NMC
Committed to Nuclear Excellence

Mano K. Nazar
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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.

M. K. Nazar

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

c: (next page)

A047

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, 3rd 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 II Knott, Brian	Signature Brian A. Knott	Date 2/12/2002	Reviewer Clay, Sean P.	Signature [signature]	Date 2-19-02
Examiner Level II Thomas, Travis	Signature [signature]	Date 2/12/2002	Site Review Wren, Jerry P.	Signature [signature]	Date 2-19-02
Other Level N/A N/A	Signature	Date	ANII Review Clow, Ron	Signature [signature]	Date 2/21/02

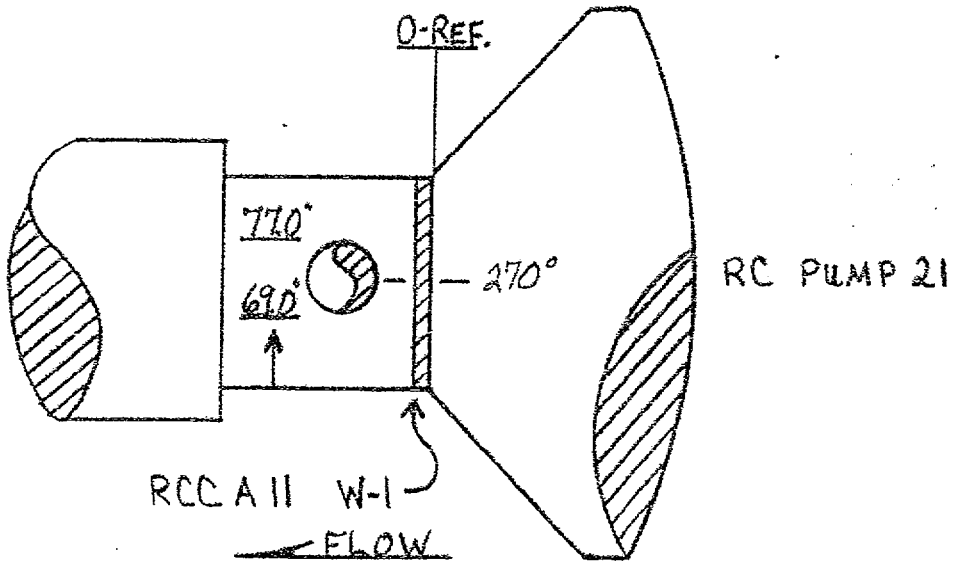
Limitation Record

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:	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		Brian A. Knott	2/12/2002	**Clay, Sean P.**	/		L II 2-19-02
Examiner	Level II	Signature	Date	Site Review		Signature	Date
Thomas, Travis	/		2/12/2002	**Wren, Jerry P.**	/	Jerry P. Wren	2-20-02
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			**Clow, Ron**			2/21/02

Supplemental Report

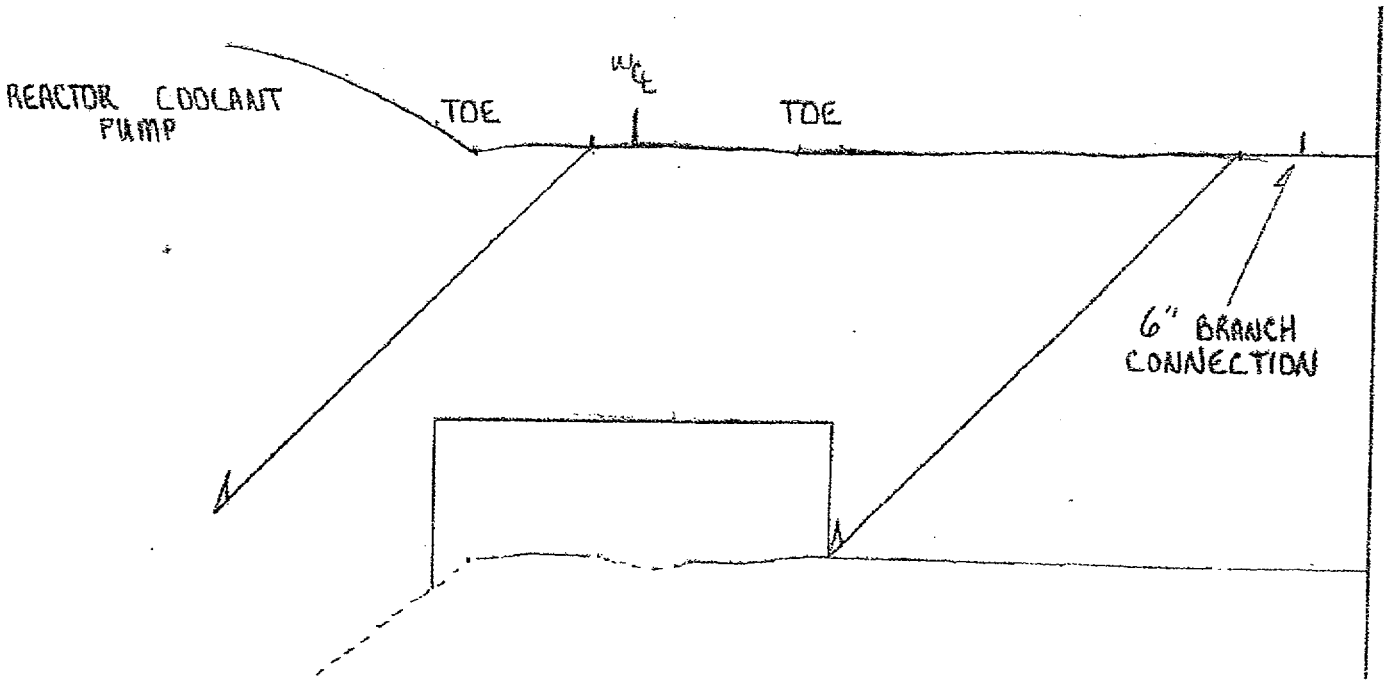
Report No.: 2002U035

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:\IDDEAL50\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	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 1
Scan 2	100.000	% Length X	96.800	% volume of length / 100 =	96.800	% 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 = 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	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 1
Scan 2	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 2
Scan 3	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 3
Scan 4	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% 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 | Procedure: ISI-UT-11 | Outage No.: PI2RF2002

Summary No.: 501140 | Procedure Revision/FC: 5 / --- | Report No.: 2002U045

Workscope: ISI | Work Order No.: 0106946 | 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 Knott, Brian	Level II	Signature Brian D. Knott	Date 2/19/2002	Reviewer Clay, Sean P.	Signature	Date 2-20-02
Examiner Potter, Michael E.	Level II	Signature Michael E. Potter	Date 2/19/2002	Site Review Wren, Jerry P.	Signature Jerry P. Wren	Date 2-21-02
Other N/A	Level N/A	Signature	Date	ANII Review Clow, Ron	Signature	Date 2/21/02

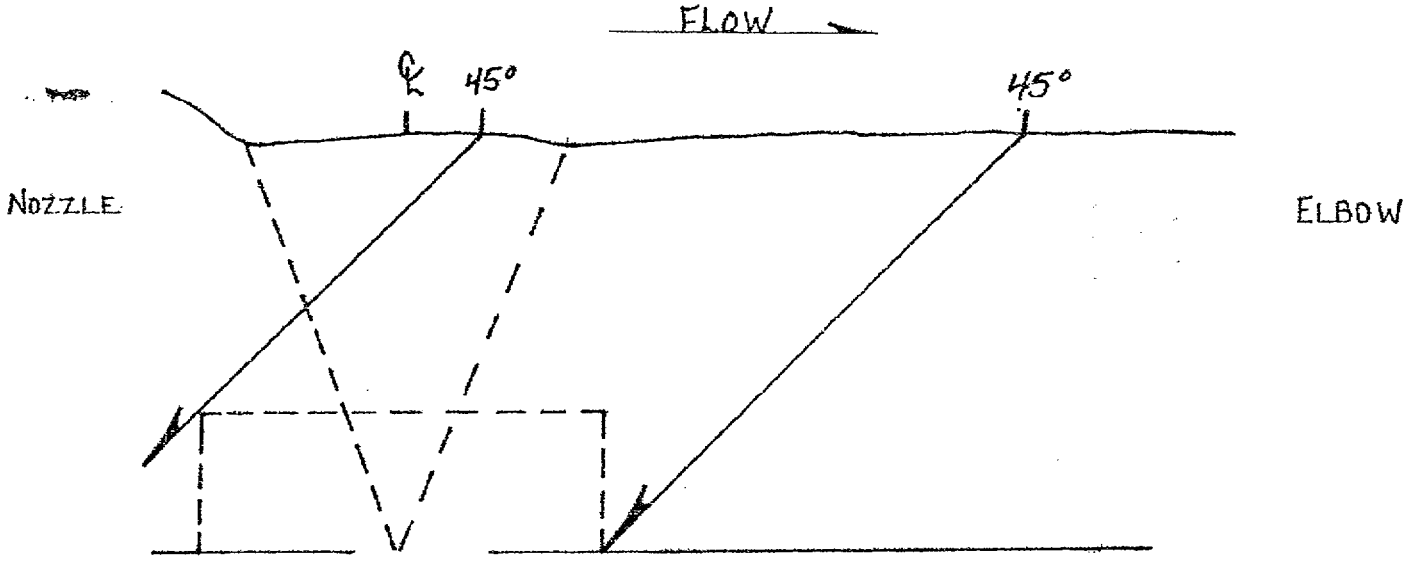
Limitation Record

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:\DDEAL50\PI2RFO2002\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		Brian A. Knott	2/19/2002	**Clay, Sean P.**	/	L.III	2-20-02
Examiner	Level II	Signature	Date	Site Review		Signature	Date
Potter, Michael E.	/	Michael E. Potter	2/19/2002	**Wren, Jerry P.**		Jerry P. Wren	2-21-02
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			**Clow, Ron**	/	RC	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	100.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 1
Scan 2	100.000	% Length X	100.000	% volume of length / 100 =	100.000	% total for Scan 2
Scan 3	100.000	% Length X	60.700	% volume of length / 100 =	60.700	% total for Scan 3
Scan 4	100.000	% Length X	60.700	% volume of length / 100 =	60.700	% 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	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 1
Scan 2	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 2
Scan 3	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 3
Scan 4	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% 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: Gary P. Wm Date: 2-21-02

Supplemental Report

Report No.: 2002U045

Page: 4 of 4

Summary No.: 501140

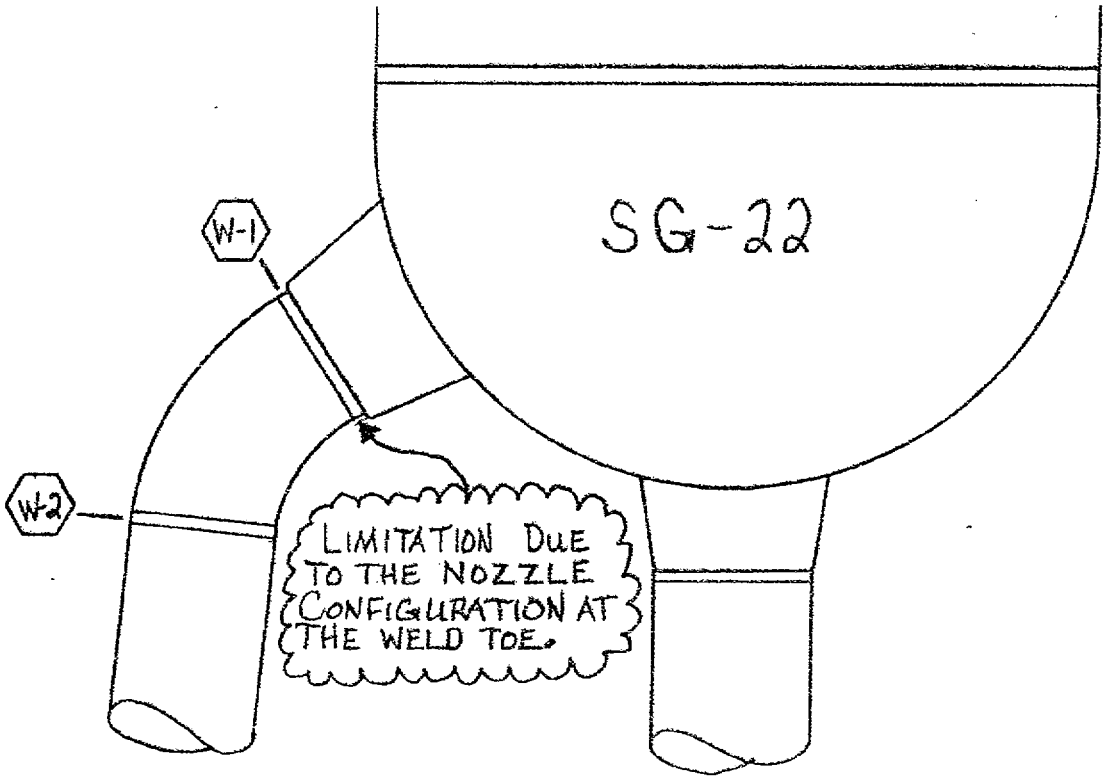
Examiner: Knott, Brian Level: II Reviewer: Clay, Sean P. Date: 2-20-02

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

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

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

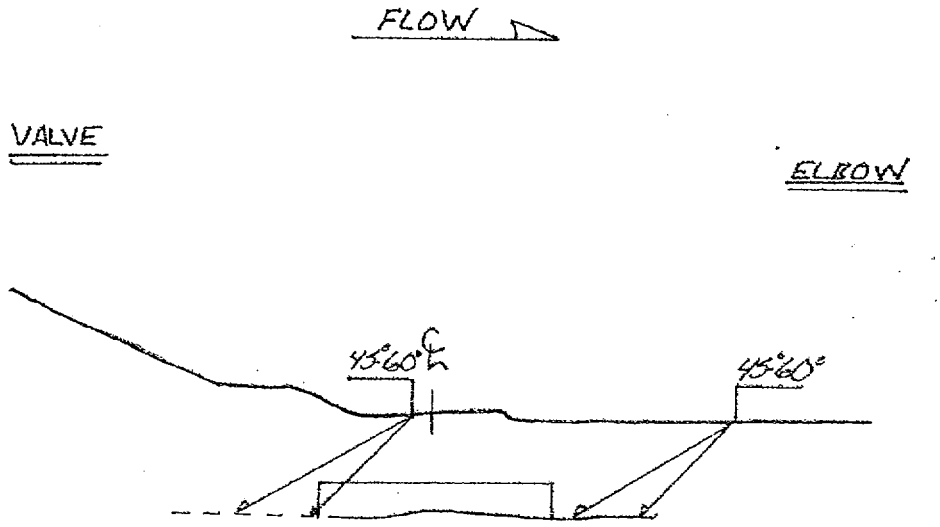
Limitation Record

Site/Unit:	NMC / PI2	Procedure:	ISI-UT-16A	Outage No.:	PI2RF2002
Summary No.:	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.	/		**2/14/2002**	**Clay, Sean P.**	/		2-18-02
Examiner	Level II	Signature	Date	Site Review		Signature	Date
Griebel, David M.	/		**2/14/2002**	**Wren, Jerry P.**	/		2-19-02
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
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.: 501638 | Procedure Revision/FC: 1 / --- | Report No.: 2002U038

Workscope: ISI | Work Order No.: 0106946 | Page: 3 of 3

45 deg

Scan 1	100.000	% Length X	50.000	% volume of length / 100 =	50.000	% total for Scan 1
Scan 2	100.000	% Length X	50.000	% volume of length / 100 =	50.000	% 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 = 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	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 1
Scan 2	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 2
Scan 3	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 3
Scan 4	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% 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: Doug P. Wm Date: 2-19-02

UT Pipe Weld Examination

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: 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 | Size/Length: .95" / 27" | Thickness/Diameter: .80" / 8"
Limitations: See attached limitation sheet. | 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 Timm, Jeremy T. /	Signature	Date 2/12/2002	Reviewer Clay, Sean P. /	Signature L1 III	Date 2-17-02
Examiner Level II Griebel, David M. /	Signature	Date 2/12/2002	Site Review Wren, Jerry P.	Signature	Date 2-18-02
Other Level N/A N/A /	Signature	Date	ANII Review Clow, Ron /	Signature	Date 2/19/02

Supplemental Report

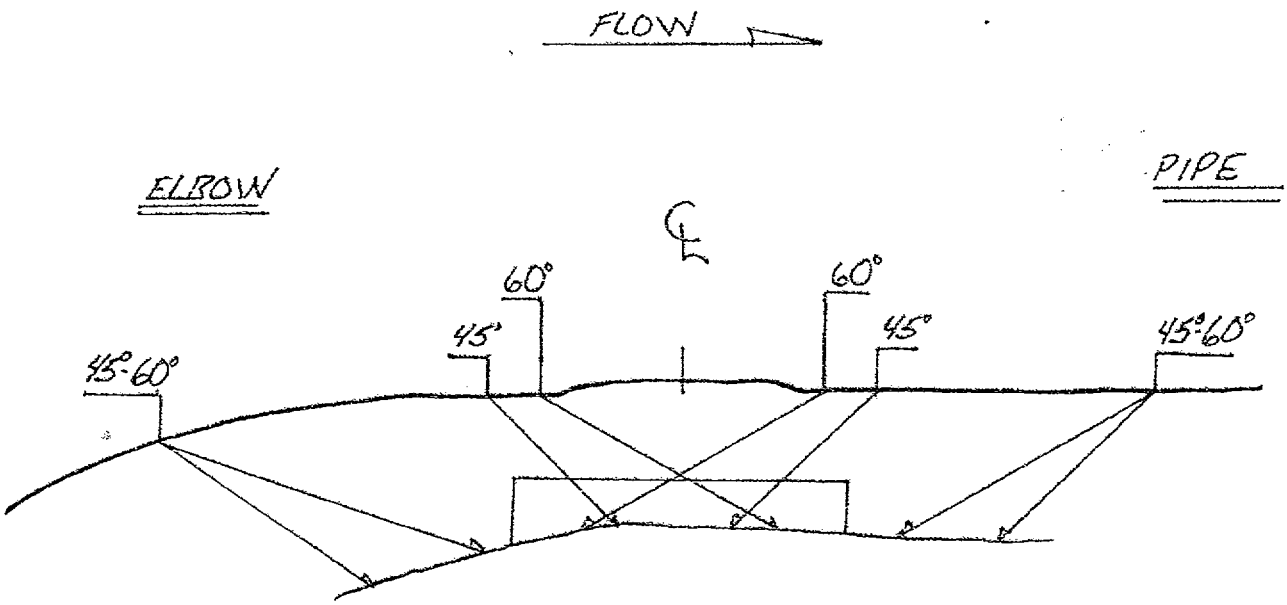
Report No.: 2002U033

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



WELD W-9

COVERAGE PLOT

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

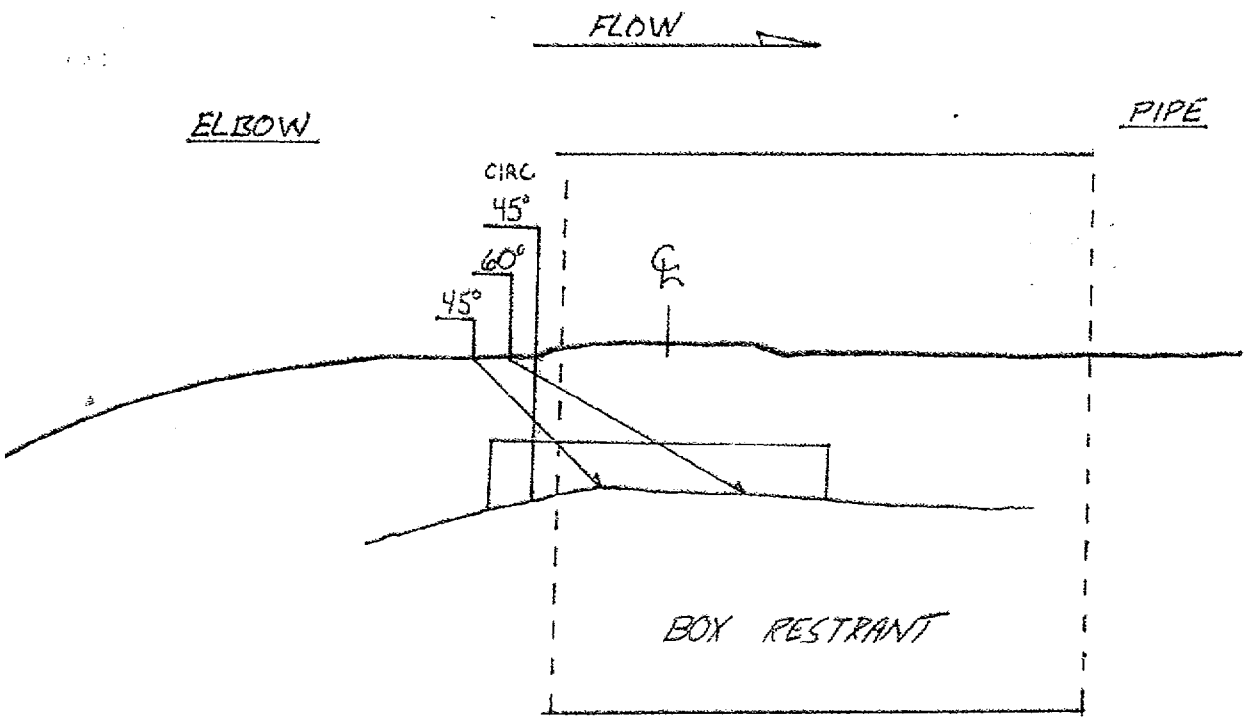
Examiner: Timm, Jeremy T. Level: II Reviewer: Clay, Sean P. Date: 2-17-02

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:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL UT\2002u033_3.bmp



WELD W-9

COVERAGE PLOT

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

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

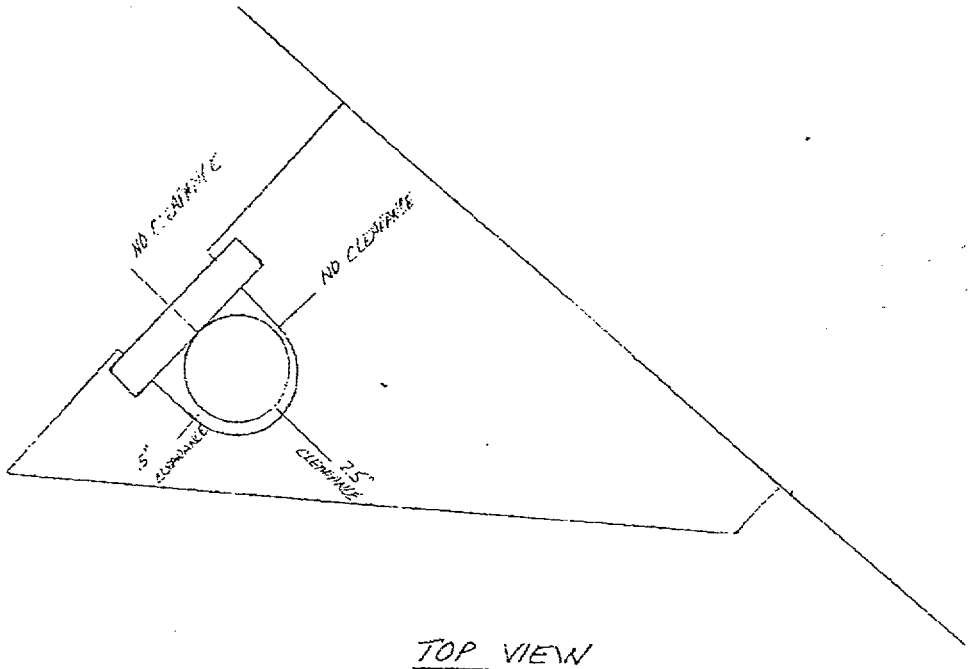
Limitation Record

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



TOP VIEW

WELD W-9

Limitations removal requirements:

N/A

Radiation field: **N/A**

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Timm, Jeremy T.		/ for J. Timm	**2/12/2002**	**Clay, Sean P.**		/ L. III	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

Determination of Percent Coverage for UT Examinations - Pipe

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:	5 of 5

45 deg

Scan 1	89.000	% Length X	26.300	% volume of length / 100 =	23.407	% total for Scan 1
Scan 2	57.500	% Length X	26.300	% volume of length / 100 =	15.123	% total for Scan 2
Scan 3	100.000	% Length X	25.000	% volume of length / 100 =	25.000	% total for Scan 3
Scan 4	100.000	% Length X	25.000	% volume of length / 100 =	25.000	% 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	89.000	% Length X	100.000	% volume of length / 100 =	89.000	% total for Scan 1
Scan 2	57.500	% Length X	100.000	% volume of length / 100 =	57.500	% total for Scan 2
Scan 3	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 3
Scan 4	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% 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: [signature] L2-III 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/cm²

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 ☐ 4-3-02

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

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

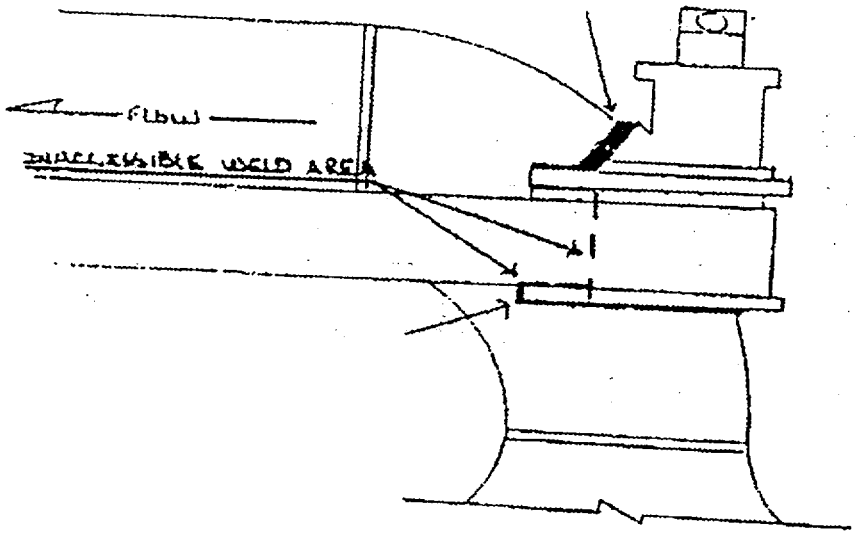
Limitation Record

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:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m021_1.bmp



Limitations removal requirements:

N/A

Radiation field: **N/A**

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

Supplemental Report

Report No.: 2002M025

Page: 3 of 6

Summary No.: 500978

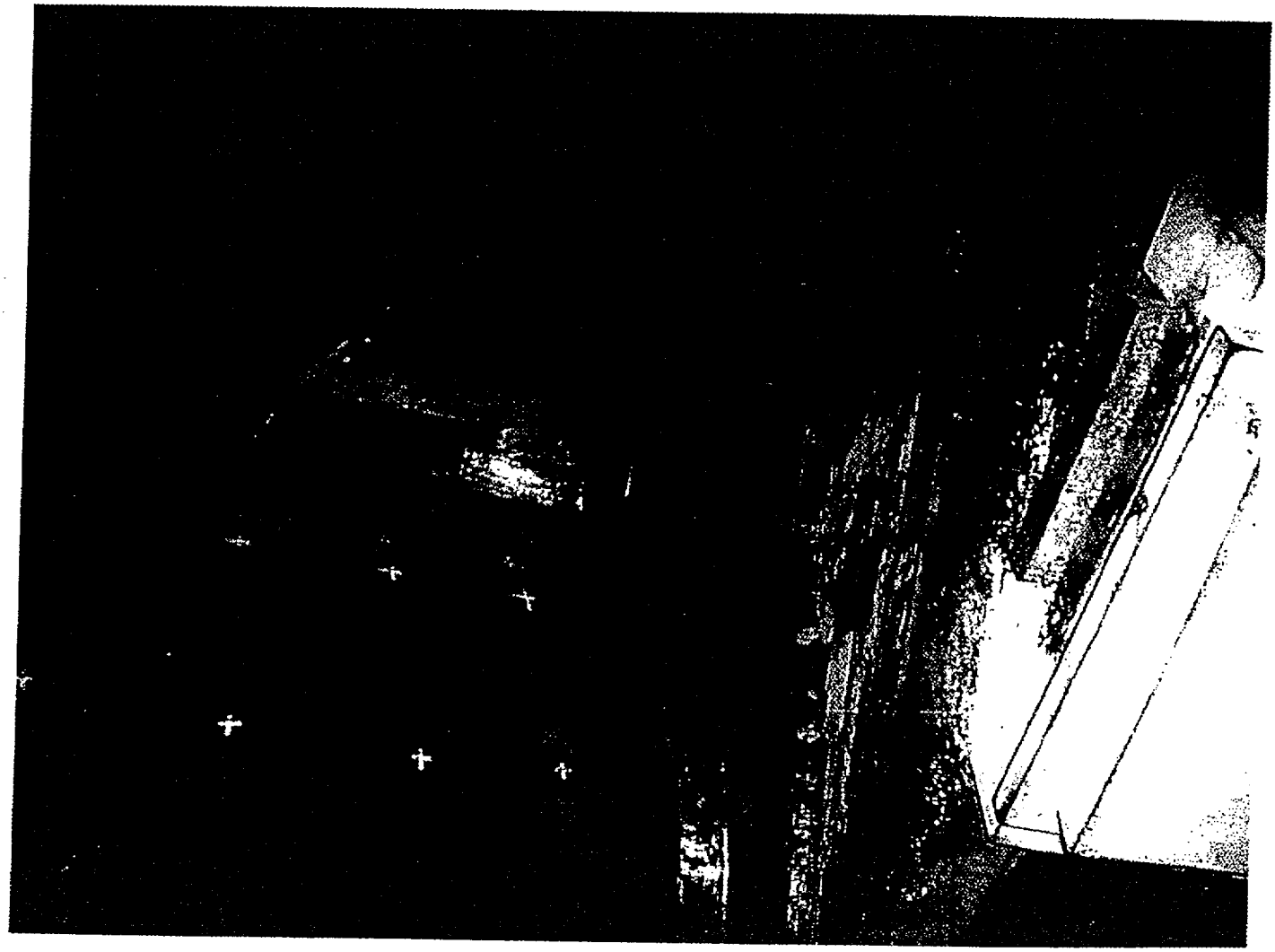
Examiner: Loredo, Quirino Level: II Reviewer: Halling, David A. Date: 2-21-02

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

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

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

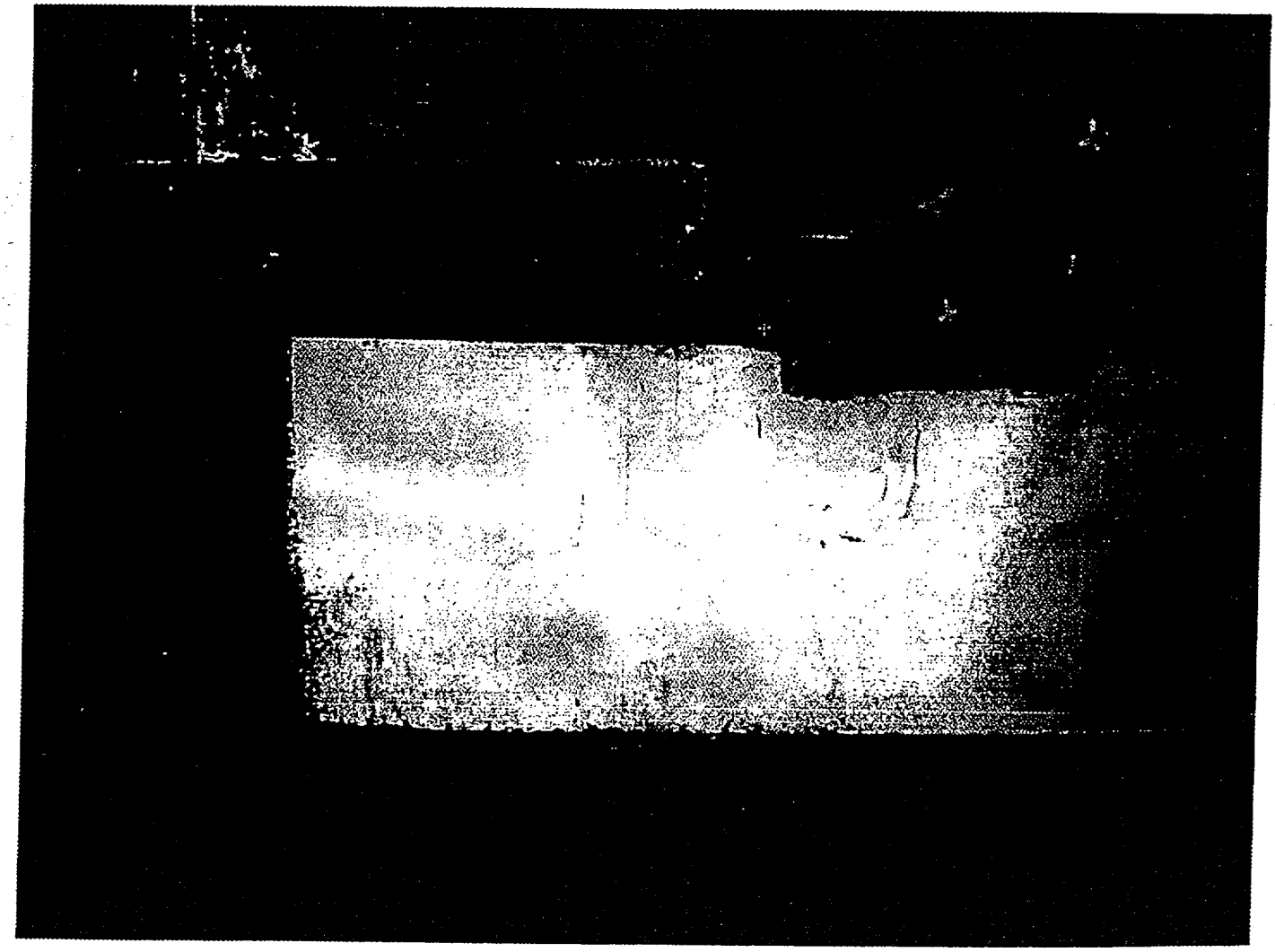
Examiner: Loredo, Quirino Level: II Reviewer: Halling, David A. Date: 2-21-02

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

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

Comments: **Side View.**

Sketch or Photo: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024_3.bmp



Supplemental Report

Report No.: 2002M025

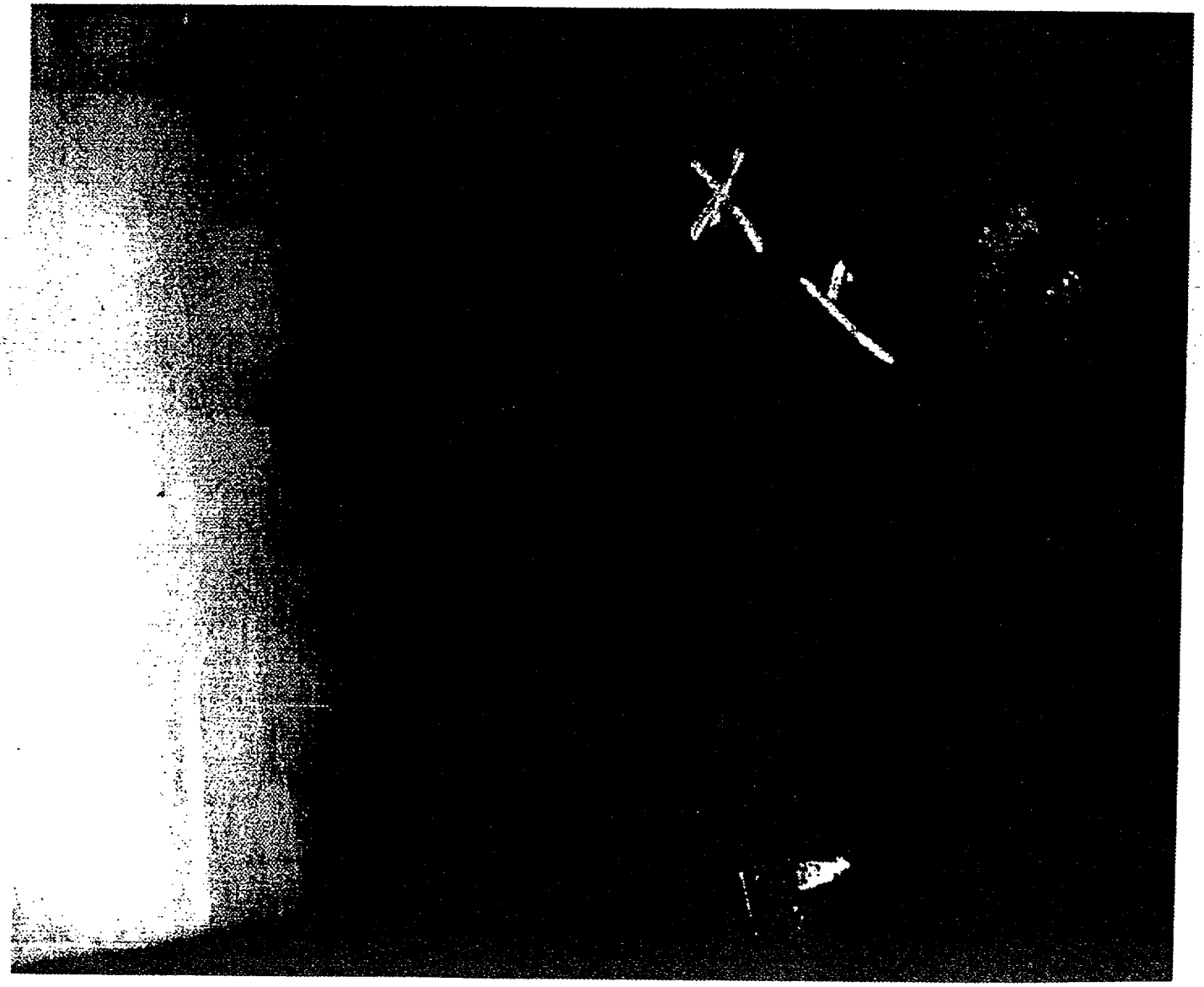
Page: 5 of 6

Summary No.: 500978

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

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 ~~0.000~~ * Width 2.0/3.0 ~~0.000~~

= Total Area required ~~0.000~~ 813 square inches

DW 2-21-02

DW 2-21-02

Coverage Achieved

Area examined 604.000 sq. in. / Total area required (100%) 813 ~~0.000~~ sq. in.

DW 2-12-02

= Percent coverage ~~0.696~~ 74.3% % (area required - area of limitations = area examined)

DW 2-21-02

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: [signature] 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/cm²

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	Signature	Date	Reviewer	Signature	Date
Loredo, Quirino	II		2/9/2002	Halling, David A.		2-21-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Potter, Michael E.	II		2/9/2002	Wren, Jerry P.		2-21-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron		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 ~~0.000~~ 270/91 2-20-02 MKP * Width ~~0.000~~ 2.0/30 2-20-02 MKP

= Total Area required ~~0.000~~ 813 2-20-02 MKP square inches

Coverage Achieved

Area examined 604.000 sq. in. / Total area required (100%) ~~0.000~~ 813 2-20-02 MKP sq. in.

= Percent coverage ~~0.835~~ 74.3% 2-20-02 MKP % (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. Wm Date: 2-21-02

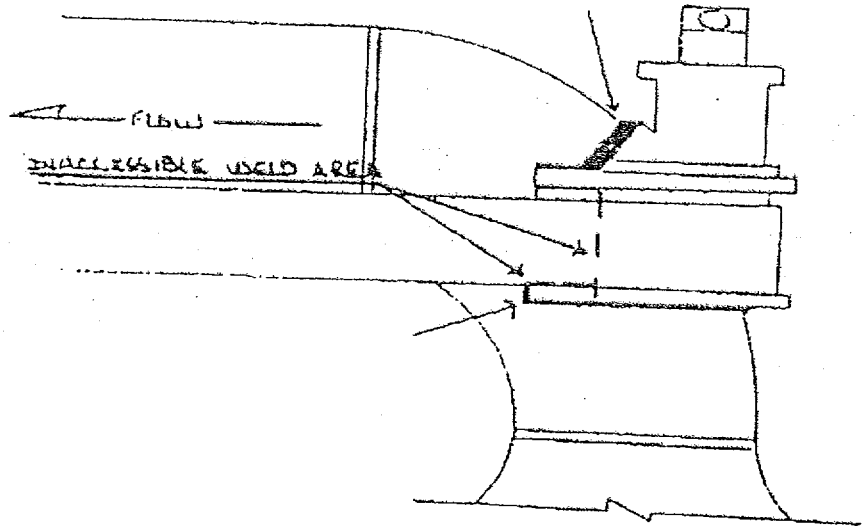
Limitation Record

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

Supplemental Report

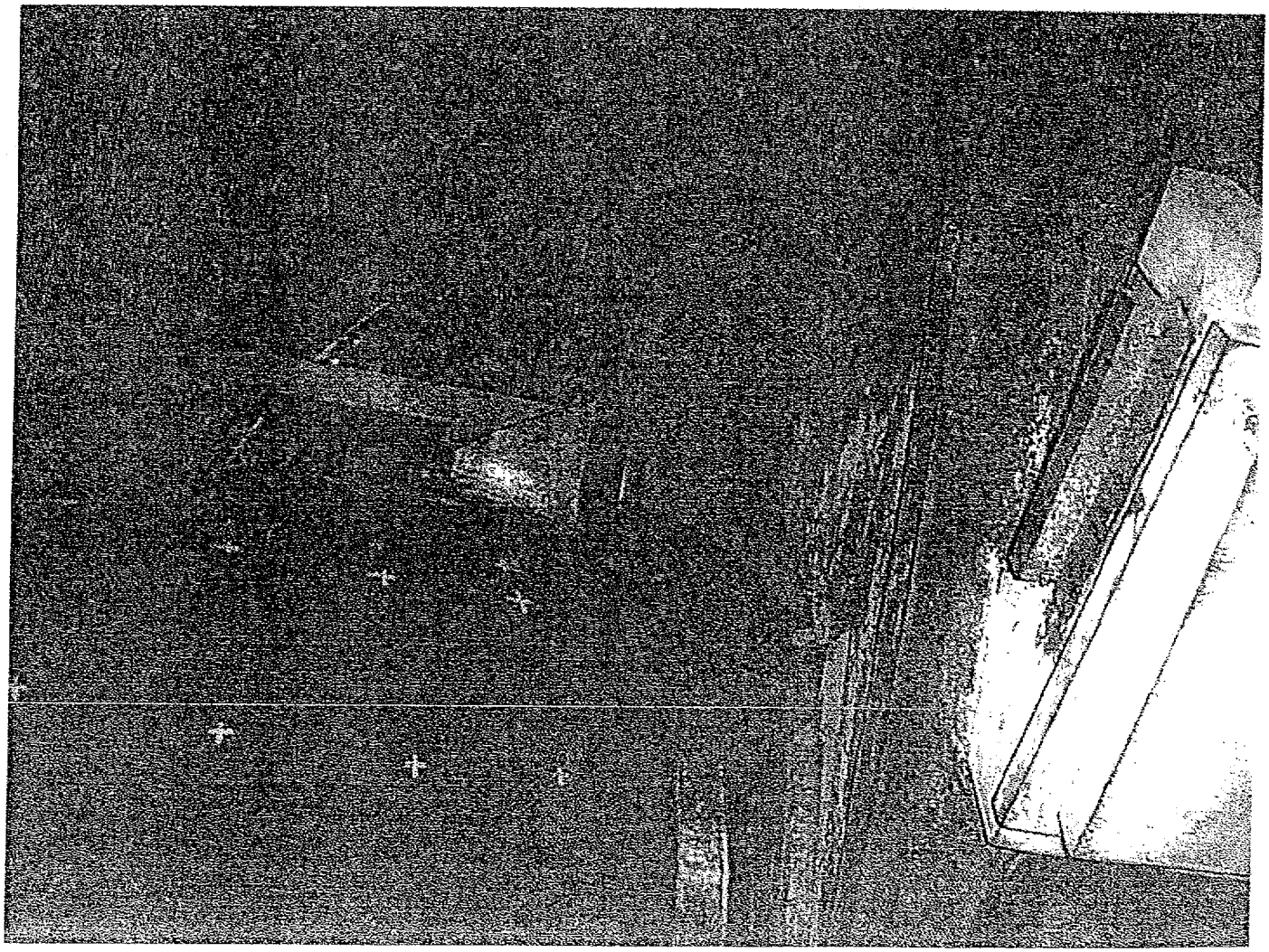
Report No.: 2002M024

Summary No.: 500985

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

Comments: **Top View (Looking Down).**

Sketch or Photo: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024_2.bmp



Supplemental Report

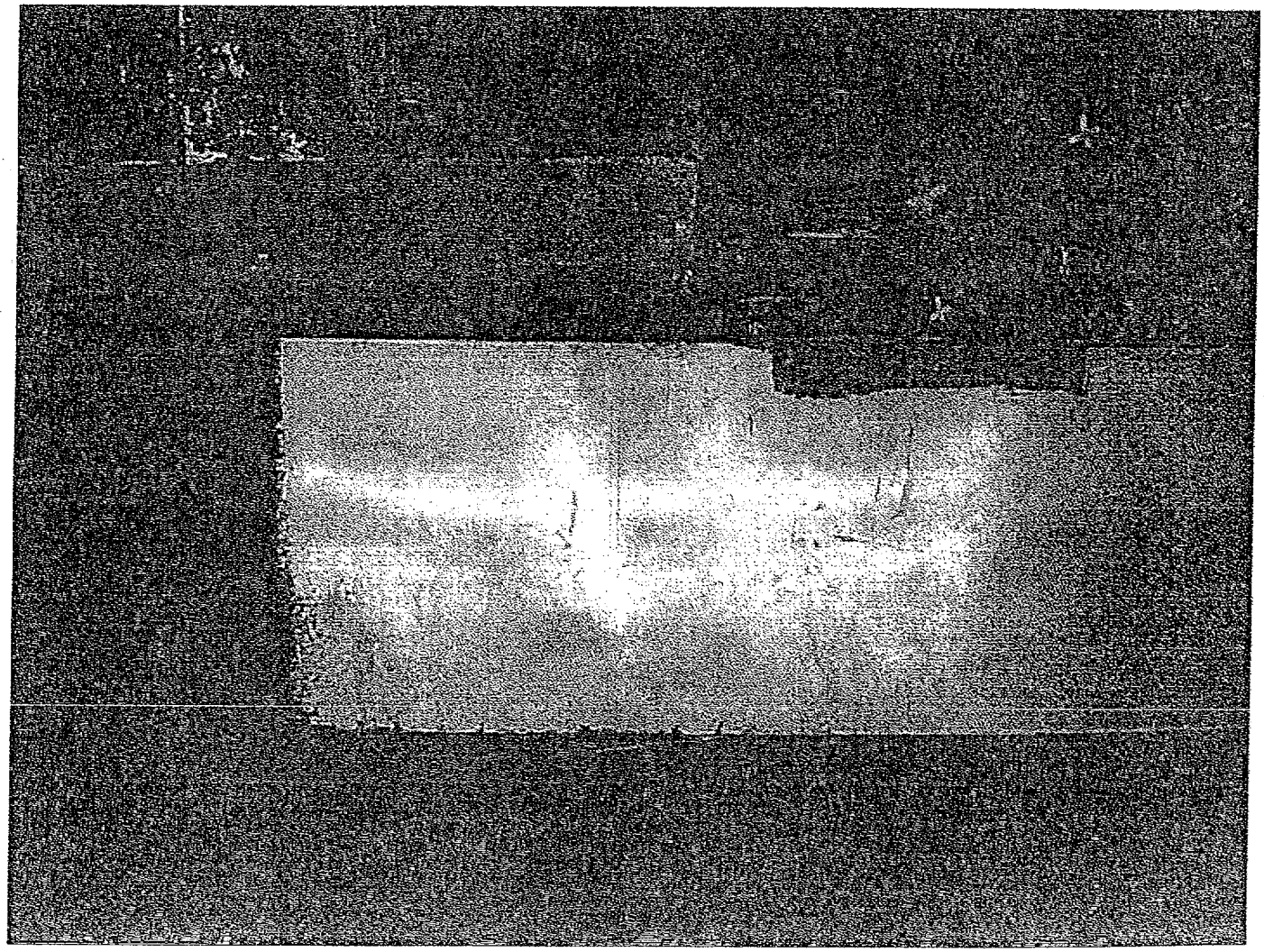
Report No.: 2002M024

Summary No.: 500985

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

Comments: Side View.

Sketch or Photo: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024_3.bmp



Supplemental Report

Report No.: 2002M024

Summary No.: 500985

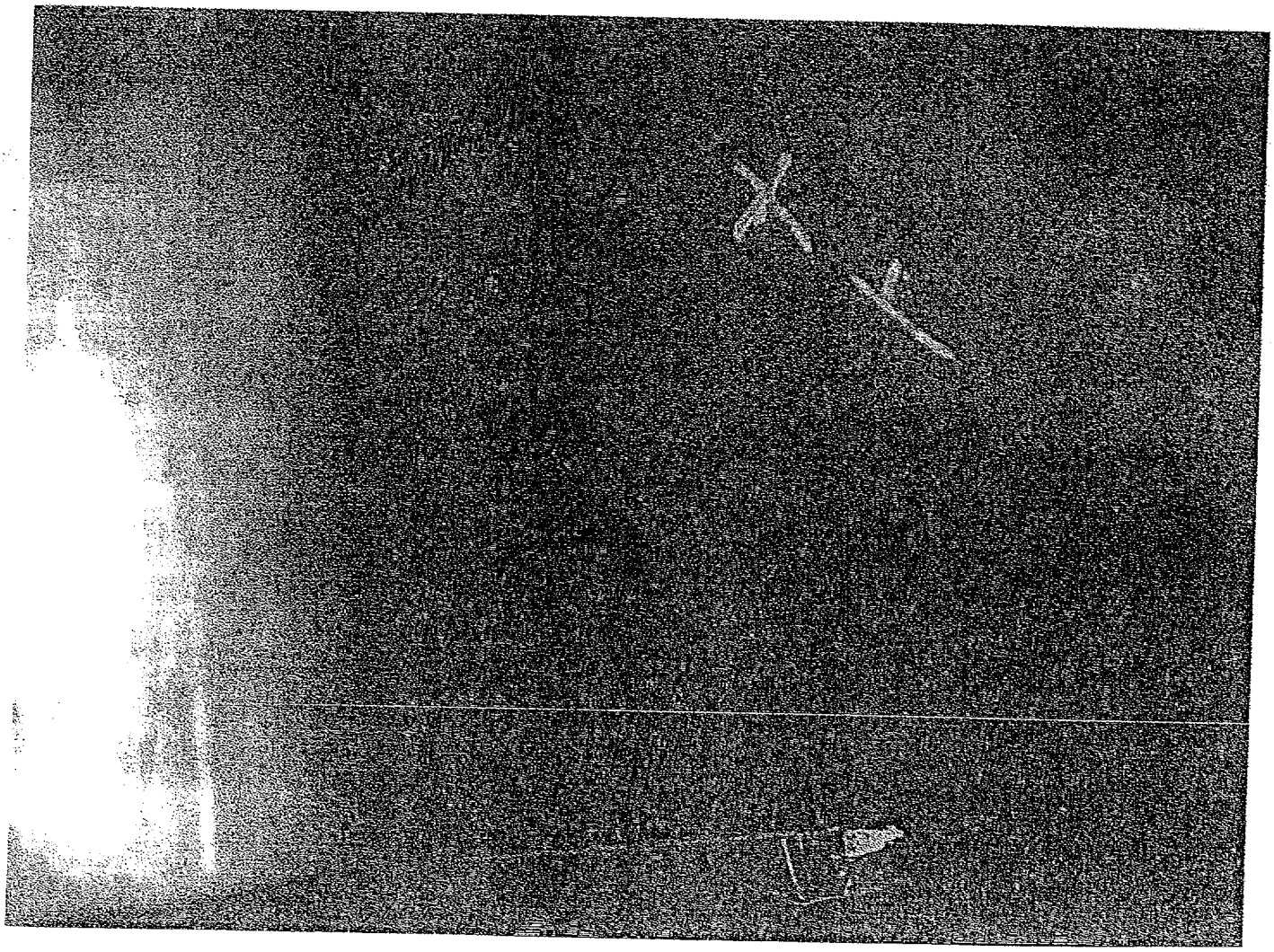
Examiner: Loredo, Quirino Level: II Reviewer: Halling, David A. Date: 2-21-02

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

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

Comments: Inaccessible Weld.

Sketch or Photo: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024_4.bmp



Magnetic Particle Examination

Site/Unit: NMC / PI2 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/cm²

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	/		2/16/2002	Halling, David A.	/		2-21-02
Examiner	Level II	Signature	Date	Site Review		Signature	Date
Potter, Michael E.	/		2/16/2002	Wren, Jerry P.			2-21-02
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Clow, Ron	/		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)

270/91 2-20-02 MP 2.0/3.0 2-20-02 MP

Length ~~0.000~~ * Width ~~0.000~~

= Total Area required ~~0.000~~ square inches

813 2-20-02 MP

Coverage Achieved

Area examined 604.000 sq. in. / Total area required (100%) ~~0.000~~ sq. in. 813 2-20-02 MP

= Percent coverage ~~0.000~~ % (area required - area of limitations = area examined)

74.3% 2-20-02 MP

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. Wa Date: 2-21-02

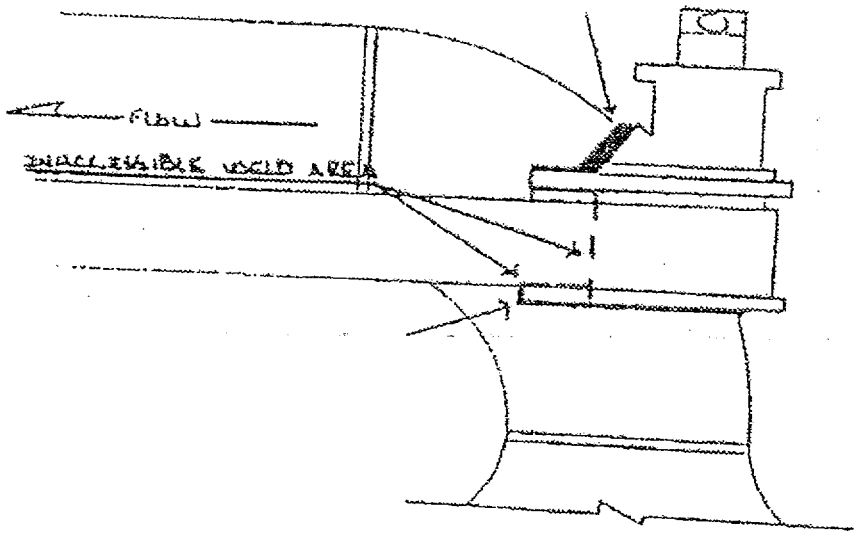
Limitation Record

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:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m021_1.bmp



Limitations removal requirements:

N/A

Radiation field: **N/A**

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

Supplemental Report

Report No.: 2002M021

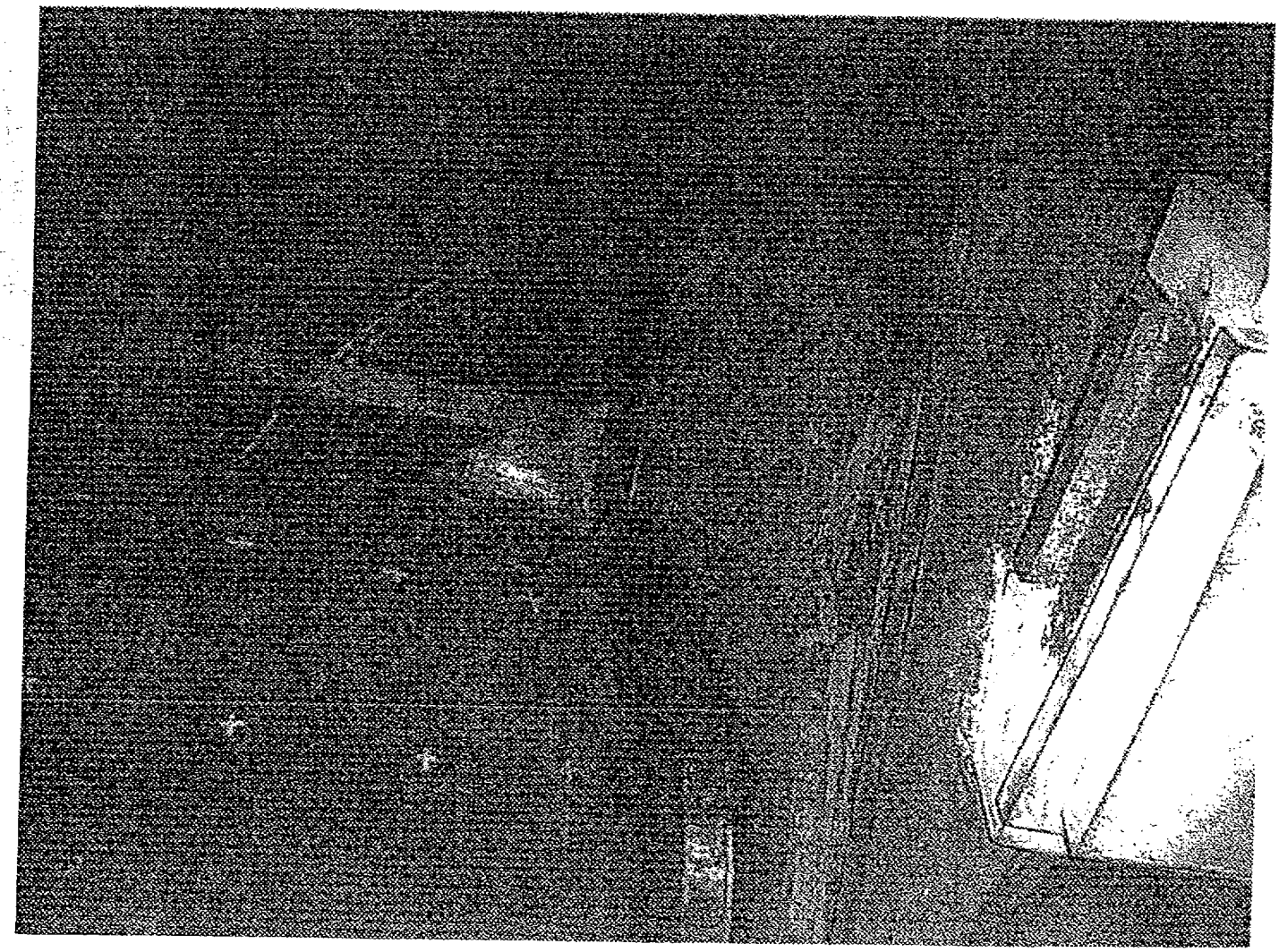
Page: 4 of 6

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	ANI Review:	Clow, Ron	Date: 2/21/02

Comments: Top View (Looking Down).

Sketch or Photo: G:\MDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024_2.bmp



Supplemental Report

Report No.: 2002M021

Summary No.: 500988

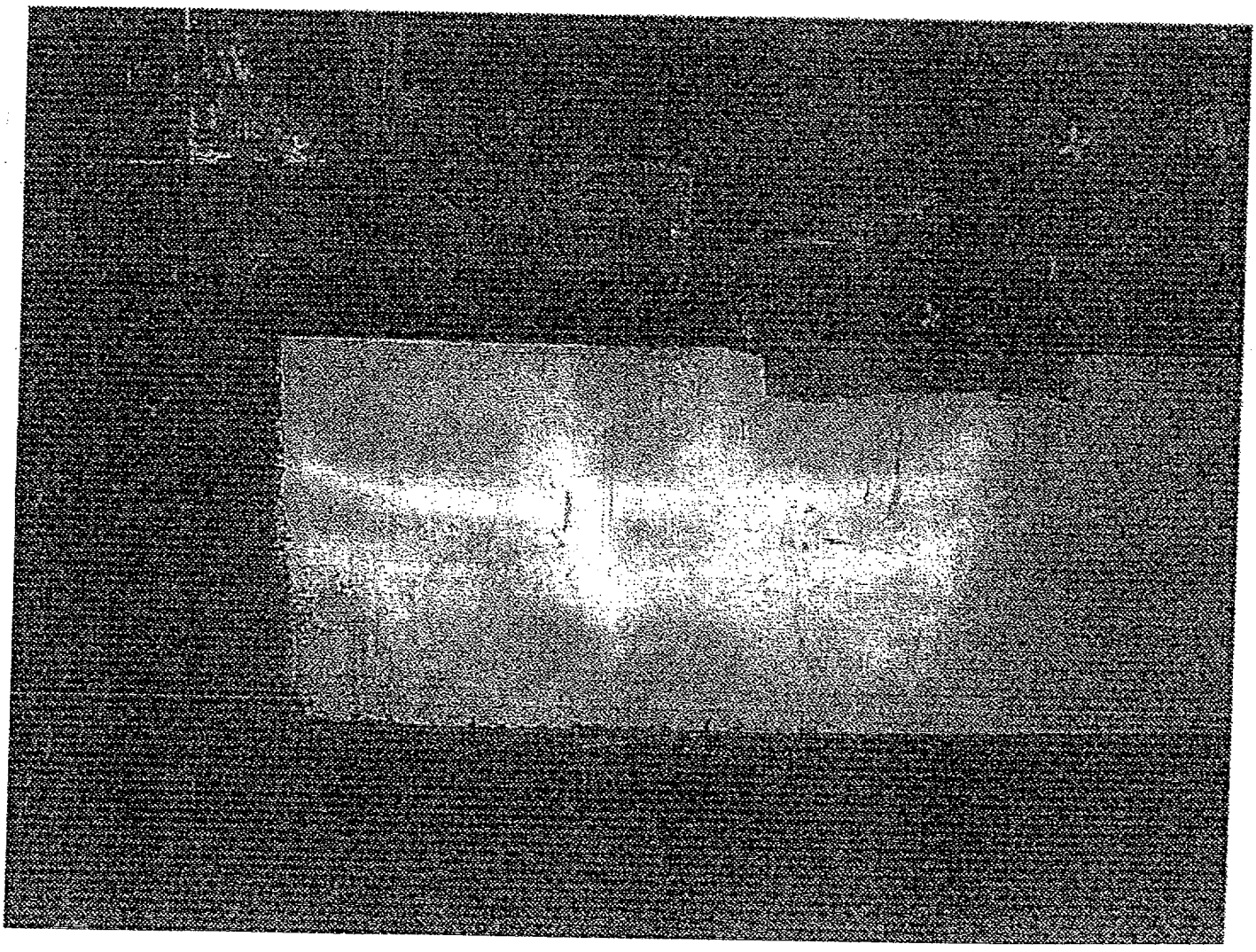
Examiner: Thomas, Travis Level: II Reviewer: Halling, David A. Date: 2-20-02

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

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

Comments: Side View.

Sketch or Photo: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m024_3.bmp



Supplemental Report

Report No.: 2002M021

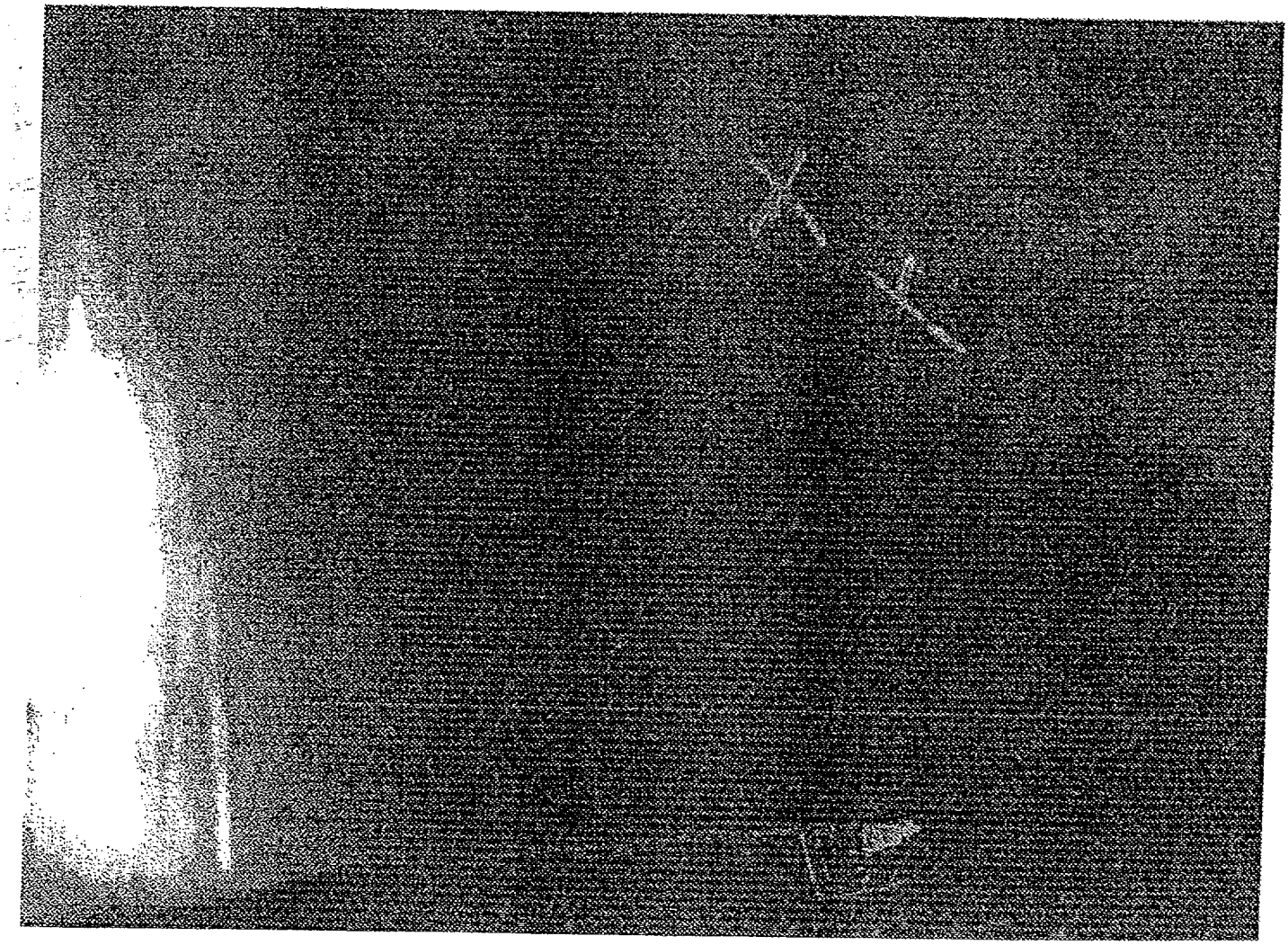
Page: 6 of 6

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	ANII Review:	Clow, Ron	Date:	2/21/02

Comments: Inaccessible Weld.

Sketch or Photo: G:\IDDEAL50\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: ~~0925~~ 0935 DMG - 2-18-02 | Finish Time: 1000

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 JPW

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

Date: 2-18-02 | Signature: [signature] | Date: 2/19/02

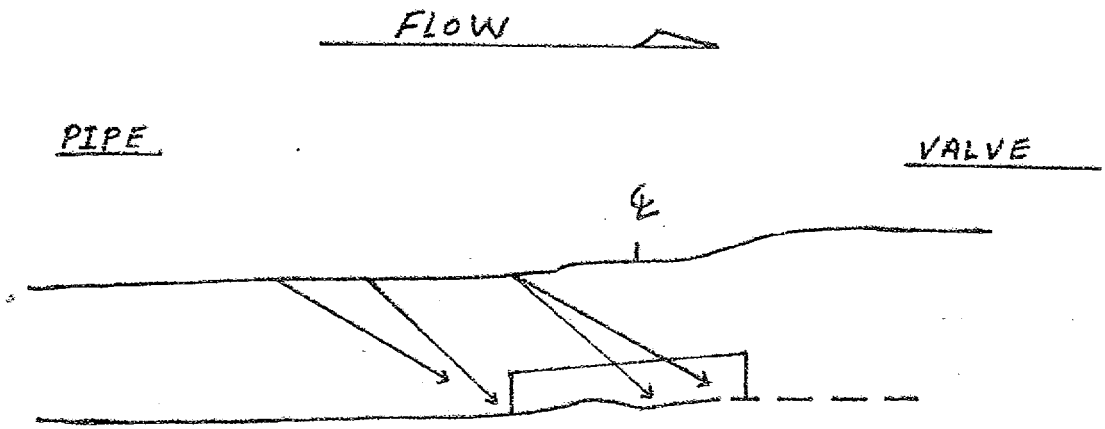
Limitation Record

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



COMPONENT ID: W-17

EXAM PERFORMED USING A 45° ½V AND 60° ½V

Limitations removal requirements:

N/A

Radiation field: N/A

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Timm, Jeremy T.	/		2/14/2002	Clay, Sean P.	/		02-18-02
Examiner	Level II	Signature	Date	Site Review		Signature	Date
Griebel, David M.	/		2/14/2002	Wren, Jerry P.			2-19-02
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
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	100.000	% Length X	50.000	% volume of length / 100 =	50.000	% total for Scan 1
Scan 2	100.000	% Length X	50.000	% volume of length / 100 =	50.000	% 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 = 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	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 1
Scan 2	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 2
Scan 3	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 3
Scan 4	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% 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: 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 JPW

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

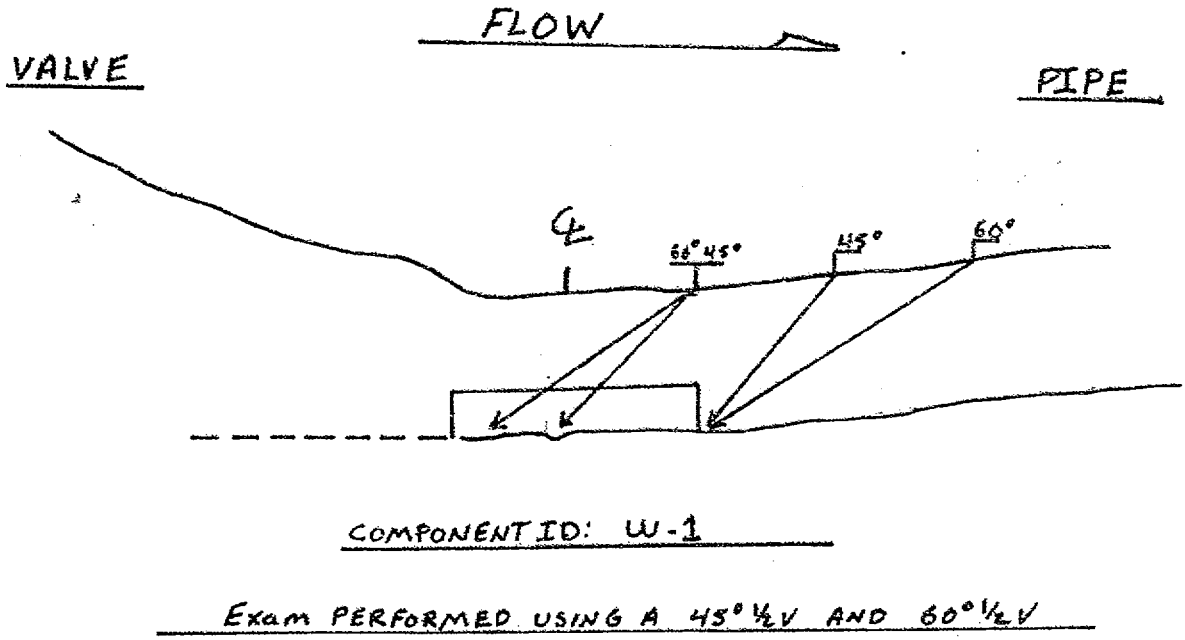
Limitation Record

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\PI2RFO2002\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.	/		2/14/2002	Clay, Sean P.	/	L-III	2-18-02
Examiner	Level II	Signature	Date	Site Review		Signature	Date
Griebel, David M.	/		2/14/2002	Wren, Jerry P.			2-19-02
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Clow, Ron	/		2/20/02

Determination of Percent Coverage for UT Examinations - Pipe

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:	3 of 3

45 deg

Scan 1	100.000	% Length X	50.000	% volume of length / 100 =	50.000	% total for Scan 1
Scan 2	100.000	% Length X	50.000	% volume of length / 100 =	50.000	% 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 = 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	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 1
Scan 2	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 2
Scan 3	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 3
Scan 4	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% 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: Jay P. Wm 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 II Johnson, Jeffrey M. /	Signature	Date 1/30/2002		Reviewer Clay, Sean P. /	Signature Lv III	Date 02-05-02	
Examiner Level II Griebel, David M. /	Signature	Date 1/30/2002		Site Review Wren, Jerry P. /	Signature Lv. III	Date 2-5-02	
Other Level N/A N/A /	Signature	Date		ANII Review Clow, Ron /	Signature	Date 2/8/02	

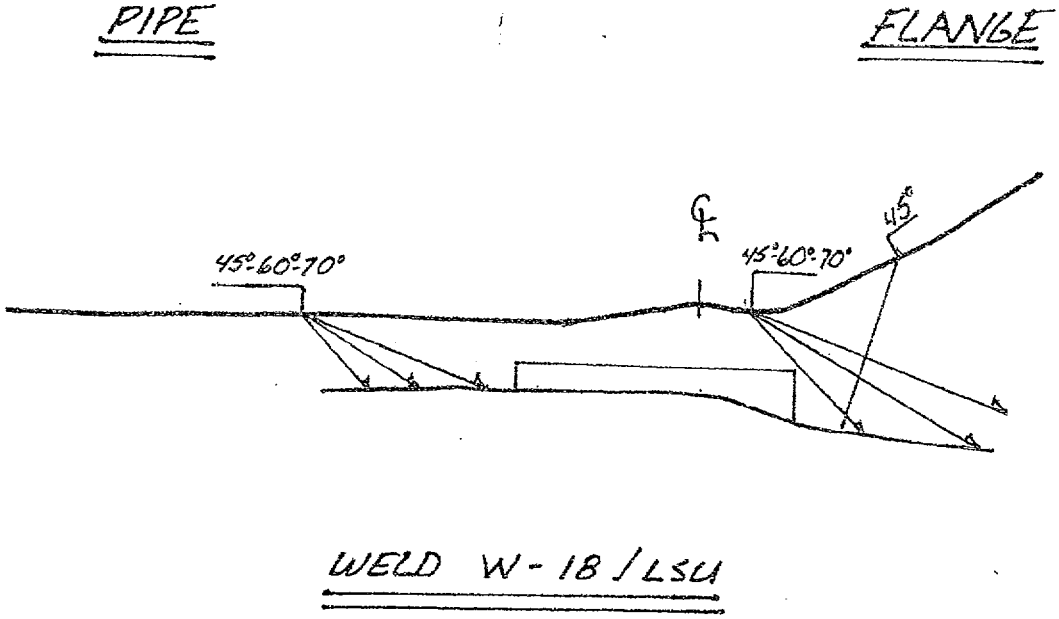
Limitation Record

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 II	Signature	Date	Reviewer		Signature	Date
Johnson, Jeffrey M.	/		1/30/2002	Clay, Sean P.	/		2-05-02
Examiner	Level II	Signature	Date	Site Review		Signature	Date
Grisbol, David M.	/		1/30/2002	Wren, Jerry P.			2-5-02
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Clow, Ron	/		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	100.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 1
Scan 2	100.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 2
Scan 3	100.000	% Length X	100.000	% volume of length / 100 =	100.000	% total for Scan 3
Scan 4	100.000	% Length X	100.000	% volume of length / 100 =	100.000	% 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	100.000	% Length X	50.000	% volume of length / 100 =	50.000	% total for Scan 1
Scan 2	100.000	% Length X	50.000	% volume of length / 100 =	50.000	% 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 L.III Date: 2-5-02

UT Pipe Weld Examination

Site/Unit: NMC / PI2 | Procedure: ISI-UT-16A | Outage No.: PI2RF2002
Summary No.: 502372 | Procedure Revision/FC: 1 / --- | Report No.: 2002U028
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- 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 II Griebel, David M. /	Signature	Date 2/14/2002	Reviewer Clay, Sean P. /	Signature L.III	Date 2-18-02
Examiner Level II Timm, Jeremy T. /	Signature	Date 2/14/2002	Site Review Wren, Jerry P. /	Signature	Date 2-19-02
Other Level N/A N/A /	Signature	Date	ANII Review Clow, Ron /	Signature	Date 2/19/02

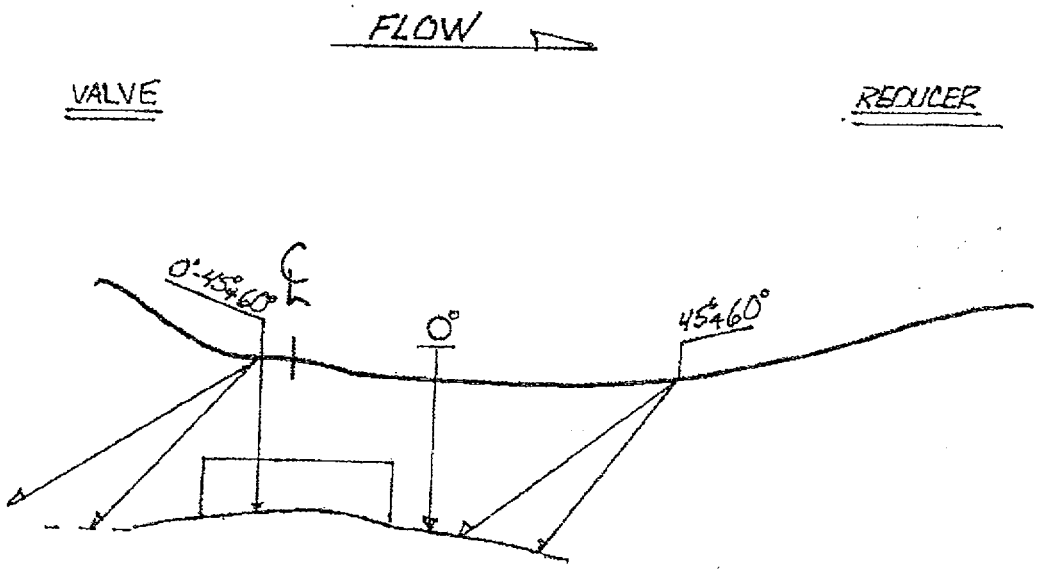
Limitation Record

Site/Unit:	NMC / PI2	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:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL UT\2002u028_1.bmp



WELD W-1

COVERAGE PLOT

Limitations removal requirements:

N/A

Radiation field: **N/A**

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Griebel, David M.	/		2/14/2002	Clay, Sean P.	/		LIII 02-18-02
Examiner	Level II	Signature	Date	Site Review		Signature	Date
Timm, Jeremy T.	/		2/14/2002	Wren, Jerry P.			2-19-02
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
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.:	502372	Procedure Revision/FC:	1 / ---	Report No.:	2002U028
Workscope:	ISI	Work Order No.:	0106946	Page:	3 of 3

45 deg

Scan 1	100.000	% Length X	50.000	% volume of length / 100 =	50.000	% total for Scan 1
Scan 2	100.000	% Length X	50.000	% volume of length / 100 =	50.000	% 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 = 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	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 1
Scan 2	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 2
Scan 3	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 3
Scan 4	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% 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: 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 Griebel, David M.	Level II	Signature	Date 2/13/2002	Reviewer Clay, Sean P.	Level III	Signature	Date 02-19-02
Examiner Timm, Jeremy T.	Level II	Signature	Date 2/13/2002	Site Review Wren, Jerry P.		Signature	Date 2-19-02
Other N/A	Level N/A	Signature	Date	ANII Review Clow, Ron		Signature	Date 2/19/02

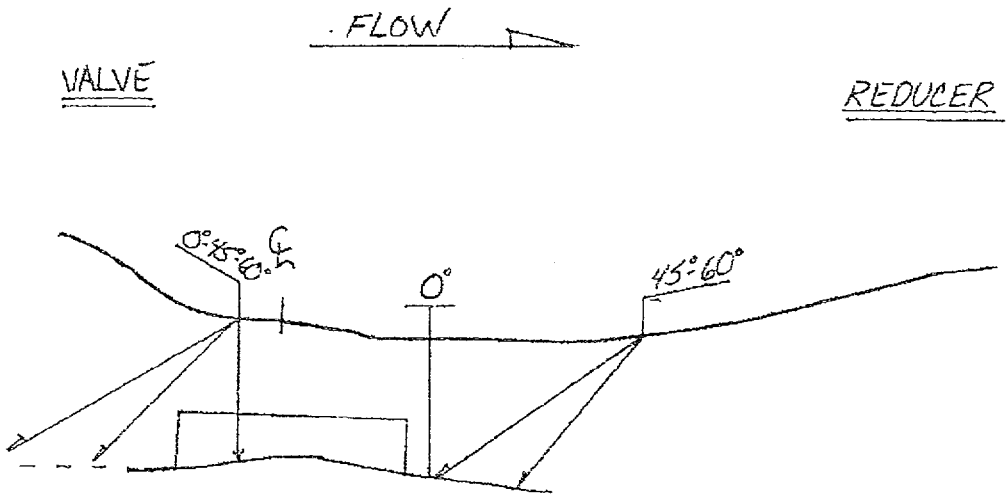
Limitation Record

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



WELD W-5

COVERAGE PLOT

Limitations removal requirements:

N/A

Radiation field: **N/A**

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Griebel, David M.	/		**2/13/2002**	**Clay, Sean P.**	/	L.III	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

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	100.000	% Length X	50.000	% volume of length / 100 =	50.000	% total for Scan 1
Scan 2	100.000	% Length X	50.000	% volume of length / 100 =	50.000	% 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 = 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	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 1
Scan 2	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 2
Scan 3	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 3
Scan 4	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% 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. Wm Date: 2-19-02

Magnetic Particle Examination

Site/Unit: NMC / PI2 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/cm²

Temp. Tool Mfg.: N/A Serial No.: N/A Surface Temp.: < 600 °F

Resolution: Not Used

Cal Block Serial No.: N/A Surface Condition: BLENDED

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.: 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	Signature	Date	Reviewer	Signature	Date
Potter, Michael E.	II /	Michael E. Potter	2/12/2002	Halling, David A.	/ D A Halling	2-18-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
Lorado, Quirino	II /	Quirino Lorado	2/12/2002	Wren, Jerry P.	/ Jerry P. Wren	2-18-02
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A /			Clow, Ron	/ R Clow	2/18/02

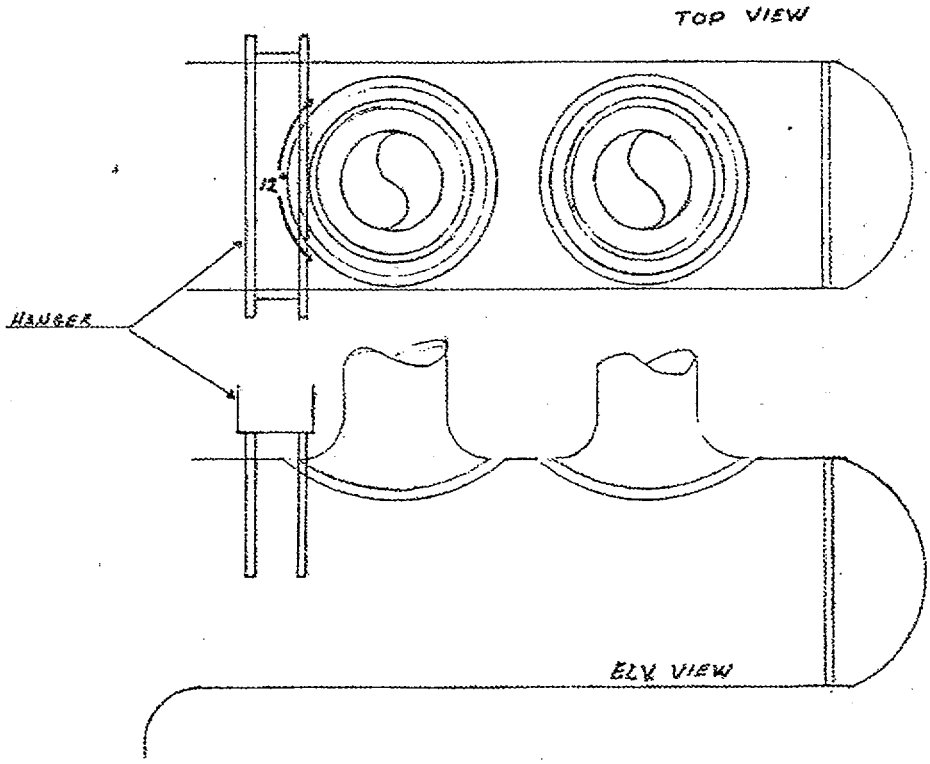
Limitation Record

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

Supplemental Report

Report No.: 2002M016

Summary No.: 500830

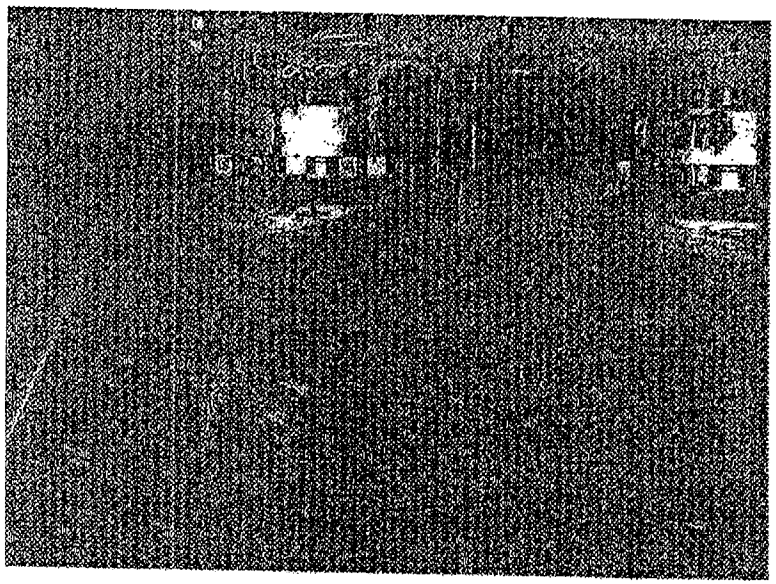
Examiner: Potter, Michael E. Level: II Reviewer: Halling, David A. Date: 2-18-02

Examiner: Loredo, Quirino Level: II Site Review: Wren, Jerry P. Date: 2-18-02

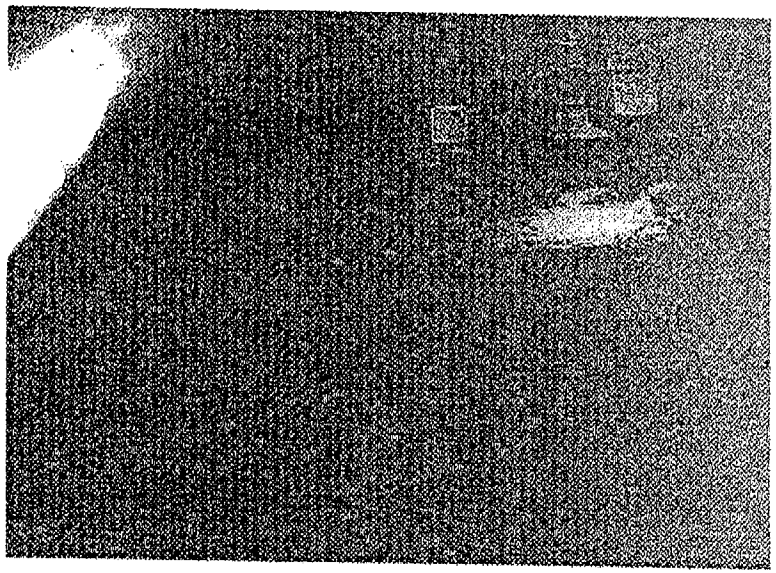
Other: N/A Level: N/A ANII Review: Clow, Ron Date: 2/18/02

Comments: None

Sketch or Photo: G:\IDDEAL50\PI2RFO2002\SUPPLEMENTAL MT\2002m016_2.bmp



G:\IDDEAL50\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~~ 2-16-02 % (area required - area of limitations = area examined)

83.3 %

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: Jay P. Wm LV-III Date: 2-18-02