NMC
Committed to Nuclear Excellence

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Prairie Island Nuclear Generating Plant
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November 16, 2002

10 CFR Part 50
Section 50.55a

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

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

Request for Relief No. 9 for the Unit 2 Third 10-year Interval Inservice Inspection Program

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

The purpose of this letter is to submit a relief request for "limited examinations" associated with that plan. Attached is Unit 2 Relief Request No. 9, Revision 0 which addresses those limited examinations. We are requesting relief pursuant to 10 CFR Part 50, Section 50.55a(g)(5)(iii) due to the impracticality of obtaining "100%" examination coverage for the affected items.

By letter dated March 21, 1997, we committed to submitting relief requests for "limited" examinations following each refueling outage inspection (whereas the regulation only requires that the relief requests be submitted within 12 months following the end of the inspection interval). We recently identified that we missed one, for the limited examinations encountered in the Spring 2000 Unit 2 refueling outage. Our review has determined that we submitted the requests following each of the other refueling outages since 1997. The attached relief request is for that Spring 2000 outage. We apologize for any inconvenience our failure to previously submit that relief request may have caused.

A047

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

Enclosure: ISI Relief Request No. 9 (Rev. 0), Prairie Island Unit 2, Third Interval and its attachments

ISI Relief Request No. 9 (Rev. 0)

Limited Examination

SYSTEM: Various
Category: Various

Class: 1 and 2
Item: Various

Impractical Examination Requirements:

ASME Section XI (1989 no addenda) Code requires full examination of inservice inspection (ISI) components per Table IWB-2500-1, and IWC-2500-1. Reg. Guide 1.147, Rev. 12 endorses Code Case N-460, "Alternative Examination Coverage for Class 1 and Class 2 Welds." This Code Case allows greater than 90% examination 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 required to be 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 most components constructed and installed 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, interferences, and weld joint configurations.

A summary of the limited examinations are described below and included in Table RR-9.

Part A: Category B-B, "Pressure retaining Welds in Vessels other than Reactor Vessels."

Chemical and Volume Control (VC) Weld (W-2), Cap–Integral Tube-sheet: Volumetric coverage limited, due to cap to tube-sheet configuration, to 48.75% for UT examination. See Attachment 1, ISI drawing 2-ISI-34 and Attachment 7, Examination Report Number 2000U138.

Part B: Category B-F, "Pressure retaining dissimilar Metal Welds in Vessels Nozzles."

Reactor Coolant (RC) Weld (W-1) Nozzle to Safe-End: Volumetric coverage limited, due to nozzle-to-safe-end configuration, to 62.5% for UT examination. See Attachment 2, ISO drawing 2-ISI-30A and Attachment 8, Examination Report Number 2000U119.

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

Reactor Coolant (RC) Weld (W-13) Nozzle to Pipe: Volumetric coverage limited, due to nozzle to pipe configuration, to 53.75%. See Attachment 3, ISO drawing 2-ISI-5 and Attachment 9, Examination Report Number 2000U125.

Part D: Category C-A, "Pressure retaining Welds in Pressure Vessels"

Steam Generator #21 (SG) Weld (W-E) Shell to transition Cone: Volumetric coverage limited, due to ring support at weld junction, to 11.4%. See Attachment 4, ISO drawing 2-ISI-37A and Attachment 10, Examination Report Number 2000U131.

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

Safety Injection Pump 22 Supports A (H-1), B (H-2), C (H-3), D (H-4): Surface examination (MT) coverage limited to 83.0% due to inaccessibility of the bottom

of support because of concrete pad interference. See Attachment 5, ISO drawing 2-ISI-60B and Attachments 11 - 14 (Examination Report Numbers 2000M087, 2000M088, 2000M086 and 2000M089).

Residual Heat Exchanger 21, Support A (H-1), and Support B (H-2): Surface examination (PT) coverage limited to 85.2% due to the configuration of the support and concrete pedestal. See Attachment 6, ISO drawing 2-ISI-69A and Attachments 15 & 16 (Exam Report Numbers 2000P054 & 2000P056).

Additional Means of Establishing Pressure Boundary Integrity:

System pressure tests and associated visual inspections (VT-2) required by Section XI are performed at the required frequency to ensure the piping system is capable of maintaining pressure boundary integrity. The B-B category weld was visually examined during a pressure test in 1997, Attachment 26, List of Section XI VT-2 Examinations. The other pressure retaining welds with limited exams were visually examined during pressure tests in 2000, Attachment 27, List of Section XI VT-2 Examinations.

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

In addition to the UT volumetric examination with limitations for the listed B-F Category weld, the required surface examination (PT) was completed, Attachment 17, Examination Report Number 2000P023.

In addition to the UT volumetric examination with limitations for the listed B-J Category weld, the required surface examination (PT) was completed, Attachment 18, Examination Report Number 2000P037.

In addition to the surface examinations (MT or PT) with limitations of all listed C-C Category integrally attached welds, VT-3 visual examinations were performed, Attachments 19 - 24 (Examination Report Numbers 2000V393, 2000V394, 2000V388, 2000V389, 2000V314, and 2000V313).

Alternate Examination:

Limitations to the required examination coverage have been noted on the applicable ISI examination reports and included in the 2000 ISI Outage Summary Report. NMC will continue to document examination limitations.

In-service inspections at Prairie Island Unit 2 have been performed to the maximum extent practical. When examination limitations are encountered, M&MR procedure ISI-LTS-1, "Limitations to NDE," is applied. ISI-LTS-1 (Attachment 25) is used when an ASME Section XI Code required examination results in less than 90% coverage of the required examination volume or area. It requires a review of the procedures to obtain maximum coverage and documentation of the limitation. The procedure also considers whether an alternative method could be used to obtain improved examination coverage required by the Code. This procedure was used for all the items identified above to determine that the maximum examination coverage was achieved.

Limitations to inspections are primarily due to obstructions, interferences, and weld joint configurations. NMC will continue to utilize the most current examination techniques available for future examinations.

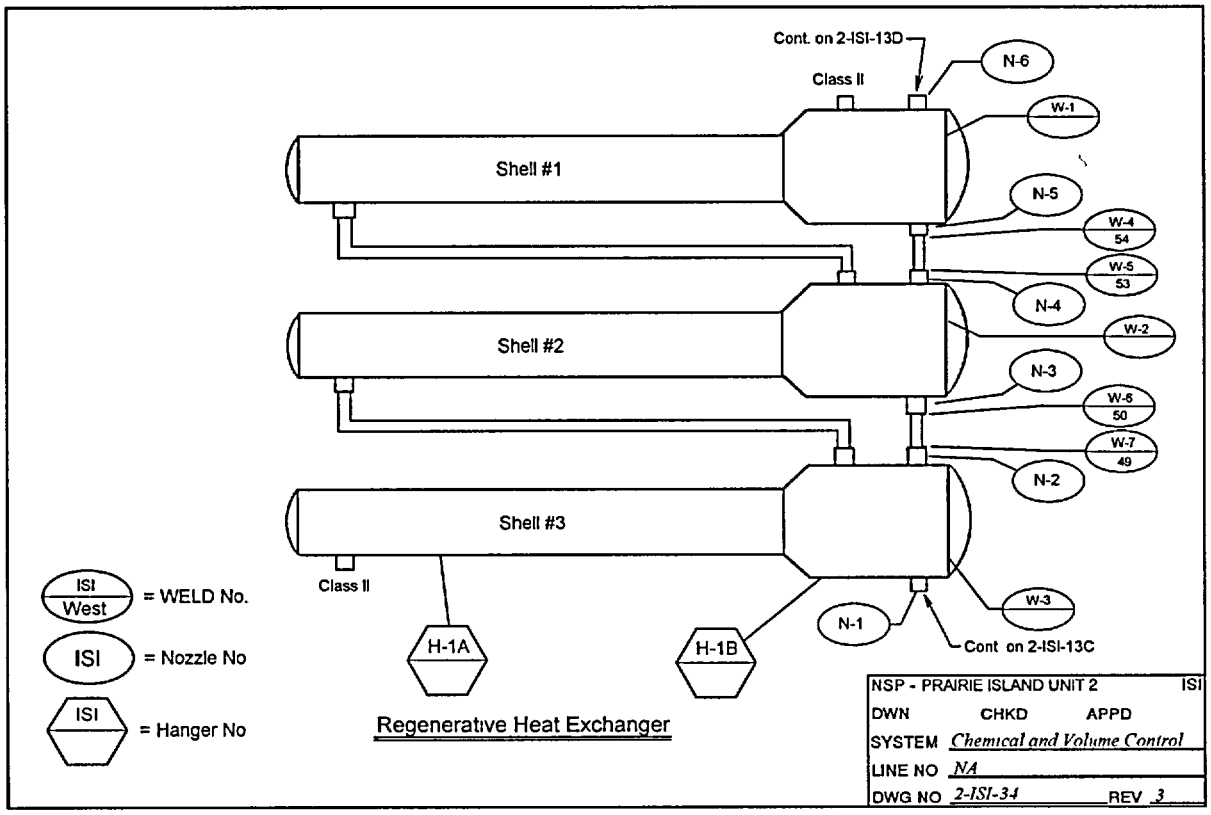
Table RR-9
Limited Examinations - Prairie Island Unit 2 – 2000 Refueling Outage

Category	Item No.	SYSTEM	ISO	Comp ID Summary #	Description	Method	% Coverage	REPORT	Limitation
B-B	B2.51	Volume Control	2-ISI-34	W-2 501536	Cap-Integral Tube-sheet	Volumetric UT	48.75%	2000U138	Limited due to cap to tube-sheet configuration.
B-F	B5.40	Reactor Coolant	2-ISI-30A	W-1 501405	Nozzle-Safe End	Volumetric UT	62.5%	2000U119	Limited due to nozzle to safe end configuration.
B-J	B9.31	Reactor Coolant	2-ISI-5	W-13 501935	Nozzle to Pipe	Volumetric UT	53.75%	2000U125	Limited due to nozzle to pipe configuration.
C-A	C1.10	Steam Generator #21	2-ISI-37A	W-E 502624	Shell to Transition Cone	Volumetric UT	11.4%	2000U131	Limited due to Ring Support at Weld junction.
C-C	C3.30	Safety Injection Pump 22	2-ISI-60B	H-1 501377	Support A	Surface MT	83.0%	2000M087	Bottom of support inaccessible due to concrete pad.
C-C	C3.30	Safety Injection Pump 22	2-ISI-60B	H-2 501385	Support B	Surface MT	83.0%	2000M088	Bottom of support inaccessible due to concrete pad.
C-C	C3.30	Safety Injection Pump 22	2-ISI-60B	H-3 501390	Support C	Surface MT	83.0%	2000M086	Bottom of support inaccessible due to concrete pad.
C-C	C3.30	Safety Injection Pump 22	2-ISI-60B	H-4 501396	Support D	Surface MT	83.0%	2000M089	Bottom of support inaccessible due to concrete pad.

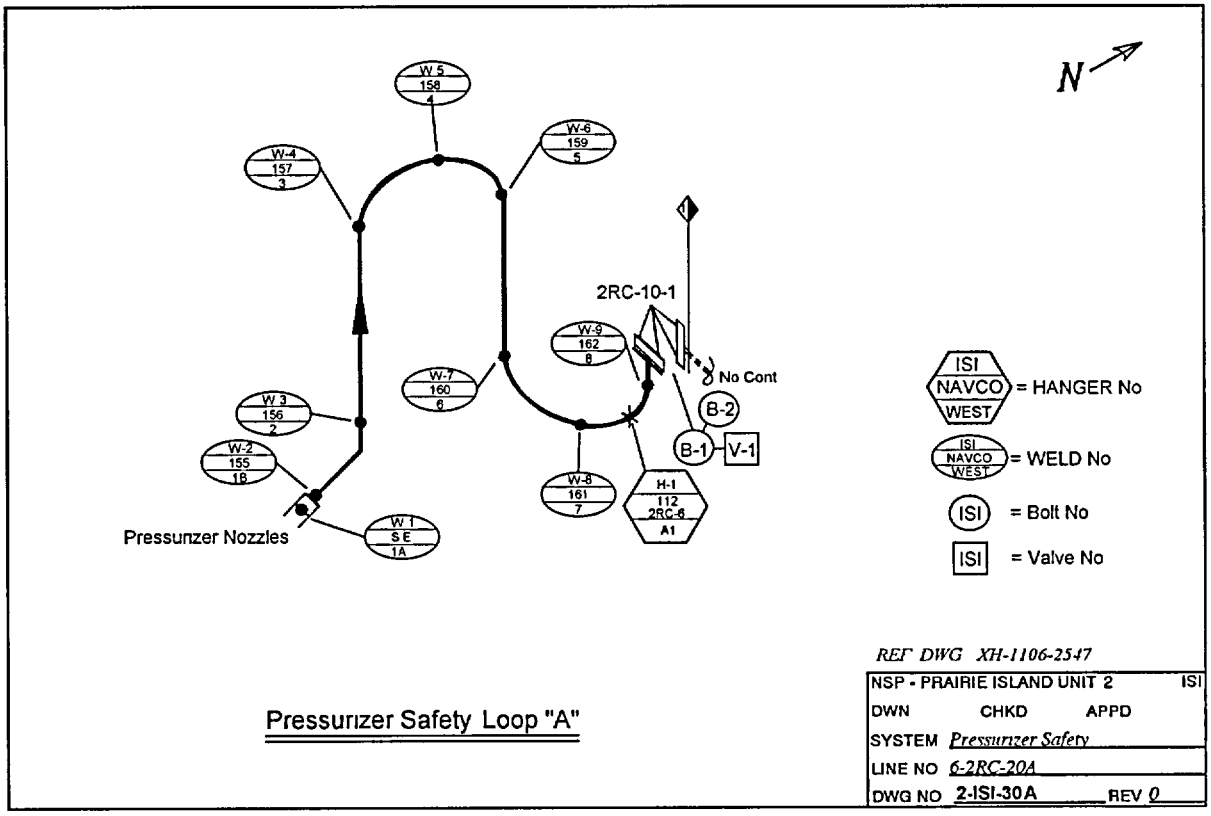
Table RR-9
Limited Examinations - Prairie Island Unit 2 – 2000 Refueling Outage

Category	Item No.	SYSTEM	ISO	Comp ID Summary #	Description	Method	% Coverage	REPORT	Limitation
C-C	C3.10	Residual Heat Exchanger 21	2-ISI-69A	H-1 501412	Support A	Surface PT	85.2%	2000P054	Limited PT examination due to configuration of support and concrete pedestal.
C-C	C3.10	Residual Heat Exchanger 21	2-ISI-69A	H-2 501419	Support B	Surface PT	85.2%	2000P056	Limited PT examination due to configuration of support and concrete pedestal.

Attachment 1, ISO Drawing 2-ISI-34

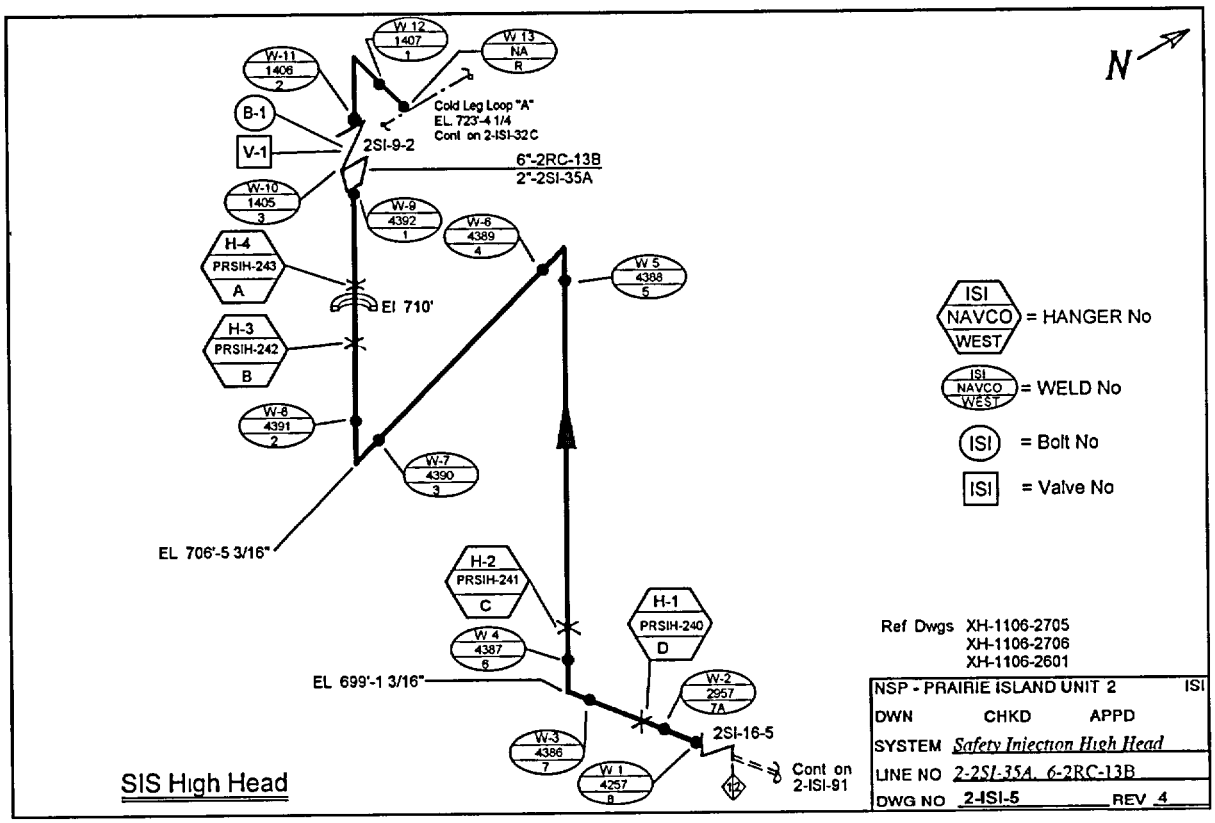


Attachment 2, ISO Drawing 2-ISI-30A

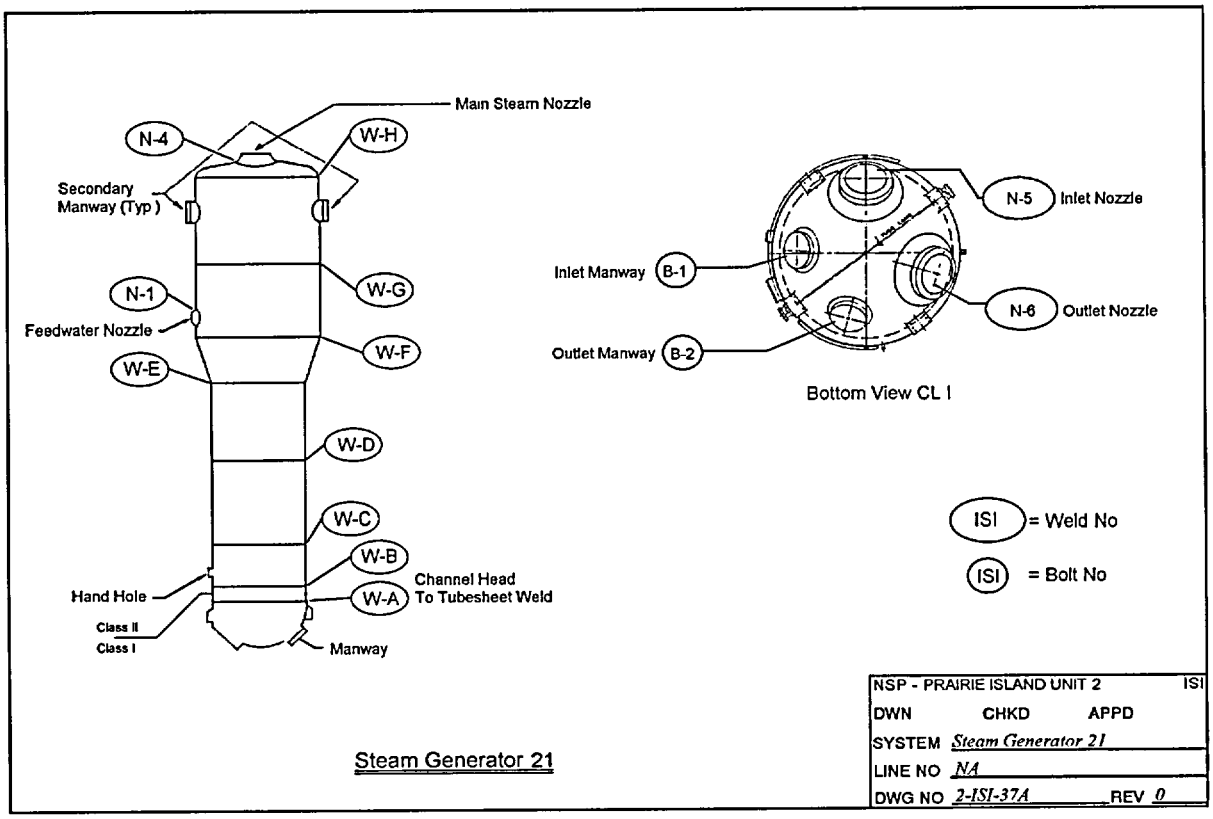


Pressurizer Safety Loop "A"

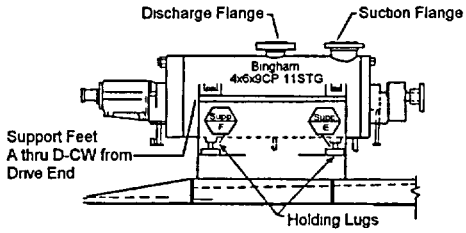
Attachment 3, ISO Drawing 2-ISI-5



Attachment 4, ISO Drawing 2-ISI-37A



Attachment 5, ISO Drawing 2-ISI-60B



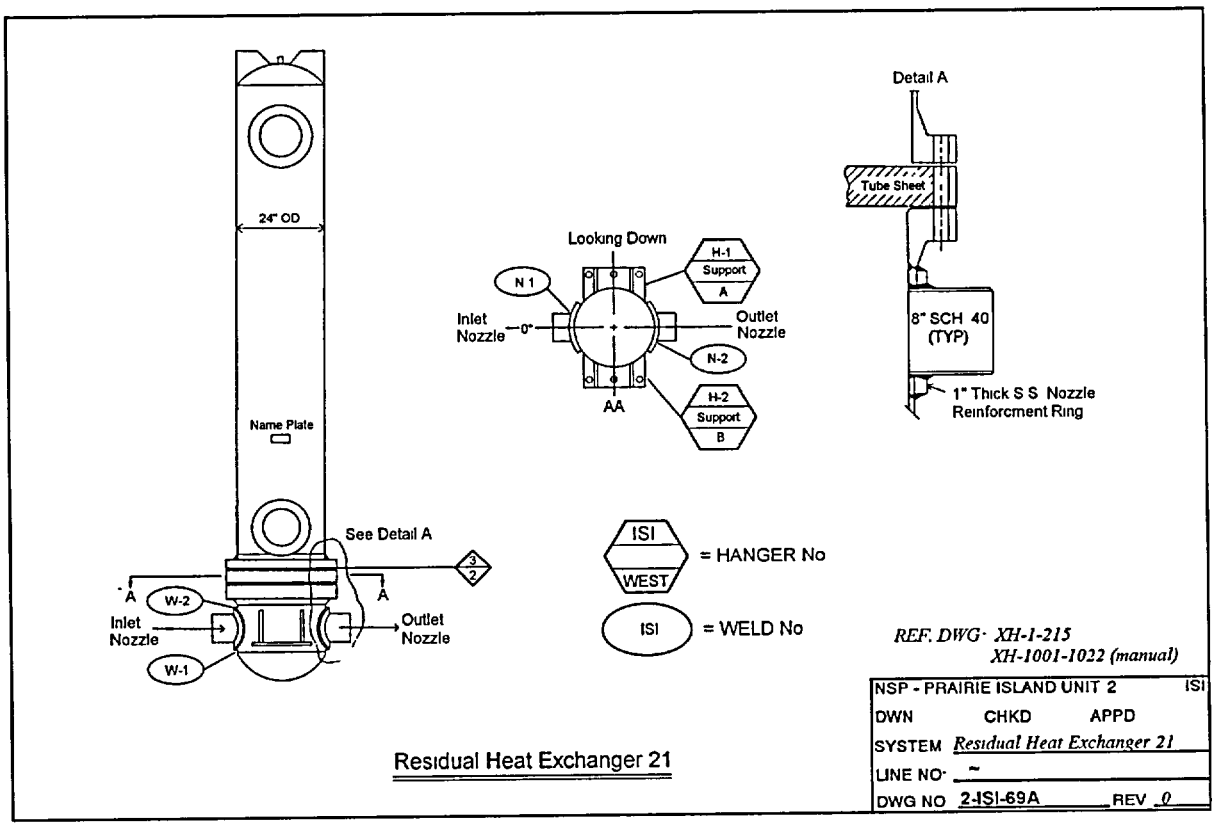
Safety Injection Pump (Typical)

REF DWG XH-1001-648

NSP - PRAIRIE ISLAND UNIT 2			ISI
DWN	CHKD	APPD	
SYSTEM *Safety Injection Pump B*			
LINE NO			
DWG NO *2-ISI-60B*		REV *0*	

Safety Injection Pump B

Attachment 6, ISO Drawing 2-ISI-69A



Residual Heat Exchanger 21

Attachment 7

NSP

UT Pipe Weld Examination

Report No.: 2000U138
Page 1 of 4

Site/Unit: NSP / PI2
Procedure: ISI-UT-16
Summary No.: 501536
Procedure Revision/FC: 13 /
Examination For: ISI
Work Order No.: 0000232

Applicable Code: 1989
ISO Drawing No.: 2-isi-34
Location: Containment
Description: Cap-Integral Tubesht
System ID: VC
Component ID: W-2
Size/Length: 6"
Thick/Dia: .719"
Limitations: See Comments
Start Time: 10:30
Finish Time: 10:52

Temp. Tool MFG: PTC Instruments
Serial No.: 3355
Surface Temp.: 68 °F
Couplant: Sonotrace 40
Batch No.: #98243

Angle Used	0	45	45T	60		
Scanning dB	N/A	37.0	40 0	47.0		

Lo Location: Top Dead Center
Wo Location: Centerline of Weld
Cal Sheet No.: 2000CA146, 2000CA147
Examination Surface: Inside ☐ Outside ☑

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

Comments:

Scans limited on tubesheet side top dead center and bottom dead center for 3 1/2" due to nozzle interference. Scans limited at 90 degree for 4" due to ID tag interference. Scans limited by attenuation on cast cap side.

Results: NAD ☑ IND ☐ GEO ☐

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

Examiner Blechinger, Todd P.	Level II /	Signature	Date 5/13/2000	Reviewer Halling, David A.	/	Signature	Date 5/17/00
Examiner N/A	Level N/A /	Signature	Date	Site Review Kinney, Charles R.	/	Signature	Date 5/17/00
Other N/A	Level N/A /	Signature	Date	ANII Review Heater, Stephen B.	/	Signature	Date 5/17/00

Attachment 7, Page 1 of 4

Limitation Record

Report No : 2000U138

Site/Unit: NSP / PI2 | Procedure: ISI-UT-16 | Page: 2 of 4

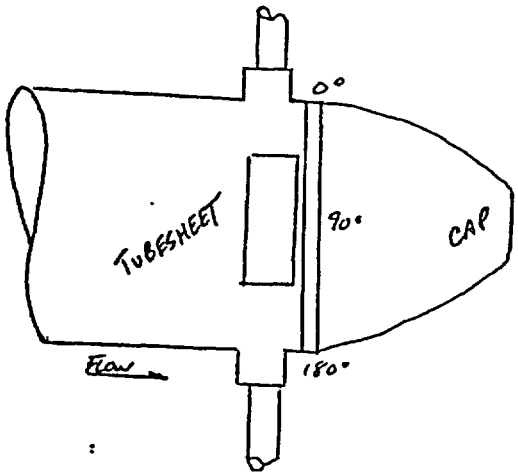
Summary No.: 501536 | Procedure Revision/FC: 13 /

Examination For: ISI | Work Order No : 0000232

Description of Limitation:

2" Nozzle at top dead center and bottom dead center. 4" Nameplate at 90 degree.

Sketch of Limitation: G:\IDDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL UT\2000U1



Limitations removal requirements:

None

Radiation field: 200 mR / hr

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Blechinger, Todd P.	/	T. P. Blech	5/13/2000	Halling, David A.	/		5/17/00
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A	/			Kinney, Charles R.	/		5/17/00
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Heater, Stephen B.			5-17-00

Attachment 7
Page 2 of 4

Determination of Percent Coverage for UT Examinations - Pipe

Attachment 7
Page 3 of 4

Site/Unit:	NSP / PI2	Procedure:	ISI-UT-16	Report No:	2000U138
Summary No.:	501536	Procedure Revision/FC:	13 /	Page:	3 of 4
Examination For:	ISI	Work Order No.:	0000232		

45 deg

Scan 1	56.000	% Length X	62.500	% volume of length / 100 =	35.000	% total for Scan 1
Scan 2	56.000	% Length X	62.500	% volume of length / 100 =	35.000	% total for Scan 2
Scan 3	100.000	% Length X	62.500	% volume of length / 100 =	62.500	% total for Scan 3
Scan 4	100.000	% Length X	62.500	% volume of length / 100 =	62.500	% total for Scan 4

Add totals and divide by # scans = 48.750 **% 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;

48.750 **% Total for complete exam**

Site Field Supervisor: _____ Date: 5/17/00

Supplemental Report

Report No.: 2000U138

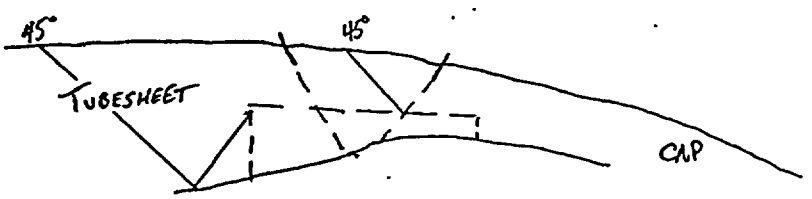
Page: 4 of 4

Summary No.: 501536

Examiner:	Blechinger, Todd P. TPB	Level:	II	Reviewer:	Halling, David A.	Date:	5/17/00
Examiner:	N/A	Level:	N/A	Site Review:	Kinney, Charles R.	Date:	5/12/00
Other:	N/A	Level:	N/A	ANII Review	Heater, Stephen B.	Date:	5-17-00

Comments: **Coverage Plot.**
No additional coverage obtained with 60 degree shear exam.

Sketch or Photo: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL UT\2000U1



Attachment 7
Page 4 of 4

Attachment 8

UT Pipe Weld Examination

Report No.: 2000U119
Page: 1 of 5

Site/Unit: NSP / PI2
Procedure: ISI-UT-16
Summary No.: 501405
Procedure Revision/FC: 13 /
Examination For: ISI
Work Order No.: 0000232

Applicable Code: 1989
ISO Drawing No : 2-ISI-30A
Location: Pressurizer
Description: Nozzle - Safe End
System ID: RC
Component ID: W-1
Size/Length: 6"
Thick/Dia: 1.379"
Limitations: No scan area on safe-end side due to configuration.
Start Time: 15:43
Finish Time: 16:25

Temp. Tool MFG: Telatemp
Serial No : NSP 122
Surface Temp.: 70 °F
Couplant: Sonotrace 40
Batch No.: #98243

Angle Used	0	45	45T	60	45RL	
Scanning dB		44.5	44.5		65.0	

Lo Location: Top Dead Center
Wo Location: Centerline of Weld
Cal Sheet No.: 2000CA120, 2000CA122
Examination Surface: Inside ☐ Outside ☑

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

Comments:
Performed supplemental 45 degree RL examination due to attenuation concerns on weld metal and inconel buttering.

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

Examiner Level II Blechinger, Todd P. /	Signature Todd P. Blech	Date 5/3/2000	Reviewer Halling, David A. /	Signature D.A. Halling	Date 5/10/00
Examiner Level II Klipela, Mathew F. /	Signature Mathew Klipela	Date 5/3/2000	Site Review Kinney, Charles R. /	Signature C.R. Kinney	Date 5/16/00
Other Level N/A N/A /	Signature	Date	ANII Review Heater, Stephen B. /	Signature Stephen Heater	Date 5-16-00

Attachment 8
Page 1 of 5

Ultrasonic Indication Report

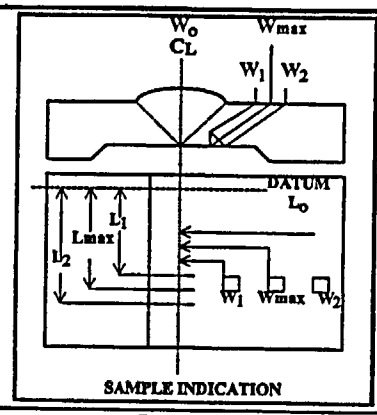
Report No.: 2000U119
Page: 2 of 5

Site/Unit: NSP / PI2
Summary No.: 501405
Examination For: ISI

Procedure: ISI-UT-16
Procedure Revision/FC: 13 /
Work Order No.: 0000232

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

- (•) 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 N/A Of Max (Forward)
L	Distance From Datum	W2	Distance From Wo At N/A Of Max (Forward)

Scan #	Indication No.	% Of DAC	W Max W	W Max MP	Forward N/A Of Max W1	Forward N/A Of Max MP	Backward N/A Of Max W2	Backward N/A Of Max MP	L1 N/A Of Max	L Max	L2 N/A Of Max	RBR Amp.	Remarks
1	1	100%	1.5	1.55	N/A	N/A	N/A	N/A	N/A	4 ccw	N/A	N/A	360 Degree Intermittent Clad Geometry

Examiner Level II Blechinger, Todd P. /	Signature Todd P. Blechinger	Date 5/3/2000	Reviewer Halling, David A. /	Signature D. A. Halling	Date 5/10/00
Examiner Level II Klipela, Mathew F. /	Signature	Date 5/3/2000	Site Review Kinney, Charles R. /	Signature M. Kinney	Date 5/16/00
Other Level N/A N/A /	Signature	Date	ANII Review Heater, Stephen B. /	Signature Stephen B. Heater	Date 5/16/00

Attachment 8
Page 2 of 5

Supplemental Report

Report No.: 2000U119

Page: 3 of 5

Summary No.: 501405

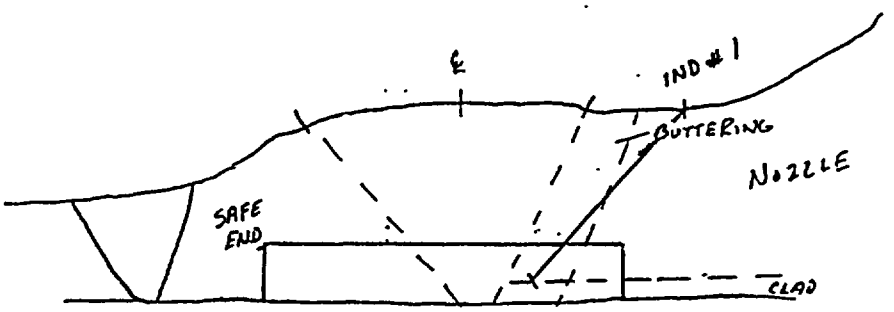
Examiner: Blechinger, Todd P. Level: II Reviewer: Halling, David A. Date: 5/16/00

Examiner: Klipela, Mathew F. Level: II Site Review: Kinney, Charles R. Date: 5/16/00

Other: N/A Level: N/A ANII Review: Heater, Stephen B. Date: 5/16/00

Comments: Indication #1 - Clad Interface Geometry

Sketch or Photo: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL UT\2000U1



Attachment 8
Page 3 of 5

Attachment 8
Page 4 of 5

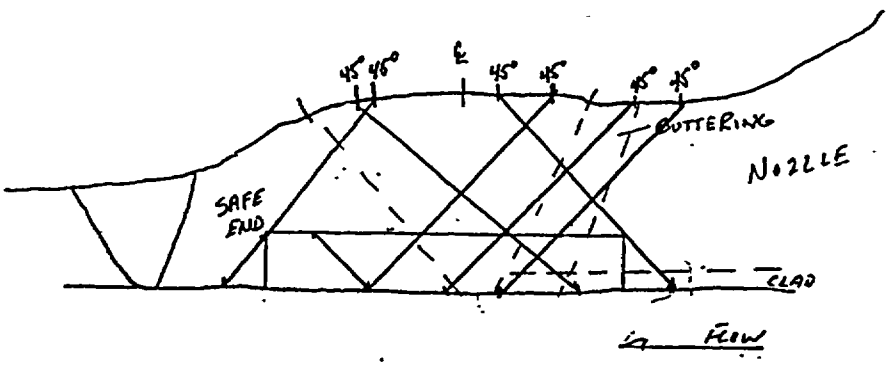
Limitation Record

Site/Unit:	NSP / PI2	Procedure:	ISI-UT-16	Report No.:	2000U119
Summary No.:	501405	Procedure Revision/FC:	13 /	Page:	4 of 5
Examination For:	ISI	Work Order No:	0000232		

Description of Limitation:

Coverage Plot

Sketch of Limitation: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL UT\2000U1



Limitations removal requirements:

None

Radiation field. 25 mR / hr

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Blechinger, Todd P.	/	Todd P. Blech	5/3/2000	Halling, David A.	/	D A Halling	5/14/00
Examiner	Level II	Signature	Date	Site Review		Signature	Date
Kilpela, Mathew F.	/	Mathew Kilpela	5/3/2000	Kinney, Charles R.	/	C R Kinney	5/14/00
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Heater, Stephen B.	/	Stephen Heater	5/14/00

Determination of Percent Coverage for UT Examinations - Pipe

Attachment 8
Page 5 of 5

Site/Unit:	NSP / PI2	Procedure.	ISI-UT-16	Report No.:	2000U119
Summary No :	501405	Procedure Revision/FC:	13 /	Page:	5 of 5
Examination For:	ISI	Work Order No.:	0000232		

45 deg

Scan 1	100.000	% Length X	62.000	% volume of length / 100 =	62.000	% total for Scan 1
Scan 2	100.000	% Length X	46.000	% volume of length / 100 =	46.000	% total for Scan 2
Scan 3	100.000	% Length X	76.000	% volume of length / 100 =	76.000	% total for Scan 3
Scan 4	100.000	% Length X	76.000	% volume of length / 100 =	76.000	% total for Scan 4

Add totals and divide by # scans = 62.500 % 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	0.000	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 1
Scan 2	0.000	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 2
Scan 3	0.000	% Length X	_____	% volume of length / 100 =	_____	% total for Scan 3
Scan 4	0.000	% 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;

62.500 % 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).

Site Field Supervisor: _____ Date: 5/16/00

Attachment 9

UT Pipe Weld Examination

Report No.: 2000U125
Page: 1 of 3

Site/Unit: NSP / PI2
Summary No.: 501935
Examination For: ISI
Procedure: ISI-UT-16
Procedure Revision/FC: 13 /
Work Order No.: 0000232

Applicable Code: 1989
ISO Drawing No : 2-ISI- 5
Location: CONTAINMENT
Description: Nozzle to Pipe
System ID: RC
Component ID: W-13
Size/Length: 6"
Thick/Dia: 2.0" T
Limitations: * See Comments
Start Time: 11:10
Finish Time: 12:32

Temp. Tool MFG: PTC Instruments
Serial No.: 3356
Surface Temp.: 95 °F
Couplant: Sonotrace 40
Batch No.: #98243

Angle Used	0	45	45T	60		
Scanning dB	N/A	38.5	53.0	51.0		

Lo Location: Top Dead Center
Wo Location: Centerline of Weld
Cal Sheet No.: 2000CA131, 2000CA132
Examination Surface: Inside ☐ Outside ☑
Indication(s): Yes ☐ No ☑
Scan Coverage WRT Weld: Upstream ☑ Downstream ☐ CW ☑ CCW ☑
Comments:
* No scans on cold leg and weld due to configuration.

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

Examiner Level II Blechinger, Todd P. /	Signature	Date 5/6/2000	Reviewer Halling, David A. /	Signature	Date 5/9/00
Examiner Level II Kilpela, Mathew F. /	Signature	Date 5/6/2000	Site Review Kinney, Charles R. /	Signature	Date 5/14/00
Other Level N/A N/A /	Signature	Date	ANII Review Heater, Stephen B. /	Signature	Date 5-17-00

Attachment 9
Page 1 of 3

Determination of Percent Coverage for UT Examinations - Pipe

Attachment 9
Page 2 of 3

Site/Unit:	NSP / PI2	Procedure:	ISI-UT-16	Report No.:	2000U125
Summary No.:	501935	Procedure Revision/FC:	13 /	Page:	2 of 3
Examination For:	ISI	Work Order No.:	0000232		

45 deg

Scan 1	100.000	% Length X	73.000	% volume of length / 100 =	73.000	% total for Scan 1
Scan 2	100.000	% Length X	95.000	% volume of length / 100 =	95.000	% total for Scan 2
Scan 3	100.000	% Length X	11.000	% volume of length / 100 =	11.000	% total for Scan 3
Scan 4	100.000	% Length X	11.000	% volume of length / 100 =	11.000	% total for Scan 4

Add totals and divide by # scans = 47.500 % 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	20.000	% volume of length / 100 =	20 000	% total for Scan 1
Scan 2	100.000	% Length X	5.000	% volume of length / 100 =	5.000	% total for Scan 2
Scan 3		% Length X		% volume of length / 100 =		% total for Scan 3
Scan 4		% Length X		% volume of length / 100 =		% total for Scan 4

Percent complete coverage

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

TCB 5-9-00 53.75 ~~54.833~~ % 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).

Site Field Supervisor: _____ Date: 5/14/00

Limitation Record

Report No.: 2000U125

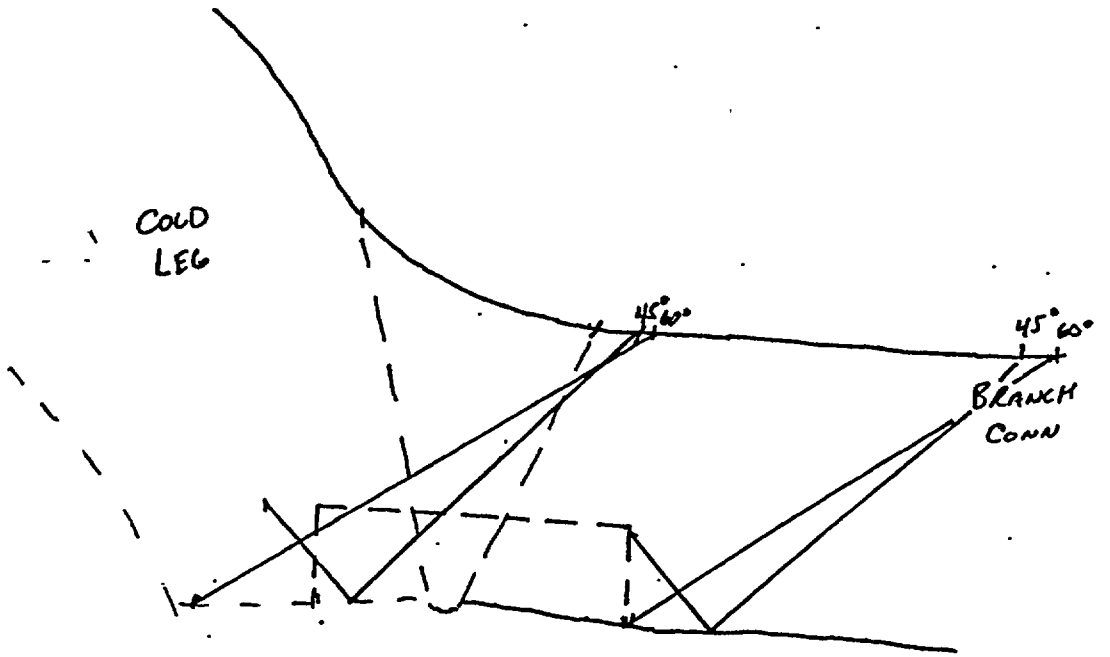
Site/Unit:	NSP / PI2	Procedure:	ISI-UT-16	Page:	3 of 3
Summary No.:	501935	Procedure Revision/FC:	13 /		
Examination For:	ISI	Work Order No.:	0000232		

Attachment 9
Page 3 of 3

Description of Limitation:

No scans on cold leg and weld due to configuration.

Sketch of Limitation: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL UT\2000U1



Limitations removal requirements:

None

Radiation field: **250 mR/HR**

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Blechinger, Todd P.	/		5/6/2000	Halling, David A.	/		5/9/00
Examiner	Level II	Signature	Date	Site Review		Signature	Date
Kilpela, Mathew F.	/		5/6/2000	Kinney, Charles R.	/		5/4/00
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Heater, Stephen B.	/		5-17-00

Attachment 10

NSP

UT Vessel Examination

Report No.: 2000U131
Page: 1 of 6

Site/Unit: NSP / P12
Summary No.: 502624
Examination For: ISI

Procedure: ISI-UT-3
Procedure Revision/FC: 9 /
Work Order No.: 0000232

Applicable Code: 1989
ISO Drawing No.: 2-ISI-37A
Location: Containment
Description: Shell to Trans Cone
System ID: SG
Component ID: W-E
Size/Length: 450.5"
Thick/Dia: 2.82"
Limitations: See attached limitation records.
Start Time: 11:09
Finish Time: 17:32

Examination Surface: Inside ☐ Outside ☑
Surface Condition: Ground Smooth
Temp Tool MFG: Telatemp
Serial No.: NSP 123
Surface Temp.: 75 °F
Couplant: Sonotrace 40
Batch No.: #98243

Angle Used	0	45	45T	60	60T	
Scanning dB	44.6	64.6	64.5	60.2	60.2	

Lo Location: Centerline of FW Nozzle
Wo Location: Top Toe
Cal Sheet No.: 2000CA136, 2000CA137, 2000CA138

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

Comments:
Noted indications recorded on Report #90-229, located outside exam volume.

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

Examiner Auer, Robert G.	Level II /	Signature	Date 5/6/2000	Reviewer Halling, David A.	/	Signature	Date 5/17/00
Examiner Newgard, Jerry W.	Level II /	Signature	Date 5/6/2000	Site Review Kinney, Charles R.	/	Signature	Date 5/20/00
Other N/A	Level N/A /	Signature	Date	ANII Review Heater, Stephen B.	/	Signature	Date 5-22-00

Attachment 10
Page 1 of 6

Limitation Record

Report No.: 2000U131

Site/Unit: NSP / PI2 | Procedure: ISI-UT-3 | Page: 2 of 6

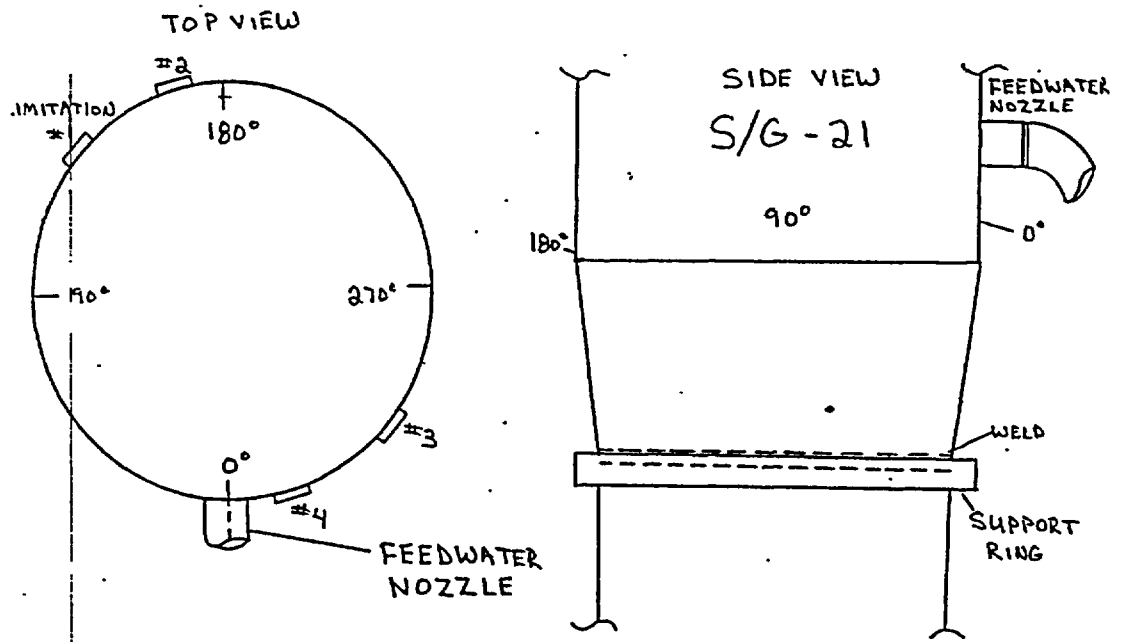
Summary No: 502624 | Procedure Revision/FC: 9 /

Examination For: ISI | Work Order No.: 0000232

Description of Limitation:

Top view limitations #1 - 4 - upper lateral support ring bolted flanges, each 7" in length, #1 - 12' 10" to 13' 5", #2 - 17' 2" to 17' 9", #3 - 31' 5" to 32', #4 - 36' 2" to 36' 9". Side view limitation - support ring covers entire weld and lower 1/2" of base material included in the exam area.

Sketch of Limitation: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL UT\2000U1



Limitations removal requirements:

None

Radiation field. 5 - 30 mR

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Auer, Robert G.	/		5/6/2000	Halling, David A.	/		5/17/00
Examiner	Level II	Signature	Date	Site Review		Signature	Date
Newgard, Jerry W.	/		5/6/2000	Kinney, Charles R.	/		5/16/00
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Heater, Stephen B.	/		5.22.00

Attachment 10
Page 2 of 6

Supplemental Report

Report No.: 2000U131

Page: 3 of 6

Summary No.: 502624

Examiner:	Auer, Robert G.	Level.	II	Reviewer:	Halling, David A.	Date.	5/17/00
Examiner:	Newgard, Jerry W.	Level:	II	Site Review:	Kinney, Charles R.	Date:	5/20/00
Other:	N/A	Level:	N/A	ANII Review:	Heater, Stephen B.	Date:	5-22-00

Comments:

0 Degree Scan - No exam volume achieved due to support ring.

45 and 60 Degree Scans - Scan #1 - No scan from this direction due to support ring. Limited exam volume was achieved from second leg of Scan #2.

Scan #2 - Limited scan from this direction due to support ring and support ring bolted flanges. Limited exam volume was achieved.

Scans #3 and 4 - No exam volume was achieved due to support ring.

See attached coverage worksheets.

Attachment 10
Page 3 of 6

Determination of Percent Coverage for UT Examinations - Vessels

Attachment 10
Page 4 of 6

Site/Unit:	NSP / PI2	Procedure:	ISI-UT-3	Report No:	2000U131
Summary No.:	502624	Procedure Revision/FC:	9 /	Page:	4 of 6
Examination For:	ISI	Work Order No.:	0000232		

0 deg Planar

Scan 93.800 % Length X 0.000 % volume of length / 100 = 0.000 % total for 0 deg

45 deg

Scan 1 93.800 % Length X 27.400 % volume of length / 100 = 25.701 % total for Scan 1

Scan 2 93.800 % Length X 30.500 % volume of length / 100 = 28.609 % total for Scan 2

Scan 3 93.800 % Length X 0.000 % volume of length / 100 = 0.000 % total for Scan 3

Scan 4 93.800 % Length X 0.000 % volume of length / 100 = 0.000 % total for Scan 4

Add totals and divide by # scans = 13.578 % total for 45 deg

60 deg

Scan 1 93.800 % Length X 34.700 % volume of length / 100 = 32.549 % total for Scan 1

Scan 2 93.800 % Length X 53.700 % volume of length / 100 = 50.371 % total for Scan 2

Scan 3 93.800 % Length X 0.000 % volume of length / 100 = 0.000 % total for Scan 3

Scan 4 93.800 % Length X 0.000 % volume of length / 100 = 0.000 % total for Scan 4

Add totals and divide by # scans = 20.730 % total for 60 deg

Percent complete coverage

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

11.436 % 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: _____ Date: 5/20/00

Supplemental Report

Report No.: 2000U131

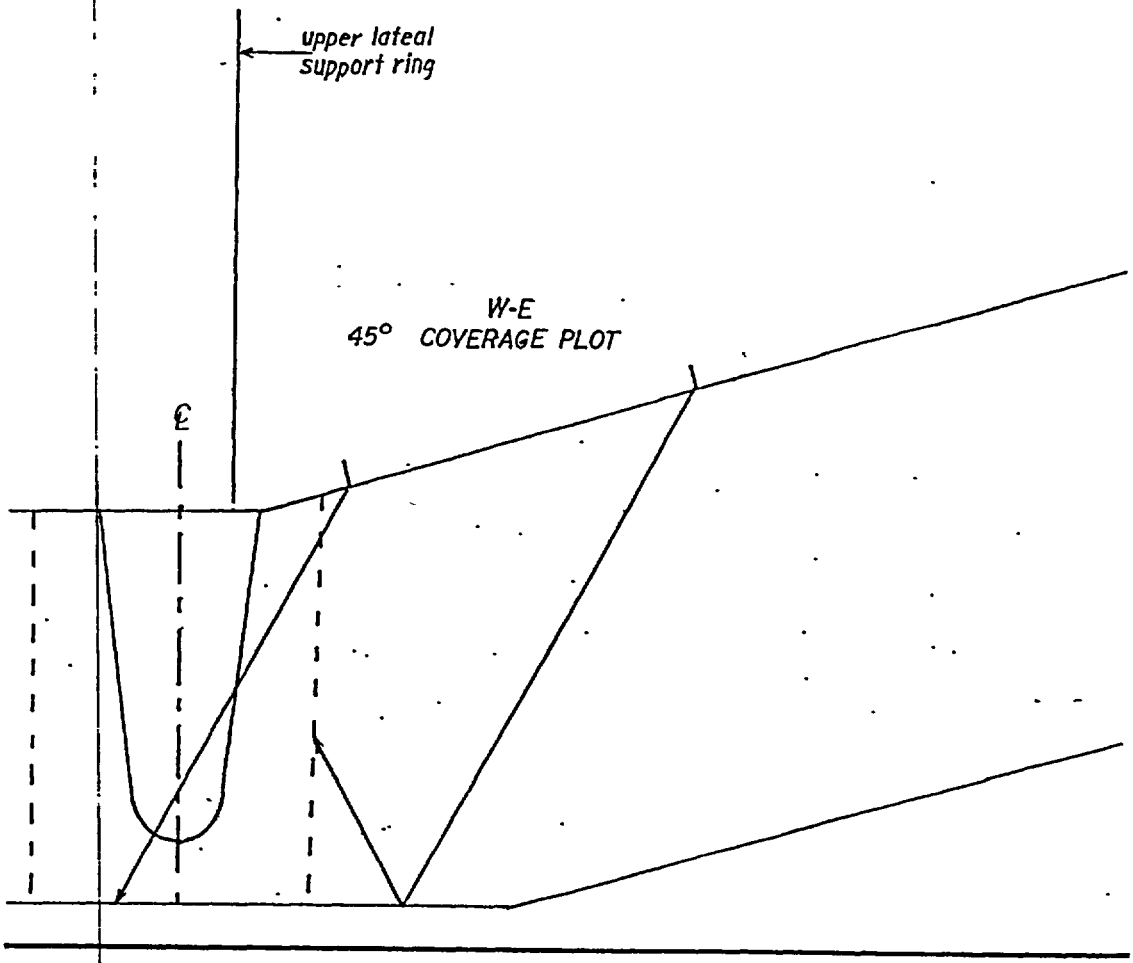
Page: 5 of 6

Summary No.: 502624

Examiner:	Auer, Robert G.	Level:	II	Reviewer:	Halling, David A.	Date:	5/17/00
Examiner:	Newgard, Jerry W.	Level:	II	Site Review:	Kinney, Charles R.	Date:	5/20/00
Other:	N/A	Level:	N/A	ANII Review:	Heater, Stephen B.	Date:	5-22-00

Comments None

Sketch or Photo: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL UT\2000U1



Attachment 10
Page 5 of 6

Supplemental Report

Report No.: 2000U131

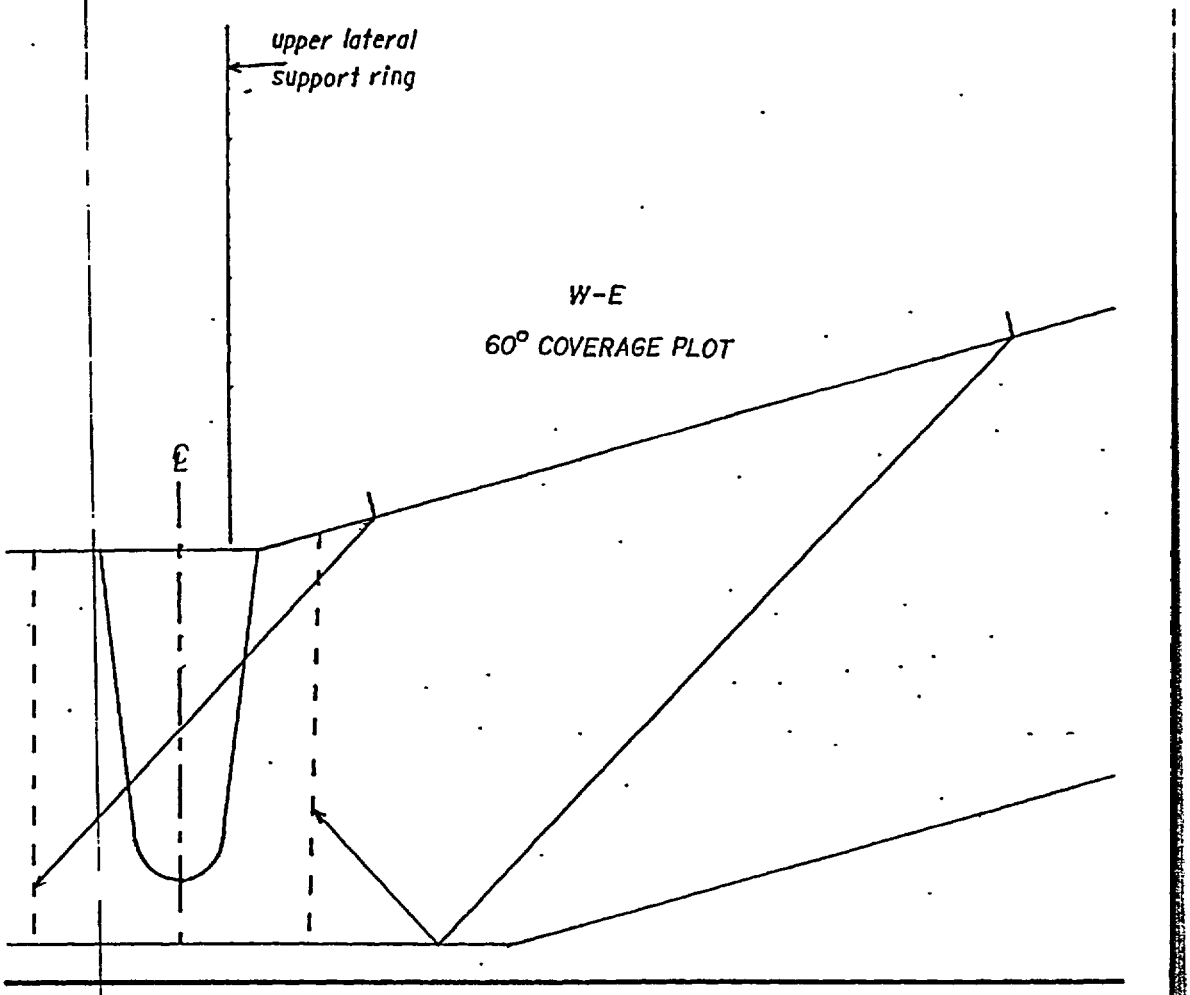
Page: 6 of 6

Summary No.: 502624

Examiner:	Auer, Robert G.	Level: II	Reviewer:	Halling, David A.	Date: 5/17/00
Examiner:	Newgard, Jerry W.	Level II	Site Review:	Kinney, Charles R.	Date: 5/20/00
Other:	N/A	Level. N/A	ANII Review:	Heater, Stephen B.	Date: 5-22-00

Comments: None

Sketch or Photo: G:\IDDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL UT2000U1



Attachment 10
Page 6 of 6

Attachment 11
Page 1 of 3

Magnetic Particle Examination

Report No.: 2000M087

Site/Unit: NSP / PI2 | Procedure: ISI-MT-1 | Page: 1 of 3

Summary No.: 501377 | Procedure Revision/FC: 10 /

Examination For: ISI | Work Order No.: 0000232

Applicable Code: 1989 | ISO Drawing No.: 2-ISI-60B | Location: Aux Building

Description: Support A

System ID: SI

Component ID: H-1 | Size/Length: N/A | Thick/Dia: .75"

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: Support Bolt Centerline | 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: N/A | Flooding ☐

Equipment: Parker Research | Serial No.: 7817

Head Shot ☐ N/A Amperes | Fixed Spacing ☐ | AC ☑ DC ☐

Adj. Spacing ☑ 6" inches | Encircling Coils ☐ N/A Turns

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

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

Comments:
MT PI Gauge - LMT-90

Results: NAD ☑ IND ☐

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Johnson, Jeffery M. /	II		5/25/2000	Halling, David A. /		5/30/00
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A /	N/A			Kinney, Charles R. /		5/30/00
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A /	N/A			Heater, Stephen B. /		5-30-00

Limitation Record

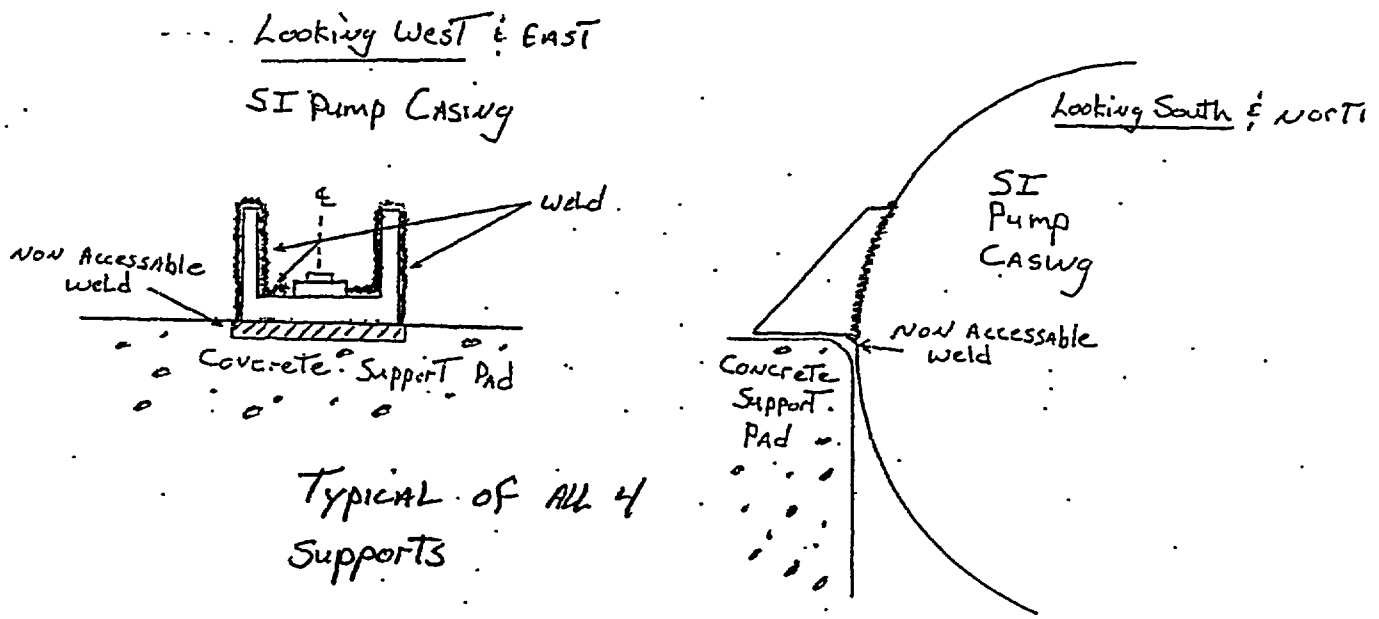
Report No: 2000M087

Site/Unit:	NSP / PI2	Procedure:	ISI-MT-1	Page:	2 of 3
Summary No.:	501377	Procedure Revision/FC:	10 /		
Examination For:	ISI	Work Order No.:	0000232		

Description of Limitation:

6" of weld on bottom of pads are inaccessible due to concrete pad.

Sketch of Limitation: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL MT\2000M



Limitations removal requirements:

None

Radiation field: < - 5 mR / hr

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Johnson, Jeffery M. /	II		5/25/2000	Halling, David A. /		5/30/00
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A /	N/A			Kinney, Charles R. /		5-30-00
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A /	N/A			Heater, Stephen B. /		5-31-00

Determination of Percent Coverage for Surface Examinations

Report No.: 2000M087

Site/Unit: NSP / PI2 | Procedure: ISI-MT-1 | Page: 3 of 3

Summary No.: 501377 | Procedure Revision/FC: 10 /

Examination For: ISI | Work Order No.: 0000232

Area Required (as shown in applicable code reference drawing)

Length 36.000 * Width 2.000

= Total Area required 72.000 square inches

Coverage Achieved

Area examined 60.000 sq. in. / Total area required (100%) 72.000 sq. in.

= Percent coverage ~~83.33~~ 83 % (area required - area of limitations = area examined)

To determine length of a circumferential weld

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

Diameter 0.000 * (PI) 3.1416

= Length 0.000 inches

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

Site Field Supervisor: [signature] Date: 5-30-2000

Attachment 12
Page 1 of 3

Magnetic Particle Examination

Report No.: 2000M088

Site/Unit: NSP / PI2 | Procedure: ISI-MT-1 | Page: 1 of 3

Summary No.: 501385 | Procedure Revision/FC: 10 /

Examination For: ISI | Work Order No.: 0000232

Applicable Code: 1989 | ISO Drawing No.: 2-ISI-60B | Location: Aux Building

Description: Support B

System ID: SI

Component ID: H-2 | Size/Length: N/A | Thick/Dia: .75"

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: Support Bolt Centerline | 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: N/A | Flooding ☐

Equipment: Parker Research | Serial No.: 7817

Head Shot ☐ N/A Amperes | Fixed Spacing ☐ | AC ☑ DC ☐

Adj. Spacing ☑ 6" inches | Encircling Coils ☐ N/A Turns

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

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

Comments:
None

Results: NAD ☑ IND ☐

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Johnson, Jeffery M. /	II	M Johnson	5/25/2000	Halling, David A. /	D. Halling	5/30/00
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A /	N/A			Kinney, Charles R. /	C. Kinney	5-30-00
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A /	N/A			Heater, Stephen B. /	Stephen Heater	5-31-00

Limitation Record

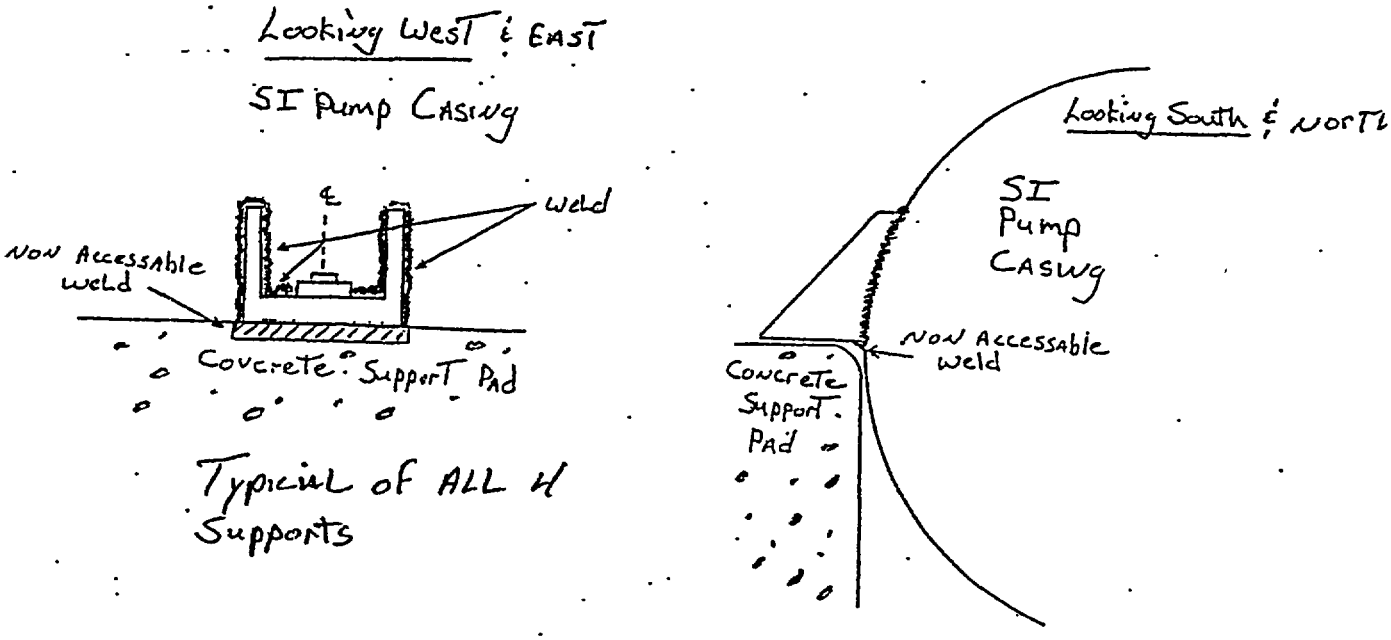
Report No.: 2000M088

Site/Unit:	NSP / PI2	Procedure:	ISI-MT-1	Page:	2 of 3
Summary No.:	501385	Procedure Revision/FC:	10 /		
Examination For:	ISI	Work Order No.:	0000232		

Description of Limitation:

6" of weld on bottom of pads are inaccessible due to concrete pad.

Sketch of Limitation: G:\IDDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL MT\2000M



Limitations removal requirements:

None

Radiation field: < - 5 mR / hr

Examiner	Level II		Signature	Date	Reviewer	Signature	Date
Johnson, Jeffery M.	/			5/25/2000	Halling, David A.	/	5/30/00
Examiner	Level N/A		Signature	Date	Site Review	Signature	Date
N/A	/				Kinney, Charles R.	/	5-30-00
Other	Level N/A		Signature	Date	ANII Review	Signature	Date
N/A	/				Heater, Stephen B.	/	5-31-00

Determination of Percent Coverage for Surface Examinations

Report No.: 2000M088

Site/Unit: NSP / PI2 | Procedure: ISI-MT-1 | Page: 3 of 3

Summary No.: 501385 | Procedure Revision/FC: 10 /

Examination For: ISI | Work Order No.: 0000232

Area Required (as shown in applicable code reference drawing)

Length 36.000 * Width 2.000

= Total Area required 72.000 square inches

Coverage Achieved

Area examined 60.000 sq. in. / Total area required (100%) 72.000 sq. in.

= Percent coverage ~~83.333~~ 83 % (area required - area of limitations = area examined)

To determine length of a circumferential weld

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

Diameter 0.000 * (Pi) 3.1416

= Length 0.000 inches

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

Site Field Supervisor: [signature] Date: 5-30-00

Attachment 13
Page 1 of 3

Magnetic Particle Examination

Report No.: 2000M086

Site/Unit: NSP / PI2 Procedure: ISI-MT-1 Page: 1 of 3

Summary No.: 501390 Procedure Revision/FC: 10 /

Examination For: ISI Work Order No.: 0000232

Applicable Code: 1989 ISO Drawing No.: 2-isi-60-b Location: Aux Building

Description: Support C

System ID: SI

Component ID: H-3 Size/Length: N/A Thick/Dia: .75"

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: Support Bolt Centerline 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: N/A Flooding ☐

Equipment: Parker Research Serial No.: 7817

Head Shot ☐ N/A Amperes Fixed Spacing ☐ AC ☑ DC ☐

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

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

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

Comments:
None

Results: NAD ☑ IND ☐

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Johnson, Jeffery M. /	II		5/25/2000	Halling, David A. /		5/30/00
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A /	N/A			Kinney, Charles R. /		5/30/00
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A /	N/A			Heater, Stephen B.		5/31/00

Attachment 13
Page 2 of 3

Limitation Record

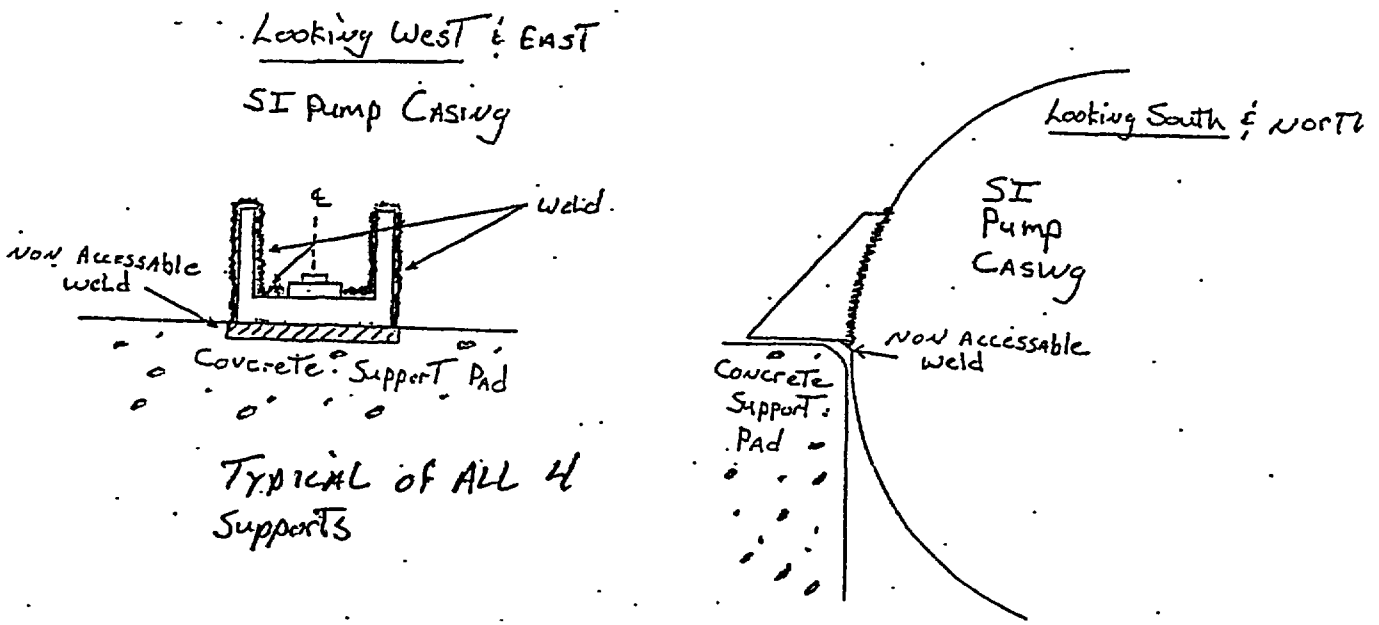
Report No.: 2000M086

Site/Unit:	NSP / PI2	Procedure:	ISI-MT-1	Page:	2 of 3
Summary No.:	501390	Procedure Revision/FC:	10 /		
Examination For:	ISI	Work Order No.:	0000232		

Description of Limitation:

6" of weld on bottom of pads are inaccessible due to concrete pad.

Sketch of Limitation: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL MT\2000M



Limitations removal requirements:

None

Radiation field: < - 5 mR / hr

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Johnson, Jeffery M.	/	M Johnson	5/25/2000	Halling, David A.	/	D.A. Halling	5/30/00
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A	/			Kinney, Charles R.	/	[signature]	5-30-00
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Heater, Stephen B.	/	[signature]	5-31-00

Determination of Percent Coverage for Surface Examinations

Report No.: 2000M086

Site/Unit: NSP / PI2 | Procedure: ISI-MT-1 | Page: 3 of 3

Summary No.: 501390 | Procedure Revision/FC: 10 /

Examination For: ISI | Work Order No.: 0000232

Area Required (as shown in applicable code reference drawing)

Length 36.000 * Width 2.000

= Total Area required 72.000 square inches

Coverage Achieved

Area examined 60.000 sq. in. / Total area required (100%) 72.000 sq. in.

= Percent coverage ~~83.33~~ 83 % (area required - area of limitations = area examined)

To determine length of a circumferential weld

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

Diameter 0.000 * (Pi) 3.1416

= Length 0.000 inches

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

Site Field Supervisor: [signature] Date: 5-30-2000

Attachment 14
Page 1 of 3

Magnetic Particle Examination

Report No.: 2000M089

Site/Unit: NSP / PI2 | Procedure: ISI-MT-1 | Page: 1 of 3

Summary No.: 501396 | Procedure Revision/FC: 10 /

Examination For: ISI | Work Order No.: 0000232

Applicable Code: 1989 | ISO Drawing No.: 2-isi-60-b | Location: Aux Building

Description: Support D

System ID: SI

Component ID: H-4 | Size/Length: N/A | Thick/Dia: .75"

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: Support Bolt Centerline | 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: N/A | Flooding ☐

Equipment: Parker Research | Serial No.: 7817

Head Shot ☐ N/A Amperes | Fixed Spacing ☐ | AC ☑ DC ☐

Adj. Spacing ☑ 6" inches | Encircling Coils ☐ N/A Turns

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

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

Comments:
None

Results: NAD ☑ IND ☐

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Johnson, Jeffery M. /	II		5/25/2000	Halling, David A. /		5/30/00
Examiner	Level N/A	Signature	Date	Site Review	Signature	Date
N/A /				Kinney, Charles R. /		5-30-00
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A /				Heater, Stephen B. /		5-31-00

Attachment 14
Page 2 of 3

Limitation Record

Report No.: 2000M089

Site/Unit: NSP / PI2 | Procedure: ISI-MT-1 | Page: 2 of 3

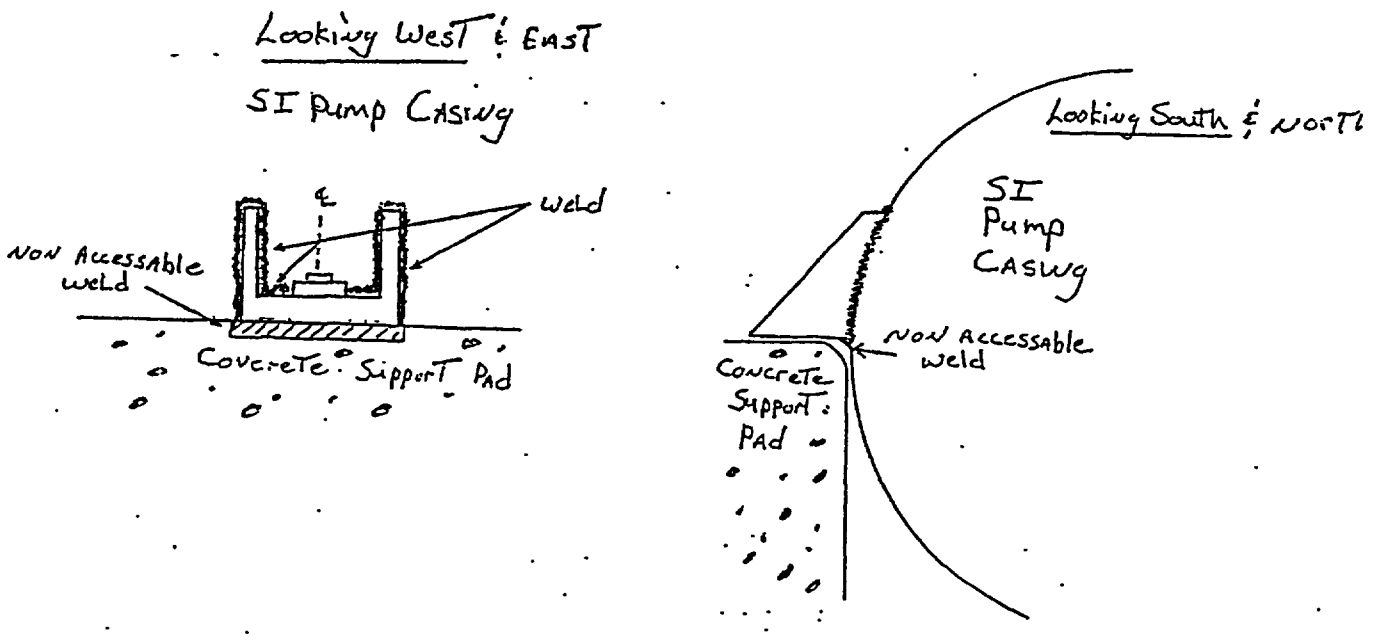
Summary No.: 501396 | Procedure Revision/FC: 10 /

Examination For: ISI | Work Order No.: 0000232

Description of Limitation:

6" of weld on bottom of pads are inaccessible due to concrete pad.

Sketch of Limitation: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL MT\2000M



Limitations removal requirements:

None

Radiation field: < - 5 mR / hr

Examiner	Level II		Signature	Date	Reviewer	Signature	Date
Johnson, Jeffery M.	/			5/25/2000	Halling, David A.	/	5/30/00
Examiner	Level N/A		Signature	Date	Site Review	Signature	Date
N/A	/				Kinney, Charles R.	/	5-30-00
Other	Level N/A		Signature	Date	ANII Review	Signature	Date
N/A	/				Heater, Stephen B.	/	5-31-00

Determination of Percent Coverage for Surface Examinations

Report No.: 2000M089

Site/Unit: NSP / PI2 | Procedure: ISI-MT-1 | Page: 3 of 3

Summary No.: 501396 | Procedure Revision/FC: 10 /

Examination For: ISI | Work Order No.: 0000232

Area Required (as shown in applicable code reference drawing)

Length 36.000 * Width 2.000

= Total Area required 72.000 square inches

Coverage Achieved

Area examined 60.000 sq. in. / Total area required (100%) 72.000 sq. in.

= Percent coverage ~~0.833~~ 83 % (area required - area of limitations = area examined)

To determine length of a circumferential weld

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

Diameter 0.000 * (Pi) 3.1416

= Length 0.000 inches

Pipe Size	Actual Diameter	(Length) Circumference		Pipe Size	Actual Diameter	(Length) Circumference
2	2.375	7.46		12	12.75	40.06
2.5	2.875	9.03		14	14.0	43.98
3	3.5	11.0		16	16 0	50.27
3.5	4.0	12.57		18	18.0	56.55
4	4..5	14.14		20	20.0	62.83
5	5.563	17.48		22	22.0	69.12
6	6.625	20.81		24	24.0	75.40
8	8.625	27.10		30	30.0	94.25
10	10.75	33.77				

Site Field Supervisor: _____ Date: 5-30-00

Attachment 15
Page 1 of 3

Liquid Penetrant Examination

Report No.: 2000P054

Site/Unit: NSP / PI2 Procedure: ISI-PT-1 Page: 1 of 3

Summary No.: 501412 Procedure Revision/FC: 12 /

Examination For: ISI Work Order No.: 0000232

Applicable Code: 1989 ISO Drawing No.: 2-isi-69-a Location: RHR PIT 21

Description: Support A

System ID: RH

Component ID: H-1 Size/Length: N/A Thick/Dia: N/A

Limitations: See attached limitation data sheets.

Temp. Tool MFG: Telatemp Serial No.: NSP 123 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: Upper Left Corner 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	87C054	98L07K	97J04K
Time	Evap. 5 Min	Dwell 15 Min	Evap. 5 Min	Develop 10 Min

Time Exam Started: 11:10 Time Exam Completed: 12:00

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

Comments:

See attached limitation data sheets.

Results: NAD ☑ IND ☐

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

Examiner	Level II		Signature	Date	Reviewer	Signature	Date
Auer, Robert G.	/			5/13/2000	Halling, David A.	/	5/16/00
Examiner	Level N/A		Signature	Date	Site Review	Signature	Date
N/A	/				Kinney, Charles R.	/	5/16/00
Other	Level N/A		Signature	Date	ANII Review	Signature	Date
N/A	/				Heater, Stephen B.	/	5-22-00

Attachment 15
Page 2 of 3

Limitation Record

Report No.: 2000P054

Site/Unit: NSP / PI2 | Procedure: ISI-PT-1 | Page: 2 of 3

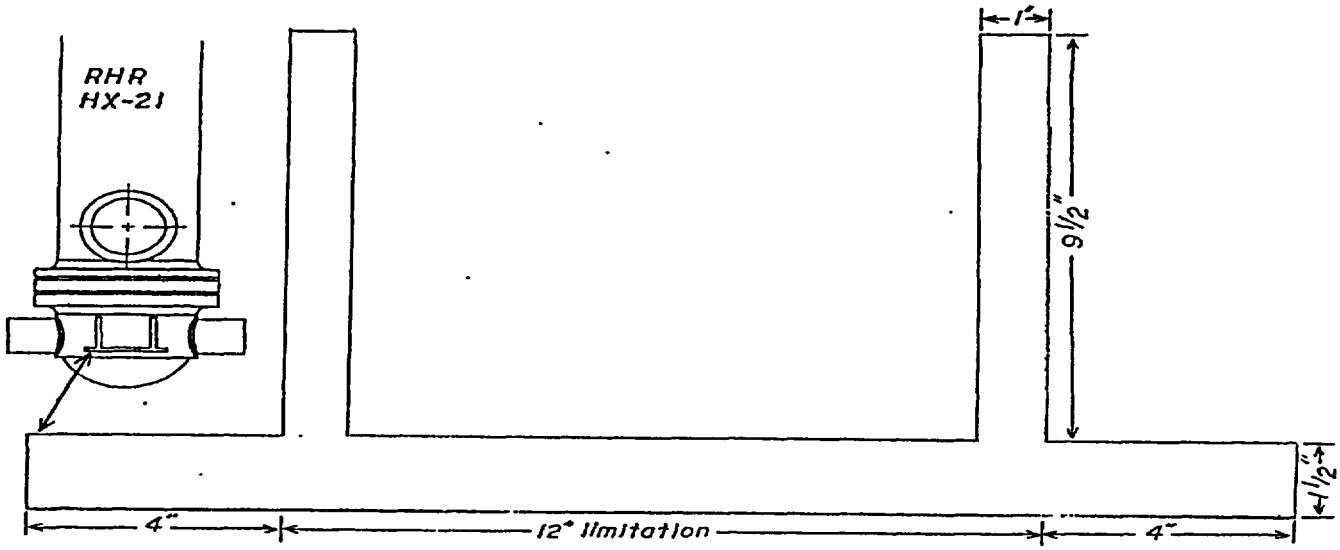
Summary No.: 501412 | Procedure Revision/FC: 12 /

Examination For: ISI | Work Order No.: 0000232

Description of Limitation:

Support sits on top of concrete pedestal. The outer radius of RHR-HX-21 and pedestal are in such close proximity as to preclude access to the center 12" of the bottom attachment weld.

Sketch of Limitation: G:\IDDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL PT\2000P0



Limitations removal requirements:

None

Radiation field: 2 - 5 mR / hr.

Examiner	Level II		Signature	Date	Reviewer	Signature	Date
Auer, Robert G.	/			5/13/2000	Halling, David A. /		5/16/00
Examiner	Level N/A		Signature	Date	Site Review	Signature	Date
N/A	/				Kinney, Charles R. /		5/17/00
Other	Level N/A		Signature	Date	ANII Review	Signature	Date
N/A	/				Heater, Stephen B. /		5-22-00

Attachment 15
Page 3 of 3

Determination of Percent Coverage for Surface Examinations

Report No.: 2000P054

Site/Unit: NSP / PI2 | Procedure: ISI-PT-1 | Page: 3 of 3

Summary No.: 501412 | Procedure Revision/FC: 12 /

Examination For: ISI | Work Order No.: 0000232

Area Required (as shown in applicable code reference drawing)

Length 81.000 * Width 1.750

= Total Area required 141.750 square inches

Coverage Achieved

Area examined 120.750 sq. in. / Total area required (100%) 141.750 sq. in.

= Percent coverage ~~0.852~~ % (area required - area of limitations = area examined)

85.2%

RGA 5-13-00

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: 5/17/00

Attachment 16
Page 1 of 3

Liquid Penetrant Examination

Report No.: 2000P056

Site/Unit: NSP / PI2 Procedure: ISI-PT-1 Page: 1 of 3

Summary No.: 501419 Procedure Revision/FC: 12 /

Examination For: ISI Work Order No.: 0000232

Applicable Code: 1989 ISO Drawing No.: 2-isi-69-a Location: RHR PIT 21

Description: Support B

System ID: RH

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

Limitations: See attached Limitation Data Sheet.

Temp. Tool MFG: Telatemp Serial No.: NSP 123 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: Upper Left Corner 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	87C054	98L07K	97J04K
Time	Evap. 5 Min	Dwell 15 Min	Evap. 5 Min	Develop 10 Min

Time Exam Started: 11:25 Time Exam Completed: 12:15

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
Auer, Robert G.		/		5/13/2000	Halling, David A.	/	5/16/00
Examiner	Level N/A		Signature	Date	Site Review	Signature	Date
N/A		/			Kinney, Charles R.	/	5/19/00
Other	Level N/A		Signature	Date	ANII Review	Signature	Date
N/A		/			Heater, Stephen B.	/	5-20-00

Limitation Record

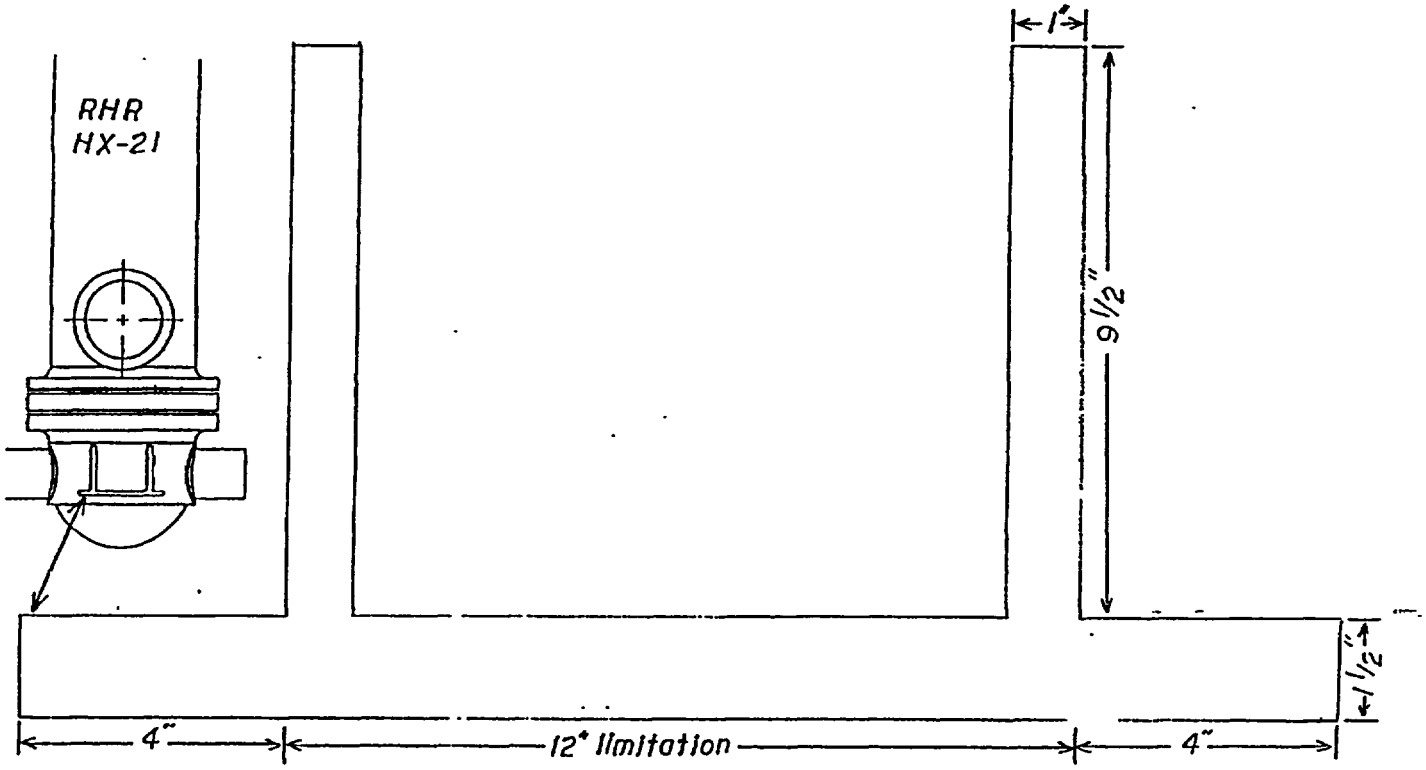
Report No.: 2000P056

Site/Unit:	NSP / PI2	Procedure:	ISI-PT-1	Page:	2 of 3
Summary No.:	501419	Procedure Revision/FC:	12 /		
Examination For:	ISI	Work Order No.:	0000232		

Description of Limitation:

Support sits on top of a concrete pedestal. The outer radius of RHR-HX-21 and pedestal are in such close proximity as to preclude access to the center 12" of the bottom attachment weld.

Sketch of Limitation: G:\IDDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL PT\2000P0



Limitations removal requirements:

None.

Radiation field: 2-5 mR / hr

Examiner	Level II		Date	Reviewer			Date
Auer, Robert G.	/	Signature	5/13/2000	Halling, David A.	/	Signature	5/16/00
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A	/			Kinney, Charles R.	/		5/19/00
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Heater, Stephen B.	/		5-20-00

Determination of Percent Coverage for Surface Examinations

Report No.: 2000P056

Site/Unit: NSP / PI2 | Procedure: ISI-PT-1 | Page: 3 of 3

Summary No.: 501419 | Procedure Revision/FC: 12 /

Examination For: ISI | Work Order No.: 0000232

Area Required (as shown in applicable code reference drawing)

Length 81.000 * Width 1.750

= Total Area required 141.750 square inches

Coverage Achieved

Area examined 120.750 sq. in. / Total area required (100%) 141.750 sq. in.

= Percent coverage ~~0.852~~ % (area required - area of limitations = area examined)

85.2%

RGA 5-13-00

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: 5/19/00

Attachment 17
Page 1 of 1

Liquid Penetrant Examination

Report No.: 2000P023

Site/Unit: NSP / PI2 Procedure: ISI-PT-1 Page: 1 of 1

Summary No.: 501405 Procedure Revision/FC: 12 /

Examination For: ISI Work Order No.: 0000232

Applicable Code: 1989 ISO Drawing No.: 2-ISI-30A Location: Pressurizer

Description: Nozzle - Safe End

System ID: RC

Component ID: W-1 Size/Length: 6"/ 19" Thick/Dia: .719"

Limitations: None

Temp. Tool MFG: Telatemp Serial No.: NSP 128 Surface Temp.: 95 °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: TDC of Nozzle Surface Condition: Blended

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	97H11K	87C054	97H11K	97J04K
Time	Evap. 5	Dwell 10	Evap. 2	Develop 7
	Time Exam Started: 14:45		Time Exam Completed: 16:00	

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

Comments:

None

Results: NAD ☑ IND ☐

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

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Blechinger, Todd P.	/	T.P. Blech	5/1/2000	Halling, David A.	/	D.A. Halling	5/4/00
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A	/			Kinney, Charles R.	/	C.R. Kinney	5/4/00
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Heater, Stephen B.	/	S.B. Heater	5-8-00

Attachment 18
Page 1 of 1

Liquid Penetrant Examination

Report No.: 2000P037

Site/Unit: NSP / PI2 Procedure: ISI-PT-1 Page: 1 of 1

Summary No.: 501935 Procedure Revision/FC: 12 /

Examination For: ISI Work Order No.: 0000232

Applicable Code: 1989 ISO Drawing No.: 2-ISI- 5 Location: CONTAINMENT

Description: Nozzle to Pipe

System ID: RC

Component ID: W-13 Size/Length: 6" Thick/Dia: 2.56"

Limitations: None

Temp. Tool MFG: PTC Instruments Serial No.: 3355 Surface Temp.: 106 °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: Top Dead Center Surface Condition: Blended

	Cleaner	Penetrant	Remover	Developer
Brand	Magnaflux	Magnaflux	Magnaflux	Magnaflux
Type	SKC-S	SKL-HF/S	SKC-S	SKD-S2
Batch No.	97H11K	87C054	97H11K	97J04K
Time	Evap. 5 Min	Dwell 10 Min	Evap. 2 Min	Develop 7 Min

Time Exam Started: 13:00 Time Exam Completed. 14:45

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

Comments:

None

Results: NAD ☑ IND ☐

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Kilpela, Mathew F. /	II		5/4/2000	Halling, David A. /		5/9/00
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A /	N/A			Kinney, Charles R. /		5/12/00
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A /	N/A			Heater, Stephen B. /		5/8/00

Attachment 19
Page 1 of 3

Visual Examination of Component Supports and Snubbers

Site/Unit: NSP / PI2 | Procedure: ISI-VT-2.0 | Report No.: 2000V393
Summary No.: 501377 | Procedure Revision/FC: 8 / 99VT2-1 | Page: 1 of 3
Examination For: ISI | Work Order No.: 0000232

Applicable Code: 1989 | ISO Drawing No.: 2-ISI-60B | Location: Aux Building
Description: Support A
System ID: SI
Component ID: H-1 | Size/Length: N/A | Thick/Dia: .75"
Limitations: See attached sketch.

Light Meter MFG: N/A | Serial No.: N/A | Illumination: N/A FL/CDS
Temp. Tool MFG: N/A | Serial No.: N/A | Surface Temp.: N/A °F
Gray Card. 1/32" Direct ☑ 1/64" Remote ☐ | Surface Condition: As Welded
Visual Equipment/Aids: Flashlight, Mirror, Neutral Gray Card

Visual Examination:
Observed Condition

All Components	NAD	IND	N/A	See Comments
1) External Obstruction	✓			
2) Cracks or Linear Ind.	✓			
3) Loose Parts	✓			
4) Missing Parts	✓			
5) Obstr. To Moving Parts	✓			
6) Wear	✓			
7) Corrosion	✓			
8) Contaminants	✓			
9) Improper Weld Reinfor.	✓			
10) Physical Deformation	✓			
11) Misuse	✓			
12) Slipped Clamps			✓	
13) Other (Describe)			✓	
14) Correct Settings		Yes		No ✓ N/A
15) Actual Setting	N/A			
16) Serial No.	N/A			
Constant Load Supports				
17) Travel Stops In Place			✓	
18) Housing Damage			✓	

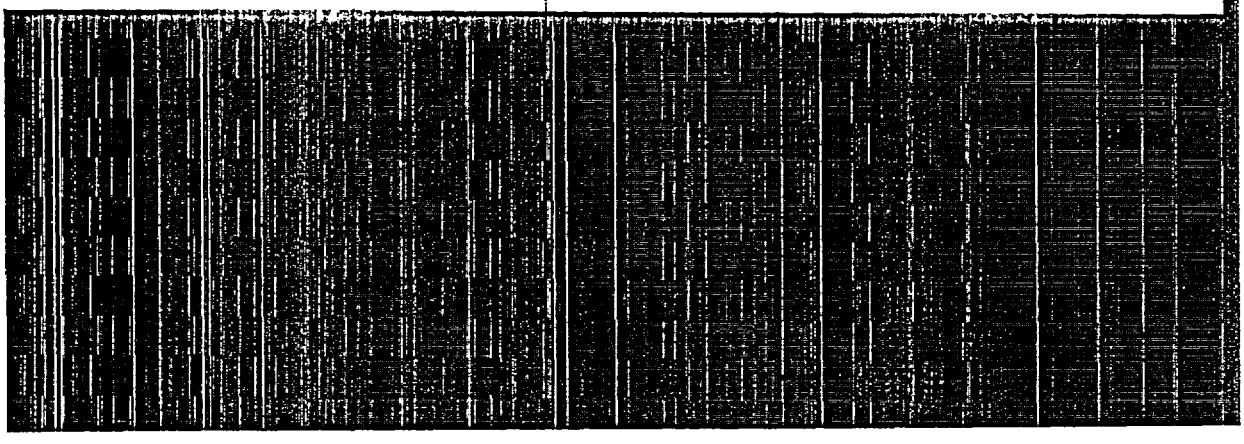
Spring Supports	NAD	IND	N/A	See Comments
19) Off Scale High			✓	
20) Off Scale Low			✓	
21) Locking Device In Place			✓	
22) Spring Degraded			✓	
23) Gross Misalignment			✓	
Mechanical Snubbers				
24) Swing Clearance			✓	
25) Bent Extension Rod			✓	
26) Housing Damage			✓	
Hydraulic Snubbers				
27) Reservoir Level			✓	
28) Leakage			✓	
29) Piston Fully Extended			✓	
30) Piston Fully Retracted			✓	
31) Reservoir Inverted			✓	
32) Piston Damage			✓	

Comments:
None

Results: NAD ☑ IND ☐

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

Examiner Level II Johnson, Jeffery M. /	Signature [signature]	Date 5/25/2000	Reviewer Halling, David A. / [signature]	Signature	Date 5/31/00
Examiner Level N/A N/A /	Signature	Date	Site Review Kinney, Charles R. / [signature]	Signature	Date 5-31-00
Other Level N/A N/A /	Signature	Date	ANII Review Heater, Stephen B. / [signature]	Signature	Date 6-1-00



Attachment 19
Page 2 of 3

Limitation Record

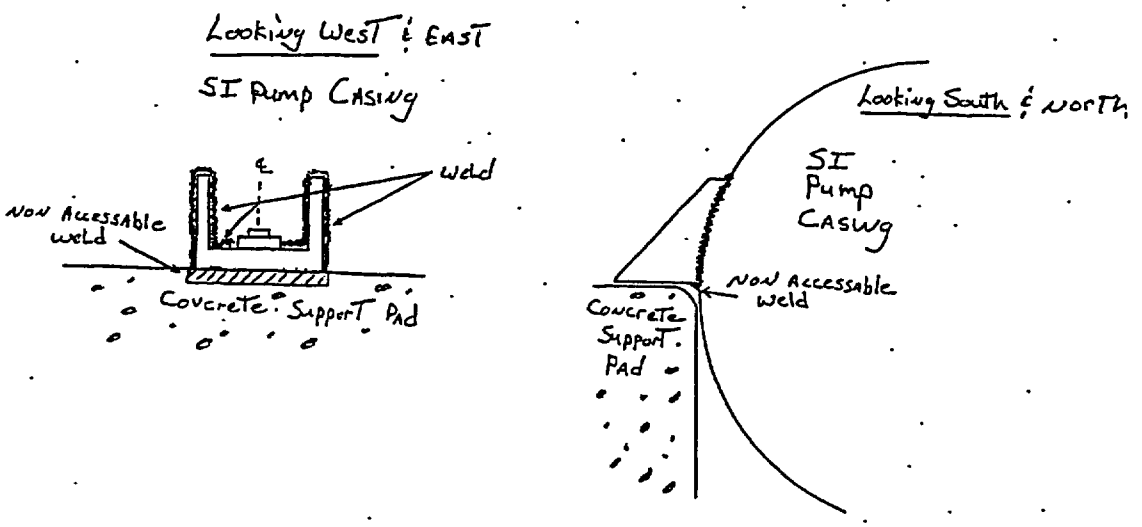
Report No.: 2000V393

Site/Unit:	NSP / PI2	Procedure:	ISI-VT-2.0	Page:	2 of 3
Summary No.:	501377	Procedure Revision/FC:	8 / 99VT2-1		
Examination For:	ISI	Work Order No:	0000232		

Description of Limitation.

6" of weld on bottom of pads are inaccessible due to concrete pad.

Sketch of Limitation: G:\IDDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL VT\2000V3



Limitations removal requirements:

None

Radiation field: **< - 5 mR / hr**

Examiner	Level II		Date	Reviewer		Signature	Date
Johnson, Jeffery M.	/		5/25/2000	Halling, David A.	/		5/31/00
Examiner	Level N/A		Date	Site Review		Signature	Date
N/A	/			Kinney, Charles R.	/		5-31-00
Other	Level N/A		Date	ANII Review		Signature	Date
N/A	/			Heater, Stephen B.	/		6-1-00

Attachment 19
Page 3 of 3

Determination of Percent Coverage for Surface Examinations

Report No.: 2000V393

Site/Unit: NSP / PI2 | Procedure: ISI-VT-2.0 | Page: 3 of 3

Summary No: 501377 | Procedure Revision/FC: 8 / 99VT2-1

Examination For: ISI | Work Order No.: 0000232

Area Required (as shown in applicable code reference drawing)

Length 36.000 * Width 2.000

= Total Area required 72.000 square inches

Coverage Achieved

Area examined 60.000 sq in. / Total area required (100%) 72.000 sq in.

= Percent coverage 83 % (area required - area of limitations = area examined)

To determine length of a circumferential weld

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

Diameter 0.000 * (PI) 3.1416

= Length 0.000 inches

Pipe Size	Actual Diameter	(Length) Circumference		Pipe Size	Actual Diameter	(Length) Circumference
2	2.375	7.46		12	12.75	40 06
2.5	2.875	9 03		14	14.0	43 98
3	3.5	11.0		16	16.0	50.27
3 5	4 0	12.57		18	18.0	56 55
4	4..5	14.14		20	20 0	62.83
5	5.563	17.48		22	22.0	69.12
6	6.625	20.81		24	24 0	75.40
8	8.625	27.10		30	30.0	94.25
10	10.75	33.77				

Site Field Supervisor: [signature] Date: 5-31-00

Attachment 20
Page 1 of 3

Visual Examination of Component Supports and Snubbers

Site/Unit: NSP / PI2 | Procedure: ISI-VT-2.0 | Report No.: 2000V394
Summary No: 501385 | Procedure Revision/FC: 8 / 99VT2-1 | Page 1 of 3
Examination For: ISI | Work Order No: 0000232

Applicable Code: 1989 | ISO Drawing No.: 2-ISI-60B | Location: Aux Building
Description: Support B
System ID: SI
Component ID: H-2 | Size/Length: N/A | Thick/Dia: .75"
Limitations: See attached sketch.

Light Meter MFG: N/A | Serial No.: N/A | Illumination: N/A FC/CDS
Temp. Tool MFG: N/A | Serial No.: N/A | Surface Temp.: N/A °F
Gray Card: 1/32" Direct ☑ 1/64" Remote ☐ | Surface Condition: As Welded
Visual Equipment/Aids. Flashlight, Mirror, Neutral Gray Card

Visual Examination:
Observed Condition

All Components	NAD	IND	N/A	See Comments
1) External Obstruction	✓			
2) Cracks or Linear Ind.	✓			
3) Loose Parts	✓			
4) Missing Parts	✓			
5) Obstr. To Moving Parts	✓			
6) Wear	✓			
7) Corrosion	✓			
8) Contaminants	✓			
9) Improper Weld Reinfor.	✓			
10) Physical Deformation	✓			
11) Misuse	✓			
12) Slipped Clamps			✓	
13) Other (Describe)			✓	
14) Correct Settings		Yes		No ✓ N/A
15) Actual Setting	N/A			
16) Serial No.	N/A			
Constant Load Supports				
17) Travel Stops In Place			✓	
18) Housing Damage			✓	

Spring Supports	NAD	IND	N/A	See Comments
19) Off Scale High			✓	
20) Off Scale Low			✓	
21) Locking Device In Place			✓	
22) Spring Degraded			✓	
23) Gross Misalignment			✓	
Mechanical Snubbers				
24) Swing Clearance			✓	
25) Bent Extension Rod			✓	
26) Housing Damage			✓	
Hydraulic Snubbers				
27) Reservoir Level			✓	
28) Leakage			✓	
29) Piston Fully Extended			✓	
30) Piston Fully Retracted			✓	
31) Reservoir Inverted			✓	
32) Piston Damage			✓	

Comments:
None .

Results: NAD ☑ IND ☐

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Johnson, Jeffery M.	II /		5/25/2000	Halling, David A.	/	5/31/00
Examiner	Level N/A	Signature	Date	Site Review	Signature	Date
N/A	/			Kinney, Charles R.	/	6/2/00
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A	/			Heater, Stephen B.	/	6-1-00

NSP

Limitation Record

Report No.: 2000V394

Site/Unit: NSP / PI2 | Procedure: ISI-VT-2.0 | Page: 2 of 3

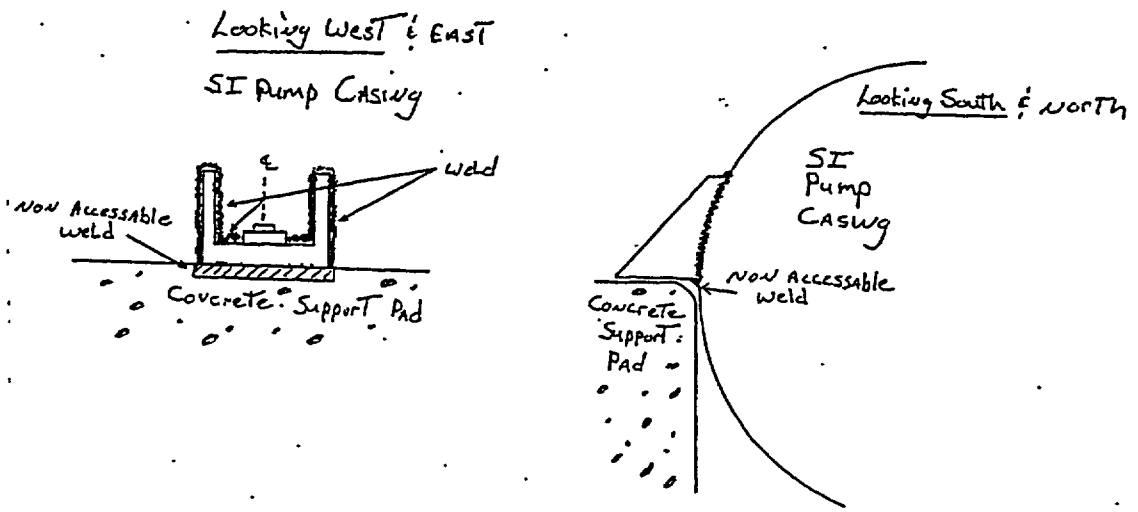
Summary No.: 501385 | Procedure Revision/FC: 8 / 99VT2-1

Examination For: ISI | Work Order No: 0000232

Description of Limitation:

6" of weld on bottom of pads are inaccessible due to concrete pad.

Sketch of Limitation: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL VT\2000V3



Limitations removal requirements:

None

Radiation field. < - 5 mR / hr

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Johnson, Jeffery M. /			5/25/2000	Halling, David A. /			5/31/00
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A /				Kinney, Charles R. /			5-31-00
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A /				Heater, Stephen B. /			6-1-00

Attachment 20
Page 3 of 3

Determination of Percent Coverage for Surface Examinations

Report No: 2000V394

Site/Unit: NSP / PI2 | Procedure: ISI-VT-2.0 | Page 3 of 3

Summary No.: 501385 | Procedure Revision/FC. 8 / 99VT2-1

Examination For: ISI | Work Order No.: 0000232

Area Required (as shown in applicable code reference drawing)

Length 36.000 * Width 2.000

= Total Area required 72.000 square inches

Coverage Achieved

Area examined 60.000 sq in. / Total area required (100%) 72.000 sq in.

= Percent coverage 83 % (area required - area of limitations = area examined)

To determine length of a circumferential weld

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

Diameter 0.000 * (PI) 3.1416

= Length 0.000 inches

Pipe Size	Actual Diameter	(Length) Circumference		Pipe Size	Actual Diameter	(Length) Circumference
2	2.375	7.46		12	12.75	40 06
2.5	2.875	9 03		14	14.0	43 98
3	3 5	11.0		16	16 0	50.27
3 5	4.0	12.57		18	18 0	56.55
4	4..5	14.14		20	20.0	62.83
5	5.563	17.48		22	22.0	69 12
6	6 625	20.81		24	24.0	75 40
8	8 625	27.10		30	30.0	94.25
10	10.75	33.77				

Site Field Supervisor: [signature] Date: 5-31-00

Attachment 21
Page 1 of 3

Visual Examination of Component Supports and Snubbers

Site/Unit: NSP / PI2 | Procedure: ISI-VT-2.0 | Report No.: 2000V388
Summary No.: 501390 | Procedure Revision/FC: 8 / 99VT2-1 | Page: 1 of 3
Examination For: ISI | Work Order No.: 0000232

Applicable Code: 1989 | ISO Drawing No.: 2-isi-60-b | Location: Aux Building
Description: Support C
System ID: SI
Component ID: H-3 | Size/Length: N/A | Thick/Dia.: .75"
Limitations: See attached sketch

Light Meter MFG: N/A | Serial No.: N/A | Illumination: N/A Ft/CDS
Temp. Tool MFG: N/A | Serial No.: N/A | Surface Temp: N/A °F
Gray Card. 1/32" Direct ☑ 1/64" Remote ☐ | Surface Condition: N/A
Visual Equipment/Aids: Flashlight, Mirror, Neutral Gray Card

Visual Examination:
Observed Condition

All Components	NAD	IND	N/A	See Comments
1) External Obstruction	✓			
2) Cracks or Linear Ind.	✓			
3) Loose Parts	✓			
4) Missing Parts	✓			
5) Obstr. To Moving Parts	✓			
6) Wear	✓			
7) Corrosion	✓			
8) Contaminants	✓			
9) Improper Weld Reinfor.	✓			
10) Physical Deformation	✓			
11) Misuse	✓			
12) Slipped Clamps			✓	
13) Other (Describe)			✓	
14) Correct Settings		Yes		No ✓ N/A
15) Actual Setting	N/A			
16) Serial No	N/A			
Constant Load Supports				
17) Travel Stops in Place			✓	
18) Housing Damage			✓	

Spring Supports	NAD	IND	N/A	See Comments
19) Off Scale High			✓	
20) Off Scale Low			✓	
21) Locking Device In Place			✓	
22) Spring Degraded			✓	
23) Gross Misalignment			✓	
Mechanical Snubbers				
24) Swing Clearance			✓	
25) Bent Extension Rod			✓	
26) Housing Damage			✓	
Hydraulic Snubbers				
27) Reservoir Level			✓	
28) Leakage			✓	
29) Piston Fully Extended			✓	
30) Piston Fully Retracted			✓	
31) Reservoir Inverted			✓	
32) Piston Damage			✓	

Comments:
None

Results: NAD ☑ IND ☐

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Johnson, Jeffery M. /	II		5/25/2000	Halling, David A. /		6/1/00
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A /	N/A			Kinney, Charles R. /		6-1-00
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A /	N/A			Heater, Stephen B. /		6-1-00

Attachment 21
Page 2 of 3

Limitation Record

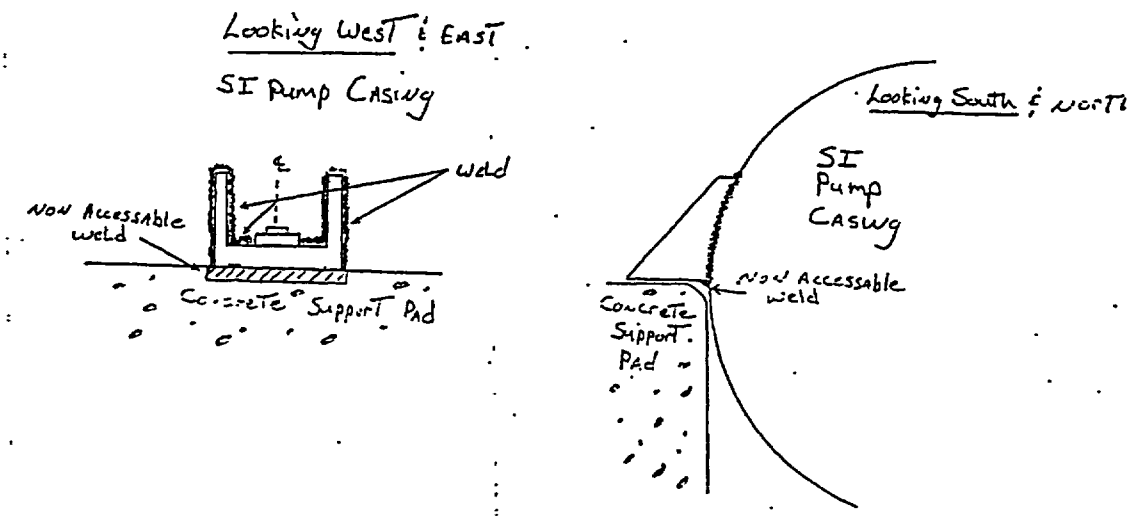
Report No.: 2000V388

Site/Unit	NSP / PI2	Procedure:	ISI-VT-2.0	Page:	2 of 3
Summary No.:	501390	Procedure Revision/FC:	8 / 99VT2-1		
Examination For:	ISI	Work Order No.:	0000232		

Description of Limitation:

6" of weld on bottom of pads are inaccessible due to concrete pad.

Sketch of Limitation: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL VT\2000V3



Limitations removal requirements:

None

Radiation field. < 5 mr/hr

Examiner	Level II		Signature	Date	Reviewer		Signature	Date
Johnson, Jeffery M.	/		JM	5/25/2000	Halling, David A.	/	DA Halling	6/1/00
Examiner	Level N/A		Signature	Date	Site Review		Signature	Date
N/A	/				Kinney, Charles R.	/		6-7-00
Other	Level N/A		Signature	Date	ANII Review		Signature	Date
N/A	/				Heater, Stephen B.	/		6/7/00

Attachment 21
Page 3 of 3

Determination of Percent Coverage for Surface Examinations

Report No.: 2000V388

Site/Unit: NSP / Pl2 | Procedure: ISI-VT-2.0 | Page 3 of 3

Summary No.: 501390 | Procedure Revision/FC: 8 / 99VT2-1

Examination For: ISI | Work Order No : 0000232

Area Required (as shown in applicable code reference drawing)

Length 36.000 * Width 2.000

= Total Area required 72.000 square inches

Coverage Achieved

Area examined 60.000 sq. in. / Total area required (100%) 72.000 sq. in

= Percent coverage ~~83~~ 83 % (area required - area of limitations = area examined)

To determine length of a circumferential weld

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

Diameter 0.000 * (Pi) 3.1416

= Length 0.000 inches

Pipe Size	Actual Diameter	(Length) Circumference		Pipe Size	Actual Diameter	(Length) Circumference
2	2 375	7.46		12	12.75	40.06
2.5	2.875	9.03		14	14.0	43.98
3	3.5	11.0		16	16 0	50.27
3.5	4.0	12.57		18	18.0	56.55
4	4. 5	14.14		20	20 0	62.83
5	5.563	17.48		22	22.0	69 12
6	6 625	20 81		24	24.0	75.40
8	8 625	27.10		30	30 0	94 25
10	10.75	33 77				

Site Field Supervisor: [signature] Date: 6-1-00

Attachment 22
Page 1 of 3

Visual Examination of Component Supports and Snubbers

Report No.: 2000V389

Site/Unit: NSP / PI2 | Procedure: ISI-VT-2.0 | Page: 1 of 3

Summary No.: 501396 | Procedure Revision/FC: 8 / 99VT2-1

Examination For: ISI | Work Order No.: 0000232

Applicable Code: 1989 | ISO Drawing No.: 2-isi-60-b | Location: Aux Building

Description: Support D

System ID: SI

Component ID: H-4 | Size/Length: N/A | Thick/Dia: .75"

Limitations. See Attached Sketch.

Light Meter MFG: N/A | Serial No.: N/A | Illumination. N/A FL/CDS

Temp. Tool MFG: N/A | Serial No.: N/A | Surface Temp.: N/A °F

Gray Card. 1/32" Direct ☑ 1/64" Remote ☐ | Surface Condition: N/A

Visual Equipment/Aids: Flashlight, Mirror, Neutral Gray Card

Visual Examination:

Observed Condition

All Components	NAD	IND	N/A	See Comments
1) External Obstruction	✓			
2) Cracks or Linear Ind.	✓			
3) Loose Parts	✓			
4) Missing Parts	✓			
5) Obstr. To Moving Parts	✓			
6) Wear	✓			
7) Corrosion	✓			
8) Contaminants	✓			
9) Improper Weld Reinfor.	✓			
10) Physical Deformation	✓			
11) Misuse	✓			
12) Slipped Clamps			✓	
13) Other (Describe)			✓	
14) Correct Settings		Yes		No ✓ N/A
15) Actual Setting	N/A			
16) Serial No.	N/A			
Constant Load Supports				
17) Travel Stops In Place			✓	
18) Housing Damage			✓	

Spring Supports	NAD	IND	N/A	See Comments
19) Off Scale High			✓	
20) Off Scale Low			✓	
21) Locking Device In Place			✓	
22) Spring Degraded			✓	
23) Gross Misalignment			✓	
Mechanical Snubbers				
24) Swing Clearance			✓	
25) Bent Extension Rod			✓	
26) Housing Damage			✓	
Hydraulic Snubbers				
27) Reservoir Level			✓	
28) Leakage			✓	
29) Piston Fully Extended			✓	
30) Piston Fully Retracted			✓	
31) Reservoir Inverted			✓	
32) Piston Damage			✓	

Comments:
None.

Results: NAD ☑ IND ☐

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

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Johnson, Jeffery M.	/		5/25/2000	Halling, David A.	/		6/1/00
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A	/			Kinney, Charles R.	/		6-1-00
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Heater, Stephen B.	/		6-1-00

Attachment 22
Page 2 of 3

Limitation Record

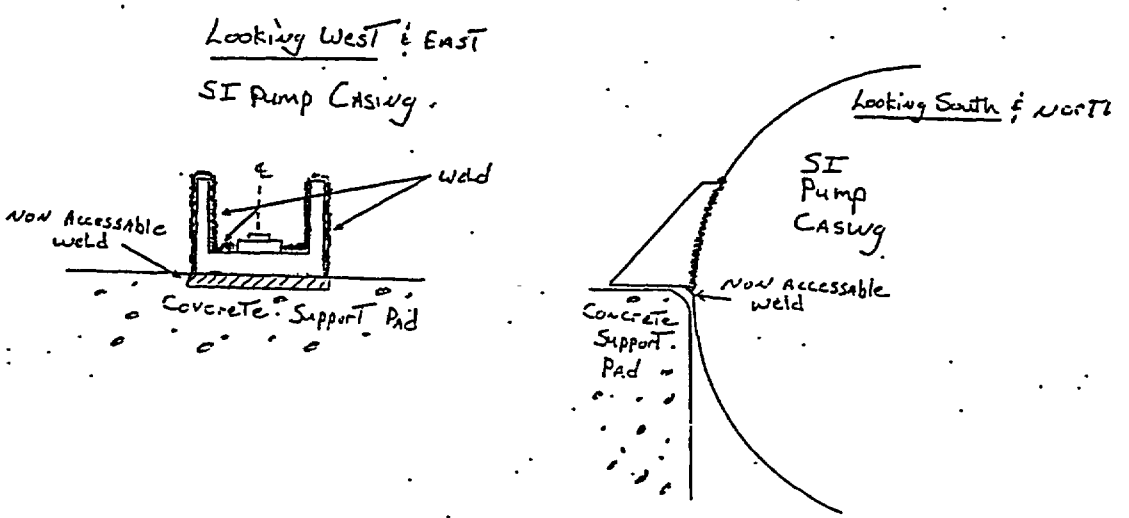
Report No.: 2000V389

Site/Unit:	NSP / PI2	Procedure:	ISI-VT-2.0	Page:	2 of 3
Summary No.:	501396	Procedure Revision/FC:	8 / 99VT2-1		
Examination For:	ISI	Work Order No.:	0000232		

Description of Limitation.

6" of weld on bottom of pads are inaccessible due to concrete pad.

Sketch of Limitation: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL VT\2000V3



Limitations removal requirements:

None

Radiation field: <5 mR/hr

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Johnson, Jeffery M.	/		5/25/2000	Halling, David A.	/		6/1/00
Examiner	Level N/A	Signature	Date	Site Review		Signature	Date
N/A	/			Kinney, Charles R.	/		6-7-00
Other	Level N/A	Signature	Date	ANII Review		Signature	Date
N/A	/			Heater, Stephen B.	/		6-7-00

Attachment 22
Page 3 of 3

Determination of Percent Coverage for Surface Examinations

Report No : 2000V389

Site/Unit:	NSP / PI2	Procedure:	ISI-VT-2.0	Page:	3 of 3
Summary No.:	501396	Procedure Revision/FC:	8 / 99VT2-1		
Examination For:	ISI	Work Order No.:	0000232		

Area Required (as shown in applicable code reference drawing)

Length 36.000 * Width 2.000

= Total Area required 72.000 square inches

Coverage Achieved

Area examined 60.000 sq in. / Total area required (100%) 72.000 sq. in.

= Percent coverage ~~86.5~~ 83 % (area required - area of limitations = area examined)

To determine length of a circumferential weld

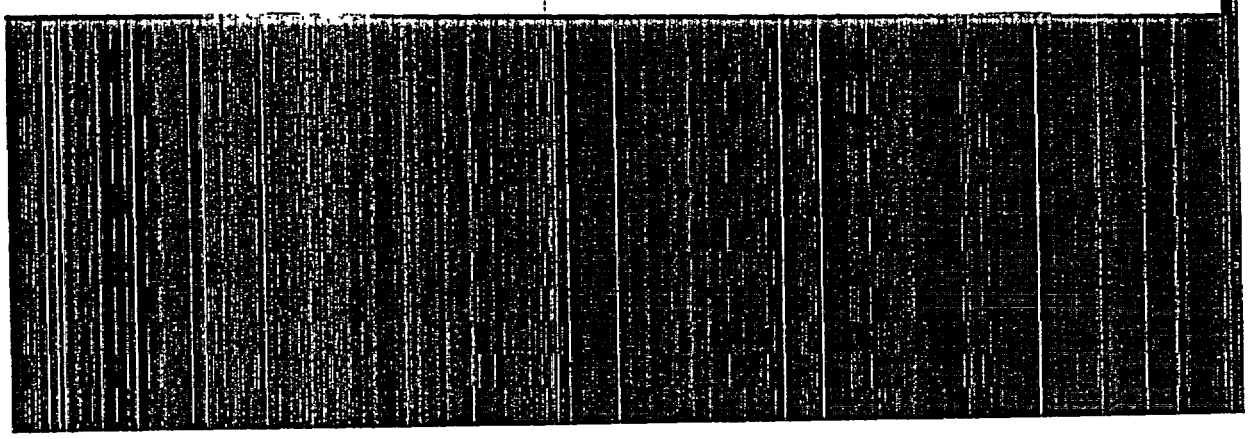
Note - Diameter refers to actual external diameter not pipe size (see table below)

Diameter 0.000 * (Pi) 3.1416

= Length 0.000 inches

Pipe Size	Actual Diameter	(Length) Circumference		Pipe Size	Actual Diameter	(Length) Circumference
2	2.375	7.46		12	12 75	40 06
2.5	2.875	9.03		14	14.0	43.98
3	3.5	11.0		16	16.0	50.27
3 5	4.0	12.57		18	18.0	56.55
4	4..5	14 14		20	20 0	62.83
5	5.563	17.48		22	22.0	69.12
6	6.625	20 81		24	24.0	75.40
8	8 625	27.10		30	30 0	94.25
10	10 75	33.77				

Site Field Supervisor: [signature] Date. 6-1-00



Visual Examination of Component Supports and Snubbers

Report No.: 2000V314
Page: 1 of 8

Site/Unit: NSP / PI2
Procedure: ISI-VT-2.0
Summary No.: 501412
Procedure Revision/FC: 8 / 99VT2-1
Examination For: ISI
Work Order No.: 0000232

Applicable Code: 1989
ISO Drawing No.: 2-isi-69-a
Location: Aux
Description: Support A
System ID: RH
Component ID: H-1
Size/Length: N/A
Thick/Dia: N/A
Limitations: None

Light Meter MFG: N/A
Serial No.: N/A
Illumination: N/A FT.CDS
Temp. Tool MFG: N/A
Serial No.: N/A
Surface Temp.: N/A °F
Gray Card: 1/32" Direct ☑ 1/64" Remote ☐
Surface Condition: Painted, As Welded
Visual Equipment/Aids: Flashlight, Mirror, Camera, 6" Scale, Neutral Gray Card

Visual Examination:
Observed Condition

All Components	NAD	IND	N/A	See Comments
1) External Obstruction			✓	
2) Cracks or Linear Ind.		✓		
3) Loose Parts	✓			
4) Missing Parts	✓			
5) Obstr. To Moving Parts			✓	
6) Wear	✓			
7) Corrosion	✓			
8) Contaminants	✓			
9) Improper Weld Reinfor.	✓			
10) Physical Deformation		✓		
11) Misuse	✓			
12) Slipped Clamps			✓	
13) Other (Describe)			✓	
14) Correct Settings	Yes	No	✓ N/A	
15) Actual Setting	N/A			
16) Serial No.	N/A			
Constant Load Supports				
17) Travel Stops In Place			✓	
18) Housing Damage			✓	

Spring Supports	NAD	IND	N/A	See Comments
19) Off Scale High			✓	
20) Off Scale Low			✓	
21) Locking Device In Place			✓	
22) Spring Degraded			✓	
23) Gross Misalignment			✓	
Mechanical Snubbers				
24) Swing Clearance			✓	
25) Bent Extension Rod			✓	
26) Housing Damage			✓	
Hydraulic Snubbers				
27) Reservoir Level			✓	
28) Leakage			✓	
29) Piston Fully Extended			✓	
30) Piston Fully Retracted			✓	
31) Reservoir Inverted			✓	
32) Piston Damage			✓	

Comments: TJG-13/00
Cracking of base previously reported. Reference: Report #86-008. Current condition is more severe than previously reported.

Results: NAD ☐ IND ☑

Percent Of Coverage Obtained > 90%: Yes
Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Auer, Robert G.	II /		5/12/2000	Halling, David A. /		5/13/00
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A /			Kinney, Charles R. /		5-24-00
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A /			Heater, Stephen B. /		5/24/00

Attachment 23
Page 2 of 8

Supplemental Report

Report No.: 2000V314

Page: 2 of 8

Summary No.: 501412

Examiner:	Auer, Robert G.	Level: II	Reviewer:	Halling, David A.	Date: 5/13/00
Examiner:	N/A	Level: N/A	Site Review:	Kinney, Charles R.	Date: 5-24-00
Other:	N/A	Level: N/A	ANII Review:	Heater, Stephen B.	Date: 5-24-00

Comments:

2) and 10) - Northeast End - 2 Cracks, 1.65" L. from bolt area through grout, 13" L. from bolt area through grout across top of pedestal, over corner and down backside of pedestal. One location had a depth of 0.4" L.

- Southwest End - Cracked from bolt area through grout and along base of grout to edge of pedestal, 4.3" L.

- Middle - Crack runs from bolt area through grout to top of pedestal, then in both directions at base of grout such that the entire length of grout is cracked at the base, 15" L. This area shows evidence of the concrete being upset by less than 0.1".

Attachment 23
Page 3 of 8

Supplemental Report

Report No.: 2000V314

Page: 3 of 8

JA 5-22-00

Summary No.: 501412

Examiner:	Auer, Robert G.	Level: II	Reviewer:	Halling, David A.	Date: 5/13/00
Examiner:	N/A	Level: N/A	Site Review:	Kinney, Charles R.	Date: 5-24-00
Other:	N/A	Level: N/A	ANII Review:	Heater, Stephen B.	Date: 5-24-00

Comments: Northeast End

Sketch or Photo: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL VT\2000V3

Attachment 23
Page 4 of 8

Supplemental Report

Report No.: 2000V314

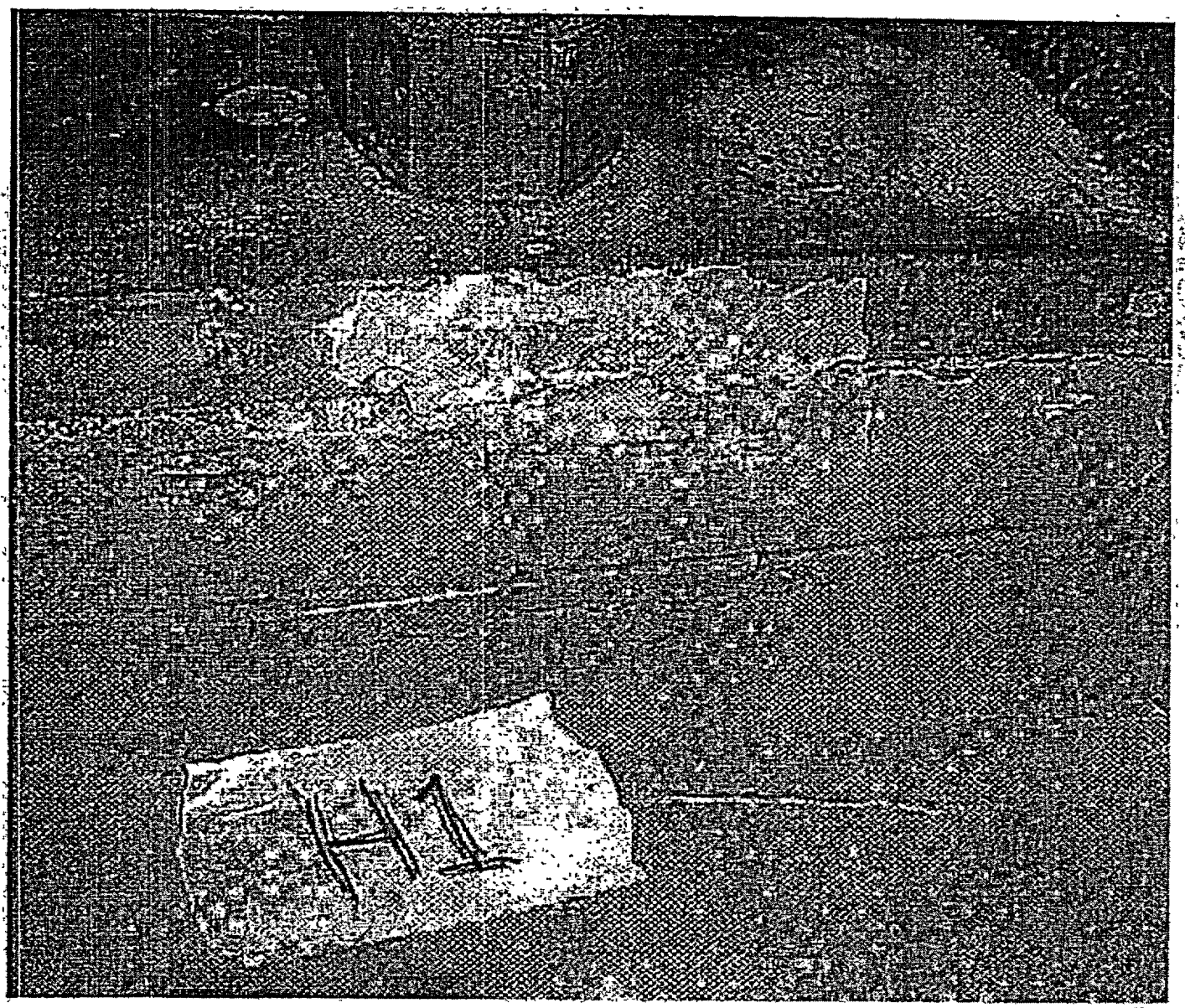
Page: 4 of 8 TAR 5-22-00

Summary No.: 501412

Examiner:	Auer, Robert G.	Level:	II	Reviewer:	Halling, David A.	Date: 5/13/00
Examiner:	N/A	Level:	N/A	Site Review:	Kinney, Charles R.	Date: 5-24-00
Other:	N/A	Level:	N/A	ANII Review:	Heater, Stephen B.	Date: 5-24-00

Comments: Middle

Sketch or Photo: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL VT\2000V3



Attachment 23
Page 5 of 8

Supplemental Report

Report No.: 2000V314

Page: 5 of 8

Summary No.: 501412

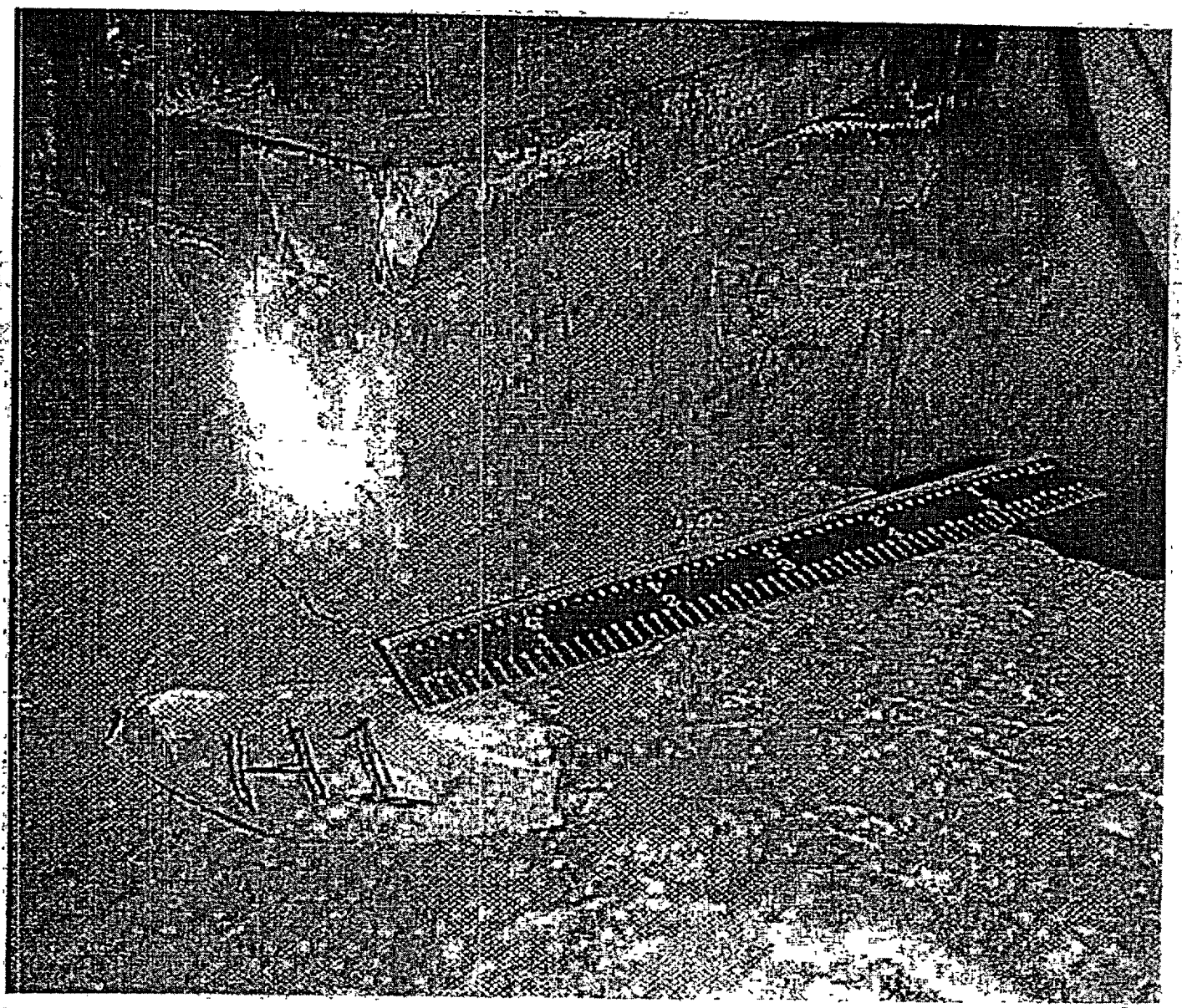
Examiner: Auer, Robert G. Level: II Reviewer: Halling, David A. Date: 5/13/00

Examiner: N/A Level: N/A Site Review: Kinney, Charles R. Date: 5-24-00

Other: N/A Level: N/A ANII Review: Heater, Stephen B. Date: 5-24-00

Comments: Southwest End

Sketch or Photo: G:\IDDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL VT\2000V3



Supplemental Report

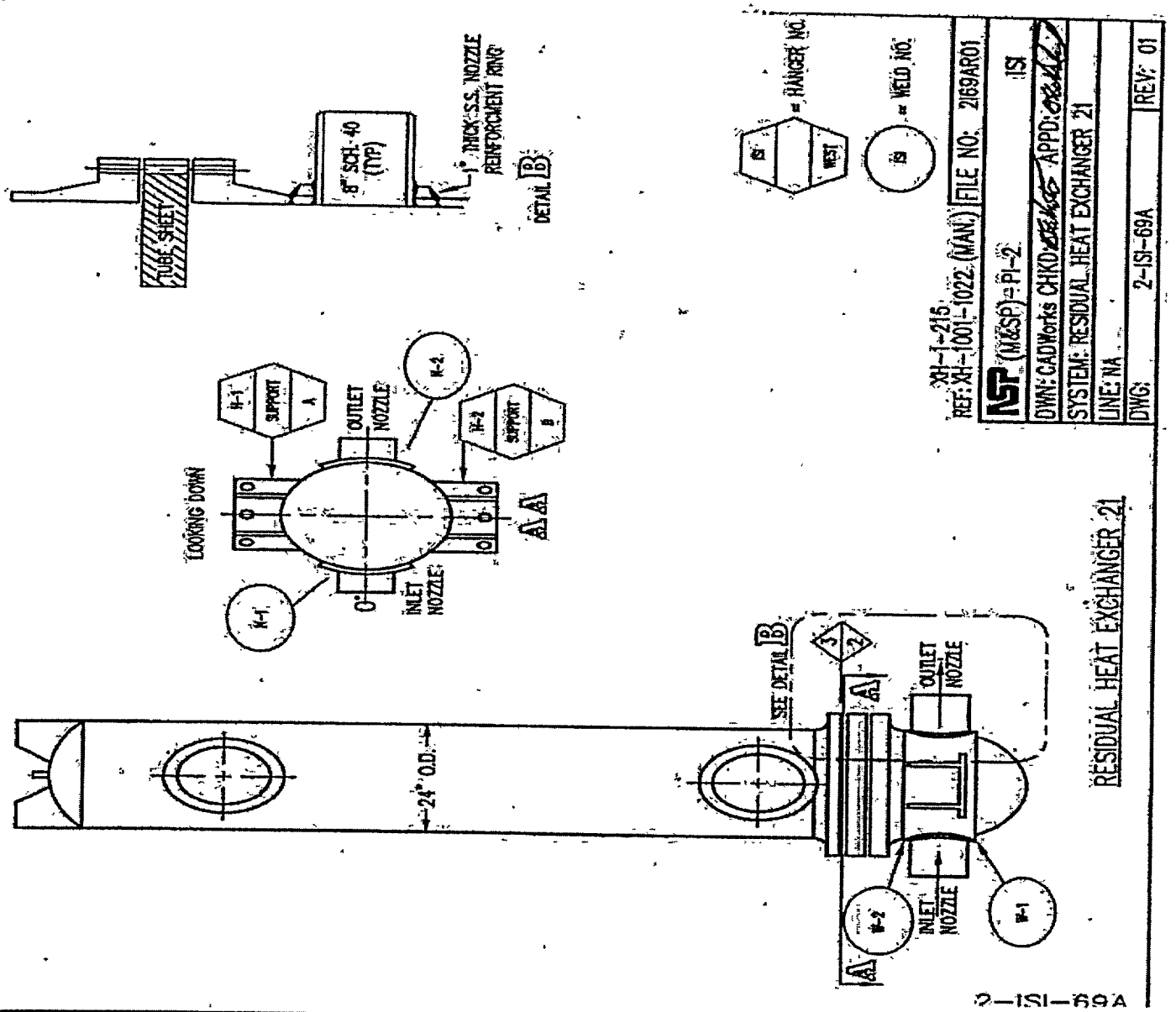
Report No.: 2000V314

Summary No.: 501412

Examiner:	Auer, Robert G.	Level:	II	Reviewer: Halling, David A.	Date: 5/12/00
Examiner:	N/A	Level:	N/A	Site Review: Kinney, Charles R.	Date: 5-24-00
Other:	N/A	Level:	N/A	ANII Review: Heater, Stephen B.	Date: 5-24-00

Comments: None

Sketch or Photo: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL VT\2000V3



ENGINEERING ISI 3RD INTERVAL DISCREPANCY DISPOSITION

UNIT 2 – 2000

Report Number: 2000V314

Item Description: #21 RHR Heat Exchanger Support A

Discrepancy: Various cracks noted in pedestal grout.

Disposition: Structural engineers at AES were contacted to review the subject condition. NSP concurs with their determination that the observed cracks do not represent any structural degradation of the pedestal. See attached letter from Doctor Setlur to Paul Hajovy dated May 22, 2000. This support is operable in its as found condition.

SM NOTIFIED: 5/15/00 1500

Prepared By: Paul Hajovy Date: 05-22-00

Reviewed By: H. M. Thorkelson Date: 5-22-00

AUTOMATED
ENGINEERING
SERVICES CORP.

3060 Ogden Ave., Suite 205
Lisle, IL 60532-1685
(630) 357-8880
Fax: (630) 357-4445
E-mail: aesc@xnet.com

May 22, 2000

Mr. Paul Hajovy
Northern States Power Company
Prairie Island Nuclear Generating Plant
1717 Wakonade Drive East
Welch, MN 55089

Dear Mr. Hajovy:

Subject: Engineering Evaluations of ISI Examination Reports - Unit 2
Report Nos. 2000V313 and 2000V314 dated 5/13/2000

Automated Engineering Services Corp. (AES) has evaluated the subject reports involving the #21 RHR Heat Exchanger pedestal grout cracking. Cracks in the grout were observed and evaluated in 1986. The evaluation stated that these cracks were hairline cracks of the concrete/grout and that the cracks do not create any immediate concern for the safety of the plant. However, the evaluation recommended that the extent of the cracking should be investigated carefully for proper corrective action.

The cracks that were observed in the subject ISI reports are the same ones that were observed in 1986. Reviewing the photographs and the sketches, it is our opinion that the cracks have not grown or widened in the past 14 years. These cracks are superficial hairline cracks in the grout and may be partly through the concrete. They appear to have occurred during the shrinking of the concrete and grout during original installation of the pedestal.

Review of the pedestal structural drawings (NF 38298-3 &-5 and 38313-1) show that the each baseplate is anchored to the concrete by three 1-1/8" diameter 1'-8" long J-type cast-in-place anchor bolts in the pedestals supporting the HX. Because of the deep embedment of the anchor bolts, surface cracks will not have any adverse effect on the structural capability of these anchors. Therefore, in our opinion, the observed cracks do not represent any structural degradation of the pedestal.

If you have any questions, please give me a call. Thank you for the opportunity to be of service to Prairie Island and NSP.

Sincerely,

A. V. Setlur

A.V. Setlur
President

PAGE 8 OF 8
REPORT # 2000V314

Visual Examination of Component Supports and Snubbers

Report No.: 2000V313

Site/Unit: NSP / PI2 | Procedure: ISI-VT-2.0 | Page: 1 of 8

Summary No.: 501419 | Procedure Revision/FC: 8 / 99VT2-1

Examination For: ISI | Work Order No.: 0000232

Applicable Code: 1989 | ISO Drawing No.: 2-isi-69-a | Location: RHR PIT 21

Description: Support B

System ID: RH

Component ID: H-2 | Size/Length: N/A | Thick/Dia: N/A

Limitations: None

Light Meter MFG: N/A | Serial No.: N/A | Illumination: N/A Ft/CDS

Temp. Tool MFG: N/A | Serial No.: N/A | Surface Temp.: N/A °F

Gray Card: 1/32" Direct ☑ 1/64" Remote ☐ | Surface Condition: Painted, As Welded

Visual Equipment/Aids: Flashlight, Mirror, Camera, 6" Scale, Neutral Gray Card

Visual Examination:
Observed Condition

All Components	NAD	IND	N/A	See Comments
1) External Obstruction			✓	
2) Cracks or Linear Ind.		✓		
3) Loose Parts	✓			
4) Missing Parts	✓			
5) Obstr. To Moving Parts			✓	
6) Wear	✓			
7) Corrosion	✓			
8) Contaminants	✓			
9) Improper Weld Reinfor.	✓			
10) Physical Deformation		✓		
11) Misuse	✓			
12) Slipped Clamps			✓	
13) Other (Describe)			✓	
14) Correct Settings	Yes	No	✓ N/A	
15) Actual Setting	N/A			
16) Serial No.	N/A			
Constant Load Supports				
17) Travel Stops in Place			✓	
18) Housing Damage			✓	

Spring Supports	NAD	IND	N/A	See Comments
19) Off Scale High			✓	
20) Off Scale Low			✓	
21) Locking Device In Place			✓	
22) Spring Degraded			✓	
23) Gross Misalignment			✓	
Mechanical Snubbers				
24) Swing Clearance			✓	
25) Bent Extension Rod			✓	
26) Housing Damage			✓	
Hydraulic Snubbers				
27) Reservoir Level			✓	
28) Leakage			✓	
29) Piston Fully Extended			✓	
30) Piston Fully Retracted			✓	
31) Reservoir Inverted			✓	
32) Piston Damage			✓	

Comments:
None

Results: NAD ☐ IND ☑

Percent Of Coverage Obtained > 90%: Yes | Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Auer, Robert G.	II		5/12/2000	Halling, David A.		5/13/00
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			Kinney, Charles R.		5-24-00
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Heater, Stephen B.		5/24/00

Attachment 24
Page 2 of 8

Supplemental Report

Report No.: 2000V313

Page: 2 of 8

Summary No.: 501419

Examiner:	Auer, Robert G.	Level: II	Reviewer:	Halling, David A.	Date: 5/13/00
Examiner:	N/A	Level: N/A	Site Review:	Kinney, Charles R.	Date: 5-24-00
Other:	N/A	Level: N/A	ANII Review:	Heater, Stephen B.	Date: 5-24-00

Comments:

2) and 10) - Northeast End - Crack runs from bolt area into grout, 1.2" L.

- Southwest End - Crack runs from bolt area through grout then along base of grout for 14", also runs in opposite direction along base of grout around corner of grout to an area under the support, 6.5" L.

- Middle - Crack runs from bolt area through grout, 1.5" L.

Attachment 24
Page 3 of 8

Supplemental Report

Report No.: 2000V313

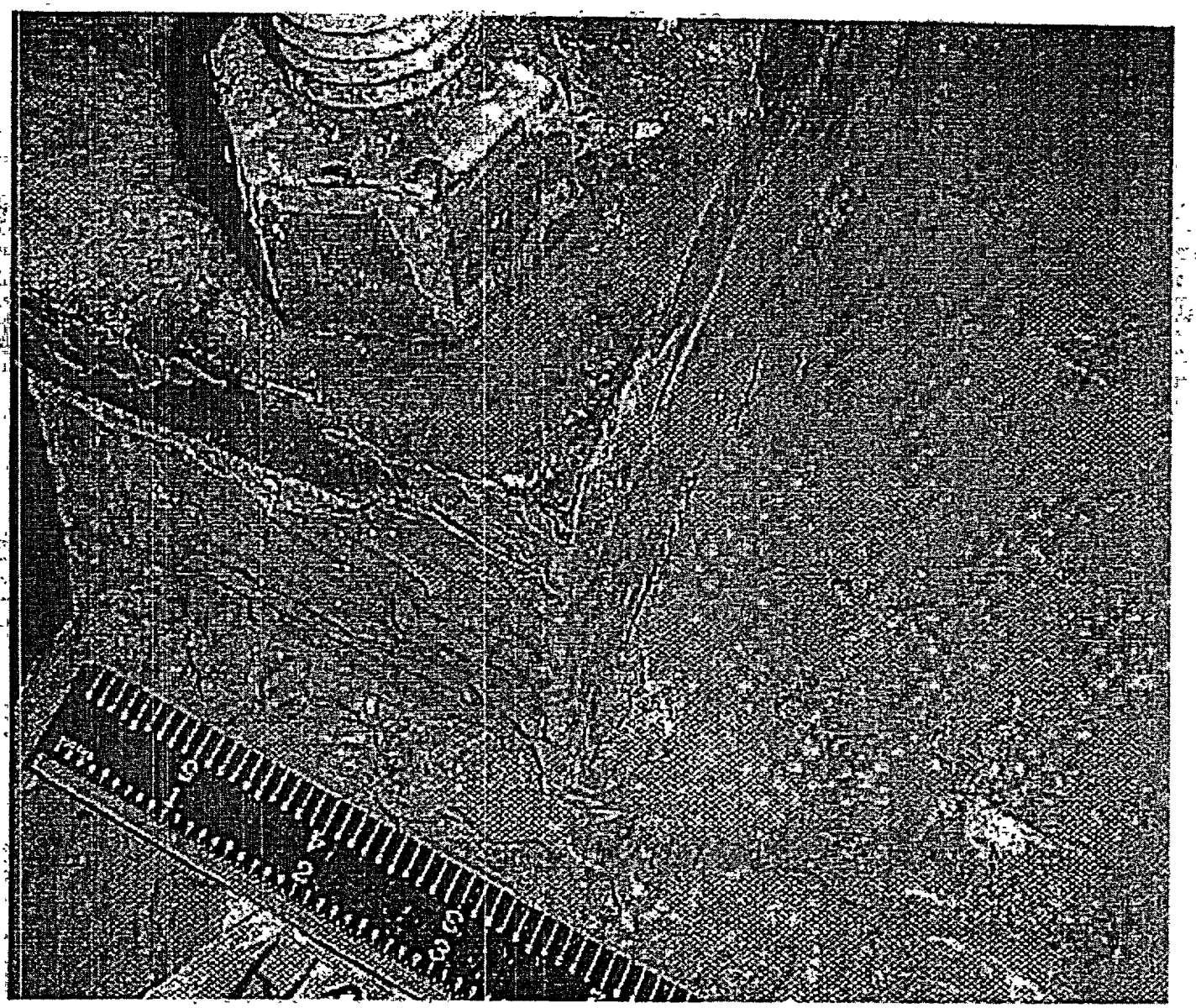
Page: 3 of 8 TH 5-22-00

Summary No.: 501419

Examiner:	Auer, Robert G.	Level: II	Reviewer:	Halling, David A.	Date: 5/13/00
Examiner:	N/A	Level: N/A	Site Review:	Kinney, Charles R.	Date: 5-24-00
Other:	N/A	Level: N/A	ANII Review:	Heater, Stephen B.	Date: 5-24-00

Comments: Southwest End

Sketch or Photo: G:\DDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL VT\2000V3



Attachment 24
Page 4 of 8

Supplemental Report

Report No.: 2000V313

Page: 4 of 8

Summary No.: 501419

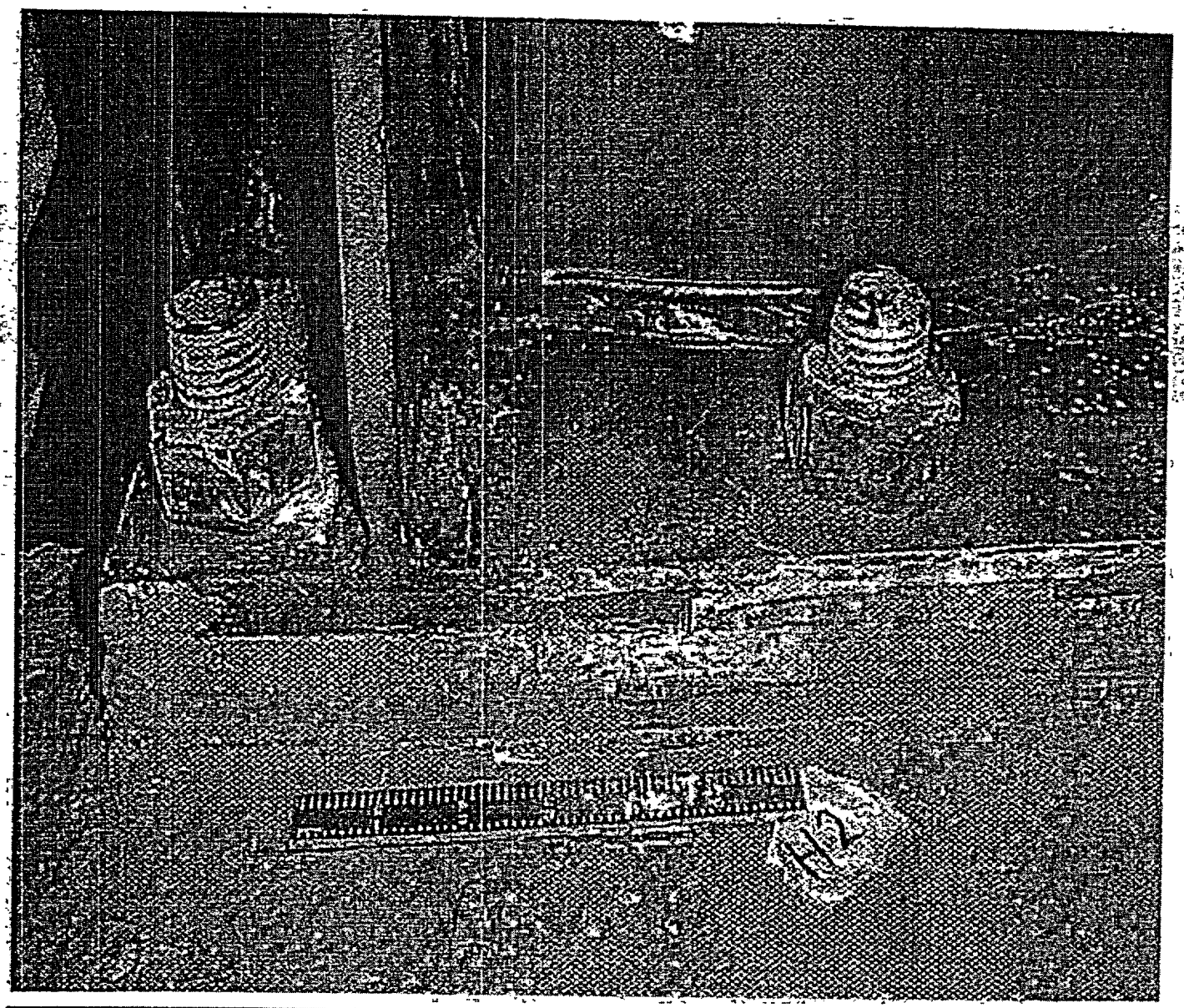
Examiner: Auer, Robert G. Level: II Reviewer: Halling, David A. Date: 5/13/00

Examiner: N/A Level: N/A Site Review: Kinney, Charles R. Date: 5-24-00

Other: N/A Level: N/A ANII Review: Heater, Stephen B. Date: 5-24-00

Comments: Middle

Sketch or Photo: G:\IDDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL VT\2000V3



Attachment 24
Page 5 of 8

Supplemental Report

Report No.: 2000V313

Page: 5 of 8

Summary No.: 501419

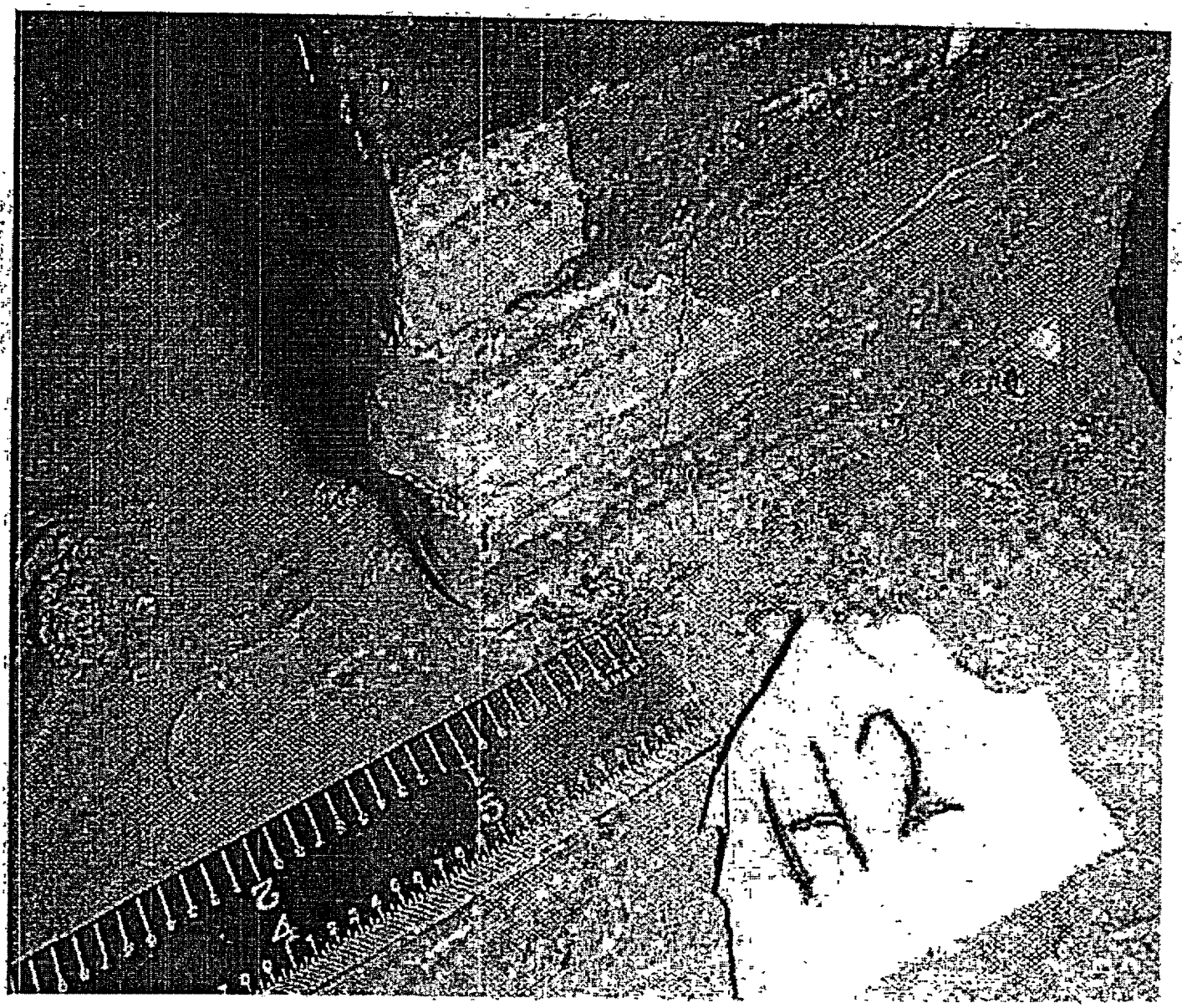
Examiner: Auer, Robert G. Level: II Reviewer: Halling, David A. Date: 5/13/00

Examiner: N/A Level: N/A Site Review: Kinney, Charles R. Date: 5-24-00

Other: N/A Level: N/A ANII Review: Heater, Stephen B. Date: 5-24-00

Comments: Northeast End

Sketch or Photo: G:\IDDEAL50\PI2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL VT\2000V3



Attachment 24
Page 6 of 8

Supplemental Report

Report No.: 2000V313

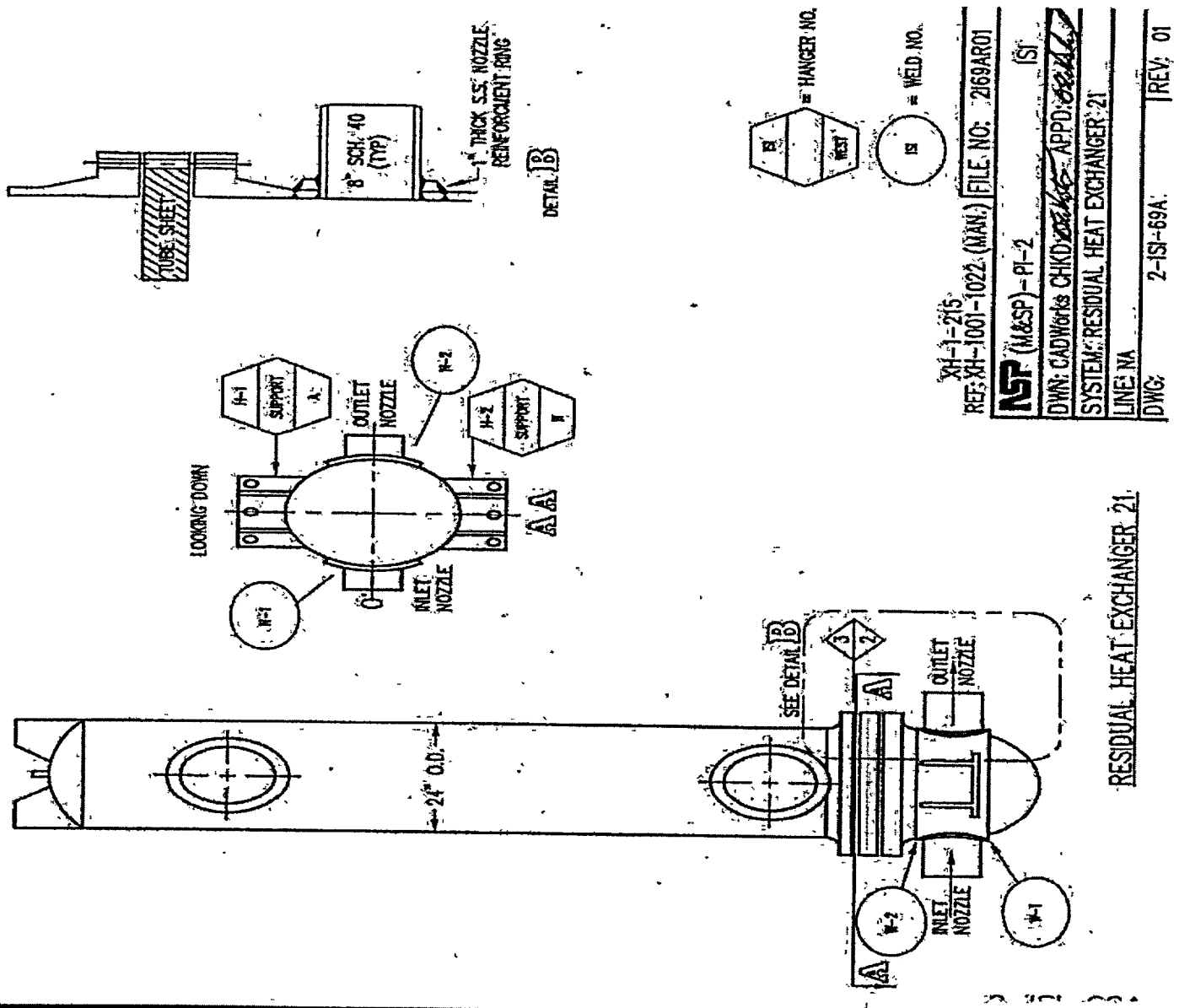
Page: 6 of 8

Summary No.: 501419

Examiner:	Auer, Robert G.	Level: II	Reviewer:	Halling, David A.	Date: 5/13/00
Examiner:	N/A	Level: N/A	Site Review:	Kinney, Charles R.	Date: 5-24-00
Other:	N/A	Level: N/A	ANII Review:	Heater, Stephen B.	Date: 5-24-00

Comments: None

Sketch or Photo: G:\DDEAL50\P\2RFO2000\PI2 SUPPLEMENTAL\PI2 SUPPLEMENTAL VT\2000V3



ENGINEERING ISI 3RD INTERVAL DISCREPANCY DISPOSITION

UNIT 2 – 2000

Report Number: 2000V313

Item Description: #21 RHR Heat Exchanger Support B

Discrepancy: Various cracks noted in pedestal grout.

Disposition: Structural engineers at AES were contacted to review the subject condition. NSP concurs with their determination that the observed cracks do not represent any structural degradation of the pedestal. See attached letter from Doctor Setlur to Paul Hajovy dated May 22, 2000. This support is operable in its as found condition.

SM NOTIFIED: 5/15/00 1500

Prepared By: Paul Hajovy Date: 05-22-00

Reviewed By: A.M. Howaldson Date: 5-22-00

Attachment 24
Page 8 of 8

AUTOMATED
ENGINEERING
SERVICES CORP.

3060 Ogden Ave., Suite 205
Lisle, IL 60532-1685
(630) 357-8880
Fax: (630) 357-4445
E-mail: aesc@xnet.com

May 22, 2000

Mr. Paul Hajovy
Northern States Power Company
Prairie Island Nuclear Generating Plant
1717 Wakonade Drive East
Welch, MN 55089

Dear Mr. Hajovy:

Subject: Engineering Evaluations of ISI Examination Reports - Unit 2
Report Nos. 2000V313 and 2000V314 dated 5/13/2000

Automated Engineering Services Corp. (AES) has evaluated the subject reports involving the #21 RHR Heat Exchanger pedestal grout cracking. Cracks in the grout were observed and evaluated in 1986. The evaluation stated that these cracks were hairline cracks of the concrete/grout and that the cracks do not create any immediate concern for the safety of the plant. However, the evaluation recommended that the extent of the cracking should be investigated carefully for proper corrective action.

The cracks that were observed in the subject ISI reports are the same ones that were observed in 1986. Reviewing the photographs and the sketches, it is our opinion that the cracks have not grown or widened in the past 14 years. These cracks are superficial hairline cracks in the grout and may be partly through the concrete. They appear to have occurred during the shrinking of the concrete and grout during original installation of the pedestal.

Review of the pedestal structural drawings (NF 38298-3 &-5 and 38313-1) show that the each baseplate is anchored to the concrete by three 1-1/8" diameter 1'-8" long J-type cast-in-place anchor bolts in the pedestals supporting the HX. Because of the deep embedment of the anchor bolts, surface cracks will not have any adverse effect on the structural capability of these anchors. Therefore, in our opinion, the observed cracks do not represent any structural degradation of the pedestal.

If you have any questions, please give me a call. Thank you for the opportunity to be of service to Prairie Island and NSP.

Sincerely,

A. V. Setlur

A.V. Setlur
President

PAGE 8 OF 8
REPORT # 2000V313

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

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

PREPARED BY: _____ Lv. III REVIEWED BY: _____ Lv III

APPROVED BY: _____ ANII REVIEW: _____
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.

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

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

7.0 INSTRUCTIONS

7.1 Initial Examination

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

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

7.2 Evaluation

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

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.

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

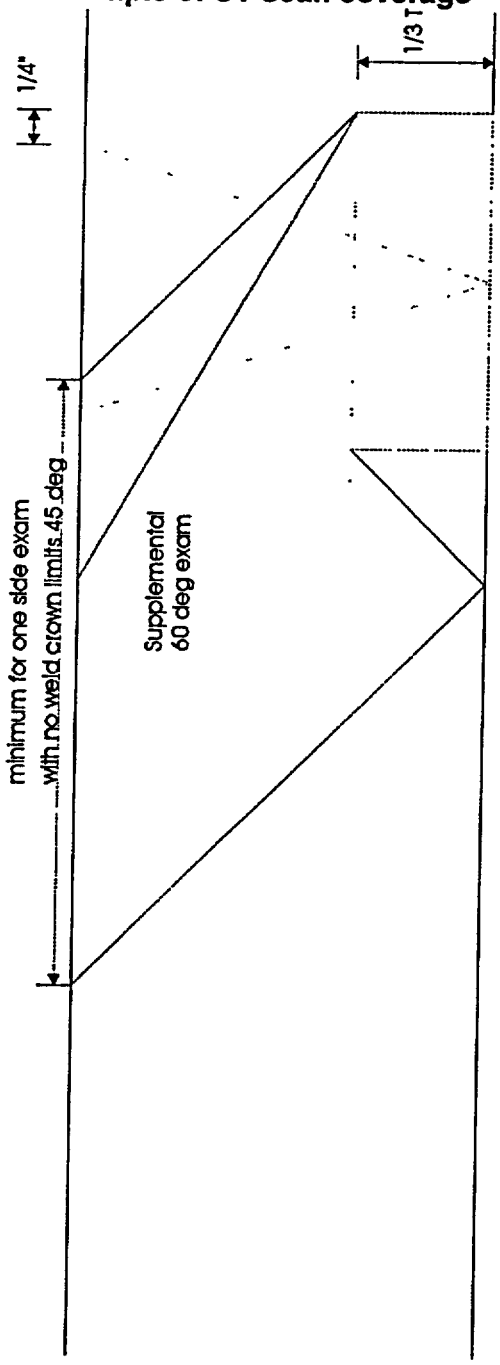
10.1 Inservice inspection examinations shall be incorporated in the ISI records. See Metals and Materials Resurces North Procedure 2.3 "ISI Examination Program".

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

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

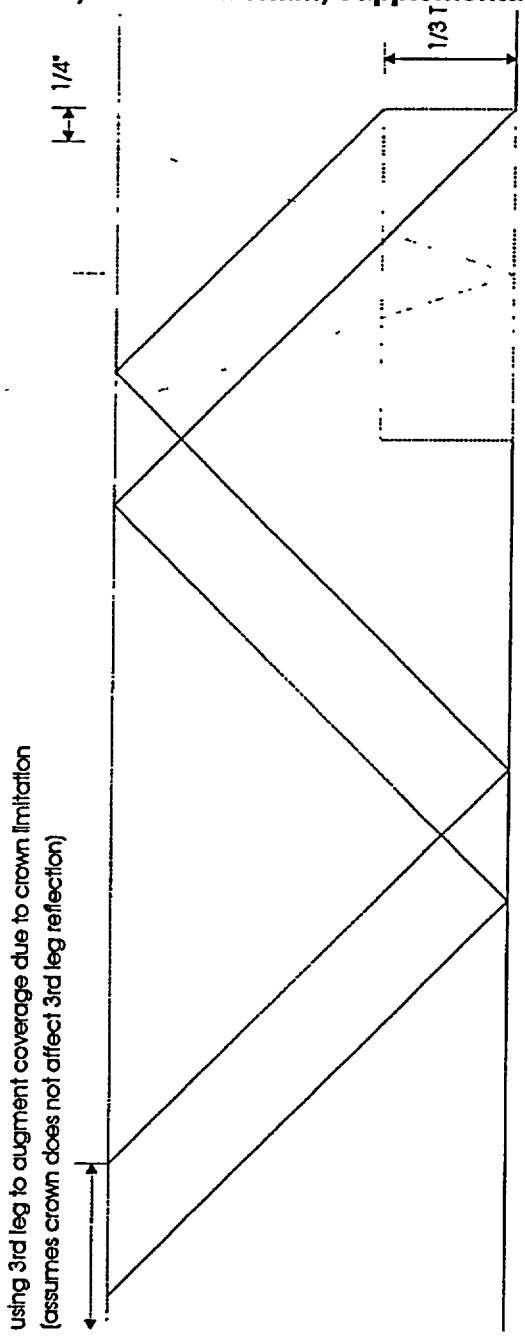
TITLE: Limitations to NDE
NUMBER: ISI-LTS-1 Revision 2

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.

APPENDIX D

LIST OF SECTION XI VT-2 EXAMINATIONS

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ISI PRESSURE TESTS UNIT 2

SYSTEM	CLASS	DESCRIPTION	PROCEDURE	DRAWING	DATE
RC	1	Reactor Coolant	2070	NF-39835	12/29/1998
FW	2	Feedwater	2168.17	NF-39843	3/6/1998
VC	2	Chemical Vol Control	2168.16	NF-39836-7	10/15/1997

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APPENDIX B

LIST OF SECTION XI VT-2 EXAMINATIONS

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ISI RESULTS UNIT 2 1/1/99 - 6/7/00

SYSTEM	CLASS	DESCRIPTION	PROCEDURE	DRAWING	DATE
		PRESSURE TEST UNIT 2			
RC	1	Reactor Coolant	2070	NF-39835	6/5/2000
CC	2	Component Cooling	2168.4A	NF-39844-1	4/29/2000
RH	2	Residual Heat Removal	2168.10	NF-39840	6/2/2000
MS	2	Main Steam	2168.11	NF-39842	6/5/2000
SI	2	Safety Injection	2168.12	NF-39838	5/29/2000
CS	2	Containment Spray	2168.14	NF-39824	5/29/2000
HC	2	Post LOCA	2168.15	NF-39830	5/31/2000
SS	2	Sampling System	2168.19	NF-39825	5/28/2000
RV	2	Vessel Vent System	2168.23	NF-39835	6/5/2000
	2	Containment Vent (Misc)	2168.24	NF-39847	6/3/2000
SI/RH/CS	2	RWST to RHR Pit Trench	2168.25	NF-39839	5/28/2000

The above tests were performed on Unit Two Code Class 1 and 2 systems between the dates of 1/1/99 and 6/7/00.