NMC
Committed to Nuclear Excellence

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

April 15, 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 Nos. 50-282 License Nos. DPR-42

Response to a Request for Additional Information Regarding Request for Relief No. 11 for the Unit 1 3rd 10-year Interval Inservice Inspection Program (TAC No. MB2199)

On May 29, 2001 we submitted for review Request for Relief No. 11 for Inservice Inspection Program for Unit 1, for examinations which were limited. The request was made 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. The NRC issued a Request for Additional Information (RAI) regarding the relief request by letter dated February 4, 2002.

Enclosed with this letter is the response to that RAI. Also enclosed are four revised pages to the original relief request.

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

c: Regional Administrator - Region III, NRC (2 copies of attachment)
Senior Resident Inspector, NRC
NRR Project Manager, NRC
Chief Boiler Inspector, State of MN
P. Fisher, Hartford Insurance

Enclosures:

1. Response to RAI, including 18 attachments
2. Revised Pages 1, 2, 6, and 9 of ISI Relief Request No. 11, Limited Examination

Enclosure 1

Response to RAI, including 18 attachments

A. Technical Letter Report (8 pages)
B. Attachments
   1.) Report 2001U039 and sketch
   2.) Report 2001U004 and sketch
   3.) Report 2001U010 and sketch
   4.) Report 2001U029 and sketch
   5.) ISO metric Drawing ISI-93B
   6.) ISO metric Drawing ISI-51B
   7.) ISO metric DrawingISI-68A
   8.) ISO metric Drawing ISI-69
   9.) Report 2001M034 and sketch
   10.) Report 2001M030
   11.) Report 2001M034
   12.) ISO metric Drawing ISI-83C
   13.) Report 2001P056
   14.) Report 2001U013 and sketch
   15.) Report 2001U034 and sketch
   16.) Limitation Record for Report 2001U040 with sketch
   17.) Report 2001M016 and sketch
   18.) INSERVICE INSPECTON – NONDESTRUCTIVE EXAMINATION PROCEDURE ISI-LTS-1, Limitations to NDE, Revision 2

TECHNICAL LETTER REPORT
REQUESTS FOR ADDITIONAL INFORMATION
ON THIRD 10-YEAR IN-SERVICE INSPECTION INTERVAL
REQUEST FOR RELIEF
FOR
NUCLEAR MANAGEMENT COMPANY
PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNIT 1
DOCKET NUMBER: 50-282

1. SCOPE

By letter dated May 29, 2001, the licensee, Nuclear Management Company (NMC), submitted multiple requests for relief from the requirements of the ASME Code, Section XI, for the Prairie Island Nuclear Generating Plant, Unit 1. These relief requests are for the third 10-year inservice inspection (ISI) interval. Brookhaven National Laboratory (BNL) reviewed the information submitted by the licensee and based on this review, the following information for each relief request is required to complete this evaluation.

2. REQUESTS FOR ADDITIONAL INFORMATION

General

(1) Please provide the date when the Third 10-year ISI Interval began for the Prairie Island Nuclear Generating Plant, Unit 1.

Response: The 3rd 10 year Interval began on Dec 17, 1993 and ends Dec. 16, 2003.

(2) For the proposed alternative examination, it was stated in the licensee's submittal that Metal and Material Resources Procedure ISI-LTS-1 is applied when limitation to required inspections are encountered. In order to evaluate the acceptability and appropriateness of the proposed alternative, a review of this procedure is required. Please describe the related activities that are applicable to this relief request for all Parts A-E below. Explain how these activities provided an alternative to the Code-required examination(s) and how the licensee gained the maximum obtainable inspection coverage practically possible.

Response: ***ISI-LTS-1 (Attachment 18) is the procedure used when an ASME Section XI Code required examination results in less than 90% Coverage. It requires a review of procedures to obtain maximum coverage and documentation of the limitation. The procedure also examines whether an alternative method could be used to obtain better coverage as allowed by the Code.***

(3) None of the limitations identified in Table 1 of the submittal discussed the ALARA concerns. However, the alternative examination section of the submittal states that "Limitations are due to design, geometry, and materials of construction of the components or ALARA concerns." Explain how the ALARA concerns affected the impracticality in performing the Code-required inspection activities for the subject welds.

Response: ***Some of the examinations are in significant radiation fields, and excessive efforts to use alternative examination techniques without significant gain in examination coverage are not warranted. These radiation fields are recorded on the limitation datasheets provided with the relief requests as attachments. For this relief request no specific item was identified as an ALARA concern in itself. Configuration issues are the main reason for the relief request or new Performance Demonstrated Initiative UT Methods as allowed by 10 CFR55a limit the acceptable examination coverage.***

2.1 **Request for Relief No.11, for "limited examinations" associated with Third 10-year Interval Program Plan Issued on February 22, 1996.**

Part A:
Pressure retaining welds in the reactor coolant system piping, Weld W-6 (pipe to elbow) and Weld W-1 (RC pump to pipe), Examination Category B-J, Item No. B9.11.

Pursuant to 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the 100% volumetric examination requirements for a reactor coolant system pipe to elbow weld W-6 and a reactor coolant pump to pipe weld W-1. Due to interferences and access limitations, the licensee performed single side examination only and therefore, could examine 75% (for the weld W-6) and 38.85% (for the weld W-1) of the Code-required volumes. In order for the proposed alternative to be considered, please provide the following:

(1) Table 1 of the licensee submittal indicates that the limitation for the weld W-6 is (PDI) single sided examination due to pipe configuration and for the weld W-1 is (PDI) single sided examination due to pump to pipe configuration. The sketches provided in the associated summary sheets are not clear to understand these limitations. Explain with sketches or photos what kind of configuration problems are associated with each of these welds. Discuss the relationship of the configuration limitations with PDI and provide the reference of the PDI section.

Response: No photos of these limitations are available. The limitations for W-1 and W-6 are related to contour configuration of the OD scan surfaces that precluded a four directional scan of the weld volume particularly from the valve side (W-1) or pump side (W-6) of the weld, which is shown on the sketches previously submitted and new sketches (Attachments 1 and 2).

10 CFR 50.55a(b)(2)(xv)(A), 10 CFR 50.55a(b)(2)(xv)G and 10 CFR 50.55a(b)(2)9(xvi), define new requirements for coverage and qualification demonstration of UT Methods. These requirements affect both piping and RPV examinations. The PDI UT methodology is in agreement with the Federal Code regarding single side access for piping. The Federal Code requires that if access is available the weld shall be scanned in each of the four directions (parallel and perpendicular to the weld) where required. Coverage credit may be taken for single side exams on ferritic piping. However, for austenitic piping a

procedure must be qualified with flaws on the inaccessible side of the weld. The final rule requires that single side access examinations must demonstrate "equivalency to two sided examinations". Current technology is not capable of reliably detecting or sizing flaw on the inaccessible side of an austenitic weld, for configurations common to US nuclear applications. Instead of a full single side qualification, PDI offers a best effort approach, which demonstrates that the best available technology is applied. This best effort approach does not meet the requirements of the Federal Code. PDI lists the limitation that single side examination is performed on a best effort basis. This requires the inaccessible side of the weld to be listed as an area of limited coverage. Hence for W-1 and W-6 only limited coverage is obtained. Table 1 has been corrected to show W-1 limitation to be 50%and W-6 limitation to be 50%. See Attachments 1 and 2, UT examination reports and sketches (2001U039 and 2001U004).

(2) The description in the Table 1of the licensee submittal identifies the weld W-6 is a circumferential weld between the RC piping to elbow, while the sketch in the corresponding summary report No. 300130 indicates that the weld is for the piping to valve. Clarify this discrepancy.

Response: The Table 1 entry is incorrect and should say "Piping to Valve" as indicated on inspection report and sketch (Attachment 2). The limitation coverage for W-1 is also incorrect and should be 50% Coverage. These have been entered into the plant corrective action process.

(3) Confirm that Code-required essentially 100% surface examination was performed for both W-6 and W-1 welds.

Response: 100% coverage PT surface examination was performed on these welds.

(4) Provide details of the alternatives, including system pressure test requirements for the reactor coolant system, proposed and/or attempted by the licensee for the subject welds.

Response: VT-2 (visual examinations) and functional pressure test requirements are being performed and meet the code requirements for these welds. As noted above, a 100% OD PT surface examination was also performed on these welds.

Part B:

Pressure retaining welds in pressure vessels, Weld W-E (#12 steam generator shell to transition) and Weld W-2 (#12 RHR Hx shell to flange), Examination Category C-A, Item No. C1.10.

Pursuant to 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the 100% volumetric examination requirements for a shell-to-transition weld W-E on the #12 Steam Generator and a shell-to-flange weld W-2 on the #12 RHR Heat Exchanger. Due to interferences, the licensee is proposing a 70.88% (for the weld W-E) and 27.26% (for the weld W-2) of the Code-required volumes. In order for the proposed alternative to be considered, please provide the following:

(1) The submittal is requesting relief from the Code-required volumetric examination for the welds W-E and W-2 based on limitations in scanning the welds due to interferences caused by the weld geometry and configuration. Explain if the alternatives include surface examinations, radiography, and/or any other examination methods and describe the results of these examinations.

Response: The alternative does not include surface examination since the code requirement is full weld volumetric. Also, radiography is not a viable option for these volumetric examinations since the S/G and heat exchanger would have to be drained down and S/G internals would have to be removed to perform radiography. No alternative examinations were performed.

(2) The sketches given in Summary Nos. 301070 and 303054 are not clear. Provide sketches showing the Code-required volume to be examined and the scanner locations with volume coverage as practical.

Response: Attached are UT reports 2001U010, 2001U029 and associated sketches (Attachments 3 and 4) and ISI-93B diagram of W-2 (Attachment 5). The UT coverage indicated on Table 1, of 70.88% for Weld W-E is incorrect and should state 77.54% coverage. This has been entered into the plant corrective action process. Weld W-E downstream UT scan is inaccessible due to restraining ring around Steam Generator. For W-2 flange, contour surface prevents adequate scan coverage downstream.

(3) Provide details of the alternatives, including system pressure test requirements for the components containing the welds, proposed and/or attempted by the licensee for the subject welds.

Response: VT-2 (visual examinations) and functional pressure test requirements are being performed and meet the code requirements for these welds.

Part C:
Integral attachment welds for piping and pumps, Examination Category C-C, Item Nos. C3.20 & C3.30.

Pursuant to 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the Code-required surface examinations for nineteen integral attachment welds for piping and pumps in the main steam piping, feedwater piping, SI pumps, and RHR heat exchanger. For six of these welds, no surface examination could be performed due to interferences. In order for the proposed alternative to be considered, please provide the following:

(1) For these welds, were any alternative inspection measures considered, such as examining surrogate welds, or performing a visual inspection to look for signs for degradation near the weld ?

Response: This ASME Code Category requires all integral attached welds to be inspected each interval. So there are no surrogate welds. The Code required examination is a surface examination, PT or MT. A Visual VT-3 examination is

performed on these supports and the weld areas that are accessible as required by IWF and Code Case 491. No degradation near the welds was observed. These welds are covered by VT-2 (visual examinations) and functional pressure tests.

(2) The diagrams given in the Limitation Record sheets are not clear, specifically the surface areas to be examined and the inaccessible portions of the weld. Some are covered by guard pipes and the licensee submittal for these welds include only the Magnetic Particle Examination sheets and no sketches or diagrams. Please provide detail sketches or photos with sufficient details so that the staff could determine the interferences on accessing the Code-required surfaces for the subject welds.

Response: Guard piping completely encloses the weld areas. See attached Isometric drawing ISI-51B, ISI-68-A, and ISI-69 (Attachments 6, 7, and 8) for location of Guard Pipe. Photograph of guard pipe not available.

(3) Explain why the integral attachment for the #12 RHR Heat Exchanger Support integral attachment weld is considered under Examination Category C-C, Item Number C3.20 which is applicable to piping.

Response: This item number should be C3.10. This has been entered into the plant corrective action process.

(4) Explain the following specific welds:

(a) Summary No. 301589 shows a weld to pipe obstructed by guard pipe and insulation. Why can the insulation not be removed for surface examination?

Response: Removal of insulation would not facilitate inspection. The inspection is constrained by guard pipe and configuration of the restraint collar.

(b) Summary No. 301258 shows floor penetration which prohibits examination of the middle 12" of the two vertical welds on the pipe collar. The drawings do not clearly demonstrate the subject welds (2 circumferential welds and 2 vertical welds) and inaccessible portions of these welds. Please provide new sketches or photos showing the welds with inaccessible portions.

Response: There is no photo available. A new sketch is provided and examination report 2001M034 (Attachments 9 and 11).

(c) Sketches in summary nos. 302082, 302086, and 303052 are not very clear. Please provide sketches with explanations how the Code-required surface areas in these welds are not accessible for examination.

Response: Rough weld area prohibits PT examination. See attached reports 2001M030, 2001M034 and 2001P056 and attached Isometric Drawing ISI-83C (Attachments 9, 10, 11, 12, and 13). For 2001M030, there is less than 2" gap between

pump and integral attachment weld pedestal. For 2001M034, Attachment 9 shows how the floor interferes with the inspection. Report for 2001P056 is included again, note the description of limitations on page 2.

Part D:
Pressure retaining welds in austenitic stainless steel or high alloy piping, Examination Category C-F-1, Item Nos. C5.11 & C5.21.

Pursuant to 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from Code-required surface and volumetric examinations for the pressure retaining welds in RHR Pump B discharge lines and SI test return line. In order for the proposed alternative to be considered , please provide the following:

(1) For these welds, were any alternative inspection measures considered, such as examining surrogate welds, or performing a visual inspection to look for discoloration where the pipe is exposed or discoloration of the insulation near the weld, which could be indicative of degradation of the weld? If so, please provide the details of these inspections.

Response: There are 377 C-F-1 welds in PI Unit 1 plant, 51 welds are examined during the 3rd Interval. The code requires 29 minimum welds or a total of 7.5 % of 377, PI Unit 1 inspects 51 C-F-1 welds (the last 12 to be completed in the Fall 2002 outage). A VT-2 (visual examinations) is conducted during required functional pressure examinations. No indications have been observed from these inspections.

(2) Please provide sketches or photos with sufficient details so that the staff could determine the interferences on accessing the Code-required surfaces and volumes for the subject welds.

Response: See attached Sketches and inspection reports 2001U013 (Attachment 14), 2001U034 (Attachment 15), and sketch for 2001U040 and 2001P070 (Attachment 16).

(3) Table 1 of the licensee submittal indicates that the limitation for the weld W-18 is (PDI) single sided examination due to tee to valve configuration and for the weld W-1 is (PDI) single sided examination due to weld crown configuration. Explain with sketches or photos what kind of configuration problems are associated with each of these welds. Discuss the relationship of the configuration limitations with PDI and provide the reference of the PDI section.

Response: See attached sketches and reports 2001U013 (Attachment 14) and 2001U034 (Attachment 15).

10 CFR 50.55a(b)(2)(xv)(A), 10 CFR 50.55a(b)(2)(xv)G and 10 CFR 50.55a(b)(2)9(xvi), define new requirements for coverage and qualification demonstrations of UT Methods. These requirements affect both piping and RPV

examinations. The PDI UT methodology is in agreement with the Federal Code regarding single side access for piping. The Federal Code requires that if access is available the weld shall be scanned in each of the four directions (parallel and perpendicular to the weld) where required. Coverage credit may be taken for single side exams on ferritic piping. However, for austenitic piping a procedure must be qualified with flaws on the inaccessible side of the weld. The federal code requires that single side access examinations must demonstrate "equivalency to two sided examinations". Current technology is not capable of reliably detecting or sizing flaw on the inaccessible side of an austenitic weld, for configurations common to US Nuclear applications. Instead of a full single side qualification, PDI offers a best effort approach, which demonstrates that the best available technology is applied. This best effort approach does not meet the requirements of the Federal Code. PDI lists the limitation that single side examination is performed on a best effort basis. This requires the inaccessible side of the weld to be listed as an area of limited coverage. Hence for W-8 and W-1 austenitic welds the examination technique is only capable of a maximum coverage of 50%. The coverage limitation on these welds is further limited by OD contour configuration surface due to Tee to Valve (W-18), 49.2% and Weldolet to Pipe (W-1) geometry 39.18%.

(4) The RHR pump "B" discharge pipe to penetration weld is claimed to be inaccessible due to penetration sleeve and welded restraint. Explain if the licensee has considered other alternatives, including radiography, visual examination. Provide details of the system pressure test requirements applicable to the components containing the subject welds.

Response: VT-2 (visual examinations) and pressure test requirements are being performed and meet the code requirements for these welds. The RHR pressure test is performed at nominal operating pressure of greater than or equal to 350 psig for at least 10 minutes, the insulation may be in place. Radiography would require draining the system and would be an undue hardship.

(5) Confirm that Code-required essentially 100% surface examination was performed for both W-18 and W-1 welds.

Response: The surface examinations were performed to essentially 100%.

Part E:

Pressure retaining weld in carbon or low alloy steel piping, Examination Category C-F-2, Item No. C5.50.

Pursuant to 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the Code-required surface examination for the Tee-Pipe Weld in the Main steam "B" line. In order for the proposed alternative to be considered , please provide the following:

(1) Please provide sketches or photos with sufficient details so that the staff could determine

the interferences on accessing the Code-required surfaces and volumes for the subject weld.

Response: See attached Sketches and report 2001M016 (Attachment 17).

(2) Confirm that Code-required essentially 100% volumetric examination was performed for the weld W-9 (LSD2U).

Response: Yes, greater than 90% UT coverage was achieved.

(3) Provide details of the alternatives, including system pressure test requirements for the main steam line containing the weld, proposed and/or attempted by the licensee for the subject weld.

Response: VT2 (visual examinations) and functional required examinations are performed each period.

(4) The Examination Category C-F-2 and Item Number C5.50 refers to piping welds 3/8 inch nominal wall thickness for piping > NPS 4 and includes both circumferential weld (Item Number C5.51) and longitudinal weld (Item Number C5.52. Clarify the Code Item Number applicable to the tee-to-pipe weld in the main steam "B" line.

Response: The W-9 (LSD2U) is a weld with both long seam and circumferential welds. the designator (LSD2U) indicates this. We use Code Case N-524 and we give this type of weld the ASME item number C5.50, which indicates both weld types.

UT Pipe Weld Examination

Report No.: 2001U039
Page: 1 of 3

Site/Unit: NSP / PI1
Procedure: ISI-UT-16A
Summary No.: 300514
Procedure Revision/FC: 0 /
Examination For: ISI
Work Order No.: 0010296

Applicable Code: 1989
ISO Drawing No.: ISI-12C
Location: Containment
Description: RC PUMP - PIPE
System ID: RC
Component ID: W-1
Size/Length: 2.0" / 101"
Thickness/Diameter: 2.5" / 32"
Limitations: One sided examination due to pump to pipe configuration.
Start Time: 08:50
Finish Time: 11:00

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 125
Surface Temp.: 70 °F
Cal. Sheet No.: 2001CA085, 2001CA086, 2001CA087

Angle Used	0	45	45T	60	45 RL	
Scanning dB	N/A	56.5	66.9	66.1	75.5	

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

Comments:
None

Results: NAD ☑ IND ☐ GEO ☐
Percent Of Coverage Obtained > 90%: No
Reviewed Previous Data: Yes

Examiner Level II Potter, Michael E. /	Signature	Date 2/15/2001	Reviewer Halling, David A. /	Signature D. A. Halling	Date 2/16/01
Examiner Level II Coburn, Timothy M. /	Signature	Date 2/15/2001	Site Review Clay, Sean P. /	Signature	Date 2/16/01
Other Level N/A N/A /	Signature	Date	ANII Review Clow, Ron /	Signature	Date 2/15/01

ATTACHMENT #1
Page 1 of 4

Supplemental Report

Report No.: 2001U039

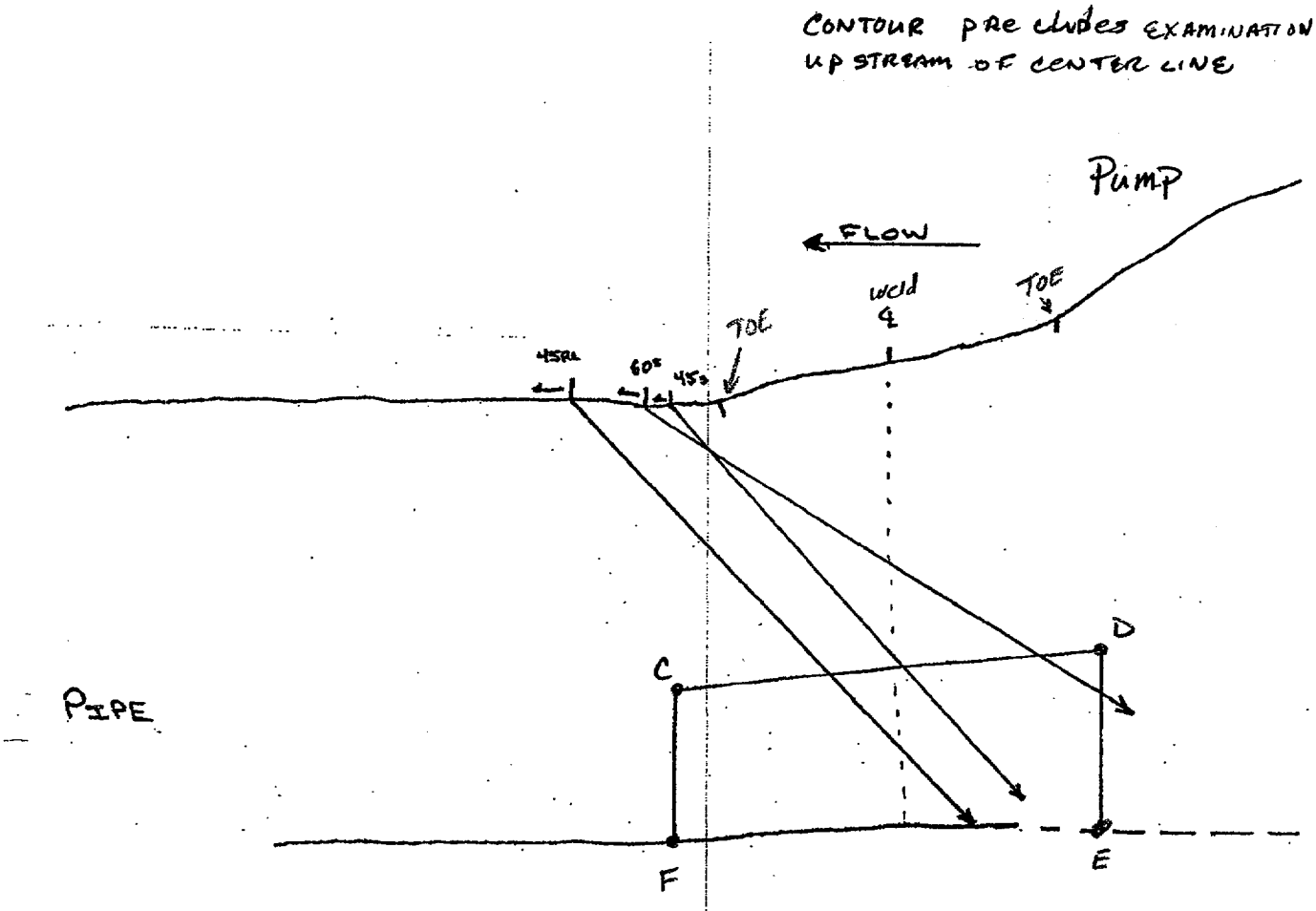
Page: 2 of 3

Summary No.: 300514

Examiner:	Potter, Michael E.	Level: II	Reviewer:	Halling, David A.	Date: 2/16/01
Examiner:	Coburn, Timothy M.	Level: II	Site Review:	Clay, Sean P.	Date: 2/16/01
Other:	N/A	Level: N/A	ANII Review:	Clow, Ron	Date: 2/19/01

Comments: None

Sketch or Photo: G:\IDDEAL50\PI1RFO2001\UT - Supplemental\2001U039-1.bmp



ATTACHMENT #1
Page 3 of 4

Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: NSP / PI1 | Procedure: ISI-UT-16A | Report No.: 2001U039
Summary No.: 300514 | Procedure Revision/FC: 0 / | Page: 3 of 3
Examination For: ISI | Work Order No.: 0010296

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	50.000	% volume of length / 100 =	50.000	% total for Scan 2
Scan 3	100.000	% Length X	100.000	% volume of length / 100 =	100.000	% total for Scan 3
Scan 4	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 4

Add totals and divide by # scans = ~~37.500~~ 50.00% **% total for 45 deg**

Other deg - 45 RL (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	100.000	% Length X	5.400	% volume of length / 100 =	5.400	% 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;

~~38.860~~ 50.0% **% Total for complete exam**

Site Field Supervisor: [signature] Lv III Date: 2/16/01

NMC

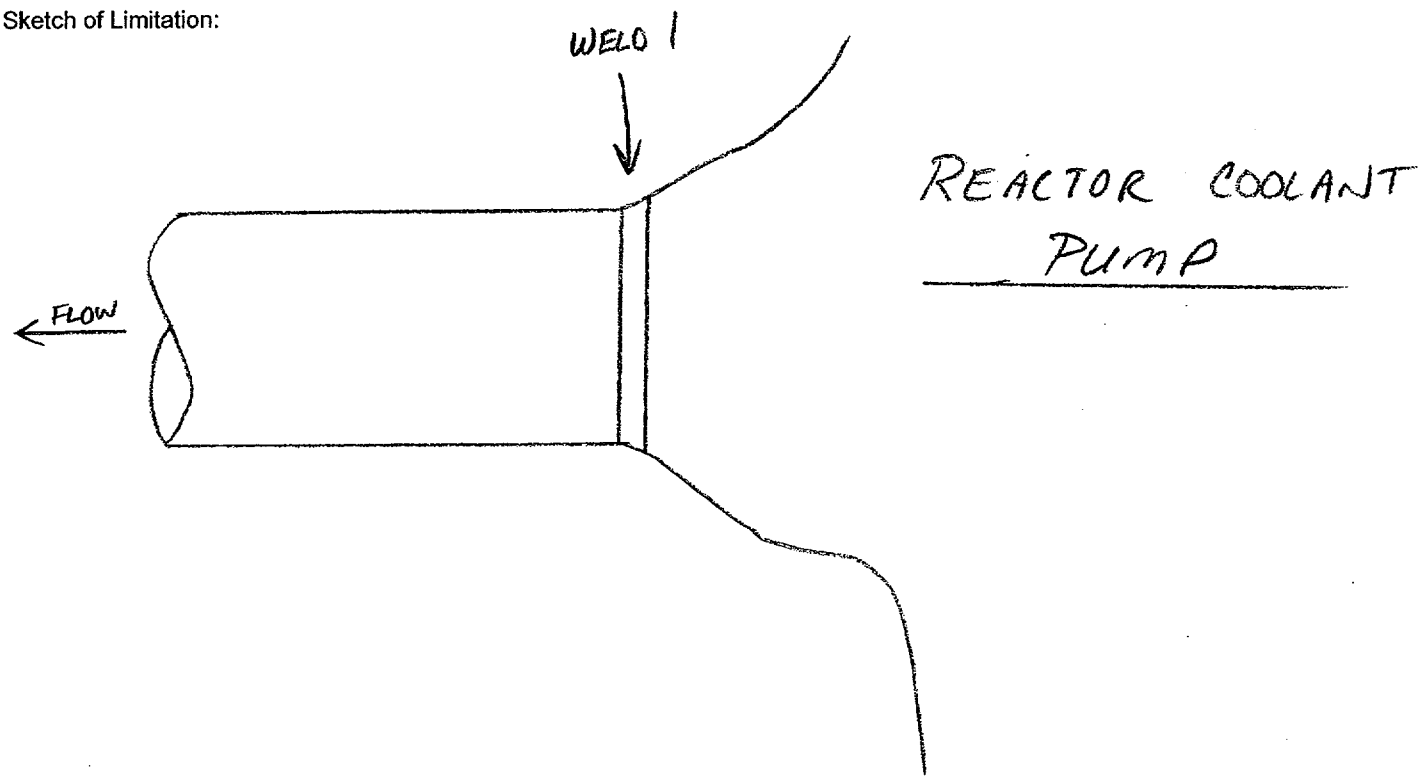
Limitation Record

Site/Unit:	NSP 1 PI 1	Procedure:	1SI-UT-16A	Outage No.:	PI1RF2001
Summary No.:	300514	Procedure Revision/FC:	0 1	Report No.:	2001 4039
Workscope:	1SI	Work Order No.:	0010296	Page:	____ of ____

Description of Limitation:

WELD JOINT AND COMPONENT GEOMETRICAL CONFIGURATION PROHIBIT SCANNING FROM THE UPSTREAM SIDE OF WELD 1.

Sketch of Limitation:



Limitations removal requirements:

NONE. NOTE: ALTHOUGH EXAM WAS PERFORMED FROM ONE SIDE ONLY, THE TECHNIQUES PROVIDE BY PROCEDURE 1SI-UT-16A REV 0 WERE USED FOR A BEST EFFORT EXAM FOR FLAWS ON THE FAR SIDE OF WELD.

Radiation field: 75 mR/hr

Examiner	Level /	Signature	Date	Reviewer	LV. III	Signature	Date
				JERRY P. WREN		Jerry P. Wren LV. III	4-8-02
Examiner	Level /	Signature	Date	Site Review	/	Signature	Date
Other	Level /	Signature	Date	ANII Review	/	Signature	Date

ATTACHMENT 2

UT Pipe Weld Examination

Report No.: 2001U004
Page: 1 of 5

Site/Unit: NSP / PI1
Procedure: ISI-UT-16A
Summary No.: 300130
Procedure Revision/FC: 0 /
Examination For: ISI
Work Order No.: 0010296

Applicable Code: 1989
ISO Drawing No.: ISI-2
Location: RCP 11 Vault
Description: VALVE - PIPE
System ID: RC
Component ID: W-6
Size/Length: 1.10" / 40.75"
Thickness/Diameter: 1.30" / 12"
Limitations: Single Side Access
Start Time: 09:50
Finish Time: 10:30

Examination Surface: Inside ☑ Outside ☐
Surface Condition: Ground Flush
Lo Location: Top Dead Center
Wo Location: Centerline of Weld
Couplant: Sonotrace 40
Batch No.: #98243
Temp. Tool Mfg.: Telatemp
Serial No.: NSP 125
Surface Temp.: 80 °F
Cal. Sheet No.: 2001CA010, 2001CA011, 2001CA012

Angle Used	0	45	45T	60	45 RL	45TRL
Scanning dB	N/A	43.3	55.7	73.6	63.0	59.0

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

Comments:

60 Degree RL examination performed at reference dB due to excessive noise level.

Results: NAD ☐ IND ☐ GEO ☑

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

Examiner Timm, Jeremy T.	Level II /	Signature	Date 1/25/2001	Reviewer Halling, David A. /	Signature	Date 1/30/01
Examiner N/A	Level N/A /	Signature	Date	Site Review Clay, Sean P. /	Signature	Date 1/30/01
Other N/A	Level N/A /	Signature	Date	ANII Review Clow, Ron /	Signature	Date 1/30/01

ATTACHMENT #2
Page 1 of 6

Ultrasonic Indication Report

Site/Unit: NSP / P11
Summary No.: 300130
Examination For: ISI

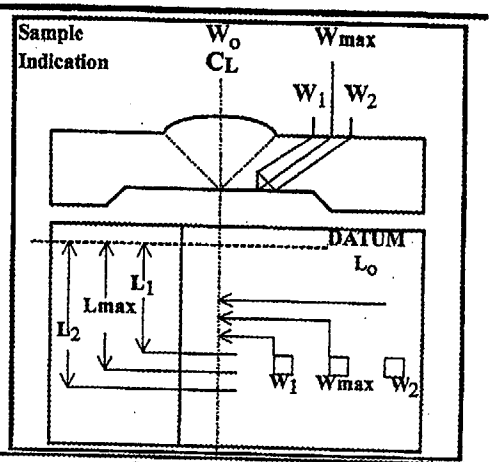
Procedure: ISI-UT-16A
Procedure Revision/FC: 0 /
Work Order No.: 0010296

Report No.: 2001U004
Page: 2 of 5

Search Unit Angle: 45 & 60 °
Wo Location: Centerline of Weld
Lo Location: Top Dead Center

(●) Piping Welds
( ) Ferritic Vessels ≥ 2"T
( ) Other _____

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



Scan #	Indication No.	% Of DAC	W Max W	W Max MP	Forward Of Max W1	Forward Of Max MP	Backward Of Max W2	Backward Of Max MP	L1 Of Max	L Max	L2 Of Max	RBR Amp.	Remarks
2	1	200%	1.25	1.80						.50			45 Degree - ID Root Geometry 360 Degree Intermittent
2	2	159%	1.70	2.20						.50			60 Degree - ID Root Geometry 360 Degree Intermittent

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.	/		1/25/2001	Halling, David A.	/		1/28/01
Examiner	Level N/A	Signature	Date	Site Review	Signature	Date
N/A	/			Clay, Sean P.	/		1/29/01
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A	/			Clow, Ron	/		1/30/01

Attachment #2
Page 2 of 6

Supplemental Report

Report No.: 2001U004

Page: 3 of 5

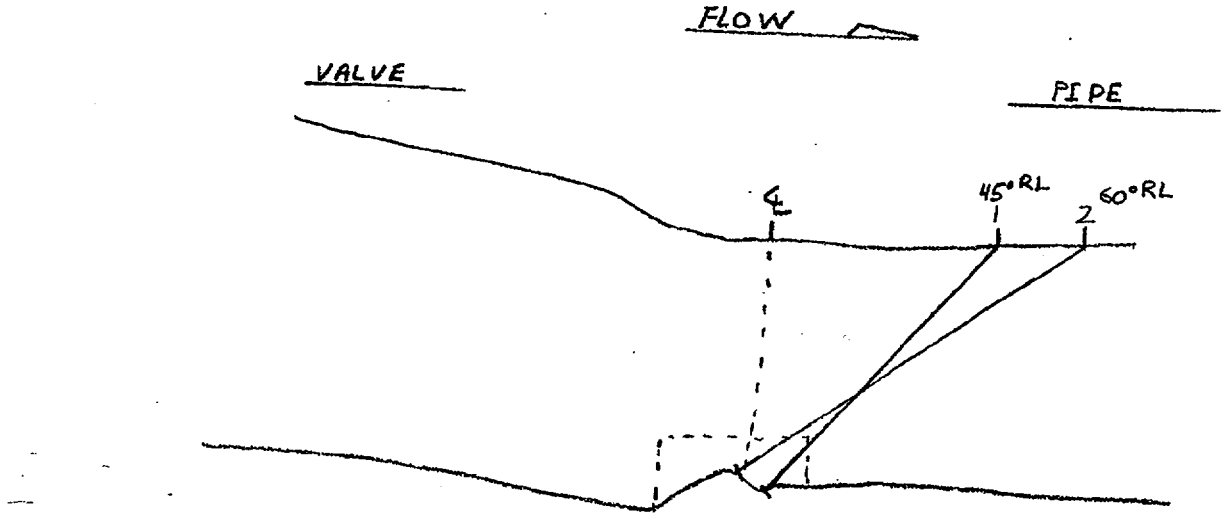
Summary No.: 300130

Examiner:	Timm, Jeremy T.	Level:	II	Reviewer:	Halling, David A.	Date:	1/28/01
Examiner:	N/A	Level:	N/A	Site Review:	Clay, Sean P.	Date:	1/29/01
Other:	N/A	Level:	N/A	ANII Review:	Clow, Ron	Date:	1/30/01

Comments: **Indications 1 and 2 - ID Root Geometry 360 Degree Intermittent.**
ID of pipe verified with 0 degree transducer.

Sketch or Photo: G:\IDDEAL50\PI1RFO2001\UT - Supplemental\2001U004-1.bmp

CONTOUR OF VALVE SURFACE
PRECLUDES EXAMINATION COVERAGE
UPSTREAM OF WELD ZONE.



Attachment #2
Page 4 of 6

Limitation Record

Report No.: 2001U004

Site/Unit: NSP / PI1 | Procedure: ISI-UT-16A | Page: 4 of 5

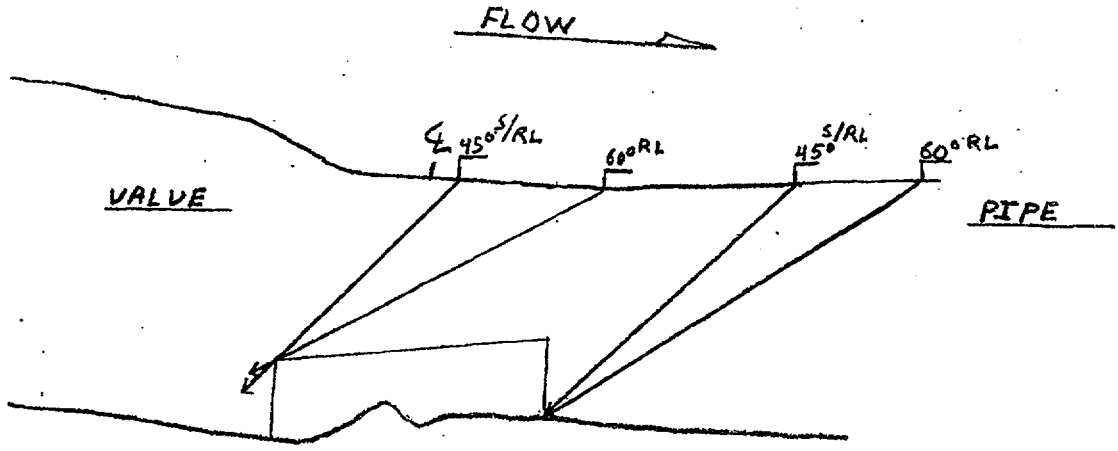
Summary No.: 300130 | Procedure Revision/FC: 0 /

Examination For: ISI | Work Order No.: 0010296

Description of Limitation:

Single side access due to valve to pipe configuration.

Sketch of Limitation: G:\IDDEAL50\PI1RFO2001\UT - Supplemental\2001U004-2.bmp



Limitations removal requirements:

60 mR/hr

Radiation field:

Examiner	Level II		Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.	/			**1/25/2001**	**Halling, David A.** /		1/28/01
Examiner	Level N/A		Signature	Date	Site Review	Signature	Date
N/A	/				**Clay, Sean P.** /		1/29/01
Other	Level N/A		Signature	Date	ANII Review	Signature	Date
N/A	/				**Clow, Ron** /		1/30/01

Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	NSP / PI1	Procedure:	ISI-UT-16A	Report No.:	2001U004
Summary No.:	300130	Procedure Revision/FC:	0 /	Page:	5 of 5
Examination For:	ISI	Work Order No.:	0010296		

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	100.000	% volume of length / 100 =	100.000	% 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	100.000	% Length X	100.000	% volume of length / 100 =	100.000	% 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;

50.00
75.000 **% Total for complete exam**

01/29/01

Site Field Supervisor: [signature] LvIII Date: 01/29/01

NMC

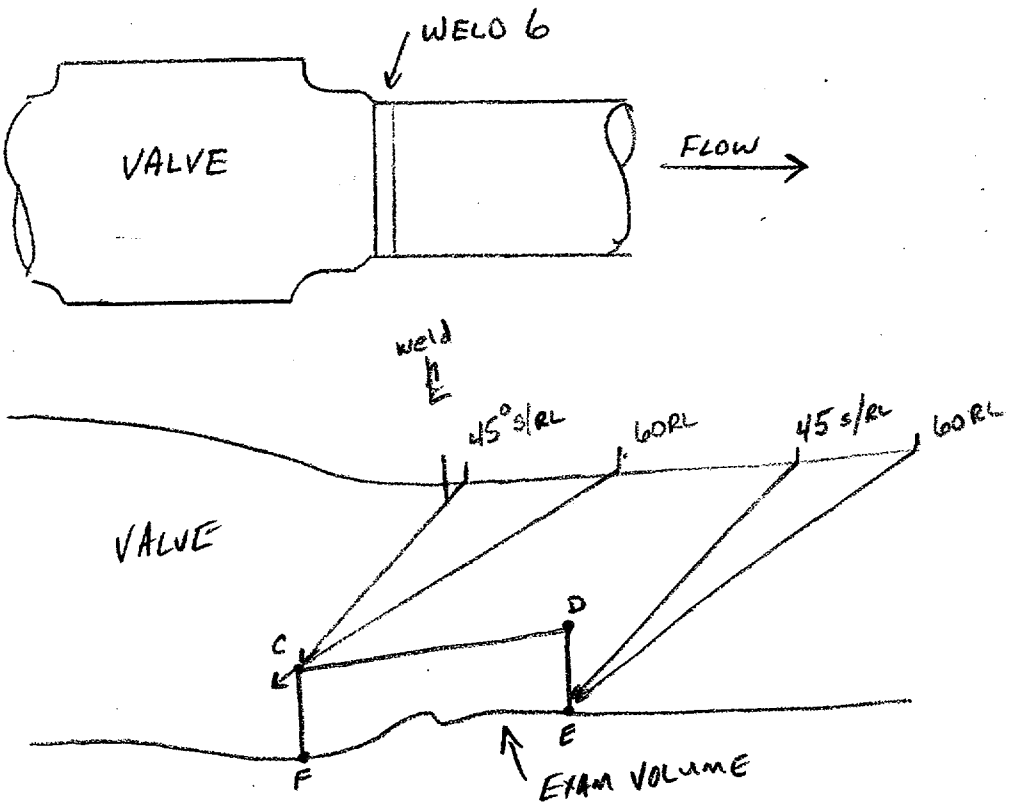
Limitation Record

Site/Unit:	NSP / PI 1	Procedure:	1SI-UT-16A	Outage No.:	PI / RF 2001
Summary No.:	300130	Procedure Revision/FC:	0 /	Report No.:	2001U004
Workscope:	1SI	Work Order No.:	0010296	Page:	____ of ____

Description of Limitation:

WELD JOINT AND COMPONENT GEOMETRICAL CONFIGURATION PROHIBIT SCANNING FROM THE UPSTREAM SIDE OF WELD 6.

Sketch of Limitation:



Limitations removal requirements:

NONE. NOTE: ALTHOUGH EXAM WAS PERFORMED FROM ONE SIDE ONLY THE TECHNIQUES PROVIDED BY PROCEDURE 1SI-UT-16A Rev.0 WERE USED FOR A BEST EFFORT EXAM FOR FLAWS ON THE FAR SIDE OF WELD

Radiation field: 60 mR/hr.

Examiner	Level /	Signature	Date	Reviewer	Lv. III	Signature	Date
				JERRY P. WREN	/	Jerry P. Wren	4-8-02
Examiner	Level /	Signature	Date	Site Review	/	Signature	Date
Other	Level /	Signature	Date	ANII Review	/	Signature	Date

UT Vessel Examination

Report No.: 2001U010
Page: 1 of 5

Site/Unit: NSP / PI1
Summary No.: 301070
Examination For: ISI
Procedure: ISI-UT-3
Procedure Revision/FC: 9 /
Work Order No.: 0010296

Applicable Code: 1989
ISO Drawing No.: ISI-43B
Location: Containment
Description: SHELL - TRANSITION
System ID: SG
Component ID: W-E
Size/Length: 527"
Thickness/Diameter: 3.15"
Limitations: Restraint Ring
Start Time: 14:05
Finish Time: 18:20

Examination Surface: Inside ☐ Outside ☑
Surface Condition: Buffed
Lo Location: Feedwater Nozzle
Wo Location: Centerline of Weld
Couplant: Sonotrace 40
Batch No.: #00143
Temp. Tool Mfg.: Telatemp
Serial No.: NSP 182
Surface Temp.: 80 °F
Cal. Sheet No.: 2001CA026, 2001CA027, 2001CA028

Angle Used	0	45	45T	60	60T	
Scanning dB	42.2	43.6	43.6	58.0	58.0	

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

Comments:

Restraint ring prohibited scanning from downstream side of weld.

Results: NAD ☐ IND ☐ GEO ☑

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

Examiner Level II Griebel, David M. /	Signature	Date 1/29/2001	Reviewer Halling, David A. /	Signature	Date 2/3/01
Examiner Level N/A N/A /	Signature	Date	Site Review Clay, Sean P. /	Signature	Date 2/3/01
Other Level N/A N/A /	Signature	Date	ANII Review Clow, Ron /	Signature	Date 2/5/01

ATTACHMENT #3
Page 1 of 6

Ultrasonic Indication Report

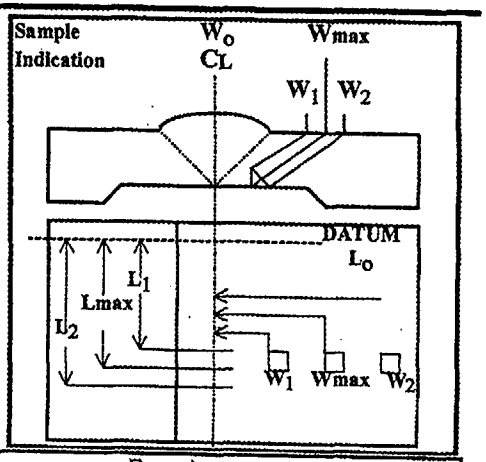
Site/Unit: NSP / PI1
Summary No.: 301070
Examination For: ISI

Procedure: ISI-UT-3
Procedure Revision/FC: 9 /
Work Order No.: 0010296

Report No.: 2001U010

Search Unit Angle: 45 / 60 °
Wo Location: Weld Centerline
Lo Location: Feedwater Nozzle

- ○ Piping Welds
- ◉ Ferritic Vessels ≥ 2"T
- ○ Other _____



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

Scan #	Indication No.	% Of DAC	W Max W	W Max MP	Forward Of Max W1	Forward Of Max MP	Backward Of Max W2	Backward Of Max MP	L1 Of Max	L Max	L2 Of Max	RBR Amp.	Remarks
3	1	141	CL	4.2						14.7			45 Degree - ID Geometry
4	2	159	CL	4.4						14.5			45 Degree - ID Geometry
3	3	80	CL	7.4						15.0			62 Degree - ID Geometry
4	4	100	CL	7.3						14.1			62 Degree - ID Geometry

Examiner	Level II	Signature	Date	Reviewer	Signature / Date
Griebel, David M.	/		1/29/2001	Halling, David A.	/ 2/3/01
Examiner	Level N/A	Signature	Date	Site Review	Signature / Date
N/A	/			Clay, Sean P.	/ 2/3/01
Other	Level N/A	Signature	Date	ANII Review	Signature / Date
N/A	/			Clow, Ron	/ 2/5/01

Attachment #3
Page 2 of 6

Determination of Percent Coverage for UT Examinations - Vessels

Report No.: 2001U010

Site/Unit: NSP / PI1 Procedure: ISI-UT-3 Page: 3 of 5

Summary No.: 301070 Procedure Revision/FC: 9 /

Examination For: ISI Work Order No.: 0010296

0 deg Planar

Scan 100.000 % Length X 91.800 % volume of length / 100 = 91.800 % total for 0 deg

45 deg

Scan 1 100.000 % Length X 93.500 % volume of length / 100 = 93.500 % total for Scan 1

Scan 2 100.000 % Length X 2.650 % volume of length / 100 = 2.650 % total for Scan 2

Scan 3 100.000 % Length X 91.800 % volume of length / 100 = 91.800 % total for Scan 3

Scan 4 100.000 % Length X 91.800 % volume of length / 100 = 91.800 % total for Scan 4

Add totals and divide by # scans = 69.938 **% total for 45 deg**

Other deg 62

Scan 1 100.000 % Length X 93.500 % volume of length / 100 = 93.500 % total for Scan 1

Scan 2 100.000 % Length X 6.450 % volume of length / 100 = 6.450 % total for Scan 2

Scan 3 100.000 % Length X 91.800 % volume of length / 100 = 91.800 % total for Scan 3

Scan 4 100.000 % Length X 91.800 % volume of length / 100 = 91.800 % total for Scan 4

Add totals and divide by # scans = 70.887 **% total for** 62 **deg**

Percent complete coverage

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

77.542 **% Total for complete exam**

Note:

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

Site Field Supervisor: [signature] LV III Date: 2/03/01

Attachment #3
Page 4 of 6

Supplemental Report

Report No.: 2001U010

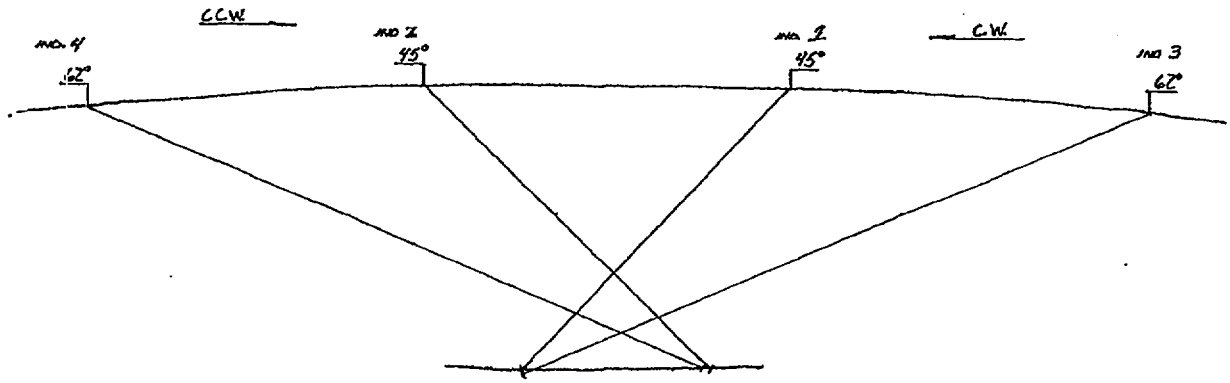
Page: 4 of 5

Summary No.: 301070

Examiner:	Griebel, David M.	Level:	II	Reviewer:	Halling, David A.	Date: 2/3/01
Examiner:	N/A	Level:	N/A	Site Review:	Clay, Sean P.	Date: 2/3/01
Other:	N/A	Level:	N/A	ANII Review:	Clow, Ron	Date: 2/5/01

Comments: **Indication Plot Sheet - Scale 2:1**

Sketch or Photo: G:\IDDEAL50\PI1RFO2001\UT - Supplemental\2001U010-1.bmp



I.D. GEOMETRY INDICATIVE OF WELDED PAD

W-E WELD

Supplemental Report

Report No.: 2001U010

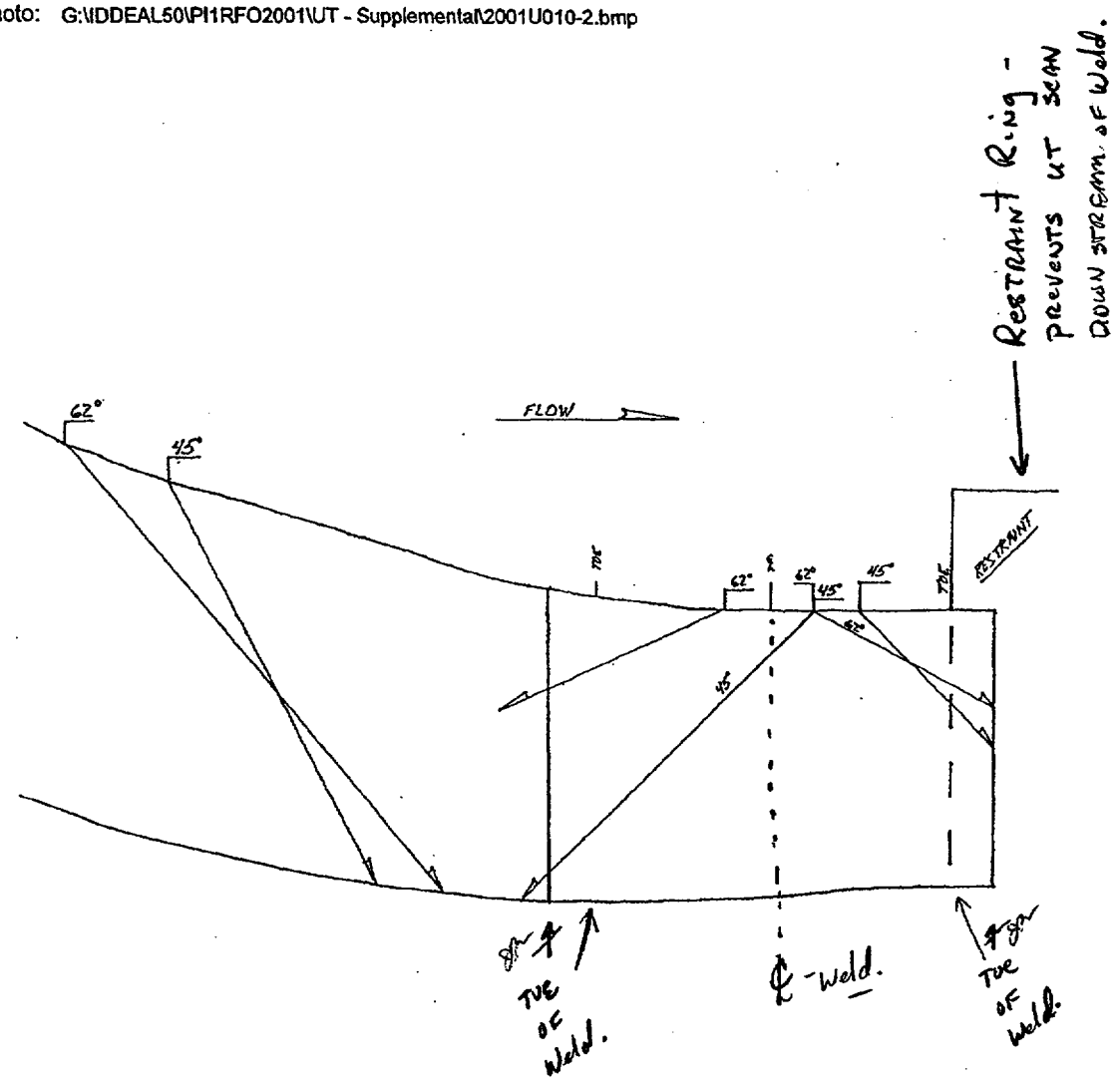
Page: 5 of 5

Summary No.: 301070

Examiner:	Griebel, David M.	Level: II	Reviewer:	Halling, David A.	Date: 2/3/01
Examiner:	N/A	Level: N/A	Site Review:	Clay, Sean P.	Date: 2/3/01
Other:	N/A	Level: N/A	ANII Review:	Clow, Ron	Date: 2/5/01

Comments: **Examination Coverage Plot - Scale 2:1**

Sketch or Photo: G:\IDDEAL50\PI1RFO2001\UT - Supplemental\2001U010-2.bmp



ATTACHMENT #3
Page 6 of 6

NMC

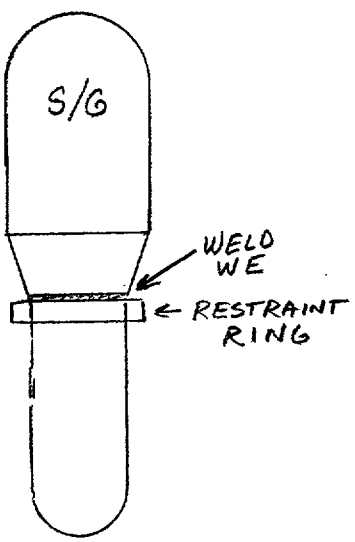
Limitation Record

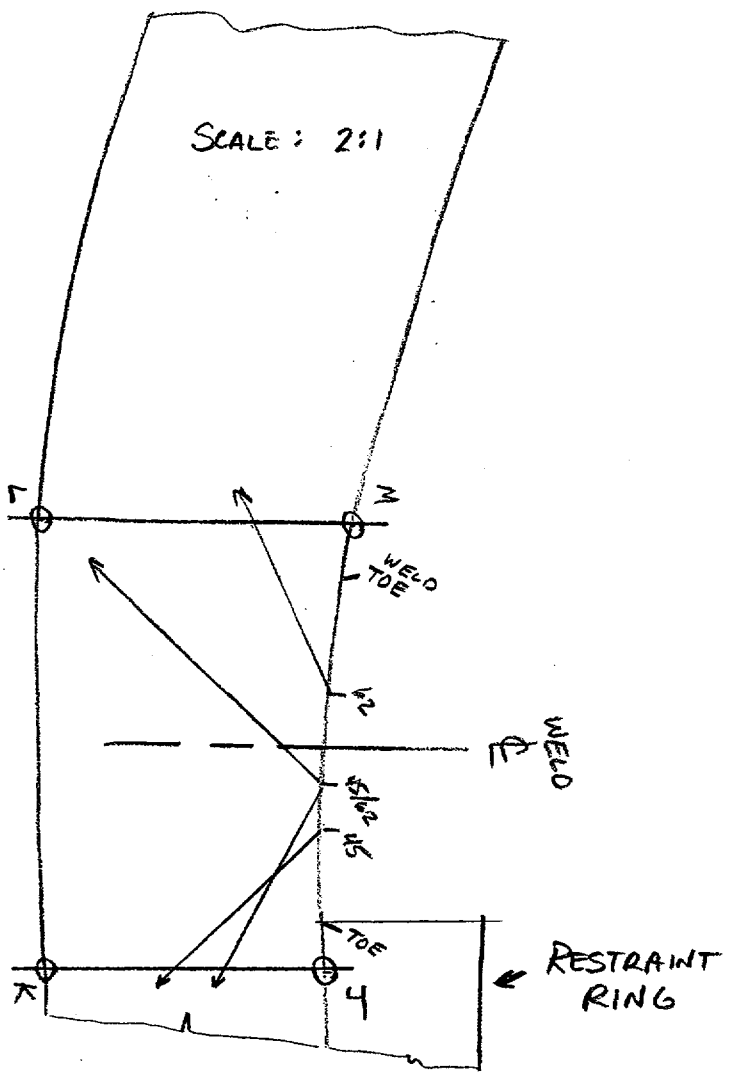
Site/Unit:	NSPI PI 1	Procedure:	1SI-UT-3	Outage No.:	PI1RF2001
Summary No.:	301070	Procedure Revision/FC:	9 / 1	Report No.:	2001U010
Workscope:	1SI	Work Order No.:	0010296	Page:	___ of ___

Description of Limitation:

RESTRAINT RING LIMITS SCANNING IN ALL DIRECTIONS & ANGLES.

Sketch of Limitation:





REQUIRED VOLUME BETWEEN J, K, L M

Limitations removal requirements:

RESTRAINT RING WOULD BE IMPRACTICAL TO REMOVE.

Radiation field: 20 mR/HR

Examiner	Level	Signature	Date	Reviewer	Signature	Date
	/			JERRY P. WREEN / LV. III		4-8-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
	/			/		
Other	Level	Signature	Date	ANII Review	Signature	Date
	/			/		

UT Pipe Weld Examination

Report No.: 2001U029
Page: 1 of 6

Site/Unit: NSP / PI1
Summary No.: 303054
Examination For: ISI
Procedure: ISI-UT-16
Procedure Revision/FC: 13 /
Work Order No.: 0010296

Applicable Code: 1989
ISO Drawing No.: ISI-93B
Location: RHR 12
Description: SHELL - FLANGE
System ID: RH
Component ID: W-2
Size/Length: .85"/75.40"
Thickness/Diameter: 0.50"/24"
Limitations: See attached sheets.
Start Time: 13:00
Finish Time: 15:45

Examination Surface: Inside ☐ Outside ☑
Surface Condition: As Welded
Lo Location: Centerline of Outlet
Wo Location: Centerline of Weld
Couplant: Sonotrace 40
Batch No.: #00143
Temp. Tool Mfg.: Telatemp
Serial No.: NSP 162
Surface Temp.: 85 °F
Cal. Sheet No.: 2001CA062, 2001CA063, 2001CA064

Angle Used	0	45	45T	60	70	70RL
Scanning dB	N/A	51.0	57.0	N/A	56.0	67.0

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

Comments:
See attached sheets for indication and coverage plots.

Results: NAD ☐ IND ☐ GEO ☑
Percent Of Coverage Obtained > 90%: No
Reviewed Previous Data: Yes

Examiner Level II Johnson, Jeffery M. /	Signature	Date 2/6/2001	Reviewer Auer, Robert G. /	Signature	Date 2-7-01
Examiner Level II Halling, David A. /	Signature	Date 2/6/2001	Site Review Clay, Sean P. /	Signature	Date 2/17/01
Other Level N/A N/A /	Signature	Date	ANII Review Clow, Ron /	Signature	Date 2/19/01

ATTACHMENT # 4
Page 1 of 6

Ultrasonic Indication Report

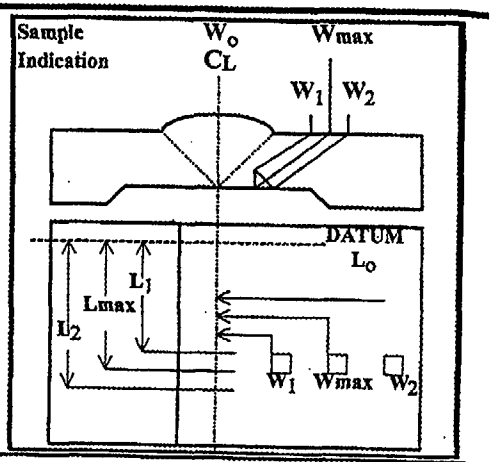
Report No.: 2001U029
Page: 2 of 6

Site/Unit: NSP / PI1
Summary No.: 303054
Examination For: ISI

Procedure: ISI-UT-16
Procedure Revision/FC: 13 /
Work Order No.: 0010296

Search Unit Angle: 45 °
Wo Location: Weld Centerline
Lo Location: Centerline of Outlet

○ Piping Welds
○ Ferritic Vessels ≥ 2"T
◉ Other Aust Vessel



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

Scan #	Indication No.	% Of DAC	W Max W	W Max MP	Forward Of Max W1	Forward Of Max MP	Backward Of Max W2	Backward Of Max MP	L1 Of Max	L Max	L2 Of Max	RBR Amp.	Remarks
3	1	50%	-.5	.805						18.75			ID Attached Divider Plate
4	2	50%	-.5	.805						19.25			ID Attached Divider Plate
3	3	50%	-.5	.805						55.75			ID Attached Divider Plate
4	4	50%	-.5	.805						56.25			ID Attached Divider Plate

Examiner Level II Johnson, Jeffery M. /	Signature	Date 2/6/2001	Reviewer Auer, Robert G. /	Signature	Date 2.17.01
Examiner Level II Halling, David A. /	Signature	Date 2/6/2001	Site Review Clay, Sean P. /	Signature	Date 2/17/01
Other Level N/A N/A /	Signature	Date	ANII Review Clow, Ron /	Signature	Date 2/16/01

Attachment #4
Page 2 of 6

Supplemental Report

Report No.: 2001U029

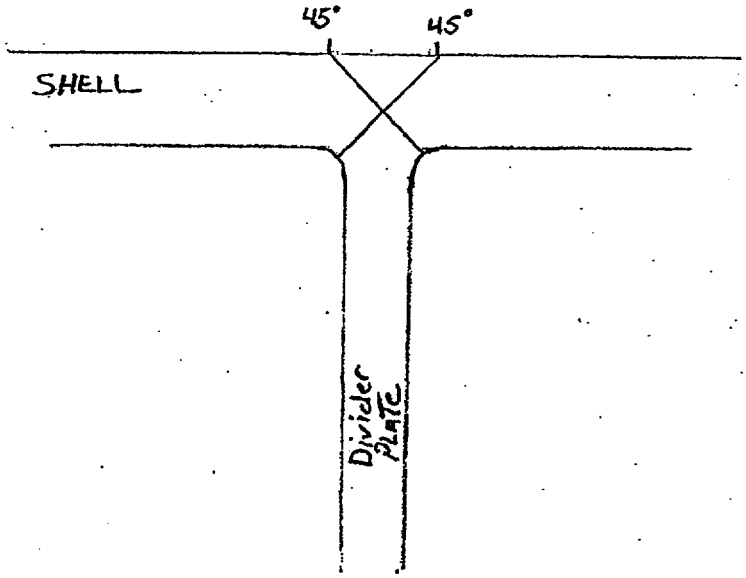
Page: 3 of 6

Summary No.: 303054

Examiner:	Johnson, Jeffery M.	Level: II	Reviewer:	Auer, Robert G.	Date: 2-17-01
Examiner:	Halling, David A.	Level: II	Site Review:	Clay, Sean P.	Date: 2/17/01
Other:	N/A	Level: N/A	ANII Review:	Clow, Ron	Date: 2/19/01

Comments: **45 Degree ID Geometry Indications of Divider Plate**

Sketch or Photo: G:\IDDEAL50\PI1RFO2001\UT - Supplemental\2001U029-1.bmp



Supplemental Report

Report No.: 2001U029

Page: 4 of 6

Summary No.: 303054

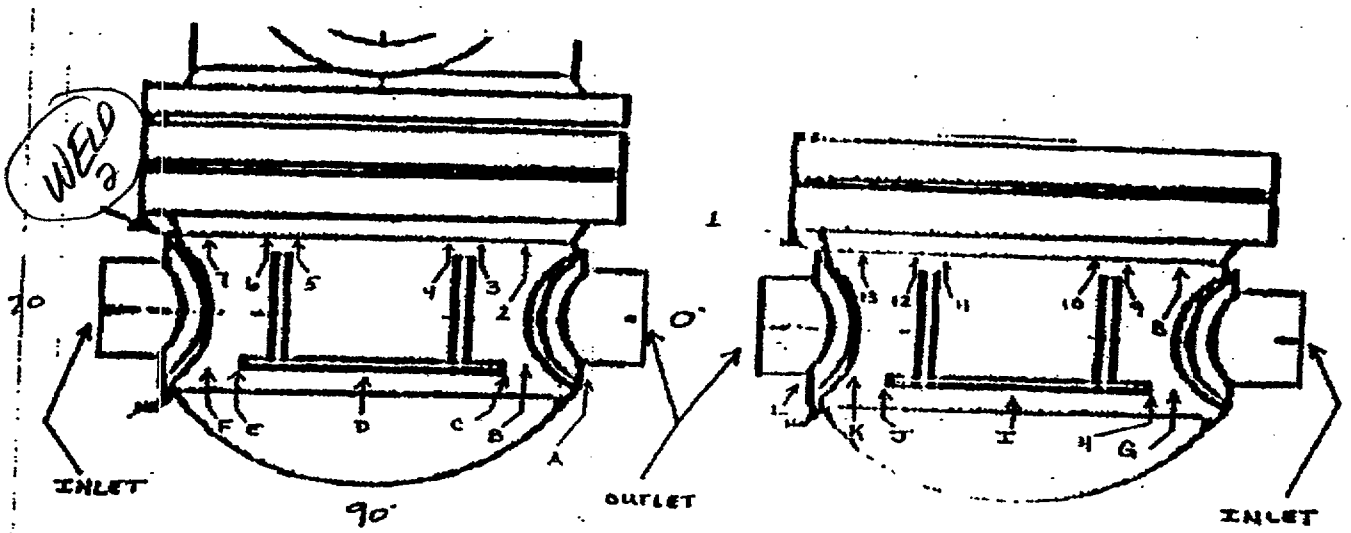
Examiner: Johnson, Jeffery M. Level: II Reviewer: Auer, Robert G. Date: 2-17-01

Examiner: Halling, David A. Level: II Site Review: Clay, Sean P. Date: 2/17/01

Other: N/A Level: N/A ANII Review: Clow, Ron Date: 2/19/01

Comments: None

Sketch or Photo: G:\DDEAL50\PI1RFO2001\UT - Supplemental\2001U029-3.bmp



1 = 0" @ TDC
2 = 0"-5" LIMITED
3 = 12½"
4 = 14½" LIMITED
5 = 24"
6 = 26" LIMITED
7 = 34"
8 = 52½" LIMITED
9 = 60½"
10 = 62" LIMITED
11 = 72"
12 = 74" LIMITED
13 = 81½"
14 = 86"

A = 0" @ 180° FROM TDC LIMITED
B = 5"
C = 9"
D = LIMITED TO 1" FROM WELD TOE (½ NODE)
E = 30"
F = 34"
G = 44" DN STRM. SIDE ONLY EXAM
H = 47"
I = LIMITED TO 1" FROM WELD TOE (½ NODE)
J = 69"
K = 73"
L = BACK TO 0"

DOWN STREAM LIMITATIONS

UP STREAM LIMITATIONS

Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	NSP / PI1	Procedure:	ISI-UT-16	Report No.:	2001U029
Summary No.:	303054	Procedure Revision/FC:	13 /	Page:	5 of 6
Examination For:	ISI	Work Order No.:	0010296		

45 deg

Scan 1	63.000	% Length X	25.620	% volume of length / 100 =	16.141	% total for Scan 1
Scan 2	63.000	% Length X	33.810	% volume of length / 100 =	21.300	% total for Scan 2
Scan 3	63.000	% Length X	100.000	% volume of length / 100 =	63.000	% total for Scan 3
Scan 4	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 4

Add totals and divide by # scans = 25.110 **% 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	63.000	% Length X	13.620	% volume of length / 100 =	8.581	% 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;

27.255 **% Total for complete exam**

Site Field Supervisor: [signature] Lv III Date: 2/17/01

Attachment #4
Page 6 of 6

Limitation Record

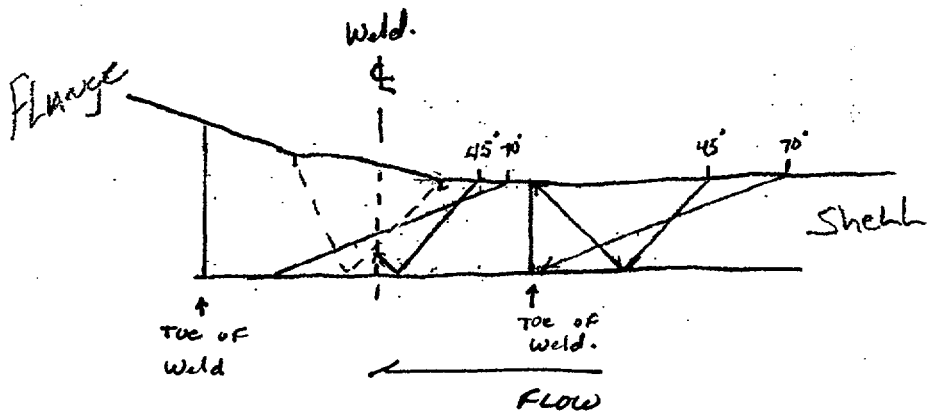
Report No.: 2001U029

Site/Unit:	NSP / PI1	Procedure:	ISI-UT-16	Page:	6 of 6
Summary No.:	303054	Procedure Revision/FC:	13 /		
Examination For:	ISI	Work Order No.:	0010296		

Description of Limitation:

Coverage Plot

Sketch of Limitation: G:\IDDEAL50\PI1RFO2001\UT - Supplemental\2001U029-2.bmp



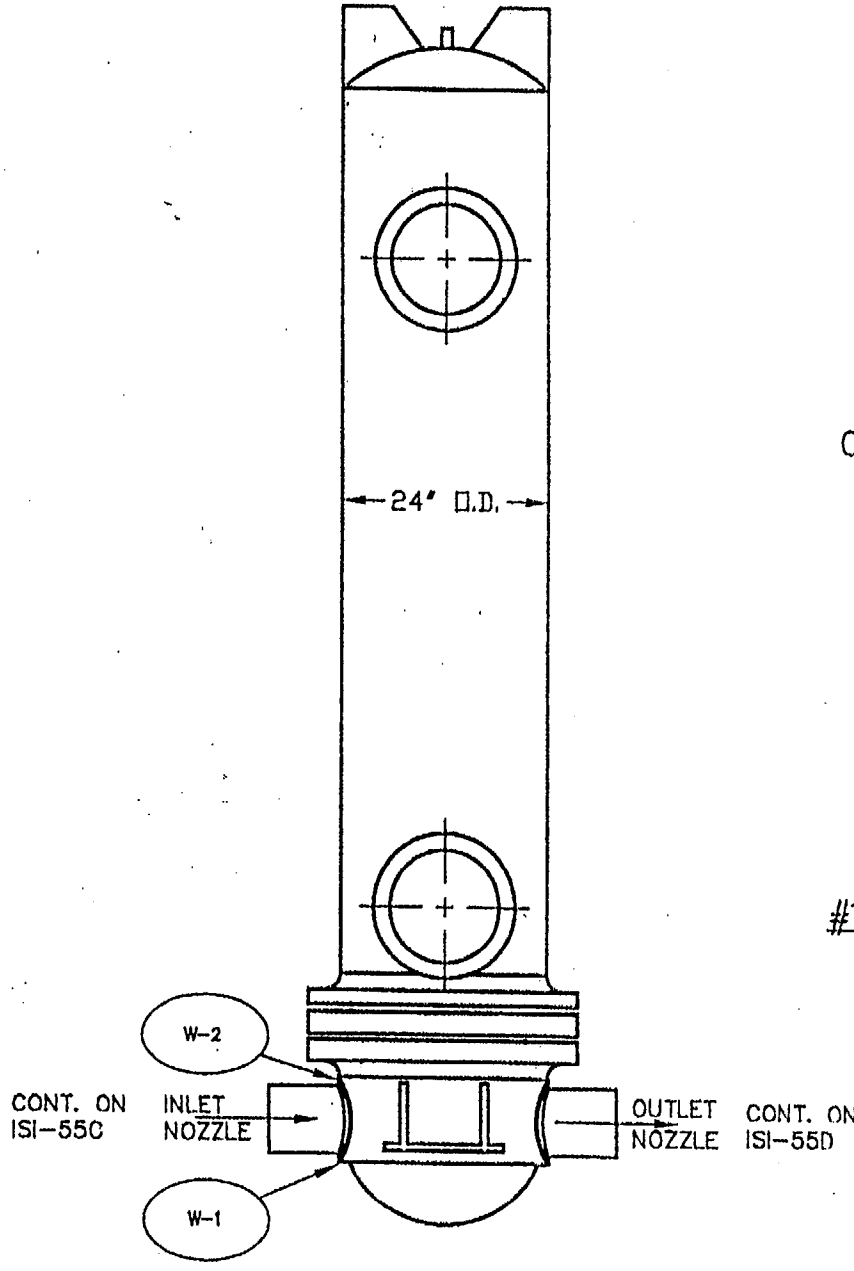
FLANGE SURFACE CONTOUR PREVENT. UT SCAN OF WELD VOLUME. DOWNSTREAM.

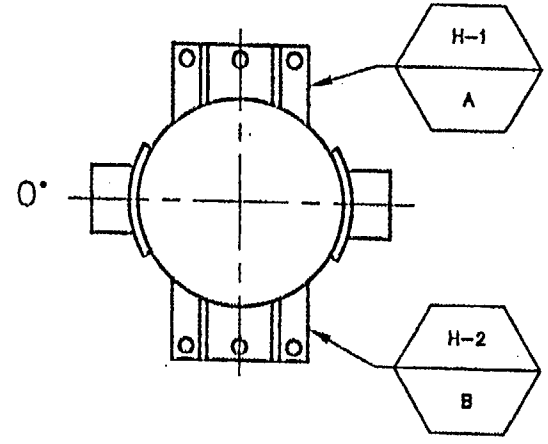
Limitations removal requirements:

None

Radiation field: **<1 mR/hr**

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Johnson, Jeffery M.	/		2/6/2001	Auer, Robert G.	/		2-17-01
Examiner	Level II	Signature	Date	Site Review		Signature	Date
Halling, David A.	/		2/6/2001	Clay, Sean P.	/		2/17/01
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Clow, Ron	/		2/19/01





LOOKING DOWN

#12 RHR HEAT EXCHANGER

ISI = HANGER NO.

ISI = WELD NO.

REF: XH-1-215

FILE NO: 1193BR02

NSP (M&SP)-PI 1 ISI

DWN: TJH CHKD: APPD:

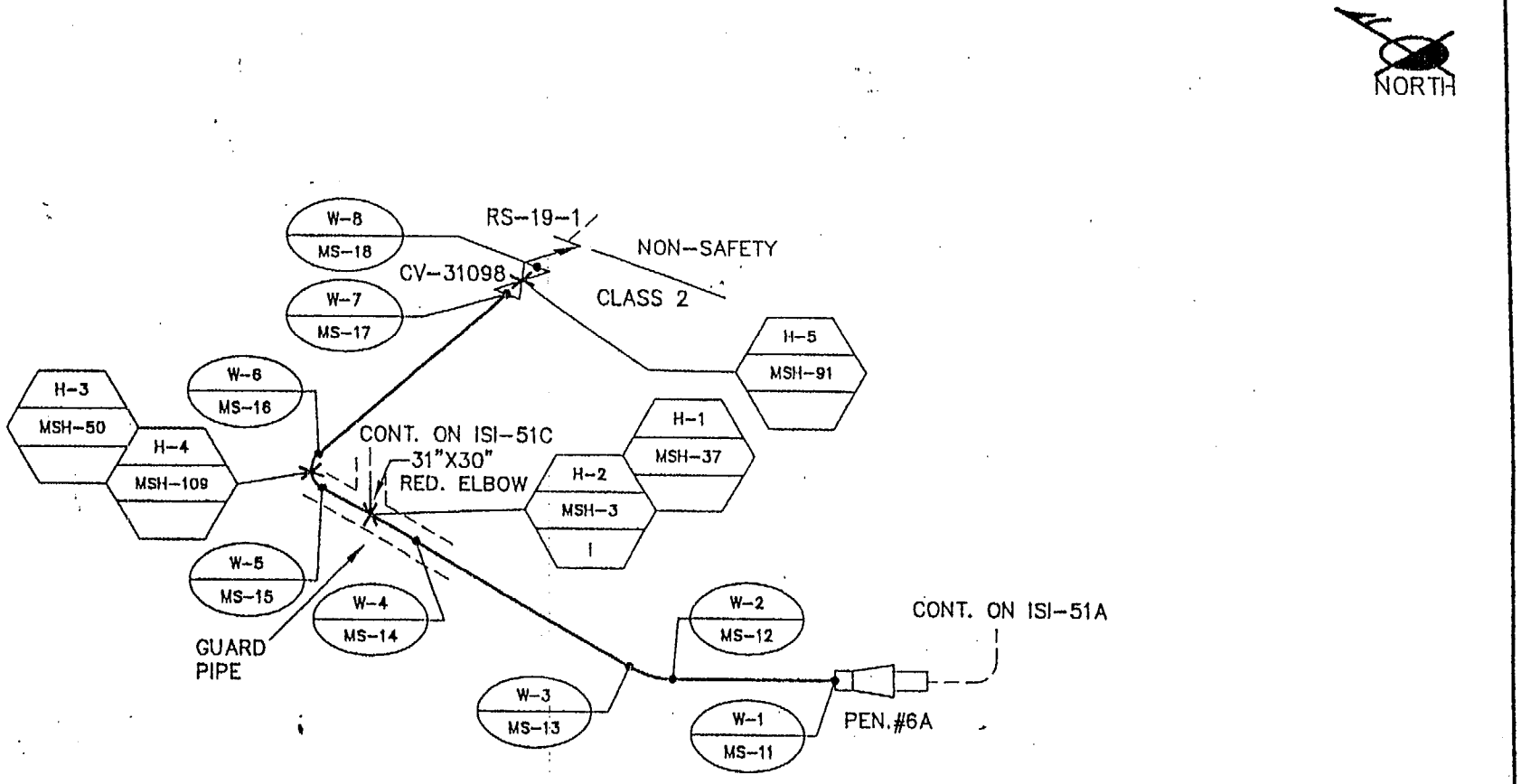
SYSTEM: RESIDUAL HEAT REMOVAL

LINE: N/A

DWG: ISI-93B REV: 02

ISI-93B

ATTACHMENT 5 Page 1 of 1



MAIN STEAM LOOP 'A'

REF: XH-106-242

FILE NO: 1151BR03

NSP (M&SP)- PI 1 ISI

DWN: CADWorks CHKD: APPD:

SYSTEM: MAIN STEAM

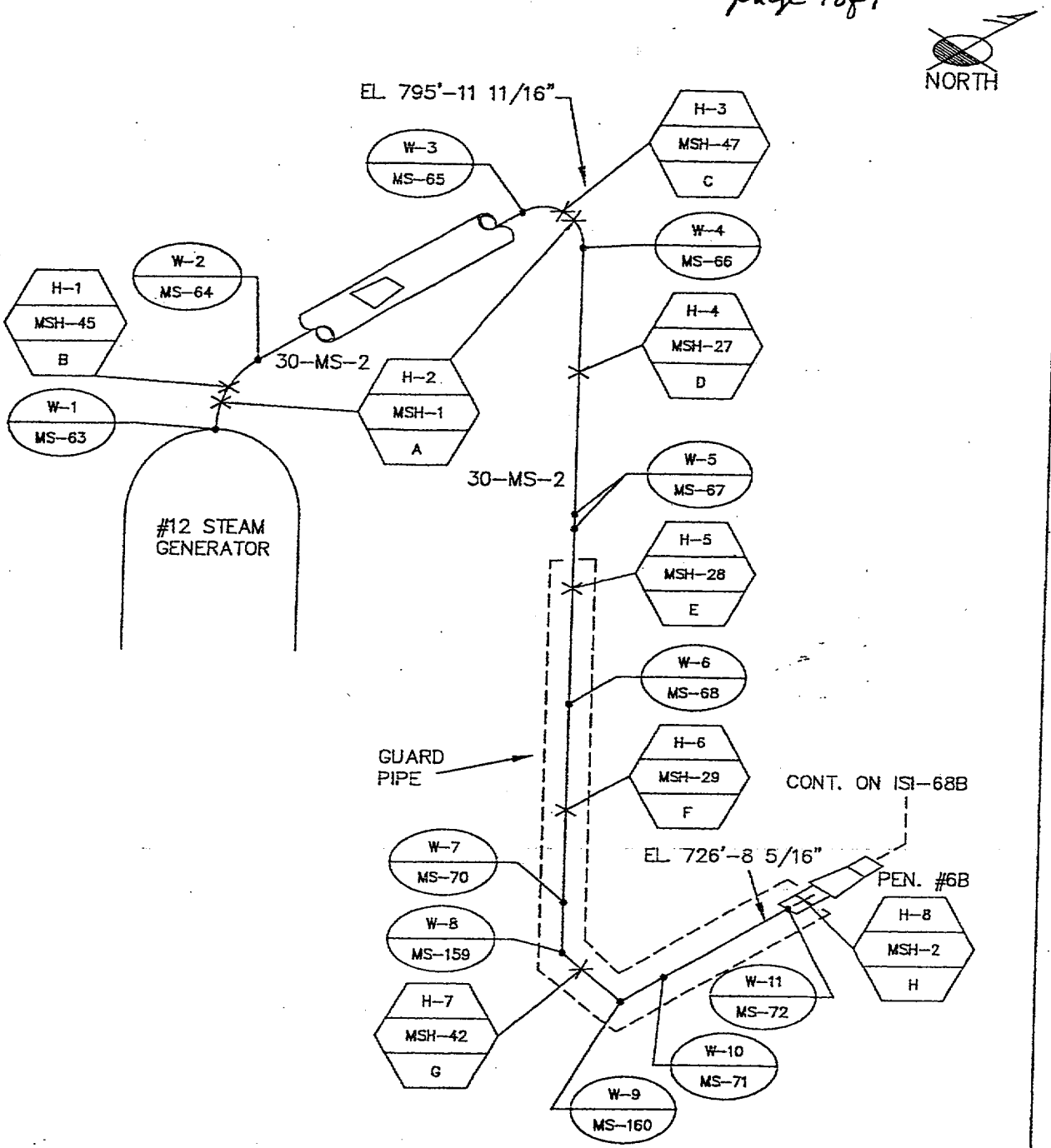
LINE: 31-MS-1

DWG: ISI-51B REV: 03

ISI-51B

Attachment 6 Page 1 of 1

Attachment 7
page 1 of 1



MAIN STEAM LOOP 'B'

ISI / NAVCO / WEST = HANGER NO.

ISI / WEST = WELD NO.

REF: XH-106-241

FILE NO:

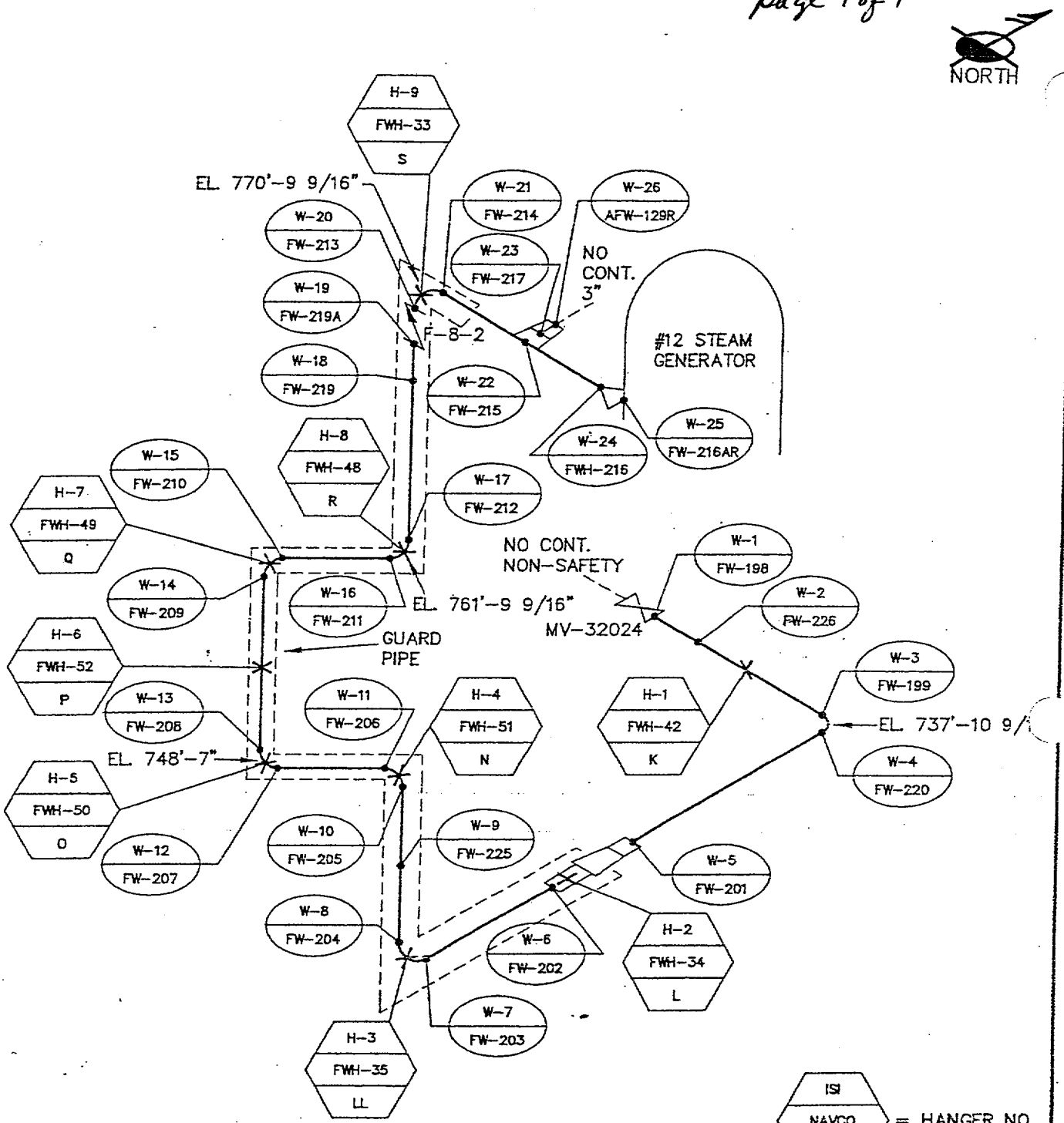
NSP (M&SP)- PI 1 ISI

DWN: JRM CHKD: APPD:

SYSTEM: MAIN STEAM

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

DWG: ISI-68-A REV: 04



FEEDWATER LOOP 'B'

REF: XH-106-130	FILE NO: 11169R01
NSP (M&SP)- Pl. 1	ISI
DWN: CADWorks CHKD:	APPD:
SYSTEM: FEEDWATER	
LINE: 16-FW-16	
DWG: ISI-69	REV: 01

ATTACHMENT #9
Page 1 of 4

Magnetic Particle Examination

Site/Unit: NSP / PI1 | Procedure: ISI-MT-1 | Report No.: 2001M034
Summary No.: 301258 | Procedure Revision/FC: 11 / | Page: 1 of 3
Examination For: ISI | Work Order No.: 0010296

Applicable Code: 1989 | ISO Drawing No.: ISI-52 | Location: Containment
Description: BEAR'G BRAK ASSY
System ID: FW
Component ID: H-7 | Size/Length: 16"
Limitations: See Comments

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
Gray Card (if used): Not Used | Cal Block Serial No.: N/A | Surface Condition: As Welded
Lo Location: Centerline of Downstream Elbow | Field Orientation: Longitudinal

Magnetic Particle Material

Brand: Magnaflux | Wet ☐ | Mixed: Yes ☐ | Applied By: Dusting ☑
Type: No. 1 Gray | Dry ☑ | No ☑ | Spraying ☐
Batch No.: 84A047 | Fluorescent ☐ | With: | Flooding ☐
Equipment: Magnaflux | Serial No.: LMT YK-11
Head Shot ☐ | Amperes | Fixed Spacing ☐ | AC ☑ DC ☐
Adj. Spacing ☑ 2 - 6 inches | Encircling Coils ☐ N/A Turns
Prods. Spacing ☐ inches | Current (machine setting) ☐ N/A Amperes

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

Comments:
See attached limitation sheets.

Results: NAD ☑ IND ☐
Percent Of Coverage Obtained > 90%: No | Reviewed Previous Data: No

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Auer, Robert G.	II /		2/19/2001	Halling, David A. /		2/20/01
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A /			Wren, Jerry P. /		2-20-01
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A /			Clow, Ron /		2/20/01

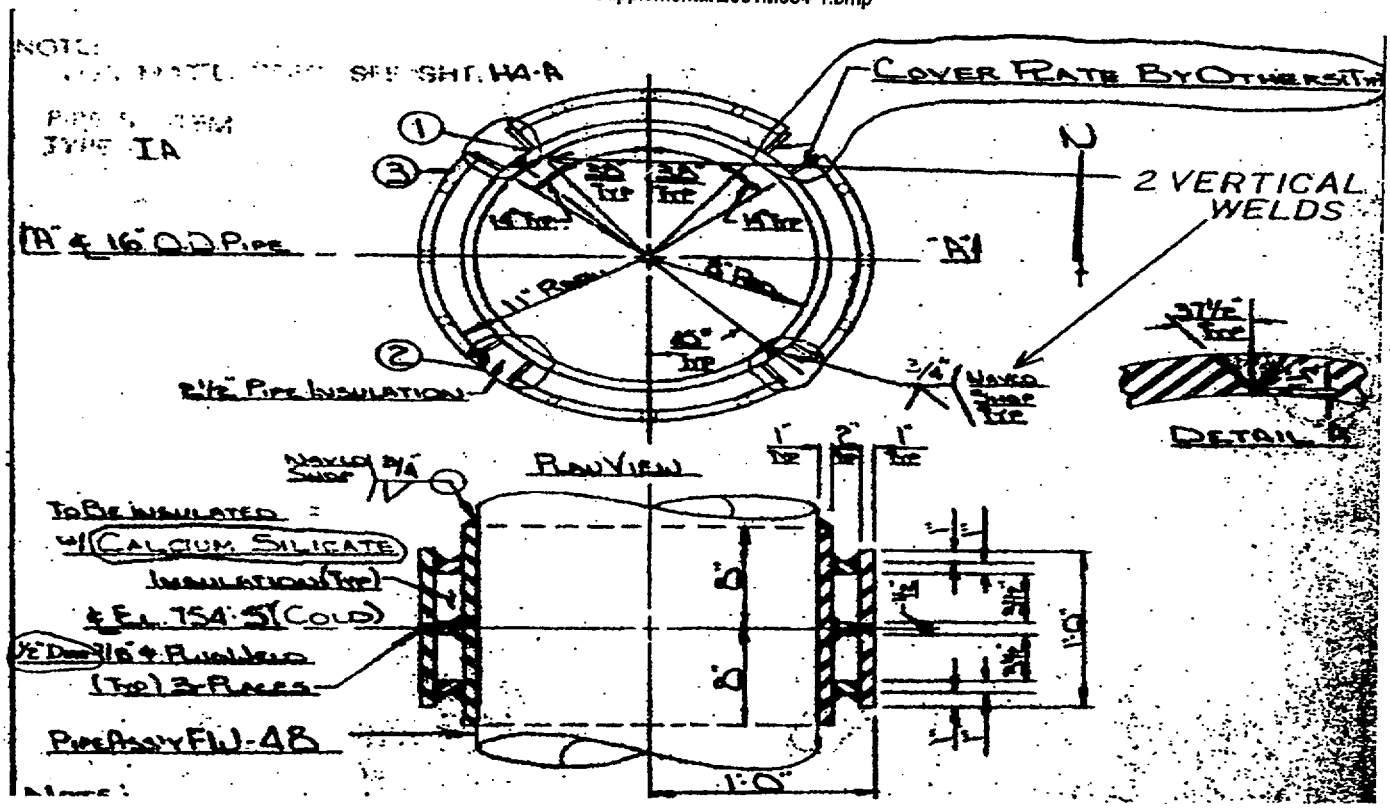
Limitation Record

Site/Unit:	NSP / PI1	Procedure:	ISI-MT-1	Report No.:	2001M034
Summary No.:	301258	Procedure Revision/FC:	11 /	Page:	2 of 3
Examination For:	ISI	Work Order No.:	0010296		

Description of Limitation:

Floor penetration prohibits examination of the middle 12" of the two vertical welds on the pipe collar.
2 Circ Welds = 58" L x 2.5" W. 2 Vertical Welds = 16" L x 3" W.

Sketch of Limitation: G:\IDDEAL50\PI1RFO2001\VT - Supplemental\2001M034-1.bmp



Limitations removal requirements:

None

Radiation field: **<2 mR/hr**

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Auer, Robert G.	/		2/19/2001	Halling, David A.	/		2/20/01
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A	/			Wren, Jerry P.	/		2-20-01
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Clow, Ron	/		2/20/01

Determination of Percent Coverage for Surface Examinations

Report No.: 2001M034

Site/Unit: NSP / PI1 | Procedure: ISI-MT-1 | Page: 3 of 3

Summary No.: 301258 | Procedure Revision/FC: 11 /

Examination For: ISI | Work Order No.: 0010296

Area Required (as shown in applicable code reference drawing)

Length 128.000 * Width 3.016

= Total Area required 386.048 square inches

Coverage Achieved

Area examined 314.000 sq. in. / Total area required (100%) 386.048 sq. in.

= Percent coverage ~~0.813~~ % (area required - area of limitations = area examined)

81.3% DPW 2-20-01

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: 2-20-01

ATTACHMENT 9
Page 4 of 4

NMC

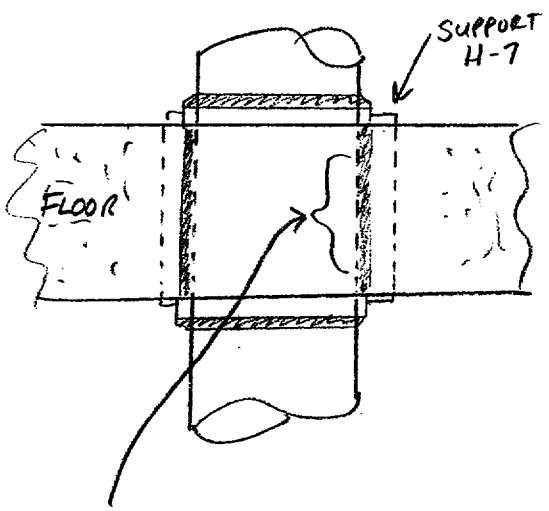
Limitation Record

Site/Unit:	NSP1 PI1	Procedure:	1S1-MT-1	Outage No.:	PI1RF2001
Summary No.:	301258	Procedure Revision/FC:	11 1	Report No.:	2001M034
Workscope:	1S1	Work Order No.:	0010296	Page:	____ of ____

Description of Limitation:

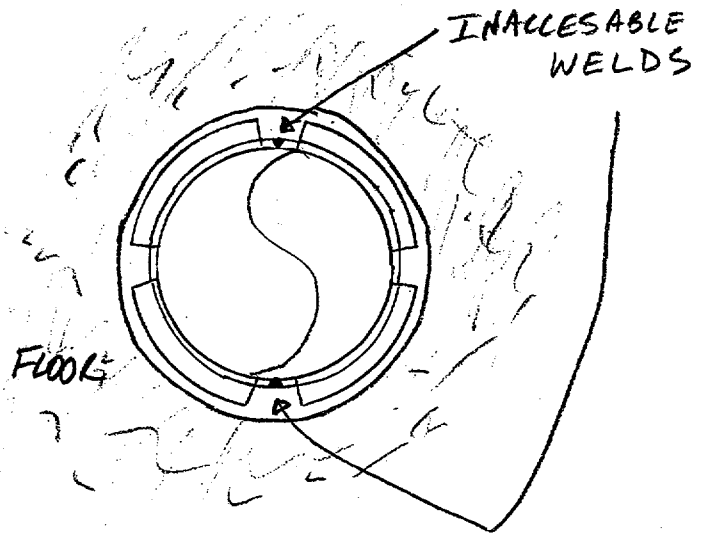
DUE TO FLOOR PENETRATION THERE IS NO PHYSICAL ACCESS TO TWO 12" SECTIONS OF VERTICAL WELDS ON PIPE COLLAR

Sketch of Limitation:



INACCESABLE AREA (TYPICAL 2 PLACES)

SIDE VIEW



TOP VIEW

Limitations removal requirements:

NONE

Radiation field:

Examiner	Level	Signature	Date	Reviewer	Signature	Date
	/			JERRY P. WRENN LV. III		4-8-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
	/			/		
Other	Level	Signature	Date	ANII Review	Signature	Date
	/			/		

ATTACHMENT 10.
Page 1 of 3

Magnetic Particle Examination

Site/Unit: NSP / PI1 | Procedure: ISI-MT-1 | Report No.: 2001M030
Summary No.: 302082 | Procedure Revision/FC: 11 / | Page: 1 of 3
Examination For: ISI | Work Order No.: 0010296

Applicable Code: 1989 | ISO Drawing No.: ISI-83C | Location: Aux Bldg
Description: Support E
System ID: SI
Component ID: H-5 | Size/Length: 1.0" / 14.0"
Limitations: See attached sketch.

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
Gray Card (if used): Not Used | Cal Block Serial No.: N/A | Surface Condition: As Welded
Lo Location: Drive Side | Field Orientation: Longitudinal

Magnetic Particle Material

Brand: Magnaflux | Wet ☐ | Mixed: Yes ☐ | Applied By: Dusting ☑
Type: 8A Red | Dry ☑ | No ☑ | Spraying ☐
Batch No.: 92B062 | Fluorescent ☐ | With: | Flooding ☐
Equipment: Parker Research | Serial No.: 7081
Head Shot ☐ | Amperes | Fixed Spacing ☐ | AC ☑ DC ☐
Adj. Spacing ☑ 2 - 6 inches | Encircling Coils ☐ N/A Turns
Prods. Spacing ☐ inches | Current (machine setting) ☐ N/A Amperes

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

Comments:
None

Results: NAD ☑ IND ☐
Percent Of Coverage Obtained > 90%: No | Reviewed Previous Data: No

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Coburn, Timothy M.	II		2/14/2001	Halling, David A.		2/16/01
Examiner	Level	Signature	Date	Site Review	Signature	Date
Auer, Robert G.	II		2/14/2001	Wren, Jerry P.		2-17-01
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Clow, Ron		2/19/01

Attachment #10
Page 2 of 3

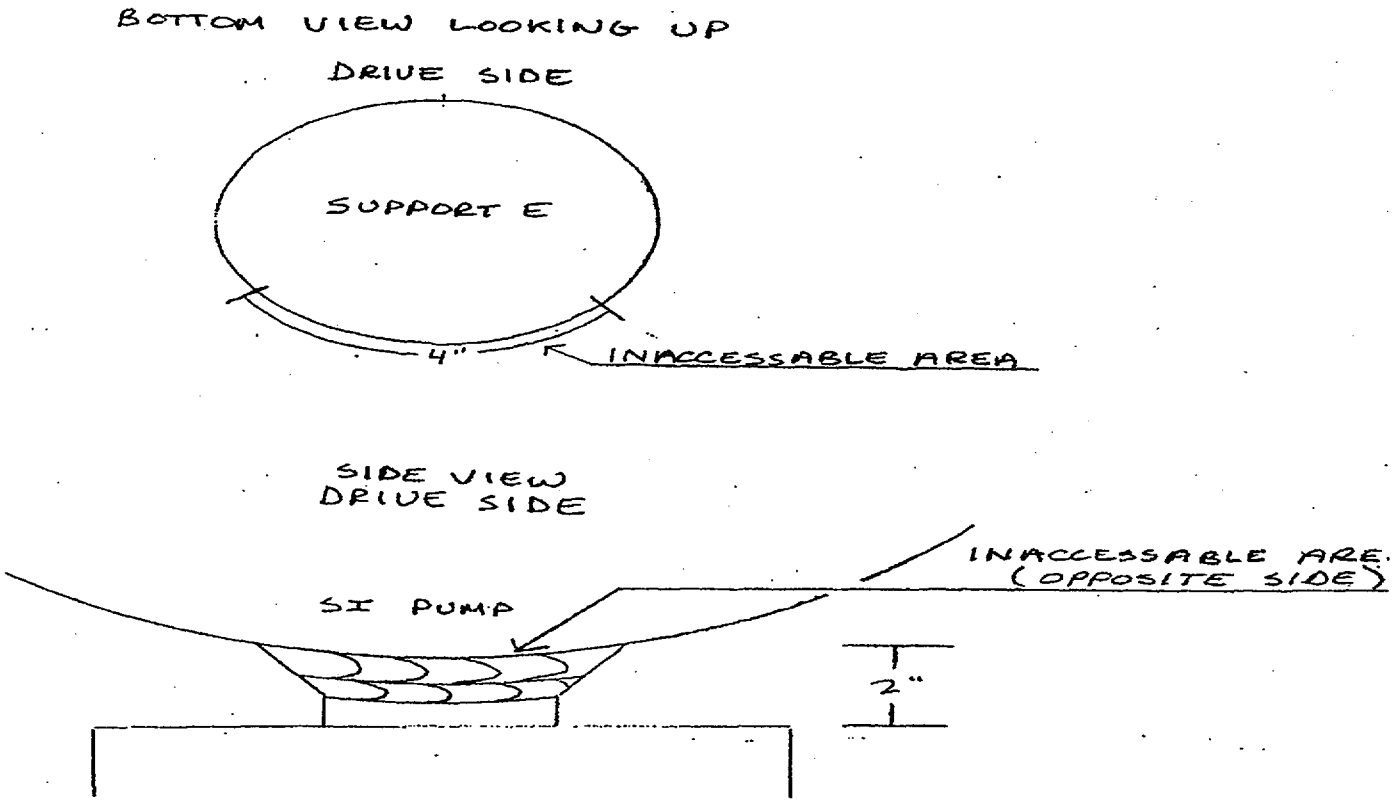
Limitation Record

Site/Unit:	NSP / PI1	Procedure:	ISI-MT-1	Report No.:	2001M030
Summary No.:	302082	Procedure Revision/FC:	11 /	Page:	2 of 3
Examination For:	ISI	Work Order No.:	0010296		

Description of Limitation:

Configuration prohibits examining weld at inside of support.

Sketch of Limitation: G:\IDDEAL50\PI1RFO2001\MT - Supplemental\2001M030-1.bmp



Limitations removal requirements:

None

Radiation field: **<1 mR/hr**

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Coburn, Timothy M.	/		2/14/2001	Halling, David A.	/		2/16/01
Examiner	Level II	Signature	Date	Site Review		Signature	Date
Auer, Robert G.	/		2/14/2001	Wren, Jerry P.	/		2-17-01
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Clow, Ron	/		2/15/01

Attachment #10
Pag 3 of 3

Determination of Percent Coverage for Surface Examinations

Report No.: 2001M030

Site/Unit: NSP / PI1 | Procedure: ISI-MT-1 | Page: 3 of 3

Summary No.: 302082 | Procedure Revision/FC: 11 /

Examination For: ISI | Work Order No.: 0010296

Area Required (as shown in applicable code reference drawing)

Length 14.000 * Width 2.000

= Total Area required 28.000 square inches

Coverage Achieved

Area examined 20.000 sq. in. / Total area required (100%) 28.000 sq. in.

= Percent coverage ~~0.714~~ % (area required - area of limitations = area examined)

71.4 % JPW 2-17-01

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: 2-17-01

Attachment 11
page 1 of 3

Magnetic Particle Examination

Report No.: 2001M034

Site/Unit: NSP / PI1 Procedure: ISI-MT-1 Page: 1 of 3

Summary No.: 301258 Procedure Revision/FC: 11 /

Examination For: ISI Work Order No.: 0010296

Applicable Code: 1989 ISO Drawing No.: ISI-52 Location: Containment

Description: BEAR'G BRAK ASSY

System ID: FW

Component ID: H-7 Size/Length: 16"

Limitations: See Comments

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

Gray Card (if used): Not Used Cal Block Serial No.: N/A Surface Condition: As Welded

Lo Location: Centerline of Downstream Elbow Field Orientation: Longitudinal

Magnetic Particle Material

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

Type: No. 1 Gray Dry ☑ No ☑ Spraying ☐

Batch No.: 84A047 Fluorescent ☐ With: Flooding ☐

Equipment: Magnaflux Serial No.: LMT YK-11

Head Shot ☐ Amperes Fixed Spacing ☐ AC ☑ DC ☐

Adj. Spacing ☑ 2 - 6 inches Encircling Coils ☐ N/A Turns

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

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

Comments:

See attached limitation sheets.

Results: NAD ☑ IND ☐

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

Examiner	Level		Signature	Date	Reviewer		Signature	Date
Auer, Robert G.	II	/	Robert G. Auer	2/19/2001	Halling, David A.	/	D.A. Halling	2/20/01
Examiner	Level		Signature	Date	Site Review		Signature	Date
N/A	N/A	/			Wren, Jerry P.	/	Jerry P. Wren	2-20-01
Other	Level		Signature	Date	ANII Review		Signature	Date
N/A	N/A	/			Clow, Ron	/	R C Clow	2/20/01

Attachment #11
Page 2 of 3

Limitation Record

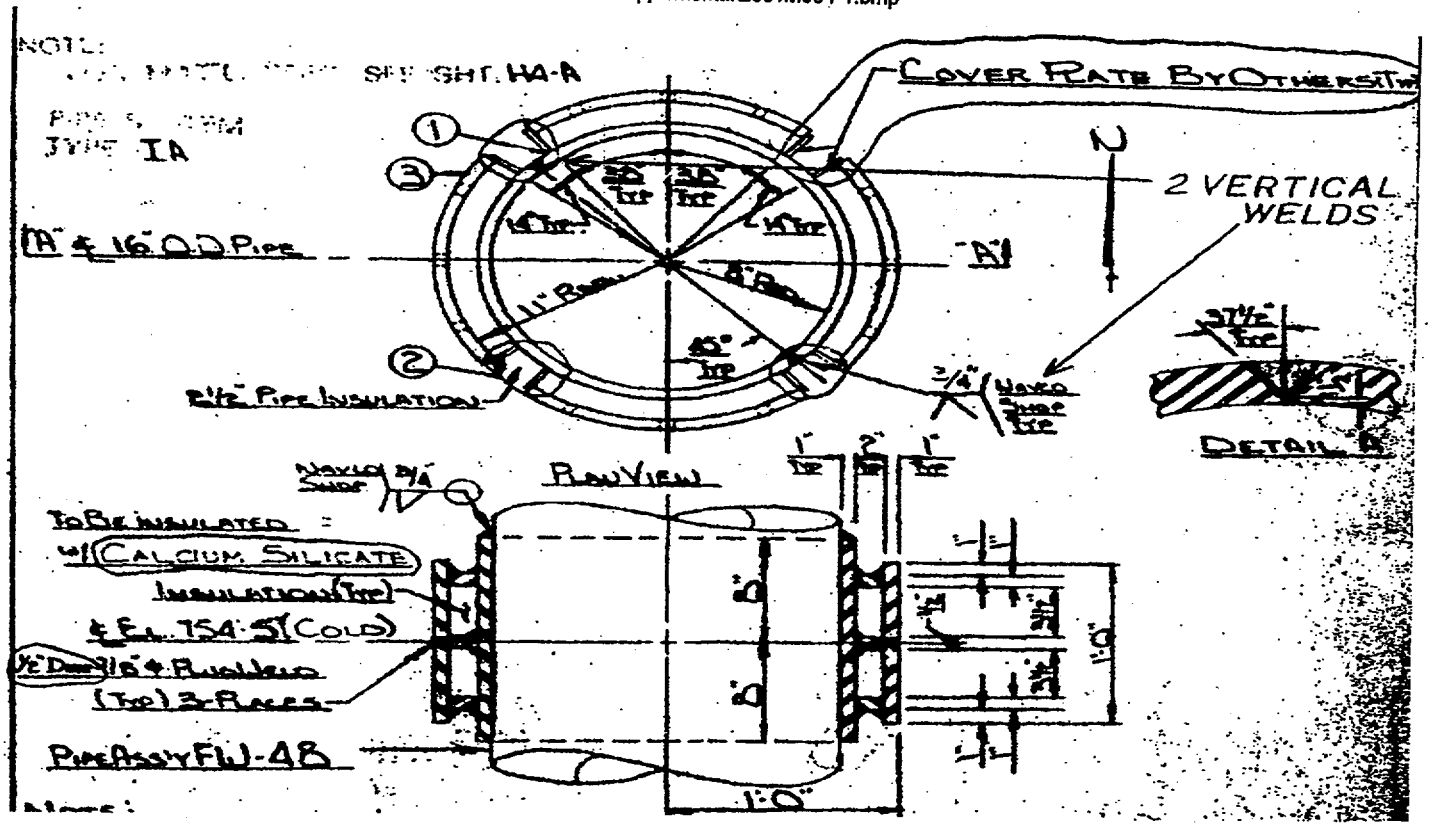
Report No.: 2001M034

Site/Unit: NSP / PI1
Summary No.: 301258
Examination For: ISI
Procedure: ISI-MT-1
Procedure Revision/FC: 11 /
Work Order No.: 0010296
Page: 2 of 3

Description of Limitation:

Floor penetration prohibits examination of the middle 12" of the two vertical welds on the pipe collar.
2 Circ Welds = 58" L x 2.5" W. 2 Vertical Welds = 16" L x 3" W.

Sketch of Limitation: G:\IDDEAL50\PI1RFO2001\VT - Supplemental\2001M034-1.bmp



Limitations removal requirements:

None

Radiation field: **<2 mR/hr**

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Auer, Robert G.	/		2/19/2001	Halling, David A.	/		2/20/01
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A	/			Wren, Jerry P.	/		2-20-01
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Clow, Ron	/		2/20/01

Attachment #11
Page 3 of 3

Determination of Percent Coverage for Surface Examinations

Report No.: 2001M034

Site/Unit: NSP / PI1 | Procedure: ISI-MT-1 | Page: 3 of 3

Summary No.: 301258 | Procedure Revision/FC: 11 /

Examination For: ISI | Work Order No.: 0010296

Area Required (as shown in applicable code reference drawing)

Length 128.000 * Width 3.016

= Total Area required 386.048 square inches

Coverage Achieved

Area examined 314.000 sq. in. / Total area required (100%) 386.048 sq. in.

= Percent coverage ~~0.813~~ % (area required - area of limitations = area examined)

81.3 % JPW 2-20-01

To determine length of a circumferential weld

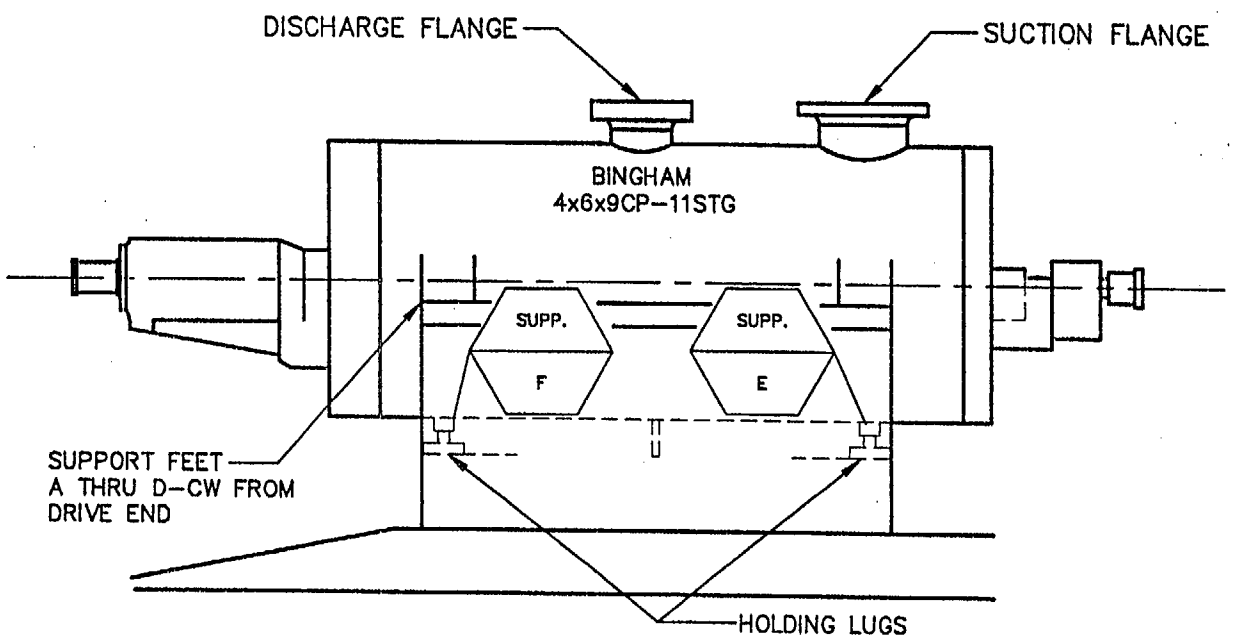
Note - Diameter refers to actual external diameter not pipe size (see table below)

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: 2-20-01



SAFETY INJECTION PUMP (TYPICAL)

SAFETY INJECTION PUMP #11

XH–1001–155
REF: XH–1001–1390

FILE NO: 1183CR00	
NSP (M&SP)– PI–1	ISI
DWN: TJH CHKD: DSW APPD: DSW	
SYSTEM: SAFETY INJECTION PUMP #11	
LINE:	
DWG: ISI–83C	REV: 00

Attachment 12.
Page 1 of 1

ATTACHMENT 13
Page 1 of 3

Liquid Penetrant Examination

Report No.: 2001P056

Site/Unit: NSP / PI1 Procedure: ISI-PT-1 Page: 1 of 3

Summary No.: 303052 Procedure Revision/FC: 13 /

Examination For: ISI Work Order No.: 0010296

Applicable Code: 1989 ISO Drawing No.: ISI-93B Location: RHR12

Description: SUPPORT

System ID: RH

Component ID: H-2 Size/Length: N/A

Limitations: See Comments

Temp. Tool Mfg.: Telatemp Serial No.: NSP 172 Surface Temp.: 85 °F

Surface Temperature of Comparator Block (if used): Side A: N/A °F Side B: N/A °F Gray Card (if used): Not Used

Lo Location: N/A Surface Condition: AS WELDED

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	98L07K	84M043	98L07K	97J04K
Time	Evap. 5 Min	Dwell 15 Min	Evap. 2 Min	Develop 7 Min
	Time Exam Started: 14:00		Time Exam Completed: 15:00	

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

Comments:

Tightly adhering mill scale on support plate material within 1/2" of weld toe.

Results: NAD ☑ IND ☐

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

Examiner	Level III	Signature	Date	Reviewer		Signature	Date
Halling, David A.	/	D.A. Halling	2/6/2001	Auer, Robert G.	/	[signature]	2-15-01
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A	/			Wren, Jerry P.		[signature]	2-15-01
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Clow, Ron	/	[signature]	2/15/01

Attachment #13
page 2 of 3

Limitation Record

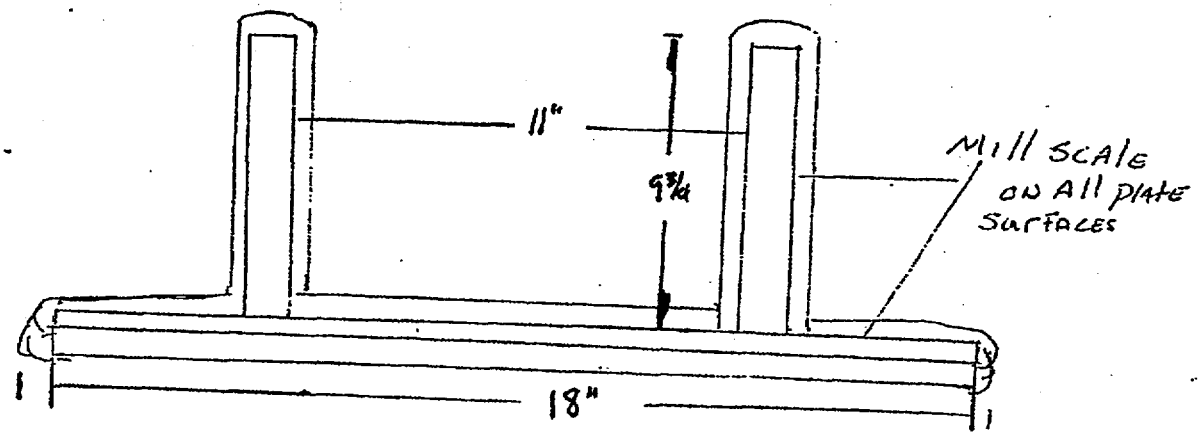
Report No.: 2001P056

Site/Unit:	NSP / PI1	Procedure:	ISI-PT-1	Page:	2 of 3
Summary No.:	303052	Procedure Revision/FC:	13 /		
Examination For:	ISI	Work Order No.:	0010296		

Description of Limitation:

Mill scale located on support base metal. Millscale is tightly adhering and could not be removed by wire wheel or flapping. Bottom of support is inaccessible for removal work.

Sketch of Limitation: G:\IDDEAL50\PI1RFO2001\PT - Supplemental\2001P056-1.bmp



Limitations removal requirements:

N/A

Radiation field: mR/hr

Examiner	Level III	Signature	Date	Reviewer	Signature	Date
Halling, David A.	/	D.A. Halling	2/6/2001	Auer, Robert G.	/	2-15-01
Examiner	Level N/A	Signature	Date	Site Review	Signature	Date
N/A	/			Wren, Jerry P.	/	2-15-01
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A	/			Clow, Ron	/	2/15/01

Attachment #13
page 3 of 3

Determination of Percent Coverage for Surface Examinations

Report No.: 2001P056

Site/Unit: NSP / PI1 | Procedure: ISI-PT-1 | Page: 3 of 3

Summary No.: 303052 | Procedure Revision/FC: 13 /

Examination For: ISI | Work Order No.: 0010296

Area Required (as shown in applicable code reference drawing)

Length 80.000 * Width 1.750

= Total Area required 140.000 square inches

Coverage Achieved

Area examined 100.000 sq. in. / Total area required (100%) 140.000 sq. in.

= Percent coverage ~~0.714~~ 71.4 % (area required - area of limitations = area examined)

DRW 2-13-01

To determine length of a circumferential weld

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

Diameter 140.000 * (Pi) 3.1416

= Length 439.824 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: 2-15-01

UT Pipe Weld Examination

Report No.: 2001U013
Page: 1 of 3

Site/Unit: NSP / PI1
Procedure: ISI-UT-16A
Summary No.: 301874
Procedure Revision/FC: 0 /
Examination For: ISI
Work Order No.: 0010296

Applicable Code: 1989
ISO Drawing No.: ISI-89B
Location: Containment
Description: TEE - VALVE
System ID: RH
Component ID: W-18
Size/Length: 1.0" / 25.13"
Thickness/Diameter: 1.0" / 8.0"
Limitations: Single side access. See attached sheet.
Start Time: 15:45
Finish Time: 16:10

Examination Surface: Inside ☑ Outside ☐
Surface Condition: Ground Flush
Lo Location: Top Dead Center
Wo Location: Centerline of Weld
Couplant: Sonotrace 40
Batch No.: #00143
Temp. Tool Mfg.: Telatemp
Serial No.: NSP 126
Surface Temp.: 70 °F
Cal. Sheet No.: 2001CA034, 2001CA035

Angle Used	0	45	45T	60		
Scanning dB	N/A	48.7	50.3	76.2		

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

Comments:
60 Degree RL scanned at reference due to noise level.

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

Examiner Timm, Jeremy T.	Level II /	Signature	Date 2/1/2001	Reviewer Halling, David A. /	Signature	Date 2/3/01
Examiner N/A	Level N/A /	Signature	Date	Site Review Clay, Sean P. /	Signature	Date 2/3/01
Other N/A	Level N/A /	Signature	Date	ANII Review Clow, Ron /	Signature	Date 2/5/01

ATTACHMENT #14
Page 1 of 4

Attachment #14
page 2 of 4

Limitation Record

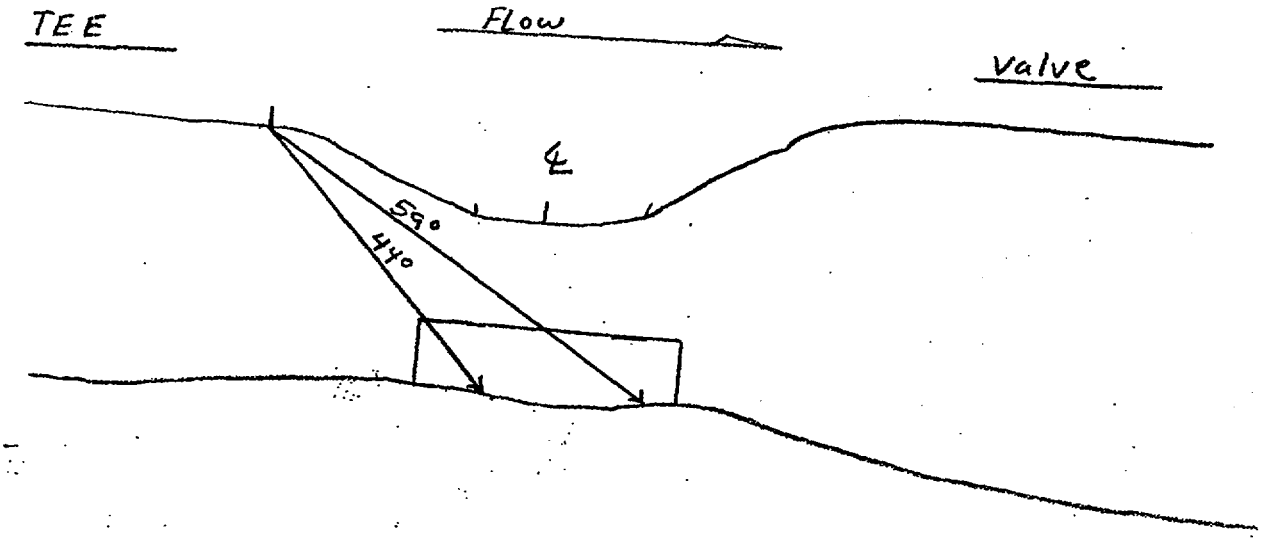
Report No.: 2001U013

Site/Unit:	NSP / PI1	Procedure:	ISI-UT-16A	Page:	2 of 3
Summary No.:	301874	Procedure Revision/FC:	0 /		
Examination For:	ISI	Work Order No.:	0010296		

Description of Limitation:

Single side access due to tee to valve configuration.

Sketch of Limitation: G:\IDDEAL50\PI1RFO2001\UT - Supplemental\2001U013-1.bmp



Limitations removal requirements:

None

Radiation field: **10 mR/hr**

Examiner	Level II		Signature	Date	Reviewer	Signature	Date
Timm, Jeremy T.	/			2/1/2001	Halling, David A.	/	2/3/01
Examiner	Level N/A		Signature	Date	Site Review	Signature	Date
N/A	/				Clay, Sean P.	/	2/3/01
Other	Level N/A		Signature	Date	ANII Review	Signature	Date
N/A	/				Clow, Ron	/	2/5/01

Attachment # 14
page 3 of 4

Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	NSP / PI1	Procedure:	ISI-UT-16A	Report No.:	2001U013
Summary No.:	301874	Procedure Revision/FC:	0 /	Page:	3 of 3
Examination For:	ISI	Work Order No.:	0010296		

45 deg

Scan 1	100.000	% Length X	13.400	% volume of length / 100 =	13.400	% total for Scan 1
Scan 2	0.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 2
Scan 3	100.000	% Length X	65.710	% volume of length / 100 =	65.710	% total for Scan 3
Scan 4	100.000	% Length X	65.710	% volume of length / 100 =	65.710	% total for Scan 4

Add totals and divide by # scans = 36.205 **% 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	100.000	% Length X	52.140	% volume of length / 100 =	52.140	% 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;

49.240 **% Total for complete exam**

Site Field Supervisor: [signature] Lv III Date: 2/3/2001

NMC

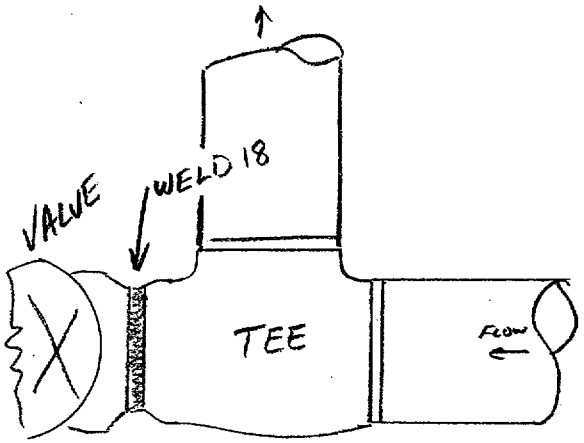
Limitation Record

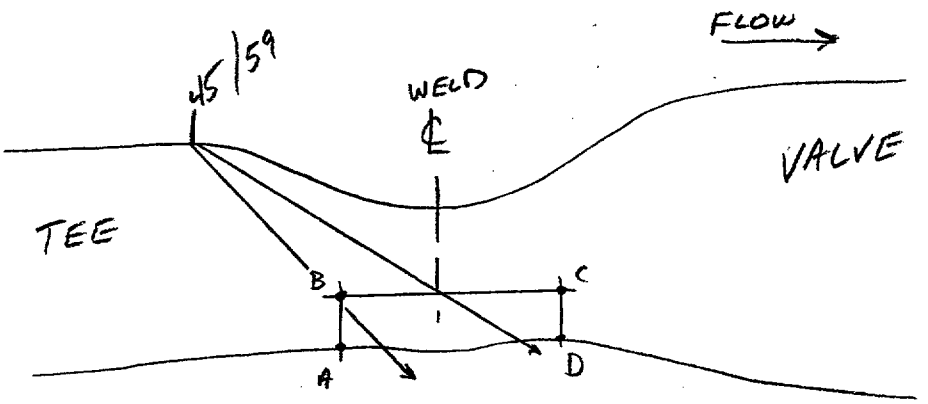
Site/Unit:	NSP / PI	Procedure:	ISI-UT-16A	Outage No.:	PI/RF2001
Summary No.:	301874	Procedure Revision/FC:	0 /	Report No.:	2001U013
Workscope:	ISI	Work Order No.:	0010296	Page:	____ of ____

Description of Limitation:

WELD JOINT AND COMPONENT GEOMETRICAL CONFIGURATION LIMIT SCANNING IN ALL DIRECTIONS.

Sketch of Limitation:





REQUIRED WELD VOLUME A-B-C-D

Limitations removal requirements:

NONE, NOTE: ALTHOUGH EXAM WAS PERFORMED FROM ONE SIDE ONLY THE TECHNIQUES PROVIDED BY PROCEDURE ISI-UT-16A REV. 0 WERE USED FOR A BEST EFFORT EXAM FOR FLAWS ON THE FAR SIDE OF WELD.

Radiation field: 10 MR/HR

Examiner	Level	Signature	Date	Reviewer	Signature	Date
	/			LEVEL III JERRY P. WRENN		4-8-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
	/			/		
Other	Level	Signature	Date	ANII Review	Signature	Date
	/			/		

UT Pipe Weld Examination

Report No.: 2001U034
Page: 1 of 3

Site/Unit: NSP / PI1
Summary No.: 305137
Examination For: ISI
Procedure: ISI-UT-16A
Procedure Revision/FC: 0 /
Work Order No.: 0010296

Applicable Code: 1989
ISO Drawing No.: ISI-101
Location: Aux Bldg
Description: WELDOLET - PIPE
System ID: SI
Component ID: W-1
Size/Length: .6" / 6.28"
Thickness/Diameter: .35" / 2.0"
Limitations: None
Start Time: 13:00
Finish Time: 15:20

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 134
Surface Temp.: 70 °F
Cal. Sheet No.: 2001CA075, 2001CA076

Angle Used	0	45	45T	60	70	
Scanning dB	N/A	N/A	52.5	N/A	63.1	

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

Comments:
None

Results: NAD ☑ IND ☐ GEO ☐
Percent Of Coverage Obtained > 90%: No
Reviewed Previous Data: Yes

Examiner Level II Potter, Michael E. /	Signature	Date 2/16/2001	Reviewer Halling, David A. /	Signature	Date 2/16/01
Examiner Level N/A N/A /	Signature	Date	Site Review Clay, Sean P. /	Signature	Date 2/16/01
Other Level N/A N/A /	Signature	Date	ANII Review Clow, Ron /	Signature	Date 2/16/01

ATTACHMENT # 15
Page 1 of 4

Attachment #15
page 2 of 4

Limitation Record

Report No.: 2001U034

Site/Unit: NSP / PI1 | Procedure: ISI-UT-16A | Page: 2 of 3

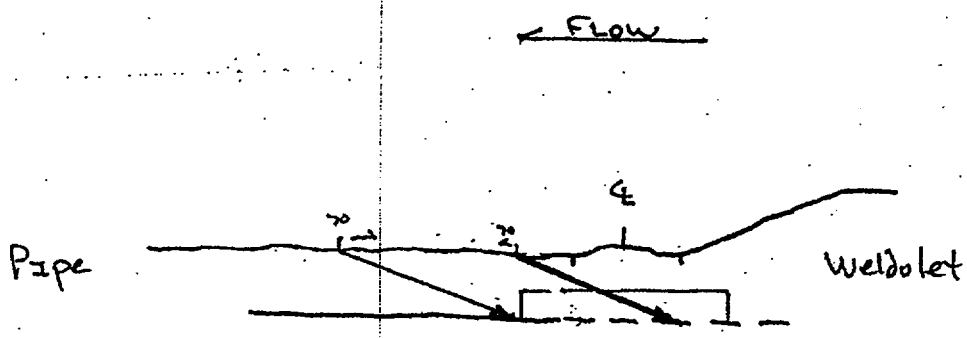
Summary No.: 305137 | Procedure Revision/FC: 0 /

Examination For: ISI | Work Order No.: 0010296

Description of Limitation:

One sided examination due to weld crown and configuration.

Sketch of Limitation: G:\IDDEAL50\PI1RFO2001\UT - Supplemental\2001U034-1.bmp



Limitations removal requirements:

None

Radiation field: <1 mR/hr

Examiner	Level II		Signature	Date	Reviewer		Signature	Date
Potter, Michael E.	/			2/16/2001	Halling, David A.	/		2/16/01
Examiner	Level N/A		Signature	Date	Site Review		Signature	Date
N/A	/				Clay, Sean P.	/		2/16/01
Other	Level N/A		Signature	Date	ANII Review		Signature	Date
N/A	/				Clow, Ron	/		2/15/01

Attachment #15
Page 3 of 4

Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	NSP / PI1	Procedure:	ISI-UT-16A	Report No.:	2001U034
Summary No.:	305137	Procedure Revision/FC:	0 /	Page:	3 of 3
Examination For:	ISI	Work Order No.:	0010296		

45 deg

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	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 = 25.000 **% total for 45 deg**

Other deg - 70 (to be used for supplemental scans)

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

Scan 1	100.000	% Length X	0.000	% volume of length / 100 =	0.000	% total for Scan 1
Scan 2	100.000	% Length X	56.700	% volume of length / 100 =	56.700	% 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;

39.175 **% Total for complete exam**

Site Field Supervisor: [signature] Lv III Date: 2/16/01

NMC

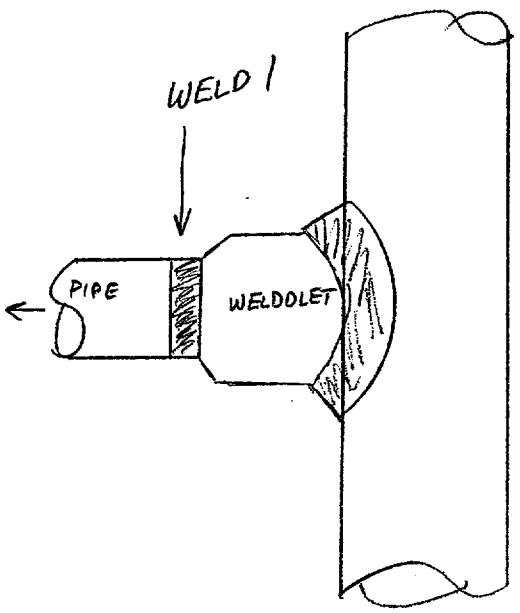
Limitation Record

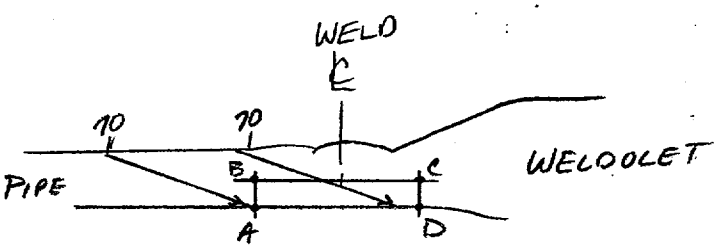
Site/Unit:	NSP / PI /	Procedure:	ISI-UT-16A	Outage No.:	PI / RF 2001
Summary No.:	305137	Procedure Revision/FC:	0 /	Report No.:	2001 U 034
Workscope:	ISI	Work Order No.:	0010296	Page:	____ of ____

Description of Limitation:

WELD JOINT AND COMPONENT GEOMETRICAL CONFIGURATION PROHIBIT SCANNING FROM THE UPSTREAM SIDE OF WELD.

Sketch of Limitation:





WELD EXAM VOLUME A-B-C-D

Limitations removal requirements:

NONE. NOTE: ALTHOUGH EXAM WAS PERFORMED FROM ONE SIDE ONLY THE TECHNIQUES PROVIDED BY PROCEDURE ISI-UT-16A R.0 WERE USED FOR A BEST EFFORT EXAM FOR FLAWS IN THE FAR SIDE OF WELD.

Radiation field: <1 MR/HR

Examiner	Level	Signature	Date	Reviewer	LU, III	Signature	Date
	/			JERRY P. WRENN			4-8-02
Examiner	Level	Signature	Date	Site Review		Signature	Date
	/				/		
Other	Level	Signature	Date	ANII Review		Signature	Date
	/				/		

ATTACHMENT 16
Page 1 of 1

NMC

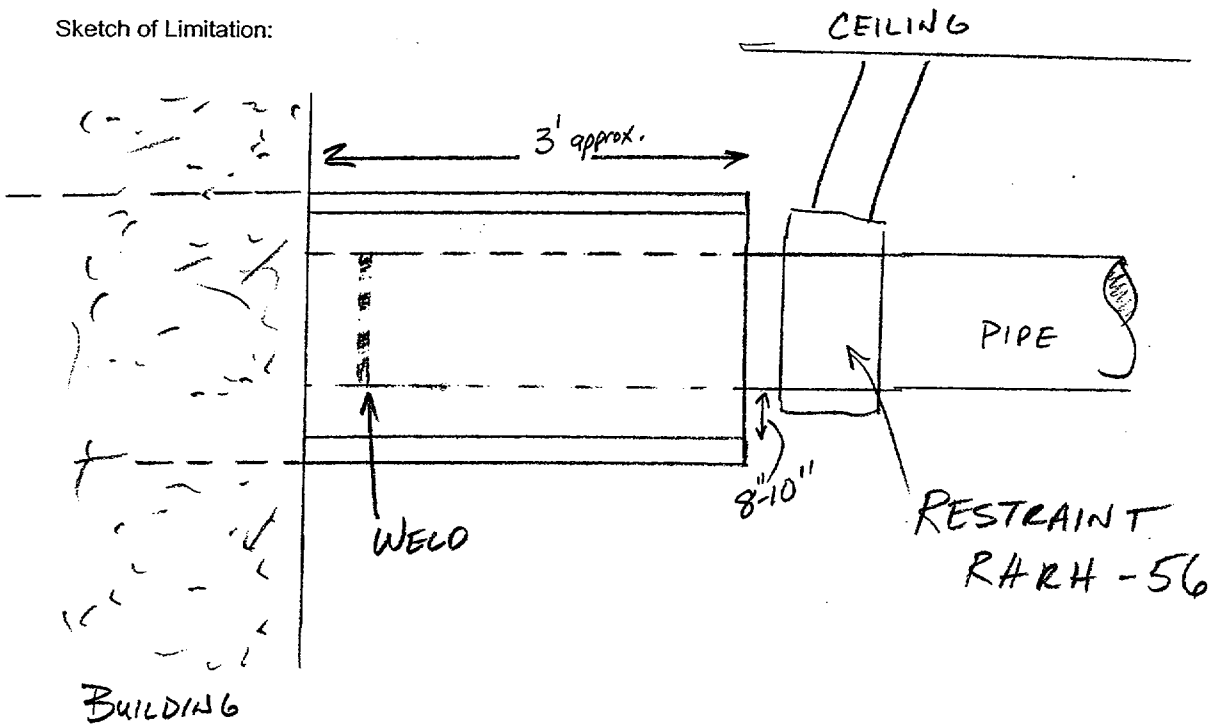
Limitation Record

Site/Unit:	NSP1 PI 1	Procedure:	1SI-PT-1 Rev-13 - 2001P070 1SI-UT-16A	Outage No.:	PI 1 RF 2001
Summary No.:	301858	Procedure Revision/FC:	0/1	Report No.:	20014040
Workscope:	1SI	Work Order No.:	0010296	Page:	____ of ____

Description of Limitation:

NO PHYSICAL ACCESS TO WELD DUE TO SLEEVE PENETRATION AND RESTRAINT. APPLIES TO BOTH PT & UT EXAM.

Sketch of Limitation:



Limitations removal requirements:

NONE

Radiation field:

Examiner	Level	Signature	Date	Reviewer	Level III	Signature	Date
	/			JERRY P. WREN	/		4-8-02
Examiner	Level	Signature	Date	Site Review		Signature	Date
	/				/		
Other	Level	Signature	Date	ANII Review		Signature	Date
	/				/		

ATTACHMENT #17
Page 1 of 4

Magnetic Particle Examination

Site/Unit: NSP / PI1 | Procedure: ISI-MT-1 | Report No.: 2001M016
Summary No.: 301619 | Procedure Revision/FC: 11 / | Page: 1 of 3
Examination For: ISI | Work Order No.: 0010296

Applicable Code: 1989 | ISO Drawing No.: ISI-68C | Location: Aux Bldg
Description: TEE - PIPE
System ID: MS
Component ID: W-9LSD2U | Size/Length: 1.60" / 97.0"
Limitations: See attached sketch.

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
Gray Card (if used): Not Used | Cal Block Serial No.: N/A | Surface Condition: Flat Topped
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: | Flooding ☐
Equipment: Magnaflux | Serial No.: LMT YK-11
Head Shot ☐ Amperes | Fixed Spacing ☐ | AC ☑ DC ☐
Adj. Spacing ☑ 6 inches | Encircling Coils ☐ N/A Turns
Prods. Spacing ☐ inches | Current (machine setting) ☐ N/A Amperes

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

Comments:
None

Results: NAD ☑ IND ☐
Percent Of Coverage Obtained > 90%: No | Reviewed Previous Data: No

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Timm, Jeremy T.	/		2/7/2001	Halling, David A.	/	D.A. Halling	2/10/01
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A	/			Wren, Jerry P.	/	Jerry P. Wren	2-10-01
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Clow, Ron	/		2/10/01

Limitation Record

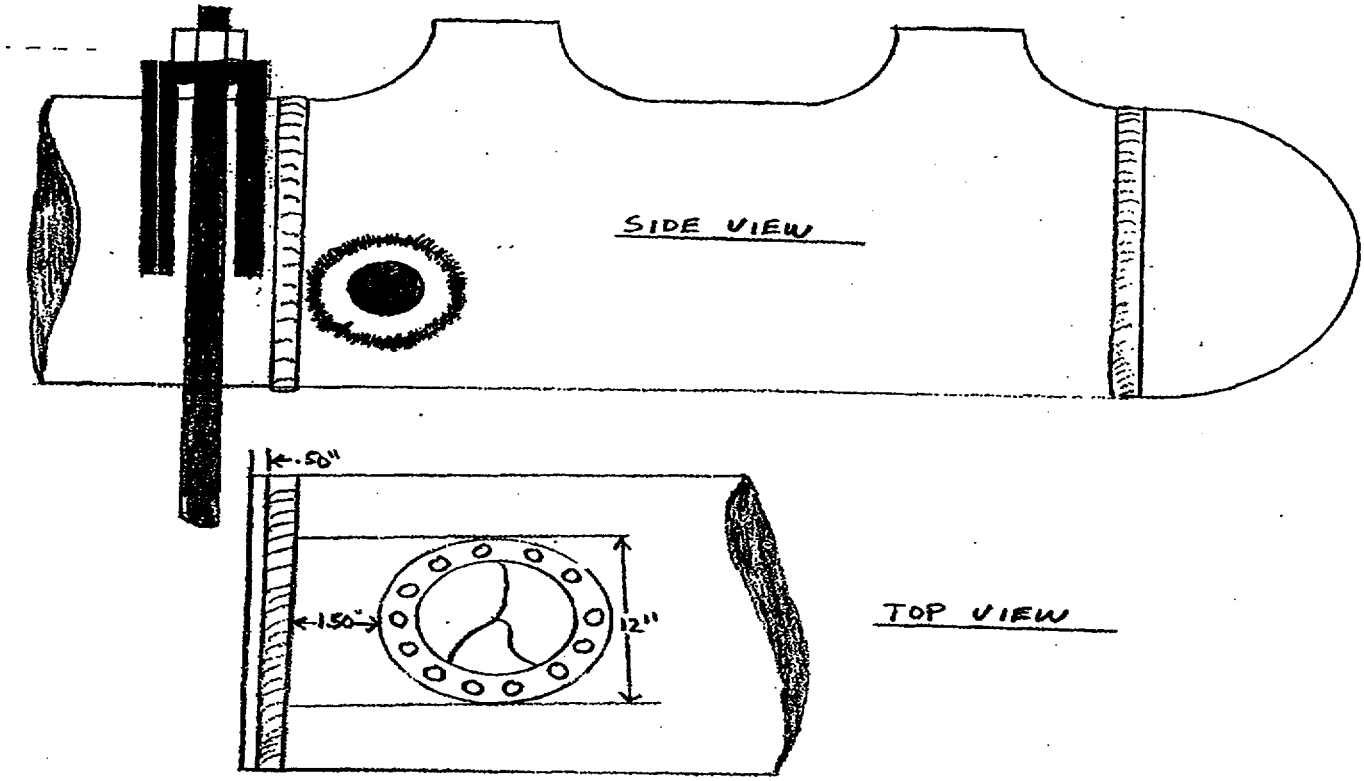
Report No.: 2001M016

Site/Unit:	NSP / PI1	Procedure:	ISI-MT-1	Page:	2 of 3
Summary No.:	301619	Procedure Revision/FC:	11 /		
Examination For:	ISI	Work Order No.:	0010296		

Description of Limitation:

Restraint and Nozzle Radius - 31.2 sq in of 252.2 sq in limited due to nozzle.

Sketch of Limitation: G:\IDDEAL50\PI1RFO2001\MT - Supplemental\2001M016-1.bmp



Limitations removal requirements:

None

Radiation field: **< 2 mR/hr**

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Timm, Jeremy T.	/		2/7/2001	Halling, David A.	/		2/10/01
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A	/			Wren, Jerry P.	/		2-10-01
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Clow, Ron	/		2/10/01

Determination of Percent Coverage for Surface Examinations

Report No.: 2001M016

Site/Unit: NSP / PI1 | Procedure: ISI-MT-1 | Page: 3 of 3

Summary No.: 301619 | Procedure Revision/FC: 11 /

Examination For: ISI | Work Order No.: 0010296

Area Required (as shown in applicable code reference drawing)

Length 97.000 * Width 2.600

= Total Area required 252.200 square inches

Coverage Achieved

Area examined 221.000 sq. in. / Total area required (100%) 252.200 sq. in.

= Percent coverage ~~0.876~~ % (area required - area of limitations = area examined)

87.6%

JPW 2-10-01

To determine length of a circumferential weld

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

Diameter 30.000 * (Pi) 3.1416

= Length 94.248 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: 2-10-01

ATTACHMENT 17
page 4 of 4

NMC

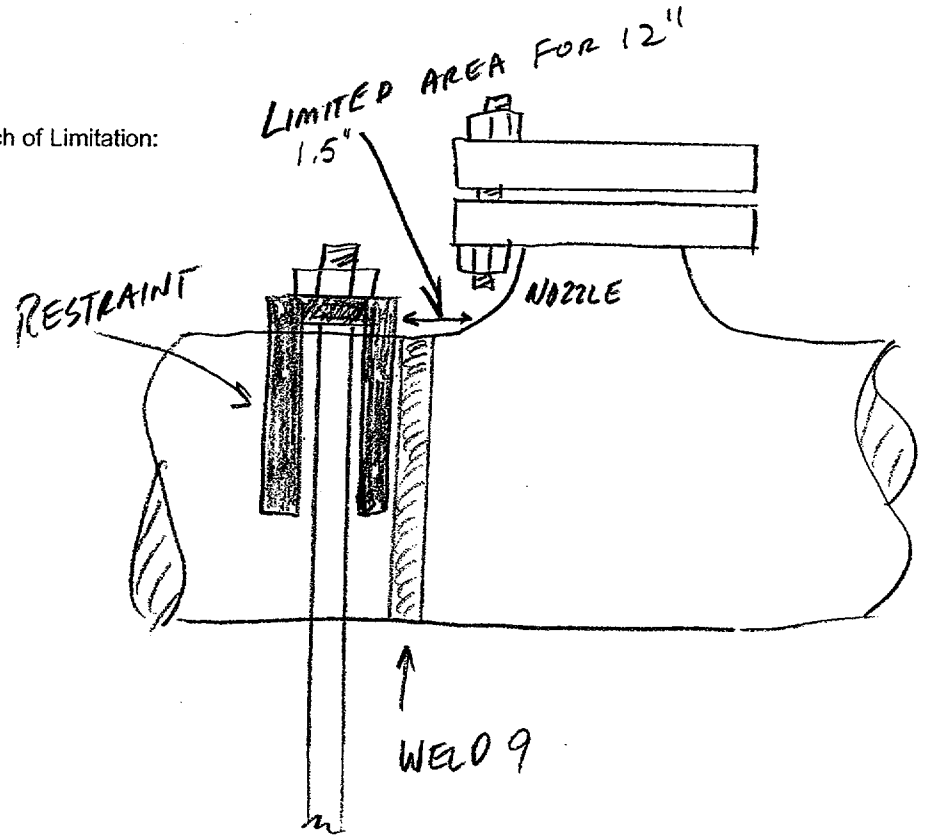
Limitation Record

Site/Unit:	NSP / PI /	Procedure:	ISI-MT-1	Outage No.:	PI / RF2001
Summary No.:	301619	Procedure Revision/FC:	11 /	Report No.:	2001M016
Workscope:	ISI	Work Order No.:	0010296	Page:	___ of ___

Description of Limitation:

RESTRAINT AND NOZZLE RADIUS PROXIMITY LIMIT PHYSICAL ACCESS

Sketch of Limitation:



SIDE VIEW

Limitations removal requirements:

NONE ASWELDED CONDITION PRECLUDES PT EXAM

Radiation field:

Examiner	Level	Signature	Date	Reviewer	Signature	Date
	/			JERRY P. WREN / LV. III		4-8-02
Examiner	Level	Signature	Date	Site Review	Signature	Date
	/			/		
Other	Level	Signature	Date	ANII Review	Signature	Date
	/			/		

XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE
NUMBER: ISI-LTS-1 Revision 2

PREPARED BY: [signature] Lv III REVIEWED BY: [signature] Lv III

APPROVED BY: [signature] ANII REVIEW: [signature]
Superintendent M&MRN

EFFECTIVE DATE: 10-16-01

1.0 PURPOSE

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

2.0 REFERENCES

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

2.1 American Society of Mechanical Engineers Boiler & Pressure Vessel Code:

- Sections V and XI, 1986 edition, no addenda (Monticello - Third Interval)
- Sections V and XI, 1989 edition, no addenda (Prairie Island - Third Interval)

2.2 Nuclear Regulatory Commission Regulatory Guide - 1.150 "Ultrasonic Testing of Reactor Vessel Welds during Preservice and Inservice Examinations", (Rev. 1 dated Feb. 1983).

2.3 Code case N-460 Alternative Examination Coverage for Class 1 and Class 2 Welds - Section XI, Division 1

2.4 ISI NDE Manual procedure

- ISI-NDE-0 "Equipment, Personnel and Material Reporting".

2.5 Metals and Materials Resources Procedure

- MMRN 2.3 "ISI Examination Program".

2.6 ISI Administrative Manual procedures

- ISIA-1.4 "Preparation of Relief Request from ASME Section XI Code Requirements"
- ISIA-2.2 "ISI Field Activities - Preparation and Control

(3)

XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE
NUMBER: ISI-LTS-1 Revision 2

3.0 APPLICABILITY

3.1 This procedure is applicable to examinations performed at Xcel Energy's Nuclear Generating Plants.

3.2 This procedure is to be followed when it has been determined that there is a limitation which prevents obtaining full coverage of an area or volume as stated by the applicable examination procedure.

- For ultrasonic examinations, this would mean less than all of the required scans and/or a reduction of required scan path for one or more scans.

4.0 DEFINITIONS

4.1 **Limitation** - something that limits, restraint : An obstacle to the performance of an examination procedure.

4.2 **Evaluation** - to determine the significance, worth, or condition of, usually by careful appraisal and study

4.3 **Practical** - " of, relating to, or manifested in practice or action : not theoretical or ideal; concerned with voluntary action and ethical decisions. Useful." For this application this is interpreted to mean, for a specific case the benefits of a proposed action outweigh the negative aspects of that action.

5.0 PREREQUISITES

5.1 Personnel Requirements

- Examination personnel certification and eye examinations shall be documented in accordance with ISI-NDE-0.
- Nondestructive examination personnel shall be certified to a minimum of Level I in the appropriate method to operate equipment and Level II to interpret test results.

6.0 EQUIPMENT

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

TITLE: Limitations to NDE
NUMBER: ISI-LTS-1 Revision 2

7.0 INSTRUCTIONS

7.1 Initial Examination

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

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

7.2 Evaluation

- The data gathered by the initial examiner shall be reviewed by the Xcel Energy's field supervisor / designee to determine if alternate methods may be used to achieve additional coverage.
- If alternate methods would provide additional coverage, a review of the benefit versus the required resources (radiation dose, time, cost etc.) to achieve that coverage shall be performed by the Xcel Energy's field supervisor to determine if that action is practical (see para 7.3).
- If it is determined that the entire examination volume or area cannot be examined due to interference by another component or part geometry, a reduction in examination coverage on any Class 1 or Class 2 weld may be accepted provided the reduction in coverage for that weld is less than 10%. The applicable examination records shall identify both the cause and percentage of reduced examination coverage (see para 7.4).

7.3 Alternate methods to achieve coverage

- For surface examinations, MT and PT may be interchanged / intermixed as appropriate to the material and the conditions.
- For volumetric examinations, RT may be substituted for or augment UT assuming the ability to drain the line, and that the wall thickness / diameter is within a practical range.
- For UT, use of other angles, full node or node and one half calibrations, skewed scans or approach from another surface to achieve additional coverage shall be considered.

7.4 Determining Coverage Achieved

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

- For surface examinations, a worksheet similar to that shown in Fig 4 shall be completed.
- For volumetric examinations, a worksheet similar to that shown in Fig 5 or 6 (ultrasonic examinations) shall be completed.

7.5 Should the evaluation show that 90% weld coverage has been achieved, attach all related information to the original NDE report and no further action is required.

7.6 Contractor procedures for performing examinations utilizing automated equipment (e.g. reactor vessel and nozzle safe-end exams) shall be reviewed by an Xcel Energy's level III in the appropriate method to ensure the requirements for identifying, quantifying and recording of limitations encountered are adequately addressed.

7.7 When it has been determined that the maximum examination coverage practically achievable for a code required item is less than required; a relief request is required to be submitted to the NRC (refer to ISIA 1.4).

8.0 ACCEPTANCE CRITERIA

This item is not applicable to this procedure.

XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE
NUMBER: ISI-LTS-1 Revision 2

9.0 REPORTING

9.1 Information addressed in Fig's 3, 4, 5 and 6 (as applicable) shall be reported.

9.2 Information for examinations that are required to meet Reg. Guide 1.150 shall also include the following from Appendix A - Alternate Method;

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

9.3 Reference System

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

9.4 Documentation

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

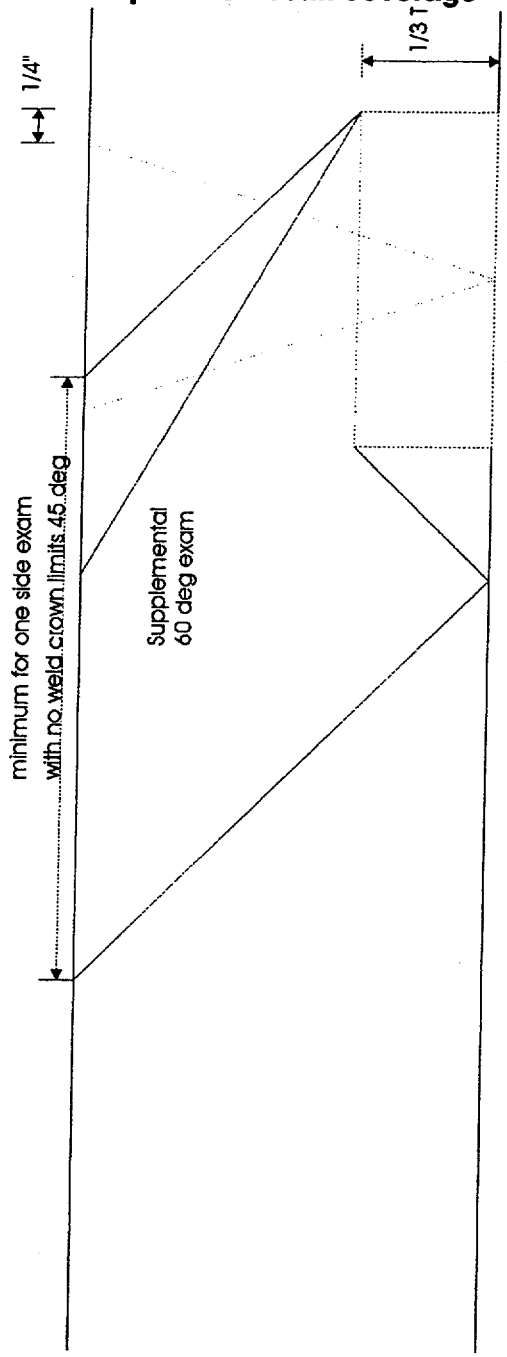
10.0 RECORDS

10.1 Inservice inspection examinations shall be incorporated in the ISI records. See Metals and Materials Resurces North Procedure 2.3 "ISI Examination Program".

10.2 Records of other examinations shall be the responsibility of the organization requesting the examination.

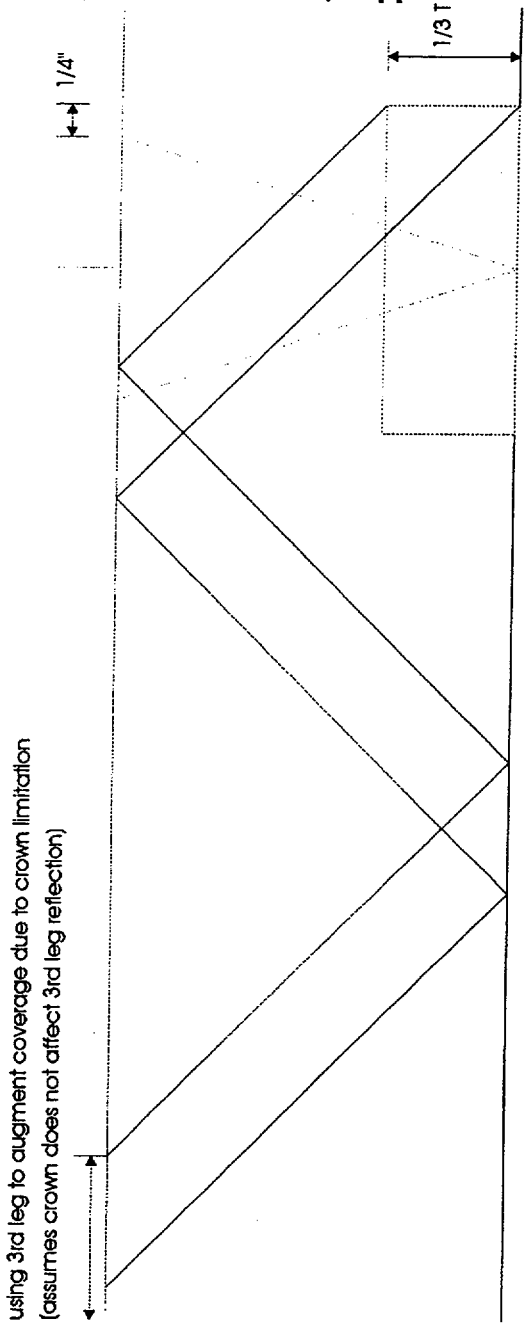
TITLE: Limitations to NDE
NUMBER: ISI-LTS-1 **Revision** 2

Figure 1
Example of UT scan coverage



TITLE: Limitations to NDE
NUMBER: ISI-LTS-1 Revision 2

Figure 2
Example of UT, one sided exam, supplemental coverage



XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE
NUMBER: ISI-LTS-1 Revision 2

Figure 3
Limitation Data Sheet

Initial exam report # _____ Procedure # _____

ISO # _____ Item # _____

Description of Limitation _____

Sketch of Limitation

Limitation removal requirements _____

Radiation field _____

Examiner: _____ Date: _____

XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE
NUMBER: ISI-LTS-1 Revision 2

Figure 4

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

Initial exam rpt # _____ Procedure # _____

ISO # _____ Item # _____

Applicable Code figure # _____

Area Required (as shown in applicable code reference drawing)

Length _____ * Width _____

= Total area required _____ square inches

Coverage Achieved

Area examined _____ sq. in. / Total area required (100%) _____ sq. in.

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

To determine length of a circumferential weld

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

Diameter _____ *(Pi) 3.1416

= Length _____ inches

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

Xcel Energy's Field Supervisor: _____ Date: _____

XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE
NUMBER: ISI-LTS-1 Revision 2

Figure 5

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

Initial exam rpt # _____ Procedure # _____

ISO # _____ Item # _____

Applicable Code figure # _____

45 deg

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

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

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

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

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

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

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

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

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

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

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

Percent complete coverage

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

_____ **% total for complete exam**

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

Xcel Energy's Field Supervisor: _____ Date: _____

XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE
NUMBER: ISI-LTS-1 Revision 2

Figure 6

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

Initial exam rpt # _____ Procedure # _____

ISO # _____ Item # _____

Applicable Code figure # _____

0 deg Planar

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

45 deg

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

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

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

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

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

60 deg

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

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

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

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

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

Percent complete coverage

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

_____ **% total for complete exam**

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

Xcel Energy's Field Supervisor: _____ Date: _____

XCEL ENERGY METALS & MATERIALS RESOURCES NORTH
INSERVICE INSPECTION - NONDESTRUCTIVE EXAMINATION PROCEDURE

TITLE: Limitations to NDE
NUMBER: ISI-LTS-1 Revision 2

SUMMARY OF SIGNIFICANT CHANGES

Title block changed NSP to Xcel Energy and Materials & Special Processes to Metals & Materials Resources North.

2.1 Added no addenda to code years.

Changed O&MS to MMRN, two places.

Changed NSP to Xcel Energy's, seven places.

Enclosure 2

Pages 1, 2, 6, and 9 of ISI
Relief Request No. 11, Limited Examination

ISI Relief Request No. 11 (Rev. 1)

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 and interference.

Summary of the limited examinations are described below and also included in Table 1.

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

Reactor Coolant, Weld W-6, (Pipe to Valve), Iso/Dwg ISI-2, Summary No. 300130, 50% Coverage volumetric examination. Single side examination only due to pipe configuration.

Reactor Coolant, Weld W-1, (RC pump to Pipe), Iso/Dwg ISI-12C, Summary No. 300514, 50% Coverage volumetric examination. Single side examination only due to pump to pipe configuration

Part B: Category C-A , "Pressure Retaining Welds in Pressure Vessels".

#12 Steam Generator, Weld W-E, (Shell –Transition), Iso/Dwg ISI-43B, Summary No. 301070, 77.54% Coverage volumetric examination. Restraint ring prohibits scanning from downstream side of weld.

RHR Heat Exchanger #12, Weld W-2 , (Shell –Flange) Iso/Dwg ISI-93B, Summary No. 303054, 27.26% Coverage volumetric examination. Weld geometry limits scans.

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

Main Steam "A", Integral Attachment Welds, Hanger H-1, Iso/Dwg ISI-51A, Summary No.301122, 69.6% Coverage surface examination. Limited by configuration.

Main Steam "A", Integral Attachment Welds, Hanger H-2, Iso/Dwg ISI-51A, Summary No. 301132, 83.5% Coverage surface examination. Limited by configuration.

Table 1: Limited Examinations-Prairie Island Unit 1 –2001 Refueling Outage.

Category	Item No.	SYSTEM	ISO	ITEM	Description/ Summary #	Method	% Coverage	REPORT	Limitation
B-J	B 9.11	Reactor Coolant	ISI-2	W-6	Pipe-Valve 300130	Volumetric	50.00	2001U004	(PDI)Single Sided Examination due to pipe configuration. (Page 10 of 37)
B-J	B 9.11	Reactor Coolant	ISI-12C	W-1	Reactor Coolant Pump to Pipe 300514	Volumetric	50.00	2001U039	(PDI)Single Sided Examination due to pump to pipe configuration. (Page 11 0f 37)
C-A	C1.10	STEAM GENERATOR #12	ISI-43B	W-E	Shell-Transition 301070	Volumetric	77.54	2001U010	Due to weld configuration. (Page 12 of 37)
C-A	C1.10	RHR Heat Exchanger #12	ISI-93B	W-2	Shell –Flange 303054	Volumetric	27.26	2001U029	Weld geometry limits scan (Page 13 of 37)
C-C	C3.20	Main Steam "A"	ISI-51A	H-1	Seismic Restraint (Integral attachment Weld) 301122	Surface	69.6	2001M011	Examination limited to 188" weld length out of 270" total weld length due to configuration of restraint (Page 14 of 37)
C-C	C3.20	Main Steam "A"	ISI-51A	H-2	Seismic Restraint (Integral attachment Weld) 301132	Surface	83.5	2001M010	Examination limited to 76" weld length out of 91" total weld length due to configuration of restraint (Page 15 of 37)

C-C	C3.30	SI PUMP 11	ISI-83C	H-4	Support D 302078	Surface	84.00	2001M025	Configuration prohibits examining weld at base of support. (Page 29 of 37)
C-C	C3.30	SI PUMP 11	ISI-83C	H-5	Support E 302082	Surface	71.4	2001M030	Configuration prohibits examining weld at inside of support. (Page 30 of 37)
C-C	C3.30	SI PUMP 11	ISI-83C	H-6	Support F 302086	Surface	71.4	2001M024	Configuration prohibits examining weld at inside of support. (Page 31 of 37)
C-C	C3.10	#12 RHR Heat Exchanger	ISI-93B	H-2	Support 303052	Surface	71.4	2001P056	Bottom of Support is inaccessible for removal work and mill scale. (Page 32 of 37)
C-F-1	C5.11	RHR Pump "B" Discharge	ISI-89B	W-14	Pipe to Penetration 10. 301858	Volumetric Surface	0	2001U040 2001P070	Weld inaccessible due to penetration sleeve and welded restraint. (Page 33, and 34, of 37)
C-F-1	C5.11	RHR Pump "B" Discharge	ISI-89B	W-18	Tee-Valve 301874	Volumetric	49.2	2001U013	(PDI)Single Sided Examination due to tee to valve configuration. (Page 36 of 37)
C-F-1	C5.21	SI Test Return	ISI-101	W-1	Weldolet to Pipe 305137	Volumetric	39.18	2001U034	(PDI)Single Sided Examination due to Weld Crown configuration. (Page 35 of 37)
C-F-2	C5.50	Main Steam "B"	ISI-68C	W-9 LSD2U	Tee-Pipe 301619	Surface	87.6	2001M016	31.2 Sq. in. of 252 Sq. in. limited due to nozzle configuration (Page 37 of 37)