

March 6, 2003

L-PI-03-28
10 CFR 50.55a

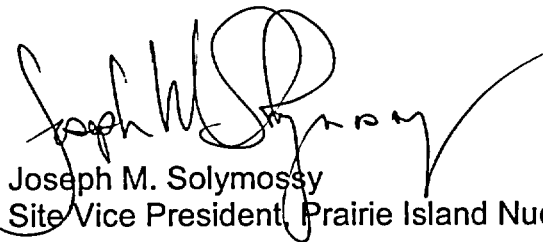
U S Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
DOCKET NO. 50-282
LICENSE NO. DPR-42
REQUEST FOR RELIEF NO. 14 FOR THE UNIT 1 3RD 10-YEAR INTERVAL
INSERVICE INSPECTION PROGRAM

On August 5, 1994 we submitted for review our third 10-year Inservice Inspection Examination Plan for Unit 1 and, on March 28, 1995, a response to a request for additional information to that plan. The NRC issued its evaluation of the third 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 1 Relief Request No. 14, Revision 0 which addresses those limited examinations. We are requesting relief pursuant to 10 CFR Part 50, Section 50.55a(g)(5)(iii) due to the impracticality of obtaining "100%" examination coverage for the affected items.

This letter contains no new commitments and no revisions to existing commitments. Please contact Jack Leveille (651-388-1121, Ext. 4142) if you have any questions related to this letter.



Joseph M. Solymosy
Site Vice President, Prairie Island Nuclear Generating Plant

cc: (see next page)

AD47

USNRC
L-PI-03-28
Page 2

NUCLEAR MANAGEMENT COMPANY, LLC

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
P. Fisher, Hartford Insurance

Enclosure: ISI Relief Request No. 14 (Rev. 0), Prairie Island Unit 1, 3rd Interval, with
attached examination reports

ISI Relief Request No. 14 (Rev. 0), Prairie Island Unit 1, 3rd Interval

Limited Examination

SYSTEM: Various
Category: Various

Class: 1 and 2
Item: Various

Impractical Examination Requirements:

ASME Section XI (1989 no addenda) Code requires full examination of inservice inspection (ISI) components per Table IWB-2500-1, and IWC-2500-1. Reg. Guide 1.147 endorses 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.

NRC Information Notice 98-42 "Implementation of 10 CFR 50.55a(g) Inservice Inspection requirements" 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% coverage is not achievable on some ISI components examined for the Third Ten Year Interval.

Basis for Relief:

The following 10 CFR 50.55a paragraphs apply to the inservice inspection of components in accordance with the ASME Section XI code:

50.55a(g)(1): 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.

50.55a(g)(4): 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.

50.55a(g)(5)(iv): 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.

Prairie Island was designed and constructed prior to development of ASME XI, therefore design for accessibility and inspection coverage is not in many cases,

ISI Relief Request No. 14 (Rev. 0), Prairie Island Unit 1, 3rd Interval

sufficient to permit satisfying the current Code requirements. Limitations to inspections are primarily due to obstructions and interference.

Summary of the limited examinations are described below and also included in Table 1, Limited Examinations – Prairie Island Unit 1 – 2002 Refueling Outage.

Part A: Category B-A, “Pressure Retaining Welds in Reactor Vessel”

Reactor Vessel (RV) Weld (W-6), Head to Flange: Volumetric coverage limited, due to flange configuration and lifting lugs, to 54.2%. See the following attachments:

Attachment 1, ISI drawing ISI-49

Attachment 2, Examination Report Number 2002U074

Attachment 3, Examination Report Number 96-0094, 96-0094R1 & 96-0094R2

Attachment 4, Examination Report Number 96-0095, 96-0095R1 & 96-0095R2

Attachment 5, Examination Report Number 96-0111, 96-0111R1 & 96-0111R2

Part B: Category B-J, “Pressure Retaining Welds in Piping”

Reactor Coolant (RC) Weld (W-2) Safe-End to 45° Elbow: Volumetric coverage limited, due to safe end configuration and proximity of adjacent safe end to nozzle weld, to 50%. See Attachment 6, ISI drawing ISI-29A and Attachment 7, Examination Report Number 2002U055.

Reactor Coolant (RC) Weld (W-21), Nozzle to Pipe: Volumetric coverage limited, due to configuration and material attenuation, to 50%. See Attachment 8, ISI drawing ISI-24 and Attachment 9, Examination Report Number 2002U062.

Reactor Coolant (RC) Weld (W-18), Valve to Elbow: Volumetric coverage limited, due to upstream valve, SI-9-1, to 50%. See Attachment 8, ISI drawing ISI-24 and Attachment 10, Examination Report Number 2002U063.

Reactor Coolant (RC) Weld (W-1), Nozzle to Pipe: Volumetric coverage limited, due to material attenuation and weld configuration, to 50%. See Attachment 11, ISI drawing ISI-3A and Attachment 12, Examination Report Number 2002U064.

Reactor Coolant (RC) Weld (W-9), Nozzle to Pipe: Volumetric coverage on limited, due to material attenuation and weld configuration, to 50%. See Attachment 13, ISI drawing ISI-2 and Attachment 14, Examination Report Number 2002U066.

Reactor Coolant (RC) Weld (W-2), Nozzle to Pipe: Volumetric coverage on nozzle side limited, due to configuration, to 75%. See Attachment 11, ISI drawing ISI-3A and Attachment 15, Examination Report Number 2002U067.

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Residual Heat Removal (RH) Weld (W-1), Valve to Pipe: Volumetric coverage on valve side limited, due to 1" drain line at BDC, to 48.15%. See Attachment 16, ISI drawing ISI-19A and Attachment 17, Examination Report Number 2002U068.

Residual Heat Removal (RH) Weld (W-1), Elbow to Pipe: Volumetric coverage limited, due to welded supports located at 90° and 270°, to 86.55%. See Attachment 18, ISI drawing ISI-3B and Attachment 19, Examination Report Number 2002U069.

Reactor Coolant (RC) Weld (W-6LS2U), Elbow to Pump: Volumetric coverage limited, on pump side due to configuration, to 70%. See Attachment 20, ISI drawing ISI-12B and Attachment 21, Examination Report Number 2002U076.

Reactor Coolant (RC) Weld (W-5), Red 50° Elbow to Nozzle: Volumetric coverage on upstream side limited, due to taper configuration and downstream side limited, due to configuration to 66.15%. See Attachment 22, ISI drawing ISI-13A and Attachment 23, Examination Report Number 2002U077.

Reactor Coolant (RC) Weld (W-6), Bent Pipe to Safe End: Volumetric coverage limited, due to joint configuration and proximity of safe-end taper from weld toe, to 75.38%. See Attachment 24, ISI drawing ISI-30B and Attachment 25, Examination Report Number 2002U096.

Part C: Category C-C "Integral attachments for Vessels, Piping, Pumps and Valves"

Feedwater (FW) integrally attached weld (H-2IA) limited to surface examination of 0% due to permanent guard pipe and penetration configuration. See Attachment 26, ISI drawing ISI-69 and Attachment 27, Examination Report Number 2002M034.

Main Steam (MS) integrally attached weld (H-7IA) limited due to surface examination of 0% due to permanent guard pipe. See Attachment 28, ISI drawing ISI-68A and Attachment 29, Examination Report Number 2002M035.

Feedwater (FW) integrally attached weld (H-7IA) limited to surface examination of 0% due to permanent guard pipe. See Attachment 26, ISI drawing ISI-69 and Attachment 30, Examination Report Number 2002M036.

Feedwater (FW) integrally attached weld (H-4IA) limited to surface examination of 0% due to permanent guard pipe. See Attachment 26, ISI drawing ISI-69 and Attachment 31, Examination Report Number 2002M038.

Main Steam (MS) integrally attached weld (H-2IA) limited due to surface examination of 0% due to permanent guard pipe. See Attachment 32, ISI drawing ISI-68B and Attachment 33, Examination Report Number 2002M039.

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Feedwater (FW) integrally attached weld (H-9IA) limited to surface examination of 0% due to permanent guard pipe. See Attachment 26, ISI drawing ISI-69 and Attachment 34, Examination Report Number 2002M041.

Part D: Category C-F-1 "Pressure Retaining Welds in Austenitic Stainless Steel or High Alloy Piping"

Safety Injection (SI) Weld (W-10), Pipe to Valve: Volumetric coverage limited on valve side, due to configuration, to 50%. See Attachment 35, ISI drawing ISI-100A and Attachment 36, Examination Report Number 2002U052.

Safety Injection (SI) Weld (W-20), Pipe to Valve: Volumetric coverage limited on valve side, due to configuration, to 50%. See Attachment 37, ISI drawing ISI-89A and Attachment 38, Examination Report Number 2002U061.

Safety Injection (SI) Weld (W-14), Pipe to Valve: Volumetric coverage limited on valve side, due to configuration, to 50%. See Attachment 39, ISI drawing ISI-99B and Attachment 40, Examination Report Number 2002U086.

Safety Injection (SI) Weld (W-18), Pipe to Valve: Volumetric coverage limited on valve side, due to configuration, to 41.75%. See Attachment 41, ISI drawing ISI-97C and Attachment 42, Examination Report Number 2002U089.

Residual Heat Removal (RH) Weld (W-1), Penetration to Pipe: Volumetric coverage limited, due to penetration sleeve, to 0%. See Attachment 43, ISI drawing ISI-53B and Attachment 44, Examination Report Number 2002U100.

Residual Heat Removal (RH) Weld (W-14), Pipe to Penetration: Surface examination coverage limited, due to penetration sleeve, to 0%. See Attachment 45, ISI drawing ISI-89B and Attachment 46, Examination Report Number 2002P140.

Residual Heat Removal (RH) Weld (W-1), Penetration to Pipe: Surface coverage limited, due to penetration sleeve, to 0%. See Attachment 43, ISI drawing ISI-53B and Attachment 47, Examination Report Number 2002P141.

Residual Heat Removal (RH) Weld (W-14), Pipe to Penetration: Volumetric coverage limited, due to penetration sleeve, to 0%. See Attachment 45, ISI drawing ISI-89B and Attachment 50, Examination Report Number 2002U099.

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

Main Steam (MS) Weld (W-6LSUD), Pipe to Pipe: Volumetric coverage limited, due to permanent guard pipe, to 0%. See Attachment 28, ISI drawing ISI-68A and Attachment 48, Examination Report Number 2002U094.

Feedwater (FW) Weld (W-9), Pipe to Pipe: Volumetric coverage limited, due to permanent guard pipe, to 0%. See Attachment 26, ISI drawing ISI-69 and Attachment 49, Examination Report Number 2002U095.

Main Steam (MS) Weld (W-6LSUD), Pipe to Pipe: Surface coverage limited, due to permanent guard pipe, to 0%. See Attachment 28, ISI drawing ISI-68A and Attachment 51, Examination Report Number 2002M040.

Feedwater (FW) Weld (W-9), Pipe to Pipe: Surface coverage limited, due to permanent guard pipe, to 0%. See Attachment 26, ISI drawing ISI-69 and Attachment 52, Examination Report Number 2002M042.

Additional Means of Establishing Integrity:

In addition, system pressure tests and associated visual inspections (VT-2) required by Section XI are performed at their required frequency to ensure the piping system is capable of maintaining pressure integrity. Attachment 53, List of Section XI VT-2 Examinations lists the most recent system pressure test completed for each system affected.

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.

In addition to the ultrasonic (UT) volumetric examination with limitations for the listed B-A Category weld, the required surface examination (MT) was completed, Attachment 54, Examination Report Number 2002M027.

In addition to the UT volumetric examination with limitations for the listed B-J Category welds, the required surface examinations (PT) were completed, Attachments 55 - 65, Examination Report Numbers 2002P080, 2002P097, 2002P099, 2002P101, 2002P113, 2002P100, 2002P110, 2002P112, 2002P087, 2002P127, and 2002P139.

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In addition to the UT volumetric examination with limitations (other than 0%) for the listed C-F-1 Category welds, the required surface examinations (PT) were completed, Attachments 65 - 69, Examination Report Numbers 2002P072, 2002P084, 2002P134 and, 2002P132.

Alternate Examination:

The limitations have been noted on the ISI examination reports and are included in the 2002 ISI Outage Summary Report. NMC will continue to document limitations.

All in-service inspections at Prairie Island Unit 1 have been completed to the greatest extent practical. When limitations to required inspections are encountered, Metals & Materials Resources North procedure ISI-LTS-1 is applied. ISI-LTS-1 (Attachment 70) 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.

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Table 1. Limited Examinations - Prairie Island Unit 1 – 2002 Refueling Outage

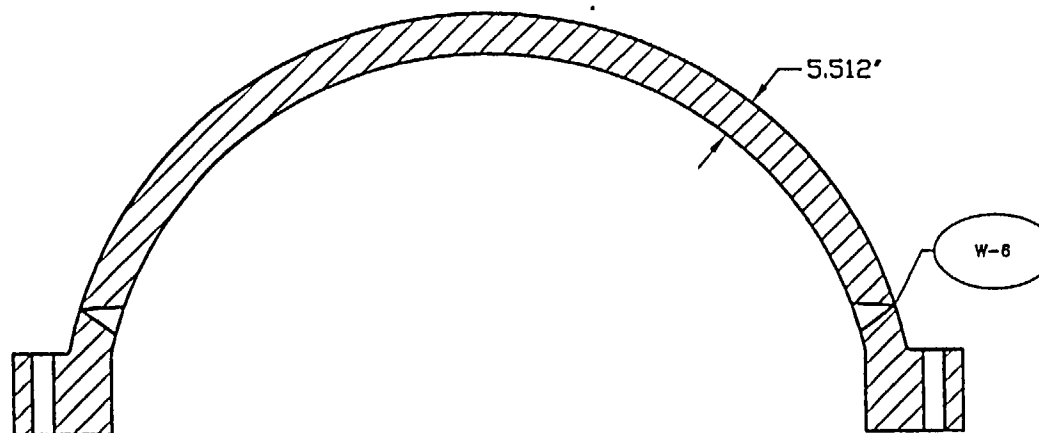
Category	Item No.	SYSTEM	ISO	Comp ID Summary #	Description	Method	% Coverage	REPORT	Limitation	Attach. #s
B-A	B1.40	Reactor Vessel	ISI-49	W-6 301095	Head to Flange	Volumetric UT	54.2%	2002U074	Limited to flange configuration (lifting lugs).	1, 2, 3, 4, 5
B-J	B9.11	Reactor Coolant	ISI-29A	W-2 300900	Safe-End to 45 degree Elbow	Volumetric UT	50%	2002U055	Limited due to safe end configuration and proximity of adjacent safe end to nozzle weld.	6, 7
B-J	B9.31	Reactor Coolant	ISI-24	W-21 300656	Nozzle to Pipe	Volumetric UT	50%	2002U062	Limited due to configuration and material attenuation.	8, 9
B-J	B9.11	Reactor Coolant	ISI-24	W-18 300654	Valve to Elbow	Volumetric UT	50%	2002U063	Limited due to upstream valve.	8, 10
B-J	B9.31	Reactor Coolant	ISI-3A	W-1 300159	Nozzle to Pipe	Volumetric UT	50%	2002U064	Limited due to weld configuration and material attenuation.	11, 12
B-J	B9.31	Reactor Coolant	ISI-2	W-9 300136	Nozzle to Pipe	Volumetric UT	50%	2002U066	Limited due to material attenuation and weld configuration.	13, 14
B-J	B9.11	Reactor Coolant	ISI-3A	W-2 300148	Nozzle to Pipe	Volumetric UT	75%	2002U067	Limited on nozzle side due to configuration.	11, 15
B-J	B9.11	Residual Heat Removal	ISI-19A	W-1 300649	Valve to Pipe	Volumetric UT	48.15%	2002U068	Limited due to 1" drain line at BDC.	16, 17
B-J	B9.11	Residual Heat Removal	ISI-3B	W-1 300171	Elbow to Pipe	Volumetric UT	86.55%	2002U069	Limited due to welded supports at 90° and 270°.	18, 19
B-J	B9.10	Reactor Coolant	ISI-12B	W-6LS2U 300527	Elbow to Pump	Volumetric UT	70%	2002U076	Limited on pump side due to configuration.	20, 21

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Table 1. Limited Examinations - Prairie Island Unit 1 – 2002 Refueling Outage

Category	Item No.	SYSTEM	ISO	Comp ID Summary #	Description	Method	% Coverage	REPORT	Limitation	Attach. #s
B-J	B9.11	Reactor Coolant	ISI-13A	W-5 300543	Red 50° Elbow to Nozzle	Volumetric UT	66.15%	2002U077	Limited on upstream side due to taper configuration and downstream side due to configuration.	22, 23
B-J	B9.11	Reactor Coolant	ISI-30B	W-6 300926	Bent Pipe to Safe End	Volumetric UT	75 38%	2002U096	Limited due to joint configuration and proximity of safe- end taper from weld toe.	24, 25
C-C	C3.20	Feedwater	ISI-69	H-2IA 321703	Integrally attached weld	Surface MT	0%	2002M034	Inaccessible due to permanent guard pipe and penetration configuration.	26, 27
C-C	C3.20	Main Steam	ISI-68A	H-7IA 321594	Integrally attached weld	Surface MT	0%	2002M035	Inaccessible due to permanent guard pipe.	28, 29
C-C	C3.20	Feedwater	ISI-69	H-7IA 321705	Integrally attached weld	Surface MT	0%	2002M036	Inaccessible due to permanent guard pipe.	26, 30
C-C	C3.20	Feedwater	ISI-69	H-4IA 321707	Integrally attached weld	Surface MT	0%	2002M038	Inaccessible due to permanent guard pipe.	26, 31
C-C	C3.20	Main Steam	ISI-68B	H-2IA 321639	Integrally attached weld	Surface MT	0%	2002M039	Inaccessible due to permanent guard pipe.	32, 33
C-C	C3.20	Feedwater	ISI-69	H-9IA 321702	Integrally attached weld	Surface MT	0%	2002M041	Inaccessible due to permanent guard pipe.	26, 34
C-F-1	C5.21	Safety Injection	ISI-100A	W-10 305081	Pipe to valve	Volumetric UT	50%	2002U052	Limited on valve side due to configuration.	35, 36

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Table 1. Limited Examinations - Prairie Island Unit 1 – 2002 Refueling Outage

Category	Item No.	SYSTEM	ISO	Comp ID Summary #	Description	Method	% Coverage	REPORT	Limitation	Attach. #s
C-F-1	C5.11	Safety Injection	ISI-89A	W-20 301445	Pipe to valve	Volumetric UT	50%	2002U061	Limited on valve side due to configuration.	37, 38
C-F-1	C5.21	Safety Injection	ISI-99B	W-14 305015	Pipe to Valve	Volumetric UT	50%	2002U086	Limited on valve side due to configuration.	39, 40
C-F-1	C5.21	Safety Injection	ISI-97C	W-18 303060	Pipe to Valve	Volumetric UT	41.75%	2002U089	Limited on valve side due to configuration.	41, 42
C-F-1	C5.11	Residual Heat Removal	ISI-53B	W-1 301326	Penetration to Pipe	Volumetric UT	0%	2002U100	Inaccessible due to penetration sleeve.	43, 44
C-F-1	C5.11	Residual Heat Removal	ISI-89B	W-14 301858	Pipe to Penetration	Surface PT	0%	2002P140	Inaccessible due to penetration sleeve.	45, 46
C-F-1	C5.11	Residual Heat Removal	ISI-53B	W-1 301326	Penetration to Pipe	Surface PT	0%	2002P141	Inaccessible due to penetration sleeve.	43, 47
C-F-1	C5.11	Residual Heat Removal	ISI-89B	W-14 301858	Pipe to Penetration	Volumetric UT	0%	2002U099	Inaccessible due to penetration sleeve.	45, 50
C-F-2	C5.50	Main Steam	ISI-68A	W-6LSUD 301584	Pipe to Pipe	Volumetric UT	0%	2002U094	Inaccessible due to permanent guard pipe.	28, 48
C-F-2	C5.51	Feedwater	ISI-69	W-9 301701	Pipe to Pipe	Volumetric UT	0%	2002U095	Inaccessible due to permanent guard pipe.	26, 49
C-F-2	C5.50	Main Steam	ISI-68A	W-6LSUD 301584	Pipe to Pipe	Surface MT	0%	2002M040	Inaccessible due to permanent guard pipe.	28, 51
C-F-2	C5.51	Feedwater	ISI-69	W-9 301701	Pipe to Pipe	Surface MT	0%	2002M042	Inaccessible due to permanent guard pipe.	26, 52



HEAD MATERIAL: SA-533, GR. B, CL. 1
FLANGE MATERIAL: SA-508, CL.3

REACTOR VESSEL
CLOSURE HEAD WELD

ISI = WELD NO.

ISI-49

REF:	FILE NO: 11149R03
NSP (M&SP)-PI 1 ISI	
DWN: CADWorks CHKD: <i>CHK</i>	APPD: <i>TY</i>
SYSTEM: REACTOR VESSEL	
LINE: N/A	
DWG: ISI-49	REV: 03



UT Vessel Examination

Site/Unit: <u>PNGP / PI1</u>	Procedure: <u>ISI-UT-3A</u>	Outage No.: <u>PI1RFO2002</u>
Summary No.: <u>301095</u>	Procedure Rev.: <u>8 TCN 02-3</u>	Report No.: <u>2002U074</u>
Workscope: <u>ISI</u>	Work Order No.: <u>0200860</u>	Page: <u>1</u> of <u>7</u>

Code: <u>1989</u>	Code Cat.: <u>B-A</u>	Location: <u>Cont 715</u>
Drawing No.: <u>ISI-49</u>	Description: <u>HEAD - FLANGE</u>	
System ID: <u>RV</u>		
Component ID: <u>W-6</u>	Size/Length: <u>3.2" / 41'</u>	Thickness/Diameter: <u>5.71" / 13'</u>
Limitations: <u>See Comments.</u>	Start Time: <u>1100</u>	Finish Time: <u>1530</u>

Examination Surface: Inside <input type="checkbox"/> Outside <input checked="" type="checkbox"/>	Surface Condition: <u>Blended / Machined</u>		
Lo Location: <u>Centerline Stud Hole 1</u>	Wo Location: <u>Weld Toe</u>	Couplant: <u>Sonotrace 40</u>	Batch No.: <u>#00143</u>
Temp. Tool Mfg.: <u>Telatemp</u>	Serial No.: <u>NSP 178</u>	Surface Temp.: <u>65</u> °F	
Cal. Report No.: <u>2002CA118, 2002CA119, 2002CA120</u>			

Angle Used	0	45	45T	60	60T	
Scanning dB	34.0	50.0	50.0	58.0	58.0	

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

Comments:

Scans 2, 3, 4 limited due to flange configuration, lifting lugs.

Results: NAD ☐ IND ☒ GEO ☐

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

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Blechninger, Todd P.			<i>Todd P. Blechninger</i>	11/23/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-27-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>Jerry P. Wren</i>	11-29-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	11/30/02



Ultrasonic Indication Report

Site/Unit: PNGP / PI1
Summary No.: 301095
Workscope: ISI

Procedure: ISI-UT-3A
Procedure Rev.: 8 TCN 02-3
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U074
Page: 2 of 7

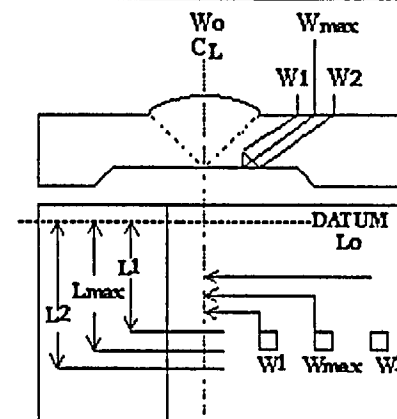
Search Unit Angle: 45 / 60 °

Wo Location: Weld Centerline

Lo Location: Centerline Stud Hole

- ☐ Piping Welds
☒ Ferritic Vessels $\geq 2^{\circ}T$
☐ Other _____

MP	Metal Path	Wmax	Distance From Wo To S.U. At Maximum Response
RBR	Remaining Back Reflection	W1	Distance From Wo At 20% Of Max (Forward)
L	Distance From Datum	W2	Distance From Wo At 20% Of Max (Forward)



Comments:

Scan #	Indication No.	% Of DAC	W Max		Forward 20% Of Max		Backward 20% Of Max		L1 Of Max	L Max	L2 Of Max	RBR Amp.	Remarks
			W	MP	W1	MP	W2	MP					
1	1	20%	2.5"	2.41"					221"	221.5"	222"		45 Degree
1	2	20%	2.5"	2.51"					235"	237"	239"		45 Degree
1	3	20%	2.5"	2.41"					282.5"	285.5"	287"		45 Degree
1	1	35%	3.85"	3.84"	3.3"	3.38"	4.1"	4.15"	218"	222.5"	223"		60 Degree
1	2	35%	3.6"	3.69"	3.15"	3.22"	4.5"	4.45"	233"	235"	237"		60 Degree
1	3	35%	3.95"	3.61"	3.45"	3.15"	4.6"	4.22"	279"	284"	287"		60 Degree

Examiner	Level III	Signature	Date	Reviewer	Signature	Date
Blechliger, Todd P.		<i>Todd P. Blechliger</i>	11/23/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-27-02
Examiner	Level N/A	Signature	Date	Site Review	Signature	Date
N/A				Wren, Jerry P.	<i>Jerry P. Wren</i>	11-29-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>Ron Clow</i>	11/30/02



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 301095
Workscope: ISI

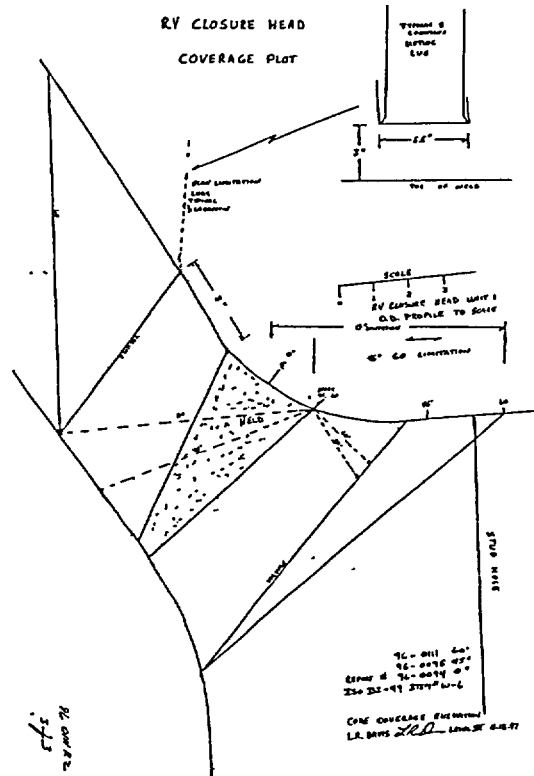
Procedure: ISI-UT-3A
Procedure Rev.: 8 TCN 02-3
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U074
Page: 3 of 7

Description of Limitation:

Refer to previous data reports 96-0094, 96-0095 and 96-0111 for limitation and determination of percent coverage data.

Sketch of Limitation: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U074-1.bmp



Limitations removal requirements:

None

Radiation field. N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Bleching, Todd P.			<i>Todd P. Bleching</i>	11/23/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-27-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>Jerry P. Wren</i>	11-29-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	11/30/02



Determination of Percent Coverage for UT Examinations - Vessels

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-3A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No.:	<u>301095</u>	Procedure Rev.:	<u>8 TCN 02-3</u>	Report No.:	<u>2002U074</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0200860</u>	Page:	<u>4</u> of <u>7</u>

0 deg Planar

Scan 100.000 % Length X 50.000 % volume of length / 100 = 50.000 % total for 0 deg

45 deg

Scan 1 100.000 % Length X 94.000 % volume of length / 100 = 94.000 % total for Scan 1

Scan 2 100.000 % Length X 38.900 % volume of length / 100 = 38.900 % total for Scan 2

Scan 3 100.000 % Length X 50.000 % volume of length / 100 = 50.000 % total for Scan 3

Scan 4 100.000 % Length X 50.000 % volume of length / 100 = 50.000 % total for Scan 4

Add totals and divide by # scans = 58.225 % total for 45 deg

Other deg 60

Scan 1 100.000 % Length X 94.400 % volume of length / 100 = 94.400 % total for Scan 1

Scan 2 100.000 % Length X 23.600 % volume of length / 100 = 23.600 % total for Scan 2

Scan 3 100.000 % Length X 50.000 % volume of length / 100 = 50.000 % total for Scan 3

Scan 4 100.000 % Length X 50.000 % volume of length / 100 = 50.000 % total for Scan 4

Add totals and divide by # scans = 54.500 % total for 60 deg

Percent complete coverage

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

54.242 % 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.

Site Field Supervisor:

James P. White LV-III

Date: 11-27-02

PAGE 4 OF 7
ATTACHMENT 2



Supplemental Report

Report No.: 2002U074Page: 5 of 7Summary No.: 301095Examiner: Blechinger, Todd P.Level: IIIReviewer: Clay, Sean P.Date: 11-27-02Examiner: N/ALevel: N/ASite Review: Wren, Jerry P.Date: 11-29-02Other: N/ALevel: N/AANII Review: Clow, RonDate: 11/30/02

Comments: None

Sketch or Photo: J:\Ideas_Photos\PI1RFO2002\UT Photos\2002U074-2.bmp

NSP MATERIALS & SPECIAL PROCESSES
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE
PRAIRIE ISLAND UNIT 1 OUTAGE

Determination of Percent Coverage Worksheet (UT - Vessel)

Initial Exam Rpt No 96-0094; 96-0095Procedure No: ISI-UT-3A (Rev 5)96-0111ISO No: ISI-49Item No: W-6Applicable Code Figure No: IWB-2500-5

0 deg Planar

Scan 100 % length X 50 % volume of length / 100 = 50 % total for 0 deg

45 deg

Scan 1 100 % length X 94.0 % volume of length / 100 = 94.0 % total for Scan 1

Scan 2 100 % length X 38.9 % volume of length / 100 = 38.9 % total for Scan 2

Scan 3 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 3

Scan 4 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 4

Add totals and divide by # scans = 58.2 % total for 45 deg

60 deg

Scan 1 100 % length X 94.4 % volume of length / 100 = 94.4 % total for Scan 1

Scan 2 100 % length X 23.6 % volume of length / 100 = 23.6 % total for Scan 2

Scan 3 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 3

Scan 4 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 4


Add totals and divide by # scans = 54.5 % total for 60 deg

Percent complete coverage

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

54.2 % 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

NSP Field Supervisor: Date: 2/9/98

1095a_%L.DOC

PAGE 5 OF 7
ATTACHMENT 2



Supplemental Report

Report No.: 2002U074
Page: 6 of 7

Summary No.: 301095

Examiner: <u>Blechinger, Todd P.</u>	Level: <u>III</u>	Reviewer: <u>Clay, Sean P.</u>	Date: <u>11-27-02</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P.</u>	Date: <u>11-29-02</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Clow, Ron</u>	Date: <u>11/30/02</u>

Comments: None

Sketch or Photo: J:\Idea\Photos\PI1RFO2002\UT Photos\2002U074-3 bmp



Xcel Energy, Inc
Prairie Island Nuclear Generating Plant
1717 Wakonade Dr. E
Welch, MN 55089

November 25, 2002

Review of Indications Unit 1 2002 RFO

Report # - 2002U074
Component ID - W-6 (Head to Flange)
Method - UT 45° and 60°

Iso # - ISI-49
Indication(s) - #1 thru #6
Procedure - ISI-UT-3A
Rev. 8 With TCN 02-3

Code - ASME Section XI '89 with No Addenda
NRC Reg. 1.150 Rev. 1

Discussion

These indications are being reviewed after being identified during the scheduled examination of weld W-6 on 11/22/2002. The indications have been previously identified during previous examinations and found to be acceptable

The indications observed on 11/22/2002 are reported as "linear" with a maximum amplitude of 35% DAC

Assumptions

Based on nominal wall thickness and curvature correction the indications are not within the inner 25% of the through-wall dimension (see attached calculations)

Summary

The procedure referenced above is intended to reflect the requirements of Reg Guide 1.150 Rev 1 Appendix A "Alternative Method" paragraph 6.2 b, allows "Reflectors which are at metal paths representing 25% and greater of the through-wall measured from the inner surface should be recorded in accordance with the requirements of ASME Section XI and characterized at 50% DAC." The reflectors in question are within the outer 75% of through-wall thickness, are sub-surface and are not suspected of being cracks. The amplitude of the subject reflectors does not exceed 50% of DAC and therefore do not require characterization/comparison to the code for an acceptance/rejection determination.

The indications noted on report # 2002U074 are acceptable and require no further evaluation.

Prepared By: [Signature]
Sean Clay, UT Level III

Reviewed By: [Signature]
Jerry Wren, UT Level III
Inspection Supervisor

PAGE 6 OF 7

ATTACHMENT 2



Supplemental Report

Report No.: 2002U074Page: 7 of 7Summary No.: 301095Examiner: Blechinger, Todd P.Level: IIIReviewer: Clay, Sean P.Date: 11-27-02Examiner: N/ALevel: N/ASite Review: Wren, Jerry P.Date: 11-29-02Other: N/ALevel: N/AANII Review: Clow, RonDate: 11/30/02Comments: NoneSketch or Photo: J:\Ideas_Photos\PI1RFO2002\UT Photos\2002U074-4 bmp

Indication Calculations Report # 2002U074

Radius = 66.93"45° Measured Angle = 45.9° (2002BS008)60° Measured Angle = 62.4° (2002BS007)

Determination of correction factor

IND #1 45° Radius = 66.93" (R). Surface distance to max amp point = 1.73 (C). C/R = .026 TAN
INV TAN = 1.48 . COS = .999 . (R / COS) - R = 0.022 correction factor.

IND #2 45° Radius = 66.93" (R). Surface distance to max amp point = 1.80 (C). C/R = .027 TAN.
INV TAN = 1.54 . COS = .999 . (R / COS) - R = 0.0242 correction factor

IND #3 45° Radius = 66.93" (R). Surface distance to max amp point = 1.73 (C). C/R = .026 TAN
INV TAN = 1.48 . COS = .999 . (R / COS) - R = 0.022 correction factor.

IND #1 60° Radius = 66.93" (R). Surface distance to max amp point = 3.68 (C). C/R = .055 TAN
INV TAN = 3.15 . COS = .998 . (R / COS) - R = 0.101 correction factor.

IND #2 60° Radius = 66.93" (R). Surface distance to max amp point = 3.94 (C). C/R = .059 TAN.
INV TAN = 3.37 . COS = .9982 . (R / COS) - R = 0.116 correction factor

IND #3 60° Radius = 66.93" (R). Surface distance to max amp point = 3.74 (C). C/R = .056 TAN.
INV TAN = 3.198 . COS = .9984 . (R / COS) - R = 0.1044 correction factor.

Determine the lower depth of the flaw from the exam surface

IND #1 45° 2.41" (metal path at 20% lower) * COS of the measured angle 45.9° = 1.677 -
correction factor = 1.655 Inches depth.

IND #2 45° 2.51" (metal path at 20% lower) * COS of the measured angle 45.9° = 1.75 -
correction factor = 1.72 Inches depth

IND #3 45° 2.41" (metal path at 20% lower) * COS of the measured angle 45.9° = 1.677 -
correction factor = 1.655 Inches depth.

IND #1 60° 4.15" (metal path at 20% lower) * COS of the measured angle 62.4° = 1.923 -
correction factor = 1.822 Inches depth.

IND #2 60° 4.45" (metal path at 20% lower) * COS of the measured angle 62.4° = 2.062 -
correction factor = 1.946 Inches depth.

IND #3 60° 4.22" (metal path at 20% lower) * COS of the measured angle 62.4° = 1.955 -
correction factor = 1.85 Inches depth.

IND #1 45° 71.02% From ID SurfaceIND #2 45° 69.83% From ID SurfaceIND #3 45° 71.02% From ID SurfaceIND #1 60° 68.10% From ID SurfaceIND #2 60° 65.92% From ID SurfaceIND #3 60° 67.59% From ID SurfacePAGE 7 OF 7
ATTACHMENT 2

Northern States Power Company Operations & Maintenance Supt Materials & Special Processes		Prairie Island Unit 1 0' ULTRASONIC EXAMINATION REPORT (3rd 10yr)		Report# 96-0094 Source Doc=B 1. 40 S/N 1095	
System R.V. CLOSURE HEAD	ISO ISI- 49	Item W- 6	Item Description HEAD - FLANGE		
Material A533grBcl1 / SA508 CL 3	Size/Length 41'	Thick/Dia 5.512	Temp 70°F	Surface Condition BLENDED	
Procedure ISI-UT-3A Rev 5 Field Change *		W R Number 9511339	ISI Contractor LMT	Exam Date 01/16/96	
Calibration Report Nmbr WDC-001		Beam Angle 0' (Nominal)	Temp Gauge S/N ISI-012	Exam Start @ 1132 hours Exam End @ 1529 hours	
Evaluation Level 20% DAC	Reporting Level 20% DAC	Cal Block 25A Ref Std LMT-105	Ref Sensitivity 11 dB Scan Sensitivity 20 dB		

RESULTS NAD = No Apparent Discontinuities; L = Linear; S = Spot; M = Multiple
GEO = Geometry Visual = Non-Section XI Visual Examination

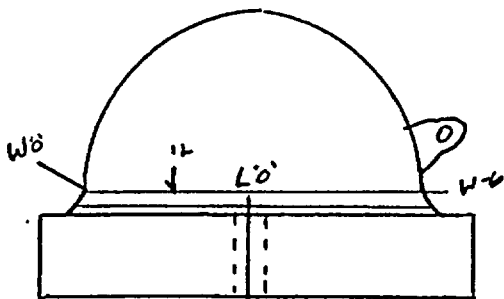
Scan Nmbr	Res-ults	Indication Type	Sweep Loc'n	Metal Path	Surf Dist	Circ Location	Axial Location	Indication Length	Amp %DAC
1L	IND	LINEAR	3.6	2.70	N/A	26.75	4.25	0.3"	
1L	IND	LINEAR	3.2	2.49	N/A	37.6	3.55	SPOT	
1L	IND	LINEAR	3.2	2.49	N/A	43.0	4.65	0.4"	
1L	IND	LINEAR	4.0	3.01	N/A	195.75	2.60	SPOT	
1L	IND	LINEAR	3.7	2.88	N/A	251.3	5.40	0.2"	

LIMITATIONS: No automated exam from 71.6" to 85.6" ; 203.7" to 217.6" ; 333.9 to 346.0" due to lifting lugs. No automated exam from 97.6" to 107" ; 293.0" to 303.2" due to guide stud. No downstream exam due to flange configuration.

REMARKS: See attached evaluation.

* Procedure field change per 96-PIU1-1.

SKETCH



W-0' EDGE OF FLANGE TAPER
L-0' CENTERLINE OF STUD HOLE # 1

PERSONNEL

Examiner: W.D. Carlin III Level
Examiner: T.P. Blechinger II Level

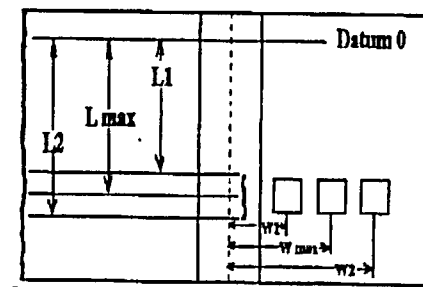
Contractor Review: SR Erickson 1/26/96 Date

NSP Review: [Signature] 1/26/96 Date

ANII Review: [Signature] 2/19/96 Date

Examination Report # 96-0094

Ind #	Scan #	@ MAX AMP				FORWARD			BACKWARD			L1 20% DAC	L MAX	L2 20% DAC	0° Back Amp	REMARKS
		% of DAC	W Max			* 20% DAC or 50% Max Amp			* 20% DAC or 50% Max Amp							
			W	S Div	MP	W1	S Div	MP	W2	S Div	MP					
1	1L	29	4.25	3.6	2.70	4.0	3.6	2.70	4.4	3.6	2.70	26.6	26.75	26.9	100	
2	1L	20	3.55	3.2	2.49	*	3.2	2.49	*	3.2	2.49	*	37.6	*	95	* SPOT IND
3	1L	27	4.65	3.2	2.49	4.3	3.2	2.49	4.85	3.2	2.49	42.7	43.0	43.1	70	
4	1L	20	2.60	4.0	3.01	*	4.0	3.01	*	4.0	3.01	*	195.75	*	40	* SPOT IND
5	1L	22	5.40	3.7	2.88	5.3	3.7	2.88	5.5	3.7	2.88	251.2	251.3	251.4	70	

SCALED PLOT


* NOTE - For flaw indications that peak at less than 20% DAC, dimensions are to be taken from the 50% Max Amp pts.

Examiner

Date

1/26/96

Examiner

Date

1/26/96

Page 2 of 2

Northern States Power Company Operations & Maintenance Supt Materials & Special Processes		Prairie Island Unit 1 0° ULTRASONIC EXAMINATION REPORT (3rd 10yr)		Report# 96-0094R1 Source Doc=B 1. 40 S/N 1095	
System R.V. CLOSURE HEAD		ISO ISI- 49		Item W- 6	
Item Description HEAD - FLANGE		Material A533grBcl1 / SA508 CL 3		Size/Length 41'	
Thick/Dia 5.512		Temp 70°F		Surface Condition Blended	
Procedure ISI-UT-3A		Rev 5		Field Change *	
W R Number 9511339		ISI Contractor		Exam Date 02/19/96	
Calibration Report Nmbr WDC-001		Beam Angle 0° (Nominal)		Temp Gauge S/N ISI-012	
Exam Start @ 1132 hours		Exam End @ 1529 hours			
Evaluation Level 20% DAC		Reporting Level 20% DAC		Cal Block 25A Ref Std LMT-105	
Ref Sensitivity 11 dB		Scan Sensitivity 20 dB			

RESULTS NAD = No Apparent Discontinuities; L = Linear; S = Spot; M = Multiple
GEO = Geometry Visual = Non-Section XI Visual Examination

Scan Nmbr	Res-ults	Indication Type	Sweep Loc'n	Metal Path	Surf Dist	Circ Location	Axial Location	Indication Length	Amp %DAC

LIMITATIONS:

REMARKS: See attached evaluation.

*Procedure field change per 96-PIU1-1

SKETCH	PERSONNEL	
	Examiner:	N/A Level
	Examiner:	N/A Level
	Contractor Review:	N/A Date
	NSP Review:	[Signature] 2/19/96 Date
	ANII Review:	[Signature] 2/19/96 Date

PI-1 Indication Review

Rpt # - 96-0094

Item # - W-6 (360 deg)

New Iso # - same

Method - UT 0°

Iso # - 1-ISI-49

Indication # - 1 through 5

New Item # - same

Procedure - NSP-UT-3A Rev 5 w /
FC 96-PIU1-1

Code - ASME Sect XI '89 with No Addenda
NRC Reg Guide 1.150 Rev 1

Discussion -

These indications are being evaluated as a result of an informational examination done during the Winter '96 outage. The reason for performing this examination was to clear up concerns about previous exams as to reference location for 0 deg and to obtain baseline automated examination data.

The indications were reported as "Linear", and the largest one measured 0.55" X 0.4" with a maximum amplitude of 29% DAC. Based on nominal wall thickness, the indications are not within the inner 25% of the through-wall dimension. (see calculations below). The indication data with this report indicates that there was no complete loss of back associated with these indications that the recording of these indications was a result of amplitude in regard to DAC. In addition there were no indications that were greater than or equal to the remaining back reflection. Previous evaluations related to the examinations in this and the adjacent areas were performed in conjunction with report #94-0203 and the results were found to be acceptable.

Assumptions -

- There is no change in metal path associated with these indications, they are laminar in nature.
- Based on nominal wall thickness, the indications are not within the inner 25% of the through-wall dimension.

Code requirements -

The procedure noted above provided the examiner with criterion for evaluating and recording indications under circumstances determined from the following source documents; ASME Sect XI IWA-2232 refers to Appendix 1 which refers to Sect V Art 4 with supplements (the supplements do not affect this evaluation). For laminar reflectors, T-441.3.2.9 (a) requires recording of "... all areas giving indications equal to or greater than the remaining back reflection" for determining interference with angle beam examinations. T-441.3.2.9 (b) requires recording of "... all areas where one or more discontinuities produce a continuous total loss of back reflection accompanied by continuous indications in the same plane" for acceptance. For planar reflectors found by straight beam, T-441.3.2.10 requires recording of "all reflectors that produce a response equal to or greater than 50% of the distance-amplitude correction (DAC). The Reg Guide requirement for "Indications without Changing Metal Path" (from

PAGE 4 OF 8

ATTACHMENT 3

PI-1 Indication Review

Appendix A) is to record when any continuous dimension exceeds one inch for the outer 75% of the through-wall dimension and, if the indication falls within the inner 25% of the through-wall dimensions, recording should be at 20% DAC and evaluation performed at 50% DAC.

Summary -

The indications noted on report #96-0094 do not fall under these criterion and do not require further evaluation.

Calculations -

Determination of % through wall (depth from OD surface)

Ind #1 - $2.70'' \text{ MP} / 5.512'' \text{ T} = 0.4898$ or 48.98%

Ind #2 - $2.49'' \text{ MP} / 5.512'' \text{ T} = 0.4517$ or 45.17%

Ind #3 - $2.49'' \text{ MP} / 5.512'' \text{ T} = 0.4517$ or 45.17%

Ind #4 - $3.01'' \text{ MP} / 5.512'' \text{ T} = 0.5461$ or 54.61%

Ind #5 - $2.88'' \text{ MP} / 5.512'' \text{ T} = 0.5225$ or 52.25%

MP stands for Metal Path taken from page 1 of the UT report.

The 5.512" T is the thickness of the component taken from the value on the UT report.

Prepared By Tom Jones

Reviewed By Brian O'Leary

Northern States Power Company Operations & Maintenance Supt Materials & Special Processes			Prairie Island Unit 1 0" ULTRASONIC EXAMINATION REPORT (3rd 10yr)			Report# 96-0094R2 Source Doc=B 1. 40 S/N 1095			
System R.V. CLOSURE HEAD		ISO ISI- 49		Item W- 6		Item Description HEAD - FLANGE			
Material A533grBcl1 / SA508 CL 3		Size/Length 41'		Thick/Dia 5.512		Temp °F		Surface Condition	
Procedure ISI-UT-3A Rev ____ Field Change ____				W R Number		ISI Contractor		Exam Date 12/12/97	
Calibration Report Nmbr		Beam Angle (Nominal)		Temp Gauge S/N		Exam Start @ ____ hours Exam End @ ____ hours			
Evaluation Level % DAC		Reporting Level % DAC		Cal Block RV-4A Ref Std		Ref Sensitivity ____ dB Scan Sensitivity ____ dB			
RESULTS NAD = No Apparent Discontinuities; L = Linear; S = Spot; M = Multiple GEO = Geometry Visual = Non-Section XI Visual Examination									
Scan Nmbr	Res- ults	Indication Type	Sweep Loc'n	Metal Path	Surf Dist	Circ Location	Axial Location	Indication Length	Amp %DAC
LIMITATIONS. Exam limitations further evaluated See attached Percent Coverage Sheet									
REMARKS: Report provides additional limitation information only.									
SKETCH						PERSONNEL			
						Examiner: <u>J.P. Wren</u> II J.P. Wren Level			
						Examiner: <u>N/A</u> Level			
						Contractor Review: <u>DA Kelley</u> 12/12/97 Date			
						NSP Review: <u>[Signature]</u> 2/19/98 Date			
						ANII Review: <u>T. A. Keller</u> 2/18/98 Date			

NSP MATERIALS & SPECIAL PROCESSES
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE
PRAIRIE ISLAND UNIT 1 OUTAGE

Determination of Percent Coverage Worksheet
(UT - Vessel)

Initial Exam Rpt No: 96-0094; 96-0095
96-0111

Procedure No: ISI-UT-3A (Rev 5)

ISO No: ISI-49

Item No: W-6

Applicable Code Figure No: IWB-2500-5

0 deg Planar

Scan 100 % length X 50 % volume of length / 100 = 50 % total for 0 deg

45 deg

Scan 1 100 % length X 94.0 % volume of length / 100 = 94.0 % total for Scan 1

Scan 2 100 % length X 38.9 % volume of length / 100 = 38.9 % total for Scan 2

Scan 3 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 3

Scan 4 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 4

Add totals and divide by # scans = 58.2 % total for 45 deg

60 deg

Scan 1 100 % length X 94.4 % volume of length / 100 = 94.4 % total for Scan 1

Scan 2 100 % length X 23.6 % volume of length / 100 = 23.6 % total for Scan 2

Scan 3 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 3

Scan 4 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 4

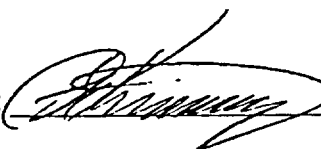
Add totals and divide by # scans = 54.5 % total for 60 deg

Percent complete coverage

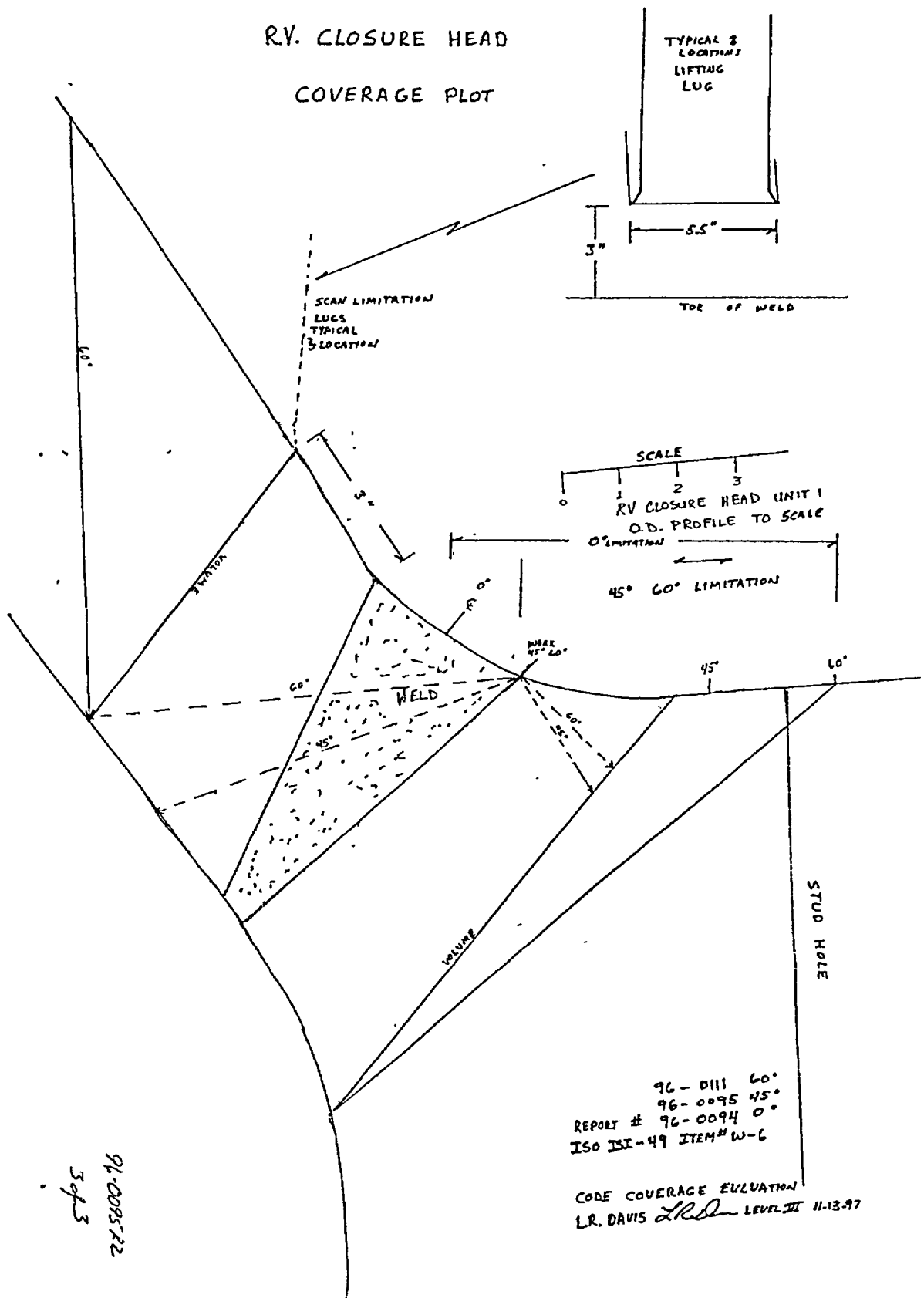
Add totals for each angle and scan required and divide by # angles to determine;

54.2 % 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.

NSP Field Supervisor: 

Date: 2/9/98



ATTACHMENT 4 PAGE 1 OF 10

Northern States Power Company Operations & Maintenance Supt Materials & Special Processes		Prairie Island Unit 1 45" ULTRASONIC EXAMINATION REPORT (3rd 10yr)		Report# 96-0095 Source Doc-B 1. 40 S/N 1095	
System R.V. CLOSURE HEAD	ISO ISI- 49	Item W- 6	Item Description HEAD - FLANGE		
Material A533grBcl1 / SA508 CL 3	Size/Length 41'	Thick/Dia 5.512	Temp 70°F	Surface Condition BLENDED	
Procedure ISI-UT-3A Rev 5 Field Change *		W R Number 9511339	ISI Contractor LMT	Exam Date 01/16/96	
Calibration Report Nbr WDC-002	Beam Angle 45° (Nominal)	Temp Gauge S/N ISI-012	Exam Start @ 1635 hours Exam End @ 1609 hours		
Evaluation Level 20% DAC	Reporting Level 20% DAC	Cal Block Ref Std 25A LMT-105	Ref Sensitivity 11 dB Scan Sensitivity 23 dB		

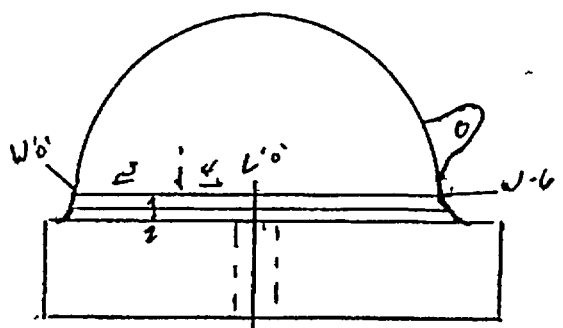
RESULTS NAD = No Apparent Discontinuities; L = Linear; S = Spot; M = Multiple
GEO = Geometry Visual = Non-Section XI Visual Examination

Scan Nbr	Results	Indication Type	Sweep Loc'n	Metal Path	Surf Dist	Circ Location	Axial Location	Indication Length	Amp %DAC
1	IND	LINEAR	2.2	2.56	1.2	215.3	1.2	1.1"	30
1	IND	LINEAR	2.2	2.57	1.1	220.1	1.1	0.5"	30
1	IND	LINEAR	2.2	2.57	1.25	232.8	1.25	0.7"	25
1	IND	LINEAR	2.2	2.52	1.15	235.0	1.15	1.8"	40
1	IND	LINEAR	2.2	2.49	1.05	237.4	1.05	0.3"	23
1	IND	LINEAR	2.1	2.47	1.1	287.5	1.1	0.4"	24
2	NAD								
3	NAD								
4	NAD								

LIMITATIONS: No automated exam from 70.0" to 89.25"; 200.6" to 219.8"; 332.1" to 350.4" due to lifting lugs. No automated exam from 97.0" to 107.5"; 291.8" to 302.4" due to guide studs. These areas were scanned manually.

REMARKS: See attached evaluation. Exam start 1/16/96. Exam end 1/17/96.
* Procedure field change per 96-PIU1-1. Indication #1 is within limitation area 200.6" to 219.8". Indication was measured manually.

SKETCH



W/O - EDGE OF FLANGE TAPER
L/O - CENTERLINE OF STUD HOLE #1

PERSONNEL

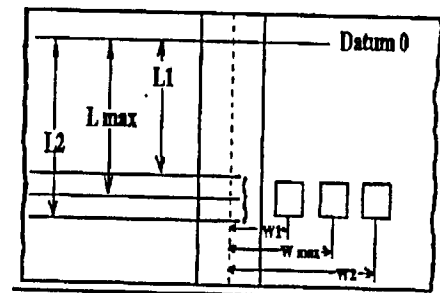
Examiner: W.D. Carlin III Level
Examiner: T.P. Blechinger II Level

Contractor Review: SR Erichson 1/26/96 Date
NSP Review: [Signature] 1/26/96 Date
ANII Review: [Signature] 2/15/96 Date

Examination Report # 96-0095

Ind #	Scan #	% of DAC	@ MAX AMP			FORWARD			BACKWARD			L1 20% DAC	L MAX	L2 20% DAC	0° Back Amp	REMARKS
			W Max			* 20% DAC or 50% Max Amp			* 20% DAC or 50% Max Amp							
			W	S Div	MP	W1	S Div	MP	W2	S Div	MP					
1	1	30	1.2	2.2	2.56	1.2	2.2	2.56	1.4	2.3	2.70	214.8	215.3	215.9	N/A	THRU WALL DIM. 0.12
2	1	30	1.1	2.2	2.51	1.0	2.1	2.50	1.3	2.4	2.68	219.8	220.1	220.3	N/A	THRU WALL DIM. 0.075
3	1	25	1.25	2.2	2.57	1.15	2.1	2.47	1.35	2.3	2.70	232.7	232.8	232.8	N/A	THRU WALL DIM. 0.096
4	1	40	1.15	2.2	2.52	0.95	2.1	2.45	1.6	2.5	2.84	234.8	235	236.6	N/A	THRU WALL DIM. 0.16
5	1	23	1.05	2.2	2.49	1.0	2.1	2.49	1.10	2.2	2.52	237.3	237.4	237.6	N/A	THRU WALL DIM. 0.02
6	1	24	1.1	2.1	2.47	1.1	2.1	2.47	1.3	2.2	2.62	287.4	287.5	287.8	N/A	THRU WALL DIM. 0.06

SCALED PLOT

SCALED PLOT


* NOTE - For flaw indications that peak at less than 20% DAC, dimensions are to be taken from the 50% Max Amp pts.

Examiner

Date

1/26/96

Page 2 of 2

ATTACHMENT 4

PAGE 2 OF 10

Northern States Power Company Operations & Maintenance Supt Materials & Special Processes			Prairie Island Unit 1 45" ULTRASONIC EXAMINATION REPORT (3rd 10yr)			Report# 96-0095R1 Source Doc=B 1. 40 S/N 1095		
System R.V. CLOSURE HEAD		ISO ISI- 49		Item W- 6		Item Description HEAD - FLANGE		
Material A533grBcl1 / SA508 CL 3		Size/Length 41'		Thick/Dia 5.512		Temp 70°F		Surface Condition Blended
Procedure ISI-UT-3A Rev 5 Field Change *				W R Number 9511339		ISI Contractor		Exam Date 02/19/96
Calibration Report Nmbr WDC-002		Beam Angle 45° (Nominal)		Temp Gauge S/N ISI-012		Exam Start @ 1635 hours Exam End @ 1609 hours		
Evaluation Level 20% DAC		Reporting Level 20% DAC		Cal Block Ref Std 25A LMT-105		Ref Sensitivity 11 dB Scan Sensitivity 23 dB		

RESULTS NAD = No Apparent Discontinuities; L = Linear; S = Spot; M = Multiple
GEO = Geometry Visual = Non-Section XI Visual Examination

Scan Nmbr	Res- ults	Indication Type	Sweep Loc'n	Metal Path	Surf Dist	Circ Location	Axial Location	Indication Length	Amp %DAC

LIMITATIONS: Scans limited to lower 60% (approx) of weld, see attached sketches 1 and 2.

REMARKS: See attached evaluation.

* Procedure field change per 96-PIU1-1

SKETCH

PERSONNEL

Examiner: N/A Level

Examiner: N/A Level

Contractor
Review: N/A 1/1
Date

NSP
Review: [Signature] 2/18/96
Date

ANII
Review: [Signature] 2/19/96
Date

PI 1 Indication Review

Rpt # - 96-0095

Item # - W-6

New Iso # - same

Method - UT 45°

Iso # - ISI-49

Indication # - 1 through 6

New Item # - same

Procedure - NSP-UT-3A Rev 5 w/
FC 96-PIU1-1

Code - ASME Sect XI '89 with No Addenda
NRC Reg Guide 1.150 Rev 1

Discussion -

These indications are being evaluated as a result of an informational examination done during the Winter '96 outage. The reason for performing this examination was to clear up concerns about previous exams as to reference location for 0 deg and to obtain baseline automated examination data.

The indications were reported as "Linear" with a maximum amplitude of 40% DAC. Previous evaluations related to the examinations in this and the adjacent areas were performed in conjunction with reports #94-0240 and 90-323, and the results were found to be acceptable.

Assumptions -

- Based on nominal wall thickness, the indications are not within the inner 25% of the through-wall dimension. (see calculations below)

Summary -

The procedure referenced above is intended to reflect the requirements of Reg. Guide 1.150 Rev 1. Appendix A "Alternative Method" paragraph 6.2 b., allows that "Reflectors which are at metal paths representing 25 percent and greater of the through-wall measured from the inner surface should be recorded in accordance with the requirements of ASME Section XI and characterized at 50 percent DAC." The reflectors in question are within the outer 75 percent of the through-wall thickness, are not surface related and are not suspected of being cracks. The amplitude of the subject reflectors does not exceed 50 percent DAC and do not require characterization/comparison to the code for an acceptance/rejection determination.

The indications noted on report #96-0095 are acceptable and require no further evaluation.

ATTACHMENT 4 PAGE 4 OF 10

PI 1 Indication Review

Calculations - From calibration report WDC-002 the 1/4 T hole is at 2.0 screen divisions and 1.86" metal path with a measured angle of 45 deg in the cal block.

Ind #1 - $\cos 45 \text{ deg} = 0.7071$ $0.7071 * 2.56" \text{MP} = \underline{1.8102"} \text{ depth from outer surface}$
 $1.8102" / 5.512" = 0.3284 \text{ or } \underline{32.84\% \text{ through-wall}}$

Ind #2 - $\cos 45 \text{ deg} = 0.7071$ $0.7071 * 2.51" \text{MP} = \underline{1.7748"} \text{ depth from outer surface}$
 $1.7748" / 5.512" = 0.3220 \text{ or } \underline{32.20\% \text{ through-wall}}$

Ind #3 - $\cos 45 \text{ deg} = 0.7071$ $0.7071 * 2.57" \text{MP} = \underline{1.8172"} \text{ depth from outer surface}$
 $1.8172" / 5.512" = 0.3297 \text{ or } \underline{32.97\% \text{ through-wall}}$

Ind #4 - $\cos 45 \text{ deg} = 0.7071$ $0.7071 * 2.52" \text{MP} = \underline{1.7819"} \text{ depth from outer surface}$
 $1.7819" / 5.512" = 0.3233 \text{ or } \underline{32.33\% \text{ through-wall}}$

Ind #5 - $\cos 45 \text{ deg} = 0.7071$ $0.7071 * 2.49" \text{MP} = \underline{1.7607"} \text{ depth from outer surface}$
 $1.7607" / 5.512" = 0.3194 \text{ or } \underline{31.94\% \text{ through-wall}}$

Ind #6 - $\cos 45 \text{ deg} = 0.7071$ $0.7071 * 2.47" \text{MP} = \underline{1.7465"} \text{ depth from outer surface}$
 $1.7465" / 5.512" = 0.3169 \text{ or } \underline{31.69\% \text{ through-wall}}$

MP refers to metal path taken from pg 1 of the UT report.

The 5.512" T is the thickness of the component taken from the value on the UT report.

Prepared By Tom Jones

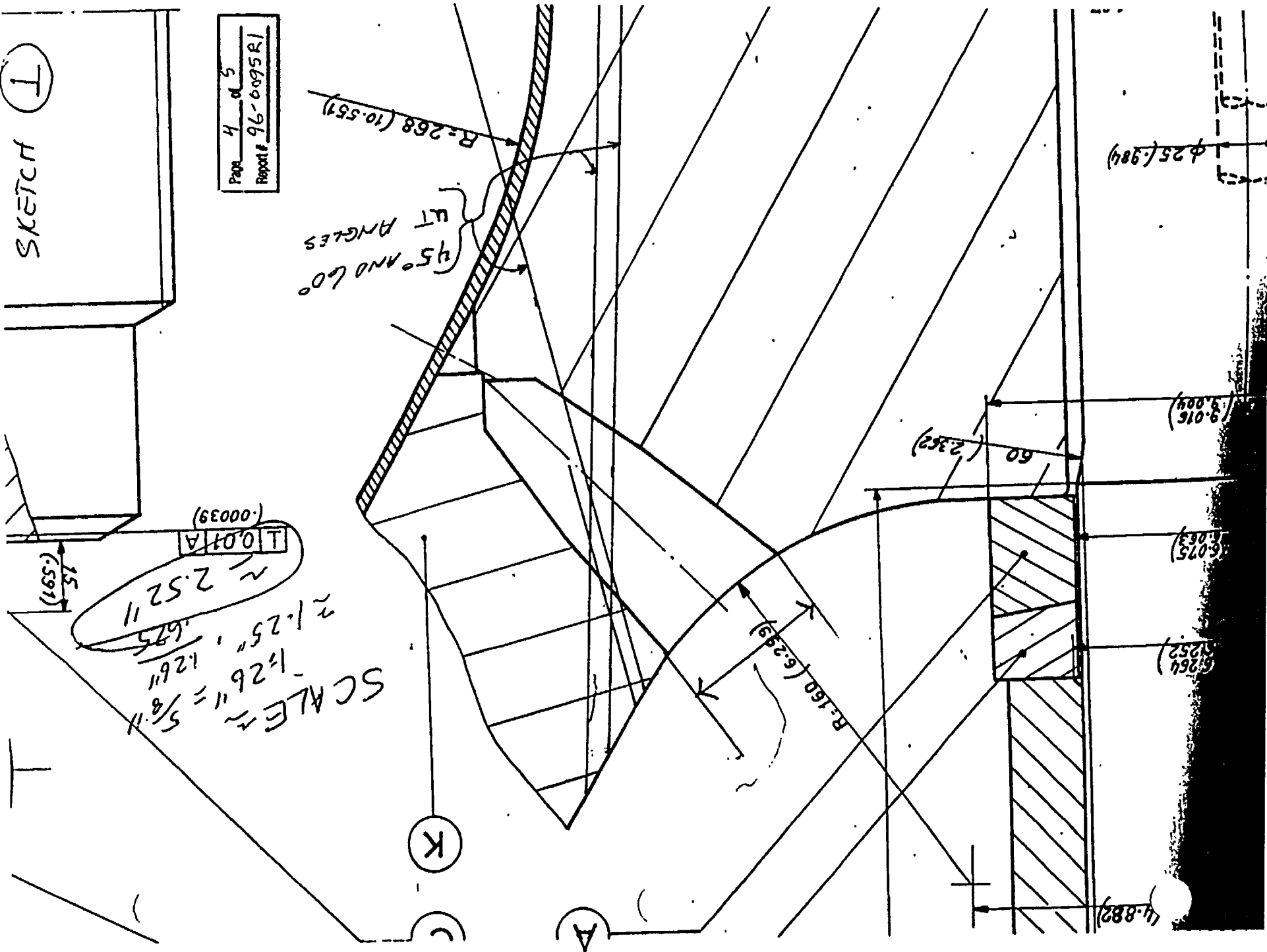
Reviewed By Dan White

ATTACHMENT 4 PAGE 5 OF 10

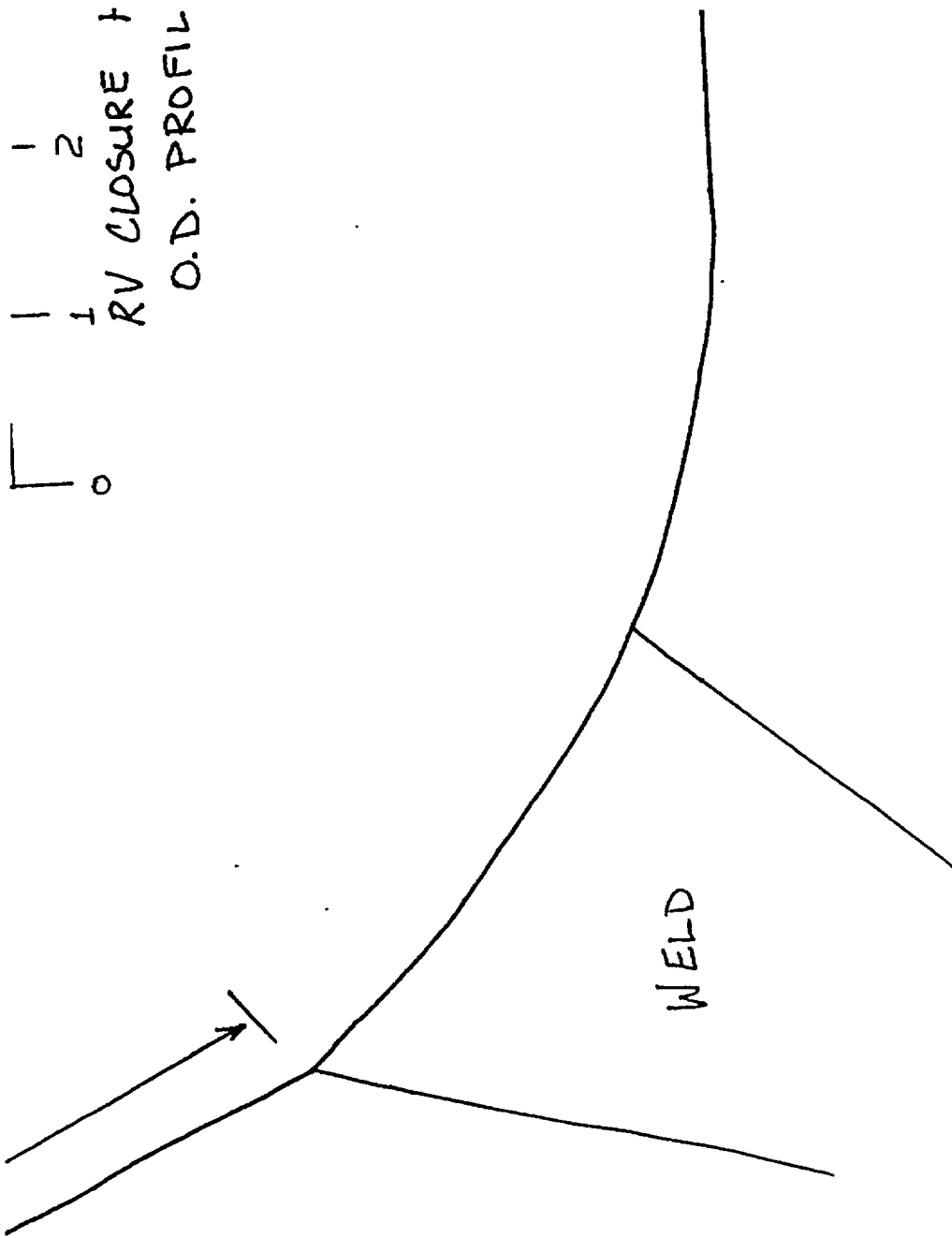
1

SKETCH

Page 4 of 5
Report # 96-0095R1



1 1
2
RV CLOSURE +
O.D. PROFIL



Northern States Power Company Operations & Maintenance Supt Materials & Special Processes				Prairie Island Unit 1 45° ULTRASONIC EXAMINATION REPORT (3rd 10yr)				Report# 96-0095R2 Source Doc=B 1. 40 S/N 1095			
System R.V. CLOSURE HEAD			ISO ISI- 49			Item W- 6		Item Description HEAD - FLANGE			
Material A533grBcl1 / SA508 CL 3			Size/Length 41'		Thick/Dia 5.512		Temp °F		Surface Condition		
Procedure ISI-UT-3A Rev ____ Field Change ____					W R Number		ISI Contractor LMT		Exam Date 12/12/97		
Calibration Report Nmbr			Beam Angle (Nominal)			Temp Gauge S/N		Exam Start @ ____ hours Exam End @ ____ hours			
Evaluation Level % DAC		Reporting Level % DAC		Cal Block Ref Std			RV-4A		Ref Sensitivity ____ dB Scan Sensitivity ____ dB		
RESULTS NAD = No Apparent Discontinuities; L = Linear; S = Spot; M = Multiple GEO = Geometry Visual = Non-Section XI Visual Examination											
Scan Nmbr	Res- ults	Indication Type	Sweep Loc'n	Metal Path	Surf Dist	Circ Location	Axial Location	Indication Length	Amp %DAC		
LIMITATIONS: Exam limitations further evaluated See attached Percent Coverage Sheet											
REMARKS: Report provides additional limitation information only.											
SKETCH						PERSONNEL					
						Examiner: <u>Jan E. Wren</u> <u>II</u> Level					
						Examiner: <u>N/A</u> <u>Level</u>					
						Contractor Review: <u>D. Adair</u> <u>12/12/97</u> Date					
						NSP Review: <u>[Signature]</u> <u>2/9/98</u> Date					
						ANII Review: <u>[Signature]</u> <u>2/9/98</u> Date					

NSP MATERIALS & SPECIAL PROCESSES
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE
PRAIRIE ISLAND UNIT 1 OUTAGE

Determination of Percent Coverage Worksheet
(UT - Vessel)

Initial Exam Rpt No: 96-0094; 96-0095
96-0111

Procedure No: ISI-UT-3A (Rev 5)

ISO No: ISI-49

Item No: W-6

Applicable Code Figure No: IWB-2500-5

0 deg Planar

Scan 100 % length X 50 % volume of length / 100 = 50 % total for 0 deg

45 deg

Scan 1 100 % length X 94.0 % volume of length / 100 = 94.0 % total for Scan 1

Scan 2 100 % length X 38.9 % volume of length / 100 = 38.9 % total for Scan 2

Scan 3 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 3

Scan 4 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 4

Add totals and divide by # scans = 58.2 % total for 45 deg

60 deg

Scan 1 100 % length X 94.4 % volume of length / 100 = 94.4 % total for Scan 1

Scan 2 100 % length X 23.6 % volume of length / 100 = 23.6 % total for Scan 2

Scan 3 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 3

Scan 4 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 4

Add totals and divide by # scans = 54.5 % total for 60 deg

Percent complete coverage

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

54.2 % total for complete exam

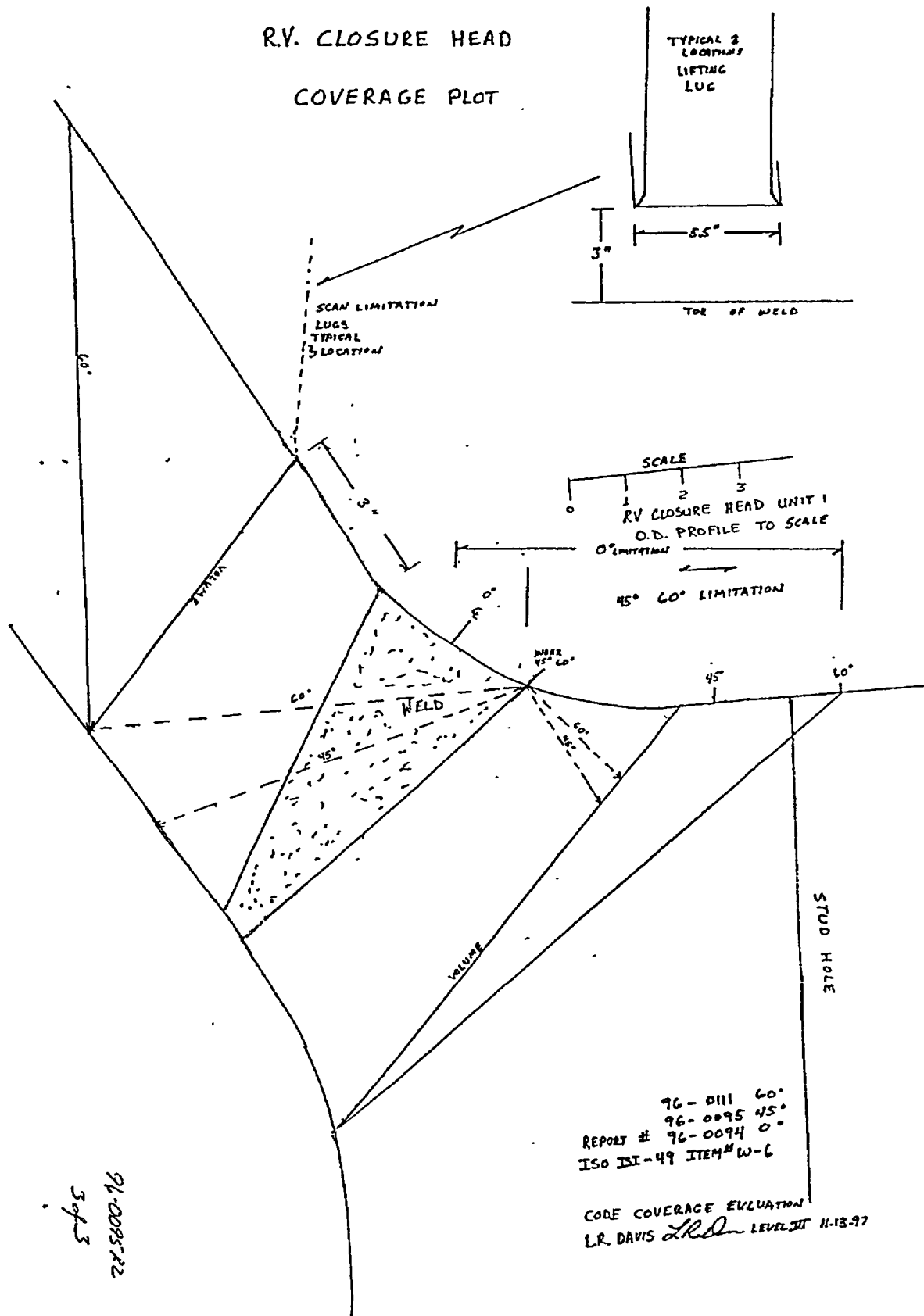
Note: Supplemental coverage may be achieved by use of other angles / methods. When used, the coverage for volume not obtained with angles as noted above shall be calculated and added to the total to provide the percent total for the complete examination.

NSP Field Supervisor: 

Date: 2/9/98

2 of 3

RV. CLOSURE HEAD COVERAGE PLOT



Northern States Power Company Operations & Maintenance Supt Materials & Special Processes		Prairie Island Unit 1 60" ULTRASONIC EXAMINATION REPORT (3rd 10yr)		Report# 96-0111 Source Doc=B 1. 40 S/N 1095	
System R.V. CLOSURE HEAD	ISO ISI- 49	Item W- 6	Item Description HEAD - FLANGE		
Material A533grBcl1 / SA508 CL 3	Size/Length 41'	Thick/Dia 5.512	Temp 70°F	Surface Condition BLENDED	
Procedure ISI-UT-3A Rev 5 Field Change *		W R Number 9511339	ISI Contractor LMT	Exam Date 01/17/96	
Calibration Report Nmbr WDC-003	Beam Angle 60° (Nominal)	Temp Gauge S/N ISI-012	Exam Start @ 1730 hours Exam End @ 1730 hours		
Evaluation Level 20% DAC	Reporting Level 20% DAC	Cal Block 25A Ref Std LMT-105	Ref Sensitivity 16 dF Scan Sensitivity 28 dF		

RESULTS NAD = No Apparent Discontinuities; L = Linear; S = Spot; M = Multiple
GEO = Geometry Visual = Non-Section XI Visual Examination

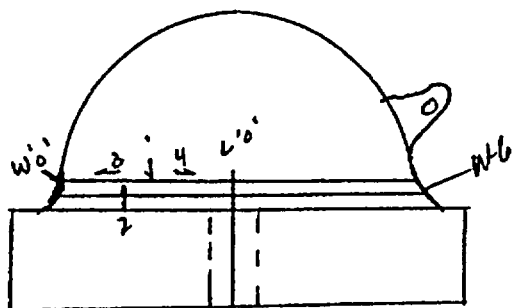
Scan Nmbr	Results	Indication Type	Sweep Loc'n	Metal Path	Surf Dist	Circ Location	Axial Location	Indication Length	Amp %DAC
1	IND	LINEAR	2.1	3.50	2.6	215.5	2.6	0.5"	40
1	IND	LINEAR	2.1	3.50	2.6	218.1	2.6	1.3"	40
1	IND	LINEAR	2.1	3.57	2.5	222.7	2.5	SPOT	20
1	IND	LINEAR	2.1	3.52	2.6	234.0	2.6	0.3"	24
1	IND	LINEAR	2.1	3.52	2.6	236.9	2.6	0.4"	40
1	IND	LINEAR	2.2	3.65	2.6	282.5	2.6	0.3"	23
1	IND	LINEAR	2.2	3.71	2.7	285.4	2.7	0.3"	24
1	IND	LINEAR	2.1	3.53	2.5	289.3	2.5	0.7"	33
2	NAD								
3	NAD								
4	NAD								

LIMITATIONS: No automated exam from 71.5" to 91.1"; 200.9" to 220.5"; 333.2" to 351.8" due to lifting lugs. No automated exam from 98.0" to 107.8"; 293.0" to 303.8" due to guide studs. These areas were scanned manually.

REMARKS: Exam start 1/17/96. Exam end 1/18/96.

* Procedure field change per 96PIU1-1. Indications 1&2 are within limitation area 200.9" to 220.5". Indications were measured manually.

SKETCH



W.O. - EDGE OF FLANGE TAPER
L.O. - CENTERLINE OF STUD HOLE #1

PERSONNEL

Examiner: W.D. Carlin III Level
Examiner: T.P. Blechinger II Level

Contractor Review: SR Erickson 1/26/96 Date

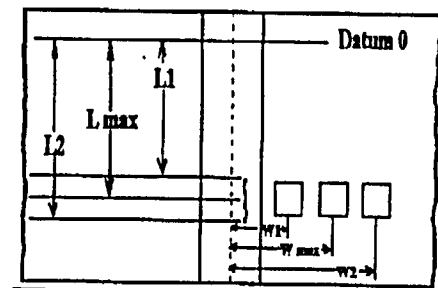
NSP Review: [Signature] 1/26/96 Date

ANII Review: [Signature] 2/19/96 Date

Examination Report # 96-0111

Ind #	Scan #	@ MAX AMP				FORWARD			BACKWARD			L ₁ 20% DAC	L MAX	L ₂ 20% DAC	0° Back Amp	REMARKS
		% of DAC	W Max			* 20% DAC or 50% Max Amp			* 20% DAC or 50% Max Amp							
			W	S Div	MP	W ₁	S Div	MP	W ₂	S Div	MP					
1	1	40	2.6	2.1	3.50	2.1	1.9	3.30	2.6	3.1	3.50	215.3	215.5	215.8	N.A	THRU WALL DIM .07
2	1	40	2.6	2.1	3.50	2.1	1.8	3.15	3.2	3.5	4.12	217.2	218.1	218.5	N.A	THRU WALL DIM .09
3	1	20	2.5	2.1	3.57	*	*	*	*	*	*	*	222.7	*	N/A	* SPOT INDICATION
4	1	24	2.6	2.1	3.52	2.3	1.9	3.32	2.8	3.2	3.70	233.8	234	234.1	N/A	THRU WALL DIM .07
5	1	40	2.6	2.1	3.52	2.1	1.8	3.13	3.2	3.5	4.10	235.8	236.9	239.8	N/A	THRU WALL DIM .17
6	1	23	2.6	2.2	3.65	2.3	2.0	3.37	2.8	3.4	3.80	282.3	282.5	282.6	N/A	THRU WALL DIM .08
7	1	24	2.7	2.2	3.71	2.3	2.0	3.36	3.0	3.4	4.00	285.3	285.4	285.6	N/A	THRU WALL DIM .11
8	1	33	2.5	2.1	3.53	2.1	1.9	3.20	3.3	3.6	4.32	288.9	289.3	289.6	N/A	THRU WALL DIM .20

SCALED PLOT



* NOTE - For flaw indications that peak at less than 20% DAC, dimensions are to be taken from the 50% Max Amp pts.

Examiner [Signature]

Date 1/26/96

Page 2 of 2

Northern States Power Company Operations & Maintenance Supt Materials & Special Processes			Prairie Island Unit 1 60" ULTRASONIC EXAMINATION REPORT (3rd 10yr)			Report# 96-0111R1 Source Doc-B 1. 40 S/N 1095		
System R.V. CLOSURE HEAD		ISO ISI- 49		Item W- 6		Item Description HEAD - FLANGE		
Material A533grBcl1 / SA508 CL 3		Size/Length 41'		Thick/Dia 5.512		Temp 70°F		Surface Condition Blended
Procedure ISI-UT-3A Rev 7 Field Change *				W R Number 9511339		ISI Contractor		Exam Date 02/19/96
Calibration Report Nmbr WDC-003		Beam Angle 60° (Nominal)		Temp Gauge S/N ISI-012		Exam Start @ 1730 hours Exam End @ 1730 hours		
Evaluation Level 20% DAC		Reporting Level 20% DAC		Cal Block Ref Std 25A LMT-105		Ref Sensitivity 16 dB Scan Sensitivity 28 dB		

RESULTS NAD = No Apparent Discontinuities; L = Linear; S = Spot; M = Multiple
GEO = Geometry Visual = Non-Section XI Visual Examination

Scan Nmbr	Res- ults	Indication Type	Sweep Loc'n	Metal Path	Surf Dist	Circ Location	Axial Location	Indication Length	Amp %DAC

LIMITATIONS: Scans limited to lower 60% (approx) of weld, See attached sketches 1 and 2.

REMARKS: See Attached evaluation.

* Procedure field change per 96-PIU1-1

SKETCH	PERSONNEL	
	Examiner: <u>N/A</u>	Level
	Examiner: <u>N/A</u>	Level
	Contractor Review: <u>N/A</u>	<u>1/1</u> Date
	NSP Review: <u>[Signature]</u>	<u>2/19/96</u> Date
	ANII Review: <u>[Signature]</u>	<u>2/19/96</u> Date

PI 1 Indication Review

Rpt # - 96-0111

Item # - W-6

New Iso # - same

Method - UT 60°

Iso # - ISI-49

Indication # - 1 through 8

New Item # - same

Procedure - NSP-UT-3A Rev 55 w /
FC 96-PIU1-1

Code - ASME Sect XI '89 with No Addenda
NRC Reg Guide 1.150 Rev 1

Discussion -

These indications are being evaluated as a result of an informational examination done during the Winter '96 outage. The reason for performing this examination was to clear up concerns about previous exams as to reference location for 0 deg and to obtain baseline automated examination data.

The indications were reported as "Linear" with a maximum amplitude of 40% DAC. Previous evaluations related to the examinations in this and the adjacent areas were performed in conjunction with reports #94-0241 and 90-324, and the results were found to be acceptable.

Assumptions -

- Based on nominal wall thickness, the indications are not within the inner 25% of the through-wall dimension. (see calculations below)

Summary -

The procedure referenced above is intended to reflect the requirements of Reg. Guide 1.150 Rev 1. Appendix A "Alternative Method" paragraph 6.2 b., allows that "Reflectors which are at metal paths representing 25 percent and greater of the through-wall measured from the inner surface should be recorded in accordance with the requirements of ASME Section XI and characterized at 50 percent DAC." The reflectors in question are within the outer 75 percent of the through-wall thickness, are not surface related and are not suspected of being cracks. The amplitudes of the subject reflectors do not exceed 50 percent DAC and do not require characterization/ comparison to the code for an acceptance/rejection determination.

The indications noted on report #96-0111 are acceptable and require no further evaluation.

ATTACHMENT 5 PAGE 4 OF 10

PI 1 Indication Review

Calculations - From calibration report WDC-003 the 1/4 T hole is at 2.0 screen divisions and 2.65" metal path with a measured angle of 60 deg in the cal block.

Ind #1 - $\cos 60 \text{ deg} = 0.5$ $0.5 * 3.5" \text{MP} = \underline{1.75" \text{ depth from outer surface}}$
 $1.75" / 5.512" = 0.3175 \text{ or } \underline{31.75\% \text{ through-wall}}$

Ind #2 - $\cos 60 \text{ deg} = 0.5$ $0.5 * 3.5" \text{MP} = \underline{1.75" \text{ depth from outer surface}}$
 $1.75" / 5.512" = 0.3175 \text{ or } \underline{31.75\% \text{ through-wall}}$

Ind #3 - $\cos 60 \text{ deg} = 0.5$ $0.5 * 3.57" \text{MP} = \underline{1.785" \text{ depth from outer surface}}$
 $1.785" / 5.512" = 0.3238 \text{ or } \underline{32.38\% \text{ through-wall}}$

Ind #4 - $\cos 60 \text{ deg} = 0.5$ $0.5 * 3.52" \text{MP} = \underline{1.76" \text{ depth from outer surface}}$
 $1.76" / 5.512" = 0.3193 \text{ or } \underline{31.93\% \text{ through-wall}}$

Ind #5 - $\cos 60 \text{ deg} = 0.5$ $0.5 * 3.52" \text{MP} = \underline{1.76" \text{ depth from outer surface}}$
 $1.76" / 5.512" = 0.3193 \text{ or } \underline{31.93\% \text{ through-wall}}$

Ind #6 - $\cos 60 \text{ deg} = 0.5$ $0.5 * 3.65" \text{MP} = \underline{1.825" \text{ depth from outer surface}}$
 $1.825" / 5.512" = 0.3311 \text{ or } \underline{33.11\% \text{ through-wall}}$

Ind #7 - $\cos 60 \text{ deg} = 0.5$ $0.5 * 3.71" \text{MP} = \underline{1.855" \text{ depth from outer surface}}$
 $1.855" / 5.512" = 0.3365 \text{ or } \underline{33.65\% \text{ through-wall}}$

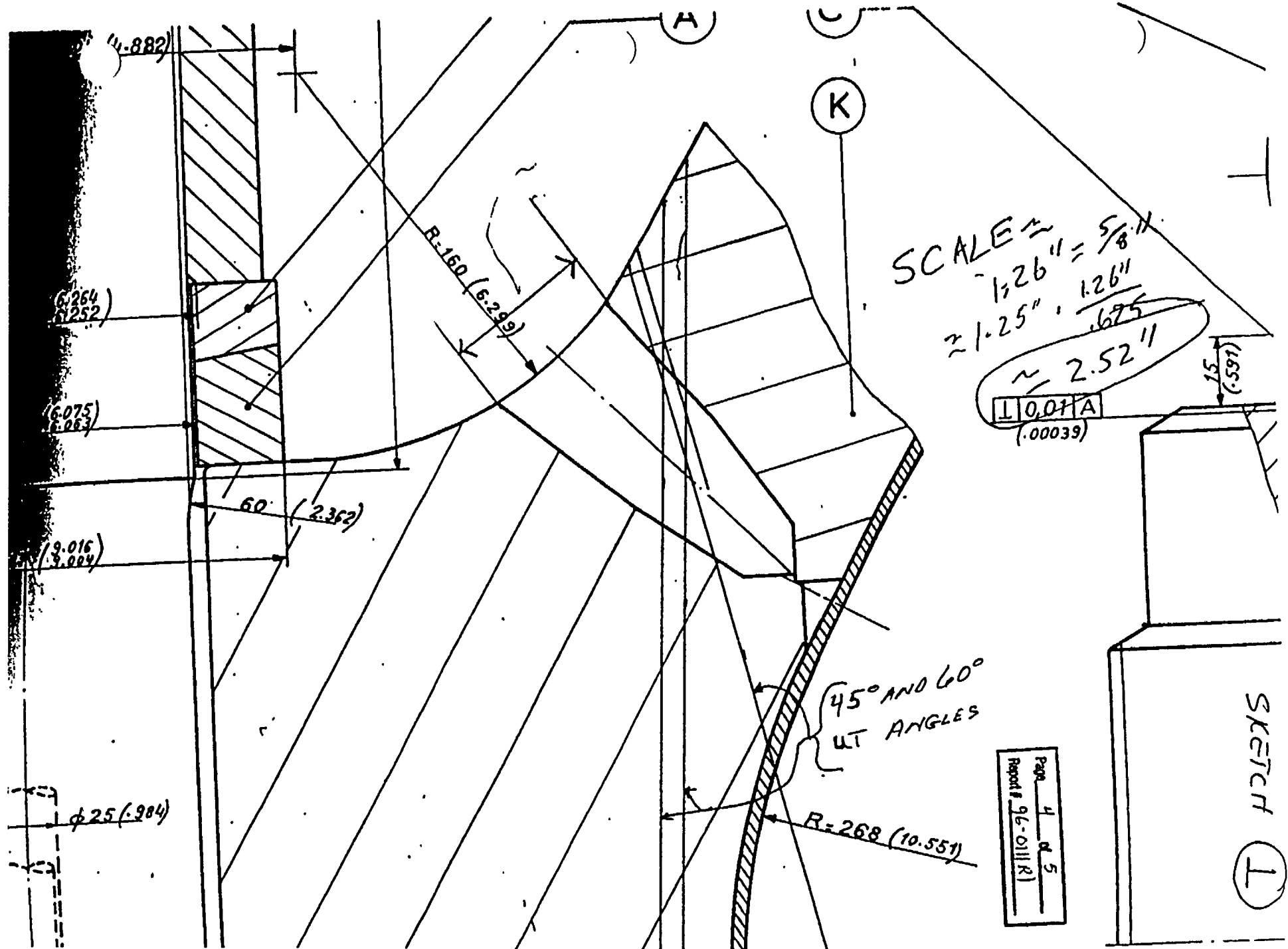
Ind #8 - $\cos 60 \text{ deg} = 0.5$ $0.5 * 3.53" \text{MP} = \underline{1.765" \text{ depth from outer surface}}$
 $1.765" / 5.512" = 0.3202 \text{ or } \underline{32.02\% \text{ through-wall}}$

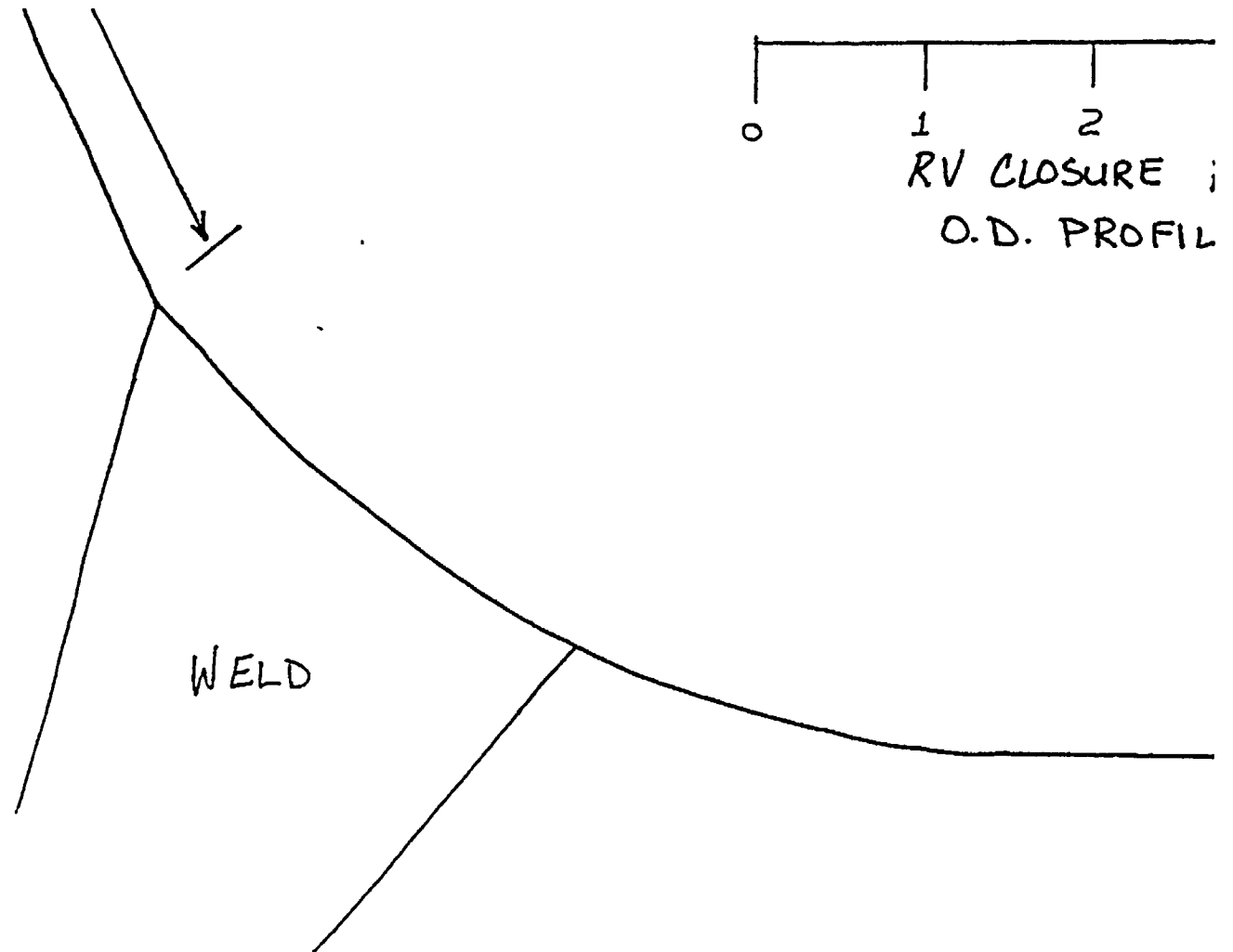
MP refers to metal path taken from pg 1 of the UT report.

The 5.512" T is the thickness of the component taken from the value on the UT report.

Prepared By Tom Jones

Reviewed By Ben Alb





NSP MATERIALS & SPECIAL PROCESSES
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE
PRAIRIE ISLAND UNIT 1 OUTAGE

Determination of Percent Coverage Worksheet
(UT - Vessel)

Initial Exam Rpt No: 96-0094; 96-0095
96-0111

Procedure No: ISI-UT-3A (Rev 5)

ISO No: ISI-49

Item No: W-6

Applicable Code Figure No: IWB-2500-5

0 deg Planar

Scan 100 % length X 50 % volume of length / 100 = 50 % total for 0 deg

45 deg

Scan 1 100 % length X 94.0 % volume of length / 100 = 94.0 % total for Scan 1

Scan 2 100 % length X 38.9 % volume of length / 100 = 38.9 % total for Scan 2

Scan 3 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 3

Scan 4 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 4

Add totals and divide by # scans = 58.2 % total for 45 deg

60 deg

Scan 1 100 % length X 94.4 % volume of length / 100 = 94.4 % total for Scan 1

Scan 2 100 % length X 23.6 % volume of length / 100 = 23.6 % total for Scan 2

Scan 3 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 3

Scan 4 100 % length X 50.0 % volume of length / 100 = 50.0 % total for Scan 4

Add totals and divide by # scans = 54.5 % total for 60 deg

Percent complete coverage

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

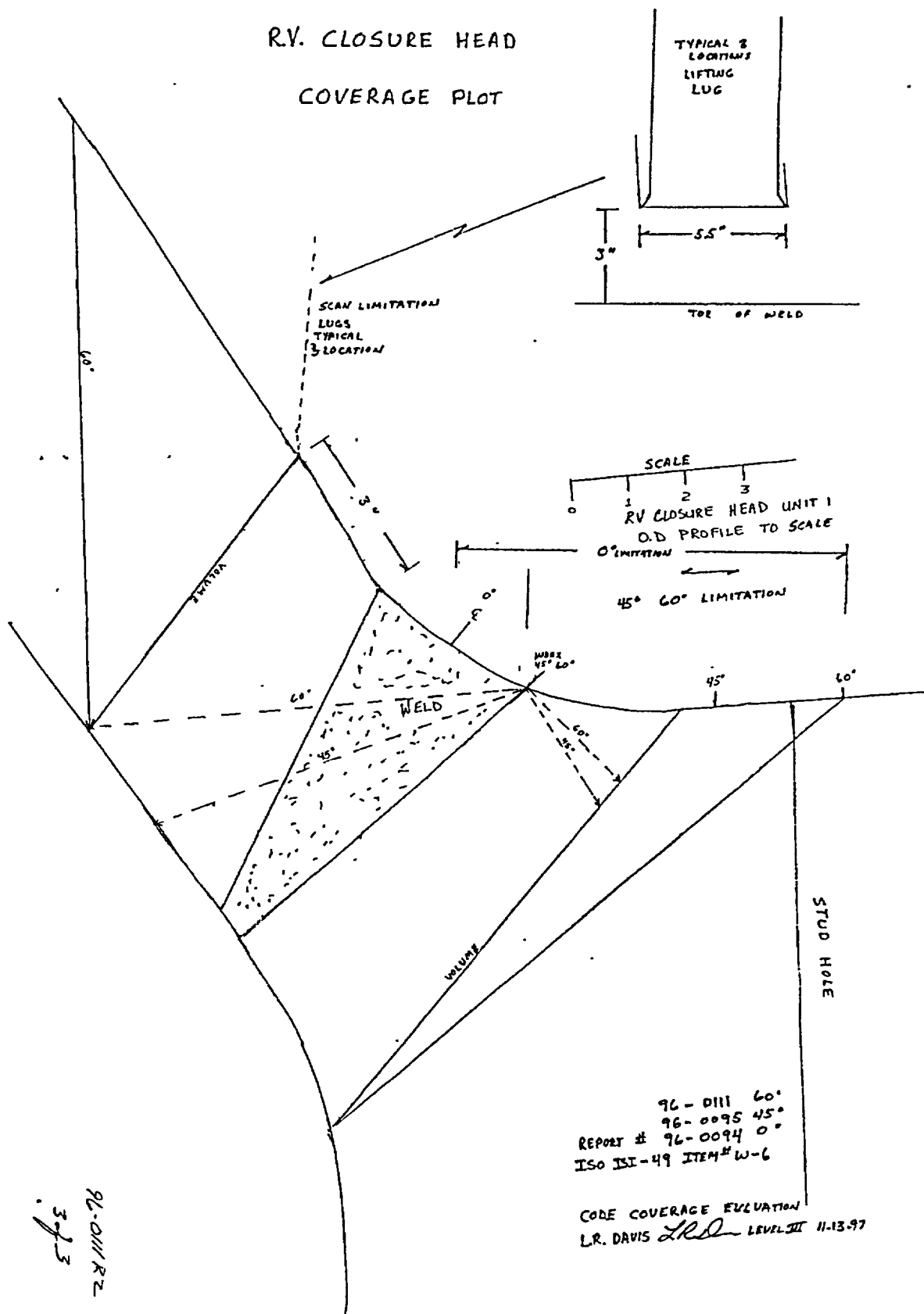
54.2 % total for complete exam

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.

NSP Field Supervisor: 

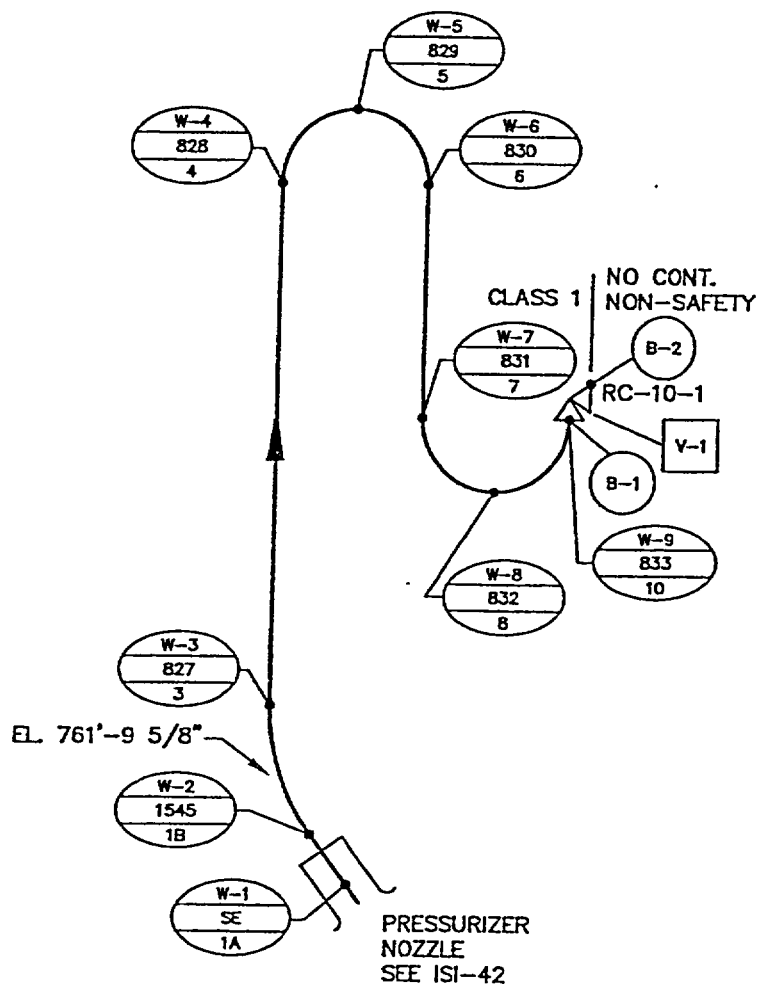
Date: 2/9/98

RV. CLOSURE HEAD COVERAGE PLOT





ATTACHMENT 6 PAGE 1 OF 1



6" PRESSURIZER SAFETY LINE LOOP 'A'

= WELD NO.
 = BOLT NO.
 = VALVE NO.

REF: XH-106-335

FILE NO: 1129AR02

NSP (M&SP)-PI 1		ISI
DWN: TJH	CHKD: <i>[Signature]</i>	APPD: <i>[Signature]</i>
SYSTEM: REACTOR COOLANT		
LINE: 6-RC-20A		
DWG:	ISI-29A	REV: 02



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 300900
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U055
Page: 1 of 4

Code: 1989 Code Cat.: B-J Location: Cont Prz Vault
Drawing No.: ISI-29A Description: SAFE END - 45° ELBOW
System ID: RC
Component ID: W-2 Size/Length: 1.1" / 19" Thickness/Diameter: .719" / 6"
Limitations: No scans on safe end side due to configuration. Start Time: 1256 Finish Time: 1312

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Blended
Lo Location: Extradose of Elbow Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143
Temp. Tool Mfg.: Telatemp Serial No.: NSP 134 Surface Temp.: 85 °F

Cal. Report No.: 2002CA100, 2002CA101

Angle Used	0	45	45T	60		
Scanning dB		58.0	58.0	76.0		

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

Comments:

None

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Bleching, Todd P.			<i>Todd P. Bleching</i>	11/19/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-22-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>Jerry P. Wren</i>	11-22-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	11/22/02



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 300900
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

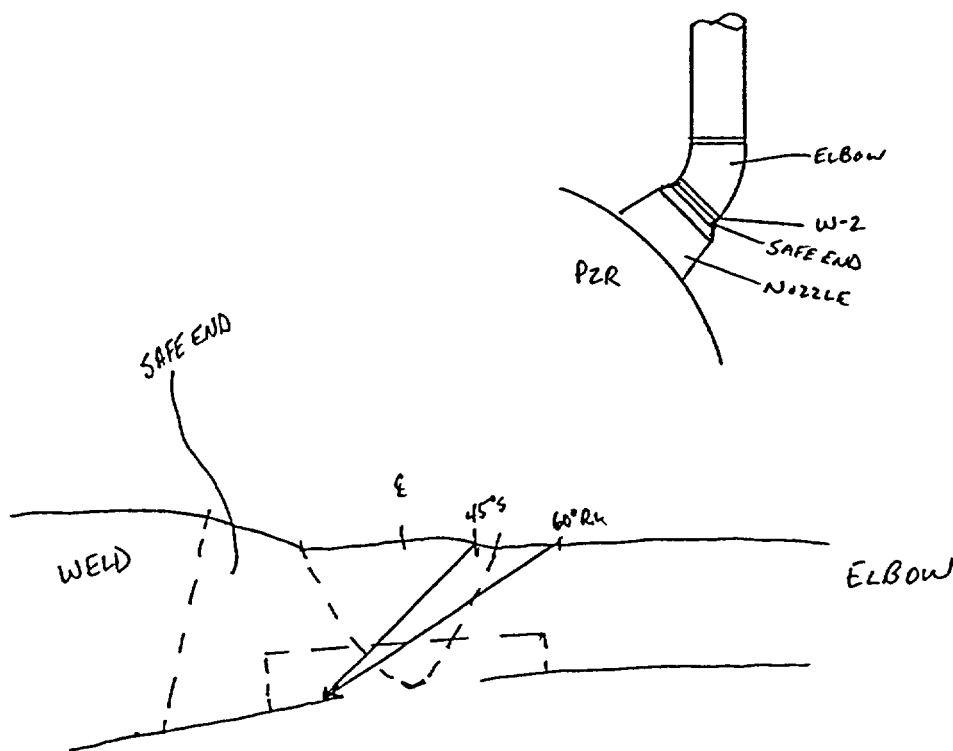
Outage No.: PI1RFO2002
Report No.: 2002U055
Page: 2 of 4

Description of Limitation:

Safe end configuration and proximity of adjacent safe end to nozzle weld.

Sketch of Limitation:

J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U055-1.bmp



Limitations removal requirements:

Single sided exam - Although the examination was performed through 100% of the code required volume. Procedure ISI-UT-16A is not qualified for the detection of flaws on the far side of single side access exams. The techniques provided by this procedure were used for a best effort examination for flaws on the far side of the weld.

Radiation field. 20 mR

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Blechninger, Todd P.			<i>Todd P. Blechninger</i>	11/19/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-22-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>Jerry P. Wren</i>	11-22-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	11/22/02

ATTACHMENT 7 PAGE 2 OF 4



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No.:	<u>300900</u>	Procedure Rev.:	<u>1</u>	Report No.:	<u>2002U055</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0200860</u>	Page:	<u>3</u> of <u>4</u>

45 deg

Scan 1	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 1
Scan 2	<u>100.000</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>100.000</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 = 50.000 % total for 45 deg

Other deg - 60 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 1
Scan 2	<u>100.000</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>100.000</u>	% total for Scan 2
Scan 3	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

50.0
75.000 % Total for complete exam
125.0
11-21-02

Site Field Supervisor:

Jan P. Wan

Date: 11-22-02

PAGE 3 OF 4

ATTACHMENT 7



Supplemental Report

Report No.: 2002U055
Page: 4 of 4

Summary No.: 300900

Examiner: Blechinger, Todd P.

Level: III

Reviewer: Clay, Sean P.

Date: 11-22-02

Examiner: N/A

Level: N/A

Site Review: Wren, Jerry P.

Date: 11-22-02

Other: N/A

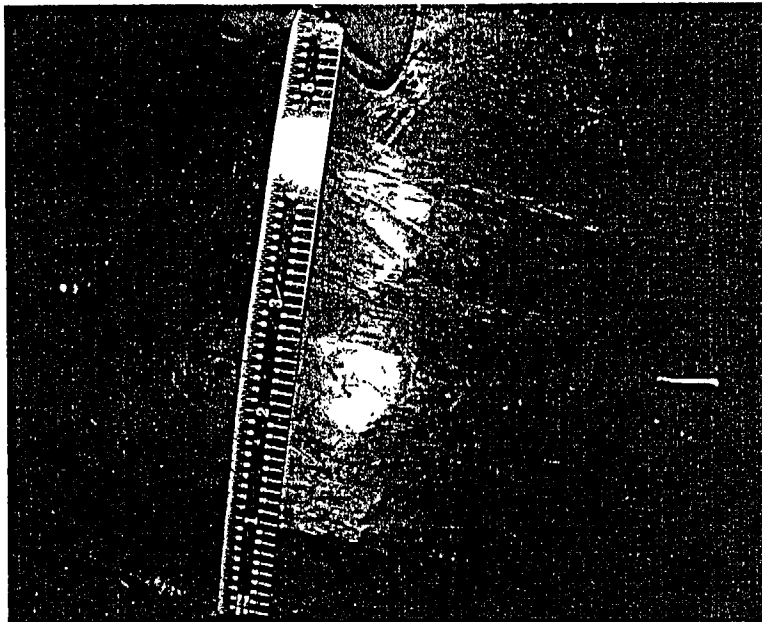
Level: N/A

ANII Review: Clow, Ron

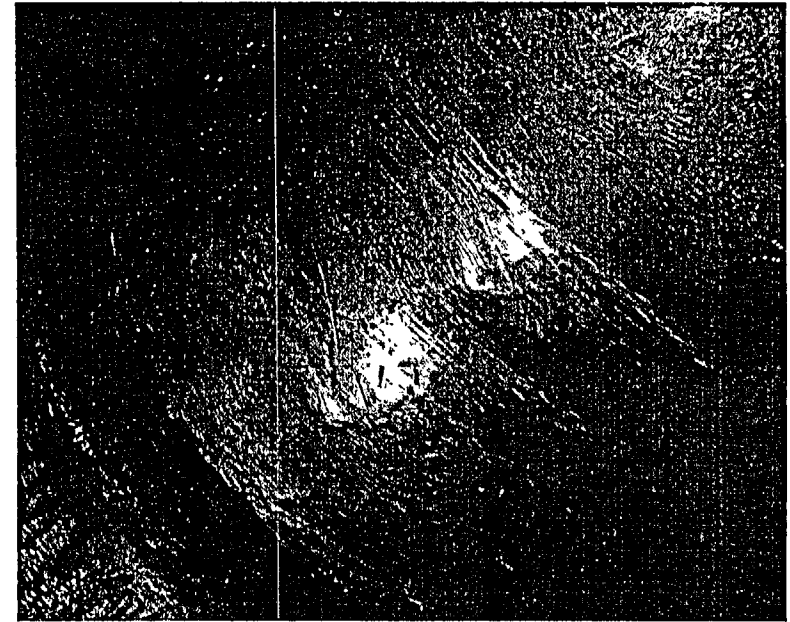
Date: 11/22/02

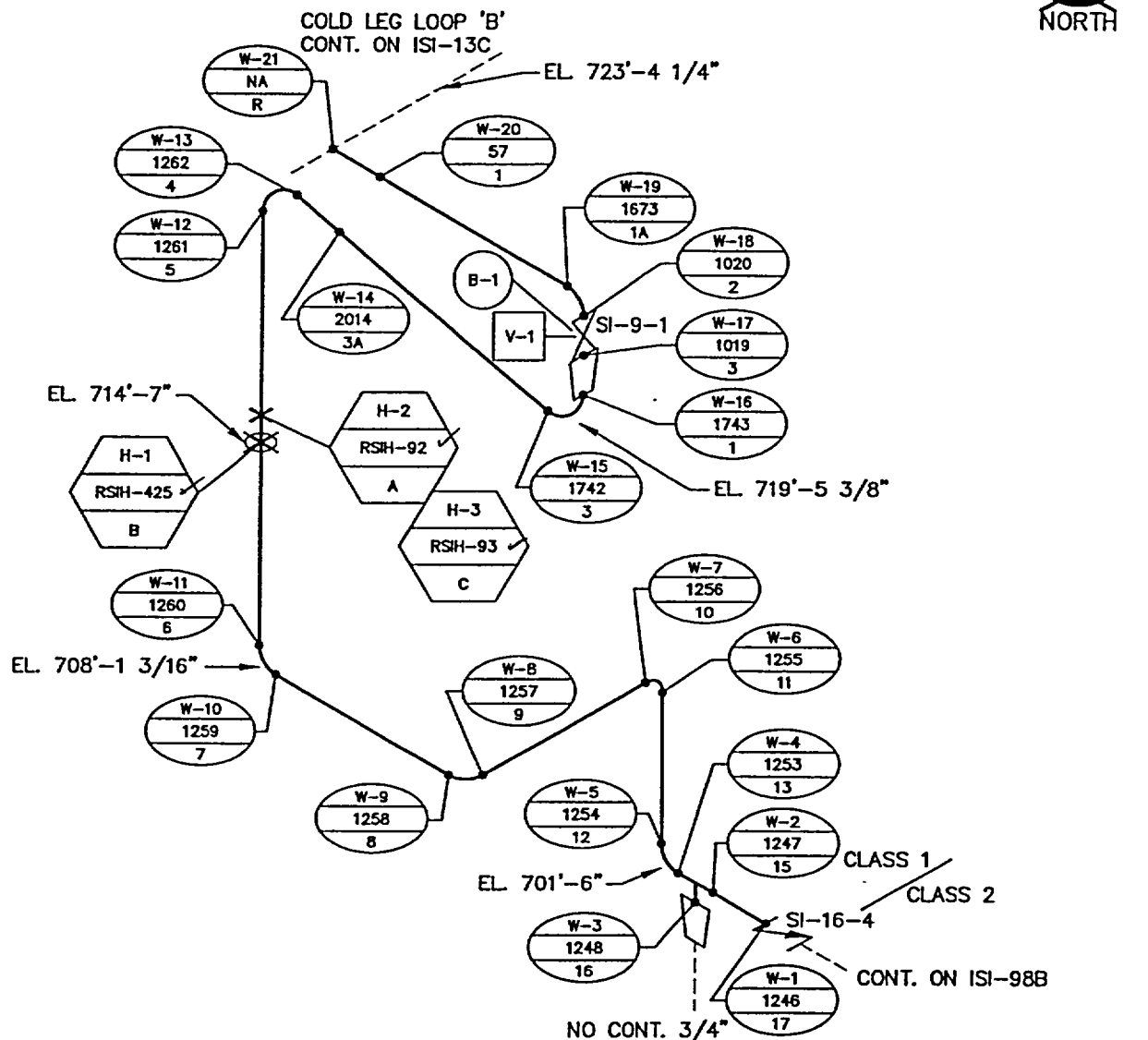
Comments: **None**

Sketch or Photo: J:\Ideas_Photos\PI1RFO2002\Misc Photos\bob\PIC00013.JPG

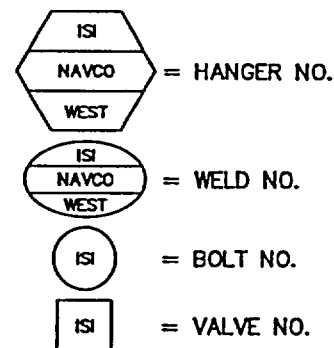


J:\Ideas_Photos\PI1RFO2002\Misc Photos\bob\PIC00010.JPG





6" & 2" SIS HIGH HEAD LOOP 'B'



XH-106-316
XH-106-1156
REF: XH-106-3978

FILE NO: 11124R04

NSP (M&SP) - PI 1	ISI
DWN: CADWorks CHKD: <i>PSW</i> APPD: <i>PSW</i>	
SYSTEM: SAFETY INJECTION	
LINE: 6-RC-13D, 2-SI-35B	
DWG: ISI-24	REV: 04



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 300656
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U062
Page: 1 of 4

Code: 1989 Code Cat.: B-J Location: Cont B Vault
Drawing No.: ISI-24 Description: NOZZLE TO PIPE
System ID: RC
Component ID: W-21 Size/Length: 1.2" / 31.0" Thickness/Diameter: 2.0" / 6.0"
Limitations: One sided exam, no axial scans on downstream side of weld. Start Time: 1536 Finish Time: 1612

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Blended
Lo Location: Datum "0" Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143
Temp. Tool Mfg.: Telatemp Serial No.: NSP 178 Surface Temp.: 80 °F

Cal. Report No.: 2002CA107

Angle Used	0	45	45T	60		
Scanning dB		53.0	59.0			

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

Comments:

None

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Knott, Brian	II		11/21/2002	Clay, Sean P.		11-26-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Stevermer, Aaron	II		11/21/2002	Wren, Jerry P.		11-27-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron		11/27/02



Supplemental Report

Report No.: 2002U062
Page: 2 of 4

Summary No.: 300656

Examiner: Knott, Brian *Brian D Knott*

Level: II

Reviewer: Clay, Sean P.

Date: 11-26-02

Examiner: Stevermer, Aaron *Aaron Stevermer*

Level: II

Site Review: Wren, Jerry P.

Date: 11-27-02

Other: N/A

Level: N/A

ANII Review: Clow, Ron

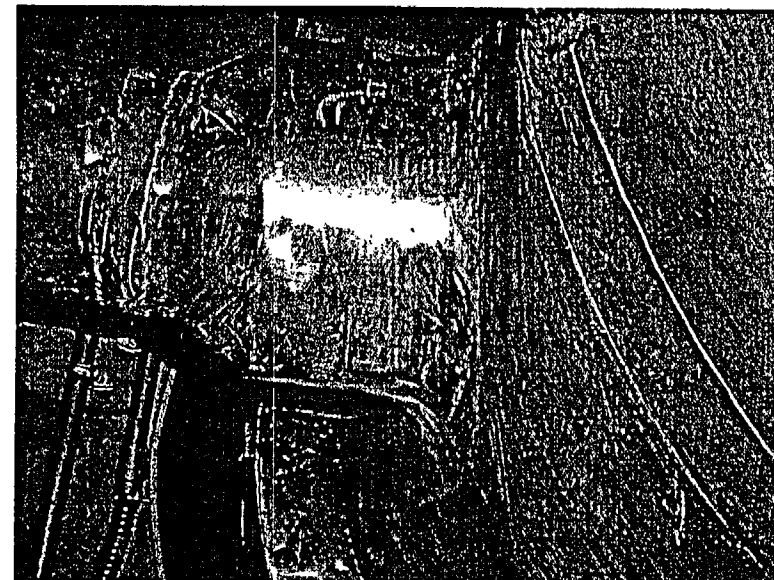
Date: 11/27/02

Comments: None

Sketch or Photo: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U062-1.jpg



J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U062-2.jpg





Limitation Record

Site/Unit: PNGP / P11
Summary No.: 300656
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

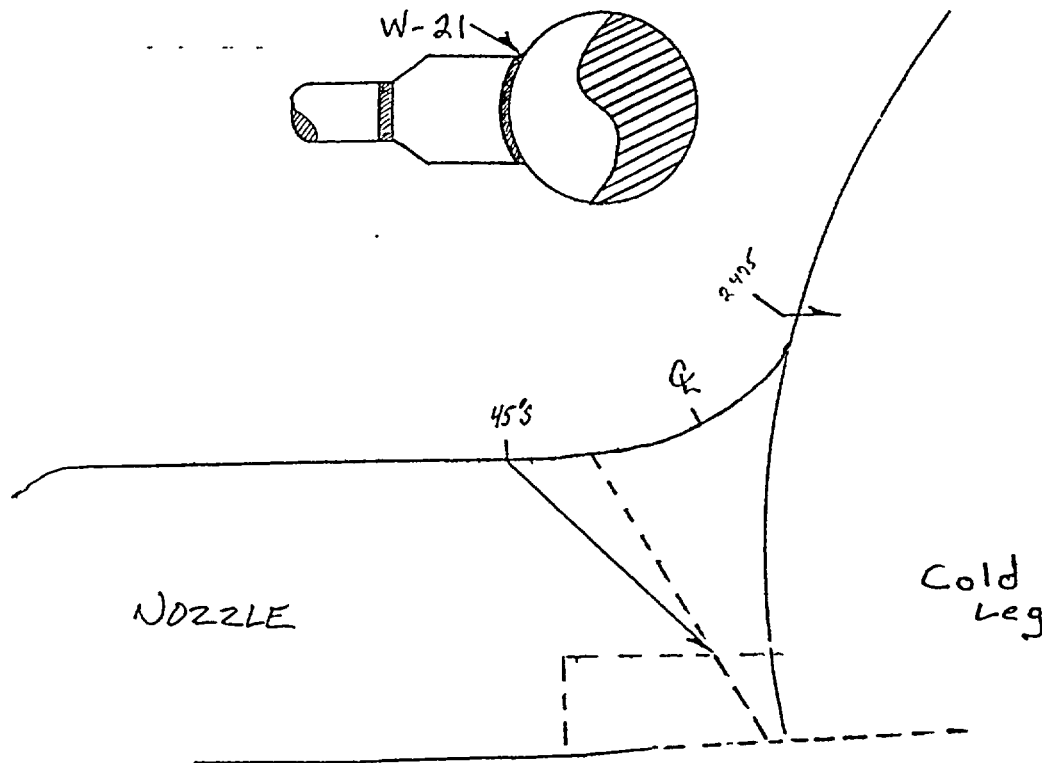
Outage No.: PI1RFO2002
Report No.: 2002U062
Page: 3 of 4

Description of Limitation:

No scans on hot leg side of the weld due to configuration and attenuation. No 60 degree RL performed due to technique limitations based on thickness and diameter considerations falling outside typical equipment parameters of PDI Table 1 document.

Sketch of Limitation.

J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U062-1.bmp



Limitations removal requirements:

Single sided exam - Although the examination was performed through 100% of the code required volume. Procedure ISI-UT-16A is not qualified for the detection of flaws on the far side of single side access exams. The techniques provided by this procedure were used for a best effort examination for flaws on the far side of the weld.

Radiation field: N/A

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Knott, Brian	II	<i>Brian Knott</i>	11/21/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-26-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Stevermer, Aaron	II	<i>Aaron Stevermer</i>	11/21/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	11-27-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron	<i>Ron Clow</i>	11/27/02

ATTACHMENT 9 PAGE 3 OF 4



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: PNGP / PI1
Summary No.: 300656
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U062
Page. 4 of 4

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>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 = 50.000 % total for 45 deg

Other deg - 0 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</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>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

50.000 % Total for complete exam

Site Field Supervisor: 

Date: 11-26-02

PAGE 4 OF 4

ATTACHMENT 9



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 300654
Workslope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U063
Page: 1 of 3

Code: 1989 Code Cat.: B-J Location: Cont B Vault
Drawing No.: ISI-24 Description: VALVE - ELBOW
System ID: RC
Component ID: W-18 Size/Length: 1.35" / 21.0" Thickness/Diameter: .7" / 6.0"
Limitations: One sided exam, no axial or circ scans on valve side due to configuration. Start Time: 1520 Finish Time: 1534

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Flat Topped
Lo Location: Datum "0" Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143
Temp. Tool Mfg.: Telatemp Serial No.: NSP 178 Surface Temp.: 80 °F

Cal. Report No.: 2002CA108, 2002CA121

Angle Used	0	45	45T	60		
Scanning dB		30.1	36.1	76.1		

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

Comments:

RL Examination performed on 11/24/2002. Exam times are 1018 - 1028.

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: No

Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Knott, Brian	II	<i>Brian D. Knott</i>	11/21/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-26-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Stevermer, Aaron	II	<i>Aaron Stevermer</i>	11/21/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	11-28-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron	<i>Ron Clow</i>	11/25/02



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 300654
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

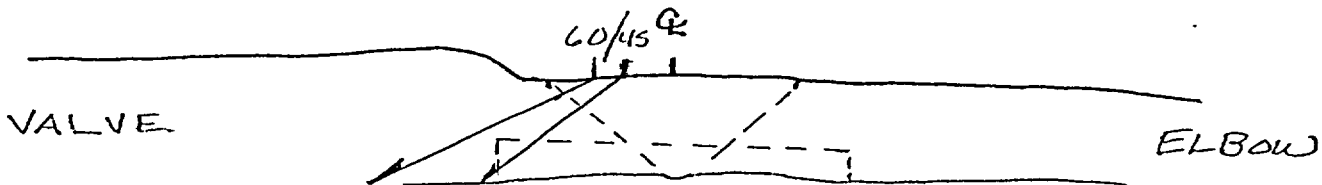
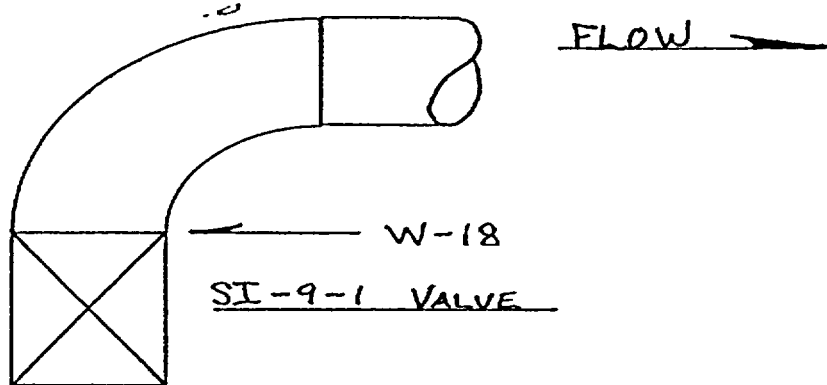
Outage No.: PI1RFO2002
Report No.: 2002U063
Page: 2 of 3

Description of Limitation:

No upstream scan 1 due to upstream valve SI-9-1.

Sketch of Limitation:

J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U063-1.bmp



Limitations removal requirements:

Single sided exam - Although the examination was performed through 100% of the code required volume. Procedure ISI-UT-16A is not qualified for the detection of flaws on the far side of single side access exams. The techniques provided by this procedure were used for a best effort examination for flaws on the far side of the weld.

Radiation field. N/A

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Knott, Brian	II	<i>Brian D. Knott</i>	11/21/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-26-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Stevermer, Aaron	II	<i>Aaron Stevermer</i>	11/21/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	11-26-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron	<i>Ron Clow</i>	11/29/02

ATTACHMENT 10 PAGE 2 OF 3



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No.:	<u>300654</u>	Procedure Rev.:	<u>1</u>	Report No.:	<u>2002U063</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0200860</u>	Page:	<u>3</u> of <u>3</u>

45 deg

Scan 1	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 1
Scan 2	<u>100.000</u>	% Length X	<u>50.000</u>	% volume of length / 100 =	<u>50.000</u>	% total for Scan 2
Scan 3	<u>50.000</u>	% Length X	<u>50.000</u>	% volume of length / 100 =	<u>25.000</u>	% total for Scan 3
Scan 4	<u>50.000</u>	% Length X	<u>50.000</u>	% volume of length / 100 =	<u>25.000</u>	% total for Scan 4

Add totals and divide by # scans = 25.000 % total for 45 deg

Other deg - 60 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 1
Scan 2	<u>100.000</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>100.000</u>	% total for Scan 2
Scan 3	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

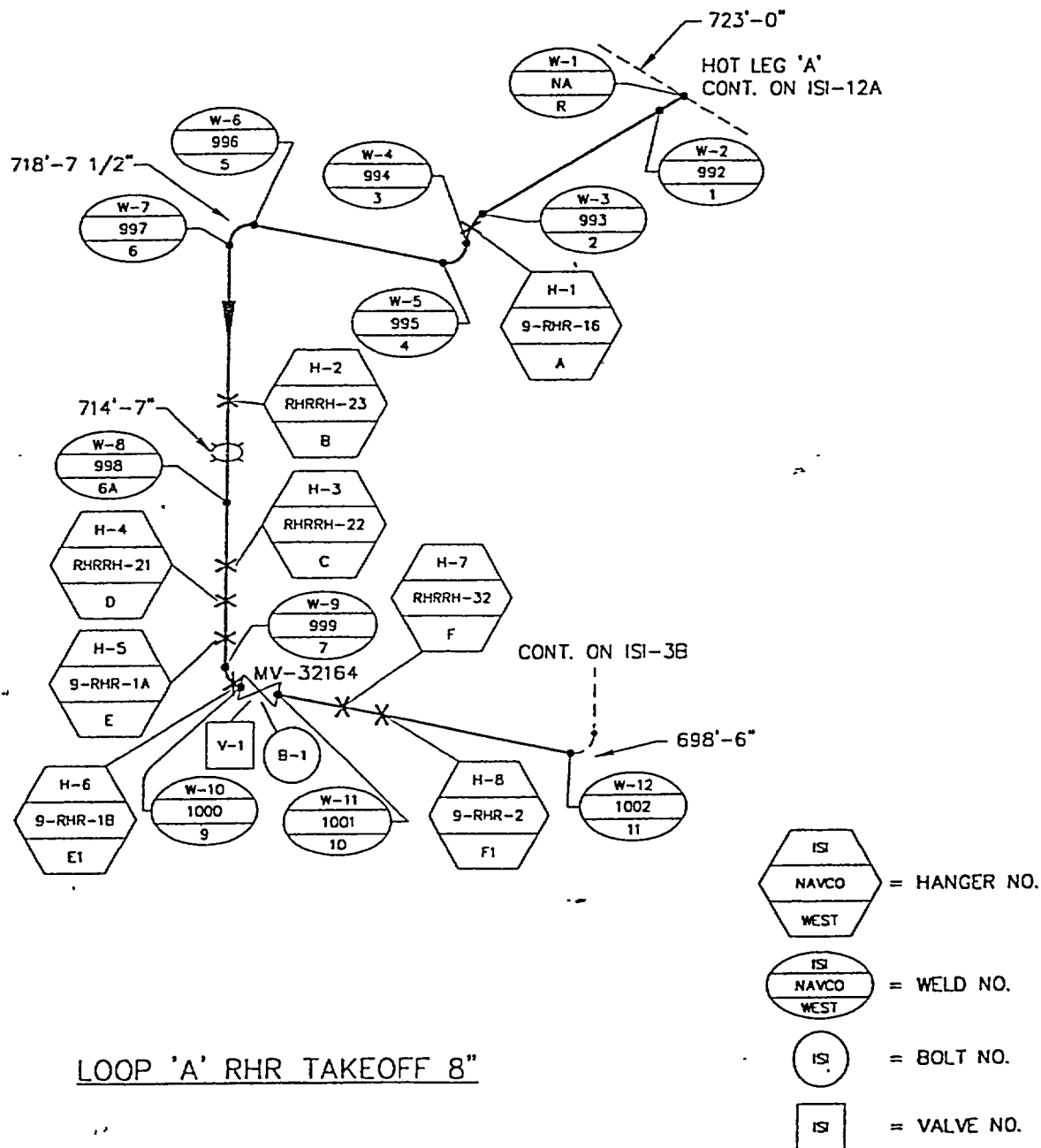
50.000 % Total for complete exam

Site Field Supervisor:

Greg P. W. III

Date: 11-26-02

PAGE 3 OF 3
ATTACHMENT 10



LOOP 'A' RHR TAKEOFF 8"

REF: XH-106-323

FILE NO: 1113AR04

ISP (M&SP)-PI 1

ISI

DWN: CADWorks CHKD: *PK* APPD: *TY*

SYSTEM: RESIDUAL HEAT REMOVAL

LINE: 8-RH-1A, 8-RC-15A

DWG: ISI-3A

REV: 04



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 300159
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U064
Page: 1 of 4

Code: 1989 Code Cat.: B-J Location: Cont A Vault
Drawing No.: ISI-3A Description: NOZZLE - PIPE
System ID: RC
Component ID: W-1 Size/Length: 2.2" / 40" Thickness/Diameter: 2.4" / 8"
Limitations: See Comments. Start Time: 1703 Finish Time: 1720

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Blended
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143
Temp. Tool Mfg.: Telatemp Serial No.: NSP 134 Surface Temp.: 95 °F

Cal. Report No.: 2002CA110

Angle Used	0	45	45T	60		
Scanning dB		67.6	67.6			

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

Comments:

Technique limitations encountered due to joint thickness and diameter. No scans on hot leg side of weld 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
Blechlner, Todd P.			<i>Todd P. Blechlner</i>	11/21/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-24-02
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Thomas, Travis			<i>Travis Thomas</i>	11/21/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	11-24-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	11/26/02

ATTACHMENT 12 PAGE 1 OF 4



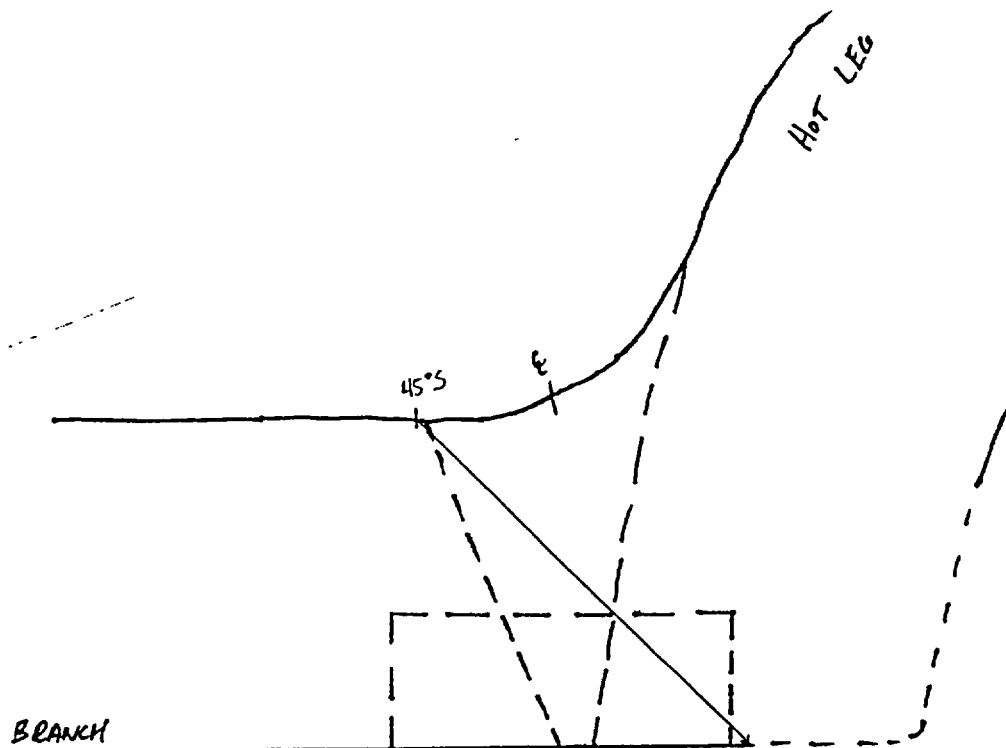
Limitation Record

Site/Unit:	PNGP / PI1	Procedure:	ISI-UT-16A	Outage No.:	PI1RFO2002
Summary No.:	300159	Procedure Rev.:	1	Report No.:	2002U064
Workscope:	ISI	Work Order No.:	0200860	Page:	2 of 4

Description of Limitation:

No scans on hot leg side of weld due to material attenuation and joint configuration. No 60 degree RL exam performed due to technique limitations based on thickness and diameter considerations falling outside typical equipment parameters of PDI Table 1 document.

Sketch of Limitation: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U064-1 bmp



Limitations removal requirements:

gan 3-5-03
~~None~~ Single sided exam - Although the examination was performed through 100% of Code required volume, Procedure ISI-UT-16A is not qualified for the detection of flaws on the far side of single side access exams. The techniques provided by this Procedure were used for a best effort examination for flaws on the far side of the weld.

Radiation field: 80 mR

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Blechninger, Todd P.			<i>Todd P. Blechninger</i>	11/21/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-24-02
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Thomas, Travis			<i>Travis Thomas</i>	11/21/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	11-24-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	11/26/02

ATTACHMENT 12 PAGE 2 OF 4



Supplemental Report

Report No.: 2002U064
Page: 3 of 4

Summary No.: 300159

Examiner: Blechinger, Todd P.

Level: III

Reviewer: Clay, Sean P.

Date: 11-24-02

Examiner: Thomas, Travis

Level: II

Site Review: Wren, Jerry P.

Date: 11-24-02

Other: N/A

Level: N/A

ANII Review: Clow, Ron

Date: 11/26/02

Comments: None

Sketch or Photo: J:\Ideas_Photos\PI1RFO2002\UT Photos\2002U064-1.jpg



J:\Ideas_Photos\PI1RFO2002\UT Photos\2002U064-2.jpg





Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No.:	<u>300159</u>	Procedure Rev.:	<u>1</u>	Report No.:	<u>2002U064</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0200860</u>	Page:	<u>4</u> of <u>4</u>

45 deg

Scan 1	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 1
Scan 2	<u>100.000</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>100.000</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 = 50.000 % total for 45 deg

Other deg - 0 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</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>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

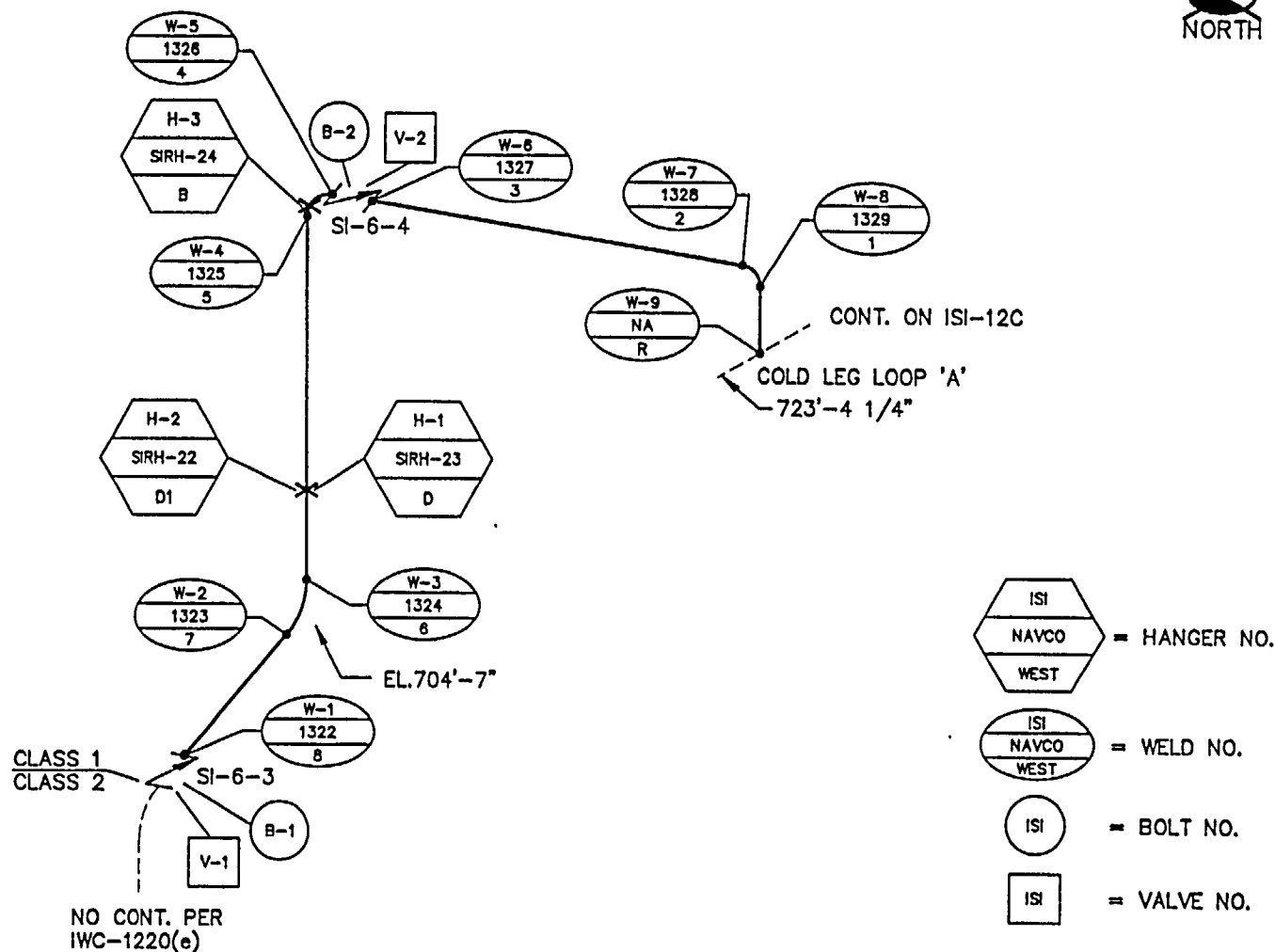
50.000 % Total for complete exam

Site Field Supervisor:

Jerry P. [Signature] LV. III

Date: 11-24-02

ATTACHMENT 12 PAGE 4 OF 4



12" ACCUMULATOR DISCHARGE

REF: XH-106-327

FILE NO: 1ISI2R04

NSP (M&SP)- PI 1	ISI
DWN: TJH	CHKD: <i>OSW</i> APPD: <i>OSW</i>
SYSTEM: SAFETY INJECTION	
LINE: 12-SI-27A, 12-RC-16A	
DWG: ISI-2	REV: 04

ISI-2



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 300136
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U066
Page: 1 of 3

Code: 1989 Code Cat.: B-J Location: Cont A Vault
Drawing No.: ISI-2 Description: NOZZLE - PIPE
System ID: RC
Component ID: W-9 Size/Length: 2.8" / 52.5" Thickness/Diameter: 2.8" / 12"
Limitations: No scans on branch due to configuration. Start Time: 1609 Finish Time: 1629

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Blended
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143
Temp. Tool Mfg.: Telatemp Serial No.: NSP 178 Surface Temp.: 80 °F

Cal. Report No.: 2002CA112

Angle Used	0	45	45T	60		
Scanning dB		64.0	70.0			

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

Comments:

See attached limitation record.

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Thomas, Travis		<i>Travis Thomas</i>	11/22/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-24-02
Examiner	Level IIR	Signature	Date	Site Review	Signature	Date
VanRuler, Christopher D.		<i>Chris VanRuler</i>	11/22/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	11-27-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>Ron Clow</i>	11/27/02



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 300136
Workscope: ISI

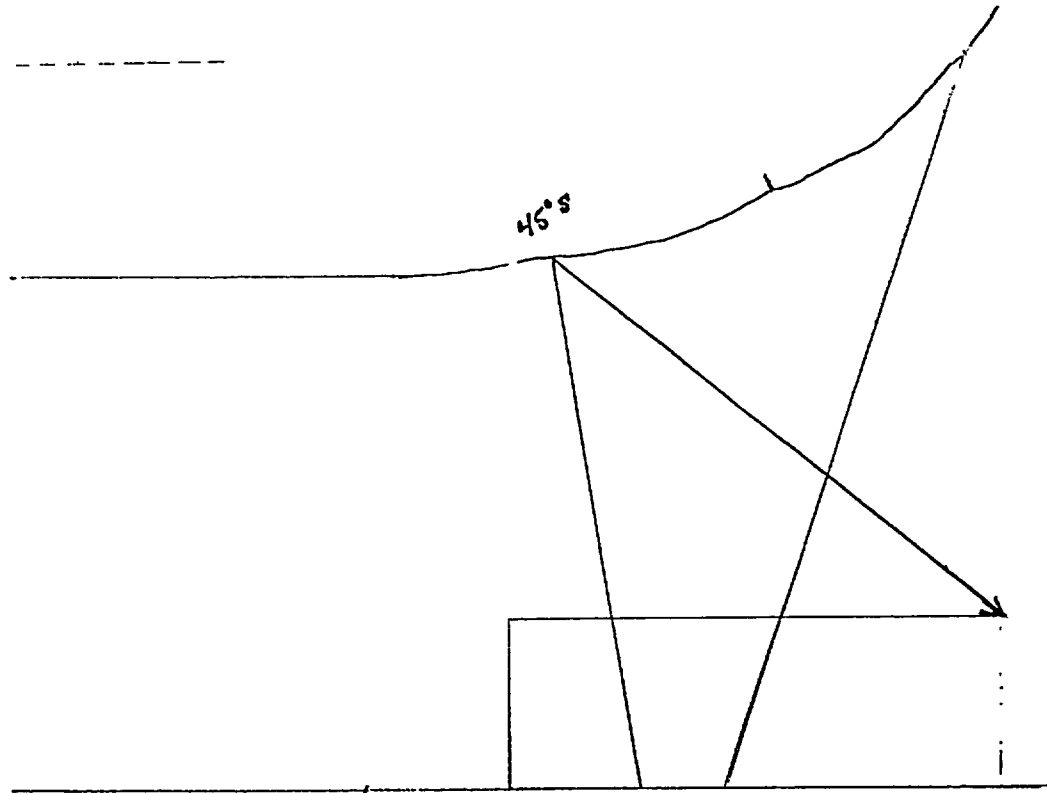
Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U066
Page: 2 of 3

Description of Limitation:

No scans on cold leg side of weld due to material attenuation and joint configuration. No 60 degree RL exam performed due to technique limitations based on thickness and diameter considerations falling outside typical equipment parameters of PDI Table 1 document.

Sketch of Limitation: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U066-1.bmp



Limitations removal requirements:

3-5-03
N/A Single sided exam - Although the examination was performed through 100% of the code required volume, Procedure ISI-UT-16A is not qualified for the detection of flaws on the far side of single sided access exams. The techniques provided by this procedure were used for a best effort examination for flaws on the far side of the weld.

Radiation field: 135 mR/hr - General Area

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Thomas, Travis		<i>Travis Thomas</i>	11/22/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-24-02
Examiner	Level IIR	Signature	Date	Site Review	Signature	Date
VanRuler, Christopher D.		<i>Chris VanRuler</i>	11/22/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	11-25-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>Ron Clow</i>	11/23/02

ATTACHMENT 14 PAGE 2 OF 3



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No.:	<u>300136</u>	Procedure Rev.:	<u>1</u>	Report No.:	<u>2002U066</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0200860</u>	Page:	<u>3</u> of <u>3</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>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 = 50.000 % total for 45 deg

Other deg - 0 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</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>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

50.000 % Total for complete exam

Site Field Supervisor: 

Date: 11-24-02

PAGE 3 OF 3
ATTACHMENT 14



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 300148
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U067
Page: 1 of 4

Code: 1989 Code Cat.: B-J Location: Cont A Vault
Drawing No.: ISI-3A Description: NOZZLE - PIPE
System ID: RC
Component ID: W-2 Size/Length: .9" / 27" Thickness/Diameter: .8" / 8"
Limitations: No scans on nozzle side due to configuration. Start Time: 1645 Finish Time: 1701

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Blended
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143
Temp. Tool Mfg.: Telatemp Serial No.: NSP 134 Surface Temp.: 95 °F

Cal. Report No.: 2002CA113, 2002CA114

Angle Used	0	45	45T	60		
Scanning dB		46.0	52.0	78.0		

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

Comments:

None

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.			<i>Todd P. Blechinger</i>	11/21/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-24-02
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Thomas, Travis			<i>Travis Thomas</i>	11/21/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	11-25-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	11/26/02

ATTACHMENT 15 PAGE 1 OF 4



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 300148
Workscope: ISI

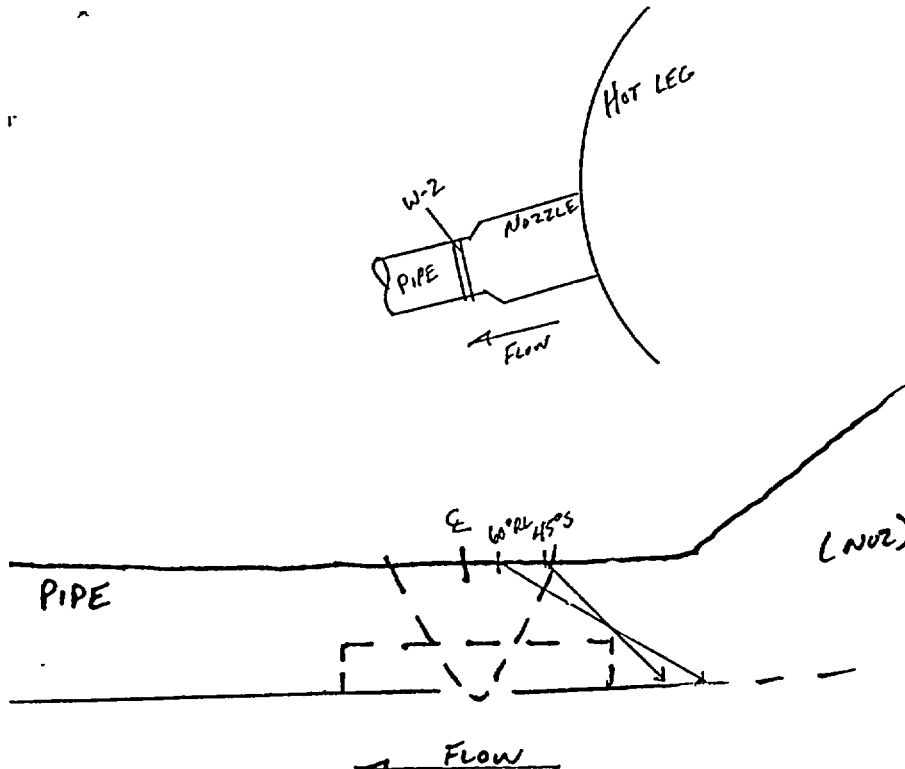
Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U067
Page: 2 of 4

Description of Limitation:

No scans on nozzle side due to configuration.

Sketch of Limitation: J:\Ideas_Photos\PI1RFO2002\UT Photos\2002U067-1 bmp



Limitations removal requirements:

Single sided exam - Although the examination was performed through 100% of the code required volume. Procedure ISI-UT-16A is not qualified for the detection of flaws on the far side of single side access exams. The techniques provided by this procedure were used for a best effort examination for flaws on the far side of the weld.

Radiation field: N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Blechniger, Todd P.			<i>Todd P. Blechniger</i>	11/21/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-24-02
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Thomas, Travis			<i>Travis Thomas</i>	11/21/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	11-25-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	11/26/02

ATTACHMENT 15 PAGE 2 OF 4



Supplemental Report

Report No.: 2002U067

Page: 3 of 4

Summary No.: 300148

Examiner: Blechinger, Todd P.

Level: III

Reviewer: Clay, Sean P.

Date: 11-24-02

Examiner: Thomas, Travis

Level: II

Site Review Wren, Jerry P.

Date: 11-25-02

Other: N/A

Level: N/A

ANII Review Clow, Ron

Date: 11/26/02

Comments: **None**

Sketch or Photo: J:\ddeal_Photos\PI1RFO2002\UT Photos\2002U067-1.jpg



PAGE 3 OF 4
ATTACHMENT 15



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No.:	<u>300148</u>	Procedure Rev.:	<u>1</u>	Report No.:	<u>2002U067</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0200860</u>	Page:	<u>4</u> of <u>4</u>

45 deg

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

Add totals and divide by # scans = 75.000 % total for 45 deg

Other deg - 60 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 1
Scan 2	<u>100.000</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>100.000</u>	% total for Scan 2
Scan 3	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

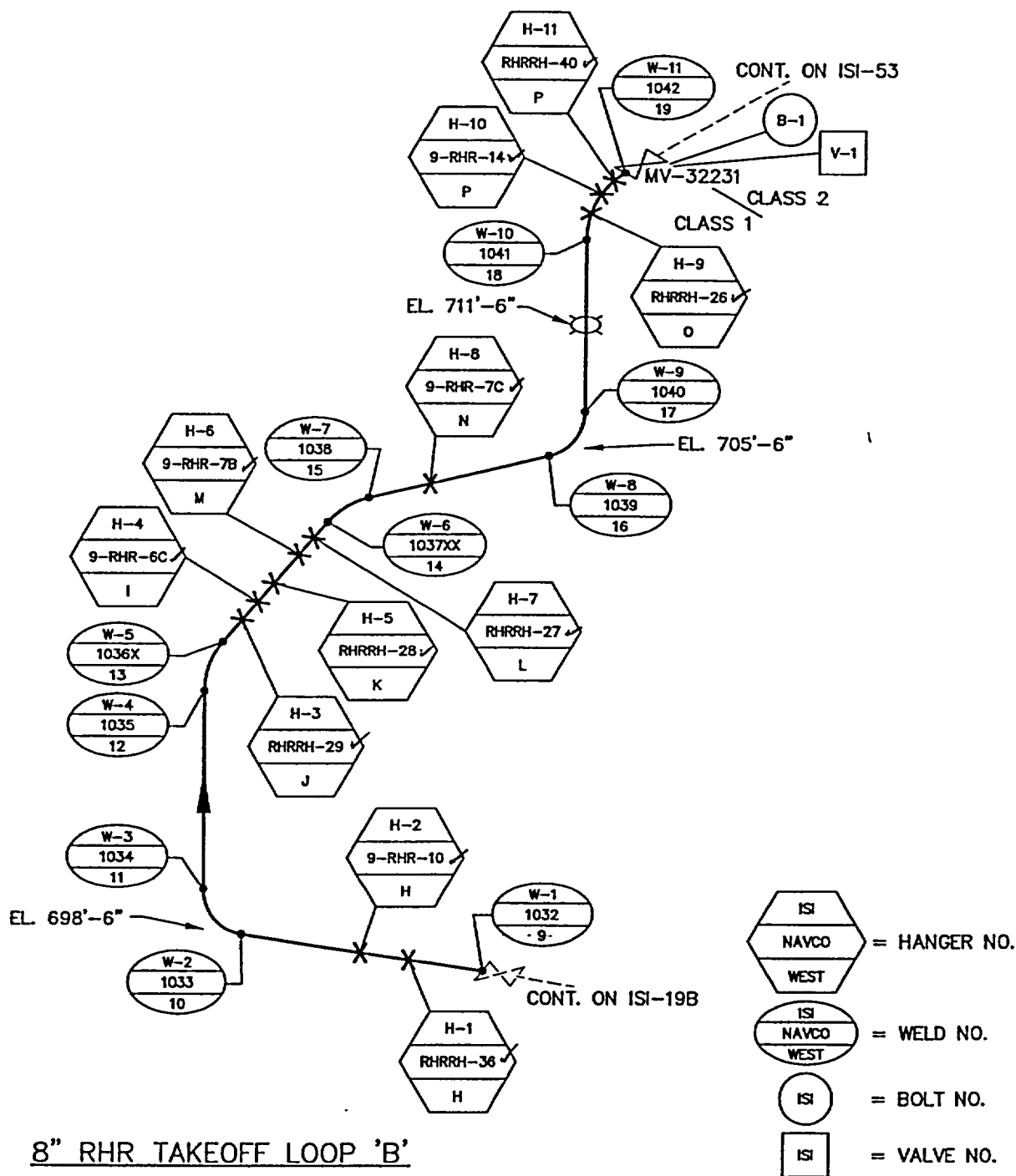
75%
~~100.000~~ % Total for complete exam
75% 11-23-02

Site Field Supervisor: Jean P. Wm

Date: 11-24-02

PAGE 4 OF 4

ATTACHMENT 15



8" RHR TAKEOFF LOOP 'B'

REF: XH-106-323

FILE NO: 1119AR04

NSP (M&SP) - PI 1	ISI
DWN: CADWorks CHKD: <i>DSW</i>	APPD: <i>DSW</i>
SYSTEM: RESIDUAL HEAT REMOVAL	
LINE: 8-RH-1B	
DWG: ISI-19A	REV: 04



UT Pipe Weld Examination

47

Site/Unit: PNGP / PI1
Summary No.: 300649
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U068
Page: 1 of 4

Code: 1989 Code Cat.: B-J Location: Cont 695
Drawing No.: ISI-19A Description: VALVE - PIPE
System ID: ~~RG~~ RH ⁰² 03-5-03
Component ID: W-1 Size/Length: .8" / 27" Thickness/Diameter: .8" / 8"
Limitations: No scans on valve side due to configuration, 1" drain line at BDC. Start Time: 1516 Finish Time: 1532

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Blended
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143
Temp. Tool Mfg.: Telatemp Serial No.: NSP 134 Surface Temp.: 95 °F

Cal. Report No.: 2002CA113, 2002CA114

Angle Used	0	45	45T	60		
Scanning dB		46.0	52.0	78.0		

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

Comments:

None

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: No

Reviewed Previous Data: Yes

Examiner Level III Blechinger, Todd P.	Signature <i>T. Blechinger</i>	Date 11/21/2002	Reviewer Clay, Sean P.	Signature <i>Sean P. Clay</i>	Date 11-24-02
Examiner Level II Thomas, Travis	Signature <i>Travis Thomas</i>	Date 11/21/2002	Site Review Wren, Jerry P.	Signature <i>Jerry P. Wren</i>	Date 11-27-02
Other Level N/A N/A	Signature	Date	ANII Review Clow, Ron	Signature <i>Ron Clow</i>	Date 11/27/02

ATTACHMENT 17 PAGE 1 OF 4



Supplemental Report

Report No.: 2002U068
Page: 2 of 4

Summary No.: 300649

Examiner: Bleching, Todd P.

Level: III

Reviewer: Clay, Sean P.

Date: 11-24-02

Examiner: Thomas, Travis

Level: II

Site Review: Wren, Jerry P.

Date: 11-27-02

Other: N/A

Level: N/A

ANII Review: Clow, Ron

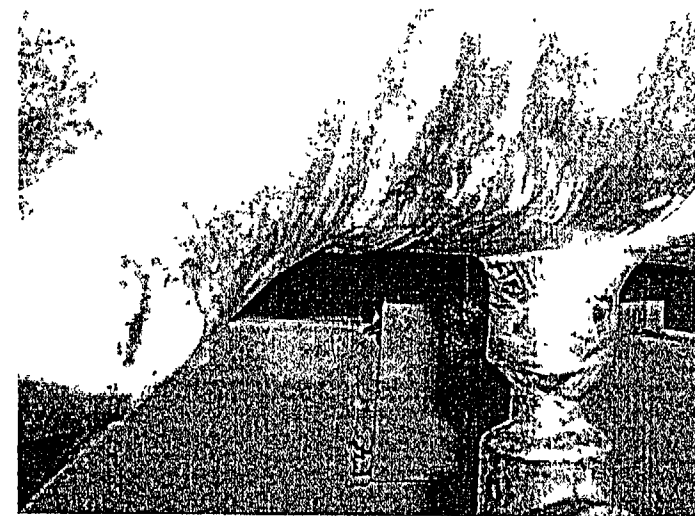
Date: 11/27/02

Comments: None

Sketch or Photo: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U068-1.jpg



J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U068-2.jpg





Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 300649
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

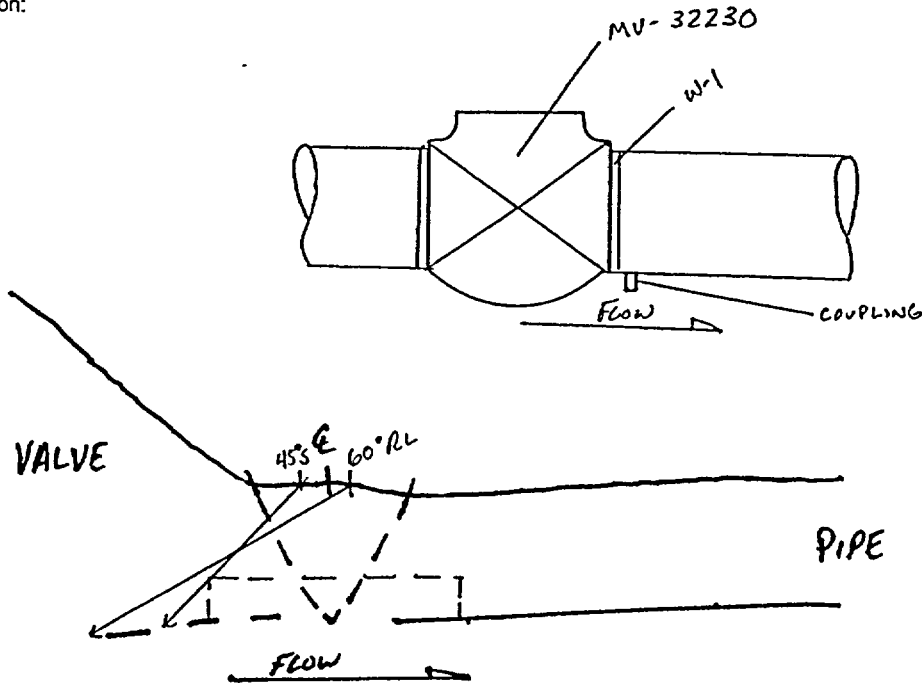
Outage No.: PI1RFO2002
Report No.: 2002U068
Page: 3 of 4

Description of Limitation:

No scans on valve side due to configuration. Coupling located at bottom dead center 1.3" from weld toe limits downstream scan for 2".

Sketch of Limitation:
ion:

J:\ddeal_Photos\PI1RFO2002\UT Photos\2002U068-3 bmp



Limitations removal requirements:

Single sided exam - Although the examination was performed through 100% of the code required volume. Procedure ISI-UT-16A is not qualified for the detection of flaws on the far side of single side access exams. The techniques provided by this procedure were used for a best effort examination for flaws on the far side of the weld.

Radiation field. N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Bleching, Todd P.			<i>T.P. Bleching</i>	11/21/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-24-02
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Thomas, Travis			<i>Travis Thomas</i>	11/21/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	11-27-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	11/27/02

ATTACHMENT 17 PAGE 3 OF 4



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No.:	<u>300649</u>	Procedure Rev.:	<u>1</u>	Report No.:	<u>2002U068</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0200860</u>	Page	<u>4</u> of <u>4</u>

45 deg

Scan 1	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 1
Scan 2	<u>92.600</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>92.600</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 = 48.150 % total for 45 deg

Other deg - 60 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 1
Scan 2	<u>92.600</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>92.600</u>	% total for Scan 2
Scan 3	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

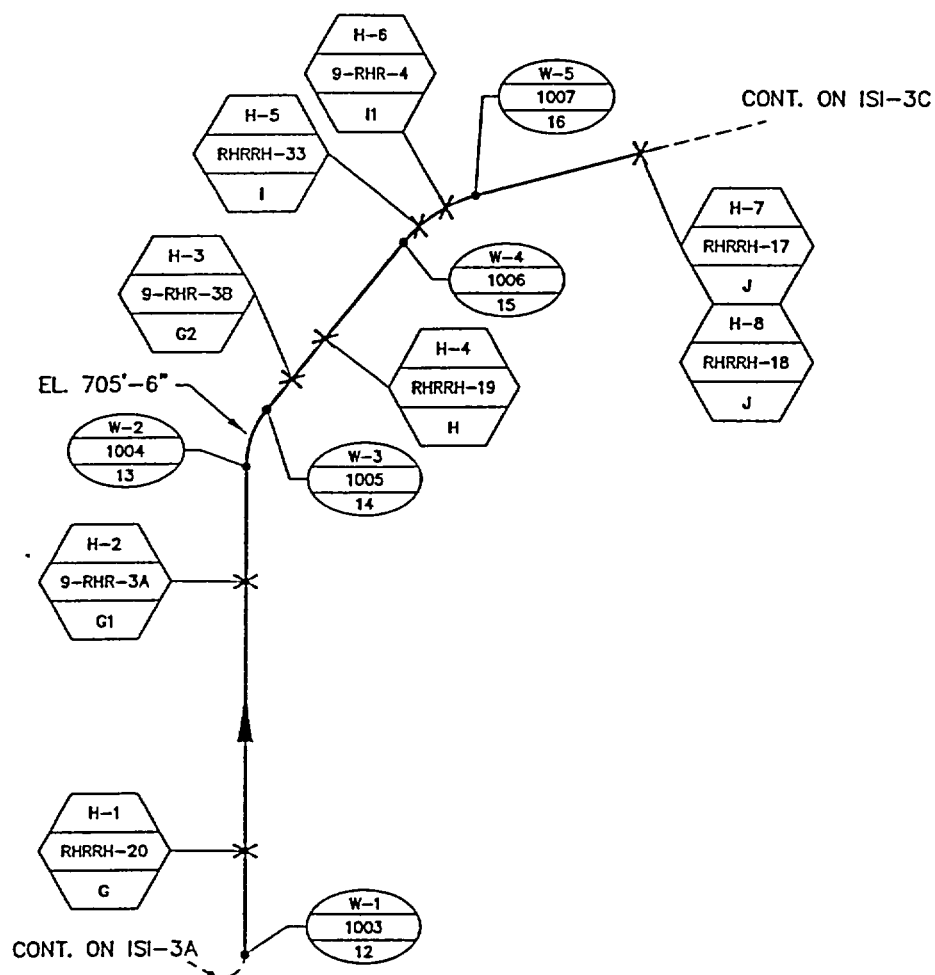
48.15
71.300 % Total for complete exam
978 11-24-02

Site Field Supervisor:

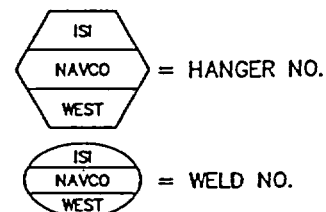
[Signature]

Date: 11-24-02

ATTACHMENT 17
PAGE 4 OF 4



LOOP 'A' RHR TAKEOFF 8"



REF: XH-106-323

FILE NO: 1113BR03

NSP (M&SP)-PI 1

ISI

DWN: CADWorks CHKD: *CHK* APPD: *M*

SYSTEM: RESIDUAL HEAT REMOVAL

LINE: 8-RH-1A

DWG: ISI-3B

REV: 03



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 300171
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U069
Page: 1 of 4

Code: 1989 Code Cat.: B-J Location: Cont 695
Drawing No.: ISI-3B Description: ELBOW - PIPE
System ID: RH
Component ID: W-1 Size/Length: 1.0" / 27" Thickness/Diameter: .8" / 8"
Limitations: Welded supports located at 90 degrees and 270 degrees. Start Time: 1606 Finish Time: 1626

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Blended
Lo Location: Extradose of Elbow Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143
Temp. Tool Mfg.: Telatemp Serial No.: NSP 134 Surface Temp.: 95 °F
Cal. Report No.: 2002CA113, 2002CA114

Angle Used	0	45	45T	60		
Scanning dB		46.0	52.0	78.0		

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

Comments:

60 Degree RL performed in areas of limitations only.

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner Level III Blechlger, Todd P.	Signature <i>T. Blechlger</i>	Date 11/21/2002	Reviewer Clay, Sean P.	Signature <i>Sean P. Clay</i>	Date 11-24-02
Examiner Level II Thomas, Travis	Signature <i>Travis Thomas</i>	Date 11/21/2002	Site Review Wren, Jerry P.	Signature <i>Jerry P. Wren</i>	Date 11-25-02
Other Level N/A N/A	Signature	Date	ANII Review Clow, Ron	Signature <i>Ron Clow</i>	Date 11/26/02



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 300171
Workscope: ISI

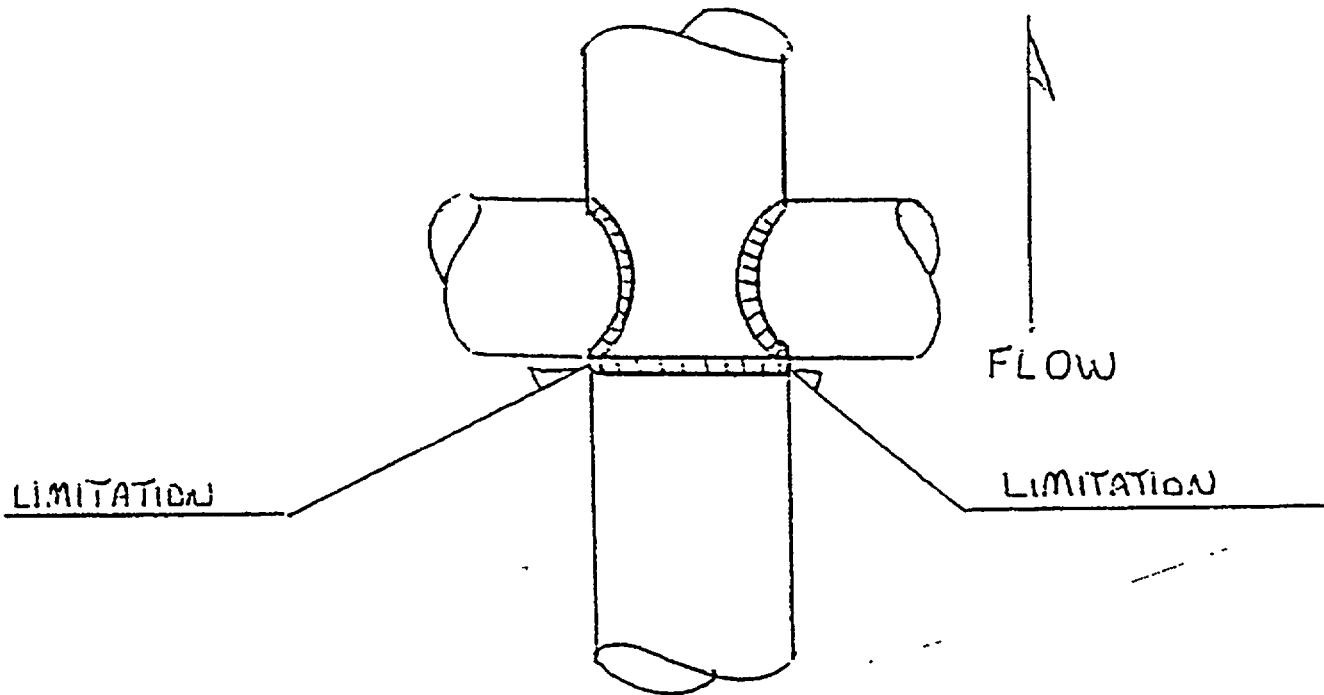
Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U069
Page: 2 of 4

Description of Limitation:

Welded support limits exam at 90 degrees and 270 degrees for 5" at each location on the downstream scan and 4.5" at each location on the downstream side for the CW and CCW scans.

Sketch of Limitation: J:\Ideas_Photos\PI1RFO2002\UT Photos\2002U069-1.bmp



Limitations removal requirements:

None

Radiation field: 20 mR

Examiner	Level III	Signature	Date	Reviewer	Signature	Date
Blechninger, Todd P.		<i>Todd P. Blechninger</i>	11/21/2002	Clay, Sean P.	<i>Sean P. Clay</i> LVIII	11-24-02
Examiner	Level II	Signature	Date	Site Review	Signature	Date
Thomas, Travis		<i>Travis Thomas</i>	11/21/2002	Wren, Jerry P.	<i>Jerry P. Wren</i> LVIII	11-25-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>Ron Clow</i>	11/26/02

ATTACHMENT 19 PAGE 2 OF 4



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No.:	<u>300171</u>	Procedure Rev.:	<u>1</u>	Report No.:	<u>2002U069</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0200860</u>	Page:	<u>3</u> of <u>4</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>63.000</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>63.000</u>	% total for Scan 2
Scan 3	<u>100.000</u>	% Length X	<u>91.600</u>	% volume of length / 100 =	<u>91.600</u>	% total for Scan 3
Scan 4	<u>100.000</u>	% Length X	<u>91.600</u>	% volume of length / 100 =	<u>91.600</u>	% total for Scan 4

Add totals and divide by # scans = 86.550 % total for 45 deg

Other deg - 0 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</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>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

86.550 % Total for complete exam

Site Field Supervisor:

Date: 11-24-02

ATTACHMENT 19 PAGE 3 OF 4



Supplemental Report

Report No.: 2002U069

Page: 4 of 4

Summary No.: 300171

Examiner: Blechinger, Todd P.

Level: III

Reviewer: Clay, Sean P.

Date: 11-25-02

Examiner: Thomas, Travis

Level: II

Site Review: Wren, Jerry P.

Date: 11-25-02

Other: N/A

Level: N/A

ANII Review: Clow, Ron

Date: 11/26/02

Comments: None

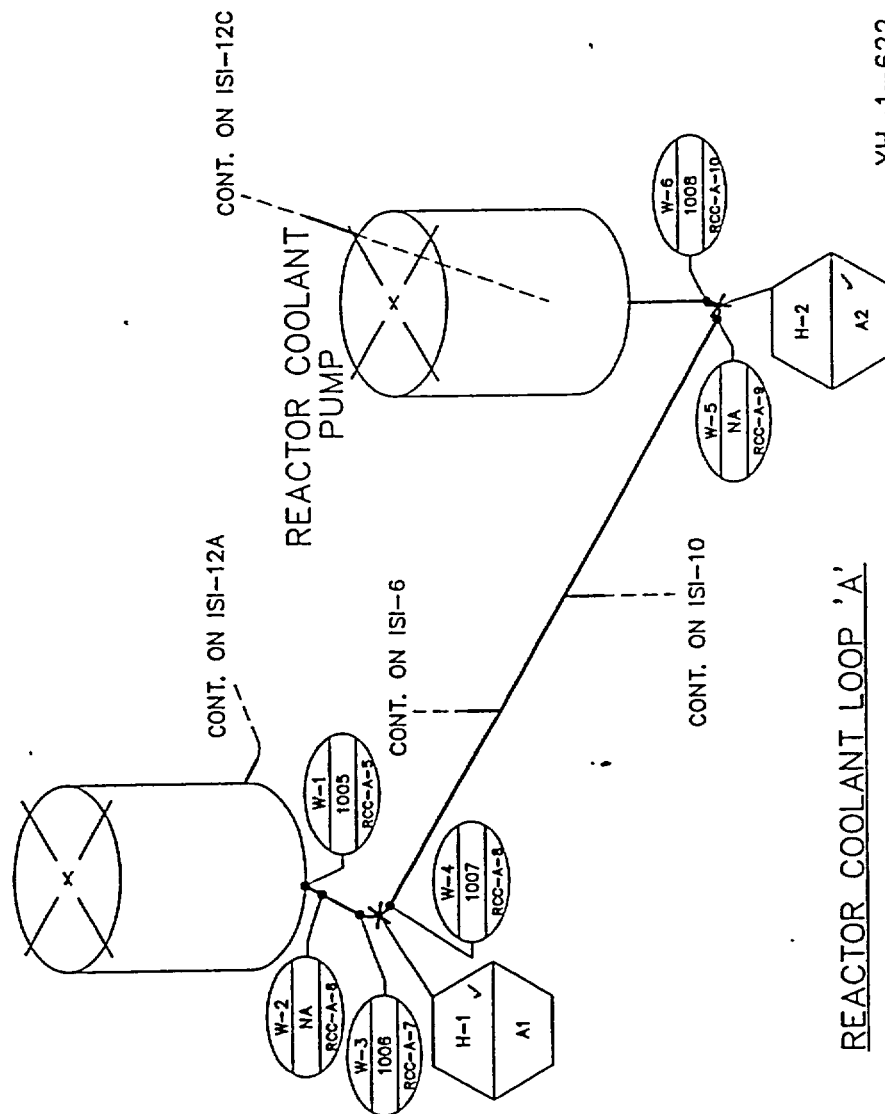
Sketch or Photo: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U069-1.jpg



ATTACHMENT 19 PAGE 4 OF 4



STEAM GENERATOR



XH-1-622
REF: XH-1-104

NSP

(M&SP) - PI 1

DWN: CADWorks CHKD: *MC* APPD: *TY*

SYSTEM: REACTOR COOLANT

LINE: 31-RC-2A

DWG: ISI-12B

REV: 01

FILE NO: 1112BR01

ISI

APPD: *TY*

SYSTEM: REACTOR COOLANT

LINE: 31-RC-2A

DWG: ISI-12B

REV: 01

ISI-12B



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 300527
Workscope: ISI

Procedure: ISI-UT-11A
Procedure Rev.: 4
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U076
Page: 1 of 5

Code: 1989 Code Cat.: B-J Location: Cont A Vault
Drawing No.: ISI-12B Description: ELBOW - PUMP
System ID: RC
Component ID: W-6LS2U Size/Length: 2.0" / 118" Thickness/Diameter: 2.9" / 31"
Limitations: No scans on downstream side due to configuration. Start Time: 1045 Finish Time: 1120

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Machined
Lo Location: Extradose of Elbow Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143
Temp. Tool Mfg.: Telatemp Serial No.: NSP 178 Surface Temp.: 75 °F

Cal. Report No.: 2002CA124, 2002CA125, 2002CA126

Angle Used	0	45	45T	60		
Scanning dB	46.3	84.0	84.0			

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

Comments:

Scanned at reference due to excessive grain noise.

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Blechlner, Todd P.			<i>T. P. Blechlner</i>	11/26/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-26-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>Jerry P. Wren</i>	11-28-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	11/29/02



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 300527
Workscope: ISI

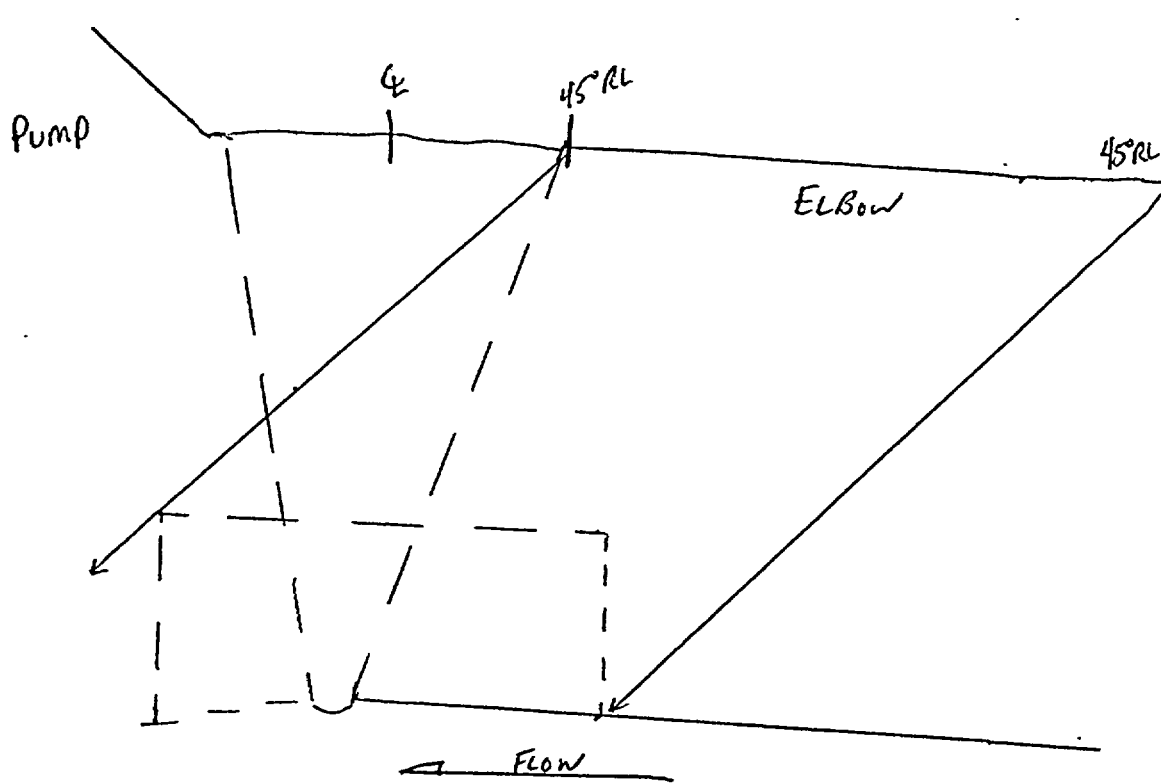
Procedure: ISI-UT-11A
Procedure Rev.: 4
Work Order No: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U076
Page: 2 of 5

Description of Limitation:

No scans on pump side due to configuration.

Sketch of Limitation: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U076-1.bmp



Limitations removal requirements:

None

Radiation field: 30 mR/hr

Examiner	Level III	Signature	Date	Reviewer	Signature	Date
Blechliger, Todd P.		<i>Todd P. Blechliger</i>	11/26/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-27-02
Examiner	Level N/A	Signature	Date	Site Review	Signature	Date
N/A				Wren, Jerry P.	<i>Jerry P. Wren</i>	11-28-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>Ron Clow</i>	11/29/02

ATTACHMENT 21 PAGE 2 OF 5



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: PNGP / PI1 Procedure: ISI-UT-11A Outage No.: PI1RFO2002
Summary No.: 300527 Procedure Rev.: 4 Report No.: 2002U076
Workscope: ISI Work Order No.: 0200860 Page: 3 of 5

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>90.000</u>	% volume of length / 100 =	<u>90.000</u>	% total for Scan 3
Scan 4	<u>100.000</u>	% Length X	<u>90.000</u>	% volume of length / 100 =	<u>90.000</u>	% total for Scan 4

Add totals and divide by # scans = 70.000 % total for 45 deg

Other deg - 0 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</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>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

70.000 % Total for complete exam

Site Field Supervisor:

Jim P. W. W.III

Date: 11-27-02

PAGE 3 OF 5
ATTACHMENT 21



Supplemental Report

Report No.: 2002U076
Page: 4 of 5

Summary No.: 300527

Examiner: <u>Blechinger, Todd P.</u>	Level: <u>III</u>	Reviewer: <u>Clay, Sean P.</u>	Date: <u>11-27-02</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P.</u>	Date: <u>11-28-02</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Clow, Ron</u>	Date: <u>11/29/02</u>

Comments: None

Sketch or Photo: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U076-1.jpg



ATTACHMENT 21 PAGE 4 OF 5



Supplemental Report

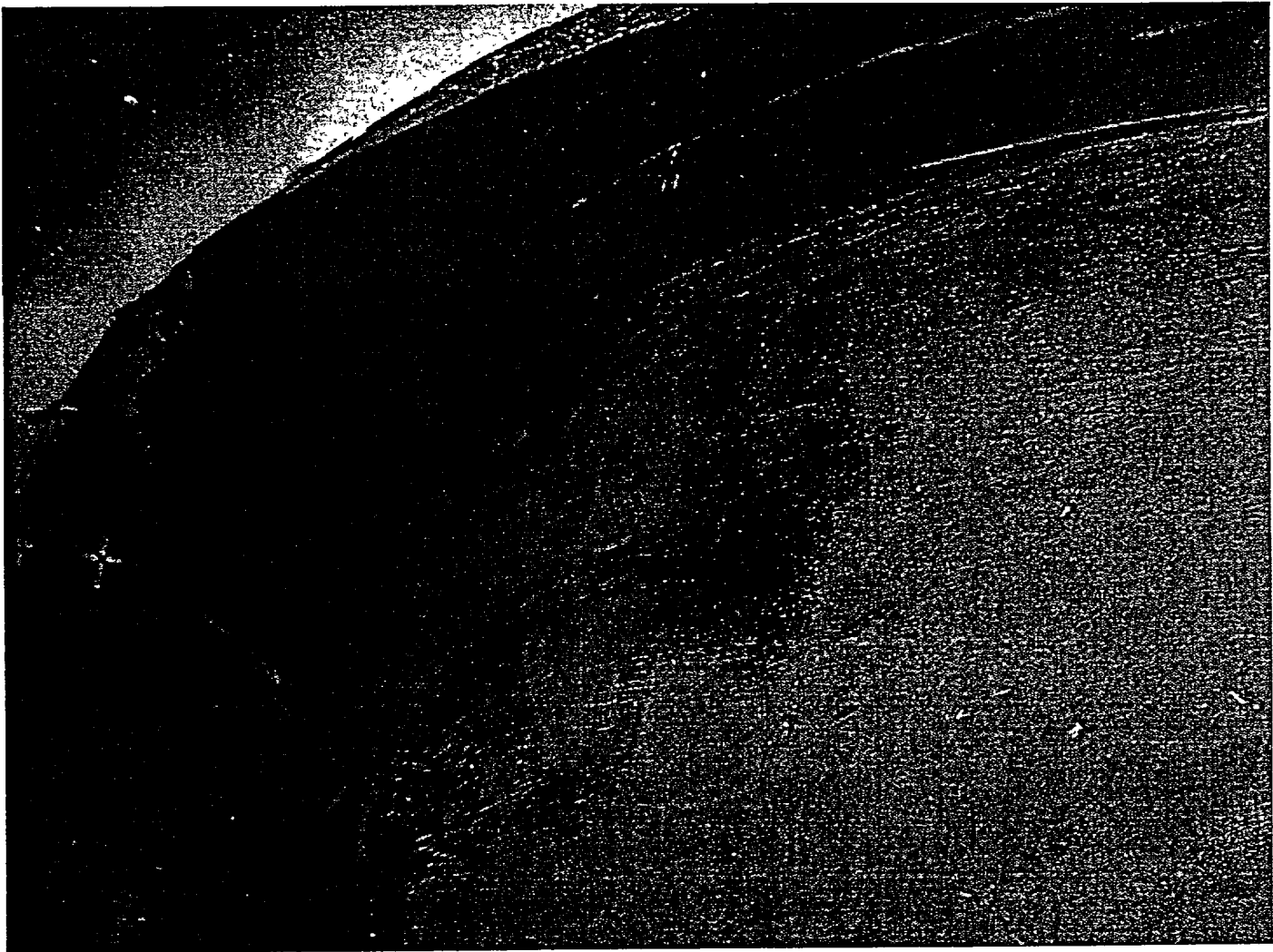
Report No.: 2002U076
Page: 5 of 5

Summary No : 300527

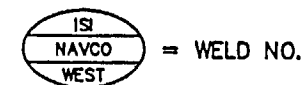
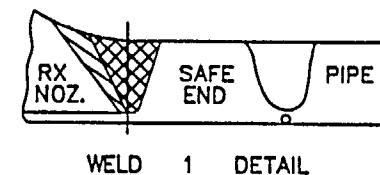
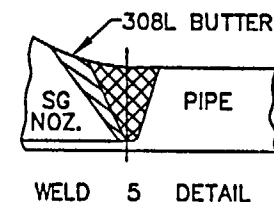
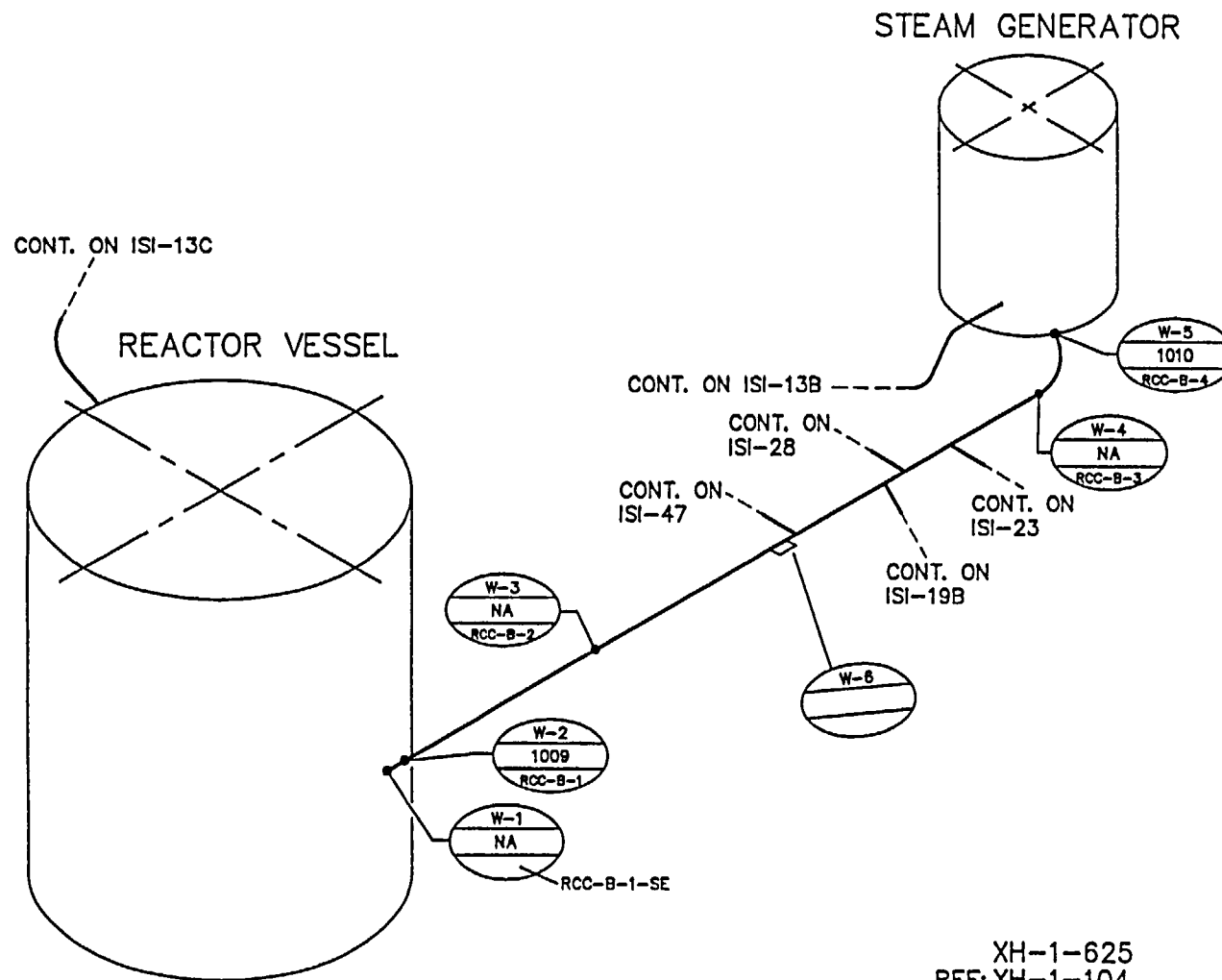
Examiner: <u>Blechinger, Todd P.</u>	Level: <u>III</u>	Reviewer: <u>Clay, Sean P.</u>	Date: <u>11-27-02</u>
Examiner: <u>N/A</u>	Level: <u>N/A</u>	Site Review: <u>Wren, Jerry P.</u>	Date: <u>11-28-02</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Clow, Ron</u>	Date: <u>11/29/02</u>

Comments: None

Sketch or Photo: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U076-3.jpg



ATTACHMENT 21 PAGE 5 OF 5



REACTOR COOLANT LOOP 'B'

XH-1-625
REF: XH-1-104

FILE NO: 1113AR02

NSP (M&SP) - PI 1		ISI
DWN: TJH	CHKD: <i>DLW</i>	APPD: <i>DLW</i>
SYSTEM: REACTOR COOLANT		
LINE: 29-RC-1B		
DWG:	ISI-13A	REV: 02



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 300543
Workscope: ISI

Procedure: ISI-UT-11A
Procedure Rev.: 4
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U077
Page: 1 of 5

Code: 1989 Code Cat.: B-J Location: Cont B Vault
Drawing No.: ISI-13A Description: RED 50° ELBOW-NOZZLE
System ID: RC
Component ID: W-5 Size/Length: 2.0" / 110" Thickness/Diameter: 2.9" / 29"
Limitations: No downstream exams due to configuration. Up scan limited due to configuration. Start Time: 0935 Finish Time: 1020

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Machined
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143
Temp. Tool Mfg.: Telatemp Serial No.: NSP 178 Surface Temp.: 90 °F

Cal. Report No.: 2002CA124, 2002CA125, 2002CA126

Angle Used	0	45	45T	60		
Scanning dB	46.3	84.0	84.0			

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

Comments:

Scanned at reference due to excessive grain noise. Maintained 20% noise level during exam.

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.				11/26/2002	Clay, Sean P.		11-27-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		11-28-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		11/29/02



Limitation Record

Site/Unit: PNGP / P11
Summary No.: 300543
Workscope: ISI

Procedure: ISI-UT-11A
Procedure Rev.: 4
Work Order No.: 0200860

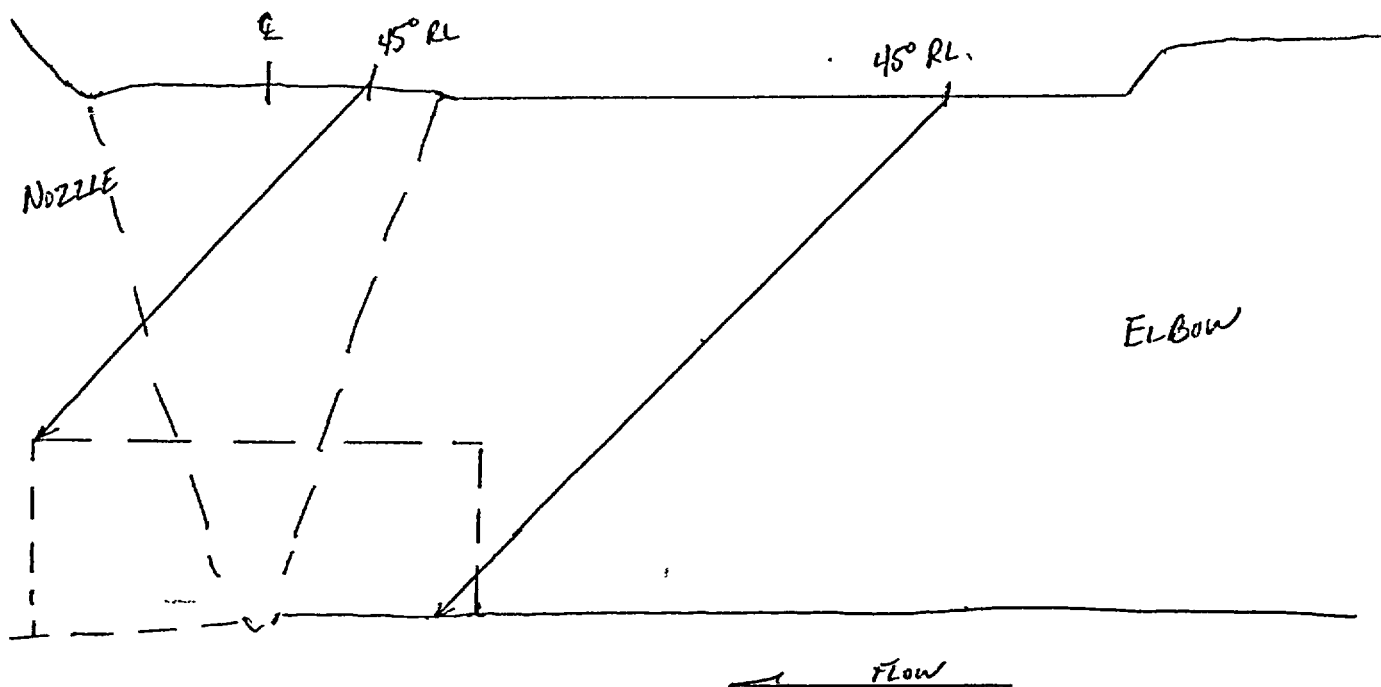
Outage No.: PI1RFO2002
Report No.: 2002U077
Page: 2 of 5

Description of Limitation:

Scans on elbow limited due to taper configuration. No scans on nozzle due to configuration.

Sketch of Limitation:

J:\Ideas_Photos\PI1RFO2002\UT Photos\2002U077-1.bmp



Limitations removal requirements:

None

Radiation field: 60 mR/hr

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Blechninger, Todd P.			<i>Todd P. Blechninger</i>	11/26/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-27-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>Jerry P. Wren</i>	11-28-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	11/29/02



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: PNGP / PI1 Procedure: ISI-UT-11A Outage No.: PI1RFO2002
Summary No.: 300543 Procedure Rev.: 4 Report No.: 2002U077
Workscope: ISI Work Order No.: 0200860 Page: 3 of 5

45 deg

Scan 1	<u>100.000</u>	% Length X	<u>84.600</u>	% volume of length / 100 =	<u>84.600</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>90.000</u>	% volume of length / 100 =	<u>90.000</u>	% total for Scan 3
Scan 4	<u>100.000</u>	% Length X	<u>90.000</u>	% volume of length / 100 =	<u>90.000</u>	% total for Scan 4

Add totals and divide by # scans = 66.150 % total for 45 deg

Other deg - 0 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</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>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

66.150 % Total for complete exam

Site Field Supervisor:  LV. III

Date: 11-27-02

ATTACHMENT 23 PAGE 3 OF 5



Supplemental Report

Report No.: 2002U077

Page: 4 of 5

Summary No.: 300543

Examiner: Blechinger, Todd P.

Level: III

Reviewer: Clay, Sean P.

Date: 11-27-02

Examiner: N/A

Level: N/A

Site Review: Wren, Jerry P.

Date: 11-28-02

Other: N/A

Level: N/A

ANII Review: Clow, Ron

Date: 11/29/02

Comments: None

Sketch or Photo: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U077-3.jpg



ATTACHMENT 23 PAGE 4 OF 5



Supplemental Report

Report No.: 2002U077

Page: 5 of 5

Summary No.: 300543

Examiner: Blechinger, Todd P.

Level: III

Reviewer: Clay, Sean P.

Date: 11-27-02

Examiner: N/A

Level: N/A

Site Review: Wren, Jerry P.

Date: 11-28-02

Other: N/A

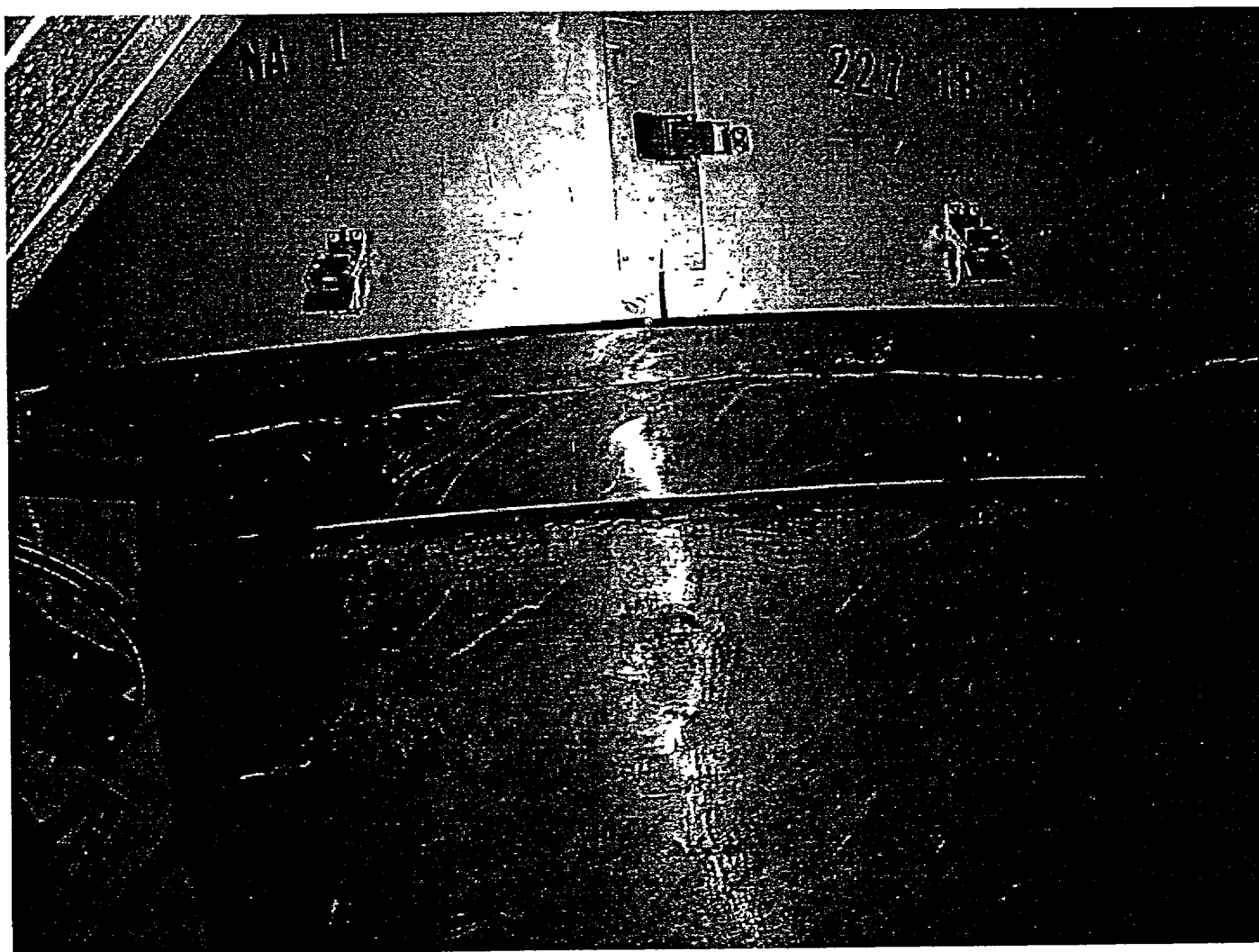
Level: N/A

ANII Review: Clow, Ron

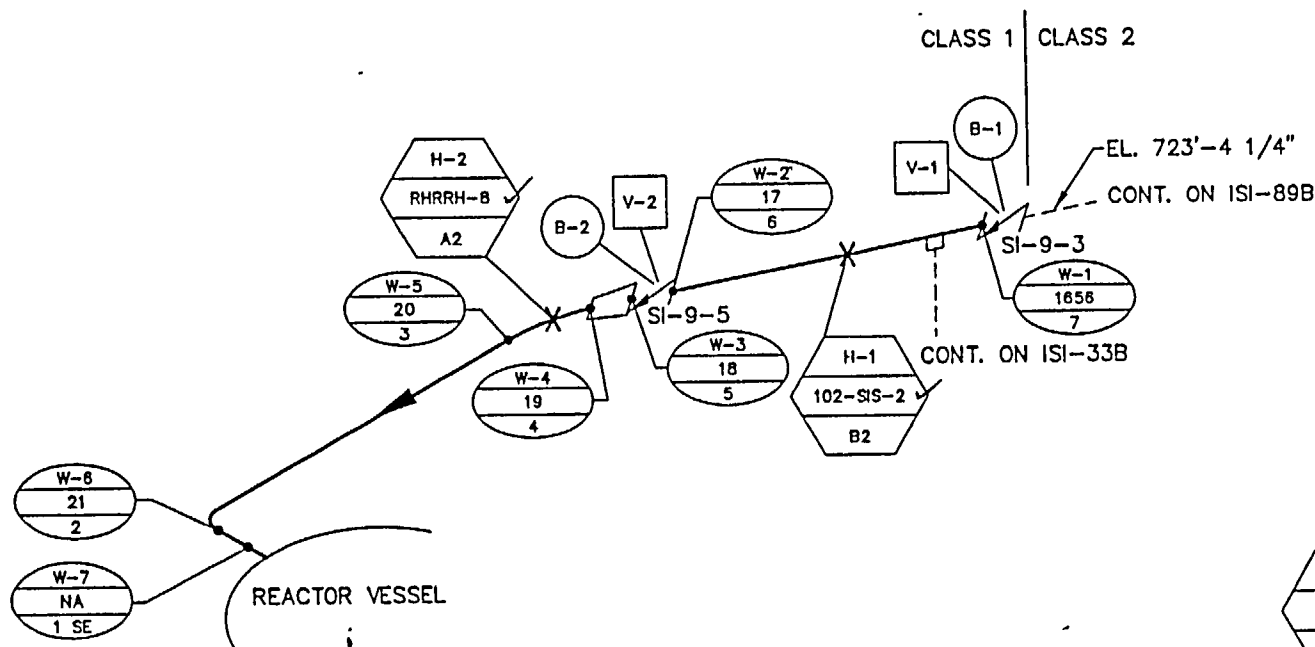
Date: 11/29/02

Comments: **None**

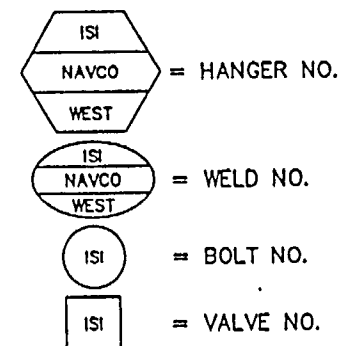
Sketch or Photo: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U077-2.jpg



ATTACHMENT 23 PAGE 5 OF 5



6" & 4" REACTOR VESSEL
SAFETY INJECTION AND REACTOR COOLANT LOOP 'B'



REF: XH-106-316

FILE NO: 1130BR01

NSP (M&SP)-PI 1		ISI
DWN: CADWorks CHKD: <i>[Signature]</i>		APPD: <i>[Signature]</i>
SYSTEM: SAFETY INJECTION, REACTOR COOLANT		
LINE: 4-RC-14B, 6-RC-14B, 6-SI-25B		
DWG: ISI-30B	REV: 01	

ISI-30B



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 300926
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U096
Page: 1 of 4

Code: 1989 Code Cat.: B-J Location: Cont Sand Plug
Drawing No.: ISI-30B Description: BENT PIPE - SAFE END
System ID: RC
Component ID: W-6 Size/Length: .85" / 13.75" Thickness/Diameter: .56" / 4"
Limitations: See attached limitation record. Start Time: 1140 Finish Time: 1157

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Blended
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143
Temp. Tool Mfg.: Telatemp Serial No.: NSP 173 Surface Temp.: 80 °F

Cal. Report No.: 2002CA146, 2002CA147

Angle Used	0	45	45T	60	70RL	
Scanning dB		53.0	53.0		82.0	

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

Comments:

70 Degree supplemental exam from upstream side utilized as a good practice.

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Auer, Robert G.	II		11/30/2002	Clay, Sean P.		12-01-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			Wren, Jerry P.		12-2-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron		12/2/02



Limitation Record

Site/Unit: PNGP / PI1
Summary No : 300926
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U096
Page: 2 of 4

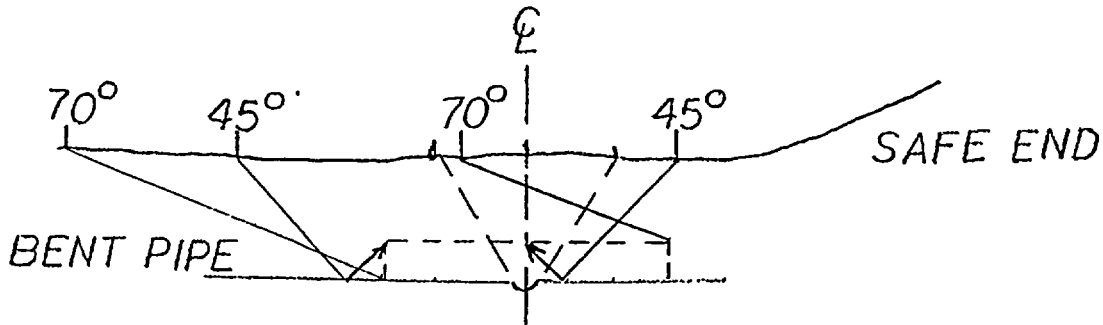
Description of Limitation:

Joint configuration and proximity of safe-end taper limit scan 2 to 0.4" from weld toe.

Sketch of Limitation:

J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U096-1.bmp

W-6



FLOW

Limitations removal requirements:

None

Radiation field: > 500 mR/hr

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Auer, Robert G.		<i>[Signature]</i>	11/30/2002	Clay, Sean P.	<i>[Signature]</i> LVI	12-01-02
Examiner	Level N/A	Signature	Date	Site Review	Signature	Date
N/A				Wren, Jerry P.	<i>[Signature]</i> W.III	12-2-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>[Signature]</i>	12/2/02

ATTACHMENT 25 PAGE 2 OF 4



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No.:	<u>300926</u>	Procedure Rev.:	<u>1</u>	Report No.:	<u>2002U096</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0200860</u>	Page:	<u>3</u> of <u>4</u>

45 deg

Scan 1	<u>100.000</u>	% Length X	<u>64.000</u>	% volume of length / 100 =	<u>64.000</u>	% total for Scan 1
Scan 2	<u>100.000</u>	% Length X	<u>37.500</u>	% volume of length / 100 =	<u>37.500</u>	% total for Scan 2
Scan 3	<u>100.000</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>100.000</u>	% total for Scan 3
Scan 4	<u>100.000</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>100.000</u>	% total for Scan 4

Add totals and divide by # scans = 75.375 % total for 45 deg

Other deg - 0 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</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>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

75.375 % Total for complete exam

Site Field Supervisor:

James P. Williams ^{LV, III}

Date: 12-02-02

ATTACHMENT 25 PAGE 3 OF 4



Supplemental Report

Report No.: 2002U096

Page: 4 of 4

Summary No.: 300926

Examiner: Auer, Robert G.

Level: II

Reviewer: Clay, Sean P.

Date: 12-01-02

Examiner: N/A

Level: N/A

Site Review: Wren, Jerry P.

Date: 12-2-02

Other: N/A

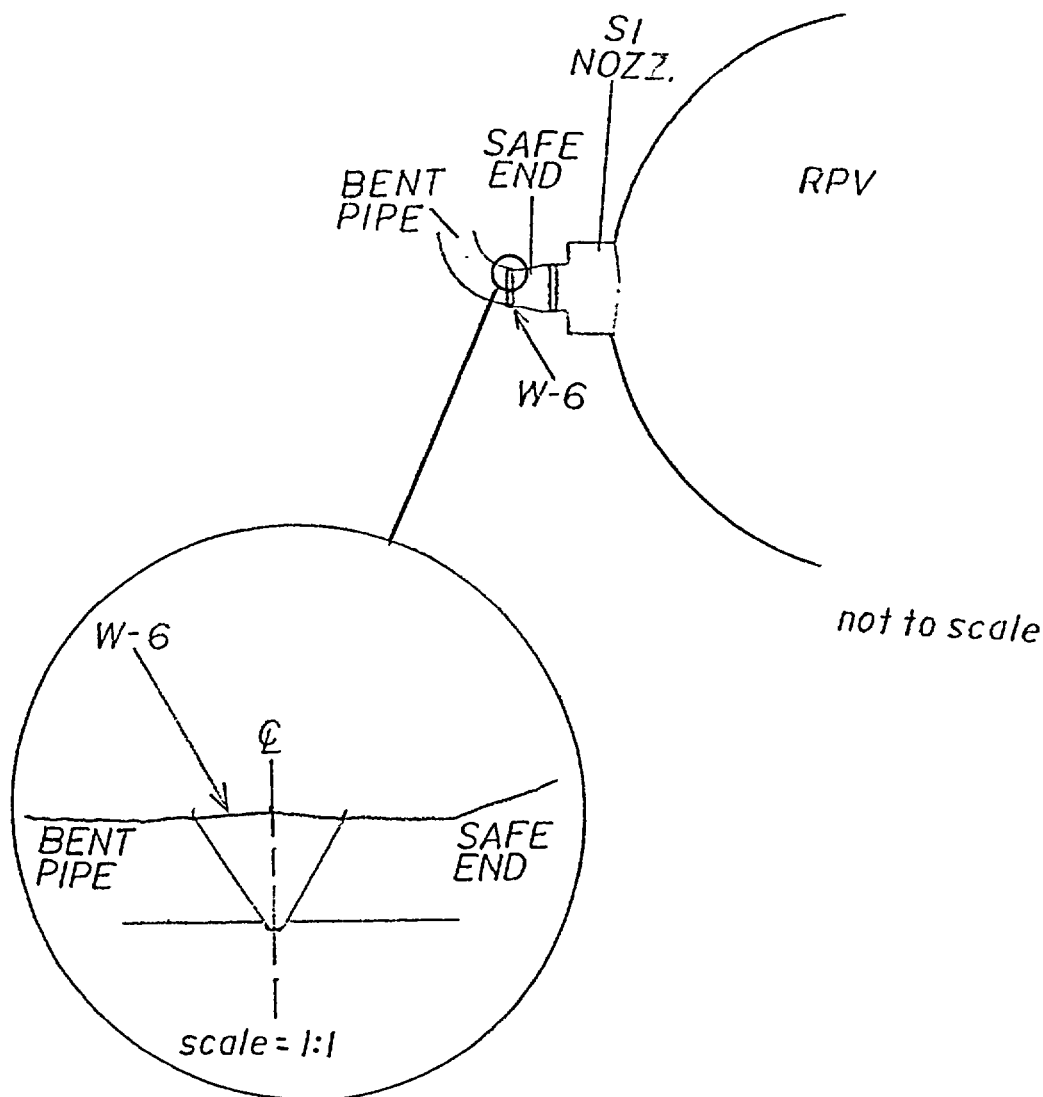
Level: N/A

ANII Review: Clow, Ron

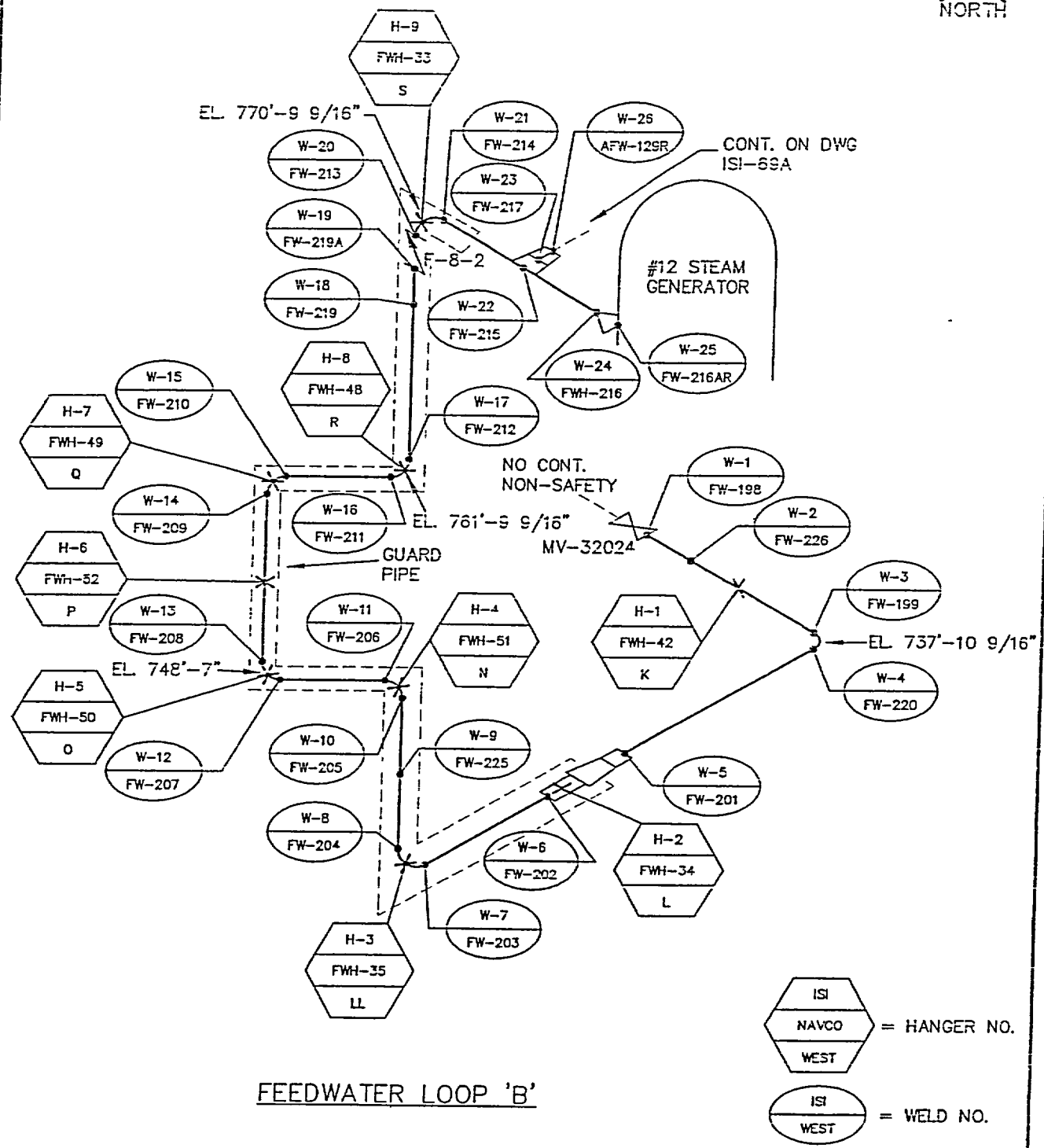
Date: 12/2/02

Comments: Component drawing, photo not available due to location and ALARA concerns.

Sketch or Photo: J:\ddeal_Photos\PI1RFO2002\UT Photos\2002U096-2 bmp



ATTACHMENT 25 PAGE 4 OF 4



REF: XH-106-130		FILE NO:	
NSP (M&SP)-PI 1		ISI	
DWN: TJH		CHKD: [Signature] APPD: [Signature]	
SYSTEM: FEEDWATER			
LINE: 16-FW-16			
DWG: ISI-69		REV: 02	



Magnetic Particle Examination

Site/Unit: PNGP / PI1 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 321703 Procedure Rev.: 12 Report No.: 2002M034
Workscope: ISI Work Order No.: 0200860 Page: 1 of 4

Code: 1989 Code Cat.: C-C Location: Cont 735
Drawing No.: ISI-69 Description: INTEGRAL ATTACHMENT (SEISMIC RESTRAINT)
System ID: FW
Component ID: H-2IA Size/Length: N/A
Limitations: Exam area has no access due to permanent guard pipe and penetration configuration.

Light Meter Mfg.: _____ Serial No.: _____ Illumination: _____ uw/cm²
Temp. Tool Mfg.: _____ Serial No.: _____ Surface Temp.: _____ °F
Resolution: Not Used
Lift Block Serial No.: _____ Surface Condition: _____
Lo/Wo Location: _____ Field Orientation: _____

Magnetic Particle Material

Brand: _____ Wet ☐ Mixed: Yes ☐ Applied By: Dusting ☐
Type: _____ Dry ☐ No ☐ Spraying ☐
Batch No.: _____ Fluorescent ☐ With: _____ Flooding ☐
Equipment: _____ Serial No.: _____
Head Shot ☐ _____ Amperes Fixed Spacing ☐ AC ☐ DC ☐
Adj. Spacing ☐ _____ inches Encircling Coils ☐ _____ Turns
Prods. Spacing ☐ _____ inches Current (machine setting) ☐ _____ Amperes

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

Comments: No previous data. SMH 11/21/03.

Results: NAD ☐ IND ☐ GEO ☐

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

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.			<i>[Signature]</i>	11/29/2002	Halling, David	<i>[Signature]</i>	Nov 30 02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P	<i>[Signature]</i>	12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>[Signature]</i>	12/1/02

PAGE 1 OF 4
ATTACHMENT 27



Supplemental Report

Report No.: 2002M034

Page: 2 of 4

Summary No.: 321703

Examiner: Timm, Jeremy T.

Level: III

Reviewer: Halling, David

Date: 2003002

Examiner: N/A

Level: N/A

Site Review: Wren, Jerry P

Date: 12-1-02

Other: N/A

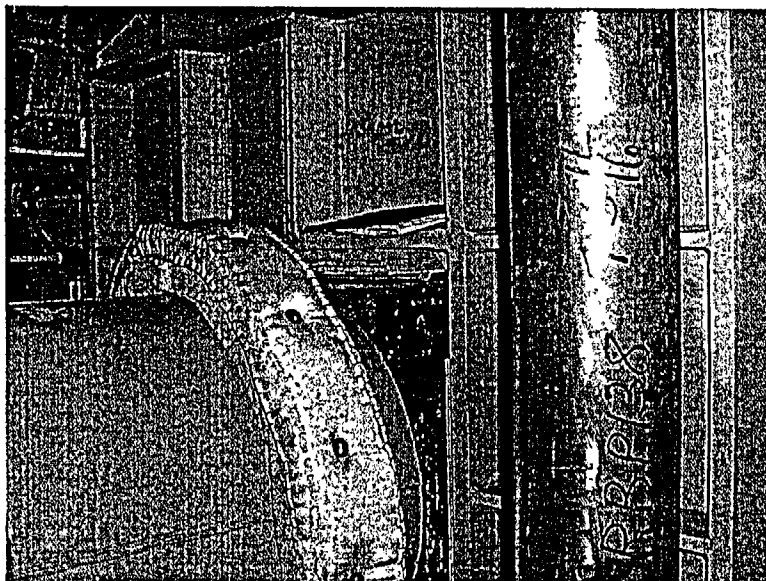
Level: N/A

ANII Review: Clow, Ron

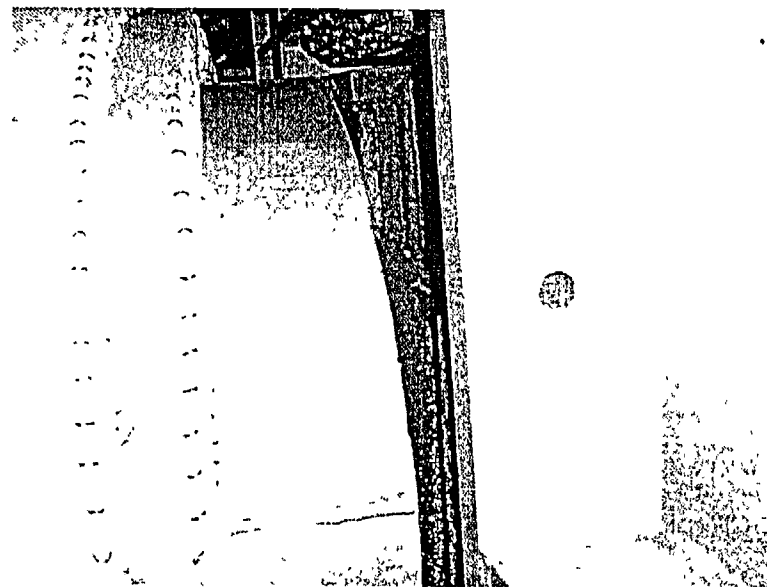
Date: 12/1/02

Comments: None

Sketch or Photo: J:\Ideas_Photos\PI1RFO2002\MT Photos\2002M034-1.jpg



J:\Ideas_Photos\PI1RFO2002\MT Photos\2002M034-2.jpg





Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 321703
Workscope: ISI

Procedure: ISI-MT-1
Procedure Rev.: 12
Work Order No.: 0200860

Outage No: PI1RFO2002
Report No.: 2002M034
Page: 3 of 4

Description of Limitation:

Examination area has no access due to permanent guard pipe and penetration configurations.

Sketch of Limitation:

J:\Ideal_Photos\PI1RFO2002\MT Photos\2002M034-3.jpg



Limitations removal requirements:

Guard pipe cannot be removed.

Radiation field: N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Halling, David		Nov 30, 02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/1/02

ATTACHMENT 27 PAGE 3 OF 4



Determination of Percent Coverage for Surface Examinations

Site/Unit: PNGP / PI1 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 321703 Procedure Rev.: 12 Report No.: 2002M034
Workscope: ISI Work Order No.: 0200860 Page: 4 of 4

Area Required (as shown in applicable code reference drawing)

Length 0.000 * Width 0.000
= Total Area required 0.000 square inches

Coverage Achieved

Area examined 0.000 sq in. / Total area required (100%) 0.000 sq in.
= Percent coverage 0 % (area required - area of limitations = area examined)

SMH 1/24/03

To determine length of a circumferential weld

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

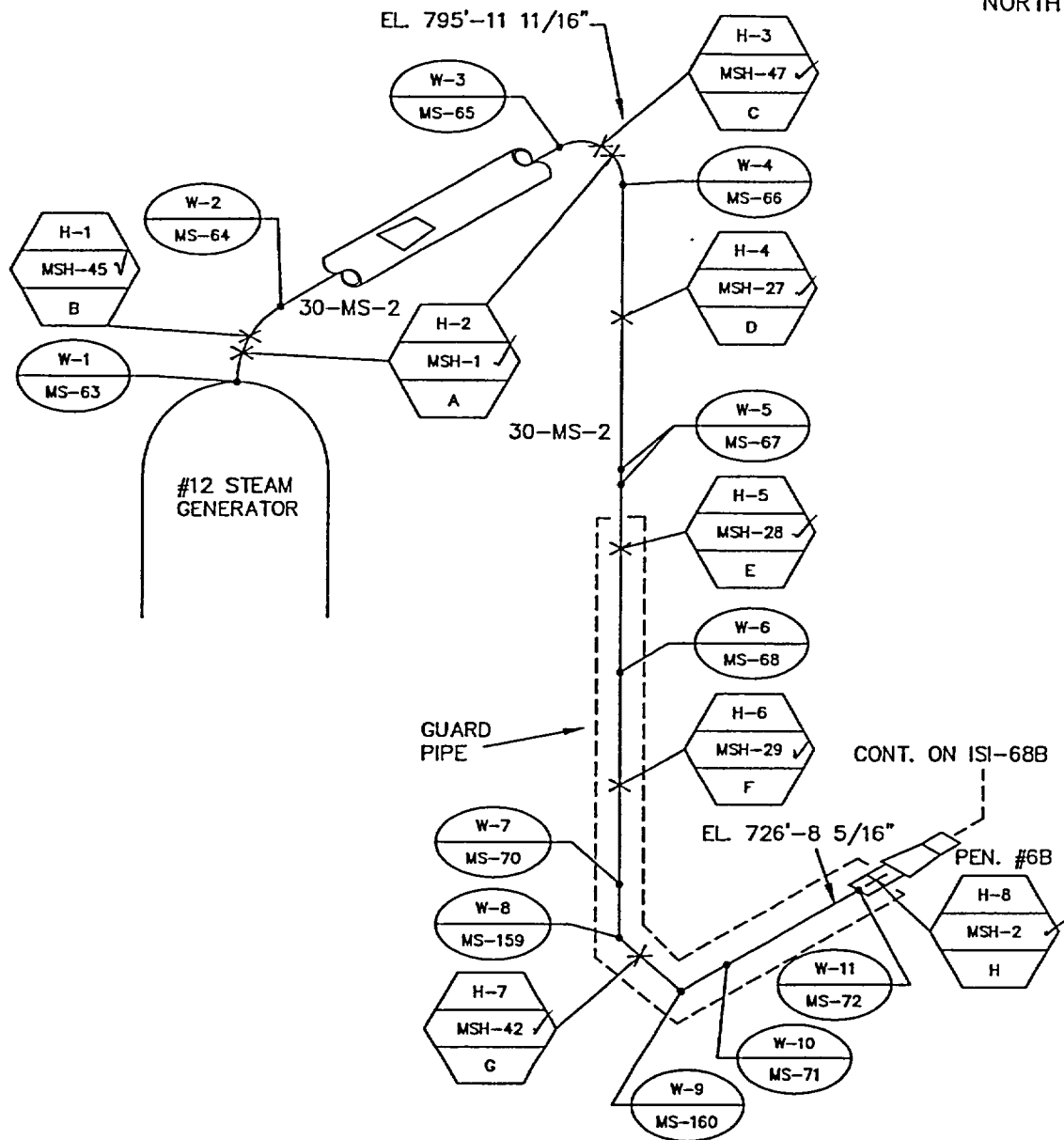
Diameter 0.000 * (Pi) 3.1416
= Length 0.000 inches

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				

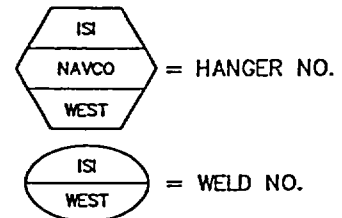
Site Field Supervisor: *Jim P. W...*

Date: 12-1-02

PAGE 4 OF 4
ATTACHMENT 27



MAIN STEAM LOOP 'B'



REF: XH-106-241

FILE NO:

NSP (M&SP)- PI 1 ISI

DWN: JRM CHKD: *JSW* APPD: *JSW*

SYSTEM: MAIN STEAM

LINE: 30-MS-2, 31-MS-2

DWG: ISI-68-A

REV: 04

ATTACHMENT 28 PAGE 1 OF 1



Magnetic Particle Examination

Site/Unit: PNGP / PI1 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 321594 Procedure Rev.: 12 Report No.: 2002M035
Workscope: ISI Work Order No.: 0200860 Page: 1 of 3

Code: 1989 Code Cat.: C-C Location: Cont 715
Drawing No.: ISI-68A Description: INTEGRAL ATTACHMENT (ANCHOR ELBOW / 8)
System ID: MS
Component ID: H-71A guard Size/Length: N/A
Limitations: Exam area under permanent guard pipe. SMH 1/21/02

Light Meter Mfg.: _____ Serial No.: _____ Illumination: _____ uw/cm²
Temp. Tool Mfg.: _____ Serial No.: _____ Surface Temp.: _____ °F
Resolution: Not Used
Lift Block Serial No.: _____ Surface Condition: _____
Lo/Wo Location: _____ Field Orientation: _____

Magnetic Particle Material

Brand: _____ Wet ☐ Mixed. Yes ☐ Applied By: _____ Dusting ☐
Type: _____ Dry ☐ No ☐ Spraying ☐
Batch No.: _____ Fluorescent ☐ With: _____ Flooding ☐
Equipment: _____ Serial No.: _____
Head Shot ☐ _____ Amperes Fixed Spacing ☐ AC ☐ DC ☐
Adj. Spacing ☐ _____ inches Encircling Coils ☐ _____ Turns
Prods. Spacing ☐ _____ inches Current (machine setting) ☐ _____ Amperes

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

Comments: No previous data. SMH 1/21/02

Results: NAD ☐ IND ☐ GEO ☐

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

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Halling, David A.		12/30/02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/1/02

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ATTACHMENT 29



Limitation Record

Site/Unit. PNGP / PI1
Summary No.: 321594
Workscope: ISI

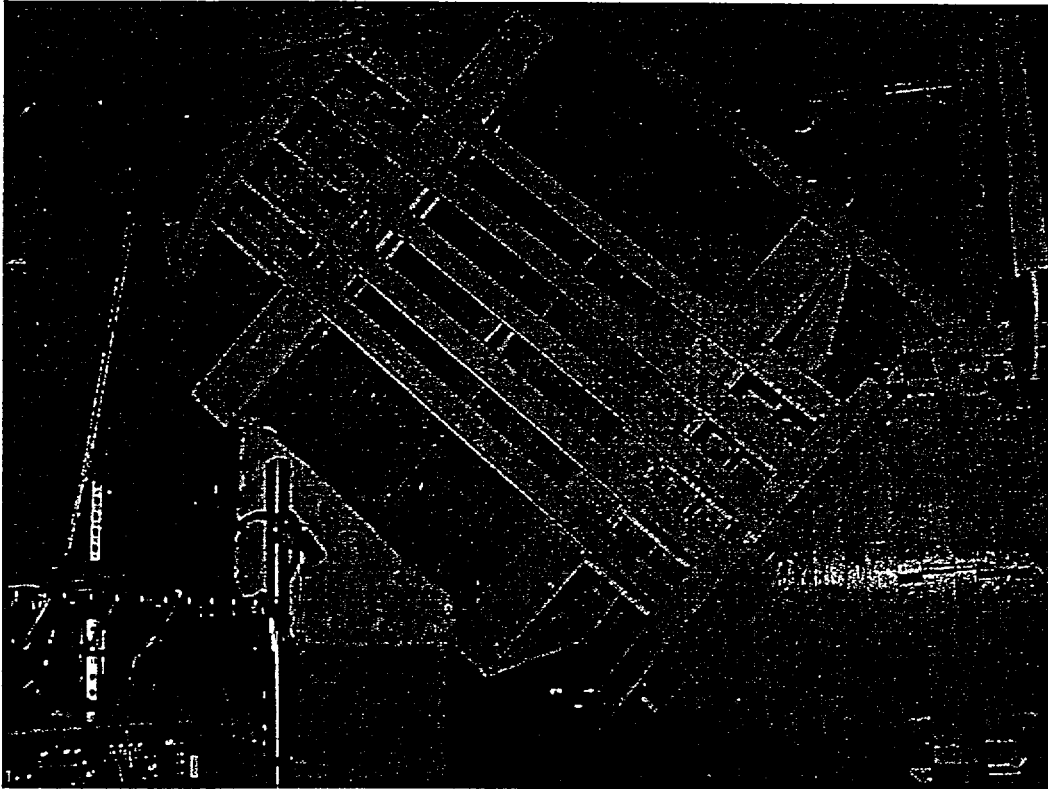
Procedure: ISI-MT-1
Procedure Rev.: 12
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002M035
Page: 2 of 3

Description of Limitation:

Entire examination area under permanent guard pipe.

Sketch of Limitation: J:\ddeal_Photos\PI1RFO2002\MT Photos\2002M035-1.jpg



Limitations removal requirements:

Permanent guard pipe cannot be removed.

Radiation field: **N/A**

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Halling, David A.		Nov 30, 02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/1/02

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ATTACHMENT 29



Determination of Percent Coverage for Surface Examinations

Site/Unit: PNGP / PI1 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 321594 Procedure Rev.: 12 Report No.: 2002M035
Workscope: ISI Work Order No.: 0200860 Page: 3 of 3

Area Required (as shown in applicable code reference drawing)

Length 0.000 * Width 0.000
= Total Area required 0.000 square inches

Coverage Achieved

Area examined 0.000 sq. in. / Total area required (100%) 0.000 sq. in.
= Percent coverage 0 % (area required - area of limitations = area examined)

SMH 1/24/03

To determine length of a circumferential weld

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

Diameter 0.000 * (Pi) 3.1416
= Length 0.000 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				

Site Field Supervisor: *Jim P. W.*

Date: 12-1-02

PAGE 3 OF 3

ATTACHMENT 29



Magnetic Particle Examination

Site/Unit: PNGP / PI1 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 321705 Procedure Rev.: 12 Report No.: 2002M036
Workscope: ISI Work Order No.: 0200860 Page: 1 of 4

Code: 1989 Code Cat.: C-C Location: Cont 735
Drawing No.: ISI-69 Description: INTEGRAL ATTACHMENT (ANCHOR ELBOW)
System ID: FW
Component ID: H-71A Size/Length: _____
Limitations: Entire examination area under permanent guard pipe.

Light Meter Mfg: _____ Serial No.: _____ Illumination: _____ uw/cm²
Temp. Tool Mfg: _____ Serial No.: _____ Surface Temp.: _____ °F
Resolution: Not Used
Lift Block Serial No.: _____ Surface Condition: _____
Lo/Wo Location: _____ Field Orientation: _____

Magnetic Particle Material

Brand: _____ Wet ☐ Mixed: Yes ☐ Applied By: Dusting ☐
Type: _____ Dry ☐ No ☐ Spraying ☐
Batch No.: _____ Fluorescent ☐ With: _____ Flooding ☐

Equipment: _____ Serial No.: _____
Head Shot ☐ _____ Amperes Fixed Spacing ☐ AC ☐ DC ☐
Adj. Spacing ☐ _____ inches Encircling Coils ☐ _____ Turns
Prods. Spacing ☐ _____ inches Current (machine setting) ☐ _____ Amperes

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

Comments: No previous data smt# 11/21/03

Results: NAD ☐ IND ☐ GEO ☐

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

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Halling, David A.		12/30/02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Crow, Ron		12/1/02

ATTACHMENT 30 PAGE 1 OF 4



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 321705
Workscope: ISI

Procedure: ISI-MT-1
Procedure Rev.: 12
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002M036
Page: 2 of 4

Description of Limitation:

Weld to be examined under permanent guard pipe.

Sketch of Limitation:

J:\Ideal_Photos\PI1RFO2002\MT Photos\2002M036-1.jpg



Limitations removal requirements:

Guard pipe is permanent and cannot be removed.

Radiation field: N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Halling, David A.		12/30/02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/1/02

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ATTACHMENT 30



Supplemental Report

Report No : 2002M036

Page. 3 of 4

Summary No.: 321705

Examiner: Timm, Jeremy T.

Level. III

Reviewer: Halling, David A.

Date: Nov. 30, 02

Examiner N/A

Level N/A

Site Review: Wren, Jerry P.

Date: 12-1-02

Other: N/A

Level N/A

ANII Review: Clow, Ron

Date: 12/1/02

Comments None

Sketch or Photo: J:\Ideal_Photos\PI1RFO2002\MT Photos\2002M036-2.jpg



ATTACHMENT 30 PAGE 3 OF 4



Determination of Percent Coverage for Surface Examinations

Site/Unit: PNGP / PI1 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 321705 Procedure Rev.: 12 Report No.: 2002M036
Workscope: ISI Work Order No.: 0200860 Page: 4 of 4

Area Required (as shown in applicable code reference drawing)

Length 0.000 * Width 0.000
= Total Area required 0.000 square inches

Coverage Achieved

Area examined 0.000 sq in. / Total area required (100%) 0.000 sq. in.
= Percent coverage 0 % (area required - area of limitations = area examined)
SMH 1/24/03

To determine length of a circumferential weld

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

Diameter 0.000 * (Pi) 3.1416
= Length 0.000 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				

Site Field Supervisor: *Jim P. White* ^{20. III}

Date: 12-1-02

ATTACHMENT 30 PAGE 4 OF 4



Magnetic Particle Examination

Site/Unit: PNGP / P11 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 321707 Procedure Rev.: 12 Report No.: 2002M038
Workscope: ISI Work Order No.: 0200860 Page: 1 of 3

Code: 1989 Code Cat.: C-C Location: Cont 735
Drawing No.: ISI-69 Description: INTEGRAL ATTACHMENT (ANCHOR ELBOW)
System ID. FW
Component ID. H-41A Size/Length: N/A
Limitations: Entire exam area under permanent guard pipe.

Light Meter Mfg.: _____ Serial No.: _____ Illumination: _____ uw/cm²
Temp. Tool Mfg.: _____ Serial No.: _____ Surface Temp.: _____ °F
Resolution: Not Used
Lift Block Serial No.: _____ Surface Condition: _____
Lo/Wo Location: _____ Field Orientation: _____

Magnetic Particle Material

Brand: _____ Wet ☐ Mixed Yes ☐ Applied By: _____ Dusting ☐
Type: _____ Dry ☐ No ☐ Spraying ☐
Batch No.: _____ Fluorescent ☐ With: _____ Flooding ☐
Equipment: _____ Serial No.: _____
Head Shot ☐ _____ Amperes Fixed Spacing ☐ AC ☐ DC ☐
Adj. Spacing ☐ _____ inches Encircling Coils ☐ _____ Turns
Prods. Spacing ☐ _____ inches Current (machine setting) ☐ _____ Amperes

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

Comments: No previous data. SMH 11/21/03

Results: NAD ☐ IND ☐ GEO ☐

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

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Halling, David A.		12/30/02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/1/02

ATTACHMENT 31 PAGE 1 OF 3



Limitation Record

Site/Unit.	PNGP / PI1	Procedure:	ISI-MT-1	Outage No.:	PI1RFO2002
Summary No.:	321707	Procedure Rev.:	12	Report No.:	2002M038
Workscope:	ISI	Work Order No.:	0200860	Page:	2 of 3

Description of Limitation:

Entire examination area under permanent guard pipe.

Sketch of Limitation: J:\Ideal_Photos\PI1RFO2002\MT Photos\2002M038-1.jpg



Limitations removal requirements:

Guard pipe is permanent and cannot be removed.

Radiation field. N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Halling, David A.		Nov 30 02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/1/02

ATTACHMENT 31 PAGE 2 OF 3



Determination of Percent Coverage for Surface Examinations

Site/Unit: PNGP / PI1 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 321707 Procedure Rev.: 12 Report No.: 2002M038
Workscope: ISI Work Order No.: 0200860 Page: 3 of 3

Area Required (as shown in applicable code reference drawing)

Length 0.000 * Width 0.000
= Total Area required 0.000 square inches

Coverage Achieved

Area examined 0.000 sq. in. / Total area required (100%) 0.000 sq. in.
= Percent coverage 0 % (area required - area of limitations = area examined)

SMH 1/24/03

To determine length of a circumferential weld

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

Diameter 0.000 * (Pi) 3.1416
= Length 0.000 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				

Site Field Supervisor:

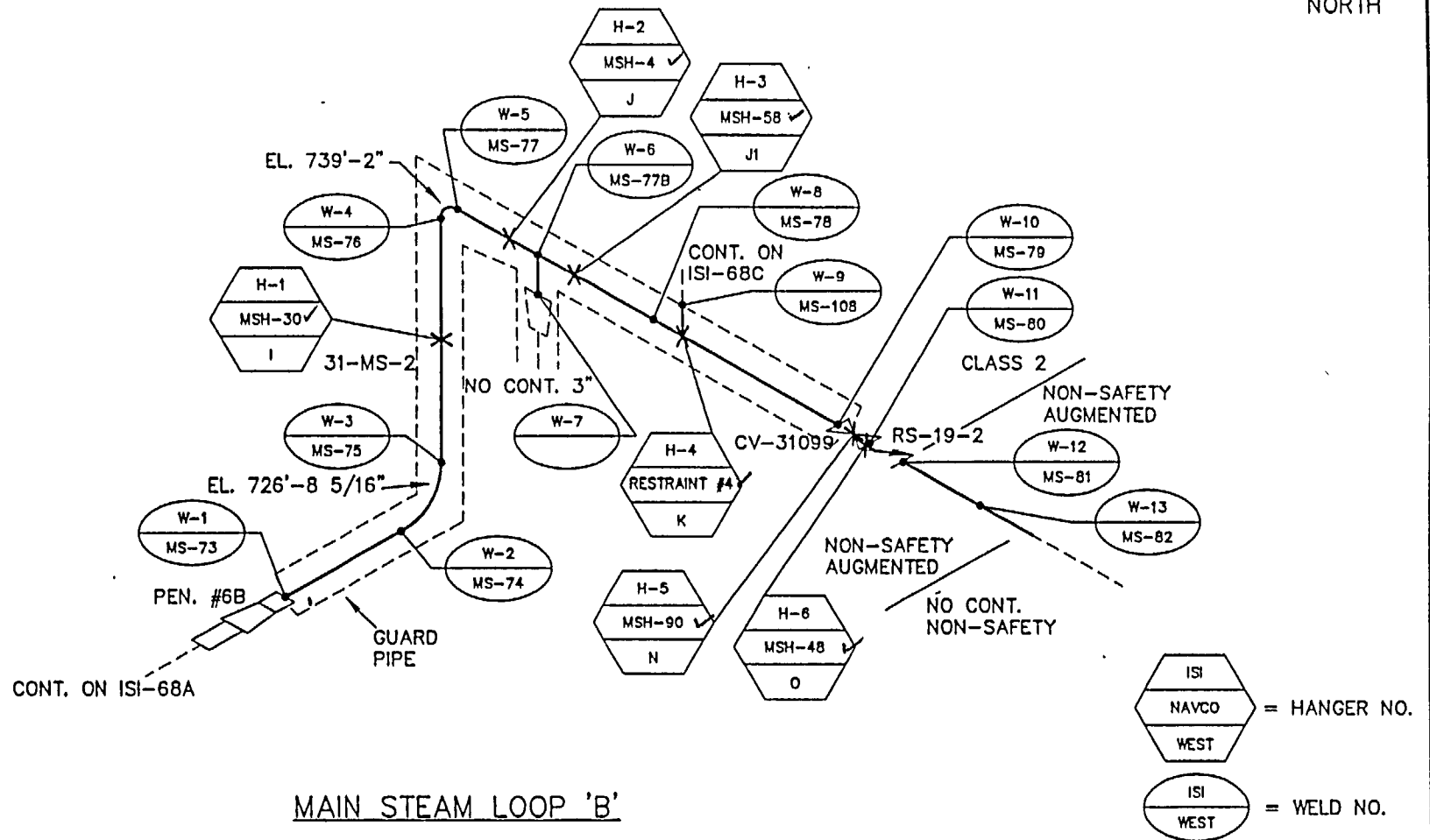
James P. White, III

Date:

12-1-02

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ATTACHMENT 31



MAIN STEAM LOOP 'B'

XH-106-241
REF: XH-106-280

FILE NO: 1168BR03

ISP (M&SP)-PI 1		ISI
DWN: CADWorks	CHKD: <i>CH</i>	APPD: <i>TY</i>
SYSTEM: MAIN STEAM		
LINE: 30-MS-2, 31-MS-2, 6-MS-5		
DWG:	ISI-68B	REV: 03

ISI-68B



Magnetic Particle Examination

Site/Unit: PNGP / PI1 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 321639 Procedure Rev.: 12 Report No.: 2002M039
Workscope: ISI Work Order No.: 0200860 Page: 1 of 3

Code: 1989 Code Cat.: C-C Location Aux 715
Drawing No.: ISI-68B Description: INTEGRAL ATTACHMENT (CONSTANT SUPPORT)
System ID: MS
Component ID: H-2IA Size/Length: _____
Limitations: Entire exam area under permanent guard pipe.

Light Meter Mfg.: _____ Serial No.: _____ Illumination: _____ uw/cm²
Temp. Tool Mfg.: _____ Serial No.: _____ Surface Temp.: _____ °F
Resolution: Not Used
Lift Block Serial No.: _____ Surface Condition: _____
Lo/Wo Location: _____ Field Orientation: _____

Magnetic Particle Material

Brand: _____ Wet ☐ Mixed: Yes ☐ Applied By: Dusting ☐
Type: _____ Dry ☐ No ☐ Spraying ☐
Batch No.: _____ Fluorescent ☐ With: _____ Flooding ☐
Equipment: _____ Serial No.: _____
Head Shot ☐ _____ Amperes Fixed Spacing ☐ AC ☐ DC ☐
Adj. Spacing ☐ _____ inches Encircling Coils ☐ _____ Turns
Prods. Spacing ☐ _____ inches Current (machine setting) ☐ _____ Amperes

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

Comments: No previous data 11/21/03.

Results: NAD ☐ IND ☐ GEO ☐

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

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Halling, David A.		12/30/02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/1/02

PAGE 1 OF 3
ATTACHMENT 33



Limitation Record

Site/Unit. PNGP / PI1
Summary No.: 321639
Workscope: ISI

Procedure: ISI-MT-1
Procedure Rev.: 12
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002M039
Page: 2 of 3

Description of Limitation:

Weld to be examined under permanent guard pipe.

Sketch of Limitation:

J:\ddeal_Photos\PI1RFO2002MT Photos\2002M039-1.bmp



Limitations removal requirements:

Guard pipe is permanent and cannot be removed.

Radiation field: N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Halling, David A.	<i>DA Halling</i>	11/29/02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>Jerry P. Wren</i>	12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Clow</i>	12/1/02

ATTACHMENT 33 PAGE 2 OF 3



Determination of Percent Coverage for Surface Examinations

Site/Unit: PNGP / PI1 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 321639 Procedure Rev.: 12 Report No.: 2002M039
Workscope: ISI Work Order No.: 0200860 Page: 3 of 3

Area Required (as shown in applicable code reference drawing)

Length 0.000 * Width 0.000
= Total Area required 0.000 square inches

Coverage Achieved

Area examined 0.000 sq. in. / Total area required (100%) 0.000 sq. in.
= Percent coverage 0 % (area required - area of limitations = area examined)
Smt 1/21/03

To determine length of a circumferential weld

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

Diameter 0.000 * (Pi) 3.1416
= Length 0.000 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				

Site Field Supervisor:

Jim P. White W.P.III

Date:

12-1-02

ATTACHMENT 33 PAGE 3 OF 3



Magnetic Particle Examination

Site/Unit: PNGP / PI1 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 321702 Procedure Rev.: 12 Report No.: 2002M041
Workscope: ISI Work Order No.: 0200860 Page: 1 of 3

Code: 1989 Code Cat.: C-C Location: Cont 735
Drawing No.: ISI-69 Description: SEISMIC RESTRAINT
System ID: FW
Component ID: H-9IA Size/Length: N/A
Limitations: Examination area not accessible due to permanent guard pipe.

Light Meter Mfg: _____ Serial No.: _____ Illumination: _____ uw/cm²
Temp. Tool Mfg: _____ Serial No.: _____ Surface Temp.: _____ °F
Resolution: Not Used
Lift Block Serial No.: _____ Surface Condition: _____
Lo/Wo Location: _____ Field Orientation: _____

Magnetic Particle Material

Brand: _____ Wet ☐ Mixed: Yes ☐ Applied By: Dusting ☐
Type: _____ Dry ☐ No ☐ Spraying ☐
Batch No.: _____ Fluorescent ☐ With: _____ Flooding ☐
Equipment: _____ Serial No.: _____
Head Shot ☐ _____ Amperes Fixed Spacing ☐ AC ☐ DC ☐
Adj. Spacing ☐ _____ inches Encircling Coils ☐ _____ Turns
Prods Spacing ☐ _____ inches Current (machine setting) ☐ _____ Amperes

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

Comments: No previous data smt 12/10/02.

Results: NAD ☐ IND ☐ GEO ☐

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

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Halling, David A.		11/30/02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Claw, Ren		12/1/02

ATTACHMENT 34 PAGE 1 OF 3



Limitation Record

Site/Unit:	PNGP / PI1	Procedure:	ISI-MT-1	Outage No.:	PI1RFO2002
Summary No.:	321702	Procedure Rev.:	12	Report No.:	2002M041
Workscope:	ISI	Work Order No.:	0200860	Page:	2 of 3

Description of Limitation:

Examination area has no access due to permanent guard pipe.

Sketch of Limitation: J:\ddeal_Photos\PI1RFO2002MT Photos\2002M041-1.jpg



Limitations removal requirements:

Guard pipe cannot be removed.

Radiation field. N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Halling, David A.		Nov 30, 02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clew, Ron		12/1/02

ATTACHMENT 34 PAGE 2 OF 3



Determination of Percent Coverage for Surface Examinations

Site/Unit: PNGP / PI1 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 321702 Procedure Rev.: 12 Report No.: 2002M041
Workscope: ISI Work Order No.: 0200860 Page: 3 of 3

Area Required (as shown in applicable code reference drawing)

Length 0.000 * Width 0.000
= Total Area required 0.000 square inches

Coverage Achieved

Area examined 0.000 sq. in. / Total area required (100%) 0.000 sq. in.
= Percent coverage 0 % (area required - area of limitations = area examined)
SMH 1/24/03

To determine length of a circumferential weld

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

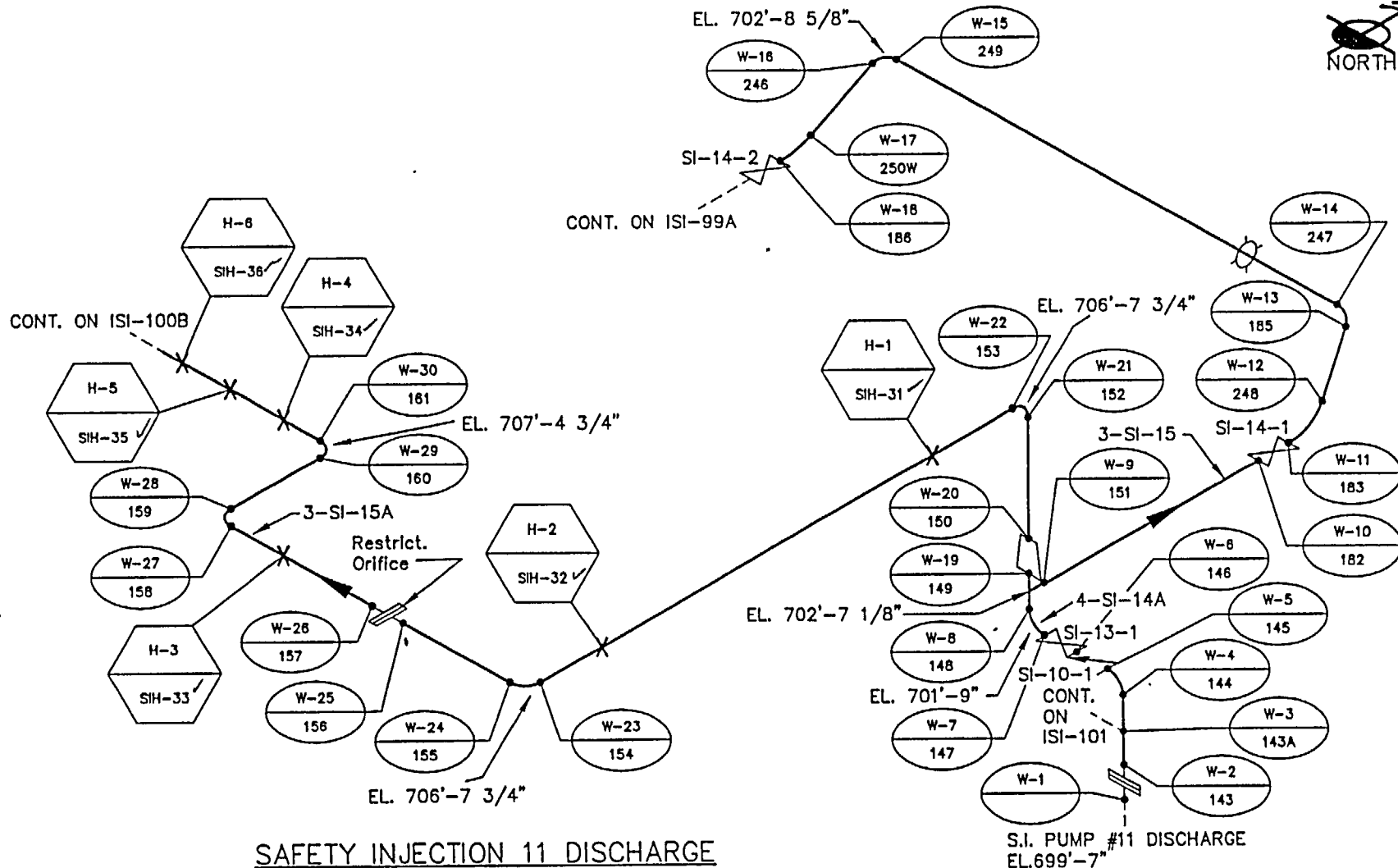
Diameter 0.000 * (Pi) 3.1416
= Length 0.000 inches

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			

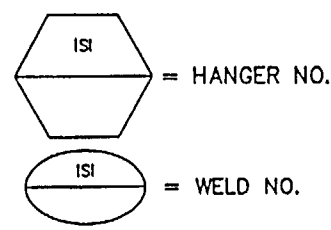
Site Field Supervisor: *Jim P. Wm* *LV. III*

Date: 12-1-02

ATTACHMENT 34 PAGE 3 OF 3



SAFETY INJECTION 11 DISCHARGE



ISI-100A

REF: XH-106-81		FILE NO: 1100AR01
NSP (M&SP)- PI 1		ISI
DWN: CADWorks CHKD: <i>[Signature]</i>		APPD: <i>[Signature]</i>
SYSTEM: SAFETY INJECTION 11 DISCHARGE		
LINE: AS NOTED		
DWG: ISI-100A	REV: 01	



UT Pipe Weld Examination

Site/Unit: PNGP / PI1

Procedure: ISI-UT-16A

Outage No.: PI1RFO2002

Summary No.: 305081

Procedure Rev.: 1

Report No.: 2002U052

Workscope: ISI

Work Order No.: 0210380

Page: 1 of 3

Code: 1989 Code Cat.: C-F-1 Location: Aux 695

Drawing No.: ISI-100A Description: PIPE - VALVE

System ID: SI

Component ID: W-10 Size/Length: .7" / 10.9" Thickness/Diameter: .438" / 3"

Limitations: No scans on valve due to configuration. Start Time: 1321 Finish Time: 1335

Examination Surface: Inside ☒ Outside ☐ Surface Condition: Blended

Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143

Temp. Tool Mfg.: Telatemp Serial No.: NSP 134 Surface Temp.: 90 °F

Cal. Report No.: 2002CA094, 2002CA095

Angle Used	0	45	45T	60	70	
Scanning dB		39.5	45.5		61.5	

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

Comments:

No previous data available.

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Blechinger, Todd P.			<i>Todd P. Blechinger</i>	11/13/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-19-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>Jerry P. Wren</i>	11-20-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	11/21/02



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 305081
Workscope: ISI

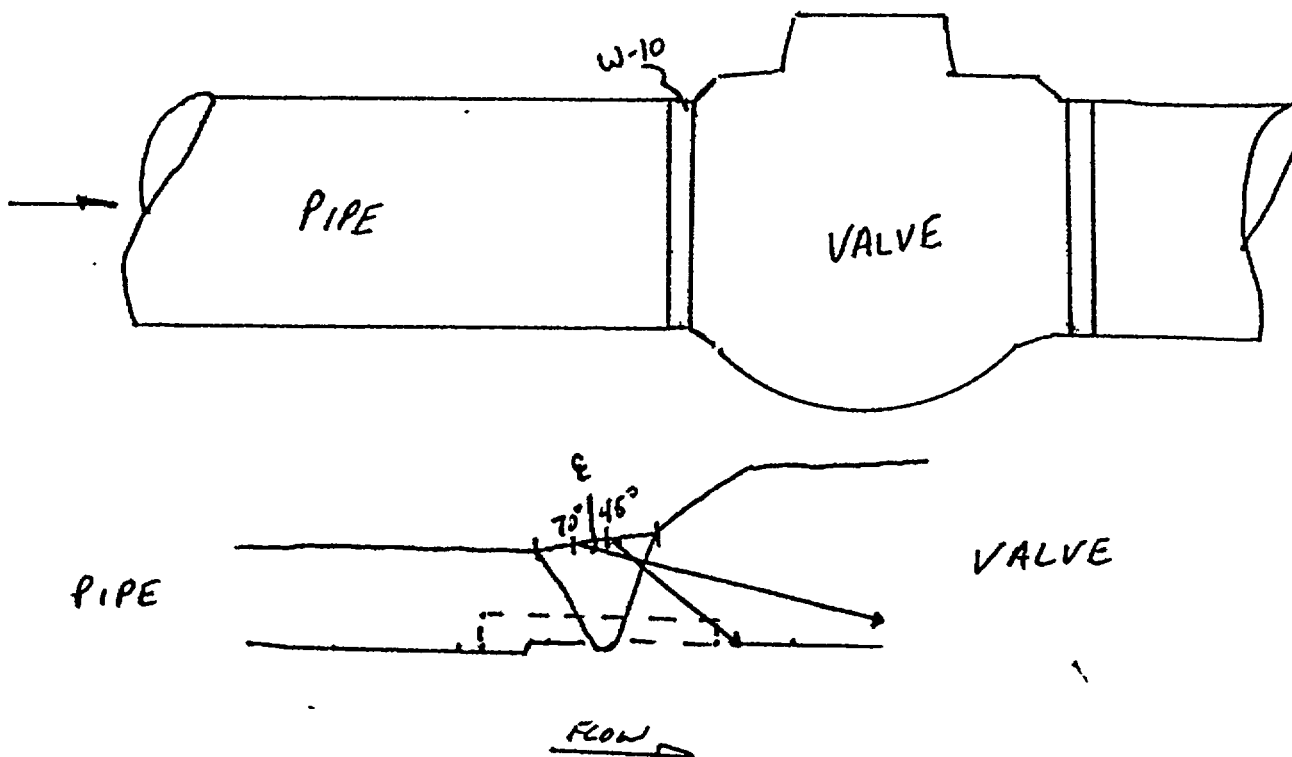
Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0210380

Outage No.: P11RFO2002
Report No.: 2002U052
Page: 2 of 3

Description of Limitation:

Valve Body Taper.

Sketch of Limitation: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U052-1.bmp



Limitations removal requirements:

Single sided exam - Although the examination was performed through 100% of the code required volume. Procedure ISI-UT-16A is not qualified for the detection of flaws on the far side of single side access exams. The techniques provided by this procedure were used for a best effort examination for flaws on the far side of the weld.

Radiation field: < 1 mr

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Blechinger, Todd P.			<i>Todd P. Blechinger</i>	11/13/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11/18/02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>Jerry P. Wren</i>	11-20-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	11/21/02

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Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No :	<u>305081</u>	Procedure Rev.:	<u>1</u>	Report No :	<u>2002U052</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0210380</u>	Page:	<u>3</u> of <u>3</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>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 = 50.000 % total for 45 deg

Other deg - 70 (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	<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>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

5c 11-18-02 Add totals for each scan required and divide by # of scans to determine;

50.0 ~~375.000~~ % Total for complete exam

Site Field Supervisor: Jan P. Wm

Date: 11-18-02



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 301445
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U061
Page: 1 of 4

Code: 1989 Code Cat.: C-F-1 Location: Cont 715
Drawing No.: ISI-89A Description: PIPE - VALVE
System ID: SI
Component ID: W-20 Size/Length: 1.0" / 21" Thickness/Diameter: .7" / 6"
Limitations: No scans on valve due to configuration. Start Time: 1000 Finish Time: 1019

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground Smooth
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143

Temp. Tool Mfg.: Telatemp Serial No.: NSP 134 Surface Temp.: 80 °F

Cal. Report No.: 2002CA105, 2002CA106

Angle Used	0	45	45T	60	60 RL	
Scanning dB		58.0	64.0		76.0	

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

Comments:
None

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Blechinger, Todd P.	III		11/20/2002	Clay, Sean P.		11-24-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Thomas, Travis	II		11/20/2002	Wren, Jerry P.		11-24-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron		11/26/02



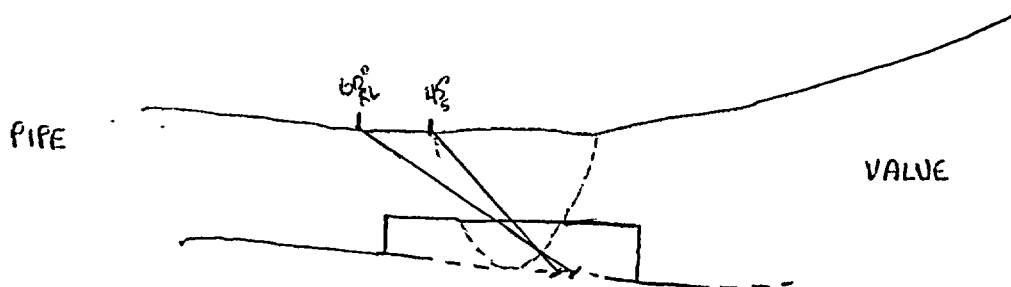
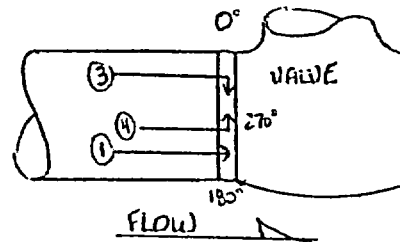
Limitation Record

Site/Unit:	PNGP / PI1	Procedure:	ISI-UT-16A	Outage No.:	PI1RFO2002
Summary No.:	301445	Procedure Rev.:	1	Report No.:	2002U061
Workscope:	ISI	Work Order No.:	0200860	Page:	2 of 4

Description of Limitation:

Valve Body Configuration.

Sketch of Limitation: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U061-1.bmp



Limitations removal requirements:

Single sided exam - Although the examination was performed through 100% of the code required volume. Procedure ISI-UT-16A is not qualified for the detection of flaws on the far side of single side access exams. The techniques provided by this procedure were used for a best effort examination for flaws on the far side of the weld.

Radiation field: N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Bleching, Todd P.			<i>T. P. Bleching</i>	11/20/2002	Clay, Sean P.	<i>Sean P. Clay</i>	11-24-02
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Thomas, Travis			<i>Travis Thomas</i>	11/20/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	11-24-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	11/26/02

ATTACHMENT 38 PAGE 2 OF 4



Supplemental Report

Report No.: 2002U061
Page: 3 of 4

Summary No.: 301445

Examiner: Blechinger, Todd P.

Level: III

Reviewer: Clay, Sean P.

Date: 11-24-02

Examiner: Thomas, Travis

Level: II

Site Review: Wren, Jerry P.

Date: 11-24-02

Other: N/A

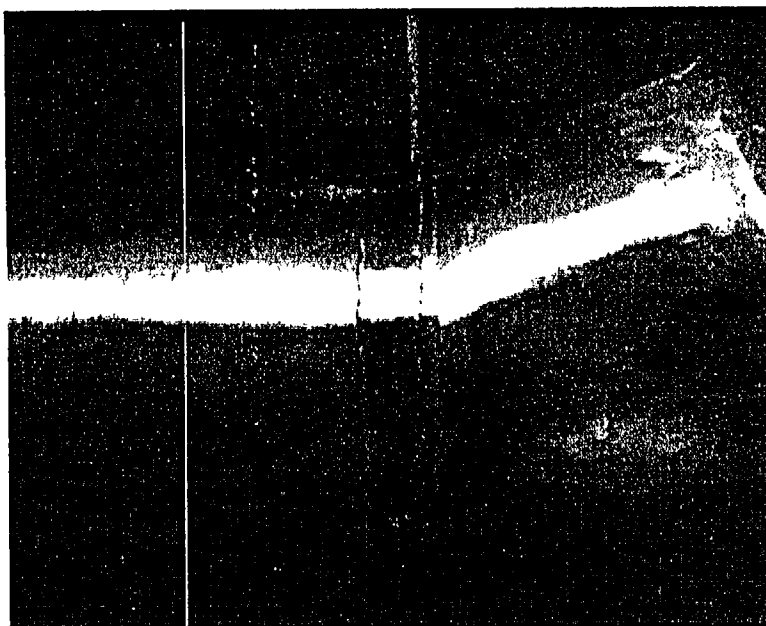
Level: N/A

ANII Review: Clow, Ron

Date: 11/26/02

Comments: None

Sketch or Photo: J:\Ideas_Photos\PI1RFO2002\Misc Photos\bob\PIC00017.JPG



J:\Ideas_Photos\PI1RFO2002\Misc Photos\bob\PIC00018.JPG





Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No.:	<u>301445</u>	Procedure Rev.:	<u>1</u>	Report No.:	<u>2002U061</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0200860</u>	Page:	<u>4</u> of <u>4</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>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 = 50.000 % total for 45 deg

Other deg - 60 (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	<u>100.000</u>	% Length X	<u>50.000</u>	% volume of length / 100 =	<u>50.000</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>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

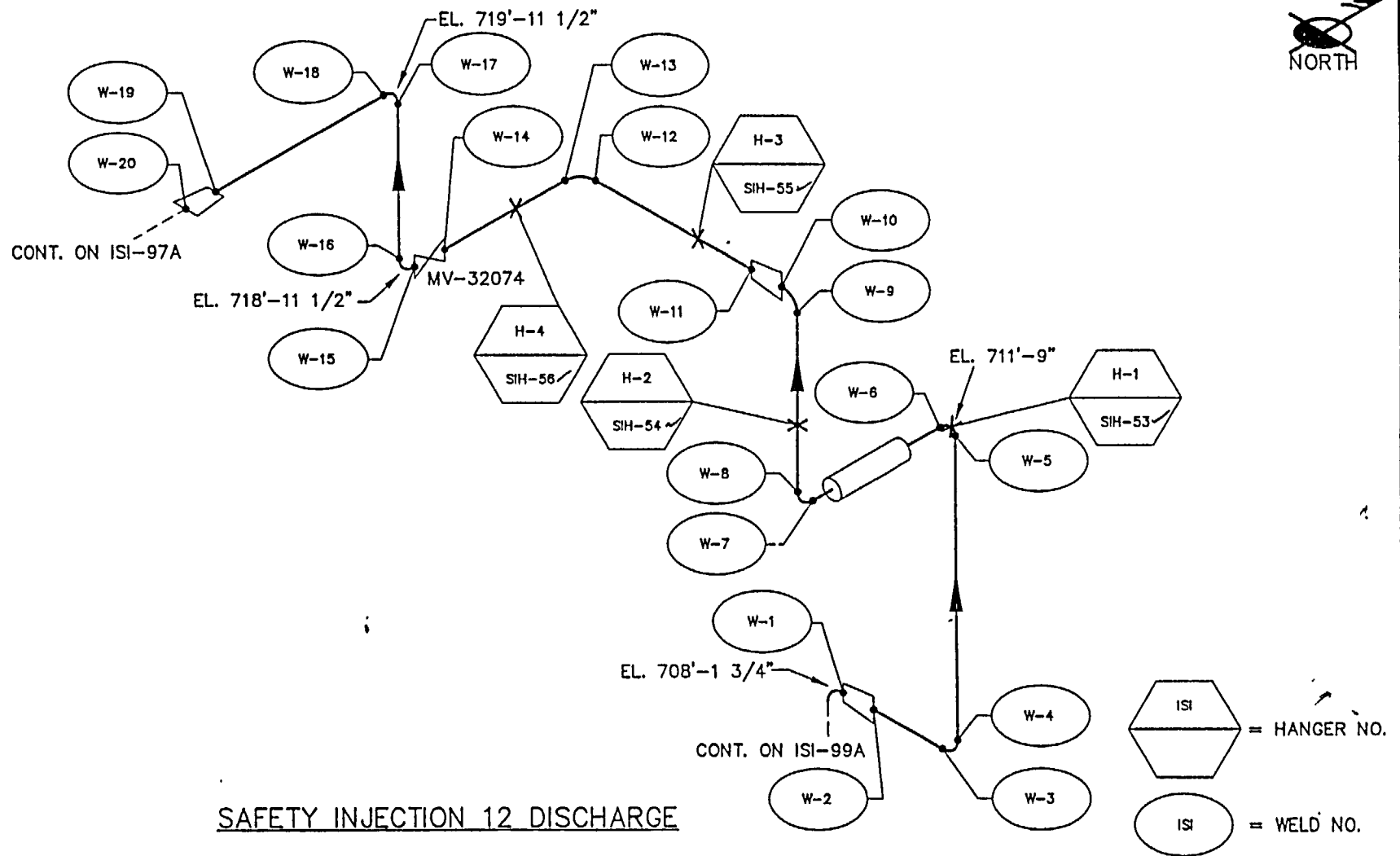
Percent complete coverage

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

50.0
62.500 % Total for complete exam
112.500

Site Field Supervisor: Jim P. White Date: 11-24-02

ATTACHMENT 38 PAGE 4 OF 4



ISI-99B

REF: NF-39332-1 & 2

FILE NO: 1199BR01

NSP (M&SP)-PI 1	ISI
DWN: CADWorks CHKD: <i>CM</i>	APPD: <i>Y</i>
SYSTEM: SAFETY INJECTION 12 DISCHARGE	
LINE: 3-SI-15B, 4-SI-15B	
DWG: ISI-99B	REV: 01



UT Pipe Weld Examination

Site/Unit: PNGP / P11
Summary No.: 305015
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U086
Page: 1 of 6

Code: 1989 Code Cat.: C-F-1 Location: Cont outer Anu
Drawing No.: ISI-99B Description: PIPE - VALVE
System ID: SI
Component ID: W-14 Size/Length: .8" / 11" Thickness/Diameter: .42" / 3"
Limitations: One sided exam due to valve 3207A- MV-32074. SMH 11/21/03 Start Time: 1507 Finish Time: 1517

Examination Surface: Inside ☐ Outside ☒ Surface Condition: As Welded
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143

Temp. Tool Mfg.: Telatemp Serial No.: NSP 173 Surface Temp.: 70 °F

Cal. Report No.: 2002CA141, 2002CA142

Angle Used	0	45	45T	60	70	
Scanning dB		56.0	56.0	N/A	83.0	

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

Comments:

Single sided exam - Although the examination was performed through 100% of the code required volume. Procedure ISI-UT-16A is not qualified for the detection of flaws on the far side of single side access exams. The techniques provided by this procedure were used for a best effort examination for flaws on the far side of the weld. No previous data. SMH 11/21/03

Results: NAD ☐ IND ☐ GEO ☒

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

Examiner	Level	II	Signature	Date	Reviewer	Signature	Date
Auer, Robert G.				11/27/2002	Clay, Sean P.		11-30-02
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Thomas, Travis				11/27/2002	Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/2/02



Ultrasonic Indication Report

Site/Unit: PNGP / PI1
 Summary No.: 305015
 Workscope: ISI

Procedure: ISI-UT-16A
 Procedure Rev.: 1
 Work Order No.: 0200860

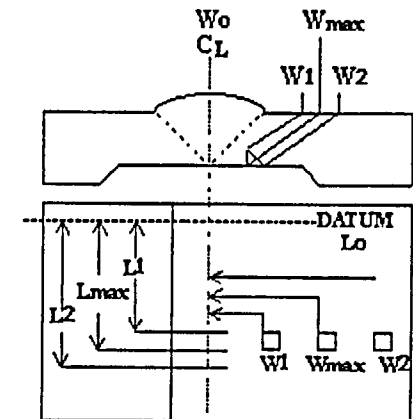
Outage No.: PI1RFO2002
 Report No.: 2002U086
 Page: 2 of 6

Search Unit Angle: 70 °
 Wo Location: Weld Centerline
 Lo Location: Top Dead Center

- ☒ Piping Welds
☐ Ferritic Vessels $\geq 2^{\circ}T$
☐ Other _____

MP	Metal Path	Wmax	Distance From Wo To S.U. At Maximum Response
RBR	Remaining Back Reflection	W1	Distance From Wo At 20% Of Max (Forward)
L	Distance From Datum	W2	Distance From Wo At 20% Of Max (Forward)

Comments: None



Scan #	Indication No.	% Of DAC	W Max		Forward Of Max		Backward Of Max		L1 Of Max	L Max	L2 Of Max	RBR Amp.	Remarks
			W	MP	W1	MP	W2	MP					
1	1	50%	0.9	1.0						2.2			Root Geometry

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Auer, Robert G.		<i>[Signature]</i>	11/27/2002	Clay, Sean P.	<i>[Signature]</i>	11-30-02
Examiner	Level II	Signature	Date	Site Review	Signature	Date
Thomas, Travis		<i>[Signature]</i>	11/27/2002	Wren, Jerry P.	<i>[Signature]</i>	12-1-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A		<i>[Signature]</i>		Clow, Ron	<i>[Signature]</i>	12/2/02



Supplemental Report

Report No.: 2002U086

Page: 3 of 6

Summary No.: 305015

Examiner: Auer, Robert G.

Level: II

Reviewer: Clay, Sean P.

Date: 11-30-02

Examiner: Thomas, Travis

Level: II

Site Review: Wren, Jerry P.

Date: 12-1-02

Other: N/A

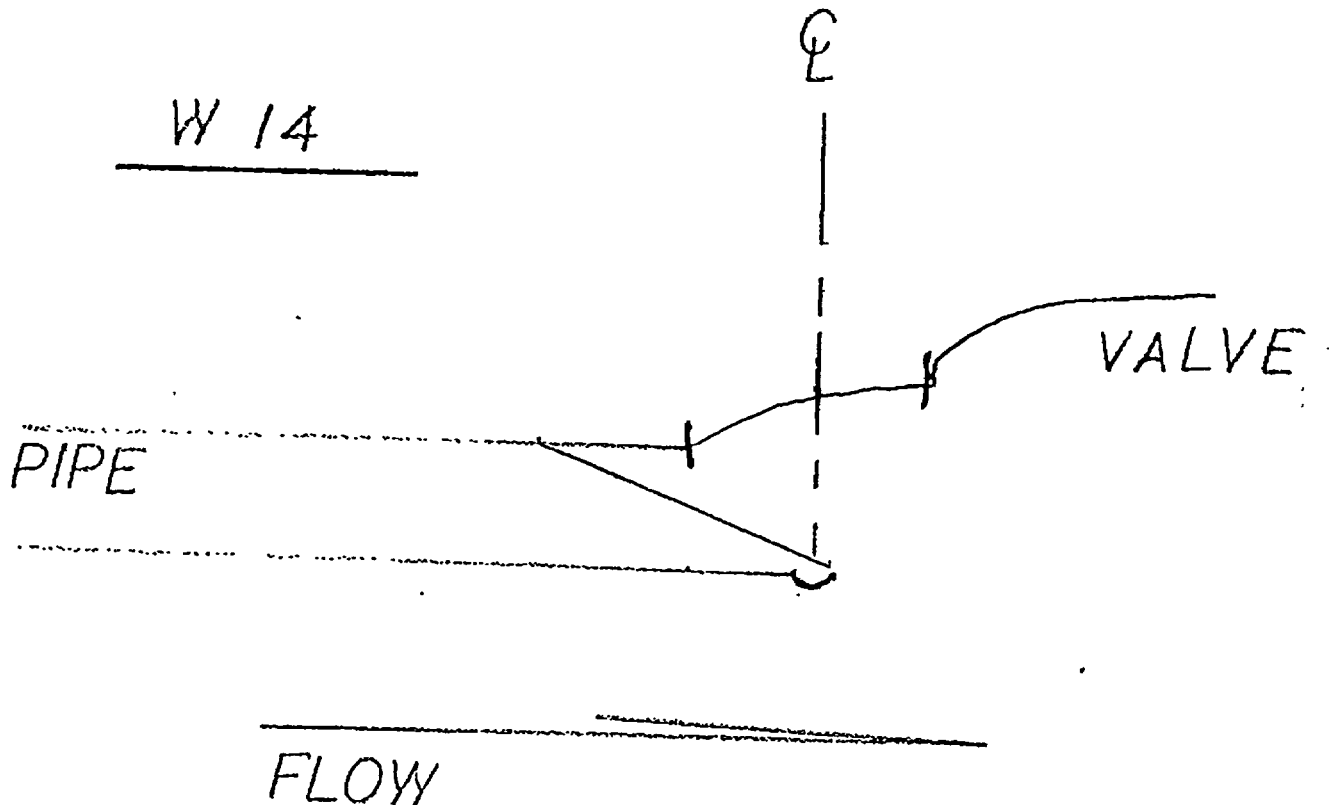
Level: N/A

ANII Review: Clow, Ron

Date: 12/2/02

Comments: Root Geometry

Sketch or Photo: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U086-1.bmp



ATTACHMENT 40 PAGE 3 OF 6



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 305015
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U086
Page: 4 of 6

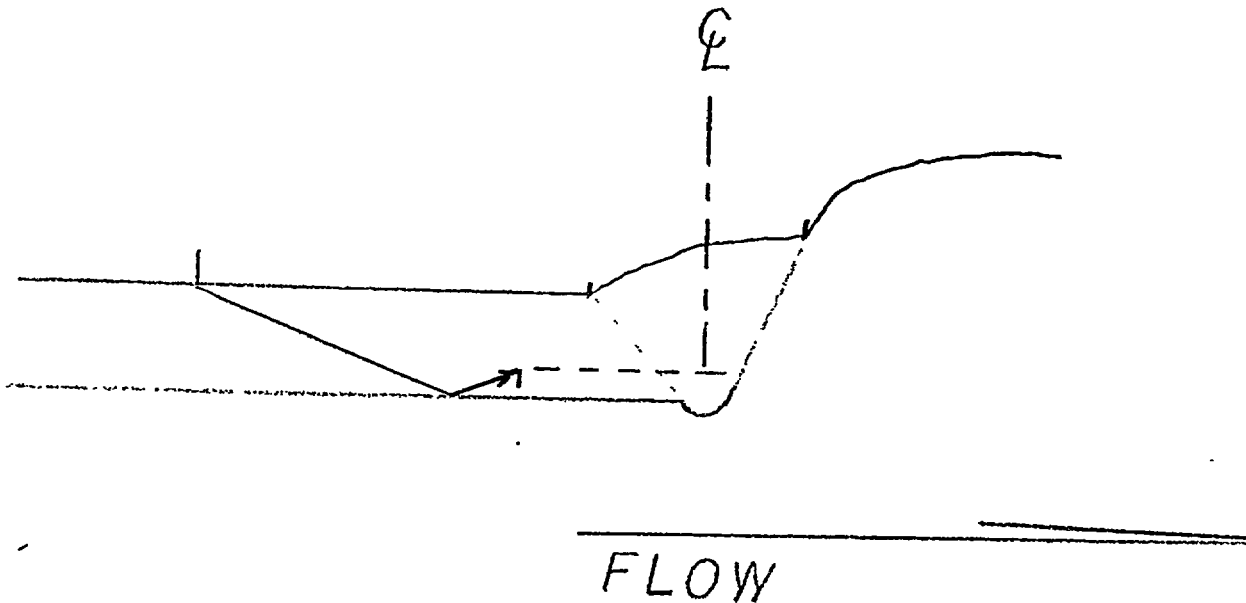
Description of Limitation:

No scan on valve side due to configuration. See photo.

Sketch of Limitation:

J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U086-2.bmp

W 14



Limitations removal requirements:

None

Radiation field: N/A

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Auer, Robert G.	II		11/27/2002	Clay, Sean P.		11-30-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Thomas, Travis	II		11/27/2002	Wren, Jerry P.		12-1-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron		12/2/02

ATTACHMENT 40 PAGE 4 OF 6



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: PNGP / PI1 Procedure: ISI-UT-16A Outage No.: PI1RFO2002
Summary No.: 305015 Procedure Rev.: 1 Report No.: 2002U086
Workscope: ISI Work Order No.: 0200860 Page: 5 of 6

45 deg

Scan 1	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</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>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 = 25.000 % total for 45 deg

Other deg - 70 (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	<u>100.000</u>	% Length X	<u>50.000</u>	% volume of length / 100 =	<u>50.000</u>	% total for Scan 1
Scan 2	<u>100.000</u>	% Length X	<u>50.000</u>	% volume of length / 100 =	<u>50.000</u>	% total for Scan 2
Scan 3	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

50.000 % Total for complete exam

Site Field Supervisor:

Jim P. White ^{LV. III}

Date: 11-30-02

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ATTACHMENT 40



Supplemental Report

Report No : 2002U086

Page: 6 of 6

Summary No.: 305015

Examiner: Auer, Robert G.

Level: II

Reviewer: Clay, Sean P.

Date 11-30-02

Examiner: Thomas, Travis

Level: II

Site Review: Wren, Jerry P.

Date: 12-1-02

Other: N/A

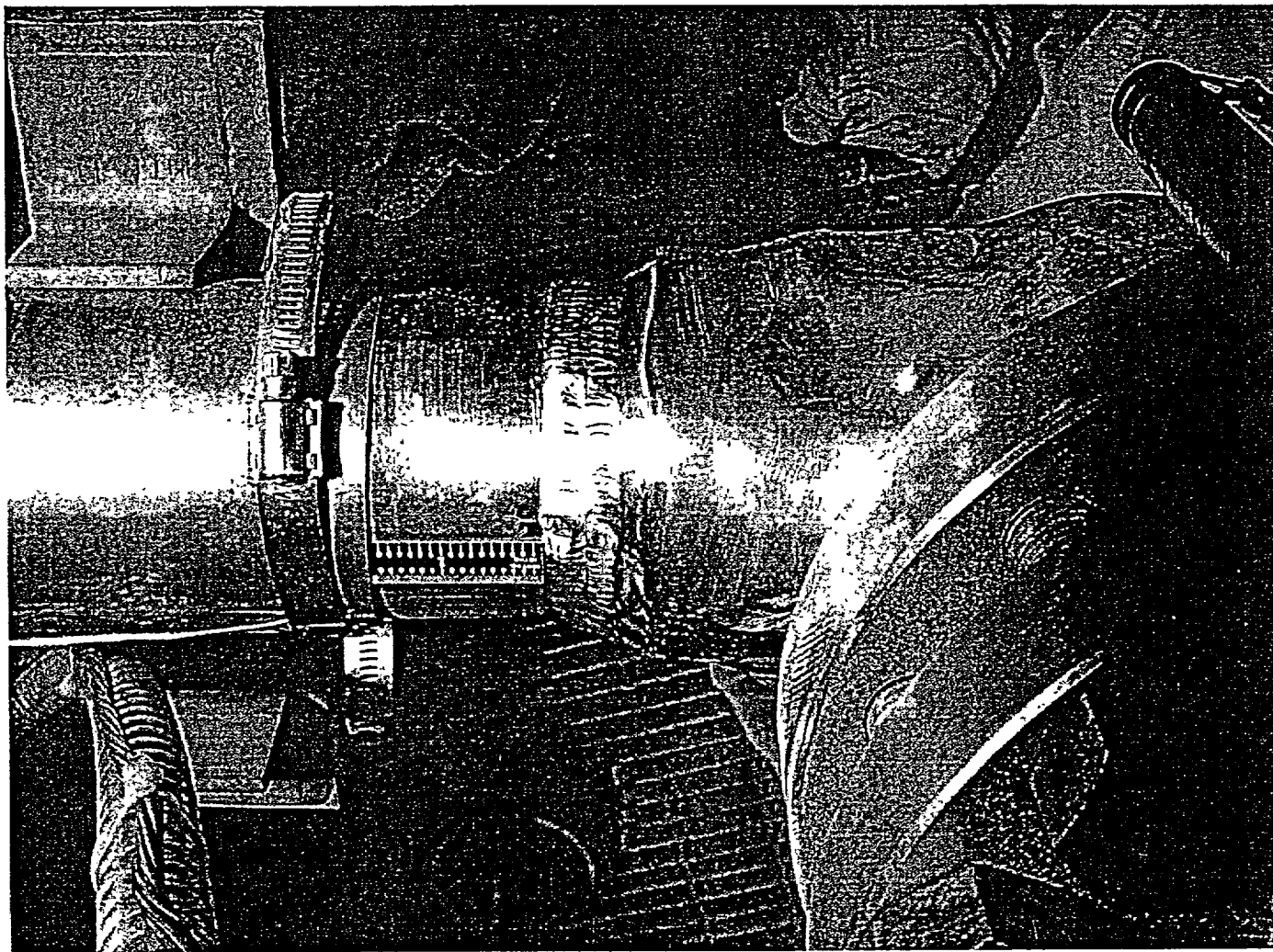
Level: N/A

ANII Review: Clow, Ron

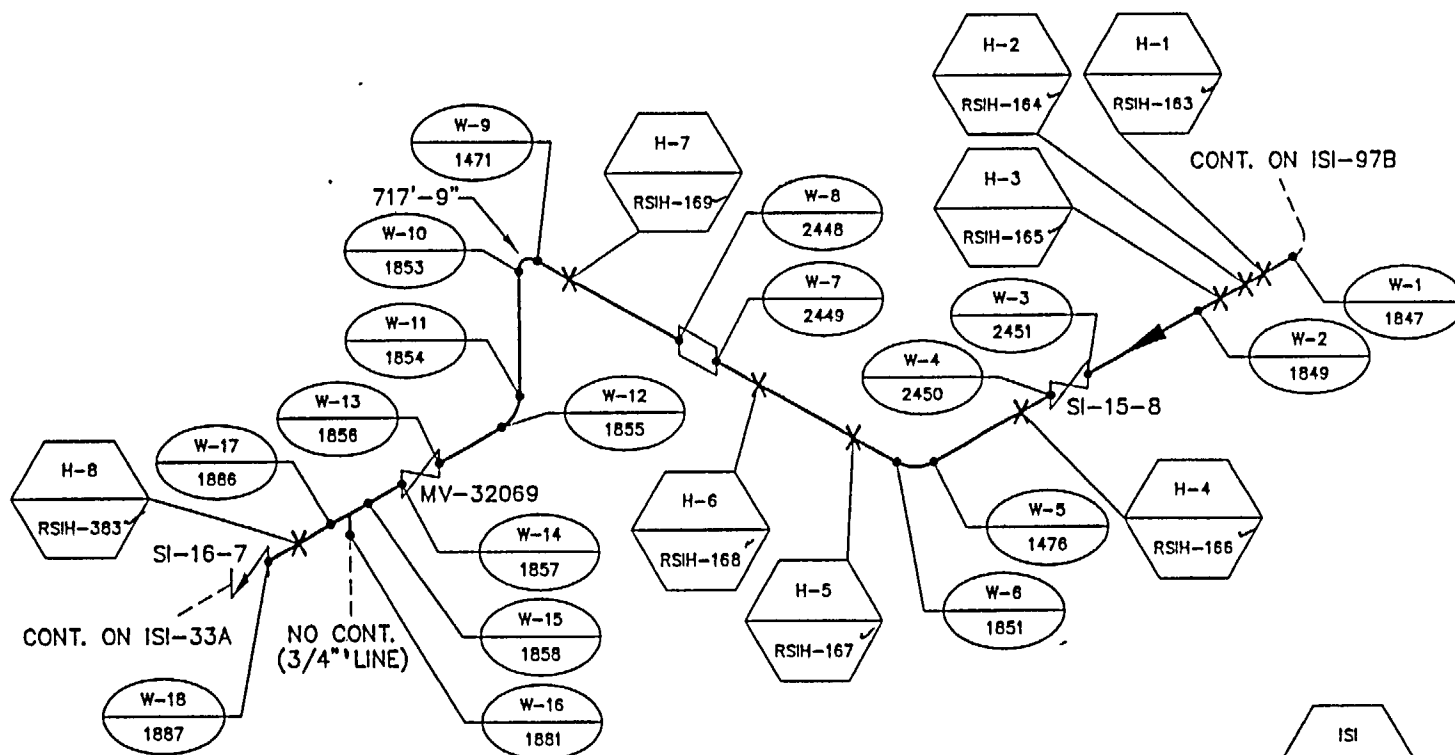
Date: 12/2/02

Comments: None

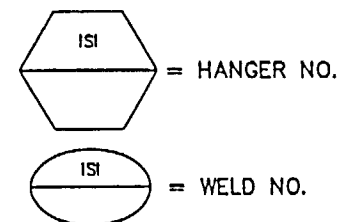
Sketch or Photo: J:\ddeal_Photos\PI1RFO2002\UT Photos\2002U086-3 bmp



ATTACHMENT 40 PAGE 6 OF 6



SAFETY INJECTION 12 DISCHARGE



XH-106-493
REF: XH-106-511

FILE NO: 1197CR01

NSP (M&SP)-PI 1		ISI
DWN: CADWorks	CHKD: <i>[Signature]</i>	APPD: <i>[Signature]</i>
SYSTEM: SAFETY INJECTION 12 DISCHARGE		
LINE: 2-SI-22A		
DWG:	ISI-97C	REV: 01

ISI-97C



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 303060
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U089
Page: 1 of 4

Code: 1989 Code Cat.: C-F-1 Location: Cont 715
Drawing No.: ISI-97C Description: PIPE - VALVE
System ID: SI
Component ID: W-18 Size/Length: 0.5" / 7.5" Thickness/Diameter: .30" / 2"
Limitations: See Comments. Start Time: 1620 Finish Time: 1630

Examination Surface: Inside ☐ Outside ☒ Surface Condition: As Welded
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143
Temp. Tool Mfg.: Telatemp Serial No.: NSP 173 Surface Temp.: 70 °F
Cal. Report No.: 2002CA139, 2002CA140

Angle Used	0	45	45T	60	70	
Scanning dB		62	62		85	

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

Comments:

No scan on valve due to configuration. No axial scan on bottom 2.5" due to stantion from support 1-RSIH-383. See attached limitation sheet.

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: No

Reviewed Previous Data: N/A

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Auer, Robert G.	II		11/27/2002	Clay, Sean P.		11-30-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			Wren, Jerry P.		12-1-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron		12/2/02



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 303060
Workscope: ISI

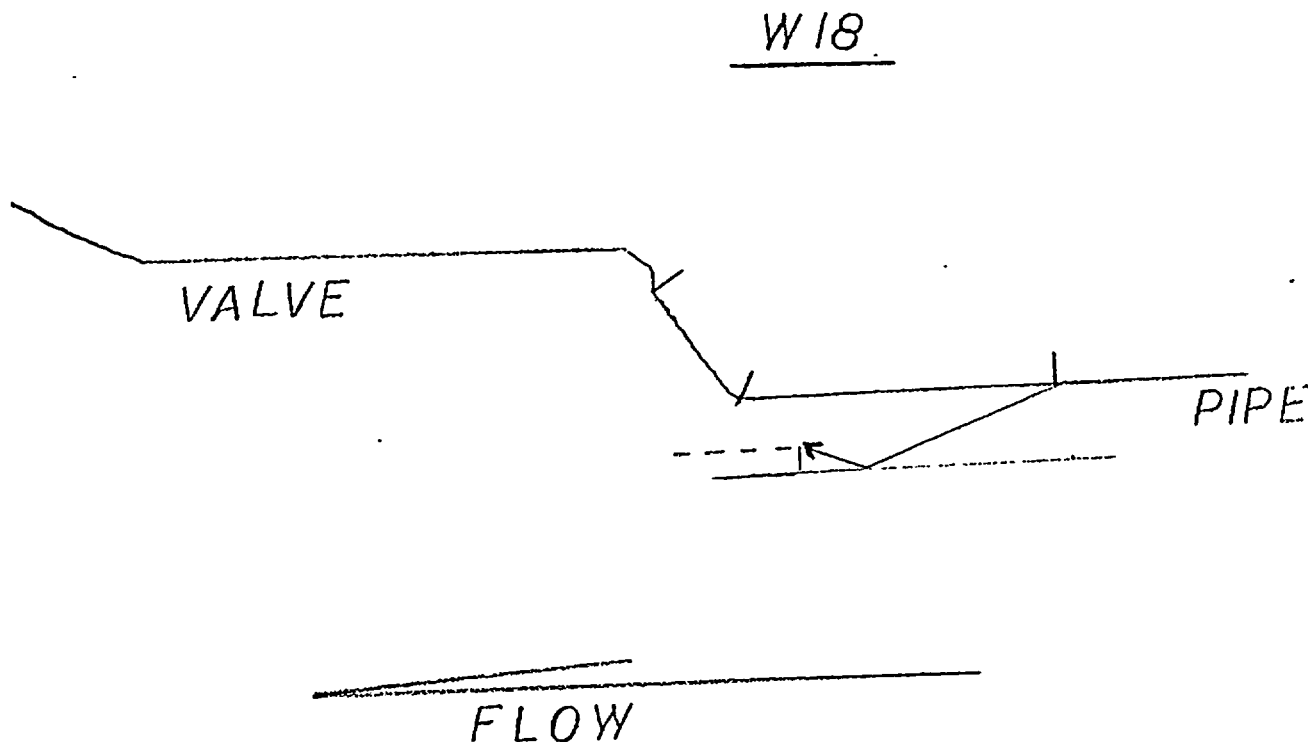
Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U089
Page: 2 of 4

Description of Limitation:

Single sided exam - Although the examination was performed through 100% of the code required volume. Procedure ISI-UT-16A is not qualified for the detection of flaws on the far side of single side access exams. The techniques provided by this procedure were used for a best effort examination for flaws on the far side of the weld.

Sketch of Limitation: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U089-1.bmp



Limitations removal requirements:

None

Radiation field: < 2 mR/hr

Examiner	Level	II	Signature	Date	Reviewer	Signature	Date
Auer, Robert G.			<i>[Signature]</i>	11/27/2002	Clay, Sean P.	<i>[Signature]</i>	11-30-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>[Signature]</i>	12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>[Signature]</i>	12/2/02

PAGE 2 OF 4
ATTACHMENT 42



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: PNGP / P11 Procedure: ISI-UT-16A Outage No.: PI1RFO2002
Summary No.: 303060 Procedure Rev.: 1 Report No.: 2002U089
Workscope: ISI Work Order No.: 0200860 Page: 3 of 4

PAGE 3 OF 4
ATTACHMENT 42

45 deg

Scan 1	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</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>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 = 25.000 % total for 45 deg

Other deg - 70 (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	<u>67.000</u>	% Length X	<u>50.000</u>	% volume of length / 100 =	<u>33.500</u>	% total for Scan 1
Scan 2	<u>67.000</u>	% Length X	<u>50.000</u>	% volume of length / 100 =	<u>33.500</u>	% total for Scan 2
Scan 3	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

41.750 % Total for complete exam

Site Field Supervisor:

James E. Williams ^{LV. III}

Date: 11-30-02



Supplemental Report

Report No.: 2002U089

Page. 4 of 4

Summary No.: 303060

Examiner: Auer, Robert G.

Level: II

Reviewer: Clay, Sean P.

Date: 11-30-02

Examiner: N/A

Level: N/A

Site Review: Wren, Jerry P.

Date: 12-1-02

Other: N/A

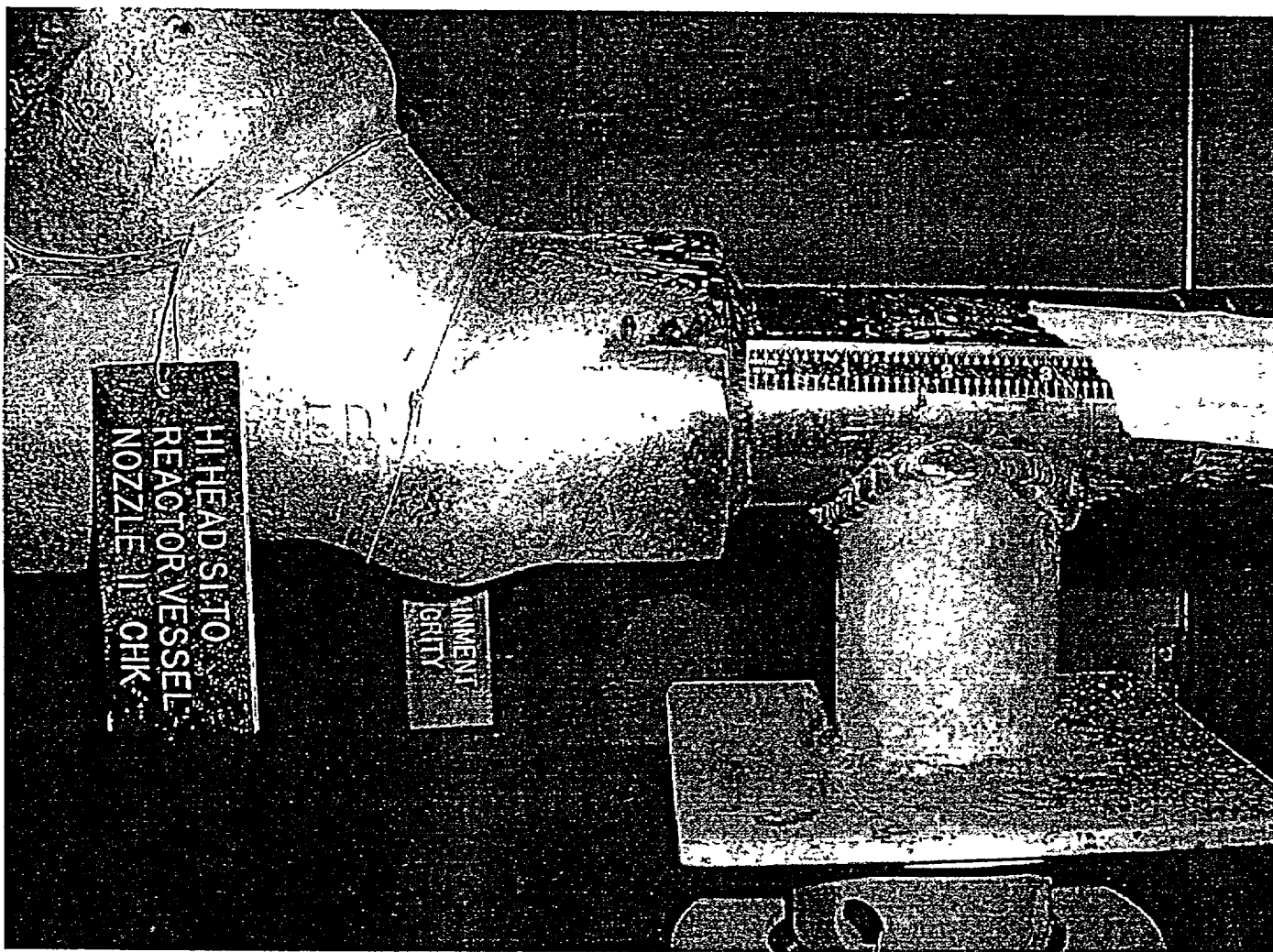
Level: N/A

ANII Review: Clow, Ron

Date: 12/2/02

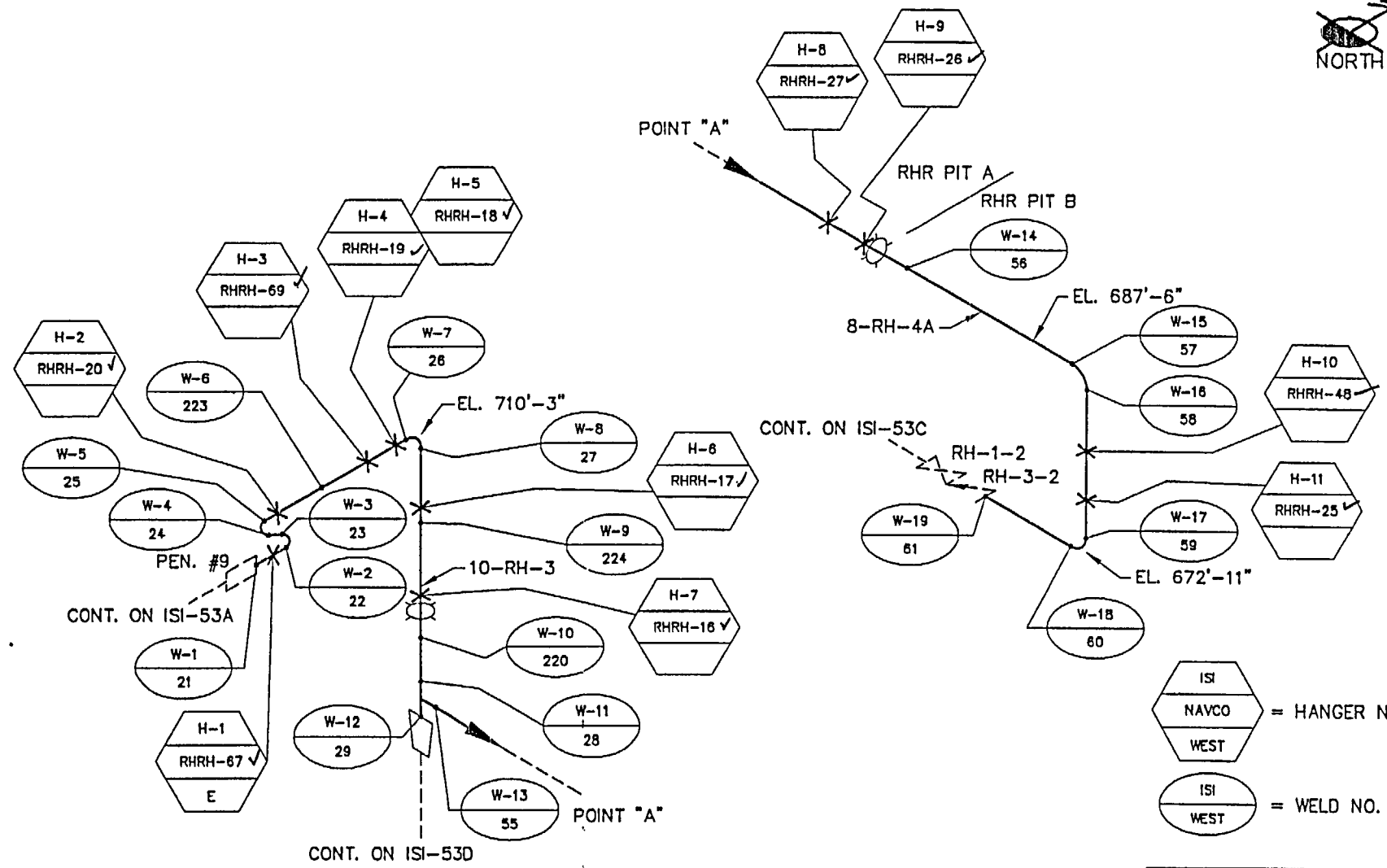
Comments: None

Sketch or Photo: J:\ddeal_Photos\PI1RFO2002\UT Photos\2002U089-2 bmp



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ATTACHMENT 42



ISI-53B

REF: XH-106-176		FILE NO:
NSP (M&SP)-PI 1		ISI
DWN: TJH	CHKD: <i>KJK</i>	APPD: <i>DSW</i>
SYSTEM: RESIDUAL HEAT REMOVAL		
LINE: 10-RH-3, 8-RH-4A		
DWG:	ISI-53B	REV: 03



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 301326
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0210380

Outage No.: PI1RFO2002
Report No.: 2002U100
Page: 1 of 4

Code: 1989 Code Cat.: C-F-1 Location: Aux CSPR
Drawing No.: ISI-53B Description: PEN 9 - PIPE
System ID: RH
Component ID: W-1 Size/Length: 10" / 31.4" Thickness/Diameter: .5" / 10"
Limitations: See attached photos. Start Time: N/A Finish Time: N/A

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground Smooth
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: _____ Batch No.: _____
Temp. Tool Mfg.: N/A Serial No.: N/A Surface Temp.: N/A °F
Cal. Report No.: N/A

Angle Used	0	45	45T	60		
Scanning dB						

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

Comments:

No exam performed due to restricted access.

No previous data. smut 12/10/03.

Results: NAD ☐ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: No

Reviewed Previous Data: N/A

Examiner	Level	II	Signature	Date	Reviewer	Signature	Date
Halling, David A.			<i>[Signature]</i>	12/4/2002	Clay, Sean P.	<i>[Signature]</i>	12-04-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>[Signature]</i>	12-5-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>[Signature]</i>	12/5/02

ATTACHMENT 44 PAGE 1 OF 4



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No.:	<u>301326</u>	Procedure Rev.:	<u>1</u>	Report No.:	<u>2002U100</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0210380</u>	Page:	<u>2</u> of <u>4</u>

45 deg

89w 3-5-03

Scan 1	<u>0.000</u>	% Length X	<u>31.400</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 1
Scan 2	<u>0.000</u>	% Length X	<u>31.400</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 2
Scan 3	<u>0.000</u>	% Length X	<u>31.400</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>31.400</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Add totals and divide by # scans = 0.000 % total for 45 deg

Other deg - 0 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</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>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

0.000 % Total for complete exam

Site Field Supervisor:

Jerry P. White *LV. III*

Date:

12-5-02

ATTACHMENT 44 PAGE 2 OF 4



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 301326
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0210380

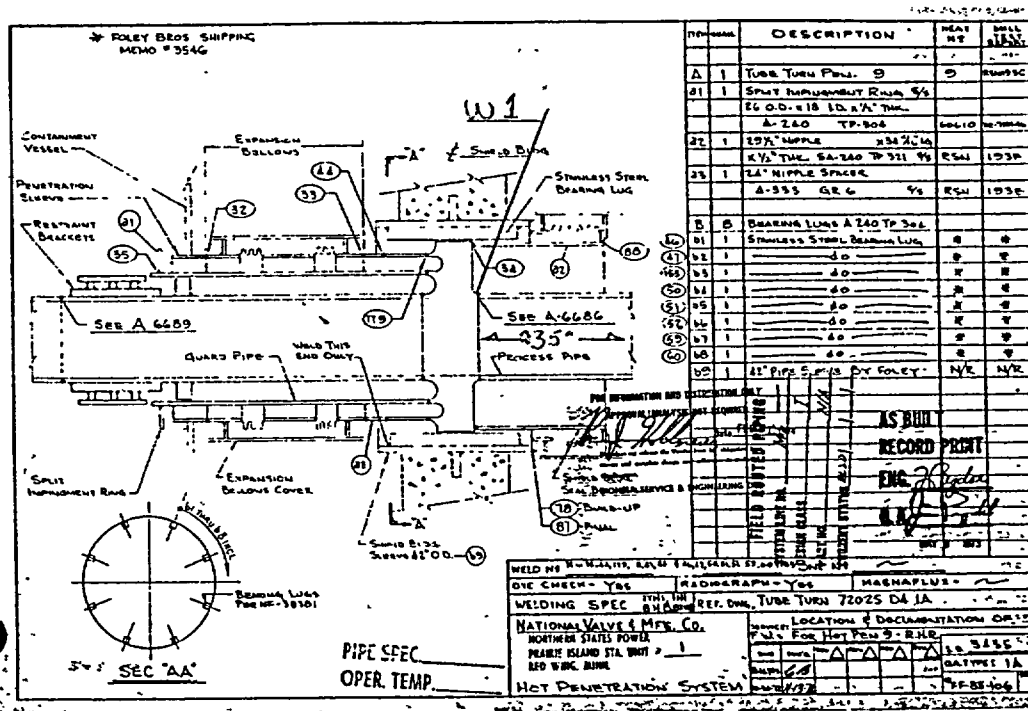
Outage No.: PI1RFO2002
Report No.: 2002U100
Page: 3 of 4

Description of Limitation:

There is no physical access due to penetration sleeve.

Sketch of Limitation:

J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U100-1 bmp



TYPICAL OF PENS. 9 & 10

Limitations removal requirements:

None

Radiation field. N/A

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Halling, David A.		<i>[Signature]</i>	12/4/2002	Clay, Sean P.	<i>[Signature]</i>	12-05-02
Examiner	Level N/A	Signature	Date	Site Review	Signature	Date
N/A				Wren, Jerry P.	<i>[Signature]</i>	12-5-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>[Signature]</i>	12/5/02

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ATTACHMENT 44



Supplemental Report

Report No : 2002U100

Page: 4 of 4

Summary No.: 301326

Examiner: Halling, David A.

Level: II

Reviewer: Clay, Sean P.

Date: 12-04-02

Examiner: N/A

Level: N/A

Site Review: Wren, Jerry P.

Date: 12-5-02

Other: N/A

Level: N/A

ANII Review: Clow, Ron

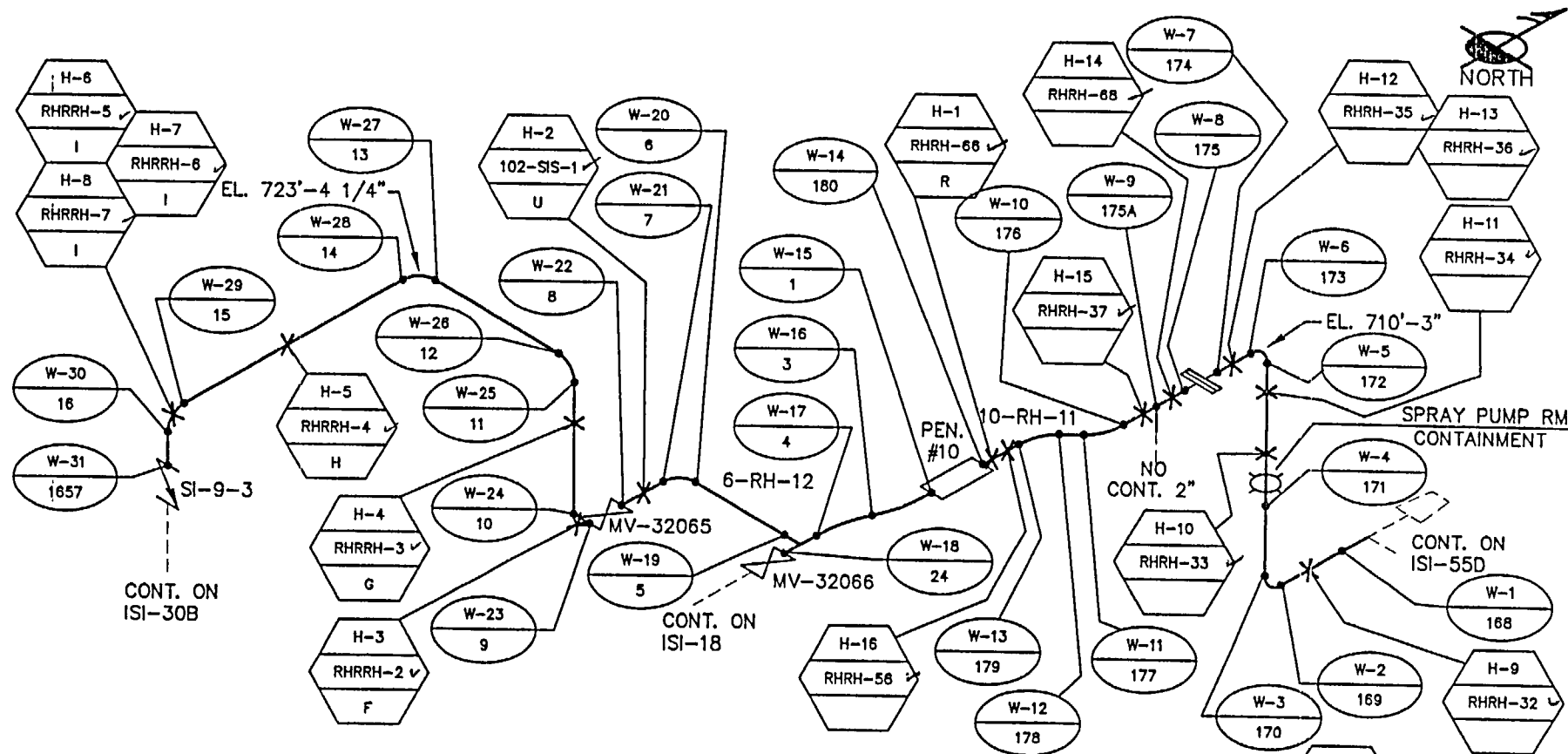
Date: 12/5/02

Comments: None

Sketch or Photo: J:\Ideas_Photos\PI1RFO2002\UT Photos\2002U100-1.jpg



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ATTACHMENT 44



RHR PUMP 'B' DISCHARGE

ISI
NAVCO = HANGER NO.
WEST

ISI
WEST = WELD NO.

XH-106-316
REF: XH-106-175

FILE NO:

NSP (M&SP) - PI 1		ISI
DWN: TJH	CHKD: <i>DW</i>	APPD:
SYSTEM: RESIDUAL HEAT REMOVAL		
LINE: 6-RH-12, 10-RH-11		
DWG:	ISI-89B	REV: 03

ISI-89B



Liquid Penetrant Examination

PAGE 1 OF 4
46
ATTACHMENT

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 301858 Procedure Rev.: 14 Report No.: 2002P140
Workscope: ISI Work Order No.: 0210380 Page: 1 of 4

Code: 1989 Code Cat.: C-F-1 Location: Aux CSPR
Drawing No.: ISI-89B Description: PIPE - PEN 10
System ID: RH
Component ID: W-14 Size/Length: 10" / 31.4"
Limitations: See attached photos.

Temp. Tool Mfg.: N/A Serial No.: N/A Surface Temp.: N/A °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: Top Dead Center/Weld Centerline Surface Condition: Ground Smooth

	Cleaner	Penetrant	Remover	Developer
Brand				
Type				
Batch No.				
Time	Evap.	Dwell	Evap.	Develop
Time Exam Started:		Time Exam Completed:		

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

Comments:

No exam performed due to restricted access. No previous data 8MTH 1/21/03.

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: No

Reviewed Previous Data: N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Halling, David A.			<i>DA Halling</i>	12/4/2002	Clay, Sean P.	<i>Sean P. Clay</i>	12-04-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>Jerry P. Wren</i>	12-4-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	12/5/02



Determination of Percent Coverage for Surface Examinations

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 301858 Procedure Rev.: 14 Report No.: 2002P140
Workscope: ISI Work Order No: 0210380 Page: 2 of 4

Area Required (as shown in applicable code reference drawing)

Length 31.400 * Width 2.000
= Total Area required 62.800 square inches

Coverage Achieved

Area examined 0.000 sq. in. / Total area required (100%) 62.800 sq. in.
= Percent coverage 0.000 % (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 10.000 * (Pi) 3.1416
= Length 31.416 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				

Site Field Supervisor: 

Date: 12-4-02

ATTACHMENT 46 PAGE 2 OF 4



Limitation Record

Site/Unit: PNGP / P11
Summary No.: 301858
Workscope: ISI

Procedure: ISI-PT-1
Procedure Rev.: 14
Work Order No.: 0210380

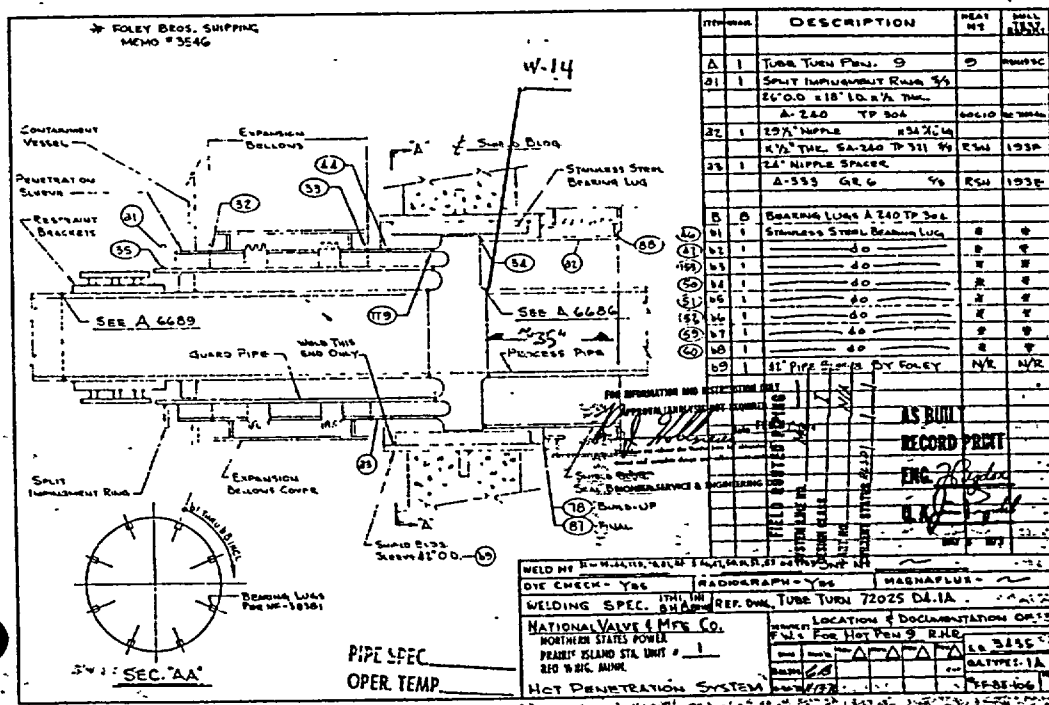
Outage No.: P11RFO2002
Report No.: 2002P140
Page: 3 of 4

Description of Limitation:

There is no physical access due to penetration sleeve.

Sketch of Limitation:

J:\ddeal_Photos\P11RFO2002\PT Photos\2002P140-1 bmp



TYPICAL FOR PEN 9 AND 10

Limitations removal requirements:

None

Radiation field N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Halling, David A.			<i>DA Halling</i>	12/4/2002	Clay, Sean P.	<i>Sean P. Clay</i>	12-05-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>Jerry P. Wren</i>	12-5-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>Ron Clow</i>	12/5/02

ATTACHMENT 46 PAGE 3 OF 4



Supplemental Report

Report No : 2002P140

Page: 4 of 4

Summary No.: 301858

Examiner: Halling, David A.

Level: III

Reviewer: Clay, Sean P.

Date: 12-04-02

Examiner: N/A

Level: N/A

Site Review: Wren, Jerry P.

Date: 12-5-02

Other: N/A

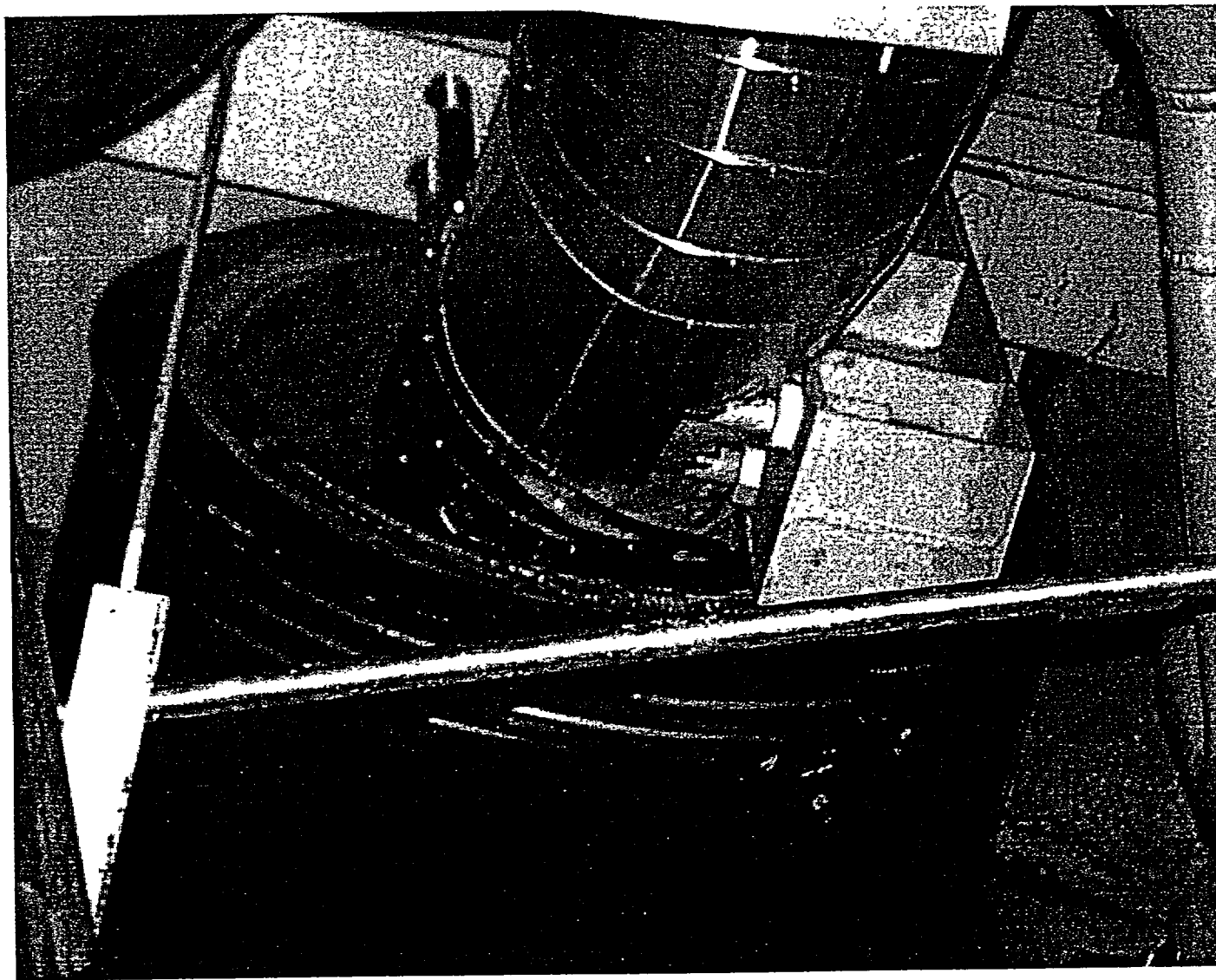
Level: N/A

ANII Review: Clow, Ron

Date: 12/5/02

Comments: None

Sketch or Photo: J:\Ideal_Photos\PI1RFO2002\Misc Photos\301858.jpg



ATTACHMENT 46 PAGE 4 OF 4



Liquid Penetrant Examination

PAGE 1 OF 4
ATTACHMENT 47

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No: PI1RFO2002
Summary No.: 301326 Procedure Rev.: 14 Report No.: 2002P141
Workscope: ISI Work Order No.: 0210380 Page 1 of 4

Code: 1989 Code Cat.: C-F-1 Location: Aux CSPR
Drawing No.: ISI-53B Description: PEN 9 - PIPE
System ID: RH
Component ID: W-1 Size/Length: 10" / 31.4"
Limitations: See attached photos.

Temp. Tool Mfg.: N/A Serial No.: N/A Surface Temp.: N/A °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: Top Dead Center/Weld Centerline Surface Condition: Ground Smooth

	Cleaner	Penetrant	Remover	Developer
Brand				
Type				
Batch No.				
Time	Evap	Dwell	Evap	Develop
Time Exam Started.		Time Exam Completed:		

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

Comments:
No exam performed due to restricted access. No previous data. SMH 11/21/03

Results: NAD ☐ IND ☐ GEO ☐
Percent Of Coverage Obtained > 90%: No Reviewed Previous Data: N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Halling, David A.				12/4/2002	Clay, Sean P.		12-04-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-5-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/5/02



Determination of Percent Coverage for Surface Examinations

Site/Unit. PNGP / PI1 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 301326 Procedure Rev.: 14 Report No.: 2002P141
Workscope: ISI Work Order No.: 0210380 Page: 2 of 4

Area Required (as shown in applicable code reference drawing)

Length 31.400 * Width 2.000
= Total Area required 62.800 square inches

Coverage Achieved

Area examined 0.000 sq. in. / Total area required (100%) 62.800 sq. in.
= Percent coverage 0.000 % (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 10.000 * (Pi) 3.1416
= Length 31.416 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				

Site Field Supervisor: Jay P. Wm ^{W.P.III}

Date: 12-5-02

ATTACHMENT 47 PAGE 2 OF 4



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 301326
Workscope: ISI

Procedure: ISI-PT-1
Procedure Rev.: 14
Work Order No.: 0210380

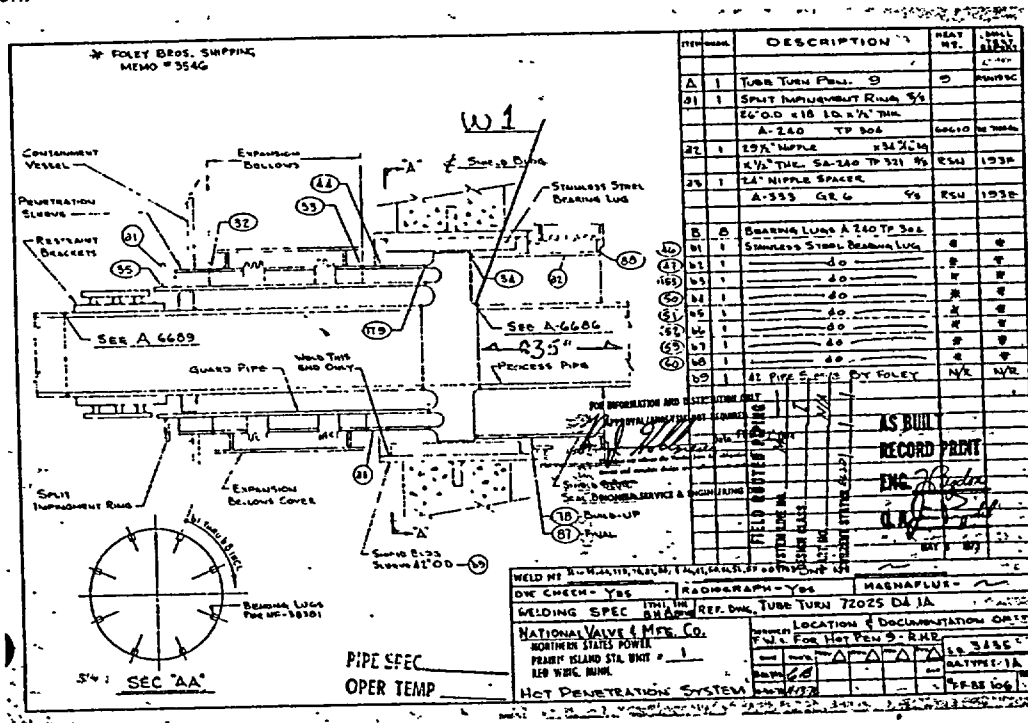
Outage No.: PI1RFO2002
Report No.: 2002P141
Page: 3 of 4

Description of Limitation:

There is no physical access due to penetration sleeve.

Sketch of Limitation:

J:\Ideal_Photos\PI1RFO2002\PT Photos\2002P141-1.bmp



TYPICAL OF PENS: 9&10

Limitations removal requirements:

None

Radiation field: N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Halling, David A.			<i>[Signature]</i>	12/4/2002	Clay, Sean P.	<i>[Signature]</i>	12-05-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>[Signature]</i>	12-5-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>[Signature]</i>	12/5/02

PAGE 3 OF 4
ATTACHMENT 47



Supplemental Report

Report No : 2002P141

Page: 4 of 4

Summary No.: 301326

Examiner: Halling, David A.

Level: III

Reviewer: Clay, Sean P.

Date: 12-04-02

Examiner: N/A

Level: N/A

Site Review: Wren, Jerry P.

Date: 12-5-02

Other: N/A

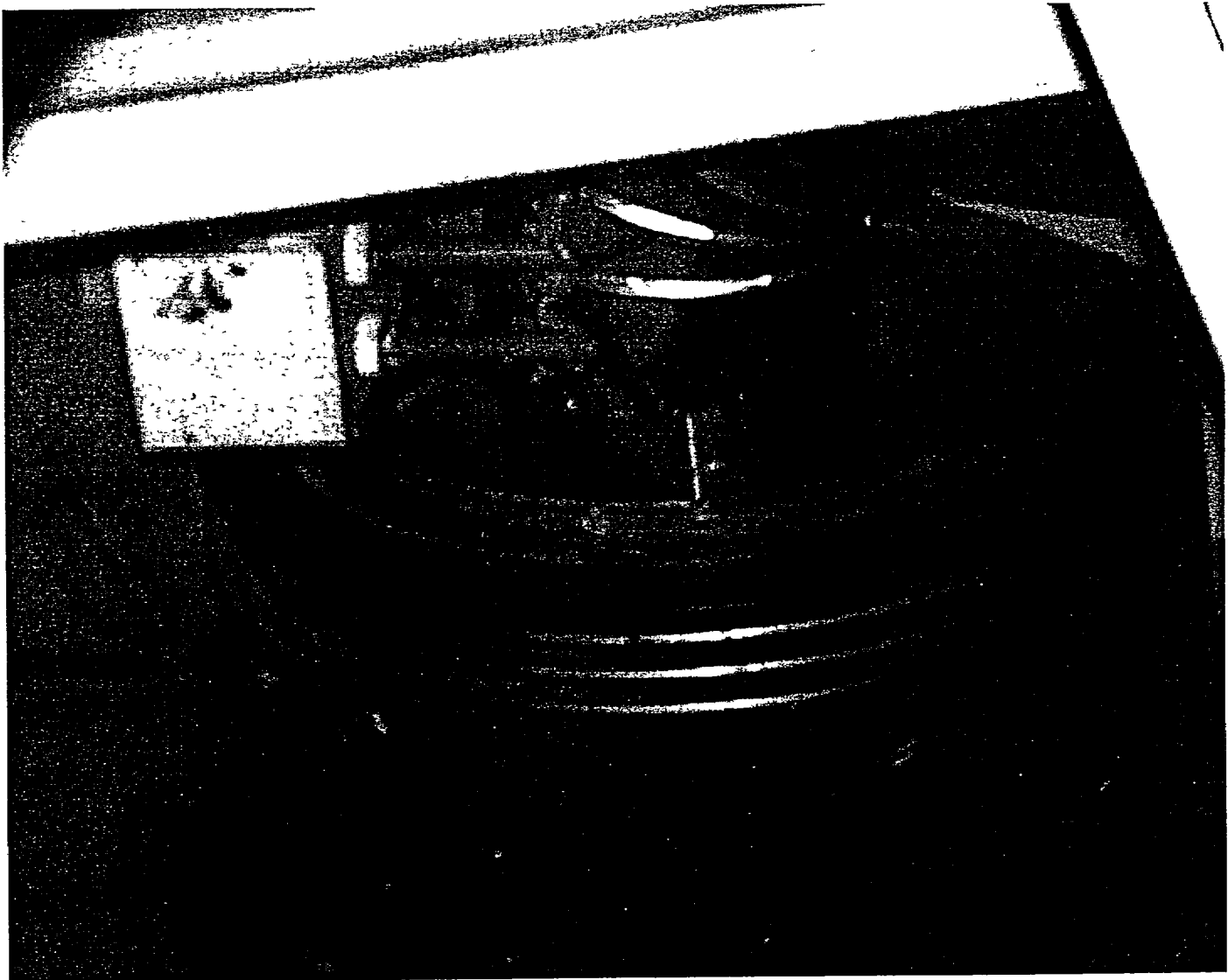
Level: N/A

ANII Review: Clow, Ron

Date: 12/5/02

Comments: None

Sketch or Photo: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U100-1.jpg



ATTACHMENT 47 PAGE 4 OF 4



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 301584
Workscope: ISI

Procedure: ISI-UT-1A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U094
Page: 1 of 4

Code: 1989 Code Cat.: C-F-2 Location: Cont 715
Drawing No.: ISI-68A Description: PIPE - PIPE
System ID: MS
Component ID: W-6LSUD guard Size/Length: N/A Thickness/Diameter: N/A
Limitations: Entire exam area under permanent guard pipe. SMH 1/21/03 Start Time: N/A Finish Time: N/A

Examination Surface: Inside ☐ Outside ☐ Surface Condition: _____
Lo Location: _____ Wo Location: Centerline of Weld Couplant: _____ Batch No.: _____
Temp. Tool Mfg.: _____ Serial No.: _____ Surface Temp.: _____ °F

Cal. Report No.: _____

Angle Used	0	45	45T	60		
Scanning dB						

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

Comments:
N/A No previous data. SMH 1/21/03.

Results: NAD ☐ IND ☐ GEO ☐

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

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Clay, Sean P.		11-30-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/1/02



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 301584
Workscope: ISI

Procedure: ISI-UT-1A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U094
Page: 2 of 4

Description of Limitation:

No access due to entire weld under permanent guard pipe.

Sketch of Limitation: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U094-1.jpg



Limitations removal requirements:

Guard pipe is permanent and cannot be removed.

Radiation field. N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Clay, Sean P.		11-30-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/1/02

PAGE 2 OF 4
ATTACHMENT 48



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-1A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No.:	<u>301584</u>	Procedure Rev.:	<u>1</u>	Report No.:	<u>2002U094</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0200860</u>	Page:	<u>3</u> of <u>4</u>

45 deg

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

Add totals and divide by # scans = 0.000 % total for 45 deg

Other deg - 0 (to be used for supplemental scans)

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

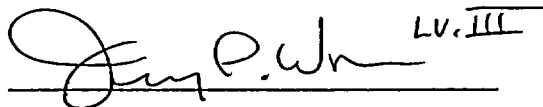
Scan 1	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 1
Scan 2	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 2
Scan 3	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for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

Percent complete coverage

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

0.000 % Total for complete exam

Site Field Supervisor:

 LV. III

Date: 11-30-02

ATTACHMENT 48 PAGE 3 OF 4



Supplemental Report

Report No.: 2002U094

Page: 4 of 4

Summary No.: 301584

Examiner: Timm, Jeremy T.

Level: III

Reviewer: Clay, Sean P.

Date: 11-30-02

Examiner: N/A

Level: N/A

Site Review: Wren, Jerry P.

Date: 12-1-02

Other: N/A

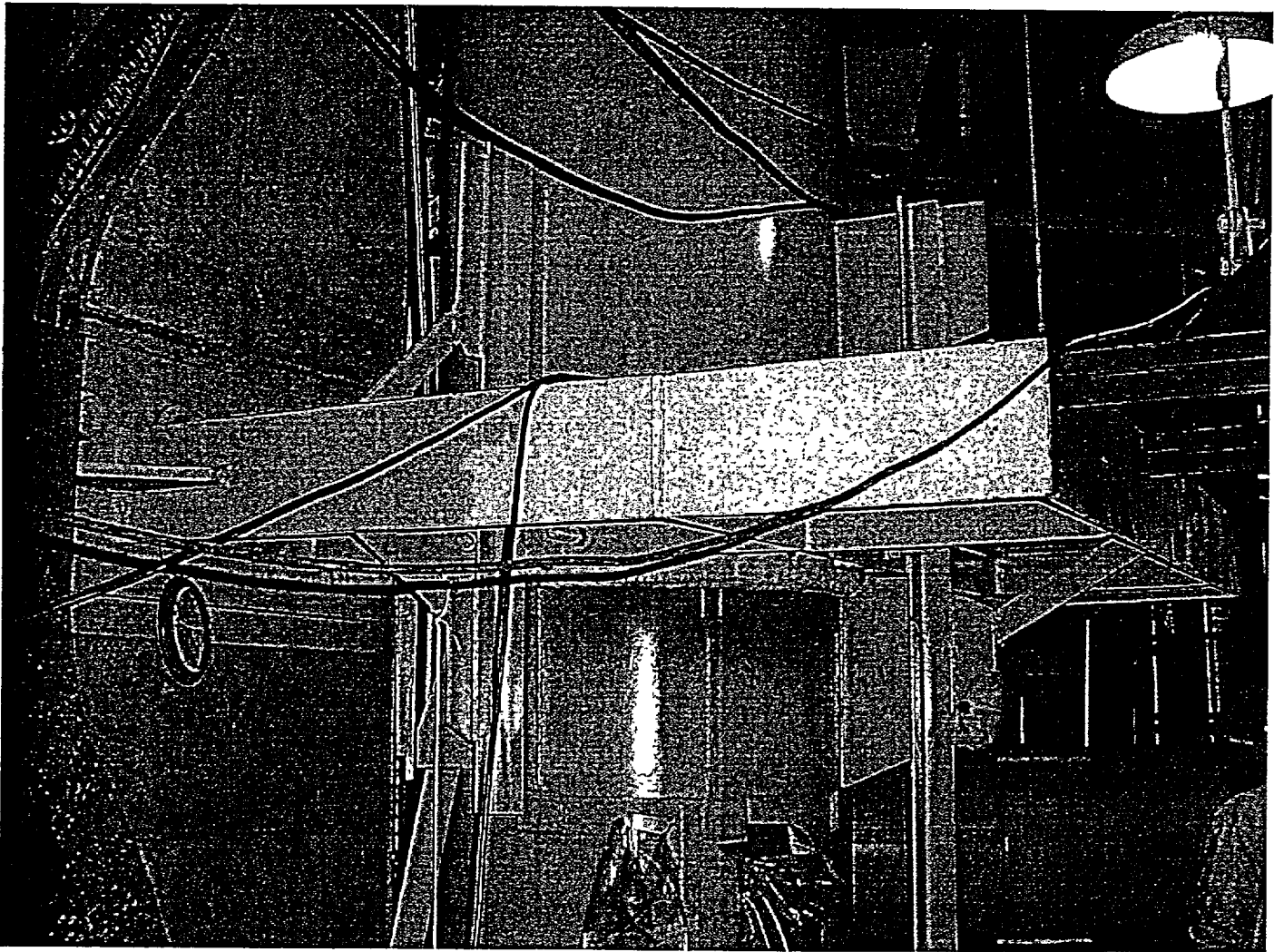
Level: N/A

ANII Review: Clow, Ron

Date: 12/1/02

Comments: **None**

Sketch or Photo: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U094-2.jpg



ATTACHMENT 48 PAGE 4 OF 4



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 301701
Workscope: ISI

Procedure: ISI-UT-1A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U095
Page: 1 of 3

Code: 1989 Code Cat.: C-F-2 Location: Cont 735
Drawing No.: ISI-69 Description: PIPE - PIPE
System ID: FW
Component ID: W-9 Size/Length: _____ Thickness/Diameter: _____
Limitations: Entire exam is under permanent guard pipe. Start Time: _____ Finish Time: _____

Examination Surface: Inside ☐ Outside ☐ Surface Condition: _____
Lo Location: _____ Wo Location: Centerline of Weld Couplant: _____ Batch No.: _____
Temp. Tool Mfg.: _____ Serial No.: _____ Surface Temp.: _____ °F
Cal. Report No.: _____

Angle Used	0	45	45T	60		
Scanning dB						

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

Comments:

No previous data. smt 11/21/03.

Results: NAD ☐ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: No

Reviewed Previous Data: N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/30/2002	Clay, Sean P.		11-30-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/1/02



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 301701
Workscope: ISI

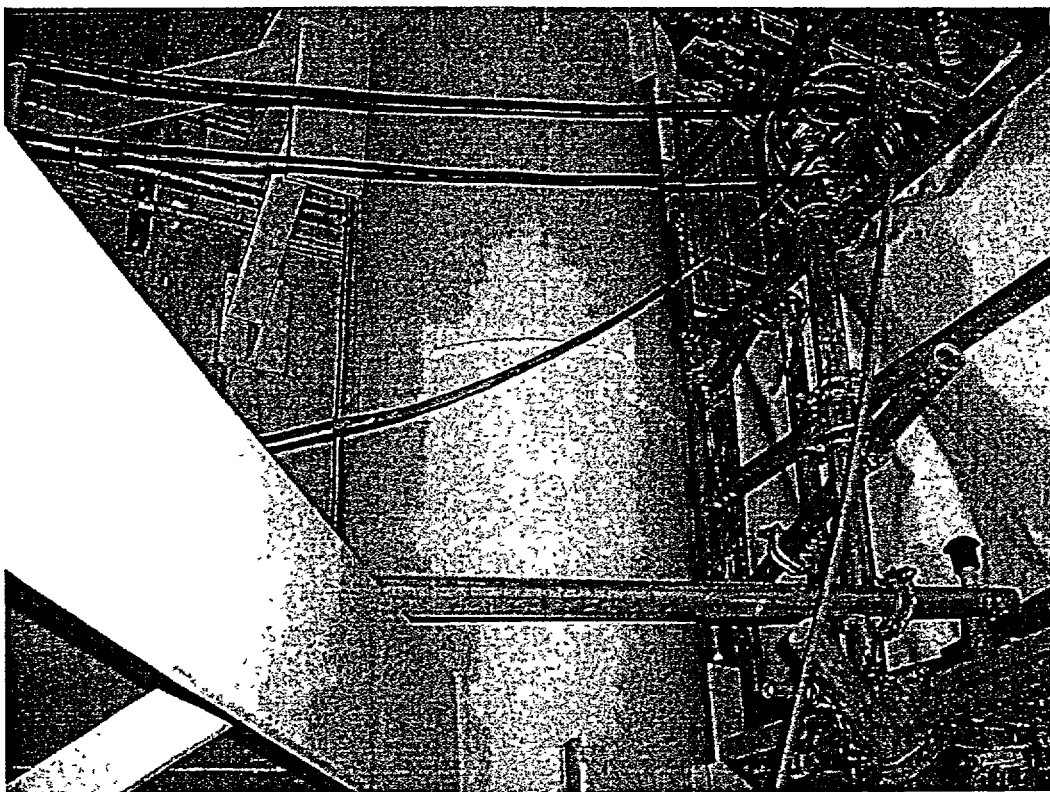
Procedure: ISI-UT-1A
Procedure Rev.: 1
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002U095
Page: 2 of 3

Description of Limitation:

Entire exam is under permanent guard pipe.

Sketch of Limitation: J:\Ideal_Photos\PI1RFO2002UT Photos\2002U095-1.jpg



Limitations removal requirements:

Guard pipe is permanent and cannot be removed.

Radiation field: N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/30/2002	Clay, Sean P.		11-30-02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/1/02

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ATTACHMENT 49



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-1A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No.:	<u>301701</u>	Procedure Rev.:	<u>1</u>	Report No.:	<u>2002U095</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0200860</u>	Page:	<u>3</u> of <u>3</u>

45 deg

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

Add totals and divide by # scans = 0.000 % total for 45 deg

Other deg - 0 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</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>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

0.000 % Total for complete exam

Site Field Supervisor:

Jerry P. White LV-III

Date:

11-30-02

ATTACHMENT 49 PAGE 3 OF 3



UT Pipe Weld Examination

Site/Unit: PNGP / PI1
Summary No.: 301858
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0210380

Outage No.: PI1RFO2002
Report No.: 2002U099
Page: 1 of 4

Code: 1989 Code Cat.: C-F-1 Location: Aux CSPR
Drawing No.: ISI-89B Description: PIPE - PEN 10
System ID: RH
Component ID: W-14 Size/Length: 10" / 31.4" Thickness/Diameter: .5" / 10"
Limitations: See attached photos. Start Time: N/A Finish Time: N/A

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground Flush
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Batch No.:
Temp. Tool Mfg.: N/A Serial No.: N/A Surface Temp.: N/A °F

Cal. Report No.:

Angle Used	0	45	45T	60		
Scanning dB						

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

Comments:

No exam performed due to restricted access. No previous data. SMH 11/21/03.

Results: NAD ☐ IND ☐ GEO ☐

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

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Halling, David A.		<i>DA Halling</i>	12/4/2002	Clay, Sean P.	<i>LS III</i>	12-04-02
Examiner	Level N/A	Signature	Date	Site Review	Signature	Date
N/A				Wren, Jerry P.	<i>J.P. Wren</i>	12-5-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>RC</i>	12/5/02



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: PNGP / PI1
Summary No.: 301858
Worksopce: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0210380

Outage No.: PI1RFO2002
Report No.: 2002U099
Page: 2 of 4

PAGE 2 OF 4
ATTACHMENT 50

45 deg

8203-503

Scan 1	<u>0.000</u>	% Length X	<u>31.400</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 1
Scan 2	<u>0.000</u>	% Length X	<u>31.400</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 2
Scan 3	<u>0.000</u>	% Length X	<u>31.400</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>31.400</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Add totals and divide by # scans = 0.000 % total for 45 deg

Other deg - 0 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</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>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

0.000 % Total for complete exam

Site Field Supervisor:

J. P. White LV, III

Date: 12-5-02



Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>PNGP / PI1</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI1RFO2002</u>
Summary No.:	<u>301858</u>	Procedure Rev.:	<u>1</u>	Report No.:	<u>2002U099</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0210380</u>	Page:	<u>2</u> of <u>4</u>

45 deg

SPU 3-503

Scan 1	<u>0.000</u>	% Length X	<u>31.400</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 1
Scan 2	<u>0.000</u>	% Length X	<u>31.400</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 2
Scan 3	<u>0.000</u>	% Length X	<u>31.400</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>31.400</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Add totals and divide by # scans = 0.000 % total for 45 deg

Other deg - 0 (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	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</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>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 3
Scan 4	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total for Scan 4

Percent complete coverage

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

0.000 % Total for complete exam

Site Field Supervisor:

Jim P. White LV. III

Date:

12-5-02



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 301858
Workscope: ISI

Procedure: ISI-UT-16A
Procedure Rev.: 1
Work Order No.: 0210380

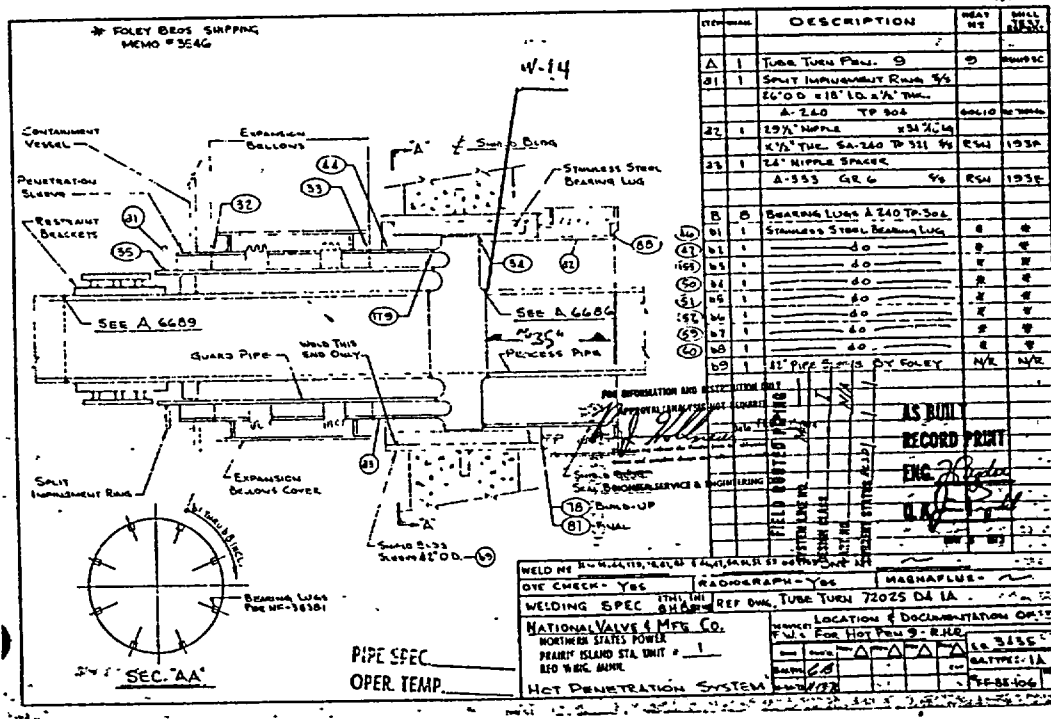
Outage No.: PI1RFO2002
Report No.: 2002U099
Page: 3 of 4

Description of Limitation:

There is no physical access due to penetration sleeve.

Sketch of Limitation:

J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U099-1.bmp



TYPICAL FOR PEN 9 AND 10

Limitations removal requirements:

None

Radiation field: N/A

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Halling, David A.		<i>[Signature]</i>	12/4/2002	Clay, Sean P.	<i>[Signature]</i>	12-05-02
Examiner	Level N/A	Signature	Date	Site Review	Signature	Date
N/A				Wren, Jerry P.	<i>[Signature]</i>	12-5-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>[Signature]</i>	12/5/02

ATTACHMENT 50 PAGE 3 OF 4



Supplemental Report

Report No.: 2002U099

Page: 4 of 4

Summary No.: 301858

Examiner: Halling, David A.

Level: II

Reviewer: Clay, Sean P.

Date: 12-04-02

Examiner: N/A

Level: N/A

Site Review: Wren, Jerry P.

Date: 12-5-02

Other: N/A

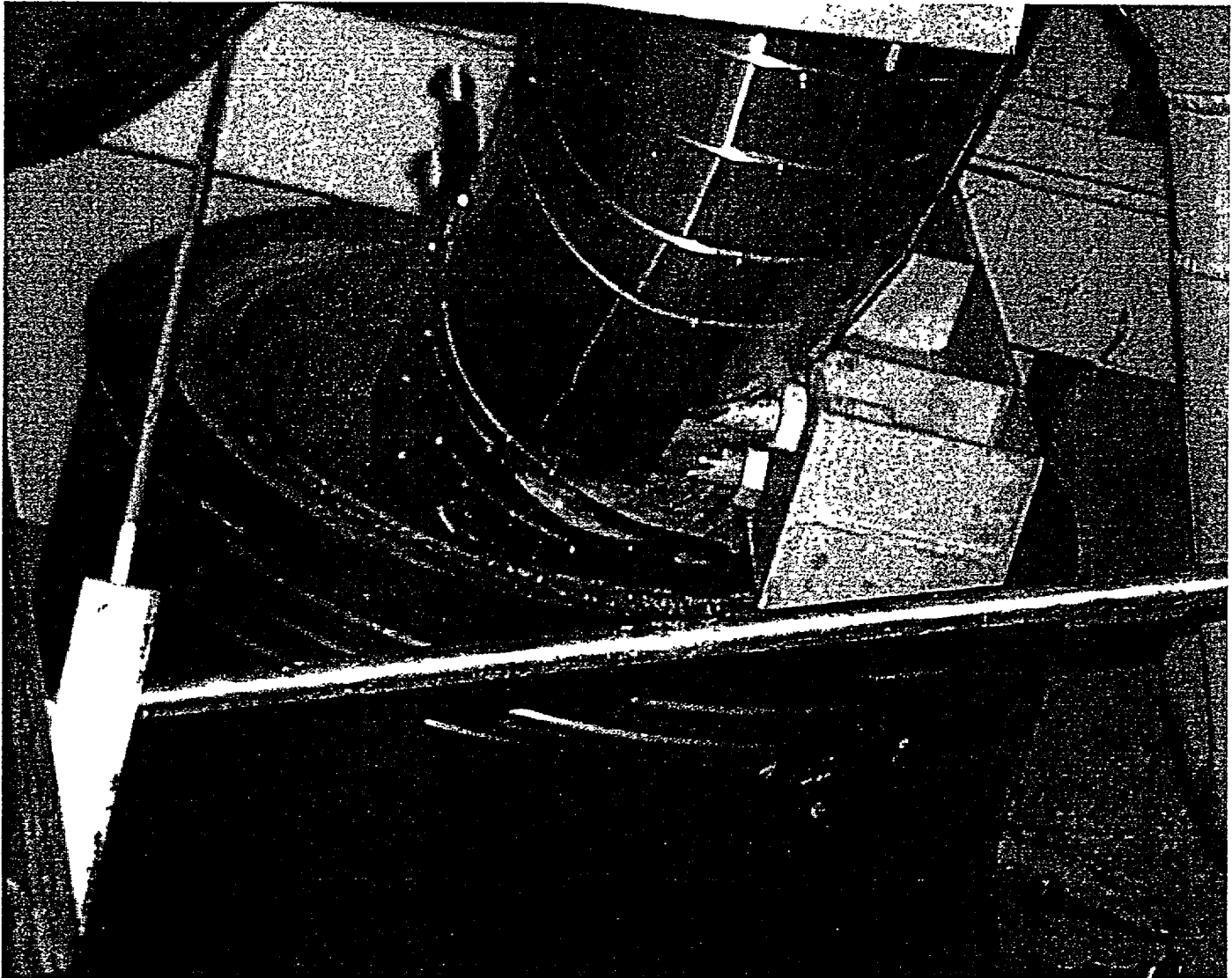
Level: N/A

ANII Review: Clow, Ron

Date: 12/5/02

Comments: None

Sketch or Photo: J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U099-1.jpg



ATTACHMENT 50 PAGE 4 OF 4



Magnetic Particle Examination

Site/Unit: PNGP / PI1 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 301584 Procedure Rev.: 12 Report No.: 2002M040
Workscope: ISI Work Order No.: 0200860 Page: 1 of 4
Code: 1989 Code Cat.: C-F-2 Location: Cont 715
Drawing No.: ISI-68A Description: PIPE - PIPE
System ID: MS
Component ID: W-6LSUD Size/Length: N/A
Limitations: Entire exam area under permanent guard pipe.

Light Meter Mfg.: _____ Serial No.: _____ Illumination: _____ uw/cm²
Temp. Tool Mfg.: _____ Serial No.: _____ Surface Temp.: _____ °F
Resolution: Not Used
Lift Block Serial No.: _____ Surface Condition: _____
Lo/Wo Location: _____ Field Orientation: _____

Magnetic Particle Material

Brand: _____ Wet ☐ Mixed: Yes ☐ Applied By: _____ Dusting ☐
Type: _____ Dry ☐ No ☐ Spraying ☐
Batch No.: _____ Fluorescent ☐ With: _____ Flooding ☐
Equipment: _____ Serial No.: _____
Head Shot ☐ _____ Amperes Fixed Spacing ☐ AC ☐ DC ☐
Adj. Spacing ☐ _____ inches Encircling Coils ☐ _____ Turns
Prods. Spacing ☐ _____ inches Current (machine setting) ☐ _____ Amperes

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

Comments:

No previous data 11/21/03

Results: NAD ☐ IND ☐ GEO ☐

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

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.			<i>[Signature]</i>	11/29/2002	Halling, David A.	<i>[Signature]</i>	Nov 30 02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.	<i>[Signature]</i>	12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>[Signature]</i>	12/1/02

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ATTACHMENT 51



Limitation Record

Site/Unit: PNGP / PI1
Summary No.: 301584
Workscope: ISI

Procedure: ISI-MT-1
Procedure Rev.: 12
Work Order No.: 0200860

Outage No.: PI1RFO2002
Report No.: 2002M040
Page: 2 of 4

Description of Limitation:

No access due to entire weld under permanent guard pipe.

Sketch of Limitation:

J:\Ideal_Photos\PI1RFO2002\UT Photos\2002U094-1.jpg



Limitations removal requirements:

Guard pipe is permanent and cannot be removed.

Radiation field: **N/A**

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Halling, David A.		Nov 30, 02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/1/02

PAGE 2 OF 4
ATTACHMENT 51



Supplemental Report

Report No : 2002M040

Page: 3 of 4

Summary No : 301584

Examiner: Timm, Jeremy T.

Level: III

Reviewer: Halling, David A.

Date: 12/1/02

Examiner: N/A

Level: N/A

Site Review: Wren, Jerry P.

Date: 12-1-02

Other: N/A

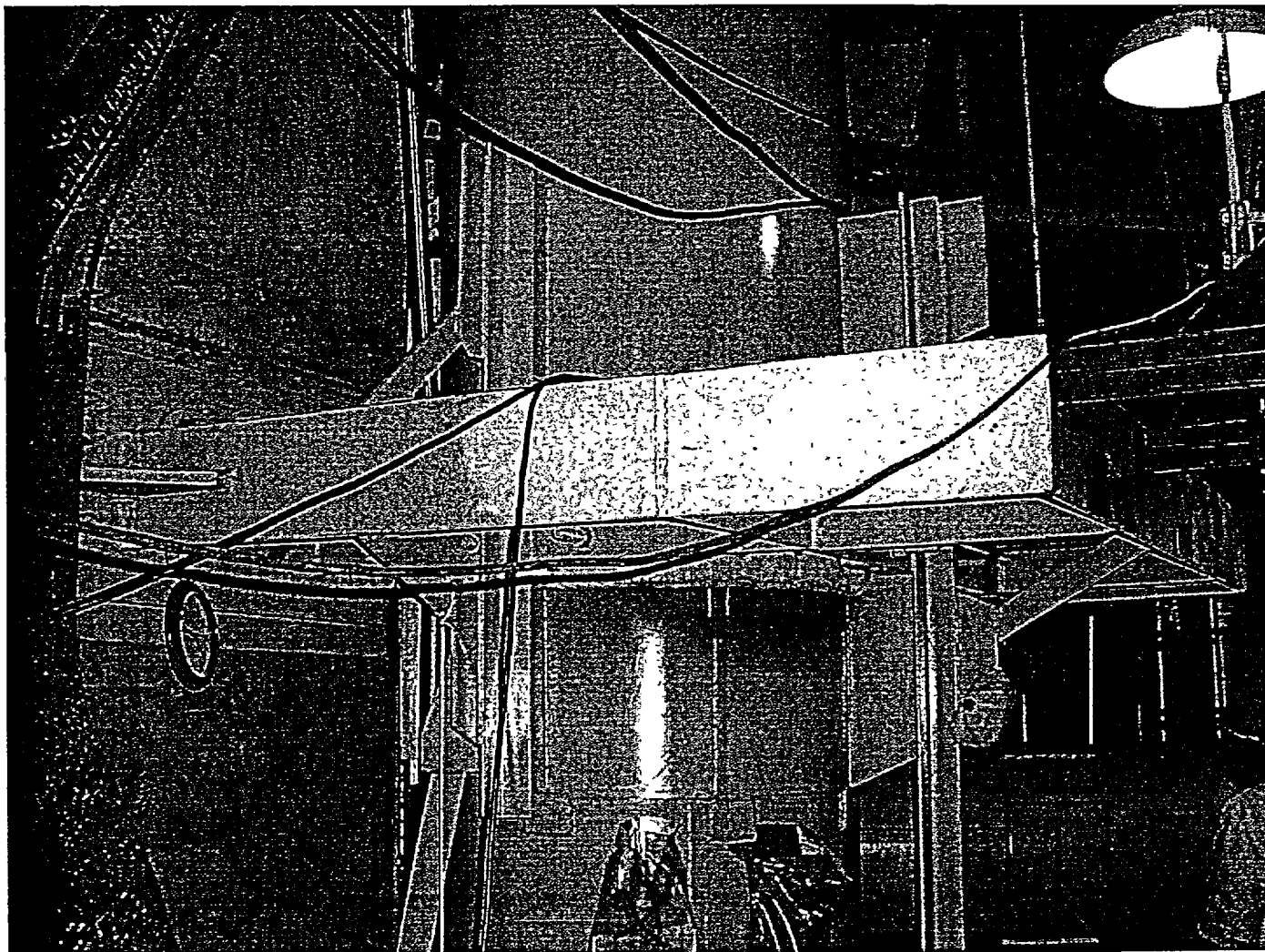
Level: N/A

ANII Review: Clow, Ron

Date: 12/1/02

Comments: None

Sketch or Photo: J:\Ideal_Photos\PI11RFO2002\UT Photos\2002U094-2.jpg



PAGE 3 OF 4

ATTACHMENT 51



Determination of Percent Coverage for Surface Examinations

Site/Unit: PNGP / PI1 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 301584 Procedure Rev.: 12 Report No.: 2002M040
Workscope: ISI Work Order No : 0200860 Page 4 of 4

Area Required (as shown in applicable code reference drawing)

Length 0.000 * Width 0.000
= Total Area required 0.000 square inches

Coverage Achieved

Area examined 0.000 sq. in. / Total area required (100%) 0.000 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 0.000 * (Pi) 3.1416
= Length 0.000 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				

Site Field Supervisor: _____

Date: 12-1-02

ATTACHMENT 51 PAGE 4 OF 4



Magnetic Particle Examination

Site/Unit: PNGP / P11 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 301701 Procedure Rev.: 12 Report No.: 2002M042
Workscope: ISI Work Order No.: 0200860 Page: 1 of 3

Code: 1989 Code Cat.: C-F-2 Location: Cont 735
Drawing No.: ISI-69 Description: PIPE - PIPE
System ID: FW
Component ID: W-9 Size/Length: _____
Limitations: Examination area is under permanent guard pipe.

Light Meter Mfg.: _____ Serial No.: _____ Illumination: _____ uw/cm²
Temp. Tool Mfg.: _____ Serial No.: _____ Surface Temp.: _____ °F
Resolution: Not Used
Lift Block Serial No.: _____ Surface Condition: _____
Lo/Wo Location: _____ Field Orientation: _____

Magnetic Particle Material

Brand: _____ Wet ☐ Mixed: Yes ☐ Applied By: Dusting ☐
Type: _____ Dry ☐ No ☐ Spraying ☐
Batch No.: _____ Fluorescent ☐ With: _____ Flooding ☐

Equipment _____ Serial No.: _____
Head Shot ☐ _____ Amperes Fixed Spacing ☐ AC ☐ DC ☐
Adj. Spacing ☐ _____ inches Encircling Coils ☐ _____ Turns
Prods Spacing ☐ _____ inches Current (machine setting) ☐ _____ Amperes

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

Comments: no previous data. sent 1/2/03

Results: NAD ☐ IND ☐ GEO ☐

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

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Halling, David A.		Nov 30, 02
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/1/02



Limitation Record

Site/Unit. PNGP / PI1
Summary No.: 301701
Workscope: ISI

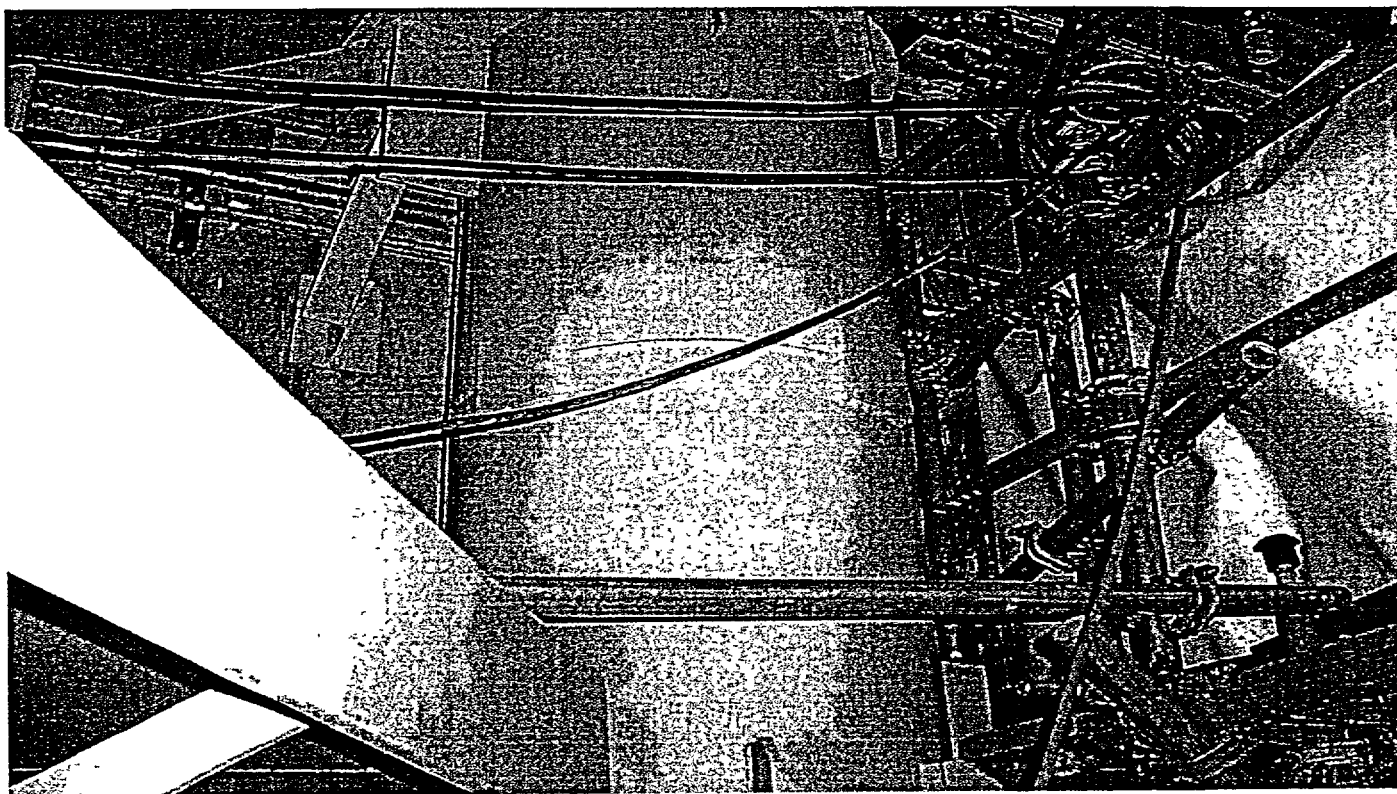
Procedure: ISI-MT-1
Procedure Rev.: 12
Work Order No.: 0200860

Outage No : PI1RFO2002
Report No.: 2002M042
Page: 2 of 3

Description of Limitation.

Examination area is under permanent guard pipe.

Sketch of Limitation: J:\Ideal_Photos\PI1RFO2002\MT Photos\2002M042-1.jpg



Limitations removal requirements:

Permanent guard pipe cannot be removed.

Radiation field: N/A

Examiner	Level	III	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				11/29/2002	Halling, David A.		20030202
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Wren, Jerry P.		12-1-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		12/1/02



Determination of Percent Coverage for Surface Examinations

Site/Unit: PNGP / PI1 Procedure: ISI-MT-1 Outage No.: PI1RFO2002
Summary No.: 301701 Procedure Rev.: 12 Report No.: 2002M042
Workscope: ISI Work Order No.: 0200860 Page: 3 of 3

Area Required (as shown in applicable code reference drawing)

Length 0.000 * Width 0.000
= Total Area required 0.000 square inches

Coverage Achieved

Area examined 0.000 sq. in. / Total area required (100%) 0.000 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 16.000 * (Pi) 3.1416
= Length 50.266 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				

Site Field Supervisor:

Jan P. Williams ^{LV-III}

Date:

12-1-02

Third Period Section XI VT-2 Examinations

System	Description	Class	Procedure	Work Order #	Date
RV	Reactor Vessel	1	SP 1070	0114211	12/5/2002
RC	Reactor Coolant	1	SP 1070	0114211	12/5/2002
RH	Residual Heat Removal	1	SP 1070	0114211	12/5/2002
FW	Feedwater	2	SP 1168.17	0200228	1/2/2003
MS	Main Steam	2	SP 1168.11	0200220	11/16/2002
SI	Safety Injection	2	SP 1168.13	0200223	Scheduled for 3/12/2003
				9909918	Last performed 11/17/1999
RH	Residual Heat Removal	2	SP 1168.10	0200219	1/14/2003

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Magnetic Particle Examination

Site/Unit: PNGP / P11 Procedure: ISI-MT-1 Outage No.: P11RFO2002
Summary No.: 301095 Procedure Rev.: 12 Report No.: 2002M027
Workscope: ISI Work Order No.: 0200860 Page: 1 of 1

Code: 1989 Code Cat.: B-A Location: Cont 715
Drawing No.: ISI-49 Description: HEAD - FLANGE
System ID: RV
Component ID: W-6 Size/Length: 3.2" / 41'
Limitations: None

Light Meter Mfg.: N/A Serial No.: N/A Illumination: N/A uw/cm²
Temp. Tool Mfg.: N/A Serial No.: N/A Surface Temp.: < 600°F °F
Resolution: 1/32" Line
Lift Block Serial No.: NE C QC Surface Condition: BLENDED
Lo/Wo Location: Datum "0" / Weld Centerline Field Orientation: Longitudinal

Magnetic Particle Material

Brand: Magnaflux Wet ☐ Mixed: Yes ☐ Applied By: Dusting ☒
Type: No. 1 Gray Dry ☒ No ☒ Spraying ☐
Batch No.: 84A047 Fluorescent ☐ With: Flooding ☐
Equipment: Contour Probe Serial No.: 617
Head Shot ☐ N/A Amperes Fixed Spacing ☐ AC ☒ DC ☐
Adj. Spacing ☒ 4 - 6 inches Encircling Coils ☐ N/A Turns
Prods. Spacing ☐ N/A inches Current (machine setting) ☐ N/A Amperes

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

Comments:

None

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Knott, Brian	II	<i>Brian D. Knott</i>	11/23/2002	Halling, David A.	<i>David A. Halling</i>	11/28/02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Stevermer, Aaron	II	<i>Aaron Stevermer</i>	11/23/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	11-29-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron	<i>Ron Clow</i>	11/29/02

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Liquid Penetrant Examination

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 300900 Procedure Rev.: 14 Report No.: 2002P080
Workscope: ISI Work Order No.: 0200860 Page: 1 of 1

Code: 1989 Code Cat: B-J Location: Cont Prz Vault
Drawing No.: ISI-29A Description: SAFE END - 45° ELBOW
System ID: RC
Component ID: W-2 Size/Length: 6" / 19.0"
Limitations: None

Temp. Tool Mfg.: Telatemp Serial No.: NSP 178 Surface Temp.: 90 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: Top Dead Center / Weld Centerline Surface Condition: Blended

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	95D01K	87C054	95D01K	00G06K
Time	Evap. 5 Min	Dwell 15 Min	Evap. 2 Min	Develop 7 Min
Time Exam Started		0830	Time Exam Completed:	0915

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

Comments:

None

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Thomas, Travis		<i>Travis Thomas</i>	11/19/2002	Halling, David A.	<i>D.A. Halling</i>	11/20/02
Examiner	Level N/A	Signature	Date	Site Review	Signature	Date
N/A				Wren, Jerry P.	<i>Jerry P. Wren</i>	11-20-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>R. Clow</i>	11/21/02

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ATTACHMENT



Liquid Penetrant Examination

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ATTACHMENT 56

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 300656 Procedure Rev.: 14 Report No.: 2002P097
Workscope: ISI Work Order No.: 0200860 Page: 1 of 1

Code: 1989 Code Cat.: B-J Location: Cont B Vault
Drawing No.: ISI-24 Description: NOZZLE TO PIPE
System ID: RC
Component ID: W-21 Size/Length: 6" / 31"
Limitations: None

Temp. Tool Mfg.: Telatemp Serial No.: NSP 178 Surface Temp.: 80 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: Top Dead Center / Weld Centerline Surface Condition: Blended

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	95D01K	87C054	95D01K	00G06K
Time	Evap. 5 Min	Dwell 15 Min	Evap. 2 Min	Develop 7 Min
Time Exam Started. 1405		Time Exam Completed: 1450		

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

Comments:

None

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
VanRuler, Christopher D.		<i>[Signature]</i>	11/21/2002	Halling, David A.	<i>[Signature]</i>	Nov 22, 02
Examiner	Level II	Signature	Date	Site Review	Signature	Date
Stevermer, Aaron		<i>[Signature]</i>	11/21/2002	Wren, Jerry P.	<i>[Signature]</i> LV. III	11-22-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>[Signature]</i>	11/23/02



Liquid Penetrant Examination

Site/Unit: PNGP / P11 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 300654 Procedure Rev.: 14 Report No.: 2002P099
Workscope: ISI Work Order No.: 0200860 Page: 1 of 1

Code: 1989 Code Cat.: B-J Location: Cont B Vault
Drawing No.: ISI-24 Description: VALVE - ELBOW
System ID: RC
Component ID: W-18 Size/Length: 6" / 21"
Limitations: None

Temp. Tool Mfg.: Telatemp Serial No.: NSP 178 Surface Temp.: 80 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: Extrados of Elbow / Weld Centerline Surface Condition: FLAT TOPPED

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	95D01K	87C054	95D01K	00G06K
Time	Evap. 5 Min	Dwell 15 Min	Evap. 2 Min	Develop 7 Min
Time Exam Started. 1405		Time Exam Completed: 1450		

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

Comments:

None

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: Yes

Reviewed Previous Data: Yes

Examiner Level II VanRuler, Christopher D.	Signature 	Date 11/21/2002	Reviewer Halling, David A.	Signature 	Date Nov 22 02
Examiner Level II Stevermer, Aaron	Signature 	Date 11/21/2002	Site Review Wren, Jerry P.	Signature 	Date 11-22-02
Other Level N/A N/A	Signature	Date	ANII Review Clow, Ron	Signature 	Date 11/23/02

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Liquid Penetrant Examination

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 300159 Procedure Rev.: 14 Report No.: 2002P101
Workscope: ISI Work Order No.: 0200860 Page: 1 of 1

Code: 1989 Code Cat.: B-J Location: Cont A Vault
Drawing No.: ISI-3A Description: NOZZLE - PIPE
System ID: RC
Component ID: W-1 Size/Length: 2.2" / 40"
Limitations: None

Temp. Tool Mfg.: Telatemp Serial No.: NSP 134 Surface Temp.: 95 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: Top Dead Center / Weld Centerline Surface Condition: Blended

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	95D01K	87C054	95D01K	00G06K
Time	Evap. 5 Min	Dwell 10 Min	Evap. 2 Min	Develop 7 Min
Time Exam Started: 1000		Time Exam Completed: 1105		

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

Comments:

None

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: Yes

Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Bleching, Todd P.	II	<i>Todd P. Bleching</i>	11/21/2002	Halling, David A.	<i>David A. Halling</i>	Nov 22, 02
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			Wren, Jerry P.	<i>Jerry P. Wren</i>	11-24-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron	<i>Ron Clow</i>	11/24/02

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ATTACHMENT 58



Liquid Penetrant Examination

Site/Unit: PNGP / P11 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 300136 Procedure Rev.: 14 Report No.: 2002P113
Workscope: ISI Work Order No.: 0200860 Page: 1 of 1

Code: 1989 Code Cat.: B-J Location: Cont A Vault
Drawing No.: ISI-2 Description: NOZZLE - PIPE
System ID: RC
Component ID: W-9 Size/Length: 12" / 52.5"
Limitations: None

Temp. Tool Mfg.: Telatemp Serial No.: NSP 178 Surface Temp.: 80 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: Extradose of Elbow / Weld Centerline Surface Condition: Blended

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	95D01K	87C054	95D01K	00G06K
Time	Evap. 5 Min	Dwell 15 Min	Evap. 2 Min	Develop 7 Min
Time Exam Started: 1500		Time Exam Completed: 1545		

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

Comments:

None

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: Yes

Reviewed Previous Data: Yes

Examiner Level II	Signature	Date	Reviewer	Signature	Date
VanRuler, Christopher D.	<i>Chris VanRuler</i>	11/22/2002	Halling, David A.	<i>David A. Halling</i>	Nov 23, 02
Examiner Level II	Signature	Date	Site Review	Signature	Date
Thomas, Travis	<i>Travis Thomas</i>	11/22/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	11-24-02
Other Level N/A	Signature	Date	ANII Review	Signature	Date
N/A			Clow, Ron	<i>Ron Clow</i>	11/24/02

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ATTACHMENT 59



Liquid Penetrant Examination

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ATTACHMENT 60

Site/Unit: PNGP / P11 Procedure: ISI-PT-1 Outage No.: P11RFO2002
Summary No.: 300148 Procedure Rev.: 14 Report No.: 2002P100
Workscope: ISI Work Order No.: 0200860 Page: 1 of 1

Code: 1989 Code Cat.: B-J Location: Cont A Vault
Drawing No.: ISI-3A Description: NOZZLE - PIPE
System ID: RC
Component ID: W-2 Size/Length: .9" / 27"
Limitations: None

Temp. Tool Mfg.: Telatemp Serial No.: NSP 134 Surface Temp.: 95 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: Top Dead Center / Weld Centerline Surface Condition: Blended

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	95D01K	87C054	95D01K	00G06K
Time	Evap. 5 Min	Dwell 10 Min	Evap. 2 Min	Develop 7 Min
Time Exam Started: 1000		Time Exam Completed: 1105		

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

Comments: None

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner Level II Blechinger, Todd P.	Signature <i>Todd P. Blechinger</i>	Date 11/21/2002	Reviewer Halling, David A.	Signature <i>DA Halling</i>	Date Nov 22, 02
Examiner Level N/A N/A	Signature	Date	Site Review Wren, Jerry P.	Signature <i>Jerry P. Wren</i>	Date 11-24-02
Other Level N/A N/A	Signature	Date	ANII Review Clow, Ron	Signature <i>R Clow</i>	Date 11/24/02



Liquid Penetrant Examination

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 300649 Procedure Rev.: 14 Report No.: 2002P110
Workscope: ISI Work Order No.: 0200860 Page: 1 of 1

Code: 1989 Code Cat.: B-J Location: Cont 695
Drawing No.: ISI-19A Description: VALVE - PIPE
System ID: RC
Component ID: W-1 Size/Length: 8" / 27.1
Limitations: None

Temp. Tool Mfg: Telatemp Serial No.: NSP 178 Surface Temp.: 100 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: TDC Weld Center Line Surface Condition: Ground Smooth

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	95D01K	87C054	95D01K	00G06K
Time	Evap. 5	Dwell 10	Evap. 2	Develop 7
Time Exam Started		1015	Time Exam Completed.	1100

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

Comments:

None. SMUT 11/21/02

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: Yes

Reviewed Previous Data: Yes

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Thomas, Travis		<i>Travis Thomas</i>	11/21/2002	Halling, David A.	<i>David A. Halling</i>	Nov 24, 02
Examiner	Level	Signature	Date	Site Review	Signature	Date
				Wren, Jerry P	<i>Jerry P. Wren</i>	11-25-02
Other	Level	Signature	Date	ANII Review	Signature	Date
				Chew, Ron	<i>Ron Chew</i>	11/26/02

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ATTACHMENT 61



Liquid Penetrant Examination

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 300171 Procedure Rev.: 14 Report No.: 2002P112
Workscope: ISI Work Order No.: 0200860 Page 1 of 4

Code: 1989 Code Cat.: B-J Location: Cont 695
Drawing No.: ISI-3B Description: ELBOW - PIPE
System ID: RH
Component ID: W-1 Size/Length: 8" / 27.1
Limitations: Weld Support Limits examination to 91.69% Coverage

Temp. Tool Mfg.: Telatemp Serial No.: NSP 178 Surface Temp.: 100 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: TDC Weld Center Line Surface Condition: Blended

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	95D01K	87C054	95D01K	00G06K
Time	Evap. 5	Dwell 10	Evap. 2	Develop 7
Time Exam Started: 1120		Time Exam Completed: 1150		

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

Comments: 91.7% DPW 12/24/02
Examination limited to ~~91.9%~~ Coverage due to Weld Support Interference.

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Thomas, Travis		<i>Travis Thomas</i>	11/21/2002	Halling, David A.	<i>David A. Halling</i>	11/23/02
Examiner	Level	Signature	Date	Site Review	Signature	Date
				Wren, Jerry P	<i>Jerry P. Wren</i>	11-24-02
Other	Level	Signature	Date	ANII Review	Signature	Date
				Crow, Ron	<i>Ron Crow</i>	11/24/02

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ATTACHMENT 62



Determination of Percent Coverage for Surface Examinations

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No: PI1RFO2002
Summary No.: 300171 Procedure Rev.: 14 Report No: 2002P112
Workscope: ISI Work Order No.: 0200860 Page: 2 of 4

Area Required (as shown in applicable code reference drawing)

Length 27.100 * Width 2.000
= Total Area required 54.200 square inches

Coverage Achieved

Area examined 49.700 sq. in. / Total area required (100%) 54.200 sq in
= Percent coverage ~~0.917~~ % (area required - area of limitations = area examined)
91.7% *Jan*

To determine length of a circumferential weld

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

Diameter 8.625 * (Pi) 3.1416
= Length 27.096 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			

Site Field Supervisor: Jerry Wren *Jerry Wren*

Date: 11-24-02

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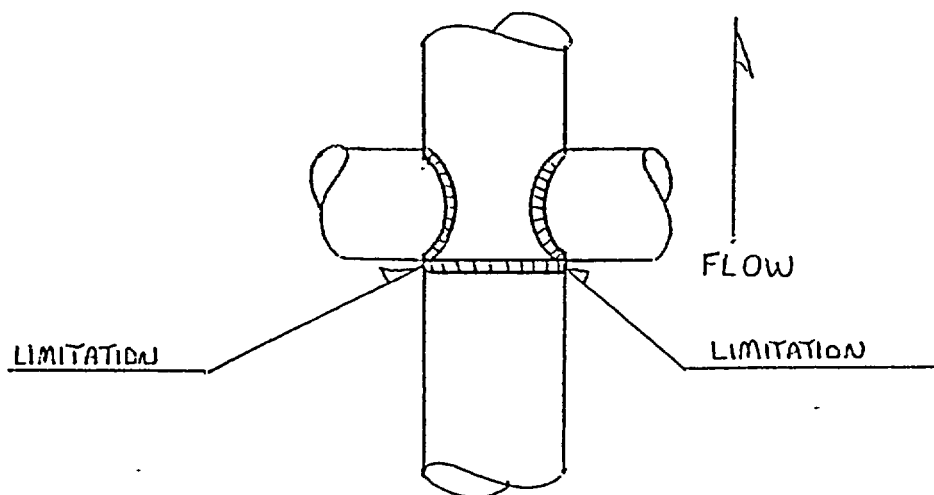
Limitation Record

Site/Unit:	PNGP / PI1	Procedure:	ISI-PT-1	Outage No.:	PI1RFO2002
Summary No.:	300171	Procedure Rev:	14	Report No.:	2002P112
Workscope:	ISI	Work Order No.:	0200860	Page	3 of 4

Description of Limitation:

Welded Support Limits Exam @ 90 degrees and 270 degrees for 4.5" at each location.

Sketch of Limitation: J:\ddeal_Photos\PI1RFO2002\PT Photos\2002P112 bmp



Limitations removal requirements:

NONE

Radiation field: 20 mr/Hr General area.

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Thomas, Travis		<i>Travis Thomas</i>	11/21/2002	Halling, David A.	<i>D.A. Halling</i>	Nov 23, 02
Examiner	Level	Signature	Date	Site Review	Signature	Date
				Wren, Jerry P	<i>Jerry P. Wren</i>	11-24-02
Other	Level	Signature	Date	ANII Review	Signature	Date
				Clow, Ron	<i>Ron Clow</i>	11/24/02

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Supplemental Report

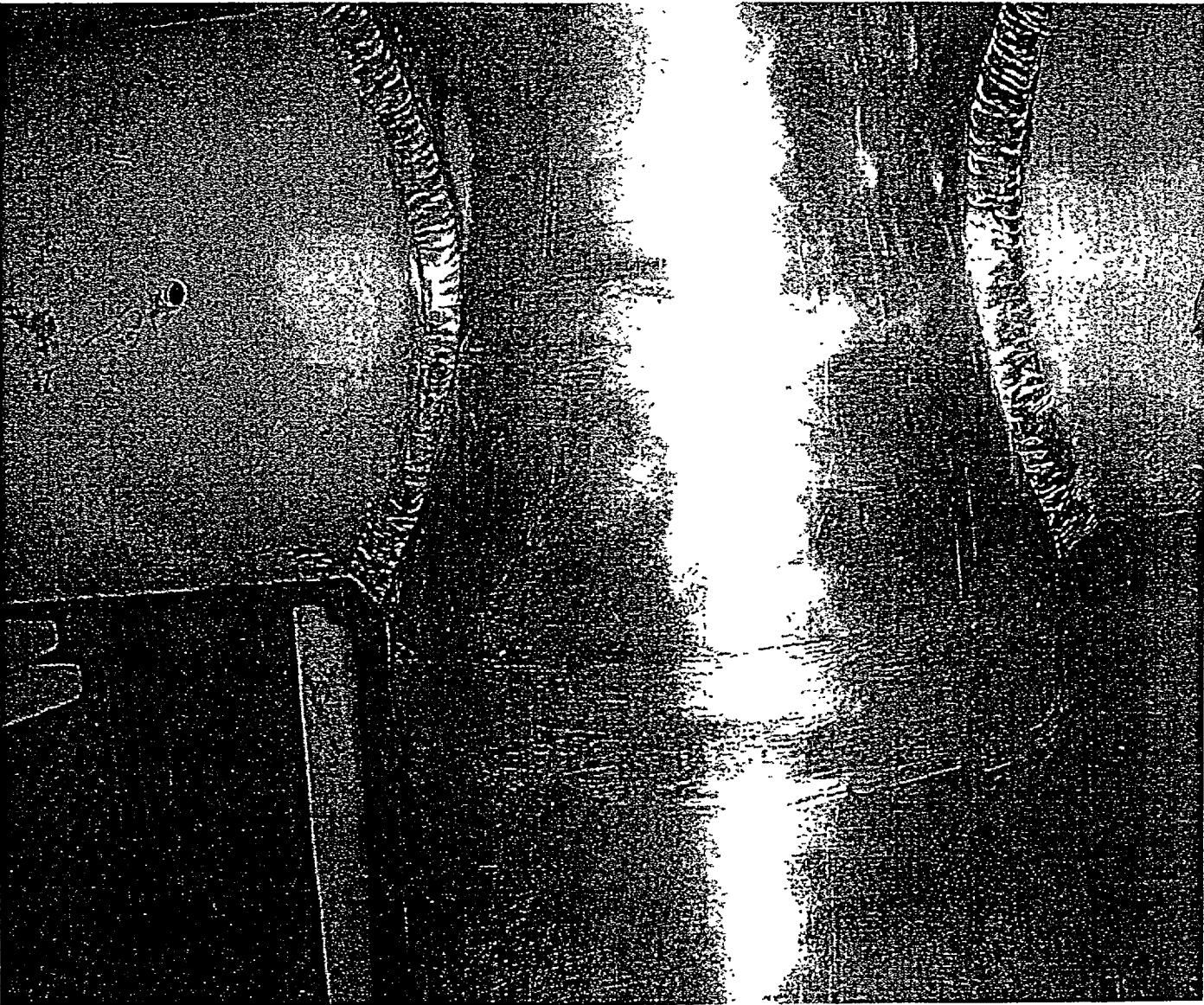
Report No : 2002P112
Page 4 of 4

Summary No.: 300171

Examiner:	Thomas, Travis	Level:	II	Reviewer:	Halling, David A.	Date	Nov 23, 02
Examiner:		Level:		Site Review:	Wren, Jerry P	Date	11-24-02
Other:		Level:		ANII Review:	Clow, Ren	Date	11/24/02

Comments:

Sketch or Photo: J:\ddeal_Photos\PI1RFO2002\PT Photos\2002P112-1.bmp



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ATTACHMENT



Liquid Penetrant Examination

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 300527 Procedure Rev.: 14 Report No.: 2002P087
Workscope: ISI Work Order No.: 0200860 Page: 1 of 1

Code: 1989 Code Cat.: B-J Location: Cont A Vault
Drawing No.: ISI-12B Description: ELBOW - PUMP
System ID: RC
Component ID: W-6LS2U Size/Length: 31" / 95"
Limitations: None

Temp. Tool Mfg.: Telatemp Serial No.: NSP 178 Surface Temp.: 80 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: Extrados of Elbow / Weld Centerline Surface Condition: Blended

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	95D01K	87C054	95D01K	00G06K
Time	Evap 5 Min	Dwell 15 Min	Evap 2 Min	Develop 7 Min
Time Exam Started: 1005		Time Exam Completed: 1136		

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

Comments:

None

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: Yes

Reviewed Previous Data: Yes

Examiner Level II Signature Date Knott, Brian <u>Brian A. Knott</u> 11/20/2002	Reviewer Signature Date Halling, David A. <u>David A. Halling</u> 11/22/02
Examiner Level II Signature Date VanRuler, Christopher D. <u>Christopher D. VanRuler</u> 11/20/2002	Site Review Signature Date Wren, Jerry P. <u>Jerry P. Wren</u> 11-24-02
Other Level II Signature Date Stevermer, Aaron <u>Aaron Stevermer</u> 11/20/2002	ANII Review Signature Date Clow, Ron <u>Ron Clow</u> 11/24/02

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Liquid Penetrant Examination

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 300543 Procedure Rev.: 14 Report No.: 2002P127
Workscope: ISI Work Order No.: 0200860 Page: 1 of 1

Code: 1989 Code Cat.: B-J Location: Cont B Vault
Drawing No.: ISI-13A Description: RED 50° ELBOW-NOZZLE
System ID: RC
Component ID: W-5 Size/Length: 29.0" / 91.0"
Limitations: None

Temp. Tool Mfg.: Telatemp Serial No.: NSP 178 Surface Temp.: 90 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: Top Dead Center / Weld Centerline Surface Condition: FLAT TOPPED

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	95D01K	87C054	95D01K	00G06K
Time	Evap. 5 Min	Dwell 15 Min	Evap. 2 Min	Develop 7 Min
Time Exam Started: 0845		Time Exam Completed: 0930		

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

Comments:

None

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: Yes

Reviewed Previous Data: Yes

Examiner Level II VanRuler, Christopher D.	Signature <i>Chris VanRuler</i>	Date 11/26/2002	Reviewer Halling, David A.	Signature <i>David A. Halling</i>	Date 11/26/02
Examiner Level II Kimmen, Ronald	Signature <i>Ronald Kimmen</i>	Date 11/26/2002	Site Review Wren, Jerry P.	Signature <i>Jerry P. Wren</i>	Date 11-27-02
Other Level N/A N/A	Signature	Date	ANII Review Clow, Ron	Signature <i>R. Clow</i>	Date 11/27/02

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Liquid Penetrant Examination

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ATTACHMENT 65

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 300926 Procedure Rev.: 14 Report No.: 2002P139
Workscope: ISI Work Order No.: 0200860 Page: 1 of 1

Code: 1989 Code Cat.: B-J Location: Cont Sand Plug
Drawing No.: ISI-30B Description: BENT PIPE - SAFE END
System ID: RC
Component ID: W-6 Size/Length: 13.75"
Limitations: None

Temp. Tool Mfg.: Telatemp Serial No.: NSP 178 Surface Temp.: 80 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: 1/32" Line
Lo/Wo Location: Top Dead Center/Weld Centerline Surface Condition: Blended

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	95D01K	87C054	95D01K	00G06K
Time	Evap. 5 Min	Dwell 15 Min	Evap 2 Min	Develop 7 Min
Time Exam Started: 1200		Time Exam Completed: 1245		

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

Comments:

None

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Jensen, Arlen	II	<i>Arlene Jensen</i>	11/30/2002	Halling, David A.	<i>D.A. Halling</i>	Nov 30, 02
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			Wren, Jerry P.	<i>Jerry P. Wren</i>	12-1-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron	<i>Ron Clow</i>	12/1/02



Liquid Penetrant Examination

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 305081 Procedure Rev.: 14 Report No.: 2002P072
Workscope: ISI Work Order No.: 0210380 Page: 1 of 1

Code: 1989 Code Cat.: C-F-1 Location: Aux 895
Drawing No.: ISI-100A Description: PIPE - VALVE
System ID: SI
Component ID: W-10 Size/Length: 3" / 10.9"
Limitations: None

Temp. Tool Mfg.: Telatemp Serial No.: NSP 134 Surface Temp.: 90 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: Top Dead Center Surface Condition: Blended

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No	95D01K	87C054	95D01K	00B07K
Time	Evap. 5 Min	Dwell 15 Min	Evap. 5 Min	Develop 7 Min
Time Exam Started: 1235		Time Exam Completed: 1317		

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

Comments:

~~None~~ No previous data. 8mit 11/21/03

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: Yes

Reviewed Previous Data: spw 12-5-02
No - N/A

Examiner Level II	Signature	Date	Reviewer	Signature	Date
Jensen, Arlen	<i>Arl Jensen</i>	11/13/2002	Halling, David A.	<i>David A. Halling</i>	11-18-02
Examiner Level N/A	Signature	Date	Site Review	Signature	Date
N/A			Wren, Jerry P	<i>Jerry P. Wren</i>	11-20-02
Other Level N/A	Signature	Date	ANII Review	Signature	Date
N/A			Clow, Ron	<i>Ron Clow</i>	11/20/02

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Liquid Penetrant Examination

Site/Unit: PNGP / P11 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 301445 Procedure Rev.: 14 Report No.: 2002P084
Workscope: ISI Work Order No.: 0200860 Page: 1 of 1

Code: 1989 Code Cat: C-F-1 Location: Cont 715
Drawing No.: ISI-89A Description: PIPE - VALVE
System ID: SI
Component ID: W-20 Size/Length: 6" / 19"
Limitations: None

Temp. Tool Mfg: Telatemp Serial No.: NSP 178 Surface Temp.: 80 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: Top Dead Center / Weld Centerline Surface Condition: Ground Smooth

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	95D01K	87C054	95D01K	00G06K
Time	Evap. 5 Min	Dwell 15 Min	Evap. 2 Min	Develop 7 Min
Time Exam Started: 1720		Time Exam Completed. 1800		

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

Comments:

None

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Thomas, Travis		<i>Travis Thomas</i>	11/19/2002	Halling, David A.	<i>David A. Halling</i>	11/20/02
Examiner	Level N/A	Signature	Date	Site Review	Signature	Date
N/A				Wren, Jerry P.	<i>Jerry P. Wren</i>	11-22-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>Ron Clow</i>	11/22/02

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ATTACHMENT 67



Liquid Penetrant Examination

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ATTACHMENT 68

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No.: PI1RFO2002
Summary No.: 305015 Procedure Rev.: 14 Report No.: 2002P134
Workscope: ISI Work Order No.: 0200860 Page: 1 of 1

Code: 1989 Code Cat.: C-F-1 Location: Cont outer Anu
Drawing No.: ISI-99B Description: PIPE - VALVE
System ID: SI
Component ID: W-14 Size/Length: 3" / 11.25"
Limitations: None

Temp. Tool Mfg.: Telatemp Serial No.: NSP 176 Surface Temp.: 65 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: Top Dead Center/Weld Centerline Surface Condition: AS WELDED

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	95D01K	84M043	95D01K	00G06K
Time	Evap. 5 Min	Dwell 15 Min	Evap. 2 Min	Develop 7 Min
Time Exam Started: 0945		Time Exam Completed: 1030		

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

Comments:

~~None~~ No previous data. smt# 11/21/03

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner Level II Jensen, Arlen	Signature <i>Arlen Jensen</i>	Date 11/27/2002	Reviewer Hallig, David A.	Signature <i>David A. Hallig</i>	Date 11-29-02
Examiner Level II VanRuler, Christopher D.	Signature <i>Chris VanRuler</i>	Date 11/27/2002	Site Review Wren, Jerry P.	Signature <i>Jerry P. Wren</i>	Date 11-29-02
Other Level N/A N/A	Signature	Date	ANII Review Clow, Ron	Signature <i>R. Clow</i>	Date 11/29/02



Liquid Penetrant Examination

Site/Unit: PNGP / PI1 Procedure: ISI-PT-1 Outage No.: P11RFO2002
Summary No.: 303060 Procedure Rev.: 14 Report No.: 2002P132
Workscope: ISI Work Order No.: 0200860 Page: 1 of 1

Code: 1989 Code Cat.: C-F-1 Location: Cont 715
Drawing No.: ISI-97C Description: PIPE - VALVE
System ID: SI
Component ID: W-18 Size/Length: 2" / 7.875"
Limitations: None

Temp. Tool Mfg.: Telatemp Serial No.: NSP 178 Surface Temp.: 70 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: Not Used
Lo/Wo Location: Top Dead Center / Weld Centerline Surface Condition: AS WELDED

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	95D01K	84M043	95D01K	00G06K
Time	Evap. 5 Min	Dwell 15 Min	Evap. 2 Min	Develop 7 Min
Time Exam Started: 1430		Time Exam Completed: 1515		

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

Comments:

~~None~~ No previous data 11/21/03
SWAT

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: Yes

Reviewed Previous Data: N/A

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
VanRuler, Christopher D.		<i>Chris VanRuler</i>	11/27/2002	Halling, David A.	<i>DA Halling</i>	Nov 28, 02
Examiner	Level N/A	Signature	Date	Site Review	Signature	Date
N/A				Wren, Jerry P.	<i>Jerry P. Wren</i>	11-29-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>Ron Clow</i>	11/29/02

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ATTACHMENT 69

**XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE**

TITLE: Limitations to NDE

NUMBER: ISI-LTS-1 Revision 2

PREPARED BY: Jean P. Wm. ^{LV} IV **REVIEWED BY:** [Signature] ^{LV} III

APPROVED BY: Monica Vil **ANII REVIEW:** [Signature]
Superintendent M&MRN

EFFECTIVE DATE: 10-18-01

1.0 PURPOSE

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

2.0 REFERENCES

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

- 2.1 American Society of Mechanical Engineers Boiler & Pressure Vessel Code:
- Sections V and XI, 1986 edition, no addenda (Monticello - Third Interval)
 - Sections V and XI, 1989 edition, no addenda (Prairie Island - Third Interval)
- 2.2 Nuclear Regulatory Commission Regulatory Guide - 1.150 "Ultrasonic Testing of Reactor Vessel Welds during Preservice and Inservice Examinations", (Rev. 1 dated Feb. 1983).
- 2.3 Code case N-460 Alternative Examination Coverage for Class 1 and Class 2 Welds - Section XI, Division 1
- 2.4 ISI NDE Manual procedure
- ISI-NDE-0 "Equipment, Personnel and Material Reporting".
- 2.5 Metals and Materials Resources Procedure
- MMRN 2.3 "ISI Examination Program".
- 2.6 ISI Administrative Manual procedures
- ISIA-1.4 "Preparation of Relief Request from ASME Section XI Code Requirements"
 - ISIA-2.2 "ISI Field Activities - Preparation and Control"

XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE

NUMBER: ISI-LTS-1 **Revision** 2

3.0 APPLICABILITY

- 3.1 This procedure is applicable to examinations performed at Xcel Energy's Nuclear Generating Plants.
- 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.

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

5.1 Personnel Requirements

- Examination personnel certification and eye examinations shall be documented in accordance with ISI-NDE-0.
- 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.

XCEL ENERGY METALS & MATERIALS RESOURCES NORTH INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE

NUMBER: ISI-LTS-1 Revision 2

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;

- Complete original examination on accessible portions
- Make sketch which includes dimensions defining location and size of limitations using a report format similar to that shown in Fig 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 Fig 3.
- 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.
- Record radiation field information on the report (this may require assistance from the health physics group).
- Sign and date the data sheet then forward it to the Xcel Energy's Field Supervisor.

7.2 Evaluation

- The data gathered by the initial examiner shall be reviewed by the Xcel Energy's field supervisor / designee to determine if alternate methods may be used to achieve additional coverage.
- 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 Xcel Energy's field supervisor to determine if that action is practical (see para 7.3).
- 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 para 7.4).

XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE

NUMBER: ISI-LTS-1 Revision 2

7.3 Alternate methods to achieve coverage

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

- For surface examinations, a worksheet similar to that shown in Fig 4 shall be completed.
- For volumetric examinations, a worksheet similar to that shown in Fig 5 or 6 (ultrasonic examinations) shall be completed.

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 Xcel Energy's 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 (refer to ISIA 1.4).

8.0 ACCEPTANCE CRITERIA

This item is not applicable to this procedure.

XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE

NUMBER: ISI-LTS-1 **Revision** 2

9.0 REPORTING

9.1 Information addressed in Fig's 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.

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 Metals and Materials Resources North Procedure 2.3 "ISI Examination Program".

10.2 Records of other examinations shall be the responsibility of the organization requesting the examination.

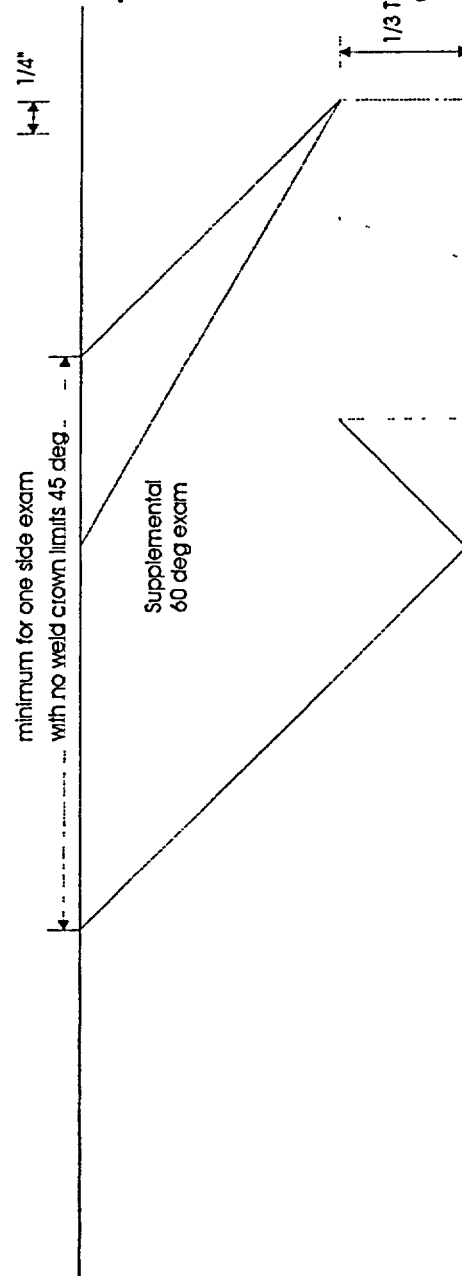
XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE

NUMBER: ISI-LTS-1

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Figure 1
Example of UT scan coverage



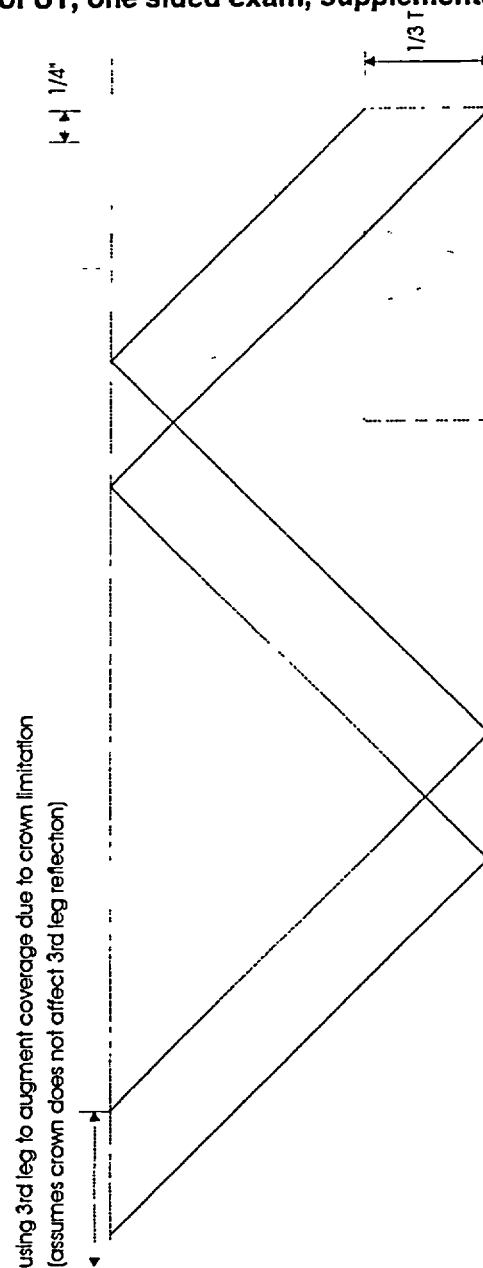
XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
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Figure 2
Example of UT, one sided exam, supplemental coverage



XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE
NUMBER: ISI-LTS-1 Revision 2

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				

Xcel Energy's Field Supervisor: _____ Date: _____

XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

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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).

Xcel Energy's Field Supervisor: _____ Date: _____

XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE

NUMBER: ISI-LTS-1 Revision 2

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.

Xcel Energy's Field Supervisor: _____ Date: _____

**XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE**

TITLE: Limitations to NDE

NUMBER: ISI-LTS-1 Revision 2

SUMMARY OF SIGNIFICANT CHANGES

Title block changed NSP to Xcel Energy and Materials & Special Processes to Metals & Materials Resources North.

2.1 Added no addenda to code years.

Changed O&MS to MMRN, two places.

Changed NSP to Xcel Energy's, seven places.