

**Mano K. Nazar**  
**Site Vice President**  
Prairie Island Nuclear Generating Plant  
Nuclear Management Company, LLC  
1717 Wakonade Dr. East • Welch MN 55089

May 31, 2002

10 CFR Part 50  
Section 50.55a

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

**PRAIRIE ISLAND NUCLEAR GENERATING PLANT**  
Docket No. 50-306 License No. DPR-60

Request for Relief No. 12 for the Unit 2 3rd 10-year Interval Inservice Inspection Program

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

The purpose of this letter is to submit a relief request for "limited examinations" associated with that plan. Attached is Unit 2 Relief Request No. 12, 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.

In this letter we have made no new Nuclear Regulatory Commission commitments. Please contact Jack Leveille (651-388-1121, Ext. 4142) if you have any questions related to this letter.

  
Mano K. Nazar  
Site Vice President  
Prairie Island Nuclear Generating Plant

c: (next page)

A047

USNRC  
May 31, 2002  
Page 2

NUCLEAR MANAGEMENT COMPANY, LLC

c: Regional Administrator - Region III, NRC  
Senior Resident Inspector, NRC  
NRR Project Manager, NRC  
Chief Boiler Inspector, State of MN  
P. Fisher, Hartford Insurance

Enclosure: ISI Relief Request No. 12 (Rev. 0), Prairie Island Unit 2, 3<sup>rd</sup> Interval, with  
attached examination reports

ISI Relief Request No. 12 (Rev. 0)

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 prior to January 1, 1971, components (including supports) must meet the requirements of paragraphs (g) (4) and (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 pre-service 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, sufficient to permit satisfying the current Code requirements. Limitations to inspections are primarily due to obstructions, interference and design configurations.

Summary of the limited examinations are described below and also included in the Table, which follows.

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

**Summary No. 501125, W-1, Reactor Coolant Pump to Pipe Weld, is limited to volumetric (UT) examination to 49.2% coverage. The limited examination coverage is the result of interference from a 6" branch connection at 270 degrees, 3" from toe of weld.**

**Summary No. 501140, W-1, Reactor Coolant Nozzle to Elbow Weld, is limited to volumetric (UT) examination to 55.35% coverage. The limited examination coverage is the result of the design configuration of the nozzle to elbow weld, which prohibits one of the four directional scans required.**

**Summary No. 501638, W-7, Reactor Coolant Valve to 45 degree Elbow Weld, is limited to volumetric (UT) examination one sided examination 50.00% coverage. PDI UT procedure is not qualified for the detection of flaws on the far side of single side access examinations. The technique provided by the PDI procedure was used for a best effort examination for flaws on the far side of the weld. Valve to elbow configuration limits this examination to single side.**

**Summary No. 501804, W-9, Reactor Coolant Elbow to pipe weld, is limited to volumetric (UT) examination to 58.75% coverage. The limited examination coverage is the result of interference from an install box restraint close to the weld toe that prevents four directional scanning of complete weld.**

**Part B: Category C-C “Integral attachments for Vessels, Piping, Pumps and Valves”**

**Summary No. 500978, Main Steam Hanger H-2, Integral attached welds, is limited to surface examination of only 74.3% of surface area due to restraint configuration.**

**Summary No. 500985, Main Steam Hanger H-3, Integral attached welds, is limited to surface examination of only 74.3% of surface area due to restraint configuration.**

**Summary No. 500988, Main Steam Hanger H-3, Integral attached welds, is limited to surface examination of only 74.3% of surface area due to restraint configuration.**

**Part C: Category C-F-1 “Pressure Retaining Welds in Austenitic Stainless Piping”**

**Summary No. 500251, W-17, Safety Injection Pipe to Valve weld, is limited to volumetric examination coverage of 50.00%. PDI UT procedure is not qualified for the detection of flaws on the far side of single side access examinations. The technique provided by the PDI procedure was used for a best effort examination for flaws on the far side of the weld. Pipe to Valve configuration limits this examination to single side.**

**Summary No. 502388, W-1, Safety Injection Valve to Pipe weld is limited to volumetric examination coverage of 50.00%. PDI UT procedure is not qualified for the detection of flaws on the far side of single side access examinations. The technique provided by the PDI procedure was used for a best effort examination for flaws on the far side of the weld. Valve to Pipe configuration limits this examination to single side.**

**Summary No. 502147, W-18/LSU, Residual Heat Removal Pipe to Flange weld is limited to volumetric examination coverage of 75.00%. PDI UT procedure is not qualified for the detection of flaws on the far side of single side access examinations. The technique provided by the PDI procedure was used for a best effort examination for flaws on the far side of the weld. Pipe to Flange configuration limits this examination to single side.**

**Summary No. 502372, W-1/LSD, Residual Heat Removal Valve to Reducer weld is limited to volumetric examination coverage of 50.00%. PDI UT procedure is not qualified for the detection of flaws on the far side of single side access examinations. The technique provided by the PDI procedure**

**was used for a best effort examination for flaws on the far side of the weld. Valve to reducer configuration limits this examination to single side.**

**Summary No. 502392, W-5/LSD, Residual Heat Removal Valve to Reducer weld is limited to volumetric examination coverage of 50.00%. PDI UT procedure is not qualified for the detection of flaws on the far side of single side access examinations. The technique provided by the PDI procedure was used for a best effort examination for flaws on the far side of the weld. Valve to reducer configuration limits this examination to single side.**

**Part D: Category C-F-2 " Pressure Retaining Welds in Ferritic and low alloy Piping."**

**Summary No. 500830, W-14/LSU, Main Steam Pipe-Flanged Nozzle weld is limited to surface examination coverage of 83.3%. Interference from a Hanger installed top dead center of weld prohibits adequate surface examination coverage.**

Additional Means of Establishing Integrity:

In addition, system pressure tests and associated visual inspections (VT-2) required by Section XI are performed at required frequency to ensure the piping system is capable of maintaining pressure integrity. System integrity is monitored during normal operation by many direct and indirect methods, e.g., containment radiation monitoring, containment air monitoring, containment sump monitoring, containment temperature monitoring, system walk downs, surveillance testing, etc.

For all listed B-J Category weld with UT volumetric limitations the associated required surface examination (PT or MT) was performed in accordance with Section XI.

For all-listed C-C Category integral attached welds with surface examination limitations the associated required visual examination (VT-3) has been performed.

For all listed C-F-1 Category, austenitic piping welds with UT volumetric limitations the associated required surface (PT) examination was performed in accordance with Section XI.

All in-service inspection at Prairie Island Unit 2 have been done to the greatest extent practical. When limitation to required inspections are encountered procedure ISI-LTS-1 is applied which requires approved alternative examination techniques be considered, or applied to gain the maximum obtainable inspection coverage practical. In all of the

above items identified, this procedure was used and the maximum inspection coverage has been achieved for the components listed to ensure pressure and structural integrity.

Alternate Examination:

The limitations have been noted on the ISI examination reports and are included in the ISI Outage Summary Report. NMC will continue to document the limitations. No additional alternative examinations are proposed.

Limitations are due to configuration design, geometry, and materials of construction of the components or limitations of approved Performance Demonstration Initiated (PDI) examination procedures for the detection of flaws. NMC will continue to utilize the most current approved PDI techniques available for future examinations.

Table: Limited Examinations-Prairie Island Unit 2 –2002 Refueling Outage.

Category	Item No.	SYSTEM	ISO	Component Id.	Description	Method	% Coverage	REPORT	Limitation
B-J	B9.11	Reactor Coolant	2-ISI-32C	W-1 501125	Pump to Pipe	Volumetric UT	49.2%	2002U035	Examination Limited due to 6" branch connection at 270 degrees, 3" downstream from weld toe. See attached report 2002U035
B-J	B9.11	Reactor coolant	2-ISI-33B	W-1 501140	Nozzle to Elbow	Volumetric UT	55.3%	2002U045	Examination limited due to the nozzle configuration at weld toe. See attached report 2002U045.
B-J	B9.11	Reactor Coolant	2-ISI-28	W-7 501638	Valve to 45 Elbow	Volumetric UT	50.00%	2002U038	Single Sided examination-PDI examination limitation. PDI procedure is not qualified for the detection of flaws on the far side of single side access exams. See attached report 2002U038
B-J	B9.11	Reactor Coolant	2-ISI-20A	W-9 501804	Elbow to Pipe	Volumetric UT	58.75%	2002U033	Examination limited due to box restraint prohibiting access to weld. See attached report 2002U033
C-C	F-A,B,C	Main Steam	2-ISI-47A	H-1 500978	Rupture Restraint	Surface MT	74.30%	2002M025	Weld area inaccessible due to restraint configuration. See report 2002M025
C-C	F-A,B,C	Main Steam	2-ISI-47A	H-2 500985	Seismic Restraint	Surface MT	74.30%	2002M024	Weld area inaccessible due to restraint configuration. See report 2002M024
C-C	F-A,B,C	Main Steam	2-ISI-47A	H-3 500988	Seismic Restraint	Surface MT	74.30%	2002M021	Weld area inaccessible due to restraint configuration. See attached report 2002M021



C-F-1	C5.11	Safety Injection	2-ISI-72	W-17 500251	Pipe to Valve	Volumetric UT	50.00%	2002U036	Single Sided examination-PDI examination limitation. PDI procedure is not qualified for the detection of flaws on the far side of single side access exams. See attached report 2002U036
C-F-1	C5.11	Safety Injection	2-ISI-70	W-1 502388	Valve to Pipe	Volumetric UT	50.00%	2002U037	Single Sided examination-PDI examination limitation. PDI procedure is not qualified for the detection of flaws on the far side of single side access exams. See attached report 2002U037
C-F-1	C5.10	Residual Heat Removal	2-ISI-51	W-18/LSU 502147	Pipe to Flange	Volumetric UT	75.00%	2002U001	Axial examination performed from pipe side only, due to Pipe to Flange Configuration. PDI procedure is not qualified for the detection of flaws on the far side of single side access exams. See attached report 2002U001
C-F-1	C5.10	Residual Heat Removal	2-ISI-50	W-1/LSD 502372	Valve to Reducer	Volumetric UT	50.00%	2002U028	Single Sided examination-PDI examination limitation. PDI procedure is not qualified for the detection of flaws on the far side of single side access exams. See attached report 2002U028

C-F-1	C5.10	Residual Heat Removal	2-ISI-50	W-5/LSD 502392	Valve to Reducer	Volumetric UT	50.00%	2002U026	Single Sided examination-PDI examination limitation. PDI procedure is not qualified for the detection of flaws on the far side of single side access exams. See attached report 2002U026
C-F-2	C5.80	Main Steam	2-ISI-46B	W-14/LSU 500830	Pipe Flanged Nozzle	Surface MT	83.00%	2002M016	Surface examination is limited due to hanger interference at top dead center. See attached report 2002M016

Attached reports in the following order (same as the order in the Table):

- |  |         |
|--|---------|
| 1. UT Pipe Weld Examination 2002U035       | 4 pages |
| 2. UT Pipe Weld Examination 2002U045       | 4 pages |
| 3. UT Pipe Weld Examination 2002U038       | 3 pages |
| 4. UT Pipe Weld Examination 2002U033       | 5 pages |
| 5. Magnetic Particle Examination 2002M025  | 6 pages |
| 6. Magnetic Particle Examination 2002M024  | 6 pages |
| 7. Magnetic Particle Examination 2002M021  | 6 pages |
| 8. UT Pipe Weld Examination 2002U036       | 3 pages |
| 9. UT Pipe Weld Examination 2002U037       | 3 pages |
| 10. UT Pipe Weld Examination 2002U001      | 3 pages |
| 11. UT Pipe Weld Examination 2002U028      | 3 pages |
| 12. UT Pipe Weld Examination 20002U026     | 3 pages |
| 13. Magnetic Particle Examination 2002M016 | 4 pages |



# UT Pipe Weld Examination

Site/Unit: NMC / PI2 Procedure: ISI-UT-11 Outage No.: PI2RF2002  
Summary No.: 501125 Procedure Revision/FC: 5 / --- Report No.: 2002U035  
Workscope: ISI Work Order No.: 0106946 Page: 1 of 4

Code: 1989 Code Cat.: B-J Location: RCP Pump 21  
Drawing No.: 2-ISI- 32C Description: Pump To Pipe  
System ID: RC  
Component ID: W- 1 Size/Length: 1.8" / 97.3" Thickness/Diameter: 2.570"/31.0"  
Limitations: See comments. Start Time: 1200 Finish Time: 1359

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Flat Topped  
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143  
Temp. Tool Mfg.: Telatemp Serial No.: NSP 179 Surface Temp.: 83 °F

Cal. Sheet No.: 2002CA068, 2002CA069, 2002CA070

Angle Used	0	45	45T	60		
Scanning dB	47.0	87.0	83.5	N/A		

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

Comments:

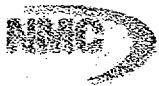
6" Branch connection at 270 degrees, 3" downstream from weld toe.

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 A. Knott</i>	2/12/2002	Clay, Sean P.	<i>Sean P. Clay</i>	2-19-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Thomas, Travis	II	<i>Travis Thomas</i>	2/12/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	2-19-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron	<i>Ron Clow</i>	2/21/02



## Limitation Record

Site/Unit: NMC / PI2  
Summary No.: 501125  
Workscope: ISI

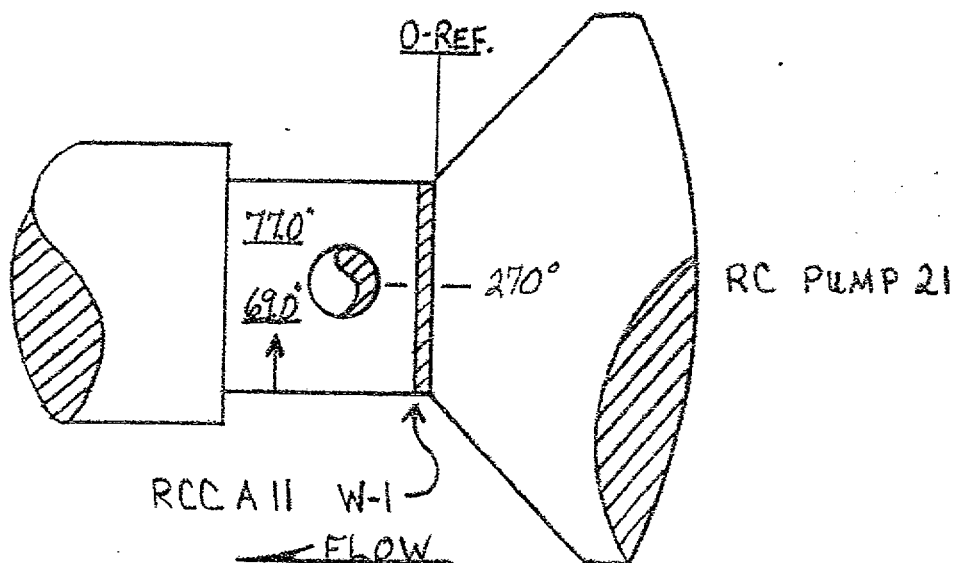
Procedure: ISI-UT-11  
Procedure Revision/FC: 5 / ---  
Work Order No.: 0106946

Outage No.: PI2RF2002  
Report No.: 2002U035  
Page: 2 of 4

### Description of Limitation:

6" Branch connection at 270 degrees, 3" downstream from weld toe.

Sketch of Limitation: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL UT\2002u035\_1.bmp



Limitations removal requirements:

N/A

Radiation field: N/A

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Knott, Brian		<i>Brian A. Knott</i>	2/12/2002	Clay, Sean P.	<i>Sean P. Clay</i>	2-19-02
Examiner	Level II	Signature	Date	Site Review	Signature	Date
Thomas, Travis		<i>Travis Thomas</i>	2/12/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	2-20-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Glow, Ron	<i>Ron Glow</i>	2/21/02



## Supplemental Report

Report No.: 2002U035

Page: 3 of 4

Summary No.: 501125

Examiner: Knott, Brian

Level: II

Reviewer: Clay, Sean P.

Date: 2-19-02

Examiner: Thomas, Travis

Level: II

Site Review: Wren, Jerry P.

Date: 2-20-02

Other: N/A

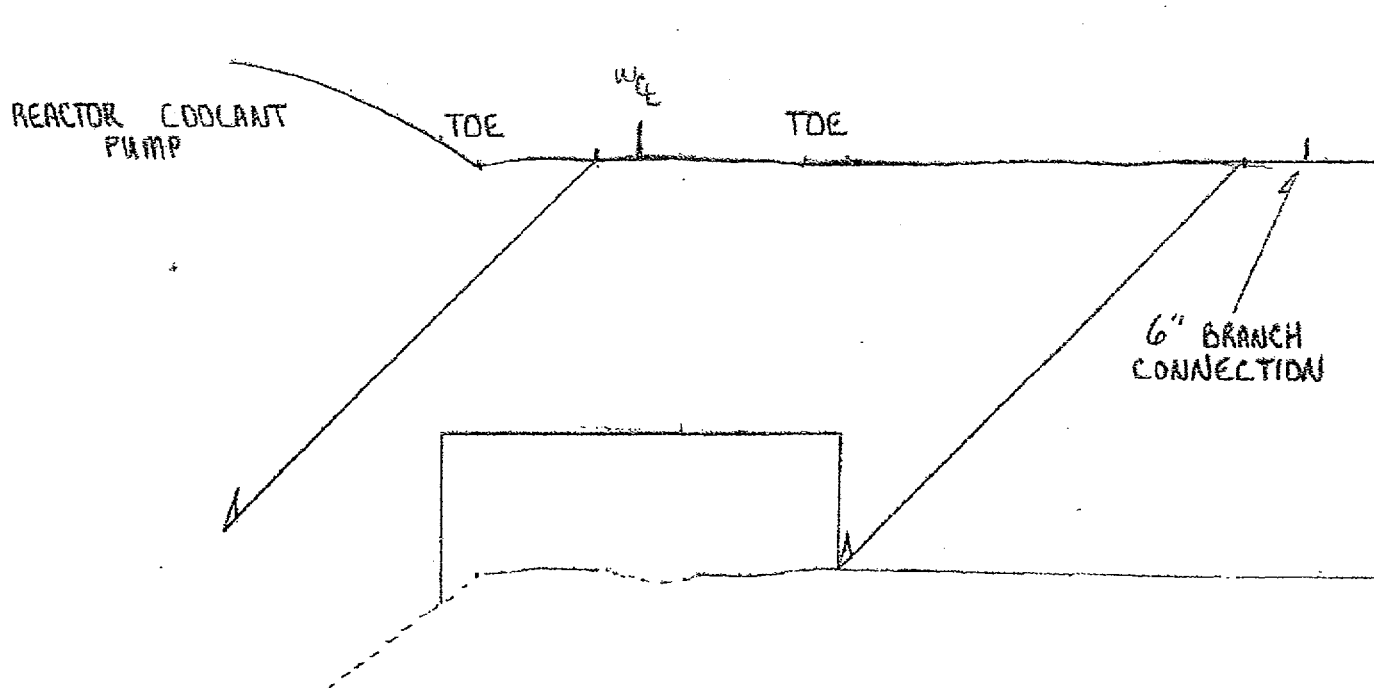
Level: N/A

ANII Review: Clow, Ron

Date: 2/21/02

Comments: None

Sketch or Photo: G:\IDEAL50\PI2RFO2002\SUPPLEMENTAL UT\2002u035\_2.bmp





## Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: NMC / PI2 Procedure: ISI-UT-11 Outage No.: PI2RF2002  
Summary No.: 501125 Procedure Revision/FC: 5 / -- Report No.: 2002U035  
Workscope: ISI Work Order No.: 0106946 Page: 4 of 4

### 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>96.800</u>	% volume of length / 100 =	<u>96.800</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 = 49.200 % total for 45 deg

Other deg - 0 (to be used for supplemental scans)

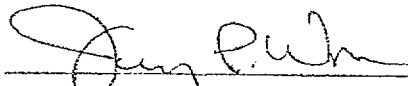
The data to be listed below is for coverage that was not obtained with the 45 deg scans.

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

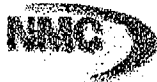
### Percent complete coverage

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

49.200 % Total for complete exam

Site Field Supervisor: 

Date: 2-20-02



# UT Pipe Weld Examination

Site/Unit: NMC / PI2  
Summary No.: 501140  
Workscope: ISI

Procedure: ISI-UT-11  
Procedure Revision/FC: 5 / ---  
Work Order No.: 0106946

Outage No.: PI2RF2002  
Report No.: 2002U045  
Page: 1 of 4

Code: 1989 Code Cat.: B-J Location: Containment  
Drawing No.: 2-ISI- 33B Description: Nozzle To Elbow  
System ID: RC  
Component ID: W- 1 Size/Length: 2.2" / 97.5" Thickness/Diameter: 2.890" / 31.0"  
Limitations: See Comments. Start Time: 0927 Finish Time: 1251

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground Flush  
Lo Location: Outside Radius of Elbow Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143  
Temp. Tool Mfg.: PTC Instruments Serial No.: 3489 Surface Temp.: 87 °F

Cal. Sheet No.: 2002CA085, 2002CA086, 2002CA087

Angle Used	0	45	45T	60		
Scanning dB	34.0	75.0	72.0	N/A		

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

Comments:

No scan #1 due to nozzle configuration.

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>	2/19/2002	Clay, Sean P.	<i>Sean P. Clay</i>	2-20-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Potter, Michael E.	II	<i>Michael E. Potter</i>	2/19/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	2-21-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron	<i>Ron Clow</i>	2/21/02





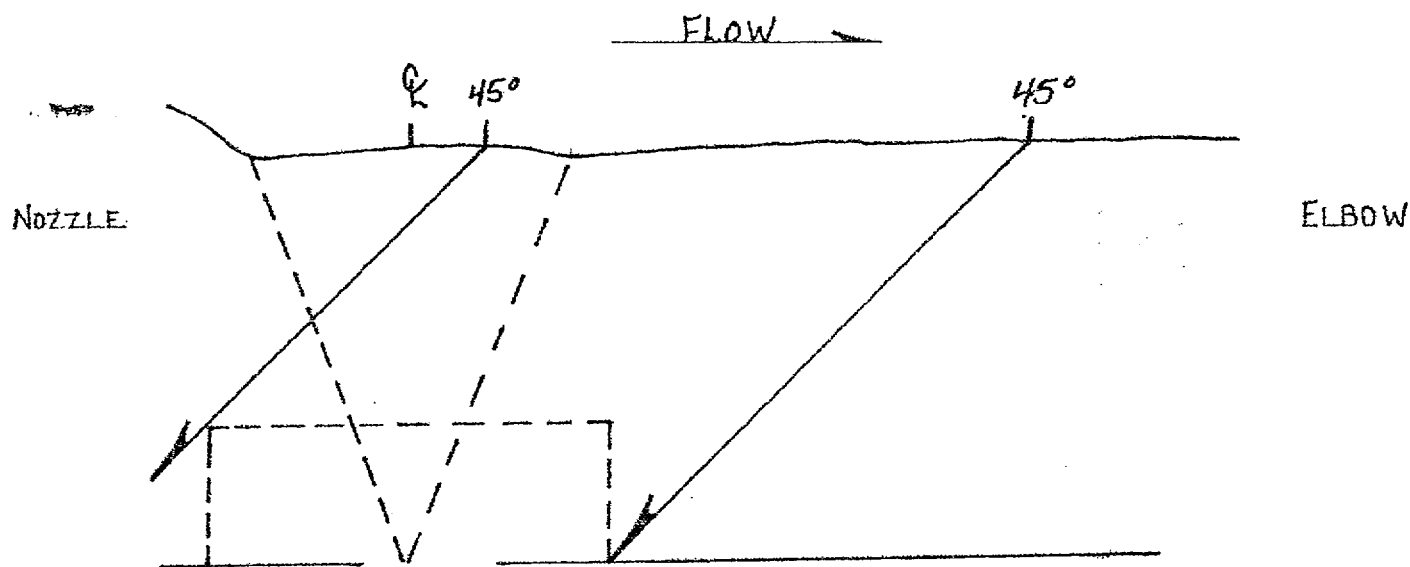
## Limitation Record

Site/Unit:	NMC / PI2	Procedure:	ISI-UT-11	Outage No.:	PI2RF2002
Summary No.:	501140	Procedure Revision/FC:	5 / ---	Report No.:	2002U045
Workscope:	ISI	Work Order No.:	0106946	Page:	2 of 4

### Description of Limitation:

No scan 1 performed due to nozzle configuration.

Sketch of Limitation: G:\IDDEAL50\PI2RF02002\SUPPLEMENTAL UT\2002u045\_2.bmp



W-1 COVERAGE PLOT

### Limitations removal requirements:

N/A

Radiation field: N/A

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Knott, Brian		<i>Brian G. Knott</i>	2/19/2002	Clay, Sean P.	<i>Sean P. Clay</i>	2-20-02
Examiner	Level II	Signature	Date	Site Review	Signature	Date
Potter, Michael E.		<i>Michael E. Potter</i>	2/19/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	2-21-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>R. Clow</i>	2/21/02



## Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: NMC / PI2 Procedure: ISI-UT-11 Outage No.: PI2RF2002  
Summary No.: 501140 Procedure Revision/FC: 5 / --- Report No.: 2002U045  
Workscope: ISI Work Order No.: 0106946 Page: 3 of 4

### 45 deg

Scan 1	<u>100.000</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>60.700</u>	% volume of length / 100 =	<u>60.700</u>	% total for Scan 3
Scan 4	<u>100.000</u>	% Length X	<u>60.700</u>	% volume of length / 100 =	<u>60.700</u>	% total for Scan 4

Add totals and divide by # scans = 55.350 % 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;

55.350 % Total for complete exam

Site Field Supervisor:

Date:

2-21-02



## Supplemental Report

Report No.: 2002U045

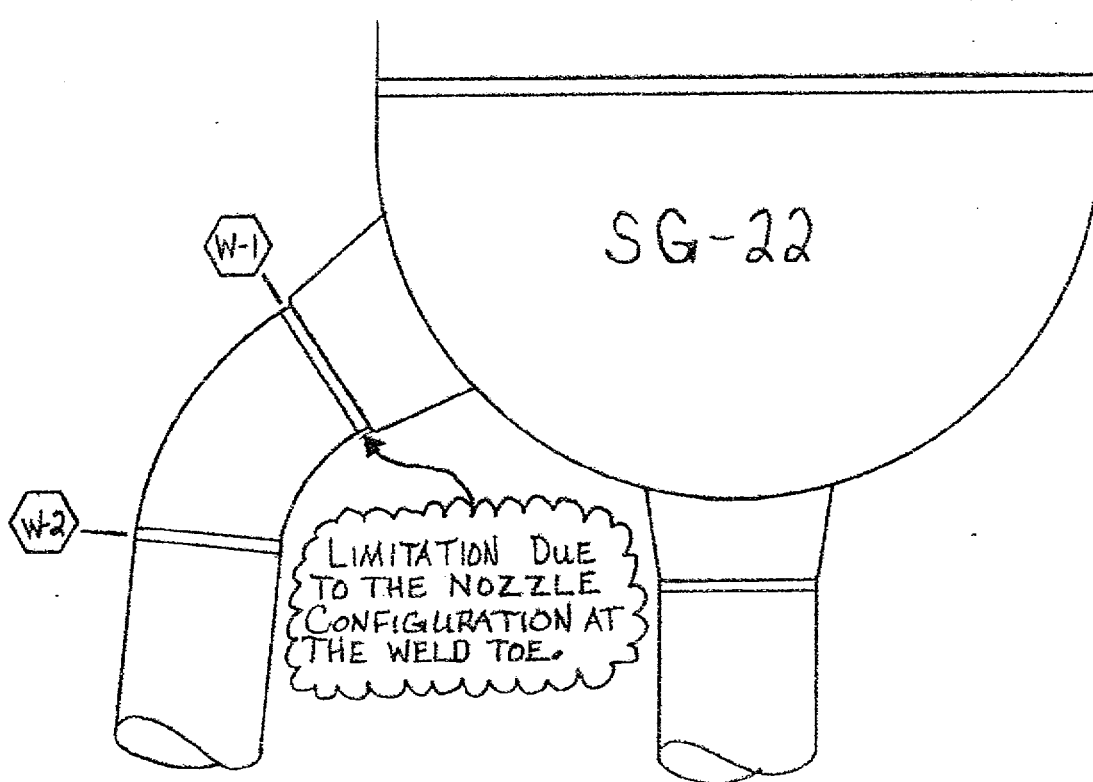
Page: 4 of 4

Summary No.: 501140

Examiner: <u>Knott, Brian</u>	Level: <u>II</u>	Reviewer: <u>Clay, Sean P.</u>	Date: <u>2-20-02</u>
Examiner: <u>Potter, Michael E.</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry P.</u>	Date: <u>2-21-02</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Clow, Ron</u>	Date: <u>2/21/02</u>

Comments: None

Sketch or Photo: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL UT\2002u045\_4.bmp





## UT Pipe Weld Examination

Site/Unit: NMC / PI2  
Summary No.: 501638  
Workscope: ISI

Procedure: ISI-UT-16A  
Procedure Revision/FC: 1 / ---  
Work Order No.: 0106946

Outage No.: PI2RF2002  
Report No.: 2002U038  
Page: 1 of 3

Code: 1989 Code Cat.: B-J Location: Containment  
Drawing No.: 2-ISI- 28 Description: Valve to 45 Elbow  
System ID: RC  
Component ID: W- 7 Size/Length: .90" / 21.0" Thickness/Diameter: .74" / 8.0"  
Limitations: Single side access due to configuration. See attached sheets. Start Time: 0835 Finish Time: 0900

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Flat Topped  
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143  
Temp. Tool Mfg.: Telatemp Serial No.: NSP 185 Surface Temp.: 80 °F

Cal. Sheet No.: 2002CA071, 2002CA072

Angle Used	0	45	45T	60		
Scanning dB	N/A	41.8	41.8	66.8		

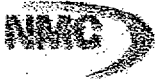
Indication(s): Yes ☐ No ☒ Scan Coverage: Upstream ☐ Downstream ☒ CW ☒ CCW ☒  
Comments:  
See Limitation Sheet.

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: No

Reviewed Previous Data: No YES 2-19-02

Examiner Level II Tim, Jeremy T.	Signature <i>[Signature]</i>	Date 2/14/2002	Reviewer Clay, Sean P.	Signature <i>[Signature]</i>	Date 2-18-02
Examiner Level II Griebel, David M.	Signature <i>[Signature]</i>	Date 2/14/2002	Site Review Wren, Jerry P.	Signature <i>[Signature]</i>	Date 2-19-02
Other Level N/A N/A	Signature	Date	ANII Review Clow, Ron	Signature <i>[Signature]</i>	Date 2/19/02



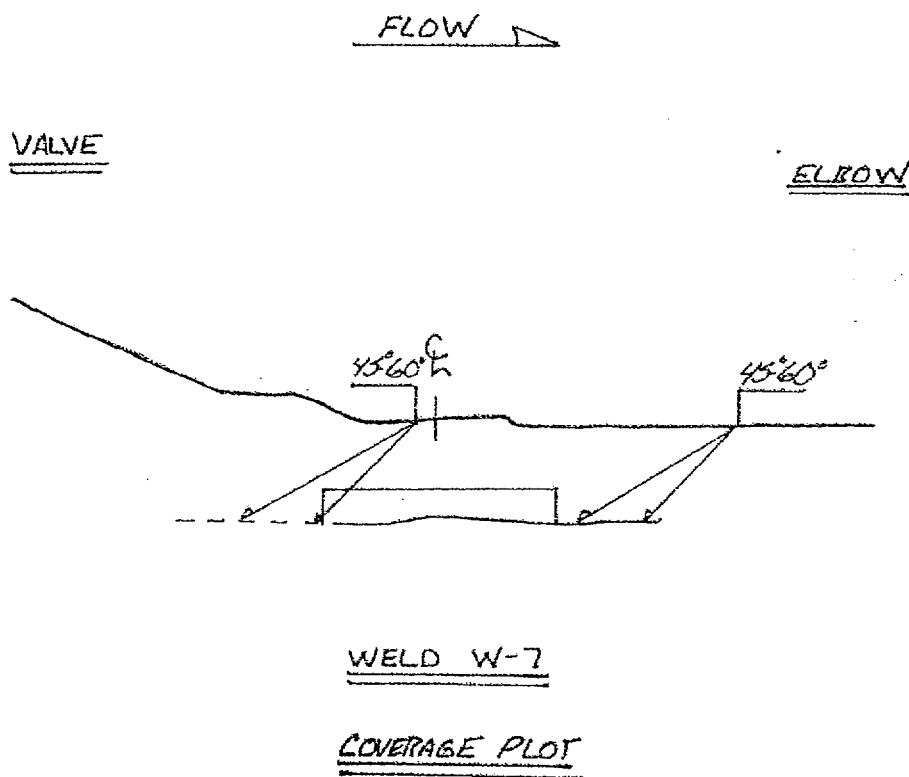
## Limitation Record

Site/Unit: NMC / PI2 Procedure: ISI-UT-16A Outage No.: PI2RF2002  
Summary No.: 501638 Procedure Revision/FC: 1 / --- Report No.: 2002U038  
Workscope: ISI Work Order No.: 0106946 Page: 2 of 3

### Description of Limitation:

Single sided exam - Although the exam 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 exam for flaws on the far side of the weld.

Sketch of Limitation: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL UT\2002u038\_1.bmp



Limitations removal requirements:

N/A

Radiation field: N/A

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.		<i>[Signature]</i>	2/14/2002	Clay, Sean P.	<i>[Signature]</i>	2-18-02
Examiner	Level II	Signature	Date	Site Review	Signature	Date
Griebel, David M.		<i>[Signature]</i>	2/14/2002	Wren, Jerry P.	<i>[Signature]</i>	2-19-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Clow, Ron	<i>[Signature]</i>	2/19/02



## Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>NMC / PI2</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI2RF2002</u>
Summary No.:	<u>501638</u>	Procedure Revision/FC:	<u>1 / ---</u>	Report No.:	<u>2002U038</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0106946</u>	Page:	<u>3</u> of <u>3</u>

### 45 deg

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>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>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;

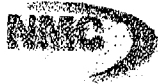
50.000 % Total for complete exam

Site Field Supervisor:

John P. White

Date:

2-19-02



# UT Pipe Weld Examination

Site/Unit: NMC / PI2  
Summary No.: 501804  
Workscope: ISI  
Procedure: ISI-UT-16A  
Procedure Revision/FC: 1 / ---  
Work Order No.: 0106946  
Outage No.: PI2RF2002  
Report No.: 2002U033  
Page: 1 of 5  
Code: 1989 Code Cat.: B-J Location: 22 Vault  
Drawing No.: 2-ISI- 20A Description: Elbow to Pipe  
System ID: RC  
Component ID: W- 9  
Limitations: See attached limitation sheet.  
Size/Length: .95" / 27" Thickness/Diameter: .80" / 8"  
Start Time: 1340 Finish Time: 1415

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Flat Topped  
Lo Location: Extradose of Elbow Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143  
Temp. Tool Mfg.: Telatemp Serial No.: NSP 185 Surface Temp.: 90 °F

Cal. Sheet No.: 2002CA065, 2002CA066

Angle Used	0	45	45T	60		
Scanning dB	N/A	36.6	36.6	70.0		

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

Comments:

Reference PT report #2002P038 for pictures.

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level	II	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.				2/12/2002	Clay, Sean P.		2-17-02
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Griebel, David M.				2/12/2002	Wren, Jerry P.		2-18-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron		2/19/02



## Supplemental Report

Report No.: 2002U033

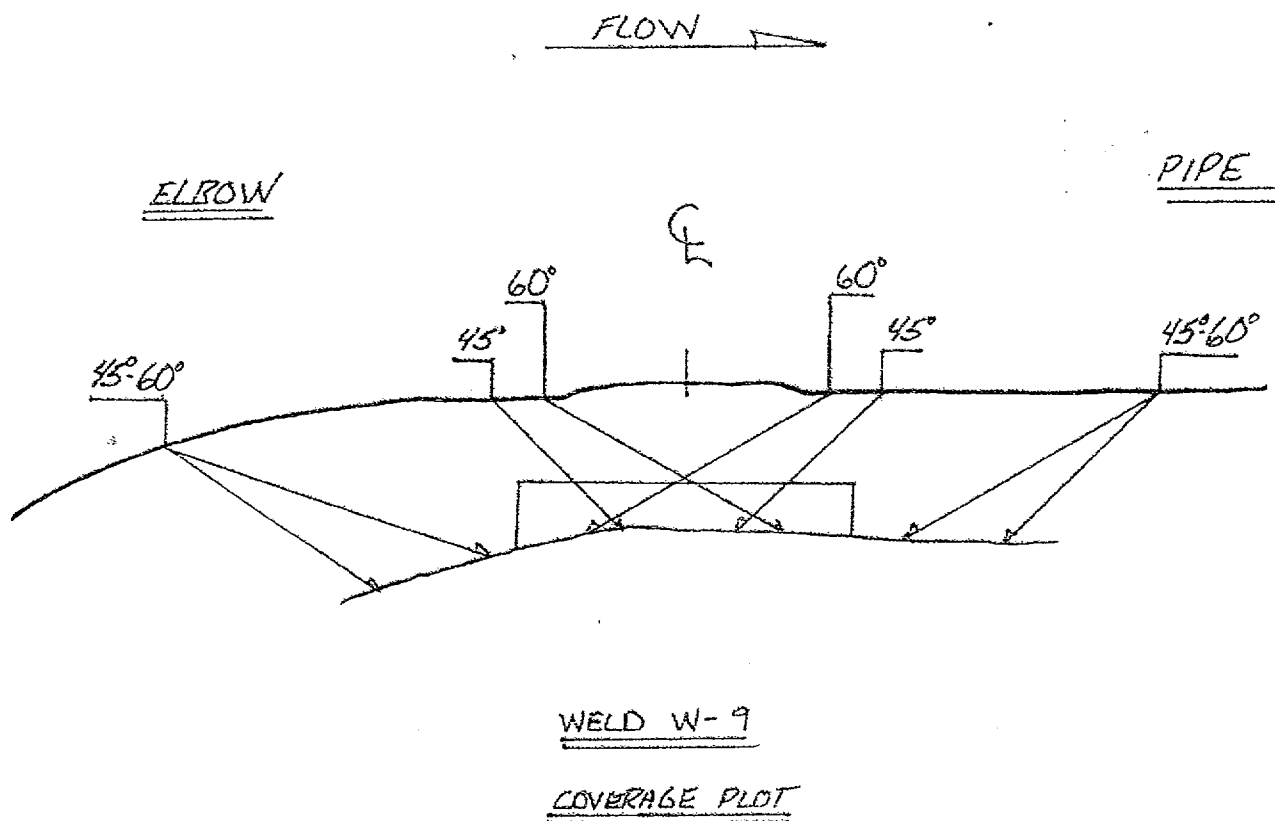
Page: 2 of 5

Summary No.: 501804

Examiner: Timm, Jeremy T.	Level: II	Reviewer: Clay, Sean P.	Date: 2-17-02
Examiner: Griebel, David M.	Level: II	Site Review: Wren, Jerry P.	Date: 2-18-02
Other: N/A	Level: N/A	ANII Review: Clow, Ron	Date: 2/19/02

Comments: None

Sketch or Photo: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL UT\2002u033\_2.bmp



PLOT SHOWS COVERAGE FOR 24" OF 27" IN SCAN 1 DIR.

PLOT SHOWS COVERAGE FOR 15.5" OF 27" IN SCAN 2 DIR.





## Supplemental Report

Report No.: 2002U033

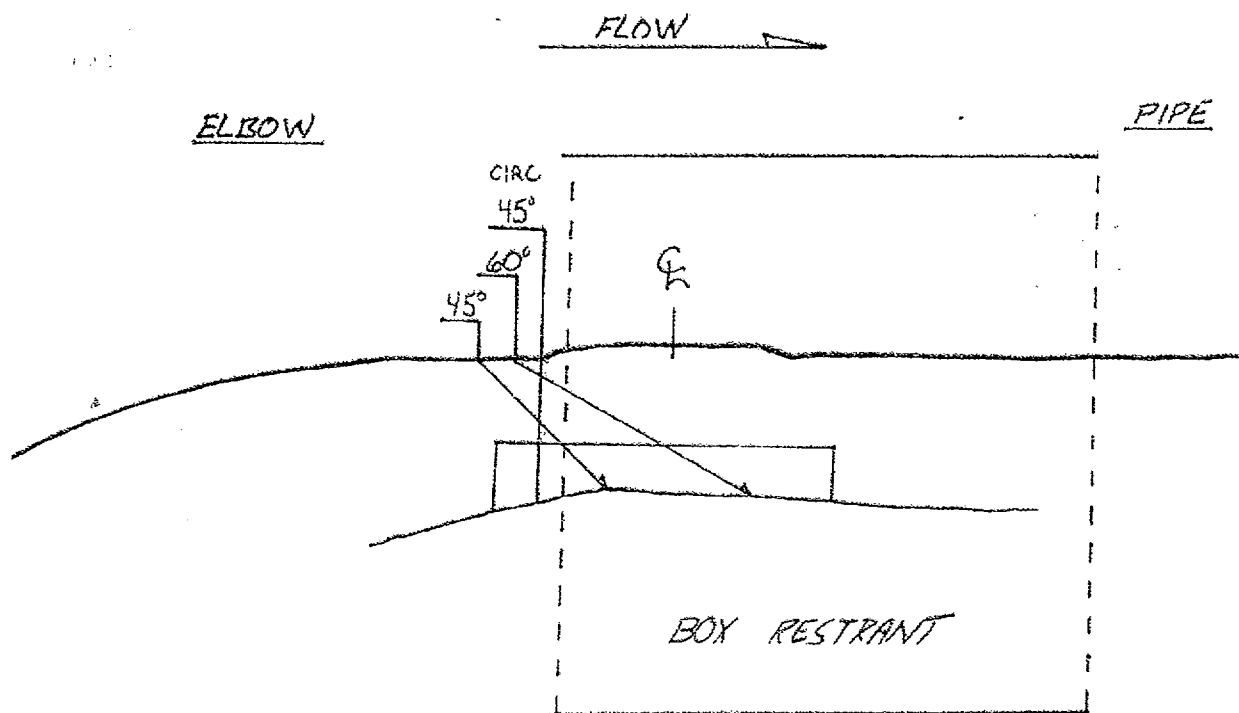
Page: 3 of 5

Summary No.: 501804

Examiner: Timm, Jeremy T.	Level: II	Reviewer: Clay, Sean P.	Date: 2-17-02
Examiner: Griebel, David M.	Level: II	Site Review: Wren, Jerry P.	Date: 2-18-02
Other: N/A	Level: N/A	ANII Review: Clow, Ron	Date: 2/19/02

Comments: None

Sketch or Photo: G:\IDEAL50\PI2RFO2002\SUPPLEMENTAL UT\2002u033\_3.bmp



WELD W-9  
COVERGE PLOT

SCAN LIMITATION: 5.5" CW to 8.0" CW SCAN 2  
11.5" CW to 20.5" CW SCAN 2  
12.0" CW to 15.0" CW SCAN 1

SCANS 3 & 4 ARE LIMITED TO U.S. SIDE  
OF WELD TOE 360°



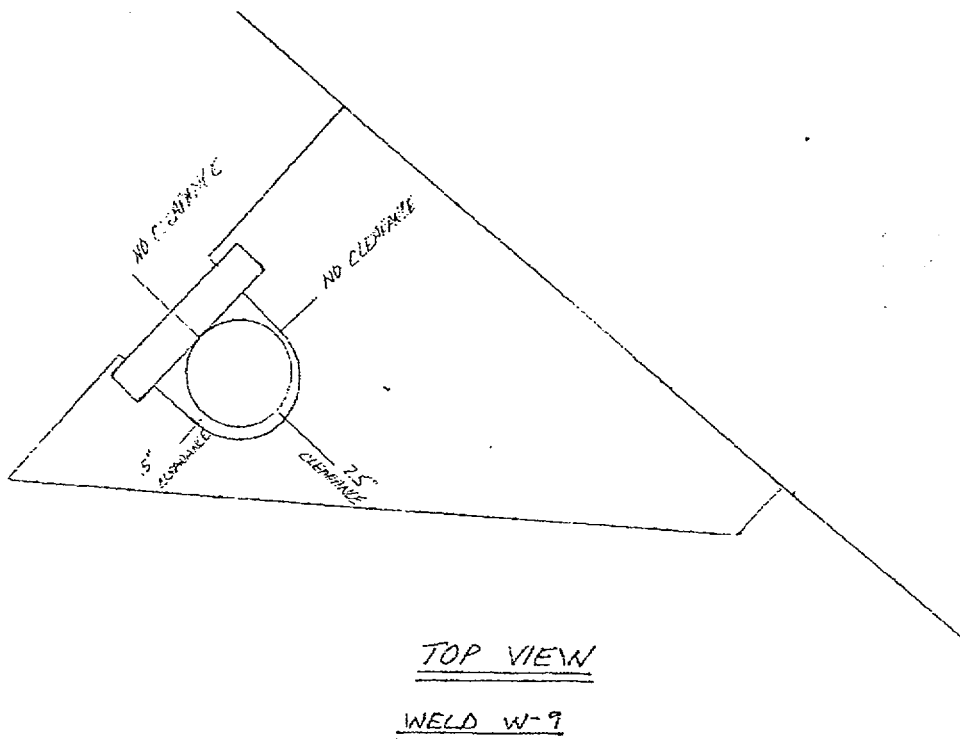
## Limitation Record

Site/Unit:	NMC / PI2	Procedure:	ISI-UT-16A	Outage No.:	PI2RF2002
Summary No.:	501804	Procedure Revision/FC:	1 / ---	Report No.:	2002U033
Workscope:	ISI	Work Order No.:	0106946	Page:	4 of 5

Description of Limitation:

Reference PT report #2002P038 for pictures.

Sketch of Limitation: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL UT\2002u033\_1.bmp



Limitations removal requirements:

N/A

Radiation field: N/A

Examiner	Level	II	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.			<i>[Signature]</i>	2/12/2002	Clay, Sean P.	<i>[Signature]</i>	2-17-02
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Griebel, David M.			<i>[Signature]</i>	2/12/2002	Wren, Jerry P.	<i>[Signature]</i>	2-18-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>[Signature]</i>	2/19/02



## Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>NMC / P12</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI2RF2002</u>
Summary No.:	<u>501804</u>	Procedure Revision/FC:	<u>1 / ---</u>	Report No.:	<u>2002U033</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0106946</u>	Page:	<u>5</u> of <u>5</u>

### 45 deg

Scan 1	<u>89.000</u>	% Length X	<u>26.300</u>	% volume of length / 100 =	<u>23.407</u>	% total for Scan 1
Scan 2	<u>57.500</u>	% Length X	<u>26.300</u>	% volume of length / 100 =	<u>15.123</u>	% total for Scan 2
Scan 3	<u>100.000</u>	% Length X	<u>25.000</u>	% volume of length / 100 =	<u>25.000</u>	% total for Scan 3
Scan 4	<u>100.000</u>	% Length X	<u>25.000</u>	% volume of length / 100 =	<u>25.000</u>	% total for Scan 4

Add totals and divide by # scans = 22.132 % 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.

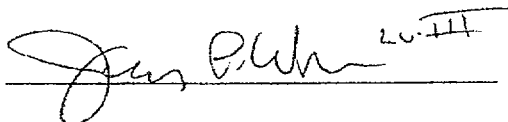
Scan 1	<u>89.000</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>89.000</u>	% total for Scan 1
Scan 2	<u>57.500</u>	% Length X	<u>100.000</u>	% volume of length / 100 =	<u>57.500</u>	% total for Scan 2
Scan 3	<u>0.000</u>	% Length X	<u>0.000</u>	% volume of length / 100 =	<u>0.000</u>	% total 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;

58.757 % Total for complete exam

Site Field Supervisor:



Date:

2-18-02



## Magnetic Particle Examination

Site/Unit: NMC / PI2 Procedure: ISI-MT-1 Outage No.: PI2RF2002  
Summary No.: 500978 Procedure Rev/FC: 12 / --- Report No.: 2002M025  
Workscope: ISI Work Order No.: 0106946 Page: 1 of 6

Code: 1989 Code Cat.: C-C Location: Containment  
Drawing No.: 2-ISI- 47A Description: Rupture Restaint  
System ID: MS  
Component ID: H- 1 Size/Length: N/A  
Limitations: See attached sheets.

Light Meter Mfg.: N/A Serial No.: N/A Illumination: N/A uw/cm<sup>2</sup>  
Temp. Tool Mfg.: N/A Serial No.: N/A Surface Temp.: < 600 °F  
Resolution: Not Used  
Cal Block Serial No.: N/A Surface Condition: As Welded  
Lo Location: Top Dead Center 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: N/A Flooding ☐  
Equipment: Parker Research Serial No.: 7817  
Head Shot ☐ N/A Amperes Fixed Spacing ☐ AC ☒ DC ☐  
Adj. Spacing ☒ 2 - 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:

Reference exam Report No: 98-0273, 98-0274.

Results: NAD ☒ IND ☐

Percent Of Coverage Obtained > 90%: NO

Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Loredo, Quirino	II	<i>[Signature]</i>	2/17/2002	Halling, David A.	<i>[Signature]</i>	2-21-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Potter, Michael E.	II	<i>[Signature]</i>	2/17/2002	Wren, Jerry P.	<i>[Signature]</i>	2-21-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A	<i>[Signature]</i>		Clow, Ron	<i>[Signature]</i>	2/21/02



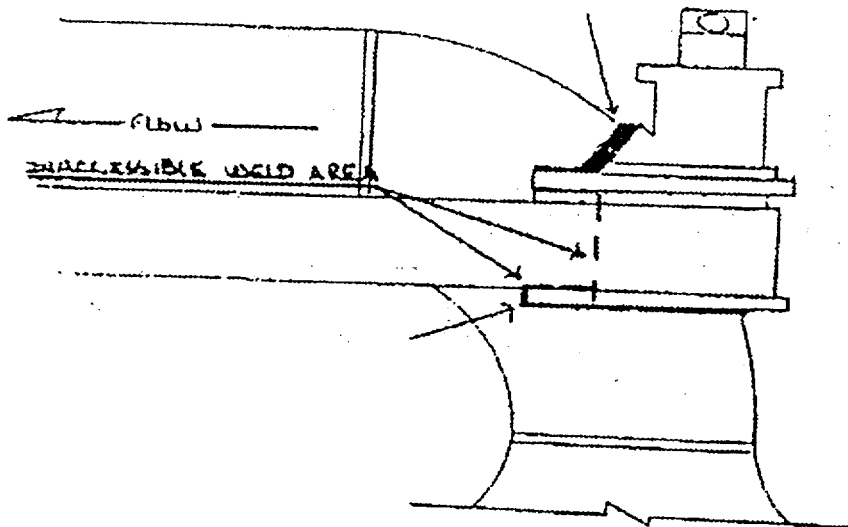
## Limitation Record

Site/Unit:	NMC / PI2	Procedure:	ISI-MT-1	Outage No.:	PI2RF2002
Summary No.:	500978	Procedure Revision/FC:	12 / ---	Report No.:	2002M025
Workscope:	ISI	Work Order No.:	0106946	Page:	2 of 6

Description of Limitation:

East Side. See supplemental sheets for additional photos.

Sketch of Limitation: G:\IDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m021\_1.bmp



Limitations removal requirements:

N/A

Radiation field: N/A

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Loredo, Quirino	II	<i>[Signature]</i>	2/17/2002	Halling, David A.	<i>[Signature]</i>	2/21/02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Potter, Michael E.	II	<i>[Signature]</i>	2/17/2002	Wren, Jerry P.	<i>[Signature]</i>	2/21/02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron	<i>[Signature]</i>	2/21/02



## Supplemental Report

Report No.: 2002M025

Page: 3 of 6

Summary No.: 500978

Examiner: <u>Loredo, Quirino</u>	Level: <u>II</u>	Reviewer: <u>Halling, David A.</u>	Date: <u>2-21-02</u>
Examiner: <u>Potter, Michael E.</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry P.</u>	Date: <u>2-21-02</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Clow, Ron</u>	Date: <u>2/21/02</u>

Comments: Top View (Looking Down).

Sketch or Photo: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024\_2.bmp





## Supplemental Report

Report No.: 2002M025

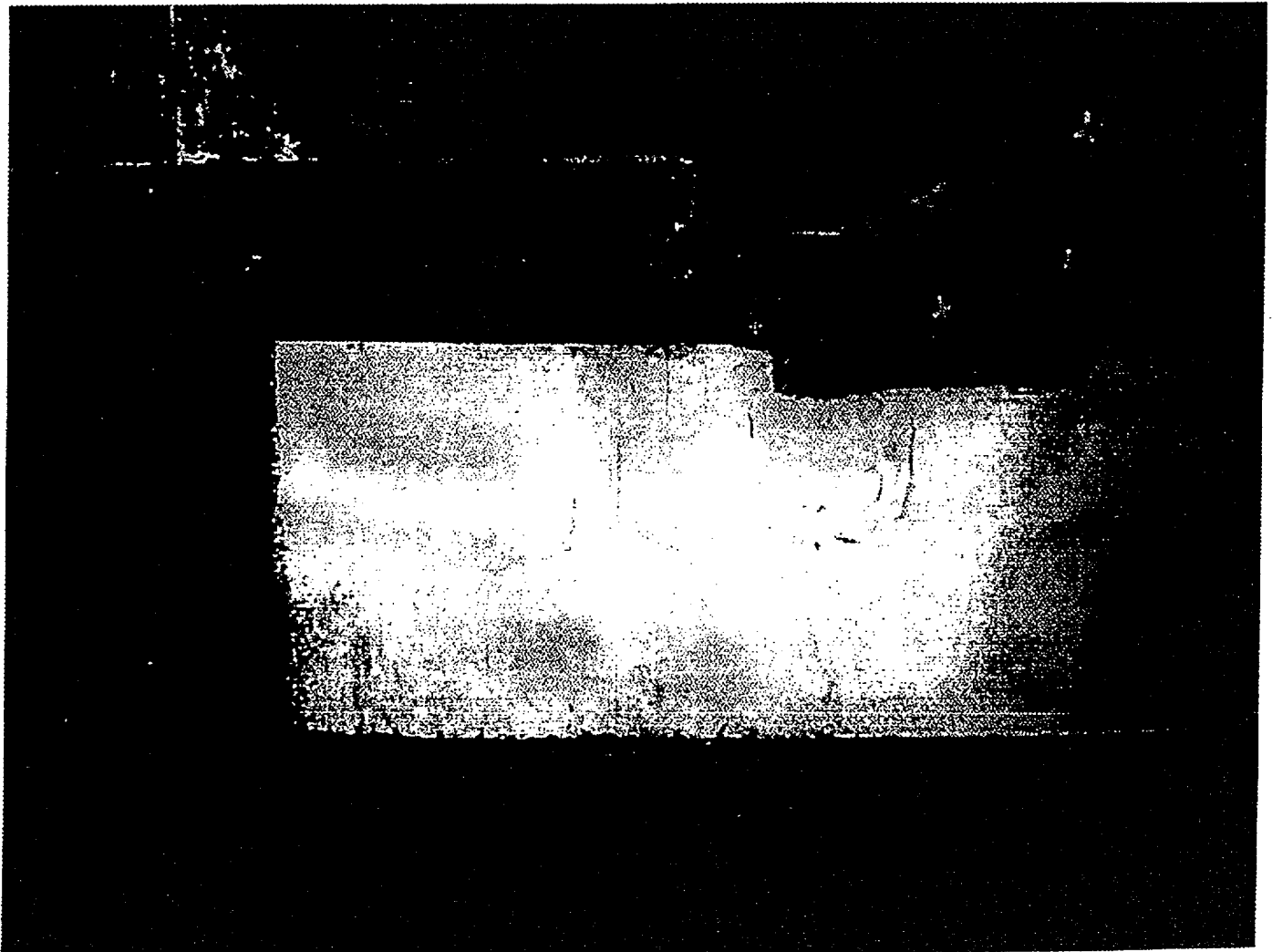
Page: 4 of 6

Summary No.: 500978

Examiner: <u>Loredo, Quirino</u>	Level: <u>II</u>	Reviewer: <u>Halling, David A.</u>	Date: <u>2-21-02</u>
Examiner: <u>Potter, Michael E.</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry P.</u>	Date: <u>2-21-02</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Clow, Ron</u>	Date: <u>2/21/02</u>

Comments: Side View.

Sketch or Photo: G:\NDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024\_3.bmp





## Supplemental Report

Report No.: 2002M025

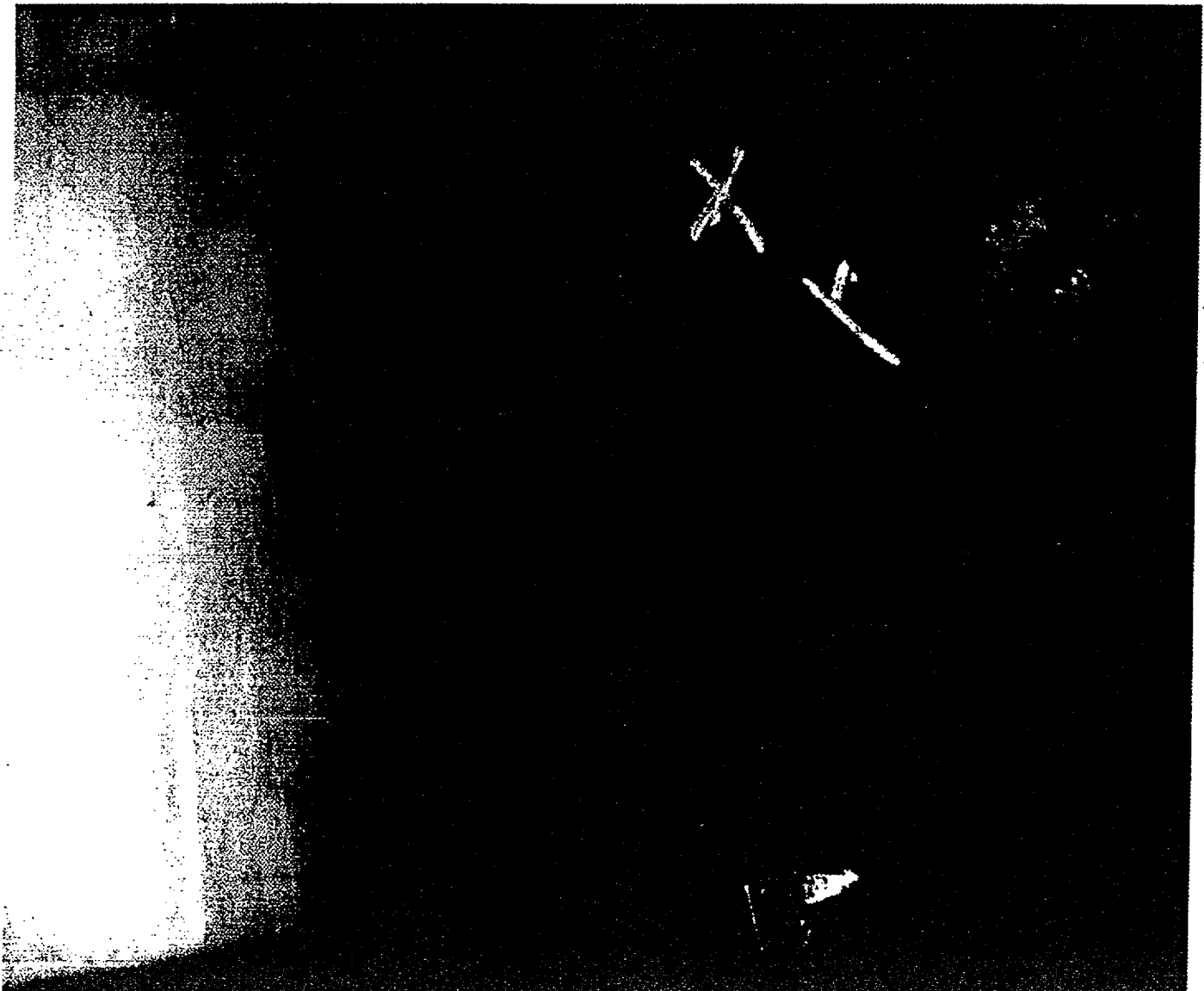
Page: 5 of 6

Summary No.: 500978

Examiner: <u>Loredo, Quirino</u>	Level: <u>II</u>	Reviewer: <u>Halling, David A.</u>	Date: <u>2-21-02</u>
Examiner: <u>Potter, Michael E.</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry P.</u>	Date: <u>2-21-02</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Clow, Ron</u>	Date: <u>2/21/02</u>

Comments: Inaccessible Weld.

Sketch or Photo: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024\_4.bmp







## Determination of Percent Coverage for Surface Examinations

Site/Unit: NMC / PI2 Procedure: ISI-MT-1 Outage No.: PI2RF2002  
Summary No.: 500978 Procedure Revision/FC: 12 / -- Report No.: 2002M025  
Workscope: ISI Work Order No.: 0106946 Page: 6 of 6

Area Required (as shown in applicable code reference drawing)

Length 270/91 \* Width 2.0/3.0  
0.000 \* 0.000  
= Total Area required 0.000 square inches  
813  
813  
813

### Coverage Achieved

Area examined 604.000 sq. in. / Total area required (100%) 813 sq. in.  
= Percent coverage 0.696 % (area required - area of limitations = area examined)  
74.3%  
74.3%

### To determine length of a circumferential weld

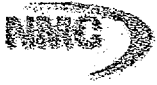
Note - Diameter refers to actual external diameter not pipe size (see table below)

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: Dean P. White

Date: 2-21-02



## Magnetic Particle Examination

Site/Unit: NMC / PI2 Procedure: ISI-MT-1 Outage No.: PI2RF2002  
Summary No.: 500985 Procedure Rev/FC: 12 / --- Report No.: 2002M024  
Workscope: ISI Work Order No.: 0106946 Page: 1 of 6  
Code: 1989 Code Cat.: C-C Location: Containment  
Drawing No.: 2-ISI- 47A Description: Seismic Restraint  
System ID: MS  
Component ID: H- 2 Size/Length: N/A  
Limitations: See attached sheet.

Light Meter Mfg.: N/A Serial No.: N/A Illumination: N/A uw/cm<sup>2</sup>  
Temp. Tool Mfg.: N/A Serial No.: N/A Surface Temp.: < 600 °F  
Resolution: Not Used  
Cal Block Serial No.: N/A Surface Condition: As Welded  
Lo Location: Top Dead Center 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: N/A Flooding ☐  
Equipment: Parker Research Serial No.: 7817  
Head Shot ☐ N/A Amperes Fixed Spacing ☐ AC ☒ DC ☐  
Adj. Spacing ☒ 2 - 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:

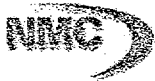
Reference exam Report No: 98-0273 and 98-0274.

Results: NAD ☒ IND ☐

Percent Of Coverage Obtained > 90%: No

Reviewed Previous Data: Yes

Examiner	Level	II	Signature	Date	Reviewer	Signature	Date
Loredo, Quirino			<i>[Signature]</i>	2/9/2002	Halling, David A.	<i>[Signature]</i>	2-21-02
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Potter, Michael E.			<i>[Signature]</i>	2/9/2002	Wren, Jerry P.	<i>[Signature]</i>	2-21-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>[Signature]</i>	2/21/02



## Determination of Percent Coverage for Surface Examinations

Site/Unit: NMC / PI2 Procedure: ISI-MT-1 Outage No.: PI2RF2002  
Summary No.: 500985 Procedure Revision/FC: 12 / --- Report No.: 2002M024  
Workscope: ISI Work Order No.: 0106946 Page: 2 of 6

Area Required (as shown in applicable code reference drawing)

Length 270/91 <sup>2-20-02</sup> \* Width 2.0/30 <sup>2-20-02</sup>  
0.000 <sup>MSP</sup> \* 0.000 <sup>MSP</sup>  
= Total Area required 0.000 square inches  
813 <sup>2-20-02</sup> <sup>MSP</sup>

### Coverage Achieved

Area examined 604.000 sq. in. / Total area required (100%) 813 <sup>2-20-02</sup> 0.000 <sup>MSP</sup> sq. in.  
= Percent coverage 0.835 % (area required - area of limitations = area examined)  
74.3 % <sup>2-20-02</sup> <sup>MSP</sup>

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: John P. Wan

Date: 2-21-02



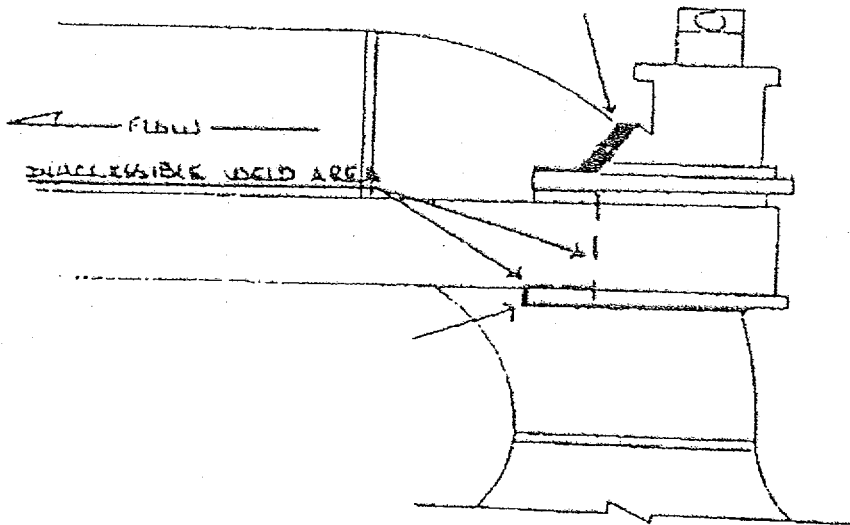
## Limitation Record

Site/Unit: NMC / PI2 Procedure: ISI-MT-1 Outage No.: PI2RF2002  
Summary No.: 500985 Procedure Revision/FC: 12 / --- Report No.: 2002M024  
Workscope: ISI Work Order No.: 0106946 Page: 3 of 6

Description of Limitation:

East Side. See supplemental sheets for additional photos.

Sketch of Limitation: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m021\_1.bmp



Limitations removal requirements:

N/A

Radiation field: N/A

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Loredo, Quirino	II	<i>[Signature]</i>	2/9/2002	Halling, David A.	<i>[Signature]</i>	2-21-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Potter, Michael E.	II	<i>[Signature]</i>	2/9/2002	Wren, Jerry P.	<i>[Signature]</i>	2-21-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron	<i>[Signature]</i>	2/21/02



## Supplemental Report

Report No.: 2002M024

Page: 4 of 6

Summary No.: 500985

Examiner: <u>Loredo, Quirino</u>	Level: <u>II</u>	Reviewer: <u>Halling, David A.</u>	Date: <u>2-21-02</u>
Examiner: <u>Potter, Michael E.</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry P.</u>	Date: <u>2-21-02</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Clow, Ron</u>	Date: <u>2/21/02</u>

Comments: Top View (Looking Down).

Sketch or Photo: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024\_2.bmp





## Supplemental Report

Report No.: 2002M024

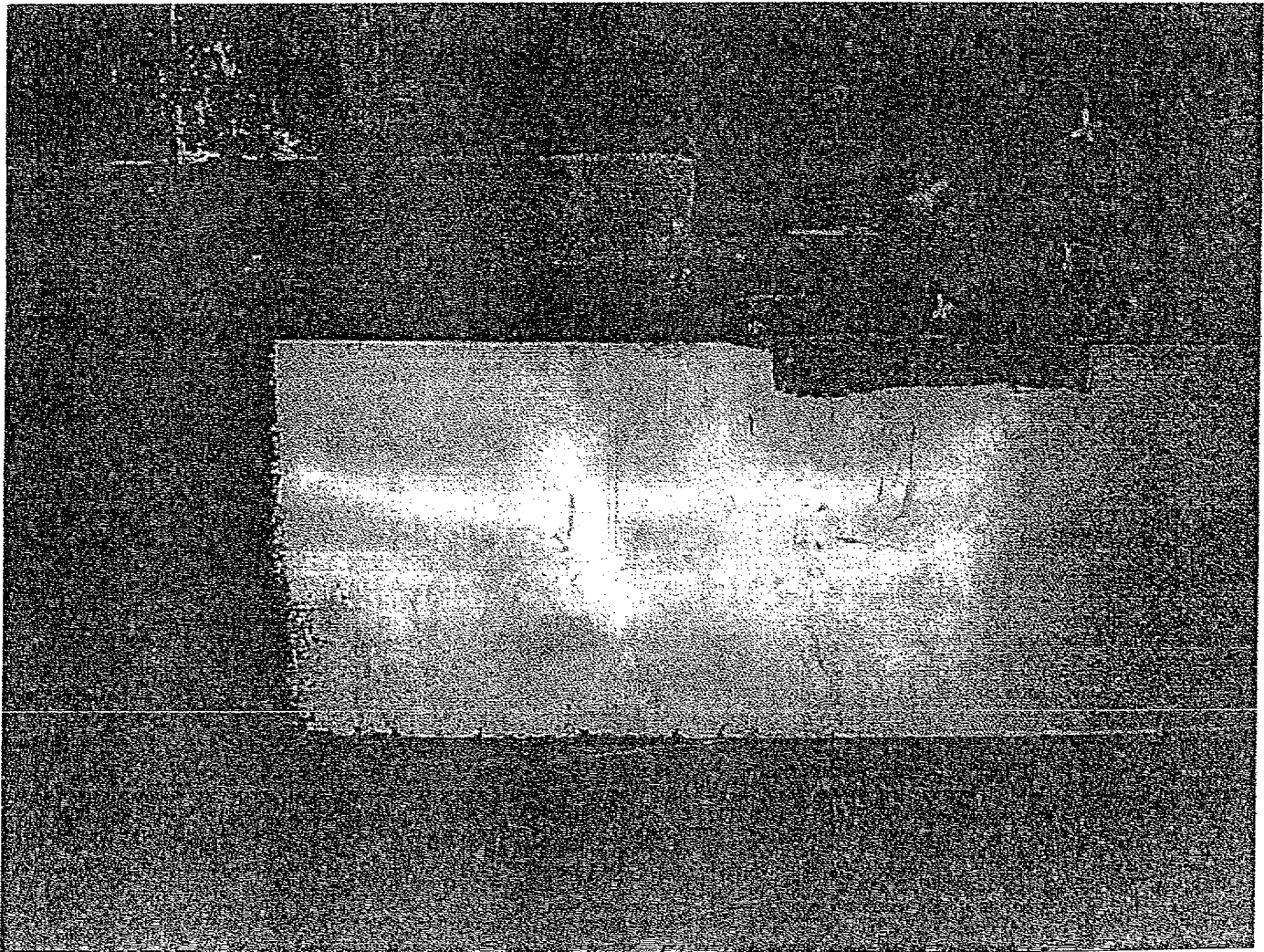
Page: 5 of 6

Summary No.: 500985

Examiner: <u>Loredo, Quirino</u>	Level: <u>II</u>	Reviewer: <u>Halling, David A.</u>	Date: <u>2-21-02</u>
Examiner: <u>Potter, Michael E.</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry P.</u>	Date: <u>2-21-02</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Clow, Ron</u>	Date: <u>2/21/02</u>

Comments: Side View.

Sketch or Photo: G:\IDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024\_3.bmp





## Supplemental Report

Report No.: 2002M024

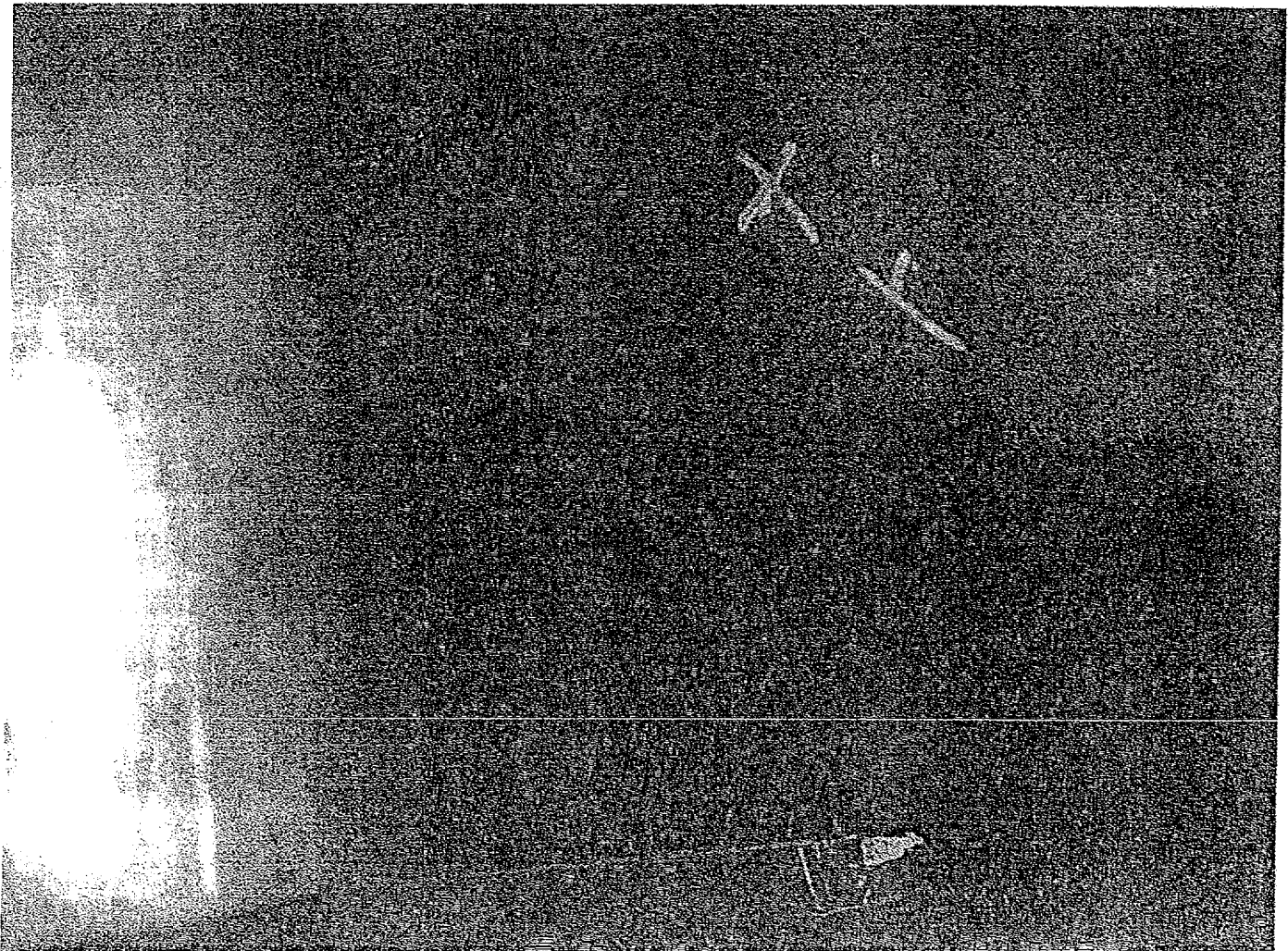
Page: 6 of 6

Summary No.: 500985

Examiner: <u>Loredo, Quirino</u>	Level: <u>II</u>	Reviewer: <u>Halling, David A.</u>	Date: <u>2-21-02</u>
Examiner: <u>Potter, Michael E.</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry P.</u>	Date: <u>2-21-02</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Clow, Ron</u>	Date: <u>2/21/02</u>

Comments: Inaccessible Weld.

Sketch or Photo: G:\NDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024\_4.bmp







# Magnetic Particle Examination

Site/Unit: NMC / P12 Procedure: ISI-MT-1 Outage No.: PI2RF2002  
Summary No.: 500988 Procedure Rev/FC: 12 / --- Report No.: 2002M021  
Workscope: ISI Work Order No.: 0106946 Page: 1 of 6  
Code: 1989 Code Cat.: C-C Location: Containment  
Drawing No.: 2-ISI-47A Description: Seismic Restraint  
System ID: MS  
Component ID: H-3 Size/Length: N/A  
Limitations: See attached sheets.

Light Meter Mfg.: N/A Serial No.: N/A Illumination: N/A uw/cm<sup>2</sup>  
Temp. Tool Mfg.: N/A Serial No.: N/A Surface Temp.: < 600 °F

Resolution: N/A  
Cal Block Serial No.: N/A Surface Condition: As Welded  
Lo Location: Top Dead Center 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: N/A Flooding ☐

Equipment: Parker Research Serial No.: 7817  
Head Shot ☐ N/A Amperes Fixed Spacing ☐ AC ☒ DC ☐  
Adj. Spacing ☒ 2 - 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:

Reference exam Report No: 98-0273 and 98-0274.

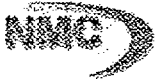
Results: NAD ☒ IND ☐

Percent Of Coverage Obtained > 90%: No

Reviewed Previous Data: Yes

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Thomas, Travis	I	<i>Travis Thomas</i>	2/16/2002	Halling, David A.	<i>David A. Halling</i>	2-21-02
Examiner	Level II	Signature	Date	Site Review	Signature	Date
Potter, Michael E.	I	<i>Michael E. Potter</i>	2/16/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	2-21-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A	I			Clew, Ron	<i>Ron Clew</i>	2/21/02





## Determination of Percent Coverage for Surface Examinations

Site/Unit: NMC / PI2 Procedure: ISI-MT-1 Outage No.: PI2RF2002  
Summary No.: 500988 Procedure Revision/FC: 12 / --- Report No.: 2002M021  
Workscope: ISI Work Order No.: 0106946 Page: 2 of 6

Area Required (as shown in applicable code reference drawing)

Length 270/91 \* Width 2.0/3.0  
0.000 \* 0.000  
= Total Area required 0.000 square inches  
813 2-20-02 NAP

### Coverage Achieved

Area examined 604.000 sq. in. / Total area required (100%) 0.000 sq. in.  
= Percent coverage 0.000 % (area required - area of limitations = area examined)  
74.3% 2-20-02 NAP

### 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: Don P. Wm

Date: 2-21-02



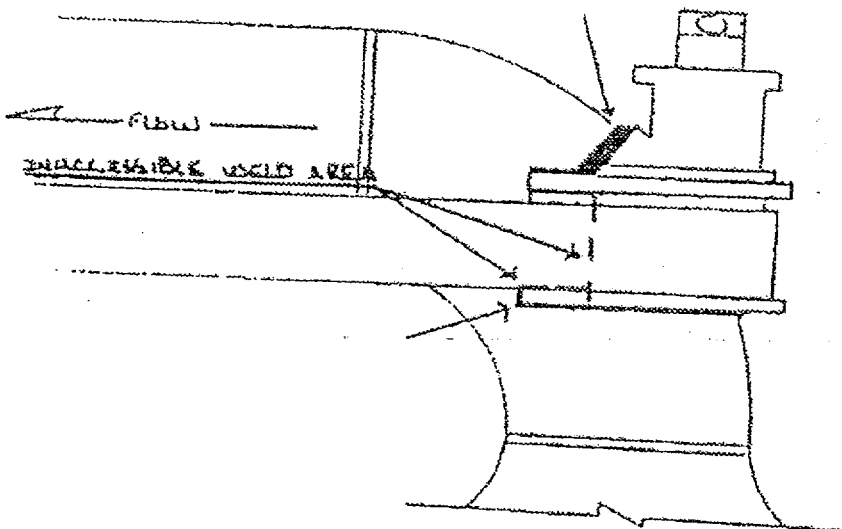
## Limitation Record

Site/Unit: NMC / PI2 Procedure: ISI-MT-1 Outage No.: PI2RF2002  
Summary No.: 500988 Procedure Revision/FC: 12 / --- Report No.: 2002M021  
Workscope: ISI Work Order No.: 0106946 Page: 3 of 6

### Description of Limitation:

East Side. See supplemental sheets for additional photos.

Sketch of Limitation: G:\IDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m021\_1.bmp

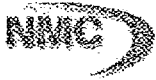


### Limitations removal requirements:

N/A

Radiation field: N/A

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Thomas, Travis	II	<i>Travis Thomas</i>	2/16/2002	Halling, David A.	<i>David A. Halling</i>	2-20-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Potter, Michael E.	II	<i>Michael E. Potter</i>	2/16/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	2-21-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron	<i>Ron Clow</i>	2/21/02



## Supplemental Report

Report No.: 2002M021

Page: 4 of 6

Summary No.: 500988

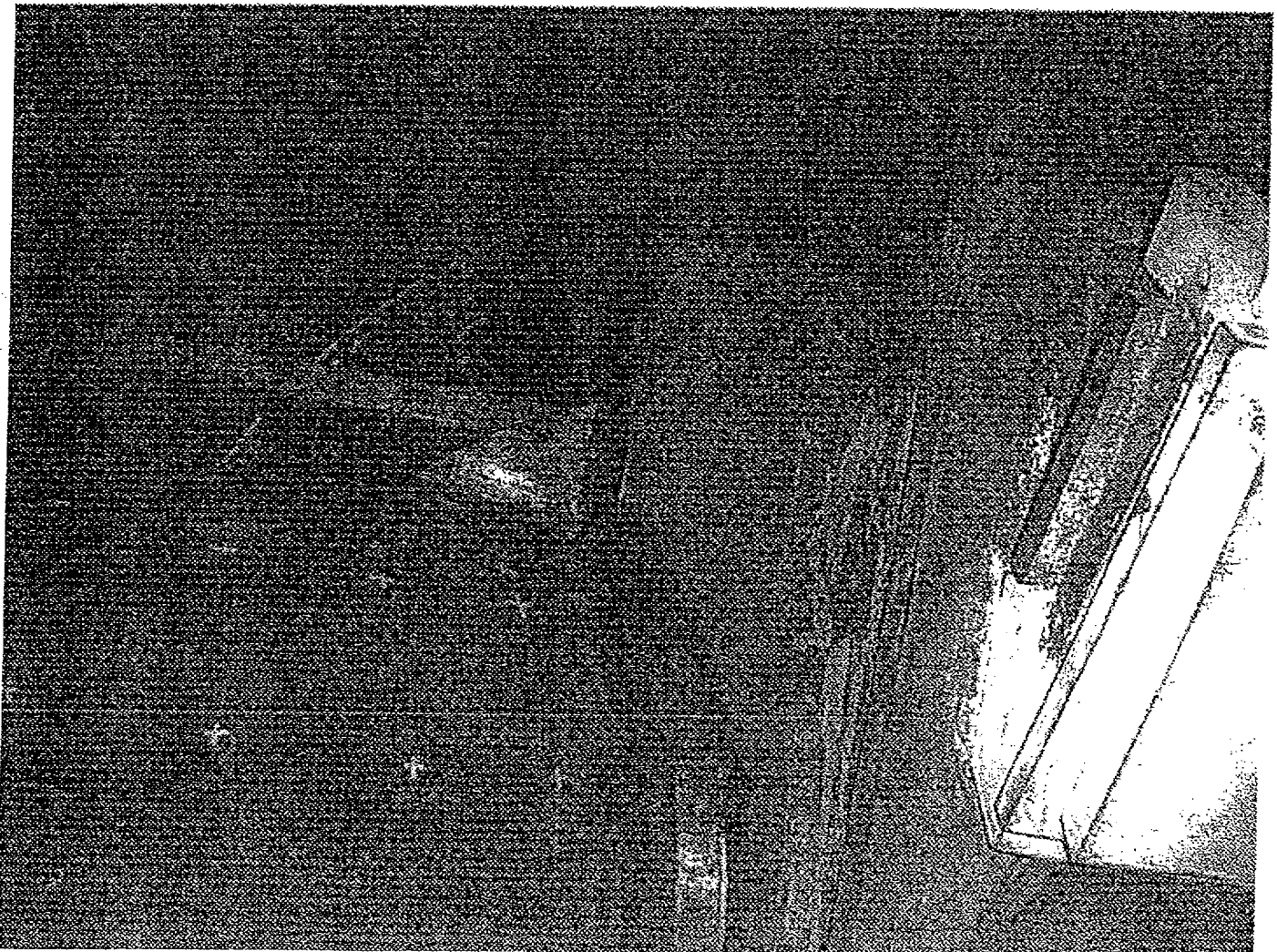
Examiner: Thomas, Travis Level: II Reviewer: Halling, David A. Date: 2-20-02

Examiner: Potter, Michael E. Level: II Site Review: Wren, Jerry P. Date: 2-21-02

Other: N/A Level: N/A AN/I Review: Clow, Ron Date: 2/21/02

Comments: Top View (Looking Down).

Sketch or Photo: G:\NIDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024\_2.bmp





## Supplemental Report

Report No.: 2002M021

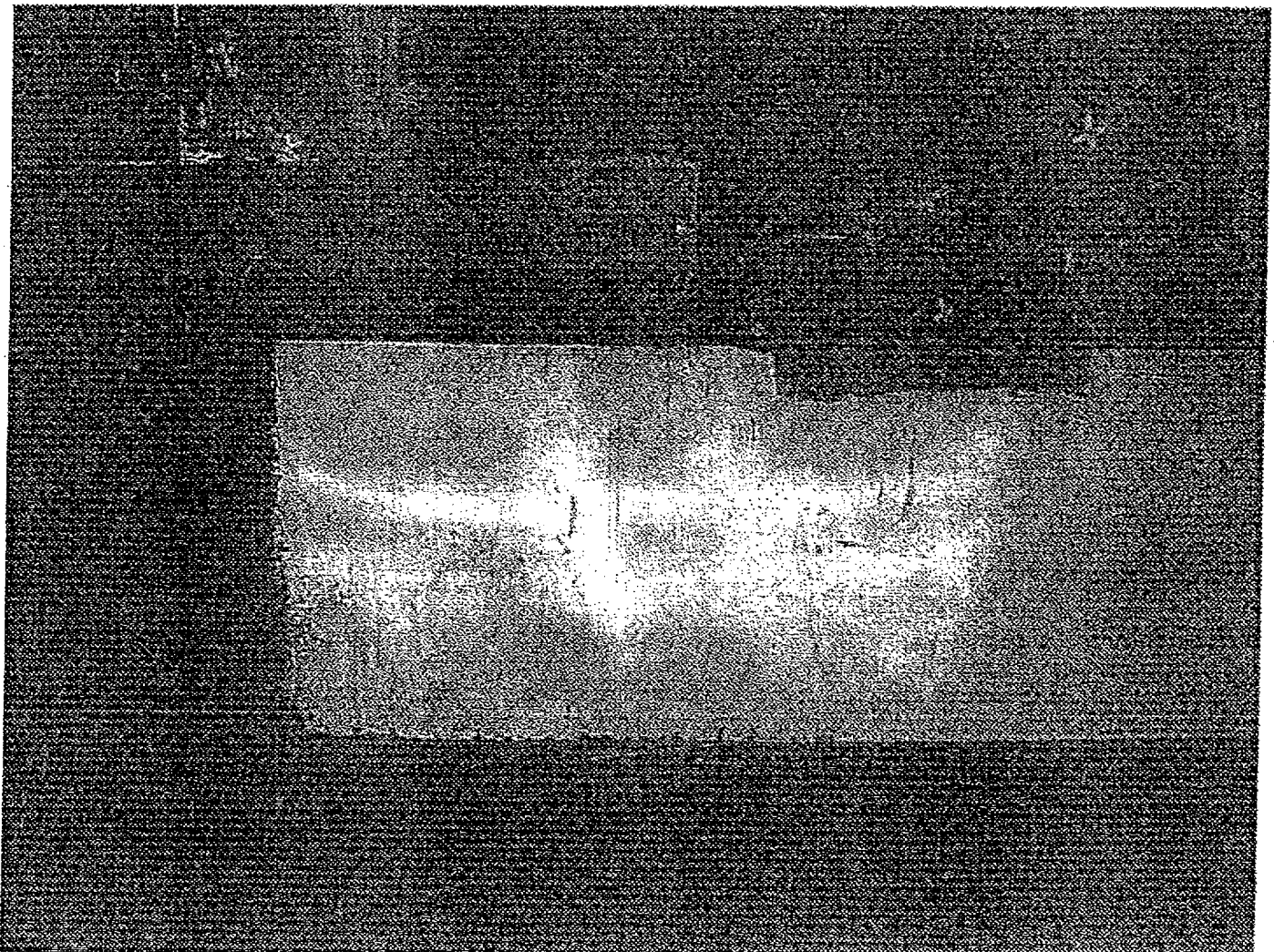
Page: 5 of 6

Summary No.: 500989

Examiner: <u>Thomas, Travis</u>	Level: <u>II</u>	Reviewer: <u>Halling, David A.</u>	Date: <u>2-20-02</u>
Examiner: <u>Potter, Michael E.</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry P.</u>	Date: <u>2-21-02</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Clow, Ron</u>	Date: <u>2/21/02</u>

Comments: **Side View.**

Sketch or Photo: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024\_3.bmp





## Supplemental Report

Report No.: 2002M021

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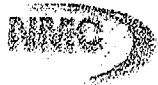
Summary No.: 500938

Examiner: <u>Thomas, Travis</u>	Level: <u>II</u>	Reviewer: <u>Halling, David A.</u>	Date: <u>2-20-02</u>
Examiner: <u>Potter, Michael E.</u>	Level: <u>II</u>	Site Review: <u>Wren, Jerry P.</u>	Date: <u>2-21-02</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>Clow, Ron</u>	Date: <u>2/21/02</u>

Comments: Inaccessible Weld.

Sketch or Photo: G:\IDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024\_4.bmp





## UT Pipe Weld Examination

Site/Unit: NMC / PI2 Procedure: ISI-UT-16A Outage No.: PI2RF2002  
Summary No.: 500251 Procedure Revision/FC: 1 / --- Report No.: 2002U036  
Workscope: ISI Work Order No.: 0106946 Page: 1 of 3

Code: 1989 Code Cat.: C-F-1 Location: Containment  
Drawing No.: 2-ISI- 72 Description: Pipe to Valve  
System ID: SI  
Component ID: W-17 Size/Length: 1.0" / 21.0" Thickness/Diameter: .740" / 8.0"  
Limitations: Single side access due to configuration. See attached sheets. Start Time: 0935 Finish Time: 1000  
~~-0925~~  
DMG - 2-18-02

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Flat Topped  
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143  
Temp. Tool Mfg.: Telatemp Serial No.: NSP 185 Surface Temp.: 80 °F  
Cal. Sheet No.: 2002CA071, 2002CA072

Angle Used	0	45	45T	60		
Scanning dB	N/A	41.8	41.8	66.8		

Indication(s): Yes ☐ No ☒ Scan Coverage: Upstream ☒ Downstream ☐ CW ☒ CCW ☒  
Comments:  
See Limitation Sheet.

Results: NAD ☒ IND ☐ GEO ☐  
Percent Of Coverage Obtained > 90%: No Reviewed Previous Data: No YES 2-18-02

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.	II		2/14/2002	Clay, Sean P.		2-18-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Griebel, David M.	II		2/14/2002	Wren, Jerry P.		2-18-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron		2/19/02



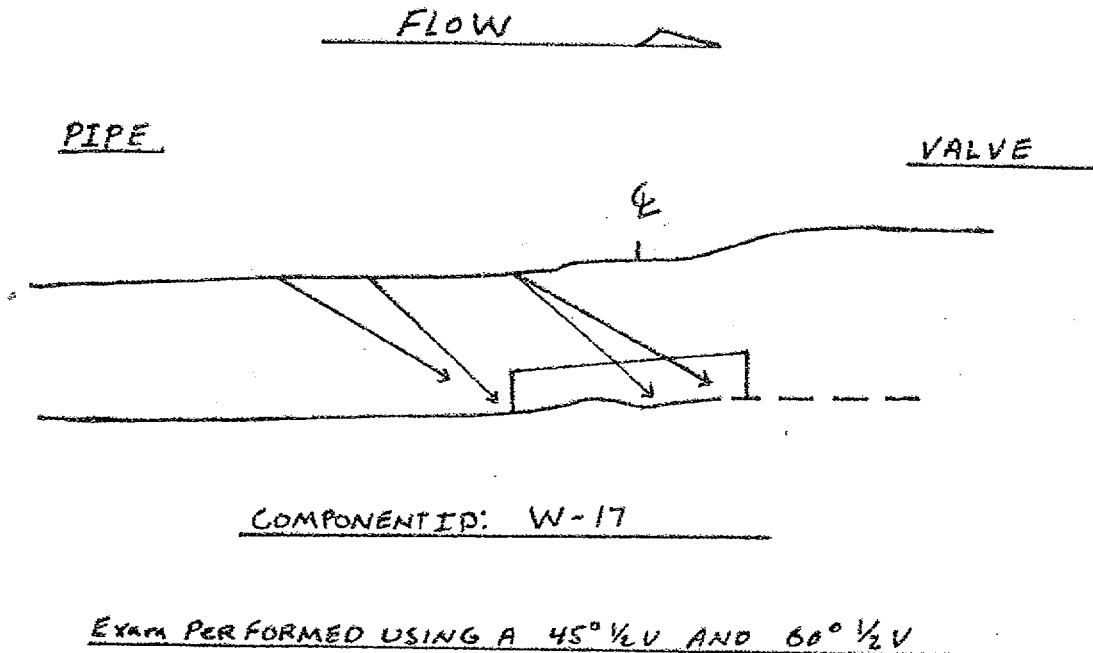
## Limitation Record

Site/Unit: NMC / PI2 Procedure: ISI-UT-16A Outage No.: PI2RF2002  
Summary No.: 500251 Procedure Revision/FC: 1 / --- Report No.: 2002U036  
Workscope: ISI Work Order No.: 0106946 Page: 2 of 3

### Description of Limitation:

Single sided exam - Although the exam 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 exam for flaws on the far side of the weld.

Sketch of Limitation: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL UT\2002u036\_1.bmp



Limitations removal requirements:

N/A

Radiation field: N/A

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.	II		2/14/2002	Clay, Sean P.		02-18-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Griebel, David M.	II		2/14/2002	Wren, Jerry P.		2-19-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron		2/19/02



## Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: NMC / PI2 Procedure: ISI-UT-16A Outage No.: PI2RF2002  
Summary No.: 500251 Procedure Revision/FC: 1 / --- Report No.: 2002U036  
Workscope: ISI Work Order No.: 0106946 Page: 3 of 3

### 45 deg

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>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>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

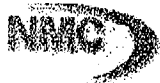
Site Field Supervisor: \_\_\_\_\_

*John P. W...*

Date: \_\_\_\_\_

2-19-02





# UT Pipe Weld Examination

Site/Unit: NMC / PI2 Procedure: ISI-UT-16A Outage No.: PI2RF2002  
Summary No.: 502388 Procedure Revision/FC: 1 / --- Report No.: 2002U037  
Workscope: ISI Work Order No.: 0106946 Page: 1 of 3

Code: 1989 Code Cat.: C-F-1 Location: Containment  
Drawing No.: 2-ISI-70 Description: Valve to Pipe  
System ID: SI  
Component ID: W-1 Size/Length: 1.0" / 21.0" Thickness/Diameter: .740" / 8.0"  
Limitations: Single side access due to configuration. See attached sheets. Start Time: 0800 Finish Time: 0830

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Flat Topped  
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: SonoTrace 40 Batch No.: #00143  
Temp. Tool Mfg.: Telatemp Serial No.: NSP 185 Surface Temp.: 80 °F  
Cal. Sheet No.: 2002CA071, 2002CA072

Angle Used	0	45	45T	60		
Scanning dB	N/A	41.8	41.8	66.8		

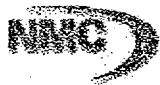
Indication(s): Yes ☐ No ☒ Scan Coverage: Upstream ☐ Downstream ☒ CW ☒ CCW ☒  
Comments:  
See Limitation Sheet.

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: No

Reviewed Previous Data: No YES 2-19-02

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.	II		2/14/2002	Clay, Sean P.		2-18-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Griebel, David M.	II		2/14/2002	Wren, Jerry P.		2-19-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron		2/19/02



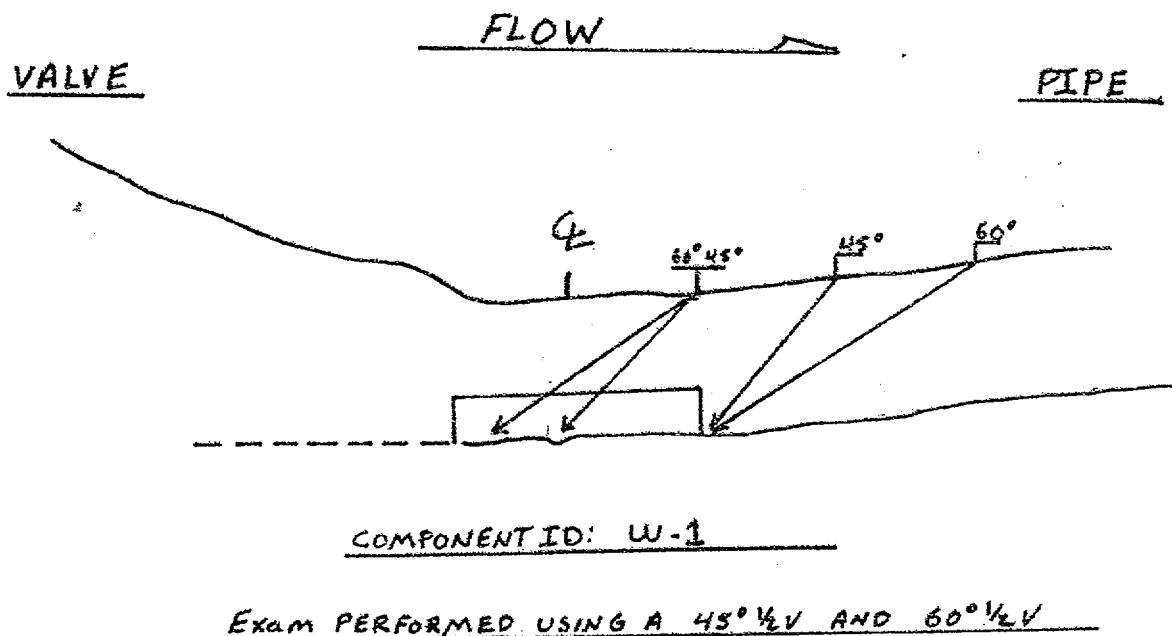
## Limitation Record

Site/Unit:	NMC / PI2	Procedure:	ISI-UT-16A	Outage No.:	PI2RF2002
Summary No.:	502388	Procedure Revision/FC:	1 / ---	Report No.:	2002U037
Workscope:	ISI	Work Order No.:	0106946	Page:	2 of 3

### Description of Limitation:

Single sided exam - Although the exam 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 exam for flaws on the far side of the weld.

Sketch of Limitation: G:\IDDEAL50\PI2RF02002\SUPPLEMENTAL UT\2002u037\_1.bmp



Limitations removal requirements:

N/A

Radiation field: N/A

Examiner	Level	II	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.	I			2/14/2002	Clay, Sean P.		2-18-02
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Griebel, David M.	I			2/14/2002	Wren, Jerry P.		2-19-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A	I				Clow, Ron		2/20/02



## Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>NMC / PI2</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI2RF2002</u>
Summary No.:	<u>502388</u>	Procedure Revision/FC:	<u>1 / ---</u>	Report No.:	<u>2002U037</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0106946</u>	Page:	<u>3</u> of <u>3</u>

### 45 deg

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>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>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:

Greg P. Williams

Date: 2-19-02



## UT Pipe Weld Examination

Site/Unit: NMC / PI2 Procedure: ISI-UT-16A Outage No.: PI2RF2002  
Summary No.: 502147 Procedure Revision/FC: 1 / --- Report No.: 2002U001  
Workscope: ISI Work Order No.: 0106946 Page: 1 of 3

---

Code: 1989 Code Cat.: C-F-1 Location: B RHR Pit  
Drawing No.: 2-ISI- 51 Description: Pipe to Flange  
System ID: RH  
Component ID: W-18/LSU Size/Length: 12" Thickness/Diameter: .375"  
Limitations: Pipe to flange. No scans downstream of weld - 18. Start Time: 1200 Finish Time: 1220

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 162 Surface Temp.: 80 °F

Cal. Sheet No.: 2002CA002, 2002CA003

Angle Used	0	45	45T	60	70	
Scanning dB		47.0			55.0	

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. 75% total coverage achieved

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Johnson, Jeffrey M.	II		1/30/2002	Clay, Sean P.		02-05-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Griebel, David M.	II		1/30/2002	Wren, Jerry P.		2-5-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron		2/18/02



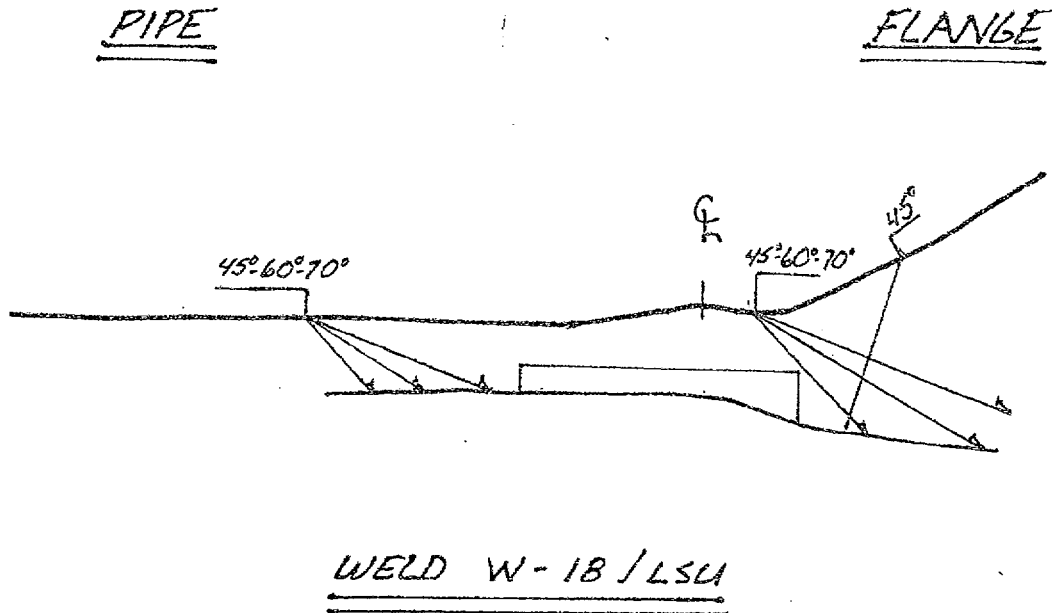
## Limitation Record

Site/Unit: NMC / PI2 Procedure: ISI-UT-16A Outage No.: PI2RF2002  
Summary No.: 502147 Procedure Revision/FC: 1 / --- Report No.: 2002U001  
Workscope: ISI Work Order No.: 0106946 Page: 2 of 3

### Description of Limitation:

Axial examination performed from the pipe side only due to Pipe to Flange configuration.

Sketch of Limitation: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL UT\2002u001\_1.bmp

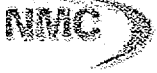


### Limitations removal requirements:

None

### Radiation field:

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Johnson, Jeffrey M.	II	<i>[Signature]</i>	1/30/2002	Clay, Sean P.	<i>[Signature]</i>	2-05-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Grisbel, David M.	II	<i>[Signature]</i>	1/30/2002	Wren, Jerry P.	<i>[Signature]</i>	2-5-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron	<i>[Signature]</i>	2/8/02



## Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: NMC / PI2 Procedure: ISI-UT-16A Outage No.: PI2RF2002  
Summary No.: 502147 Procedure Revision/FC: 1 / --- Report No.: 2002U001  
Workscope: ISI Work Order No.: 0106946 Page: 3 of 3

### 45 deg

Scan 1	<u>100.000</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>0.000</u>	% volume of length / 100 =	<u>0.000</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 = 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>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		% 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

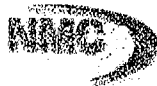
Add totals for each scan required and divide by # of scans to determine;

75.000 % Total for complete exam

Site Field Supervisor: Jerry Wren

*[Signature]* <sup>W. III</sup>

Date: 2-5-02



# UT Pipe Weld Examination

Site/Unit: NMC / PI2  
Summary No.: 502372  
Workscope: ISI

Procedure: ISI-UT-16A  
Procedure Revision/FC: 1 / ---  
Work Order No.: 0106946

Outage No.: PI2RF2002  
Report No.: 2002U028  
Page: 1 of 3

Code: 1989 Code Cat.: C-F-1 Location: Containment  
Drawing No.: 2-ISI-50 Description: Valve to Reducer  
System ID: RH  
Component ID: W-1/LSD Size/Length: 1.0" / 27.0" Thickness/Diameter: .8" / 10.0"  
Limitations: Single sided exam. Start Time: 1300 Finish Time: 1345

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground  
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143  
Temp. Tool Mfg.: Telatemp Serial No.: NSP 185 Surface Temp.: 95 °F

Cal. Sheet No.: 2002CA053, 2002CA054

Angle Used	0	45	45T	60		
Scanning dB	N/A	43.4	43.4	69.2		

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

Comments:

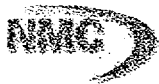
No scan 2 due to valve configuration.

Results: NAD ☒ IND ☐ GEO ☐

Percent Of Coverage Obtained > 90%: No

Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Griebel, David M.	II	<i>[Signature]</i>	2/14/2002	Clay, Sean P.	<i>[Signature]</i>	2-18-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Timm, Jeremy T.	II	<i>[Signature]</i>	2/14/2002	Wren, Jerry P.	<i>[Signature]</i>	2-19-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron	<i>[Signature]</i>	2/19/02



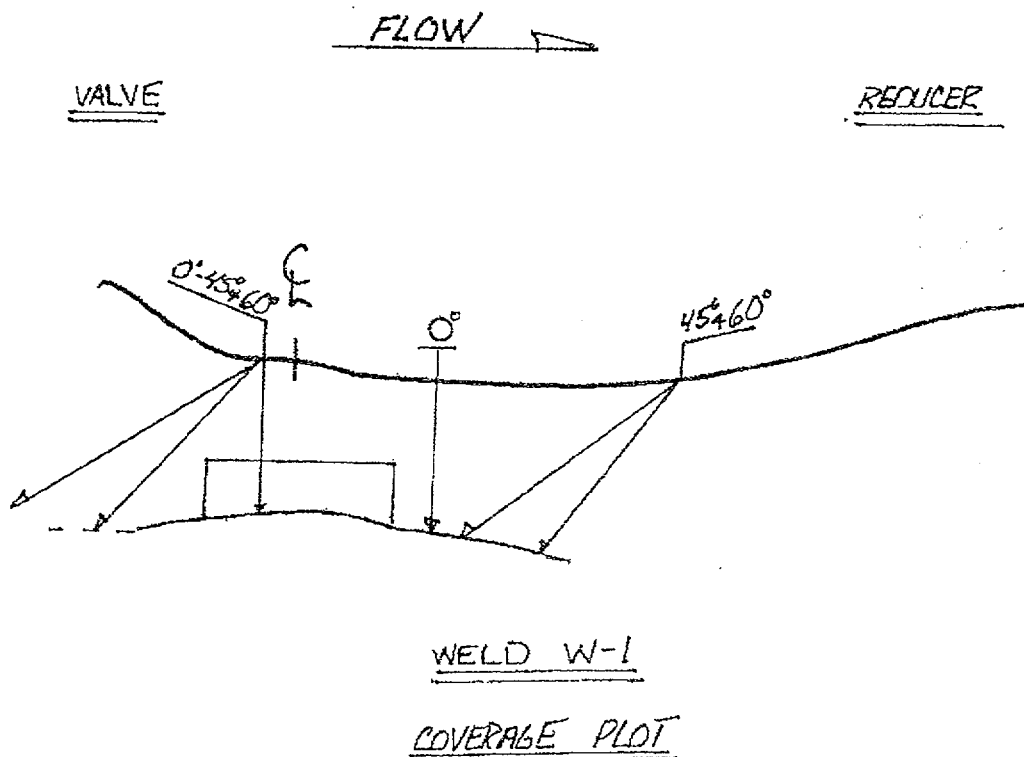
## Limitation Record

Site/Unit:	NMC / P12	Procedure:	ISI-UT-16A	Outage No.:	PI2RF2002
Summary No.:	502372	Procedure Revision/FC:	1 / ---	Report No.:	2002U028
Workscope:	ISI	Work Order No.:	0106946	Page:	2 of 3

### 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 exam for flaws on the far side of the weld.

Sketch of Limitation: G:\IDEAL50\PI2RFO2002\SUPPLEMENTAL UT\2002u028\_1.bmp



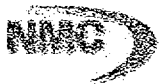
Limitations removal requirements:

N/A

Radiation field: N/A

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Griebel, David M.	/	<i>[Signature]</i>	2/14/2002	Clay, Sean P.	<i>[Signature]</i>	L.III 02-10-02
Examiner	Level II	Signature	Date	Site Review	Signature	Date
Timm, Jeremy T.	/	<i>[Signature]</i>	2/14/2002	Wren, Jerry P.	<i>[Signature]</i>	2-19-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A	/			Clow, Ron	<i>[Signature]</i>	2/19/02





## Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	<u>NMC / PI2</u>	Procedure:	<u>ISI-UT-16A</u>	Outage No.:	<u>PI2RF2002</u>
Summary No.:	<u>502372</u>	Procedure Revision/FC:	<u>1 / ---</u>	Report No.:	<u>2002U028</u>
Workscope:	<u>ISI</u>	Work Order No.:	<u>0106946</u>	Page:	<u>3</u> of <u>3</u>

### 45 deg

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>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>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;

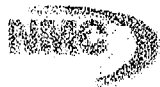
50.000 % Total for complete exam

Site Field Supervisor:

Jim P. Wm

Date:

2-19-02



## UT Pipe Weld Examination

Site/Unit: NMC / PI2 Procedure: ISI-UT-16A Outage No.: PI2RF2002  
Summary No.: 502392 Procedure Revision/FC: 1 / --- Report No.: 2002U026  
Workscope: ISI Work Order No.: 0106946 Page: 1 of 3

Code: 1989 Code Cat.: C-F-1 Location: Containment  
Drawing No.: 2-ISI-50 Description: Valve to Reducer  
System ID: RH  
Component ID: W-5/LSD Size/Length: 1.0" / 27.0" Thickness/Diameter: .8" / 10"  
Limitations: See Comments. Start Time: 1350 Finish Time: 1430

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground  
Lo Location: Top Dead Center Wo Location: Centerline of Weld Couplant: Sonotrace 40 Batch No.: #00143  
Temp. Tool Mfg.: Telatemp Serial No.: NSP 185 Surface Temp.: 90 °F

Cal. Sheet No.: 2002CA049, 2002CA050

Angle Used	0	45	45T	60		
Scanning dB	N/A	43.4	43.4	N/A		

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

Comments:

See Limitation Record.

Results: NAD ☒ IND ☐ GEO ☐

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

Examiner	Level	II	Signature	Date	Reviewer	Signature	Date
Griebel, David M.	/			2/13/2002	Clay, Sean P.		02-18-02
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Timm, Jeremy T.	/			2/13/2002	Wren, Jerry P.		2-19-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A	/				Clow, Ron		2/19/02



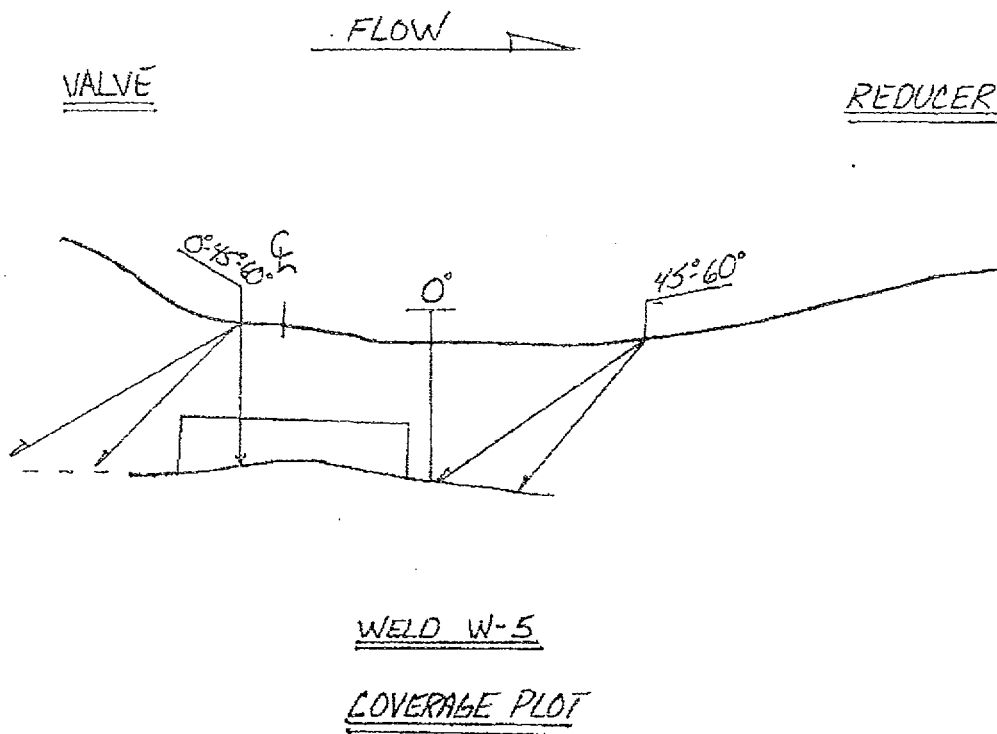
## Limitation Record

Site/Unit: NMC / PI2 Procedure: ISI-UT-16A Outage No.: PI2RF2002  
Summary No.: 502392 Procedure Revision/FC: 1 / --- Report No.: 2002U026  
Workscope: ISI Work Order No.: 0106946 Page: 2 of 3

### 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: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL UT\2002u026\_1.bmp



Limitations removal requirements:

N/A

Radiation field: N/A

Examiner	Level	II	Signature	Date	Reviewer	Signature	Date
Griebel, David M.			<i>[Signature]</i>	2/13/2002	Clay, Sean P.	<i>[Signature]</i>	02-18-02
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Timm, Jererny T.			<i>[Signature]</i>	2/13/2002	Wren, Jerry P.	<i>[Signature]</i>	2-18-02
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Clow, Ron	<i>[Signature]</i>	2/19/02



## Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: NMC / PI2 Procedure: ISI-UT-16A Outage No.: PI2RF2002  
Summary No.: 502392 Procedure Revision/FC: 1 / --- Report No.: 2002U026  
Workscope: ISI Work Order No.: 0106946 Page: 3 of 3

### 45 deg

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>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>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:

James P. Williams

Date:

2-19-02



# Magnetic Particle Examination

Site/Unit: NMC / P12 Procedure: ISI-MT-1 Outage No.: PI2RF2002  
Summary No.: 500830 Procedure Rev/FC: 12 / -- Report No.: 2002M016  
Workscope: ISI Work Order No.: 0106946 Page: 1 of 4  
Code: 1989 Code Cat.: C-F-2 Location: Aux. Bldg.  
Drawing No.: 2-ISI-46B Description: Pipe-Flanged Nozzle  
System ID: MS  
Component ID: W-14/LSU Size/Length: 16" / 72"  
Limitations: Hanger at Top Dead Center.

Light Meter Mfg.: N/A Serial No.: N/A Illumination: N/A uw/cm<sup>2</sup>  
Temp. Tool Mfg.: N/A Serial No.: N/A Surface Temp.: < 600 °F

Resolution: Not Used

Cal Block Serial No.: N/A

Lo Location: Top Dead Center

Surface Condition: BLENDED

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: N/A

Flooding ☐

Equipment: Parker Research

Serial No.: 3975

Head Shot ☐ N/A Amperes

Fixed Spacing ☐

AC ☒ DC ☐

Adj. Spacing ☒ 2 - 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:

See sketch for limitations.

Results: NAD ☒ IND ☐

Percent Of Coverage Obtained > 90%: No

Reviewed Previous Data: Yes

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Potter, Michael E.	I	<i>Michael Potter</i>	2/12/2002	Halling, David A.	<i>David A. Halling</i>	2-18-02
Examiner	Level II	Signature	Date	Site Review	Signature	Date
Loredo, Quirino	I	<i>Quirino Loredo</i>	2/12/2002	Wren, Jerry P.	<i>Jerry P. Wren</i>	2-18-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A	I			Ciow, Ron	<i>Ron Ciow</i>	2/18/02



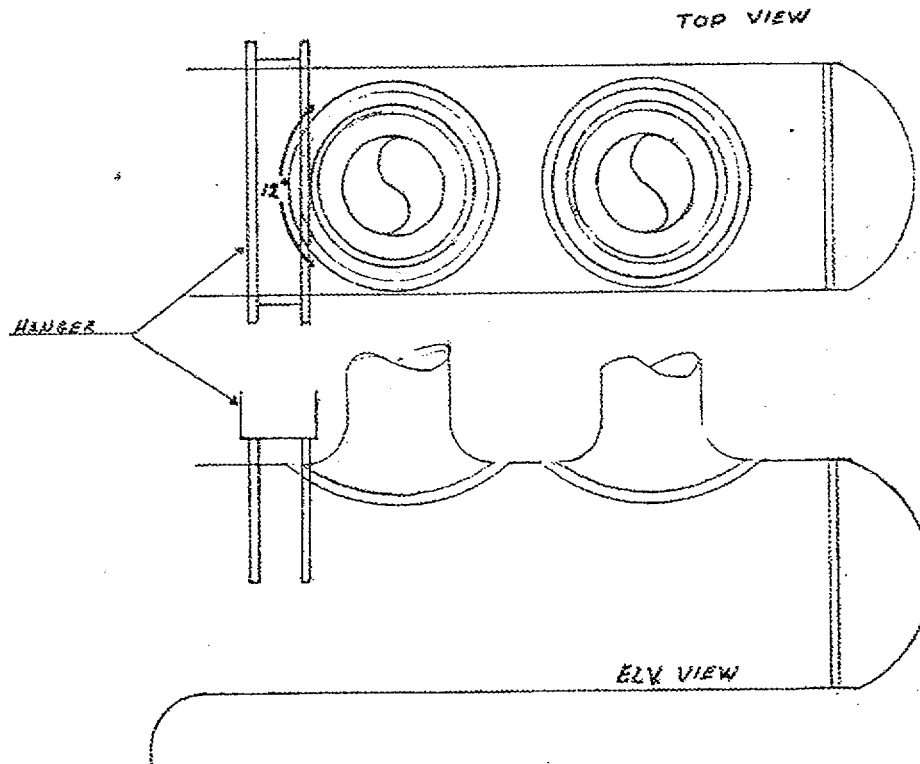
## Limitation Record

Site/Unit:	NMC / P12	Procedure:	ISI-MT-1	Outage No.:	PI2RF2002
Summary No.:	500830	Procedure Revision/FC:	12 / --	Report No.:	2002M016
Workscope:	ISI	Work Order No.:	0106946	Page:	2 of 4

Description of Limitation:

Hanger at Top Dead Center.

Sketch of Limitation: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m016\_1.bmp

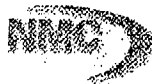


Limitations removal requirements:

N/A

Radiation field: N/A

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Potter, Michael E.	/	<i>Michael E. Potter</i>	2/12/2002	Halling, David A.	/ <i>David A. Halling</i>	2-18-02
Examiner	Level II	Signature	Date	Site Review	Signature	Date
Loredo, Quirino	/	<i>Quirino Loredo</i>	2/12/2002	Wren, Jerry P.	/ <i>Jerry P. Wren</i>	2-18-02
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A	/			Clew, Ron	/ <i>Ron Clew</i>	2/18/02



## Supplemental Report

Report No.: 2002M016

Page: 3 of 4

Summary No.: 500830

Examiner: Potter, Michael E.

Level: II

Reviewer: Halling, David A.

Date: 2-18-02

Examiner: Lorado, Quirino

Level: II

Site Review: Wren, Jerry P.

Date: 2-18-02

Other: N/A

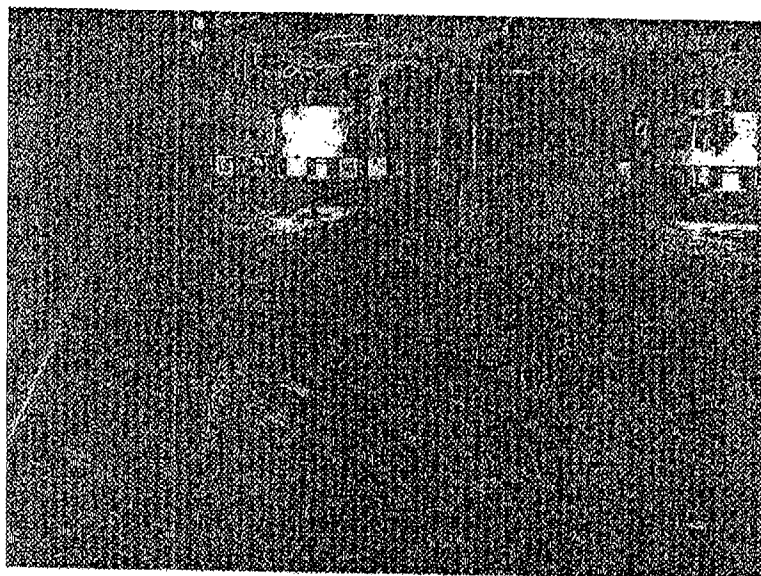
Level: N/A

ANII Review: Clow, Ron

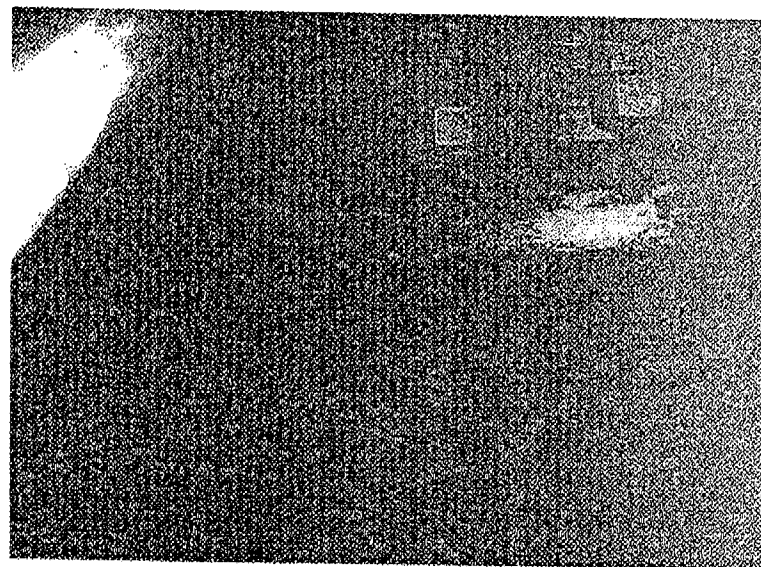
Date: 2/18/02

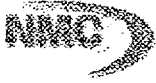
Comments: None

Sketch or Photo: G:\DDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m016\_2.bmp



G:\DDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m016\_3.bmp





## Determination of Percent Coverage for Surface Examinations

Site/Unit: NMC / PI2 Procedure: ISI-MT-1 Outage No.: PI2RF2002  
Summary No.: 500830 Procedure Revision/FC: 12 / --- Report No.: 2002M016  
Workscope: ISI Work Order No.: 0106946 Page: 4 of 4

Area Required (as shown in applicable code reference drawing)

Length 72.000 \* Width 2.250  
= Total Area required 162.000 square inches

### Coverage Achieved

Area examined 135.000 sq. in. / Total area required (100%) 162.000 sq. in.  
= Percent coverage 0.833 <sup>map</sup> 83.3% (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: Jerry P. Williams <sup>Lv. III</sup>

Date: 2-18-02