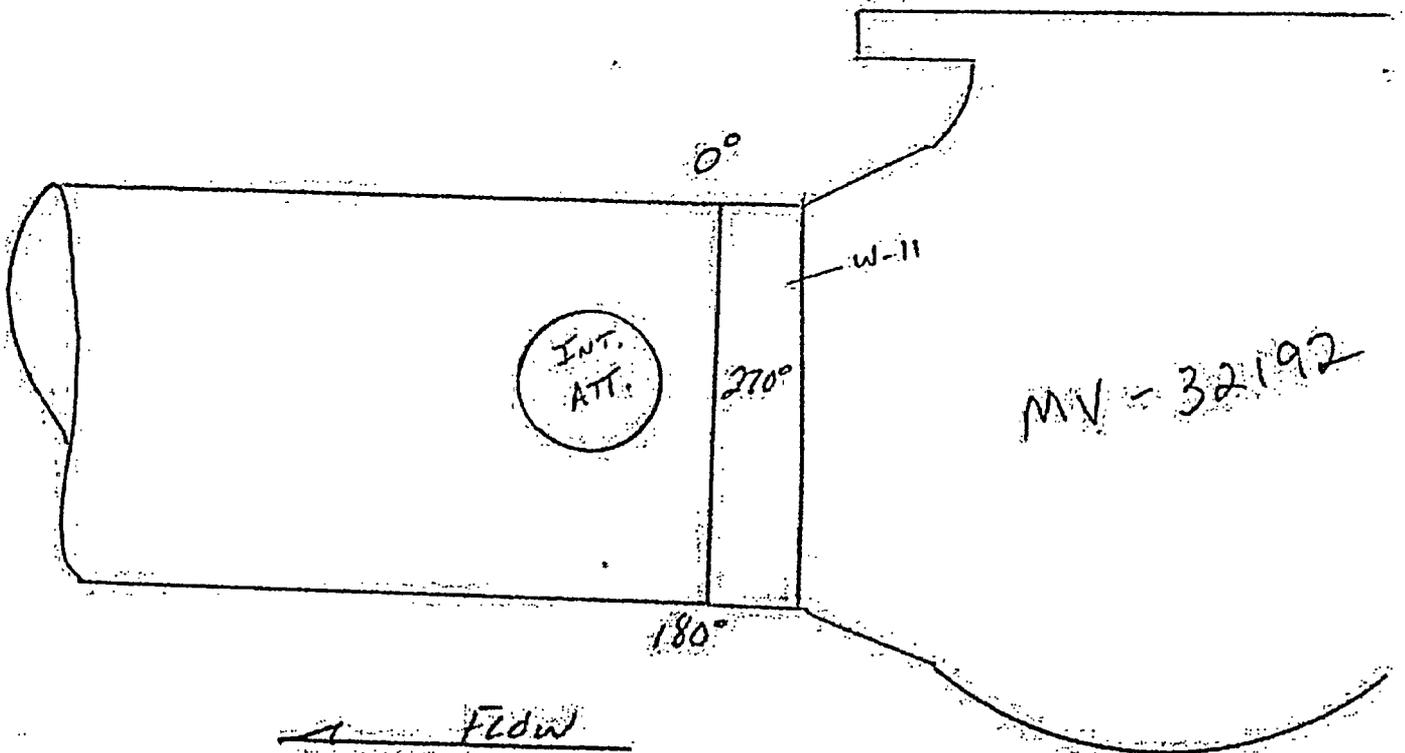
Examiner: Blechinger, Todd P. Level: III Reviewer: Halling, David A. Date: 5/23/2005

Examiner: Jensen, Arlen Level: II Site Review: Wren, Jerry Date: 5/24/2005

Other: N/A Level: N/A ANII Review: Daly, Gerald Date: 5/27/2005

Comments: No upstream exams due to valve body taper. Integral attachment limits downstream exam @ 270° for 3".

Sketch or Photo: J:\ISIData\ISNPI2_05 outage\Scans\2005U024 501953 limitation diagram.jpg





Supplemental Report

Report No.: 2005U024

Page: 5 of 5

Summary No.: 501953

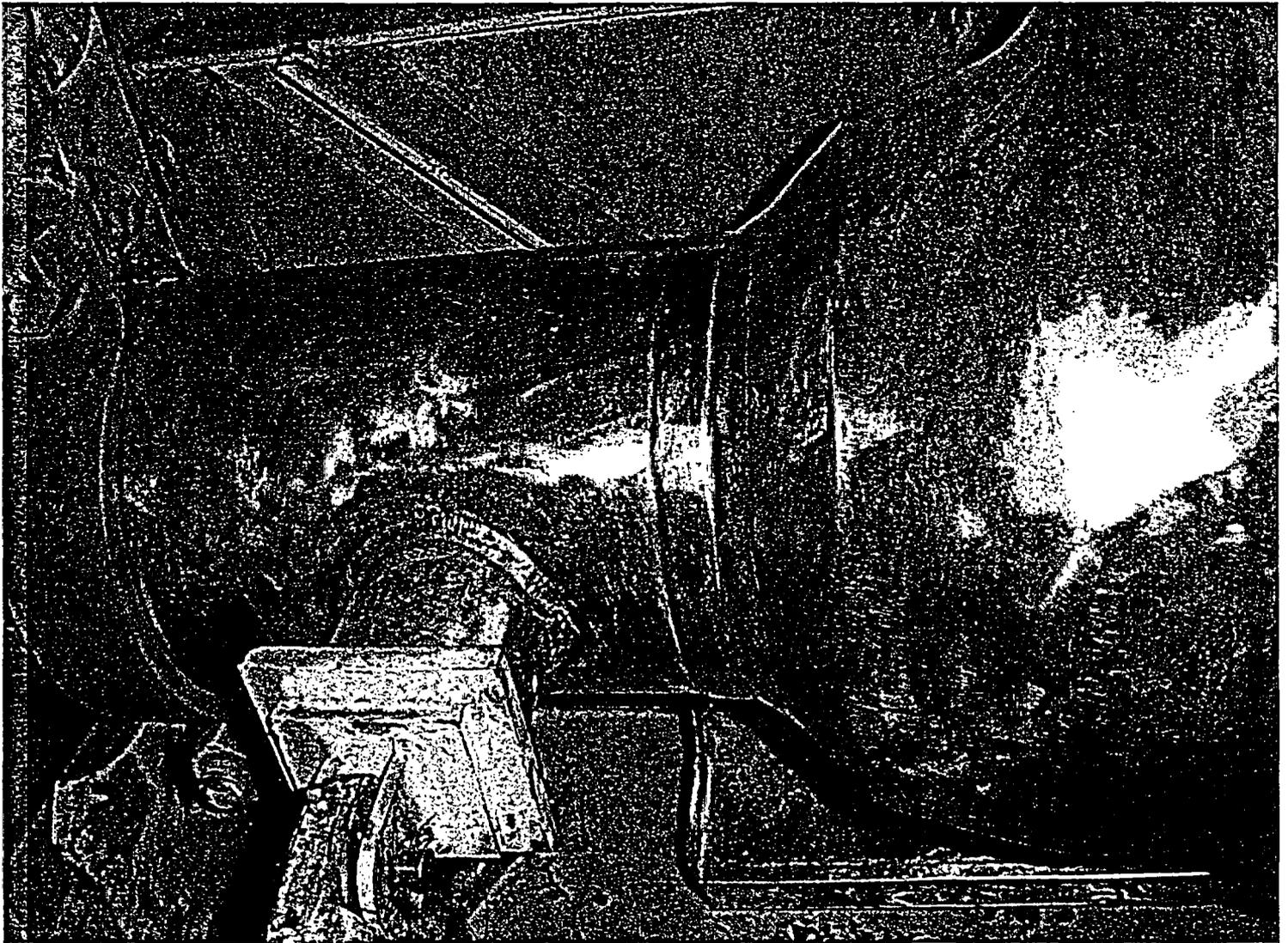
Examiner: Blechinger, Todd P. Level: III Reviewer: Halling, David A. Date: 5/23/2005

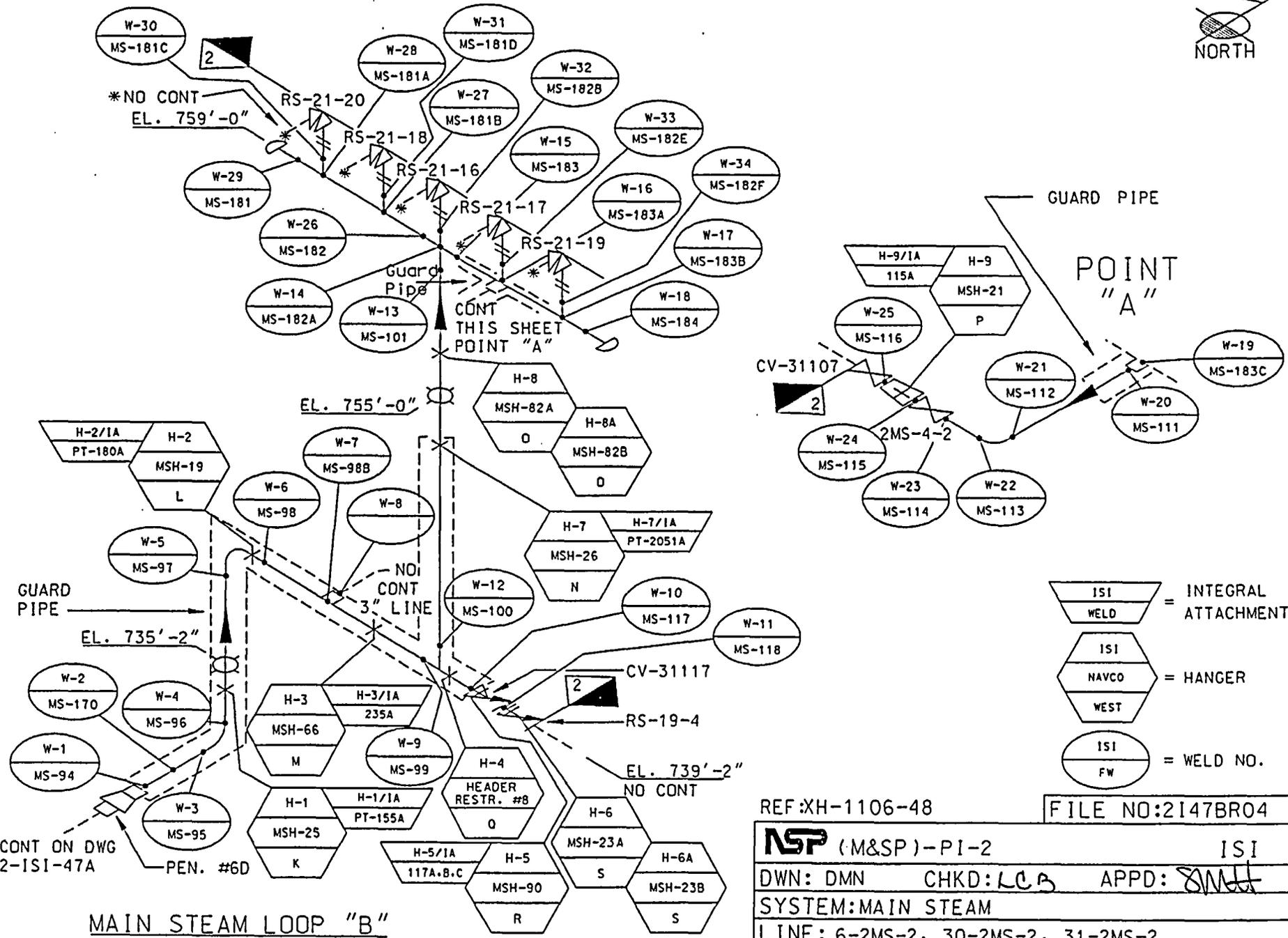
Examiner: Jensen, Arlen Level: II Site Review: Wren, Jerry Date: 5/24/2005

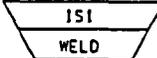
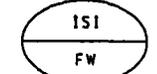
Other: N/A Level: N/A ANII Review: Daly, Gerald Date: 5/27/2005

Comments: **W-11 limitation photo**

Sketch or Photo: J:\ISIData\IS\PI2_05 outage\Photos\TODD\5-19\DSC01549.JPG





-  = INTEGRAL ATTACHMENT
-  = HANGER
-  = WELD NO.

REF: XH-1106-48	FILE NO: 2147BR04
NSP (M&SP)-PI-2	
DWN: DMN	CHKD: LCB
APPD: <i>[Signature]</i>	
SYSTEM: MAIN STEAM	
LINE: 6-2MS-2, 30-2MS-2, 31-2MS-2	
DWG: 2-ISI-47B	REV: 05

2-ISI-47B



UT Pipe Weld Examination

Site/Unit: PINGP / PI2

Procedure: SWI NDE-UT-1A

Outage No.: EO3I

Summary No.: 500814

Procedure Rev.: 1

Report No.: 2005U023

Workscope: ISI

Work Order No.: 0406679

Page: 1 of 4

Code: 1989 Edition

Cat./Item: C-F-2/C5.80

Location: Aux Bldg

Drawing No.: 2-ISI-47B

Description: Tee to Flange

System ID: MS

Component ID: W-14/LSU

Size/Length: 1.8" / 68" Thickness/Diameter: 1.75" / N/A

Limitations: See supplements

Start Time: 10:15 Finish Time: 10:30

Examination Surface: Inside Outside

Surface Condition: Ground Flush

Lo Location: TDC East Side

Wo Location: Centerline of Weld

Couplant: Sonotrace 40

Batch No.: #02243

Temp. Tool Mfg.: PTC Instruments

Serial No.: PI11

Surface Temp.: 62 °F

Cal. Report No.: 2005CA021, 2005CA022

Angle Used	0	45	45T	60	N/A	N/A
Scanning dB	N/A	44.0	44.0	48.0	N/A	N/A

Indication(s): Yes No

Scan Coverage: Upstream Downstream CW CCW

Comments:

No downstream scan on flange side due to configuration.

Results: NAD IND GEO

Percent Of Coverage Obtained > 90%: No

Reviewed Previous Data: Yes

Examiner	Level III	Signature	Date	Reviewer	Signature	Date
Blechinger, Todd P.			5/17/2005	Timm, Jeremy		5/25/2005
Examiner	Level II	Signature	Date	Site Review	Signature	Date
Jensen, Arlen			5/17/2005	Wren, Jerry		5/25/2005
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Daly, Gerald		6/21/2005



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: <u>PINGP / PI2</u>	Procedure: <u>SWI NDE-UT-1A</u>	Outage No.: <u>EO3I</u>
Summary No.: <u>500814</u>	Procedure Rev.: <u>1</u>	Report No.: <u>2005U023</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0406679</u>	Page: <u>2</u> of <u>4</u>

45 deg

Scan 1	<u>52.900</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>52.900</u>	% total for Scan 1
Scan 2	<u>52.900</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>52.900</u>	% total for Scan 2
Scan 3	<u>100.000</u>	% Length X	<u>96.800</u>	% volume of length / 100 =	<u>96.800</u>	% total for Scan 3
Scan 4	<u>100.000</u>	% Length X	<u>96.800</u>	% volume of length / 100 =	<u>96.800</u>	% total for Scan 4

Add totals and divide by # scans = 74.850 % total for 45 deg

Other deg - _____ (to be used for supplemental scans)

The data to be listed below is for coverage that was not obtained with the 45 deg scans.

Scan 1	_____	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 1
Scan 2	_____	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 2
Scan 3	_____	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 3
Scan 4	_____	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 4

Percent complete coverage

Add totals for each scan required and divide by # of scans to determine;

74.850 % Total for complete exam

Site Field Supervisor: _____

Date: _____



Supplemental Report

Report No.: 2005U023

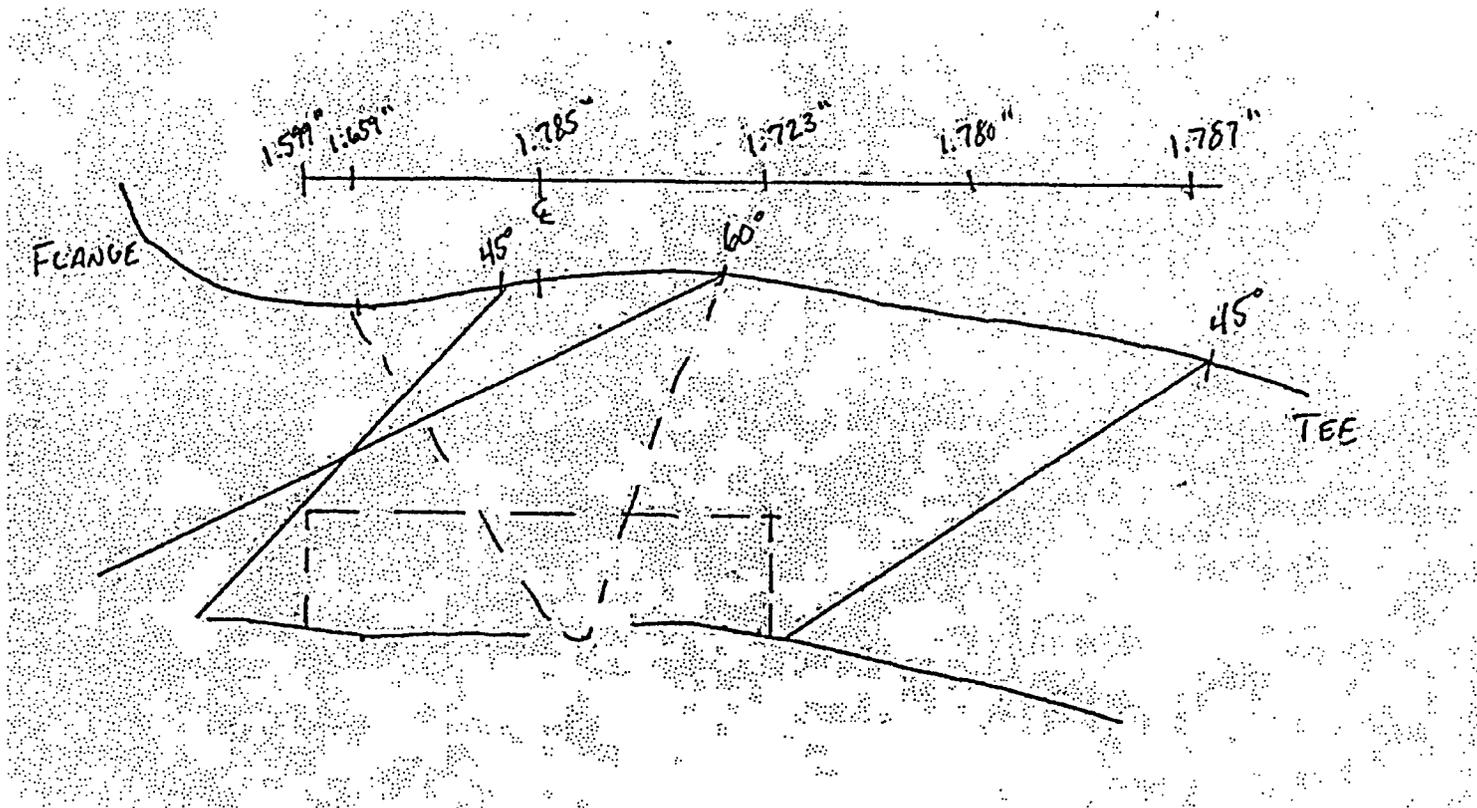
Page: 3 of 4

Summary No.: 500814

Examiner: <u>Bleching, Todd P.</u>	Level: <u>III</u>	Reviewer: <u>Timm, Jeremy</u>	Date: <u>5/25/2005</u>
Examiner: <u>Jensen, Arlen</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry</u>	Date: <u>5/25/2005</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Daly, Gerald</u>	Date: <u>6/21/2005</u>

Comments: **W-14 Coverage plot**

Sketch or Photo: J:\ISIData\ISIP12_05 outage\Scans\2005U023 500814 coverage plot.jpg





Supplemental Report

Report No.: 2005U023

Page: 4 of 4

Summary No.: 500814

Examiner: Blechinger, Todd P.

Level: III

Reviewer: Timm, Jeremy

Date: 5/25/2005

Examiner: Jensen, Arlen

Level: II

Site Review: Wren, Jerry

Date: 5/25/2005

Other: N/A

Level: N/A

ANII Review: Daly, Gerald

Date: 6/21/2005

Comments: W-14 Limitation photo

No downstream scan due to Flange configuration.

Upstream exam limited for 17" at 0° & 15" at 180° due to support interference.

CW & CCW scans limited for 12" at 0° due to support interference.

Sketch or Photo: J:\ISIData\SI\PI2_05 outage\Photos\TODD\05-17 TB\DSC01443.JPG

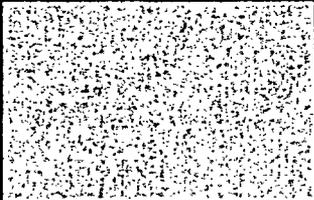
J:\ISIData\SI\PI2_05 outage\Photos\TODD\05-17 TB\DSC01444.JPG



	LIMITATIONS TO NDE	NUMBER: SWI NDE-LTS-1
		REV: 1
		Page 1 of 13

INFORMATION USE
<ul style="list-style-type: none"> • <i>Procedure may be performed from memory.</i> • <i>User remains responsible for procedure adherence.</i> • <i>Procedure should be available, but not necessarily at the work location.</i>

O.C. REVIEW DATE: NR	OWNER: T. Downing	EFFECTIVE DATE 4/19/05
--------------------------------	-----------------------------	----------------------------------

	LIMITATIONS TO NDE	NUMBER: SWI NDE-LTS-1
		REV: 1
		Page 2 of 13

1.0 PURPOSE

This procedure provides instruction for identifying, quantifying and recording of limitations encountered while performing NDE examinations under the ISI program.

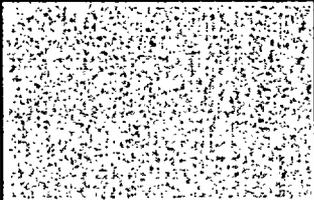
2.0 REFERENCES

This procedure complies with the applicable portions of the following referenced documents:

- 2.1 Nuclear Regulatory Commission Regulatory Guide - 1.150 "Ultrasonic Testing of Reactor Vessel Welds during Preservice and Inservice Examinations", (Rev. 1 dated Feb. 1983).
- 2.2 Code case N-460 - Alternative Examination Coverage for Class 1 and Class 2 Welds - Section XI, Division 1.
- 2.3 Procedure SWI NDE-NDE-1, "Equipment, Personnel and Material Reporting."
- 2.4 5AWI 14.6.0 "ISI Examination Program"

3.0 APPLICABILITY

- 3.1 This procedure is applicable to examinations performed at Prairie Island Nuclear Generating Plant.
- 3.2 This procedure is to be followed when it has been determined that there is a limitation which prevents obtaining full coverage of an area or volume as stated by the applicable examination procedure.
 - For ultrasonic examinations, this would mean less than all of the required scans and/or a reduction of required scan path for one or more scans.

	LIMITATIONS TO NDE	NUMBER: SWI NDE-LTS-1
		REV: 1
		Page 3 of 13

4.0 DEFINITIONS

- 4.1 **Limitation** - something that limits, restraint: An obstacle to the performance of an examination procedure.
- 4.2 **Evaluation** - to determine the significance, worth, or condition of, usually by careful appraisal and study.
- 4.3 **Practical** - " of, relating to, or manifested in practice or action: not theoretical or ideal; concerned with voluntary action and ethical decisions. Useful." For this application this is interpreted to mean, for a specific case the benefits of a proposed action outweigh the negative aspects of that action.

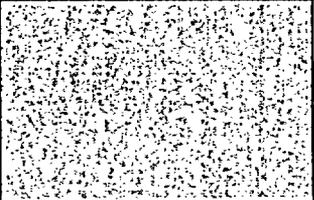
5.0 PREREQUISITES

Personnel Requirements

- 5.1 Examination personnel certification and eye examinations **SHALL** be documented in accordance with SWI NDE-NDE-1.
- 5.2 Nondestructive examination personnel **SHALL** be certified to a minimum of Level I in the appropriate method to operate equipment and Level II to interpret test results.

6.0 EQUIPMENT

This item is not applicable to this procedure. If alternate methods are required to augment coverage, that work **SHALL** be done under a separate procedure.

	LIMITATIONS TO NDE	NUMBER: SWI NDE-LTS-1
		REV: 1
		Page 4 of 13

7.0 INSTRUCTIONS

7.1 Initial Examination

Where the examiner is not able to complete a full examination as dictated by applicable procedure, the following steps **SHALL** be taken:

- 7.1.1 Complete original examination on accessible portions.
- 7.1.2 Make sketch which includes dimensions defining location and size of limitations using a report format similar to that shown in Figure 3.
- 7.1.3 Describe the limitation including what it is and how it interferes with the exam. State what appears to be required to remove the limitation using a report format similar to that shown in Figure 3.
- 7.1.4 For volumetric examinations, construct a surface profile using a surface contour gauge and perform a thickness profile (typically one reading each 1/2" in a line) of the area that encompasses the code required volume. For UT that would include the available scanning surface.
- 7.1.5 Record radiation field information on the report (this may require assistance from the health physics group).
- 7.1.6 Sign and date the data sheet then forward it to the NDE Level III.

7.2 Evaluation

- 7.2.1 The data gathered by the initial examiner **SHALL** be reviewed by the NDE Level III or / designee to determine if alternate methods may be used to achieve additional coverage.
- 7.2.2 If alternate methods would provide additional coverage, a review of the benefit versus the required resources (radiation dose, time, cost etc.) to achieve that coverage **SHALL** be performed by the NDE Level III to determine if that action is practical (see Step 7.3).

	LIMITATIONS TO NDE	NUMBER: SWI NDE-LTS-1
		REV: 1
		Page 5 of 13

7.2.3 If it is determined that the entire examination volume or area cannot be examined due to interference by another component or part geometry, a reduction in examination coverage on any Class 1 or Class 2 weld may be accepted provided the reduction in coverage for that weld is less than 10%. The applicable examination records **SHALL** identify both the cause and percentage of reduced examination coverage (see Step 7.4).

7.3 Alternate Methods to Achieve Coverage

7.3.1 For surface examinations, MT and PT may be interchanged / intermixed as appropriate to the material and the conditions.

7.3.2 For volumetric examinations, RT may be substituted for or augment UT assuming the ability to drain the line, and that the wall thickness / diameter is within a practical range.

7.3.3 For UT, use of other angles, full node or node and one half calibrations, skewed scans or approach from another surface to achieve additional coverage **SHALL** be considered.

7.4 Determining Coverage Achieved

When evaluation of initial and alternate examination methods results in examinations, which do not provide full coverage, a determination of percent coverage **SHALL** be made. The required examination coverage is defined by applicable figures in ASME Sect XI.

7.4.1 For surface examinations, a worksheet similar to that shown in Figure 4 **SHALL** be completed.

	For ASME Section XI appendix VIII exams, code coverage may be limited by what the procedure has been demonstrated.
--	--

7.4.2 For volumetric examinations, a worksheet similar to that shown in Figure 5 or Figure 6 (ultrasonic examinations) **SHALL** be completed.

	LIMITATIONS TO NDE	NUMBER: SWI NDE-LTS-1
		REV: 1
		Page 6 of 13

- 7.5 Should the evaluation show that 90% weld coverage has been achieved, attach all related information to the original NDE report and no further action is required.
- 7.6 Contractor procedures for performing examinations utilizing automated equipment (e.g. reactor vessel and nozzle safe-end exams) **SHALL** be reviewed by an NDE Level III in the appropriate method to ensure the requirements for identifying, quantifying and recording of limitations encountered are adequately addressed.
- 7.7 When it has been determined that the maximum examination coverage practically achievable for a code required item is less than required; a relief request is required to be submitted to the NRC (5AWI 14.6.0).

8.0 ACCEPTANCE CRITERIA

This item is not applicable to this procedure.

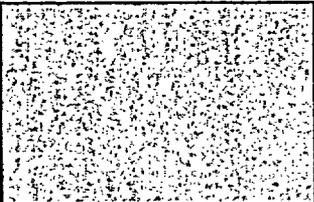
9.0 REPORTING

- 9.1 Information addressed in Figures 3, 4, 5 and 6 (as applicable) **SHALL** be reported.
- 9.2 Information for examinations that are required to meet Reg. Guide 1.150 **SHALL** also include the following from Appendix A - Alternate Method:

7.c "The best estimate of the portion of the volume required to be examined by the ASME Code that has not been effectively examined such as volumes of material near each surface because of near-field or other effects, volumes near interfaces between cladding and parent metal, volumes shadowed by laminar material defects, volumes shadowed by part geometry, volumes inaccessible to the transducer, volumes affected by electronic gating, and volumes near the surface opposite the transducer. Sketches and/or descriptions of the tools, fixtures and component geometry which contribute to incomplete coverage should be included."

9.3 Reference System

Recording of limitations **SHALL** be based on the reference system shown in the original examination procedure.

	LIMITATIONS TO NDE	NUMBER: SWI NDE-LTS-1
		REV: 1
		Page 7 of 13

9.4 Documentation

A picture of the limitation should be taken and added to the description, preferably in a digital format.

10.0 RECORDS

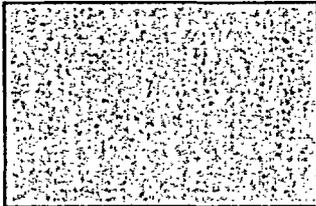
- 10.1 Inservice inspection examinations **SHALL** be incorporated in the ISI records. See "ISI Examination Program."
- 10.2 Records of other examinations **SHALL** be the responsibility of the organization requesting the examination.

11.0 ATTACHMENTS

- 11.1 Figure 1 – Example of UT Scan Coverage
- 11.2 Figure 2 — Example of UT, One Sided Exam, Supplemental Coverage
- 11.3 Figure 3 – Limitation Data Sheet
- 11.4 Figure 4 – Determination of Percent Coverage for Surface Examinations
- 11.5 Figure 5 – Determination of Percent Coverage for UT Examinations -Pipe
- 11.6 Figure 6 — Determination of Percent Coverage for UT Examinations -Vessels

12.0 SUMMARY OF SIGNIFICANT CHANGES

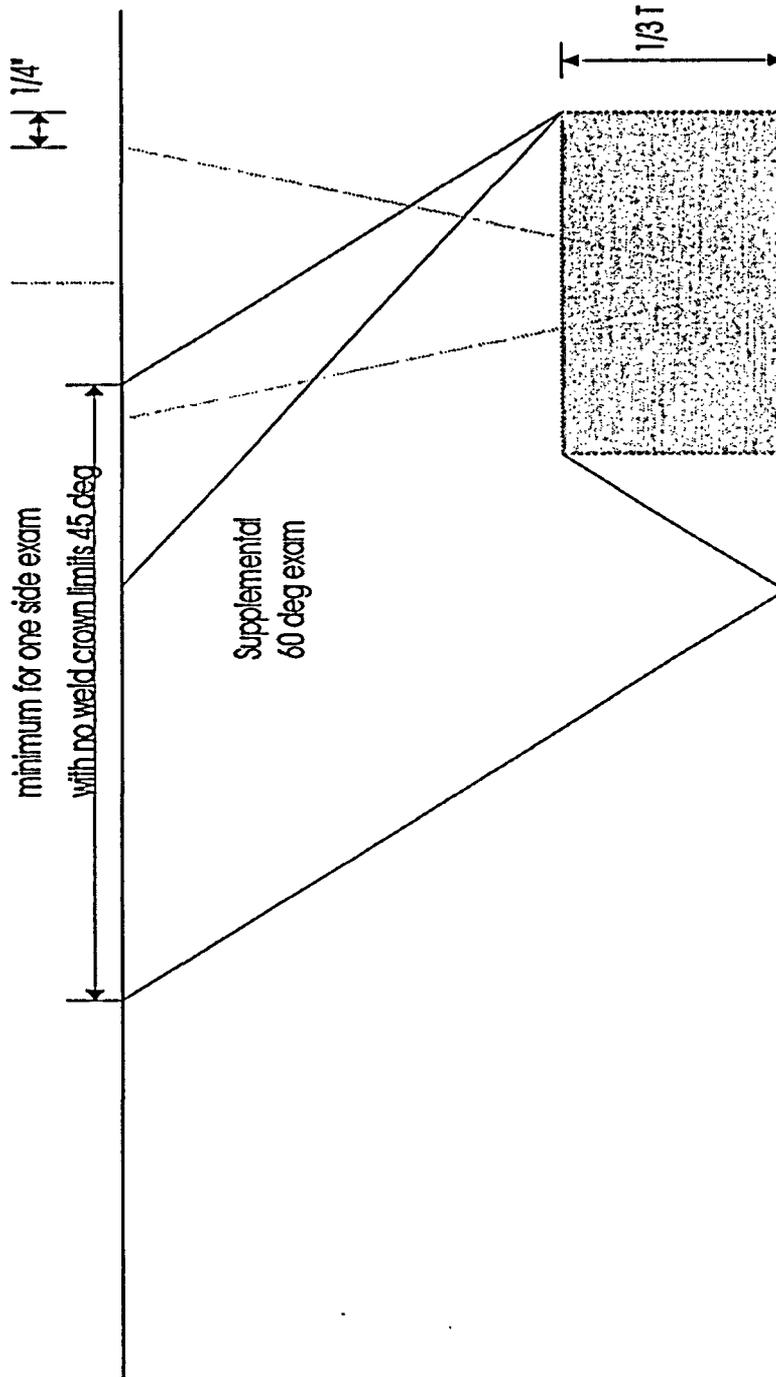
- 2.1 Deleted ASME Code year, covered with 5AWI 14.6.0.
- 5.1 Changed SWI NDE-0 to SWI NDE-NDE-1.

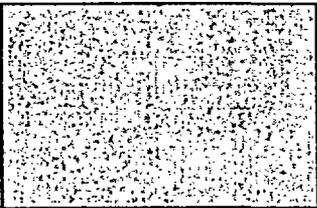


LIMITATIONS TO NDE

NUMBER:	SWI NDE-LTS-1
REV:	1
Page 8 of 13	

Figure 1 - Example of UT scan coverage

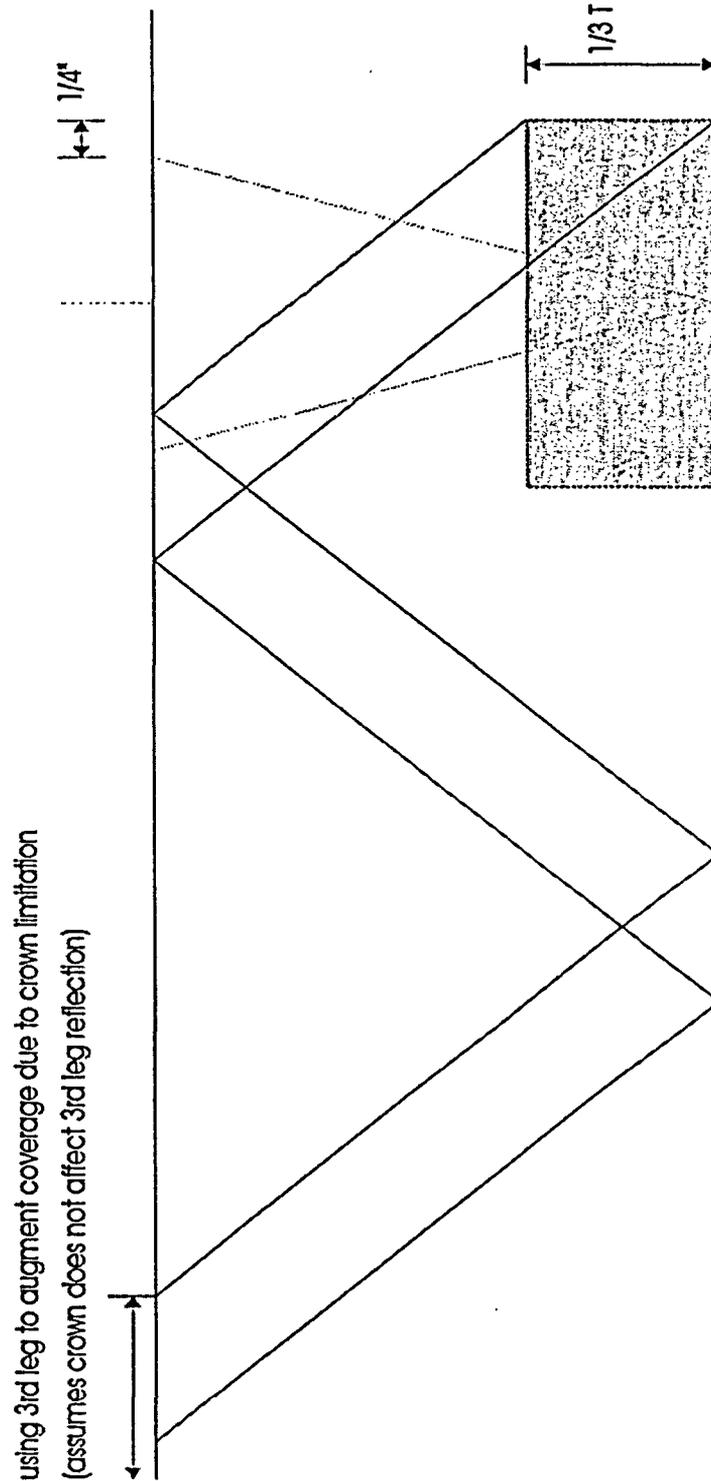




LIMITATIONS TO NDE

NUMBER:	SWI NDE-LTS-1
REV:	1
Page 9 of 13	

Figure 2 - Example of UT, One Sided Exam, Supplemental Coverage



	LIMITATIONS TO NDE	NUMBER: SWI NDE-LTS-1
		REV: 1
		Page 10 of 13

Figure 3 –Limitation Data Sheet

TITLE: Limitations to NDE
NUMBER: SWI NDE-LTS-1 Revision 0

**Figure 3
Limitation Data Sheet**

Initial exam report # _____ Procedure # _____

ISO # _____ Item # _____

Description of Limitation _____

Sketch of Limitation

Limitation removal requirements _____

Radiation field _____

Examiner: _____ Date: _____

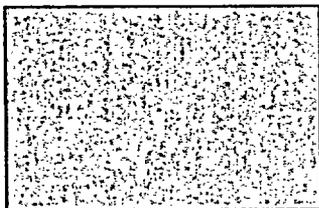
	<h2 style="margin: 0;">LIMITATIONS TO NDE</h2>	NUMBER: <h3 style="margin: 0;">SWI NDE-LTS-1</h3> <hr/> REV: 1 <hr/> Page 11 of 13
---	--	---

Figure 4 –Determination of Percent Coverage for Surface Examinations

TITLE: Limitations to NDE
 NUMBER: SWI NDE-LTS-1 Revision 0

Figure 4

Determination of Percent Coverage for Surface Examinations
This is a sample form only

Initial exam rpt # _____ Procedure # _____
 ISO # _____ Item # _____
 Applicable Code figure # _____

Area Required (as shown in applicable code reference drawing)

Length _____ * Width _____
 = Total area required _____ square inches

Coverage Achieved

Area examined _____ sq. in. / Total area required (100%) _____ sq. in.
 = Percent coverage _____% (area required - area of limitations = area examined)

To determine length of a circumferential weld

Note - Diameter refers to actual external diameter not pipe size (see table below)

Diameter _____ *(Pi) 3.1416
 = Length _____ inches

Pipe Size	Actual Diameter	(Length) Circumference		Pipe Size	Actual Diameter	(Length) Circumference
2	2.375	7.46		12	12.75	40.06
2.5	2.875	9.03		14	14.0	43.98
3	3.5	11.0		16	16.0	50.27
3.5	4.0	12.57		18	18.0	56.55
4	4.5	14.14		20	20.0	62.83
5	5.563	17.48		22	22.0	69.12
6	6.625	20.81		24	24.0	75.40
8	8.625	27.10		30	30.0	94.25
10	10.75	33.77				

NDE Level III: _____ Date: _____

LIMITATIONS TO NDE	NUMBER:
	SWI NDE-LTS-1
	REV: 1
Page 12 of 13	

Figure 5 - Determination of Percent Coverage for UT Examinations -Pipe

TITLE: Limitations to NDE
NUMBER: SWI NDE-LTS-1 Revision 0

Figure 5

Determination of Percent Coverage for UT Examinations - Pipe
This is a sample form only

Initial exam rpt # _____ Procedure # _____
 ISO # _____ Item # _____
 Applicable Code figure # _____

45 deg

Scan 1 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 1
 Scan 2 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 2
 Scan 3 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 3
 Scan 4 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 4

Add totals and divide by # scans = _____ % total for 45 deg

Other deg - _____ (to be used for supplemental scans)

The data to be listed below is for coverage that was not obtained with the 45 deg scans.

Scan 1 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 1
 Scan 2 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 2
 Scan 3 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 3
 Scan 4 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 4

Percent complete coverage

Add totals for each scan required and divide by # of scans to determine;
 _____ % total for complete exam

Example - 45 deg scan 1 = 63% plus supplemental 60 deg scan 1 = 28% (of remaining required scan volume) for total of 91% coverage for scan 1 volume. Repeat for the remaining scans, add together and divide by the # of scans (typically 4).

NDE Level III: _____ Date: _____

	LIMITATIONS TO NDE	NUMBER: SWI NDE-LTS-1
		REV: 1
		Page 13 of 13

Figure 6 - Determination of Percent Coverage for UT Examinations -Vessels

TITLE: Limitations to NDE
NUMBER: SWI NDE-LTS-1 Revision 0

Figure 6

Determination of Percent Coverage for UT Examinations - Vessels
This is a sample form only

Initial exam rpt # _____ Procedure # _____

ISO # _____ Item # _____

Applicable Code figure # _____

0 deg Planar

Scan _____ % length X _____ % volume of length / 100 = _____ % total for 0 deg

45 deg

Scan 1 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 1

Scan 2 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 2

Scan 3 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 3

Scan 4 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 4

Add totals and divide by # scans = _____ % total for 45 deg

60 deg

Scan 1 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 1

Scan 2 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 2

Scan 3 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 3

Scan 4 _____ % length X _____ % volume of length / 100 = _____ % total for Scan 4

Add totals and divide by # scans = _____ % total for 60 deg

Percent complete coverage

Add totals for each angle and scan required and divide by # angles to determine;

_____ % total for complete exam

Note: Supplemental coverage may be achieved by use of other angles / methods. When used, the coverage for volume not obtained with angles as noted above shall be calculated and added to the total to provide the percent total for the complete examination.

NDE Level III: _____ Date: _____