

NMP1L3349

August 17, 2020

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Nine Mile Point Nuclear Station, Unit 1
Renewed Facility Operating License No. DPR-63
NRC Docket No. 50-220

Subject: End of Interval Relief Request Associated with the Fourth Ten-Year Inservice Inspection (ISI) Interval

In accordance with 10 CFR 50.55a, "Codes and standards," paragraph (g)(5)(iii), Exelon Generation Company, LLC (Exelon), is requesting relief from the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components." This relief request applies to the fourth ten-year Inservice Inspection (ISI) interval, which concluded on August 22, 2019, for the Nine Mile Point Nuclear Station, Unit 1. The fourth ten-year ISI interval complied with the ASME Boiler and Pressure Vessel Code, Section XI, 2004 Edition with No Addenda.

There are no regulatory commitments in this letter.

Exelon requests approval of this relief request by August 17, 2021.

If you have any questions concerning this letter, please contact Tom Loomis at (610) 765-5510.

Respectfully,



David T. Gudger
Senior Manager - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Attachments: 1) Relief Request 1ISI-006
2) Nine Mile Point Nuclear Station Unit 1 Fourth Inservice Inspection Interval Limited Coverage Non-Destructive Examination Reports

End of Interval Relief Request Associated with the
Fourth Ten-Year Inservice Inspection (ISI) Interval
August 17, 2020
Page 2

cc: Regional Administrator, Region I, NRC
NRC Senior Resident Inspector, NMP
Project Manager NRC, NMP
A. L. Peterson, NYSERDA

Attachment 1
Relief Request 1ISI-006

ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticability--
Revision 0
(Page 1 of 17)

1. ASME Code Component(s) Affected

Code Class:	1 & 2
Reference:	IWB-2500, Table IWB-2500-1, IWC-2500, Table IWC-2500-1, ASME Code Case N-460, ASME Code Case N-716.
Examination Category:	B-A, B-D, B-O, C-B, R-A
Item Number:	B1.12, B1.40, B3.90, B14.10, C2.21, R1.11, R1.16, R1.20
Description:	Limited Examination Coverage
Component Number:	See Table 1ISI-006.1 for a list of Component ID's

2. Applicable Code Edition and Addenda

The Nine Mile Point Nuclear Station, Unit 1 fourth 10-year interval Inservice Inspection (ISI) Program was based on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," 2004 Edition with No Addenda.

Nine Mile Point Nuclear Station, Unit 1 maintains the responsibility to ensure examinations were performed in accordance with the requirements of ASME Section XI, Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," as amended and mandated by 10 CFR 50.55a and as modified by the Performance Demonstration Initiative (PDI) Program description. In the case of limited examinations, efforts were made to obtain additional examination coverage. Table 1ISI-006.1 identifies whether each listed examination was performed in accordance with the requirements of ASME Section XI, Appendix VIII.

3. Applicable Code Requirements

The extent of examination requirement for Examination Category B-A, Item Number B1.12, per Table IWB-2500-1, requires a volumetric examination of essentially 100% of the weld length.

The extent of examination requirement for Examination Category B-A, Item Number B1.40, per Table IWB-2500-1, requires a volumetric and surface examination for the closure head-to-flange weld of essentially 100% of the weld length.

The extent of examination requirement for Examination Category B-D, Item Number B3.90, per Table IWB-2500-1, requires a volumetric examination of all nozzle-to-vessel welds. During the third period of the fourth ISI interval, Nine Mile Point Nuclear Station, Unit 1 Relief Request NMP-RR-001 (ML17067A056) was submitted and approved to use ASME Code Case N-702 by the Nuclear Regulatory Commission (NRC) in a Safety Evaluation Report (SER) dated December 5, 2017 (ML17331A181). Following the adoption of ASME Code Case N-613-1, Nine Mile Point Nuclear Station, Unit 1 performed a volumetric examination using a reduced examination volume (A-B-C-D-E-F-G-H) of Figures 1, 2, and 3 of the Code Case in lieu of the previous examination volumes of ASME Section XI, Figures IWB-2500-7(a), (b), and (c).

ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticability--
Revision 0
(Page 2 of 17)

The extent of examination requirement for Examination Category B-O, Item Number B14.10, per Table IWB-2500-1, requires a volumetric or surface examination of the pipe-to-pipe welds and pipe-to-flange-welds in Control Rod Drive (CRD) housings.

The extent of examination requirement for Examination Category C-B, Item Number C2.21, per Table IWC-2500-1, requires a surface and volumetric examination of the nozzle-to-shell welds. Note 4 in Table IWC-2500-1 states, in the case of multiple vessels of similar design, size and service (such as steam generators, heat exchangers), the required examinations may be limited to one vessel or distributed among the vessels.

The extent of examination requirement for Examination Category R-A, Item Numbers R1.11, R1.16, and R1.20, per Table 1 of ASME Code Case N-716, requires a volumetric examination of essentially 100% of the examination location. Relief Request 1ISI-003 (ML090860860) was submitted and then was approved by the NRC in a SER dated March 15, 2010 (ML100700034).

Nine Mile Point Nuclear Station, Unit 1 adopted ASME Code Case N-460 ("Alternative Examination Coverage for Class 1 and Class 2 Welds, Section XI, Division 1"), which defines "essentially 100%" as greater than 90% coverage of the examination volume or surface area, as applicable. The greater than 90% minimum coverage was applied to all surface and volumetric examinations required by ASME Section XI.

4. Impracticability of Compliance

In accordance with 10 CFR 50.55a(g)(5)(iii), relief is requested on the basis that conformance with these ASME Section XI requirements is impractical since conformance would require extensive structural modifications to the component or surrounding structure.

Due to the original design of these components, Nine Mile Point Nuclear Station, Unit 1 is unable to satisfy the ASME Section XI requirements to perform the volumetric or surface examination to the extent required for welds greater than 90% of the volume or surface area. Nine Mile Point Nuclear Station, Unit 1 would incur significant engineering, material, and installation costs to perform such modifications without a compensating increase in the level of quality and safety; therefore, relief is requested on the basis that the ASME Section XI requirements to examine these components are impractical due to component configuration, interference from permanent plant equipment, single-sided access, etc.

Table 1ISI-006.1 provides a summary of the examination limitations for each component for which relief is requested. The table also indicates the outage the component was examined, the coverage percentage obtained for each component, and other pertinent design information. This table is the cumulative list of the limited ASME Section XI examinations performed during the fourth ISI interval. Attachment 2 provides coverage plots which were extracted from the Non-Destructive Examination (NDE) summary sheets that detail the examination limitations.

ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticability--
Revision 0
(Page 3 of 17)

Recordable indications were determined to be acceptable as identified on the attached table.

Based on the above, Nine Mile Point Nuclear Station, Unit 1 requests relief to perform examinations without achieving ASME Section XI compliance coverage when the required coverage is impractical.

5. Burden Caused by Compliance

Compliance with the applicable ASME Section XI volumetric and surface examination requirements can only be accomplished by redesigning and refabricating the subject and/or surrounding components. Based on this, the ASME Section XI requirements are deemed impractical in accordance with 10 CFR 50.55a(g)(5)(iii).

6. Proposed Alternative and Basis for Use

Nine Mile Point Nuclear Station, Unit 1 has performed the ASME Section XI required examinations to the maximum extent practical (Code Coverage), which are documented in Table 1ISI-006.1. Due to the physical interferences causing these limitations, there are no alternative examination techniques currently available to increase coverage. There were no cases in any of the listed examinations where the component's outside diameter surface features (i.e., weld crowns, weld shrinkage, surface roughness, etc.) could have been conditioned to obtain the required coverage without major modification to the components. As a minimum, all components received the required volumetric or surface examinations to the extent practical due to limited or lack of access.

Periodic system pressure tests that include VT-2 visual examinations will continue to be performed in accordance with ASME Section XI, Examination Category B-P, for Class 1 pressure retaining components during each refueling outage, and Examination Category C-H for Class 2 pressure retaining components each inspection period of Table IWB-2500-1 and Table IWC-2500-1. The absence of any observed leakage provides additional assurance that the structural integrity of the subject components will be maintained throughout the remainder of the interval.

7. Duration of Proposed Alternative

Relief is requested for the fourth ISI interval for Nine Mile Point Nuclear Station, Unit 1.

8. Precedents

The following similar end of interval impracticability relief requests have been previously authorized by the NRC:

- Nine Mile Point Nuclear Power Plant, Unit 2 third ISI interval Relief Request 2ISI-014 was authorized per NRC SER dated June 2, 2020 (ADAMS Accession No. ML20141L053).

ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticability--
Revision 0
(Page 4 of 17)

- Peach Bottom Atomic Power Station, Units 2 and 3 fourth ISI interval Relief Request I4R-63 was authorized in NRC SER dated April 14, 2020 (ADAMS Accession No. ML20097D644).
- Joseph M Farley Nuclear Plant, Units 1 and 2 fourth ISI interval Relief Request FNP-ISI-03 was authorized in NRC SER dated August 2, 2019 (ADAMS Accession No. ML19192A171); and Joseph M Farley Nuclear Plant, Units 1 and 2 fourth ISI interval Relief Request FNP-ISI-02 was authorized in NRC SER dated August 8, 2019 (ADAMS Accession No. ML19213A194).
- James A. FitzPatrick Nuclear Power Plant fourth ISI interval Relief Request I4R-22 was authorized in NRC SER dated June 21, 2019 (ADAMS Accession No. ML19135A444).
- LaSalle County Station, Units 1 and 2 third ISI interval Relief Request I3R-15 was authorized in NRC SER dated May 20, 2019 (ADAMS Accession No. ML19121A317).
- Watts Bar Nuclear Plant, Unit 1 second ISI interval Relief Request 1-ISI-21 was authorized per NRC SER dated April 12, 2019 (ADAMS Accession No. ML19071A009).

ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticality--
Revision 0
(Page 5 of 17)

Table 1ISI-006.1
Nine Mile Point Nuclear Station, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Class / Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Line No. / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Frequency (MHz) / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
RV-WD-001A (N1-ISI- 034800)	Closure Head- to-Flange Weld (00.0 Closure Head)	IWB-2500-5 Volumetric Ultrasonic Test	1 B-A B1.40	N1R21	CS	360" Closure Head 5.30"	1030 psig 550°F	60° / 2.0 / RL 60° / 2.0 / RL 45° / 2.25 / Shear	29%	Yes	The examination was limited due to the configuration of the closure head-to-flange weld (radius at vessel to head interface). Recordable indication was detected, evaluated as a flaw, and determined to be acceptable in accordance with IWB-3600 of ASME Section XI. (Att. 2 - Pg. Nos. 2 - 4) 1/3 each inspection period to obtain 100% of the weld by the end of the interval. This examination covers from 0 to 120 degree of the flange weld.
36-WD-012 (N1-ISI- 228000)	N7A Nozzle-to- Closure Head (36.0 Reactor Instrumentation)	IWB-2500-7 Volumetric Ultrasonic Test	1 B-D B3.90	N1R21	SA336 CS	12.625" Safety Valve Nozzles 4.60" w clad nom	1030 psig 550°F	60° / 2.0 / RL 60° / 2.0 / RL 45° / 2.25 / Shear 35° / 2.25 / Shear	50.5%	Yes	The examination was limited due to the nozzle-to-vessel configuration and single sided access from top head. The inner 15% (area of interest) received 98.5% coverage. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 5 - 6)

Note:

- The following systems and their abbreviations are listed here: 00.0 Closure Head (CH), 00.1 Reactor Pressure Vessel (RPV), 01.0 Main Steam System (MS), 32.0 Reactor Recirculation (RR), 33.0 Reactor Clean Up (RWCU), 33.2 Reactor Clean Up (RWCU), 36.0 Reactor Instrumentation (INST), 37.0 Reactor Drain (RD), 39.0 Emergency Condenser (EC), 40.0 Reactor Core Spray (CS), 42.1 Liquid Poison (LP), 44.0 Control Rod Drive (CRD) Housing, and 44.1 Control Rod Drive (CRD).

ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticability--
Revision 0
(Page 6 of 17)

Table 1ISI-006.1
Nine Mile Point Nuclear Station, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Class / Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Line No. / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Frequency (MHz) / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
36-WD-014 (N1-ISI- 228500)	N7B Nozzle-to- Closure Head (36.0 Reactor Instrumentation)	IWB-2500-7 Volumetric Ultrasonic Test	1 B-D B3.90	N1R21	SA336 CS	12.625" Safety Valve Nozzles 4.60" w clad nom	1030 psig 550°F	60° / 2.0 / RL 60° / 2.0 / RL 45° / 2.25 / Shear 35° / 2.25 / Shear	50.5%	Yes	The examination was limited due to the nozzle-to-vessel configuration and single sided access from top head. The inner 15% (area of interest) received 98.5% coverage. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 7 - 8)
36-WD-016 (N1-ISI- 229000)	N7C Nozzle-to- Closure Head (36.0 Reactor Instrumentation)	IWB-2500-7 Volumetric Ultrasonic Test	1 B-D B3.90	N1R21	SA336 CS	12.625" Safety Valve Nozzles 4.60" w clad nom	1030 psig 550°F	60° / 2.0 / RL 60° / 2.0 / RL 45° / 2.25 / Shear 35° / 2.25 / Shear	48%	Yes	The examination was limited due to the nozzle-to-vessel configuration and single sided access from top head. The inner 15% (area of interest) received 92.25% coverage. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 9 - 11)
36-WD-018 (N1-ISI- 229500)	N7D Nozzle-to- Closure Head (36.0 Reactor Instrumentation)	IWB-2500-7 Volumetric Ultrasonic Test	1 B-D B3.90	N1R21	SA336 CS	12.625" Safety Valve Nozzles 4.60" w clad nom	1030 psig 550°F	60° / 2.0 / RL 60° / 2.0 / RL 45° / 2.25 / Shear 35° / 2.25 / Shear	48%	Yes	The examination was limited due to the nozzle-to-vessel configuration and single sided access. The inner 15% (area of interest) received 92.25% coverage. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 12 - 14)

Note:

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ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticality--
Revision 0
(Page 7 of 17)

Table 1ISI-006.1
Nine Mile Point Nuclear Station, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Class / Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Line No. / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Frequency (MHz) / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
36-WD-020 (N1-ISI- 230000)	N7E Nozzle-to- Closure Head (36.0 Reactor Instrumentation)	IWB-2500-7 Volumetric Ultrasonic Test	1 / B-D / B3.90	N1R21	SA336 CS	12.625" Safety Valve Nozzles 4.60" w clad nom	1030 psig 550°F	60° / 2.0 / RL 60° / 2.0 / RL 45° / 2.25 / Shear 35° / 2.25 / Shear	50.5%	Yes	The examination was limited due to the due to the nozzle-to-vessel configuration and single sided access. The inner 15% (area of interest) received 98.5% coverage. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 15 - 16)
36-WD-022 (N1-ISI- 230500)	N7F Nozzle-to- Closure Head (36.0 Reactor Instrumentation)	IWB-2500-7 Volumetric Ultrasonic Test	1 B-D B3.90	N1R21	SA336 CS	12.625" Safety Valve Nozzles 4.60" w clad nom	1030 psig 550°F	60° / 2.0 / RL 60° / 2.0 / RL 45° / 2.25 / Shear 35° / 2.25 / Shear	50.5%	Yes	The examination was limited due to the due to the nozzle-to-vessel configuration and single sided access. The inner 15% (area of interest) received 98.5% coverage. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 17 - 18)
36-WD-024 (N1-ISI- 231000)	N7G Nozzle-to- Closure Head (36.0 Reactor Instrumentation)	IWB-2500-7 Volumetric Ultrasonic Test	1 B-D B3.90	N1R21	SA336 CS	12.625" Safety Valve Nozzles 4.60" w clad nom	1030 psig 550°F	60° / 2.0 / RL 60° / 2.0 / RL 45° / 2.25 / Shear 35° / 2.25 / Shear	48%	Yes	The examination was limited due to the due to the nozzle-to-vessel configuration and single sided access. The inner 15% (area of interest) received 92.25% coverage. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 19 - 21)

Note:

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ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticability--
Revision 0
(Page 8 of 17)

Table 1ISI-006.1
Nine Mile Point Nuclear Station, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Class / Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Line No. / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Frequency (MHz) / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
36-WD-026 (N1-ISI- 231500)	N7H Nozzle-to- Closure Head (36.0 Reactor Instrumentation)	IWB-2500-7 Volumetric Ultrasonic Test	1 B-D B3.90	N1R21	SA336 CS	12.625" Safety Valve Nozzles 4.60" w clad nom	1030 psig 550°F	60° / 2.0 / RL 60° / 2.0 / RL 45° / 2.25 / Shear 35° / 2.25 / Shear	48%	Yes	The examination was limited due to the due to the nozzle-to-vessel configuration and single sided access. The inner 15% (area of interest) received 92.25% coverage. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 22 - 24)
36-WD-028 (N1-ISI- 232000)	N7J Nozzle-to- Closure Head (36.0 Reactor Instrumentation)	IWB-2500-7 Volumetric Ultrasonic Test	1 B-D B3.90	N1R21	SA336 CS	12.625" Safety Valve Nozzles 4.60" w clad nom	1030 psig 550°F	60° / 2.0 / RL 60° / 2.0 / RL 45° / 2.25 / Shear 35° / 2.25 / Shear	50.5%	Yes	The examination was limited due to the nozzle-to-vessel configuration and single sided access. The inner 15% (area of interest) received 98.5% coverage. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 25 - 26)
36-WD-1073 (N1-ISI- 236700)	N7L Nozzle-to- Closure Head (36.0 Reactor Instrumentation)	IWB-2500-7 Volumetric Ultrasonic Test	1 B-D B3.90	N1R21	SA336 CS	12.625" Safety Valve Nozzles 4.60" w clad nom	1030 psig 550°F	60° / 2.0 / RL 60° / 2.0 / RL 45° / 2.25 / Shear 35° / 2.25 / Shear	48%	Yes	The examination was limited due to the nozzle-to-vessel configuration and single sided access. The inner 15% (area of interest) received 92.25% coverage. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 27 - 29)

Note:

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ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticality--
Revision 0
(Page 9 of 17)

Table 1ISI-006.1
Nine Mile Point Nuclear Station, Unit 1
List of Components with Limited Examination Coverage

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39-WD-089 (N1-ISI- 282300)	N5B Nozzle-to- Vessel (39.0 Emergency Condenser)	IWB-2500-7 Volumetric Ultrasonic Test	1 B-D B3.90	N1R21	SA336 CS	18.0" 18.0" ECC Nozzles 7.13"	1030 psig 550°F	45° / 2.25 / Shear 60° / 2.0 / RL 60° / 2.0 / RL	29.6%	Yes	The examination was limited due to the nozzle-to-vessel configuration and the adjacent nozzle insulation ring. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 30 - 33)
40-WD-081 (N1-ISI- 350500)	N6B Nozzle-to- Vessel (40.0 Reactor Core Spray)	IWB-2500-7 Volumetric Ultrasonic Test	1 B-D B3.90	N1R21	SA336 CS	6.0" 6.0" CSB 7.70"	1030 psig 550°F	45° / 2.25 / Shear 60° / 2.0 / Long 60° / 2.0 / Long	12.06%	Yes	The examination was limited due to nozzle-to-vessel configuration, the adjacent nozzle insulation ring, and other nozzles. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 34 - 35)
60-46-WD- 006C1 (N1-ISI- 436900)	Hx 60-46 Head Outlet-to-Nozzle (39.0 Emergency Condenser)	IWC-2500- 4(a), (b), or (d) IWC-2500-1 Volumetric Ultrasonic Test and Surface Liquid Penetrant Test,	2 C-B C2.21	N1R21	SS, SA312 TP316 SA240 TP316	21.0" EC Heat Exchanger 60-46 Discharge 1.3"	1030 psig 550°F	45° / 1.5 / Shear 60° / 2.0 / Long	50%	No	The examination was limited due to the head outlet-to-nozzle configuration and single sided access. Essentially 100% coverage was achieved for the surface examination. (Att. 2 - Pg. Nos. 36 - 37)
40-WD-025 (N1-ISI- 325300)	Valve 40-09-to- Elbow (40.0 Reactor Core Spray)	IWB-2500-8(c), IWB-2500-9, 10, & 11 Volumetric Ultrasonic Test	1 R-A R1.16	N1R21	SA376 TP316	12.0" 12.0" CSA 0.62"	1030 psig 550°F	45° / 1.5 / Shear 60° / 2.0 / Long	50%	Yes	The examination was limited due to the valve-to-elbow configuration and single sided access. (Att. 2 - Pg. Nos. 38 - 39)

Note:

- The following systems and their abbreviations are listed here: 00.0 Closure Head (CH), 00.1 Reactor Pressure Vessel (RPV), 01.0 Main Steam System (MS), 32.0 Reactor Recirculation (RR), 33.0 Reactor Clean Up (RWCU), 33.2 Reactor Clean Up (RWCU), 36.0 Reactor Instrumentation (INST), 37.0 Reactor Drain (RD), 39.0 Emergency Condenser (EC), 40.0 Reactor Core Spray (CS), 42.1 Liquid Poison (LP), 44.0 Control Rod Drive (CRD) Housing, and 44.1 Control Rod Drive (CRD).

ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticality--
Revision 0
(Page 10 of 17)

Table 1ISI-006.1
Nine Mile Point Nuclear Station, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Class / Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Line No. / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Frequency (MHz) / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
40-WD-029 (N1-ISI- 326900)	Valve 40-01-to- Pipe (40.0 Reactor Core Spray)	IWB-2500-8(c), IWB-2500-9, 10, & 11 Volumetric Ultrasonic Test	1 R-A R1.16	N1R21	SA376 TP316	12.0" 12.0" CSA 0.62"	1030 psig 550°F	45° / 1.5 / Shear 60° / 1.0 / NA 60° / 2.0 / Long	50%	Yes	The examination was limited due to the valve-to-pipe configuration and single sided access. (Att. 2 - Pg. Nos. 40 - 41)
RV-WD-001B (N1-ISI- 034900)	Closure Head- to-Flange Weld (00.0 Closure Head)	IWB-2500-5 Volumetric Ultrasonic Test	1 B-A B1.40	N1R22	CS	360" Closure Head 4.52"	1030 psig 550°F	60° / NA / Zone 1 Headside 60° / NA / Zone 2 Headside 60° / NA / Zone 1 Headside CW/CCW 60° / NA / Zone 2 Headside CW/CCW	83.7%	Yes	The examination was limited due to the configuration of the closure head-to-flange weld (radius at vessel to head interface) and single sided access. (Att. 2 - Pg. Nos. 42 - 45) 1/3 each inspection period to obtain 100% of the weld by the end of the interval. This examination covers from 120 to 240 degree of the flange weld.
60-46-WD- 001C1 (N1-ISI- 436300)	Hx 60-46 Nozzle-to-Head Inlet (39.0 Emergency Condenser)	IWC-2500- 4(a), (b), or (d) IWC-2500-1 Volumetric Ultrasonic Test and Surface Liquid Penetrant Test,	2 C-B C2.21	N1R22	SS, SA312 TP316	21.2" EC Heat Exchanger 60-46 Suction 1.5"	1030 psig 550°F	0° / 4.0 / Long 45° / 1.5 / Shear 60° / 2.0 / Long	50%	No	The examination was limited due to the nozzle-to-head inlet configuration and single sided access. Essentially 100% coverage was achieved for the surface examination. (Att. 2 - Pg. Nos. 46 - 48)
42.1-WD-017 (N1-ISI- 357000)	Valve 42.1-02- to-Reducer (42.1 Liquid Poison)	IWB-2500-8(c), IWB-2500-9, 10, & 11 Volumetric Ultrasonic Test	1 R-A R1.11	N1R22	ASTM A182 GRF304	1.5" 1.5" Liquid Poison Line 0.2"	1500 psig 100°F	0° / 4.0 / Long 45° / 5.0 / Shear 60° / 5.0 / Shear 70° / 5.0 / Shear 70° / 2.25 / Shear	50%	Yes	The examination was limited due to the valve-to-reducer configuration and single sided access. (Att. 2 - Pg. Nos. 49 - 50)

Note:

- The following systems and their abbreviations are listed here: 00.0 Closure Head (CH), 00.1 Reactor Pressure Vessel (RPV), 01.0 Main Steam System (MS), 32.0 Reactor Recirculation (RR), 33.0 Reactor Clean Up (RWCU), 33.2 Reactor Clean Up (RWCU), 36.0 Reactor Instrumentation (INST), 37.0 Reactor Drain (RD), 39.0 Emergency Condenser (EC), 40.0 Reactor Core Spray (CS), 42.1 Liquid Poison (LP), 44.0 Control Rod Drive (CRD) Housing, and 44.1 Control Rod Drive (CRD).

ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticality--
Revision 0
(Page 11 of 17)

Table 1ISI-006.1
Nine Mile Point Nuclear Station, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Class / Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Line No. / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Frequency (MHz) / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
32-WD-044 (N1-ISI- 141900)	N1B Nozzle-to- Vessel (32.0 Reactor Recirculation)	IWB-2500-7 Volumetric Ultrasonic Test	1 B-D B3.90	N1R23	SA336 CS	28.0" 28.0" Suction 12S 7.875"	1030 psig 550°F	65° / 2.25 / Long (PAUT) 10°-75° / 2.25 / Long (PAUT) 25°-75° / 2.25 / Transverse (PAUT)	51.55%	Yes	The examination was limited due to the nozzle-to-vessel configuration. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 51 - 59)
32-WD-124 (N1-ISI- 173200)	N1D Nozzle-to- Vessel (32.0 Reactor Recirculation)	IWB-2500-7 Volumetric Ultrasonic Test	1 B-D B3.90	N1R23	SA336 CS	28.0" 28.0" Suction 14S 7.875"	1030 psig 550°F	65° / 2.25 / Long (PAUT) 10°-75° / 2.25 / Long (PAUT) 25°-75° / 2.25 / Transverse (PAUT)	51.55%	Yes	The examination was limited due to the nozzle-to-vessel configuration. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 60 - 68)
44.1-WD-018 (N1-ISI- 379200)	N9 Nozzle-to- Vessel (44.1 Control Rod Drive)	IWB-2500-7 Volumetric Ultrasonic Test	1 B-D B3.90	N1R23	SA336 CS	3.0" 3.0" Control Rod Drive Line 7.875"	1030 psig 550°F	65° / 2.25 / Long (PAUT) 10°-75° / 2.25 / Long (PAUT) 25°-75° / 2.25 / Transverse (PAUT)	64.2%	Yes	The examination was limited due to the nozzle-to-vessel configuration. Essentially 100% coverage was achieved for the inner radius section examination for this nozzle. (Att. 2 - Pg. Nos. 69 - 76)
RV-CRD-R1 (N1-ISI- 374600)	CRD Housing-to- Flange Weld (44.0 Control Rod Drive Housing)	IWB-2500-18 Surface Liquid Penetrant Test	1 B-O B14.10	N1R23	SS	18.8" Reactor Vessel 0.56"	1030 psig 550°F	NA / NA / NA	84.1%	No	The examination was limited due to inherent obstructions caused by adjoining components. Disassembly of the CRD mechanisms does not facilitate additional coverage for the required surface examination areas and redesign of the CRD mechanisms to provide access is not practical. (Att. 2 - Pg. Nos. 77 - 77) Examined outer 180 degrees of circumference.

Note:

- The following systems and their abbreviations are listed here: 00.0 Closure Head (CH), 00.1 Reactor Pressure Vessel (RPV), 01.0 Main Steam System (MS), 32.0 Reactor Recirculation (RR), 33.0 Reactor Clean Up (RWCU), 33.2 Reactor Clean Up (RWCU), 36.0 Reactor Instrumentation (INST), 37.0 Reactor Drain (RD), 39.0 Emergency Condenser (EC), 40.0 Reactor Core Spray (CS), 42.1 Liquid Poison (LP), 44.0 Control Rod Drive (CRD) Housing, and 44.1 Control Rod Drive (CRD).

ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticality--
Revision 0
(Page 12 of 17)

Table 1ISI-006.1
Nine Mile Point Nuclear Station, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Class / Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Line No. / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Frequency (MHz) / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
RV-CRD-R5 (N1-ISI- 374700)	CRD Housing- to-Flange Weld (44.0 Control Rod Drive Housing)	IWB-2500-18 Surface Liquid Penetrant Test	1 B-O B14.10	N1R23	SS	18.8" Reactor Vessel 0.56"	1030 psig 550°F	NA / NA / NA	84.1%	No	The examination was limited due to inherent obstructions caused by adjoining components. Disassembly of the CRD mechanisms does not facilitate additional coverage for the required surface examination areas and redesign of the CRD mechanisms to provide access is not practical. (Att. 2 - Pg. Nos. 78 - 78) Examined outer 180 degrees of circumference.
RV-CRD-S3 (N1-ISI- 374900)	CRD Housing- to-Flange Weld (44.0 Control Rod Drive Housing)	IWB-2500-18 Surface Liquid Penetrant Test	1 B-O B14.10	N1R23	SS	18.8" Reactor Vessel 0.56"	1030 psig 550°F	NA / NA / NA	84.1%	No	The examination was limited due to inherent obstructions caused by adjoining components. Disassembly of the CRD mechanisms does not facilitate additional coverage for the required surface examination areas and redesign of the CRD mechanisms to provide access is not practical. (Att. 2 - Pg. Nos. 79 - 79) Examined outer 180 degrees of circumference.

Note:

- The following systems and their abbreviations are listed here: 00.0 Closure Head (CH), 00.1 Reactor Pressure Vessel (RPV), 01.0 Main Steam System (MS), 32.0 Reactor Recirculation (RR), 33.0 Reactor Clean Up (RWCU), 33.2 Reactor Clean Up (RWCU), 36.0 Reactor Instrumentation (INST), 37.0 Reactor Drain (RD), 39.0 Emergency Condenser (EC), 40.0 Reactor Core Spray (CS), 42.1 Liquid Poison (LP), 44.0 Control Rod Drive (CRD) Housing, and 44.1 Control Rod Drive (CRD).

ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticality--
Revision 0
(Page 13 of 17)

Table 1ISI-006.1
Nine Mile Point Nuclear Station, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Class / Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Line No. / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Frequency (MHz) / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
RV-CRD-T7 (N1-ISI- 375100)	CRD Housing- to-Flange Weld (44.0 Control Rod Drive Housing)	IWB-2500-18 Surface Liquid Penetrant Test	1 B-O B14.10	N1R23	SS	18.8" Reactor Vessel 0.56"	1030 psig 550°F	NA / NA / NA	84.1%	No	The examination was limited due to inherent obstructions caused by adjoining components. Disassembly of the CRD mechanisms does not facilitate additional coverage for the required surface examination areas and redesign of the CRD mechanisms to provide access is not practical. (Att. 2 - Pg. Nos. 80 - 80) Examined outer 180 degrees of circumference.
RV-CRD-U6 (N1-ISI- 375300)	CRD Housing- to-Flange Weld (44.0 Control Rod Drive Housing)	IWB-2500-18 Surface Liquid Penetrant Test	1 B-O B14.10	N1R23	SS	18.8" Reactor Vessel 0.56"	1030 psig 550°F	NA / NA / NA	84.1%	No	The examination was limited due to inherent obstructions caused by adjoining components. Disassembly of the CRD mechanisms does not facilitate additional coverage for the required surface examination areas and redesign of the CRD mechanisms to provide access is not practical. (Att. 2 - Pg. Nos. 81 - 81) Examined outer 180 degrees of circumference.
39-WD-470 (N1-ISI- 305200)	Valve 39-03-to- Pipe (39.0 Emergency Condenser)	IWB-2500-8(c), IWB-2500-9, 10, & 11 Volumetric Ultrasonic Test	1 R-A R1.11	N1R23	ASTM A351 GRCF ASTM A358 TP304	10.0" 10.0" ECC Line 0.84"	1030 psig 550°F	45° / 1.5 / Shear 60° / 2.0 / Long	48%	Yes	The examination was limited due to the valve-to-pipe configuration and single sided access. (Att. 2 - Pg. Nos. 82 - 83)

Note:

- The following systems and their abbreviations are listed here: 00.0 Closure Head (CH), 00.1 Reactor Pressure Vessel (RPV), 01.0 Main Steam System (MS), 32.0 Reactor Recirculation (RR), 33.0 Reactor Clean Up (RWCU), 33.2 Reactor Clean Up (RWCU), 36.0 Reactor Instrumentation (INST), 37.0 Reactor Drain (RD), 39.0 Emergency Condenser (EC), 40.0 Reactor Core Spray (CS), 42.1 Liquid Poison (LP), 44.0 Control Rod Drive (CRD) Housing, and 44.1 Control Rod Drive (CRD).

ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticability--
Revision 0
 (Page 14 of 17)

Table 1ISI-006.1
Nine Mile Point Nuclear Station, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Class / Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Line No. / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Frequency (MHz) / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
39-WD-471 (N1-ISI- 305500)	Pipe-to-Valve 39-01 (39.0 Emergency Condenser)	IWB-2500-8(c), IWB-2500-9, 10, & 11 Volumetric Ultrasonic Test	1 R-A R1.11	N1R23	ASTM A358 TP304 ASTM A351 GRCF	10.0" 10.0" ECC Line 0.84"	1030 psig 550°F	45° / 1.5 / Shear 60° / 2.0 / Long	48%	Yes	The examination was limited due to the pipe-to-valve configuration and single sided access. (Att. 2 - Pg. Nos. 84 - 85)
32-WD-050 (N1-ISI- 145500)	Gate Valve 32- 376-to-Pipe (32.0 Reactor Recirculation)	IWB-2500-8(c), IWB-2500-9, 10, & 11 Volumetric Ultrasonic Test	1 R-A R1.16	N1R23	ASTM A351 GRCF SA655 TP316	28.0" 28.0" Suction 12S 1.12"	1030 psig 550°F	45° / 1.5 / Shear 60° / 2.0 / Long 45° / 1.5 / Shear 60° / 1.5 / Long	50%	Yes	The examination was limited due to the valve-to-pipe configuration and single sided access. Recordable indications were detected and dispositioned as acceptable per ASME Section XI. (Att. 2 - Pg. Nos. 86 - 87)
37-WD-006 (N1-ISI- 244600)	Elbow-to-Pipe (37.0 Reactor Drain)	IWB-2500-8(c), IWB-2500-9, 10, & 11 Volumetric Ultrasonic Test	1 R-A R1.20	N1R23	SA376 TP304	2.0" 2.0" Line 0.218"	1030 psig 550°F	45° / 2.25 / Shear 70° / 2.25 / Shear 0° / 2.25 / Long	75%	Yes	The examination was limited due to the elbow-to-pipe configuration and single sided access. (Att. 2 - Pg. Nos. 88 - 89)
RV-WD-133 (N1-ISI- 052800)	Upper Intermediate Shell Long Weld @ 90 (00.1 Reactor Pressure Vessel)	IWB-2500-2 Volumetric Ultrasonic Test	1 B-A B1.12	N1R24	CLAD	133" Reactor Vessel 7.125"/0.218"	1030 psig 550°F	60°-80° / NA / Long (Auto UT) 40°-50° / NA / Shear (Auto UT) 30°-60° / NA / Long (Auto UT) 0° / NA / Long (Auto UT)	54.5%	Yes	The examination was limited due to the proximity of the feedwater sparger piping and the tie rod at 90 degrees. (Att. 2 - Pg. Nos. 90 - 91)

Note:

- The following systems and their abbreviations are listed here: 00.0 Closure Head (CH), 00.1 Reactor Pressure Vessel (RPV), 01.0 Main Steam System (MS), 32.0 Reactor Recirculation (RR), 33.0 Reactor Clean Up (RWCU), 33.2 Reactor Clean Up (RWCU), 36.0 Reactor Instrumentation (INST), 37.0 Reactor Drain (RD), 39.0 Emergency Condenser (EC), 40.0 Reactor Core Spray (CS), 42.1 Liquid Poison (LP), 44.0 Control Rod Drive (CRD) Housing, and 44.1 Control Rod Drive (CRD).

ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticability--
Revision 0
(Page 15 of 17)

Table 1ISI-006.1
Nine Mile Point Nuclear Station, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Class / Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Line No. / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Frequency (MHz) / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
RV-WD-134 (N1-ISI- 052900)	Upper Intermediate Shell Long Weld @ 210 (00.1 Reactor Pressure Vessel)	IWB-2500-2 Volumetric Ultrasonic Test	1 B-A B1.12	N1R24	CLAD	133" Reactor Vessel 7.125"/0.218"	1030 psig 550°F	60°-80° / NA / Long (Auto UT) 40°-50° / NA / Shear (Auto UT) 30°-60° / NA / Long (Auto UT) 0° / NA / Long (Auto UT)	53%	Yes	The examination was limited due to the proximity of the feedwater sparger piping and the tie rod at 90 degrees. (Att. 2 - Pg. Nos. 92 - 93)
RV-WD-135 (N1-ISI- 053000)	Upper Intermediate Shell Long Weld @ 330 (00.1 Reactor Pressure Vessel)	IWB-2500-2 Volumetric Ultrasonic Test	1 B-A B1.12	N1R24	CLAD	133" Reactor Vessel 7.125"/0.218"	1030 psig 550°F	60°-80° / NA / Long (Auto UT) 40°-50° / NA / Shear (Auto UT) 30°-60° / NA / Long (Auto UT) 0° / NA / Long (Auto UT)	50.3%	Yes	The examination was limited due to the proximity of the feedwater sparger and the downcomer piping. Recordable indication was detected and determined to be allowable in accordance with Table IWB-3510-1 of ASME Section XI. (Att. 2 - Pg. Nos. 94 - 95)
RV-WD-142 (N1-ISI- 053700)	Lower Shell Long Weld @ 18 (00.1 Reactor Pressure Vessel)	IWB-2500-2 Volumetric Ultrasonic Test	1 B-A B1.12	N1R24	CLAD	133" Reactor Vessel 7.125"/0.218"	1030 psig 550°F	60°-80° / NA / Long (Auto UT) 40°-50° / NA / Shear (Auto UT) 30°-60° / NA / Long (Auto UT) 0° / NA / Long (Auto UT)	75.3%	Yes	The examination was limited due to the proximity of the core shroud support plate. (Att. 2 - Pg. Nos. 96 - 97)

Note:

- The following systems and their abbreviations are listed here: 00.0 Closure Head (CH), 00.1 Reactor Pressure Vessel (RPV), 01.0 Main Steam System (MS), 32.0 Reactor Recirculation (RR), 33.0 Reactor Clean Up (RWCU), 33.2 Reactor Clean Up (RWCU), 36.0 Reactor Instrumentation (INST), 37.0 Reactor Drain (RD), 39.0 Emergency Condenser (EC), 40.0 Reactor Core Spray (CS), 42.1 Liquid Poison (LP), 44.0 Control Rod Drive (CRD) Housing, and 44.1 Control Rod Drive (CRD).

ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticability--
Revision 0
(Page 16 of 17)

Table 1ISI-006.1
Nine Mile Point Nuclear Station, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Class / Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Line No. / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Frequency (MHz) / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
RV-WD-143 (N1-ISI- 053800)	Lower Shell Long Weld @ 138 00.1 Reactor Pressure Vessel)	IWB-2500-2 Volumetric Ultrasonic Test	1 B-A B1.12	N1R24	CLAD	133" Reactor Vessel 7.125"/0.218"	1030 psig 550°F	60°-80° / NA / Long (Auto UT) 40°-50° / NA / Shear (Auto UT) 30°-60° / NA / Long (Auto UT) 0° / NA / Long (Auto UT)	75.6%	Yes	The examination was limited due to the proximity of the core shroud support plate. (Att. 2 - Pg. Nos. 98 - 99)
RV-WD-144 (N1-ISI- 053900)	Lower Shell Long Weld @ 258 (00.1 Reactor Pressure Vessel)	IWB-2500-2 Volumetric Ultrasonic Test	1 B-A B1.12	N1R24	CLAD	133" Reactor Vessel 7.125"/0.218"	1030 psig 550°F	60°-80° / NA / Long (Auto UT) 40°-50° / NA / Shear (Auto UT) 30°-60° / NA / Long (Auto UT) 0° / NA / Long (Auto UT)	50.1%	Yes	The examination was limited due to the proximity of the core shroud support plate and the N1D nozzle. (Att. 2 - Pg. Nos. 100 - 101)
RV-WD-001C (N1-ISI- 035000)	Closure Head- to-Flange Weld (00.0 Closure Head)	IWB-2500-5 Volumetric Ultrasonic Test	1 B-A B1.40	N1R24	CLAD	360" Closure Head 4.52"	1030 psig 550°F	60° / 3.0 / RL 60° / 3.0 / RL	78.5%	Yes	The examination was limited due to the configuration of the closure head-to-flange weld (radius at vessel to head interface). (Att. 2 - Pg. Nos. 102 - 104) 1/3 each inspection period to obtain 100% of the welds by the end of the interval. This examination covers from 240 to 360 degree of the flange weld.

Note:

- The following systems and their abbreviations are listed here: 00.0 Closure Head (CH), 00.1 Reactor Pressure Vessel (RPV), 01.0 Main Steam System (MS), 32.0 Reactor Recirculation (RR), 33.0 Reactor Clean Up (RWCU), 33.2 Reactor Clean Up (RWCU), 36.0 Reactor Instrumentation (INST), 37.0 Reactor Drain (RD), 39.0 Emergency Condenser (EC), 40.0 Reactor Core Spray (CS), 42.1 Liquid Poison (LP), 44.0 Control Rod Drive (CRD) Housing, and 44.1 Control Rod Drive (CRD).

ATTACHMENT 1
10 CFR 50.55a Relief Request 1ISI-006
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticality--
Revision 0
(Page 17 of 17)

Table 1ISI-006.1
Nine Mile Point Nuclear Station, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Class / Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Line No. / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Frequency (MHz) / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
01-WD-456 (N1-ISI- 081700)	Pipe-to-Tee (01.0 Main Steam System)	IWB-2500-8(c), IWB-2500-9, 10, & 11 Volumetric Ultrasonic Test	1 R-A R1.11	N1R24	ASTM A106 GRB	2.0" 2.0" MSA Valve By- Pass Line 0.344"	1030 psig 550°F	35° / 5.0 / Shear 45° / 5.0 / Shear 60° / 5.0 / Shear 70° / 5.0 / Shear 0° / 4.0 / Long	67%	Yes	The examination was limited due to the pipe-to-tee configuration and the accessible areas between the piping and the floor. (Att. 2 - Pg. Nos. 105 - 107)
33-WD-048C1 (N1-ISI- 215200)	Valve 33-01R- to-Pipe (33.0 Reactor Clean Up)	IWB-2500-8(c), IWB-2500-9, 10, & 11 Volumetric Ultrasonic Test	1 R-A R1.11	N1R24	SA312 TP316	6.0" 6.0" Line 0.432"	1075 psig 550°F	45° / 2.25 / Shear 60° / 2.25 / Shear 70° / 2.25 / NA 0° / 4.0 / Long	50%	Yes	The examination was limited due to the valve-to-pipe configuration and single sided access. (Att. 2 - Pg. Nos. 108 - 110)
33-WD-055 (N1-ISI- 220700)	Tee-to-Reducer (33.2 Reactor Clean Up)	IWB-2500-8(c), IWB-2500-9, 10, & 11 Volumetric Ultrasonic Test	1 R-A R1.11	N1R24	SA333 GR6	6.0" 6.0" Line 0.432"	1075 psig 550°F	45° / 5.0 / Shear 60° / 5.0 / Shear 70° / 5.0 / Shear 0° / 4.0 / Long	61.75%	Yes	The examination was limited due to the tee-to-reducer configuration (welded T-box) and single sided access. (Att. 2 - Pg. Nos. 111 - 113)
37-WD-003 (N1-ISI- 244000)	Flange-to- Reducer (37.0 Reactor Drain)	IWB-2500-8(c), IWB-2500-9, 10, & 11 Volumetric Ultrasonic Test	1 R-A R1.16	N1R25	SA376 TP304	4.0" 4.0" Line 0.338"	1030 psig 550°F	45° / 2.25 / Shear 60° / 2.25 / Shear 70° / 2.25 / NA	50%	Yes	The examination was limited due to due to the flange-to-reducer configuration and single sided access. (Att. 2 - Pg. Nos. 114 - 117)

Note:

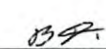

- The following systems and their abbreviations are listed here: 00.0 Closure Head (CH), 00.1 Reactor Pressure Vessel (RPV), 01.0 Main Steam System (MS), 32.0 Reactor Recirculation (RR), 33.0 Reactor Clean Up (RWCU), 33.2 Reactor Clean Up (RWCU), 36.0 Reactor Instrumentation (INST), 37.0 Reactor Drain (RD), 39.0 Emergency Condenser (EC), 40.0 Reactor Core Spray (CS), 42.1 Liquid Poison (LP), 44.0 Control Rod Drive (CRD) Housing, and 44.1 Control Rod Drive (CRD).

Attachment 2

Nine Mile Point Nuclear Station Unit 1 Fourth Inservice Inspection Interval Limited Coverage Non-Destructive Examination Reports

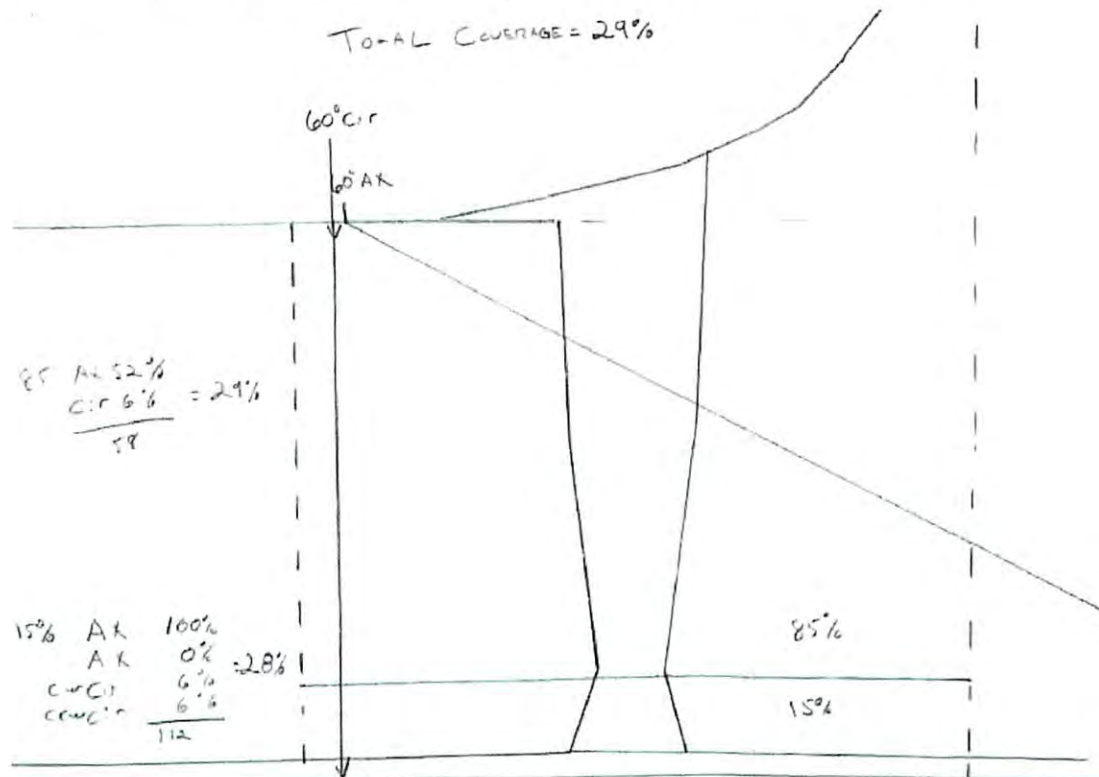


Supplemental Report

Report No.: ISI-UT-11-011Page: 4 of 8Summary No.: 034800Examiner: Serth, Joseph Level: II-PDIReviewer: Downs, Bill, Level III Date: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level III Date: 4/7/11Other: N/ALevel: N/AANII Review: Rose, Charles Date: 4/8/11

Comments:

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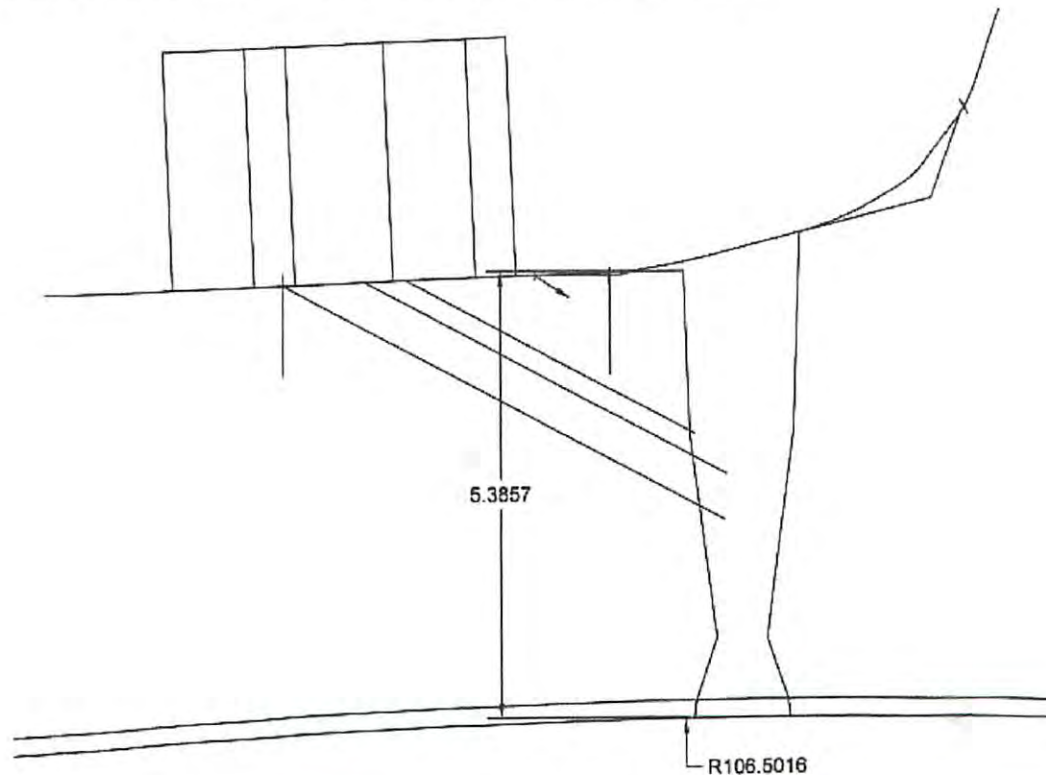


Supplemental Report

Report No.: ISI-UT-11-011Page: 5 of 8Summary No.: 034800Examiner: Serth, JosephLevel: II-PDIReviewer: Downs, Bill, Level IIIDate: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level IIIDate: 4/7/11Other: N/ALevel: N/AANII Review: Rose, CharlesDate: 4/8/11

Comments:

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\RV-WD-001A SUPP2.jpg



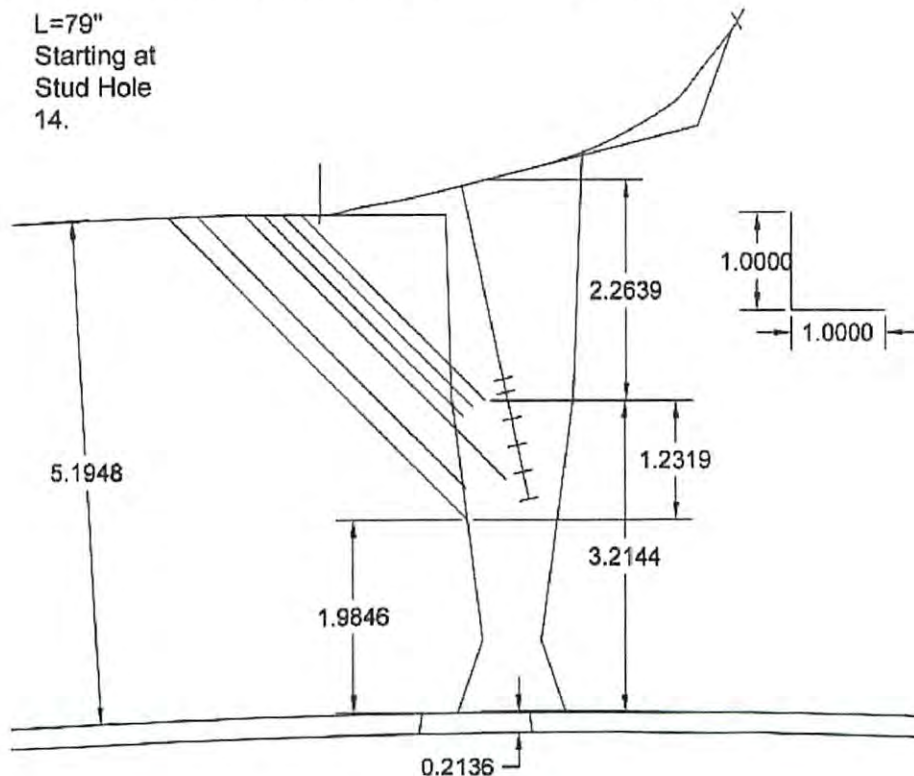


Supplemental Report

Report No.: ISI-UT-11-011Page: 6 of 8Summary No. 034800Examiner: Serth, JosephLevel: II-PDIReviewer: Downs, Bill, Level IIIDate: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level IIIDate: 4/7/11Other: N/ALevel: N/AANII Review: Rose, CharlesDate: 4/8/11

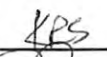
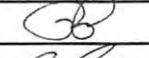
Comments:

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\RV-WD-001A SUPP3.jpg





Supplemental Report

Report No.: ISI-UT-11-092Page: 5 of 6Summary No.: 228000Examiner: Serth, Joseph Level: II-PDIReviewer: Smith, Kenneth R., Level III-PDI Date: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level III Date: 4/7/11Other: N/ALevel: N/AANII Review: Rose, Charles Date: 4/8/11

Comments: Inner 15% circumferential scan parameters from EPRI model# IR-2011-457.

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD Nozzle SUPP1.jpg

Parameters	Xducer # 1	Xducer # 2	Xducer # 3
Refracted Angle	35°	35°	45°
Incident Angle	42° - 50°	42° - 50°	42° - 50°
Skew Angle	± 35°	± 25°	± 17° to 78°
Misorientation Angle (Max)	20°	14°	20°
Scan Area ("R")	6.23" - 7.08"	6.21" - 6.78"	7.69" - 12.08"
Scan Area ("R") from Nozzle Barrel OD	0.667" - 1.517"	0.647" - 1.217"	2.127" - 6.517"
Min. Metal Path	~ 6.00	~ 6.08	~ 5.98
Max. Metal Path	~ 6.61	~ 6.62	~ 6.67

Supplemental Report

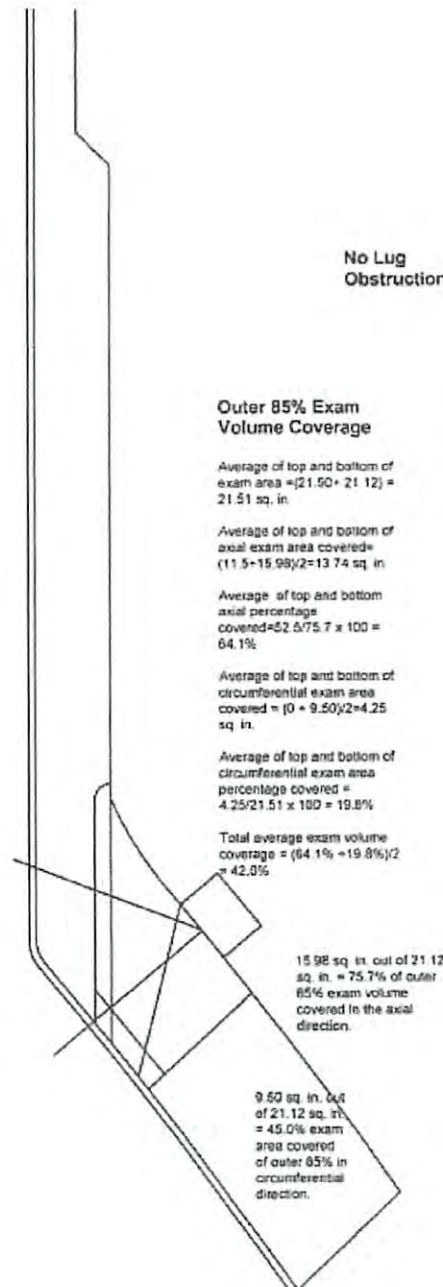
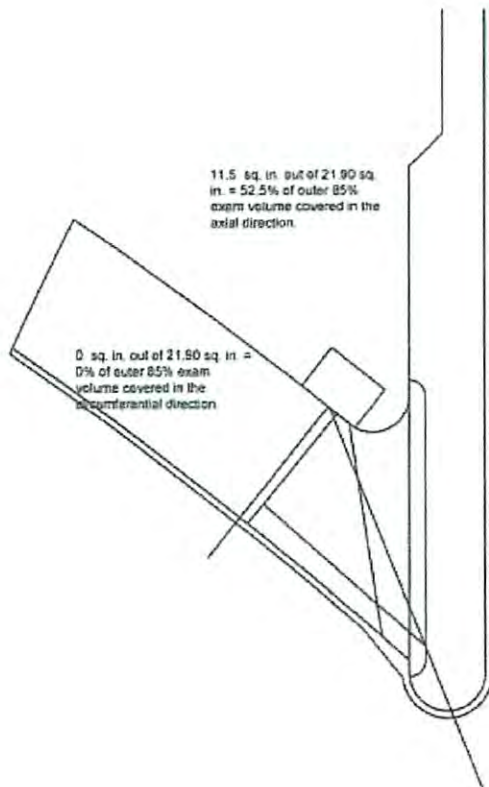
Report No.: ISI-UT-11-092

Page: 6 of 6

Summary No.: 228000

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD-012(N7A).jpg

BA/17/11



Inner 15% Exam Volume Coverage

Axial = 100%

Circumferential = 97%

Average Inner 15% Exam Volume Coverage = $(100\% + 97\%) / 2 = 98.5\%$

Reference Nine Mile Point Unit 1 Reactor Pressure Vessel (RPV) Nozzle Examinations IR-2011-457

Total Exam Volume Coverage

$= 85 \times 42.0\% + 15 \times 98.5\% = 35.7\% + 14.8\% = 50.5\%$



Supplemental Report

Report No.: ISI-UT-11-093Page: 5 of 6Summary No.: 228500

Examiner: Serth, Joseph
 Examiner: N/A
 Other: N/A

Level: II-PDI
 Level: N/A
 Level: N/A

Reviewer: Smith, Kenneth R., Level III-PDI
 Site Review: Peterson, Patrick, Level III
 ANII Review: Rose, Charles

Date: 4-7-11
 Date: 4/7/11
 Date: 4/8/11

Comments: Inner 15% circumferential scan parameters from EPRI model# IR-2011-457.

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD Nozzle SUPP1.jpg

Parameters	Xducer # 1	Xducer # 2	Xducer # 3
Refracted Angle	35°	35°	45°
Incident Angle	42° - 50°	42° - 50°	42° - 50°
Skew Angle	± 35°	± 25°	± 17° to 78°
Misorientation Angle (Max)	20°	14°	20°
Scan Area ("R")	6.23" - 7.08"	6.21" - 6.78"	7.69" - 12.08"
Scan Area ("R") from Nozzle Barrel OD	0.667" - 1.517"	0.647" - 1.217"	2.127" - 6.517"
Min. Metal Path	~ 6.00	~ 6.08	~ 5.98
Max. Metal Path	~ 6.61	~ 6.62	~ 6.67



Supplemental Report

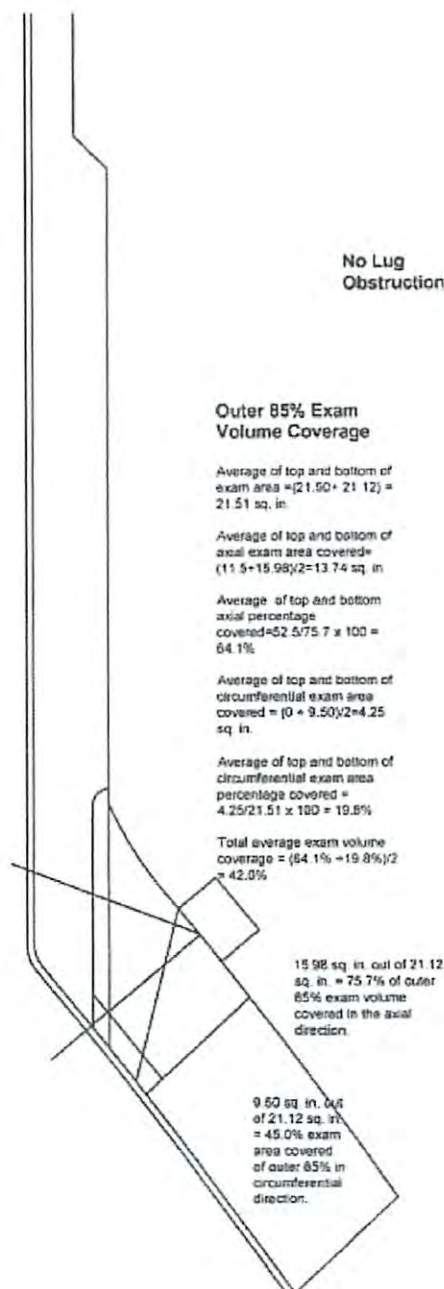
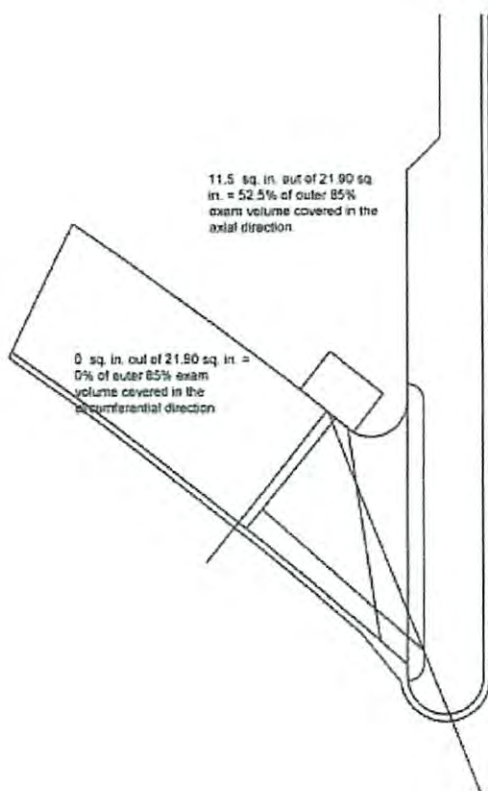
Report No.: **ISI-UT-11-093**

Page: **6** of **6**

Summary No.: **228500**

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD-014(N7B).jpg

Q4114



Inner 15% Exam Volume Coverage

Axial = 100%

Circumferential = 97%

Average Inner 15% Exam Volume Coverage = $(100\% + 97\%) / 2 = 98.5\%$


Reference Nine Mile Point Unit 1 Reactor Pressure Vessel (RPV) Nozzle Examinations IR-2011-457

Total Exam Volume Coverage

= $85 \times 42.0\% + 15 \times 98.5\% = 35.7\% + 14.8\% = 50.5\%$



Supplemental Report

Report No.: ISI-UT-11-094Page: 5 of 7Summary No.: 229000Examiner: Serth, Joseph Level: II-PDIReviewer: Smith, Kenneth R., Level III-PDI Date: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level III Date: 4/7/11Other: N/ALevel: N/AANII Review: Rose, Charles Date: 4/8/11

Comments: Inner 15% circumferential scan parameters from EPRI model# IR-2011-457.

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD Nozzle SUPP1.jpg

Parameters	Xducer # 1	Xducer # 2	Xducer # 3
Refracted Angle	35°	35°	45°
Incident Angle	42° - 50°	42° - 50°	42° - 50°
Skew Angle	± 35°	± 25°	± 17° to 78°
Misorientation Angle (Max)	20°	14°	20°
Scan Area ("R")	6.23" - 7.08"	6.21" - 6.78"	7.69" - 12.08"
Scan Area ("R") from Nozzle Barrel OD	0.667" - 1.517"	0.647" - 1.217"	2.127" - 6.517"
Min. Metal Path	~ 6.00	~ 6.08	~ 5.98
Max. Metal Path	~ 6.61	~ 6.62	~ 6.67



Supplemental Report

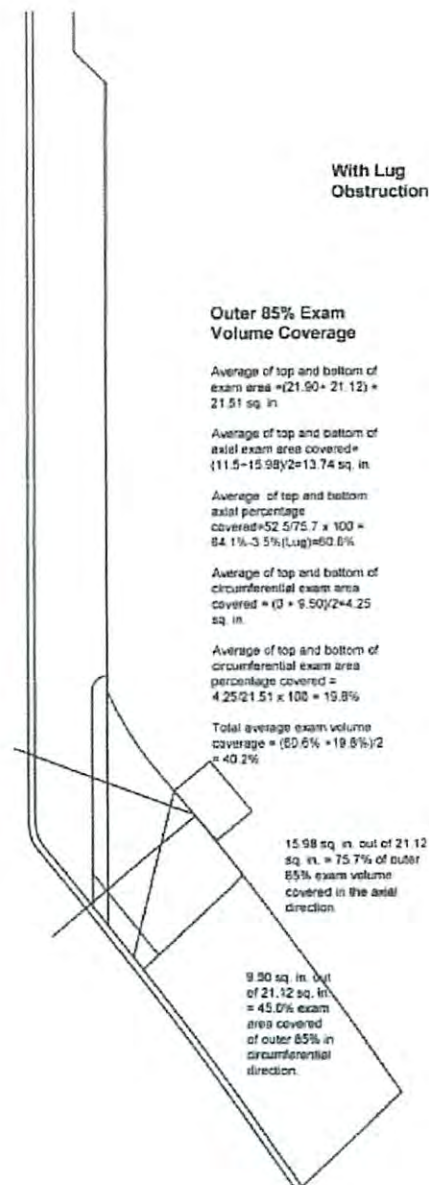
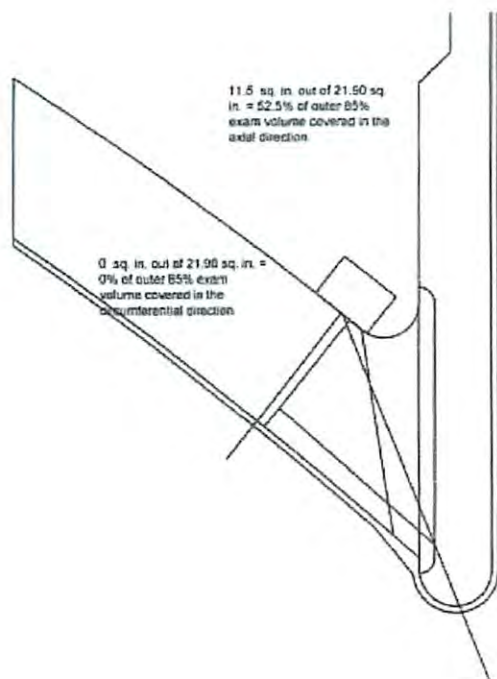
Report No.: **ISI-UT-11-094**

Page: **6** of **7**

Summary No.: **229000**

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD-016(N7C).jpg

04/7/11





Supplemental Report

Report No.: ISI-UT-11-094

Page: 7 of 7

Summary No.: 229000

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD-016(N7C)Obstruction.jpg

04/11/11

Outer 85% Exam Volume Coverage

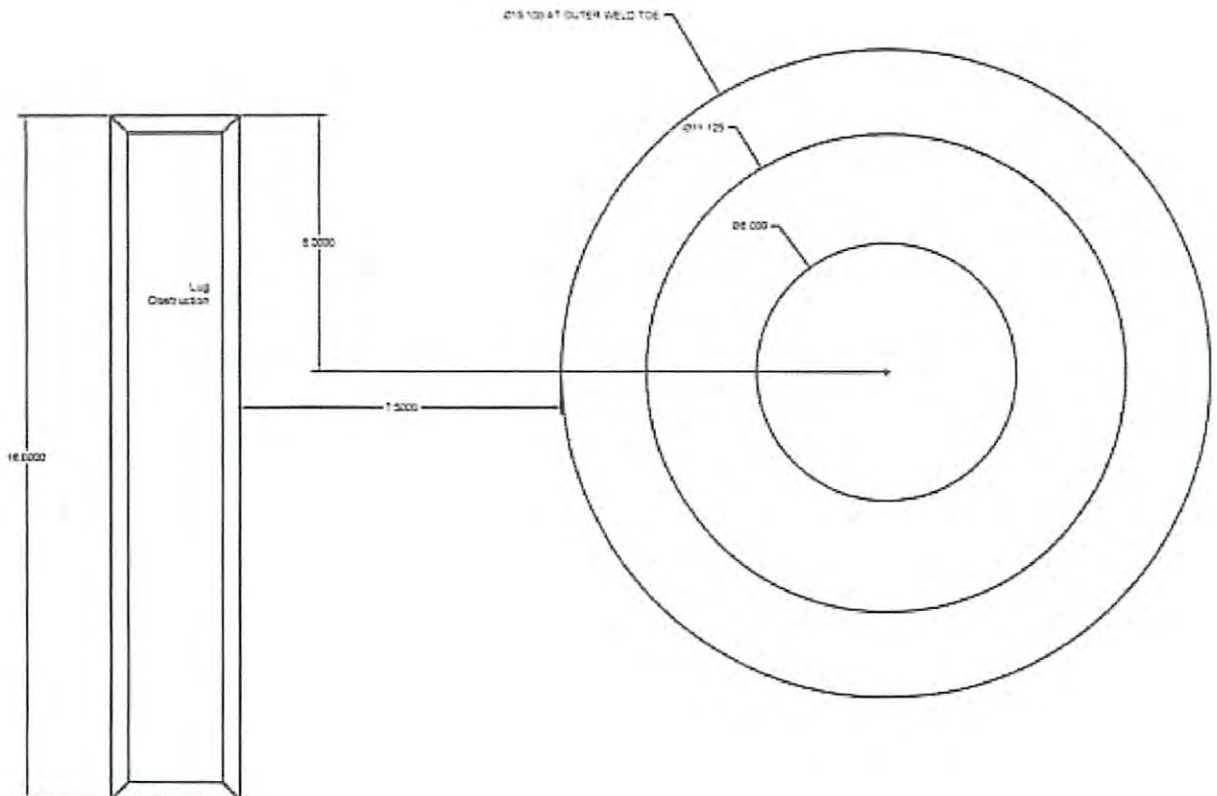
Axial Exam area obstructed 3.5% due to adjacent Lug Obstruction.

Circ. Exam area obstructed 0% due to adjacent lug obstruction.

Inner 15% Exam Volume Coverage


Axial exam area obstructed 12.5% due to adjacent lug obstruction.

Circ. exam area obstructed 0% due to adjacent lug obstruction.





Supplemental Report

Report No.: ISI-UT-11-095Page: 5 of 7Summary No.: 229500Examiner: Serth, Joseph Level: II-PDIReviewer: Smith, Kenneth R., Level III-PDI Date: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level III Date: 4/7/11Other: N/ALevel: N/AANII Review: Rose, Charles Date: 4/8/11

Comments: Inner 15% circumferential scan parameters from EPRI model# IR-2011-457.

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD Nozzle SUPP1.jpg

Parameters	Xducer # 1	Xducer # 2	Xducer # 3
Refracted Angle	35°	35°	45°
Incident Angle	42° - 50°	42° - 50°	42° - 50°
Skew Angle	± 35°	± 25°	± 17° to 78°
Misorientation Angle (Max)	20°	14°	20°
Scan Area ("R")	6.23" - 7.08"	6.21" - 6.78"	7.69" - 12.08"
Scan Area ("R") from Nozzle Barrel OD	0.667" - 1.517"	0.647" - 1.217"	2.127" - 6.517"
Min. Metal Path	~ 6.00	~ 6.08	~ 5.98
Max. Metal Path	~ 6.61	~ 6.62	~ 6.67

Supplemental Report

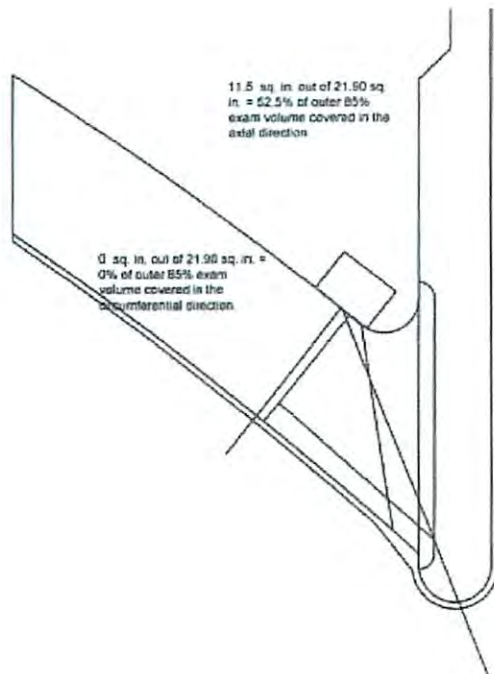
Report No.: ISI-UT-11-095

Page: 6 of 7

Summary No.: 229500

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD-018(N7D).jpg

Handwritten signature/initials



With Lug Obstruction

Outer 85% Exam Volume Coverage

Average of top and bottom of exam area = $(21.90 + 21.12) \div 2 = 21.51$ sq. in.

Average of top and bottom of axial exam area covered = $(11.5 + 15.98) \div 2 = 13.74$ sq. in.

Average of top and bottom axial percentage covered = $52.5 / 75.7 \times 100 = 69.35\%$ (Lug) = 60.8%

Average of top and bottom of circumferential exam area covered = $(0 + 9.50) \div 2 = 4.75$ sq. in.

Average of top and bottom of circumferential exam area percentage covered = $4.75 / 21.51 \times 100 = 22.08\%$

Total average exam volume coverage = $(60.8\% + 22.08\%) \div 2 = 41.44\%$

Inner 15% Exam Volume Coverage

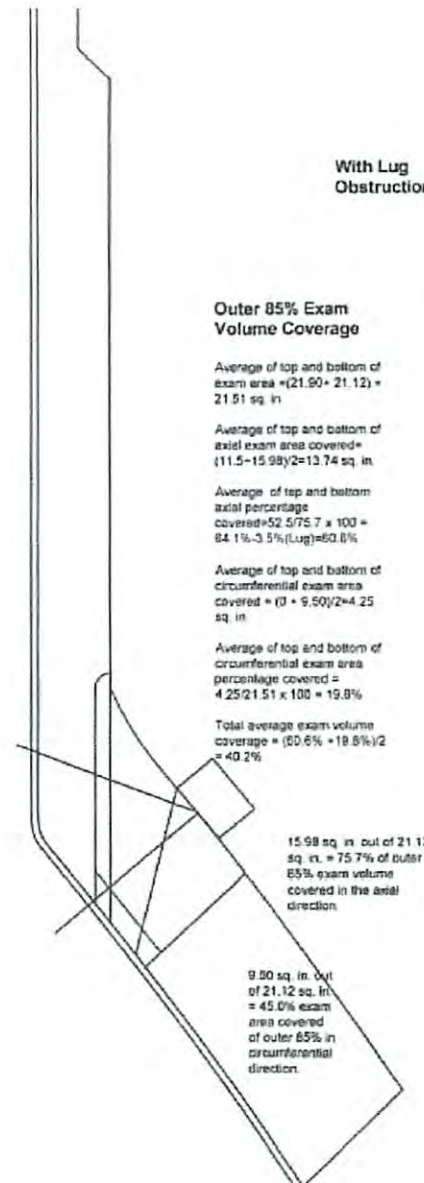
Axial = $100\% - 12.5\%$ (Lug) = 87.5%

Circumferential = 87%

Average Inner 15% Exam Volume Coverage = $(87.5\% + 87\%) \div 2 = 92.25\%$

Reference Nine Mile Point Unit 1 Reactor Pressure Vessel (RPV) Nozzle Examinations IR-2011-457

Total Exam Volume Coverage
= $85 \times 40.2\% + 15 \times 92.25\% = 34.2\% + 13.8\% = 48.0\%$





Supplemental Report

Report No.: ISI-UT-11-095

Page: 7 of 7

Summary No.: 229500

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD-018(N7D)Obstruction.jpg

8/7/11

Outer 85% Exam Volume Coverage

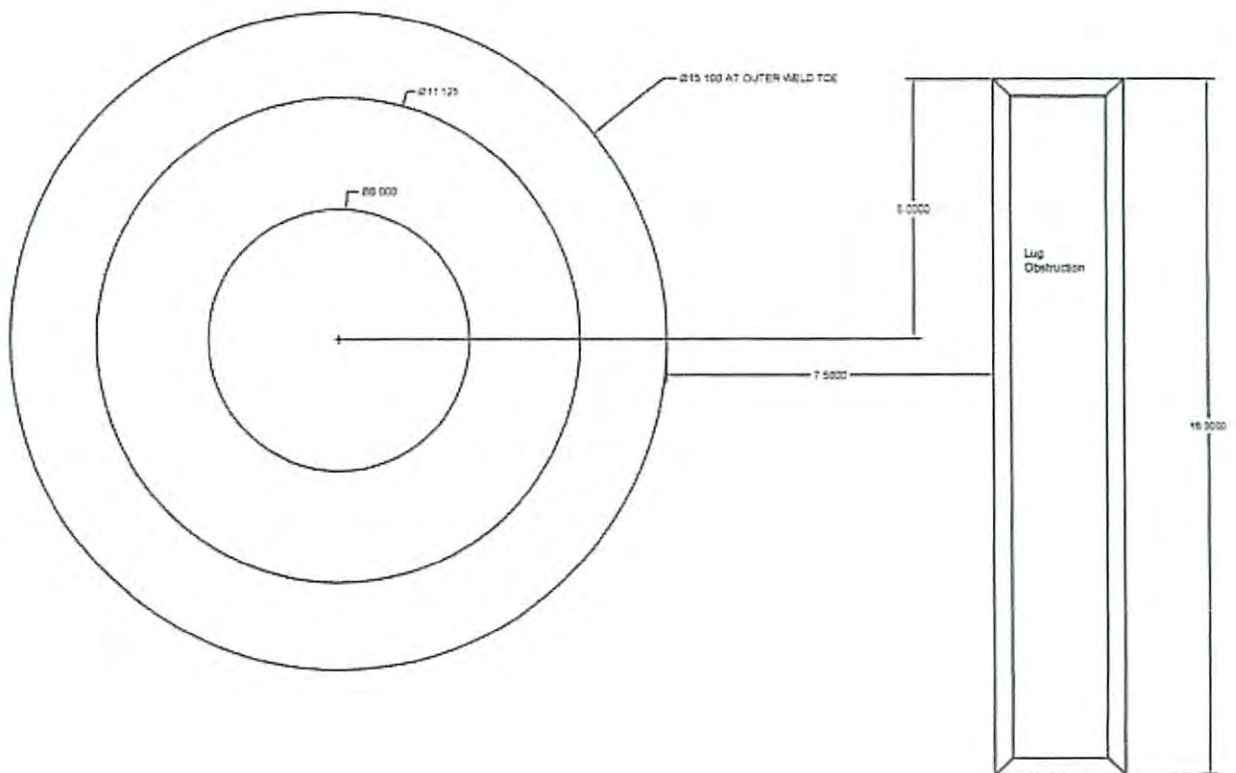
Axial exam area obstructed 3.5% due to adjacent Lug Obstruction.

Circ. exam area obstructed 0% due to adjacent lug obstruction.

Inner 15% Exam Volume Coverage

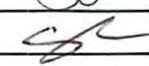
Axial exam area obstructed 12.5% due to adjacent lug obstruction.

Circ. exam area obstructed 0% due to adjacent lug obstruction.





Supplemental Report

Report No.: ISI-UT-11-096Page: 5 of 6Summary No.: 230000Examiner: Serth, Joseph Level: II-PDIReviewer: Smith, Kenneth R., Level III-PDI Date: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level III Date: 4/2/11Other: N/ALevel: N/AANII Review: Rose, Charles Date: 4/8/11

Comments: Inner 15% circumferential scan parameters from EPRI model# IR-2011-457.

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD Nozzle SUPP1.jpg

Parameters	Xducer # 1	Xducer # 2	Xducer # 3
Refracted Angle	35°	35°	45°
Incident Angle	42° - 50°	42° - 50°	42° - 50°
Skew Angle	± 35°	± 25°	± 17° to 78°
Misorientation Angle (Max)	20°	14°	20°
Scan Area ("R")	6.23" - 7.08"	6.21" - 6.78"	7.69" - 12.08"
Scan Area ("R") from Nozzle Barrel OD	0.667" - 1.517"	0.647" - 1.217"	2.127" - 6.517"
Min. Metal Path	~ 6.00	~ 6.08	~ 5.98
Max. Metal Path	~ 6.61	~ 6.62	~ 6.67

Supplemental Report

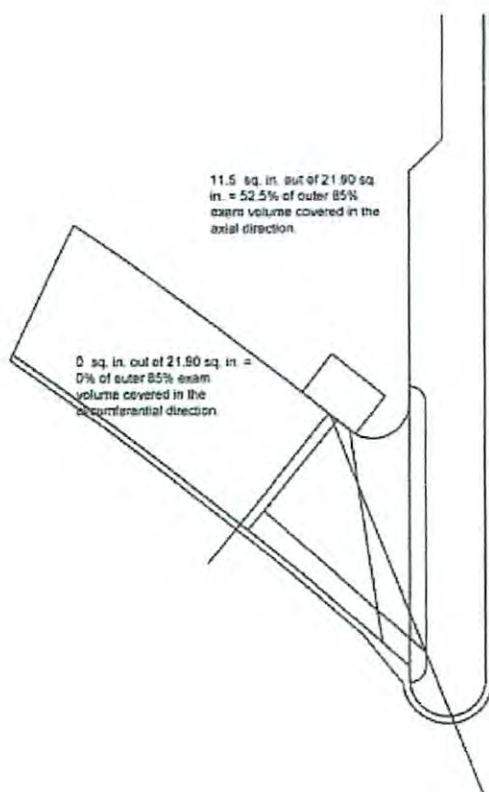
Report No.: ISI-UT-11-096

Page: 6 of 6

Summary No.: 230000

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD-020(N7E).jpg

Handwritten signature



No Lug Obstruction

Outer 85% Exam Volume Coverage

Average of top and bottom of exam area = $(21.50 + 21.12) / 2 = 21.51$ sq. in.

Average of top and bottom of axial exam area covered = $(11.5 + 15.98) / 2 = 13.74$ sq. in.

Average of top and bottom axial percentage covered = $52.5 / 75.7 \times 100 = 64.1\%$

Average of top and bottom of circumferential exam area covered = $(0 + 9.50) / 2 = 4.25$ sq. in.

Average of top and bottom of circumferential exam area percentage covered = $4.25 / 21.51 \times 100 = 19.8\%$

Total average exam volume coverage = $(64.1\% + 19.8\%) / 2 = 42.0\%$

Inner 15% Exam Volume Coverage

Axial = 100%

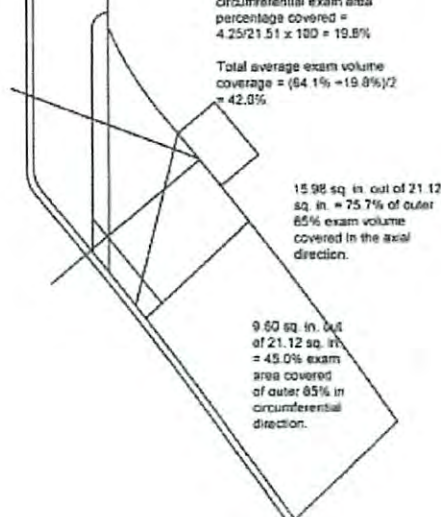
Circumferential = 97%

Average Inner 15% Exam Volume Coverage = $(100\% + 97\%) / 2 = 98.5\%$

Reference Nine Mile Point Unit 1 Reactor Pressure Vessel (RPV) Nozzle Examinations IR-2011-457


Total Exam Volume Coverage

= $85 \times 42.0\% = 35.7\%$
+ $15 \times 98.5\% = 14.8\%$
= 50.5%





Supplemental Report

Report No.: ISI-UT-11-097Page: 5 of 6Summary No.: 230500Examiner: Serth, Joseph Level: II-PDIReviewer: Smith, Kenneth R., Level III-PDI Date: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level III Date: 4/7/11Other: N/ALevel: N/AANII Review: Rose, Charles Date: 4/8/11

Comments: Inner 15% circumferential scan parameters from EPRI model# IR-2011-457.

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD Nozzle SUPP1.jpg

Parameters	Xducer # 1	Xducer # 2	Xducer # 3
Refracted Angle	35°	35°	45°
Incident Angle	42° - 50°	42° - 50°	42° - 50°
Skew Angle	± 35°	± 25°	± 17° to 78°
Misorientation Angle (Max)	20°	14°	20°
Scan Area ("R")	6.23" - 7.08"	6.21" - 6.78"	7.69" - 12.08"
Scan Area ("R") from Nozzle Barrel OD	0.667" - 1.517"	0.647" - 1.217"	2.127" - 6.517"
Min. Metal Path	~ 6.00	~ 6.08	~ 5.98
Max. Metal Path	~ 6.61	~ 6.62	~ 6.67

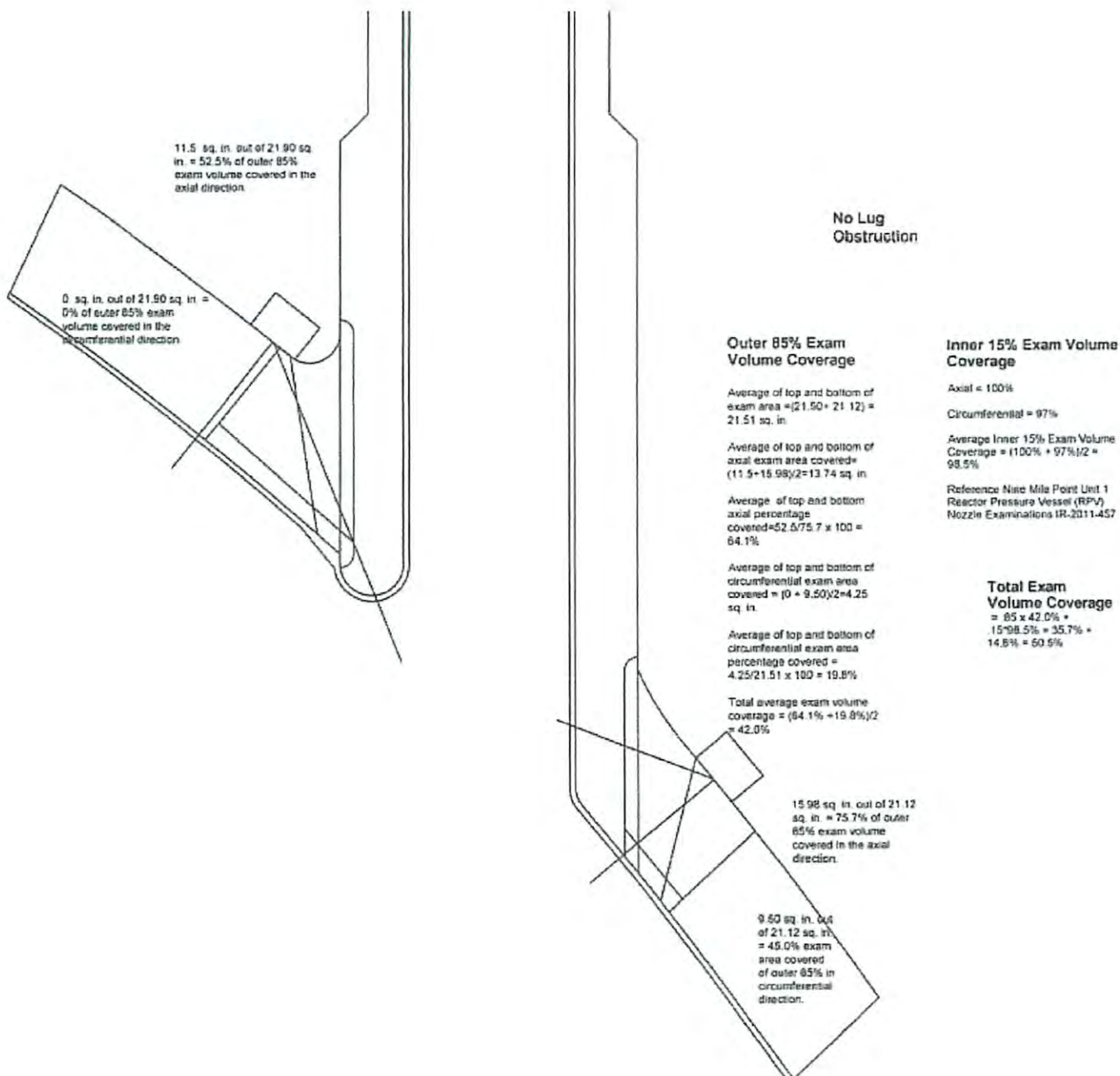
Supplemental Report

Report No.: ISI-UT-11-097

Page: 6 of 6

Summary No.: 230500

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD-022(N7F).jpg





Supplemental Report

Report No.: ISI-UT-11-098Page: 5 of 7Summary No.: 231000Examiner: Serth, JosephLevel: II-PDIReviewer: Smith, Kenneth R., Level III-PDIDate: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level IIIDate: 4/7/11Other: N/ALevel: N/AANII Review: Rose, CharlesDate: 4/8/11

Comments: Inner 15% circumferential scan parameters from EPRI model# IR-2011-457.

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD Nozzle SUPP1.jpg

Parameters	Xducer # 1	Xducer # 2	Xducer # 3
Refracted Angle	35°	35°	45°
Incident Angle	42° - 50°	42° - 50°	42° - 50°
Skew Angle	± 35°	± 25°	± 17° to 78°
Misorientation Angle (Max)	20°	14°	20°
Scan Area ("R")	6.23" - 7.08"	6.21" - 6.78"	7.69" - 12.08"
Scan Area ("R") from Nozzle Barrel OD	0.667" - 1.517"	0.647" - 1.217"	2.127" - 6.517"
Min. Metal Path	~ 6.00	~ 6.08	~ 5.98
Max. Metal Path	~ 6.61	~ 6.62	~ 6.67



Supplemental Report

Report No.: ISI-UT-11-098

Page: 7 of 7

Summary No.: 231000

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD-024(N7G)Obstruction.jpg *34/7/11*

Outer 85% Exam Volume Coverage

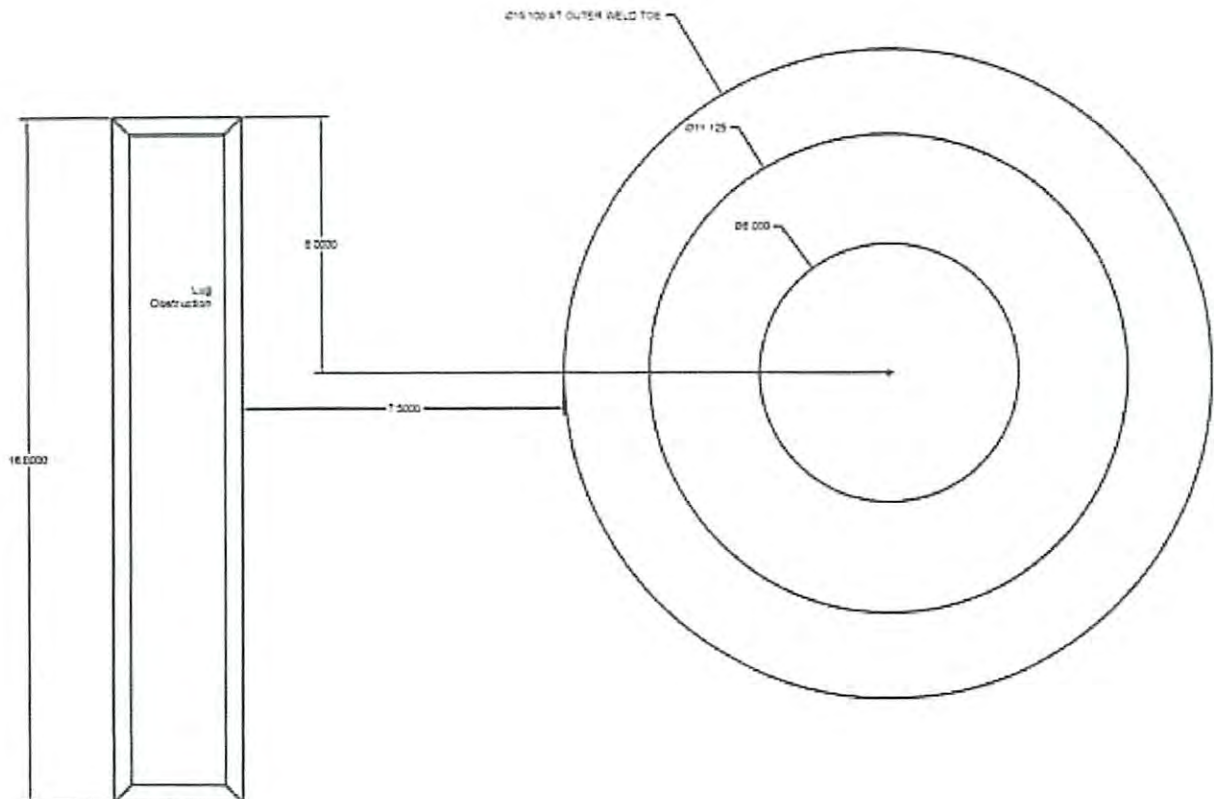
Axial Exam area obstructed 3.5% due to adjacent Lug Obstruction.

Circ. Exam area obstructed 0% due to adjacent lug obstruction.

Inner 15% Exam Volume Coverage

Axial exam area obstructed 12.5% due to adjacent lug obstruction.

Circ. exam area obstructed 0% due to adjacent lug obstruction.



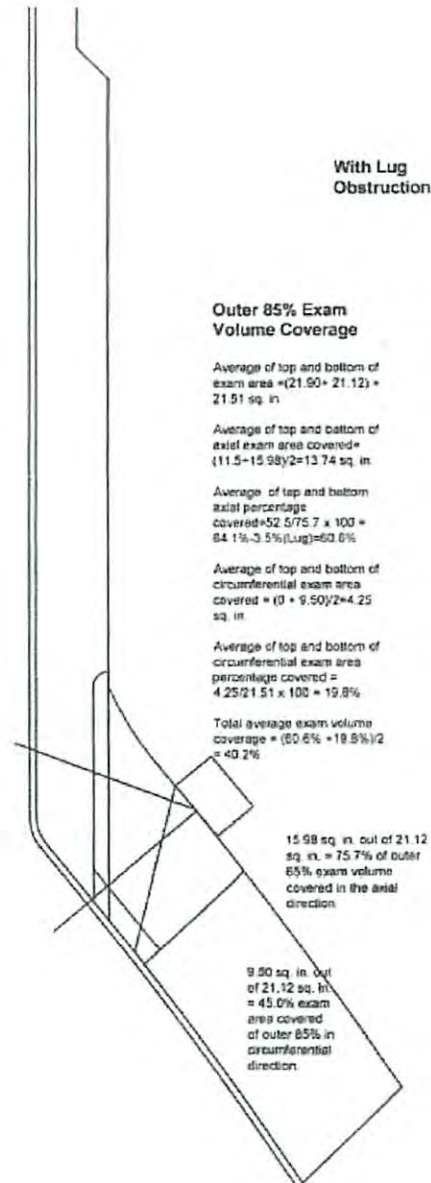
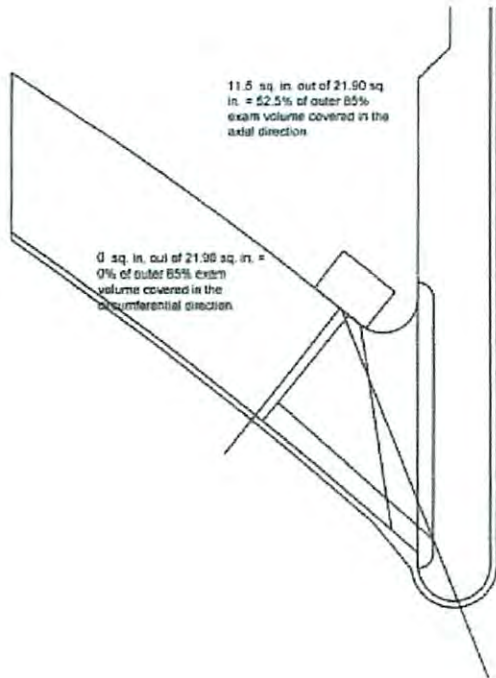


Supplemental Report

Report No.: ISI-UT-11-098Page: 6 of 7Summary No.: 231000

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD-024(N7G).jpg

B 4/7/11





Supplemental Report

Report No.: ISI-UT-11-099Page: 5 of 7Summary No.: 231500Examiner: Serth, JosephLevel: II-PDIReviewer: Smith, Kenneth R., Level III-PDIDate: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level IIIDate: 4/7/11Other: N/ALevel: N/AANII Review: Rose, CharlesDate: 4/8/11

Comments: Inner 15% circumferential scan parameters from EPRI model# IR-2011-457.

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD Nozzle SUPP1.jpg

Parameters	Xducer # 1	Xducer # 2	Xducer # 3
Refracted Angle	35°	35°	45°
Incident Angle	42° - 50°	42° - 50°	42° - 50°
Skew Angle	± 35°	± 25°	± 17° to 78°
Misorientation Angle (Max)	20°	14°	20°
Scan Area ("R")	6.23" - 7.08"	6.21" - 6.78"	7.69" - 12.08"
Scan Area ("R") from Nozzle Barrel OD	0.667" - 1.517"	0.647" - 1.217"	2.127" - 6.517"
Min. Metal Path	~ 6.00	~ 6.08	~ 5.98
Max. Metal Path	~ 6.61	~ 6.62	~ 6.67

Supplemental Report

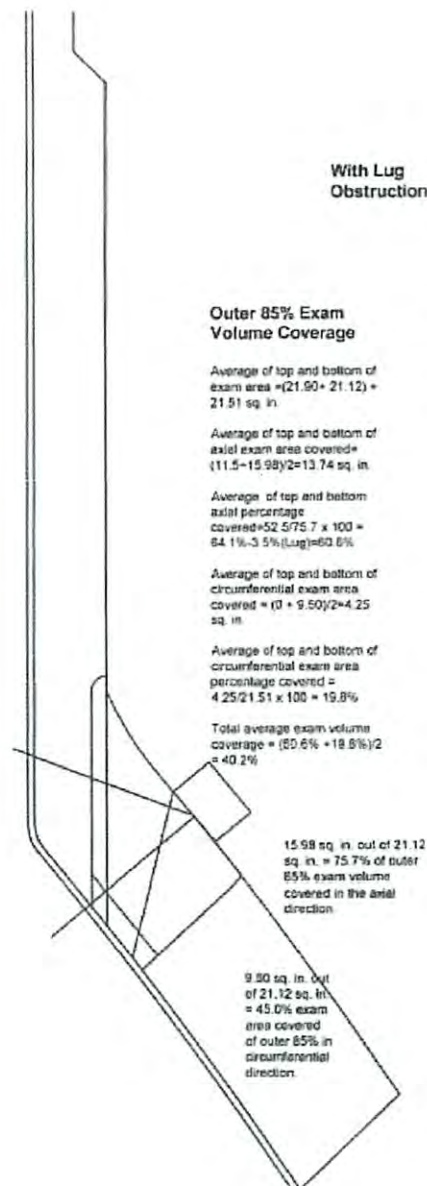
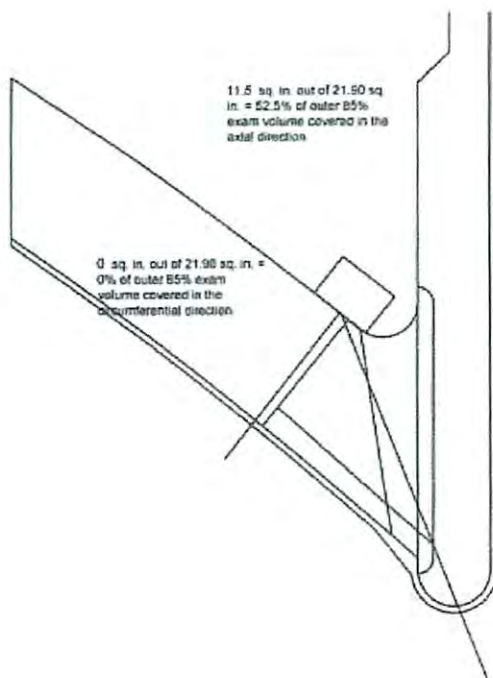
Report No.: ISI-UT-11-099

Page: 6 of 7

Summary No.: 231500

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD-026(N7H).jpg

Alt 1/1



Inner 15% Exam Volume Coverage

Axial = $106\% - 12.5\% (\text{Lug}) = 87.5\%$

Circumferential = 97%

Average Inner 15% Exam Volume Coverage = $(87.5\% + 97\%) \div 2 = 92.25\%$

Reference Nine Mile Point Unit 1 Reactor Pressure Vessel (RPV) Nozzle Examinations IR-2011-457

Total Exam Volume Coverage

= $85\% \times 40.2\% + 15\% \times 92.25\% = 34.2\% + 13.8\% = 48.0\%$



Supplemental Report

Report No.: ISI-UT-11-099Page: 7 of 7Summary No.: 231500

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\W1R21\Datasheet Scanned Images\36-WD-026(N7H)Obstruction.jpg

8/4/14

Outer 85% Exam Volume Coverage

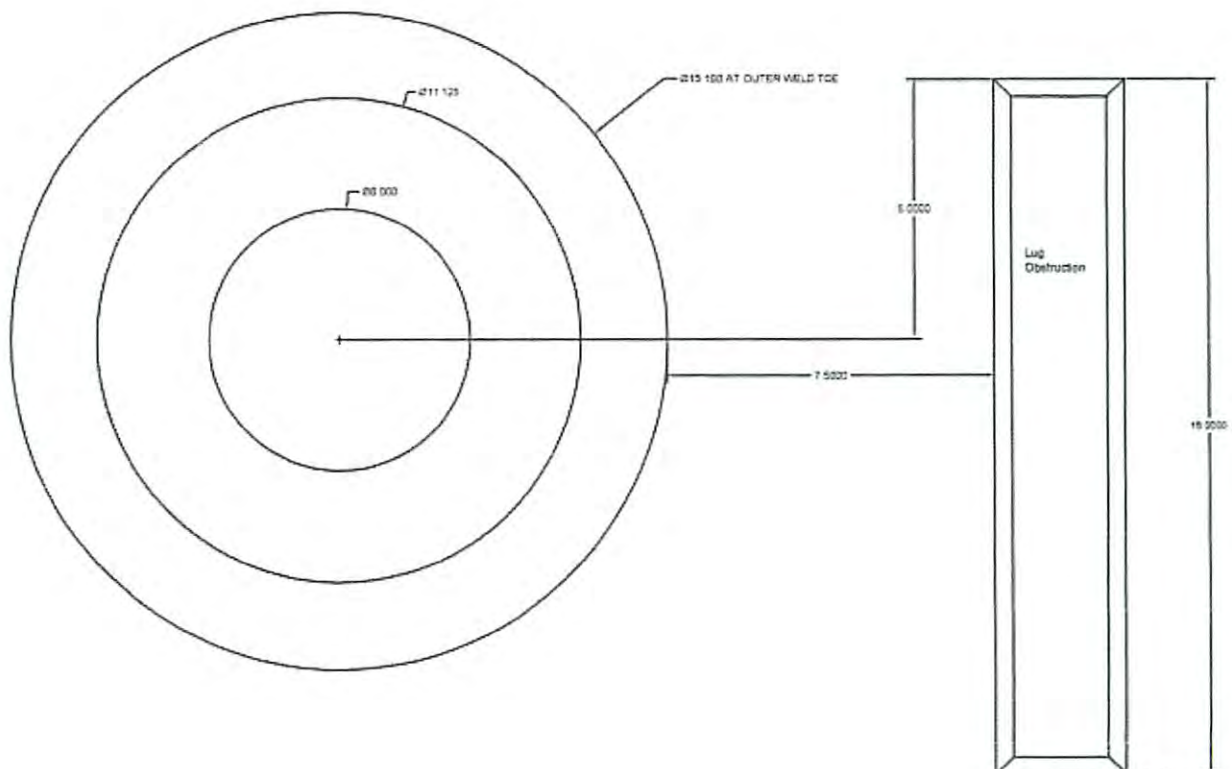
Axial exam area obstructed 3.5% due to adjacent Lug Obstruction.

Circ. exam area obstructed 0% due to adjacent lug obstruction.

Inner 15% Exam Volume Coverage

Axial exam area obstructed 12.5% due to adjacent lug obstruction.

Circ. exam area obstructed 0% due to adjacent lug obstruction.





Supplemental Report

Report No.: ISI-UT-11-100Page: 5 of 6Summary No.: 232000Examiner: Serth, JosephLevel: II-PDIReviewer: Smith, Kenneth R., Level III-PDIDate: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level IIIDate: 4/7/11Other: N/ALevel: N/AANII Review: Rose, CharlesDate: 4/8/11

Comments: Inner 15% circumferential scan parameters from EPRI model# IR-2011-457.

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD Nozzle SUPP1.jpg

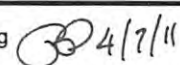
Parameters	Xducer # 1	Xducer # 2	Xducer # 3
Refracted Angle	35°	35°	45°
Incident Angle	42° - 50°	42° - 50°	42° - 50°
Skew Angle	± 35°	± 25°	± 17° to 78°
Misorientation Angle (Max)	20°	14°	20°
Scan Area ("R")	6.23" - 7.08"	6.21" - 6.78"	7.69" - 12.08"
Scan Area ("R") from Nozzle Barrel OD	0.667" - 1.517"	0.647" - 1.217"	2.127" - 6.517"
Min. Metal Path	~ 6.00	~ 6.08	~ 5.98
Max. Metal Path	~ 6.61	~ 6.62	~ 6.67

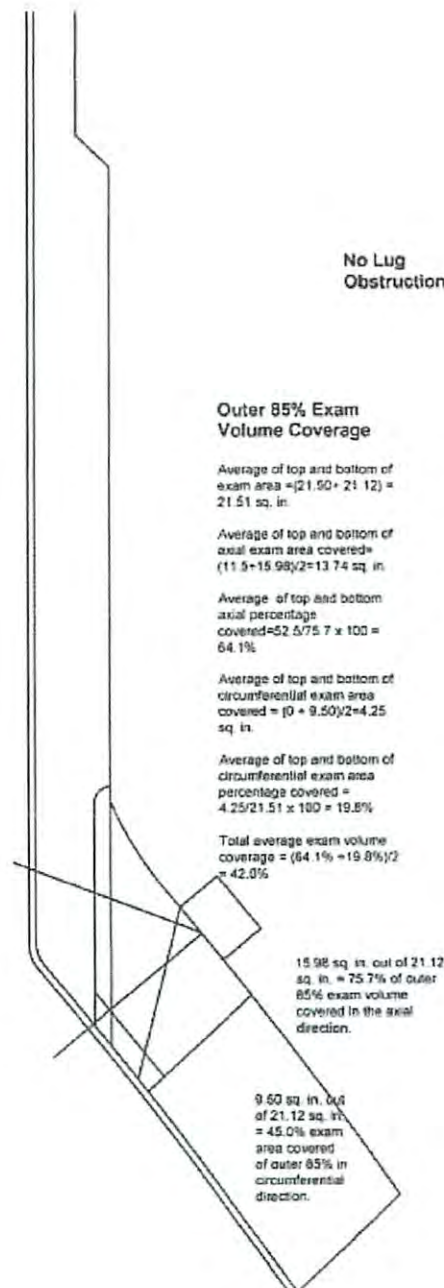
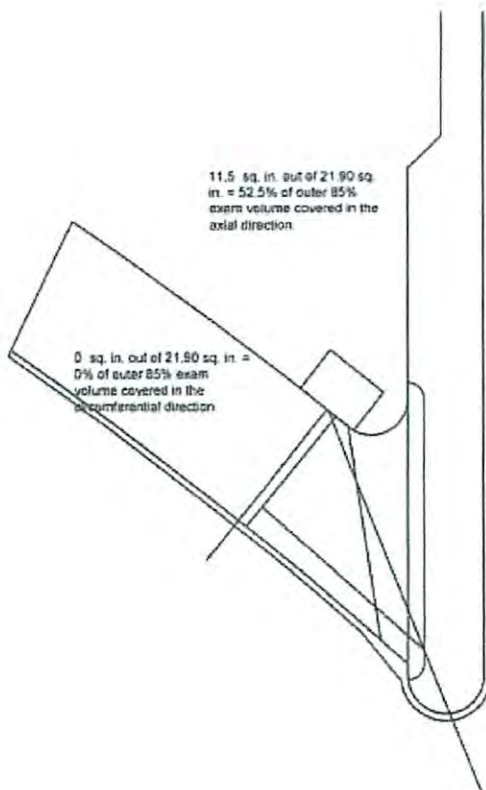
Supplemental Report

Report No.: ISI-UT-11-100

Page: 6 of 6

Summary No.: 232000

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD-028(N7J).jpg 





Supplemental Report

Report No.: ISI-UT-11-101Page: 5 of 7Summary No.: 236700Examiner: Serth, JosephLevel: II-PDIReviewer: Smith, Kenneth R., Level III-PDIDate: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level IIIDate: 4/2/11Other: N/ALevel: N/AANII Review: Rose, CharlesDate: 4/8/11

Comments: Inner 15% circumferential scan parameters from EPRI model# IR-2011-457.

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\36-WD Nozzle SUPP1.jpg


Parameters	Xducer # 1	Xducer # 2	Xducer # 3
Refracted Angle	35°	35°	45°
Incident Angle	42° - 50°	42° - 50°	42° - 50°
Skew Angle	± 35°	± 25°	± 17° to 78°
Misorientation Angle (Max)	20°	14°	20°
Scan Area ("R")	6.23" - 7.08"	6.21" - 6.78"	7.69" - 12.08"
Scan Area ("R") from Nozzle Barrel OD	0.667" - 1.517"	0.647" - 1.217"	2.127" - 6.517"
Min. Metal Path	~ 6.00	~ 6.08	~ 5.98
Max. Metal Path	~ 6.61	~ 6.62	~ 6.67

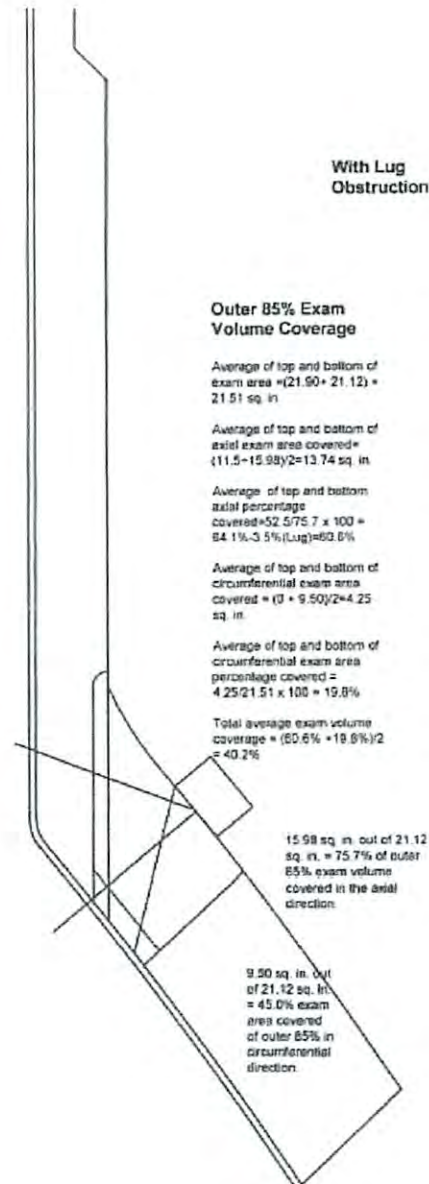
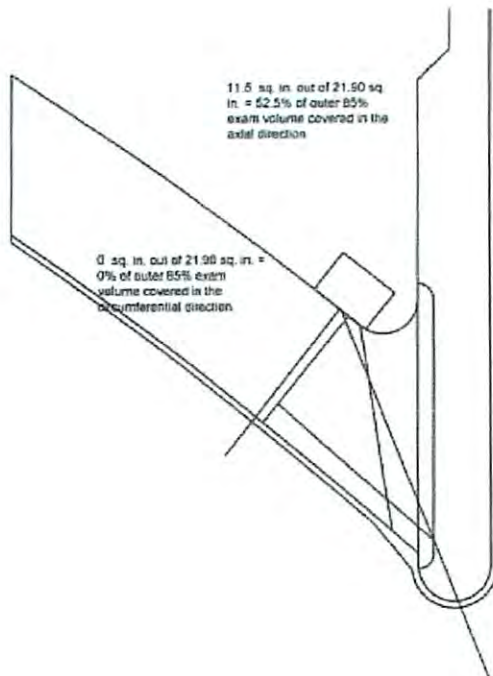
Supplemental Report

Report No.: ISI-UT-11-101

Page: 6 of 7

Summary No.: 236700

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\W1R21\Datasheet Scanned Images\36-WD-1073(N7L).jpg 



Inner 15% Exam Volume Coverage

Axial = $100\% - 12.5\% (\text{Lug}) = 87.5\%$

Circumferential = 97%

Average Inner 15% Exam Volume Coverage = $(87.5\% + 97\%) \div 2 = 92.25\%$

Reference Nine Mile Point Unit 1 Reactor Pressure Vessel (RPV) Nozzle Examinations IR-2011-457

Total Exam Volume Coverage

= $40.2\% + 48.2\% + 15\% = 92.25\%$ = 34.2% + 13.8% = 48.0%



Supplemental Report

Report No.: ISI-UT-11-101

Page: 7 of 7

Summary No.: 236700

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\W1R21\Datasheet Scanned Images\36-WD-1073(N7L)Obstruction.jpg

Q4/11

Outer 85% Exam Volume Coverage

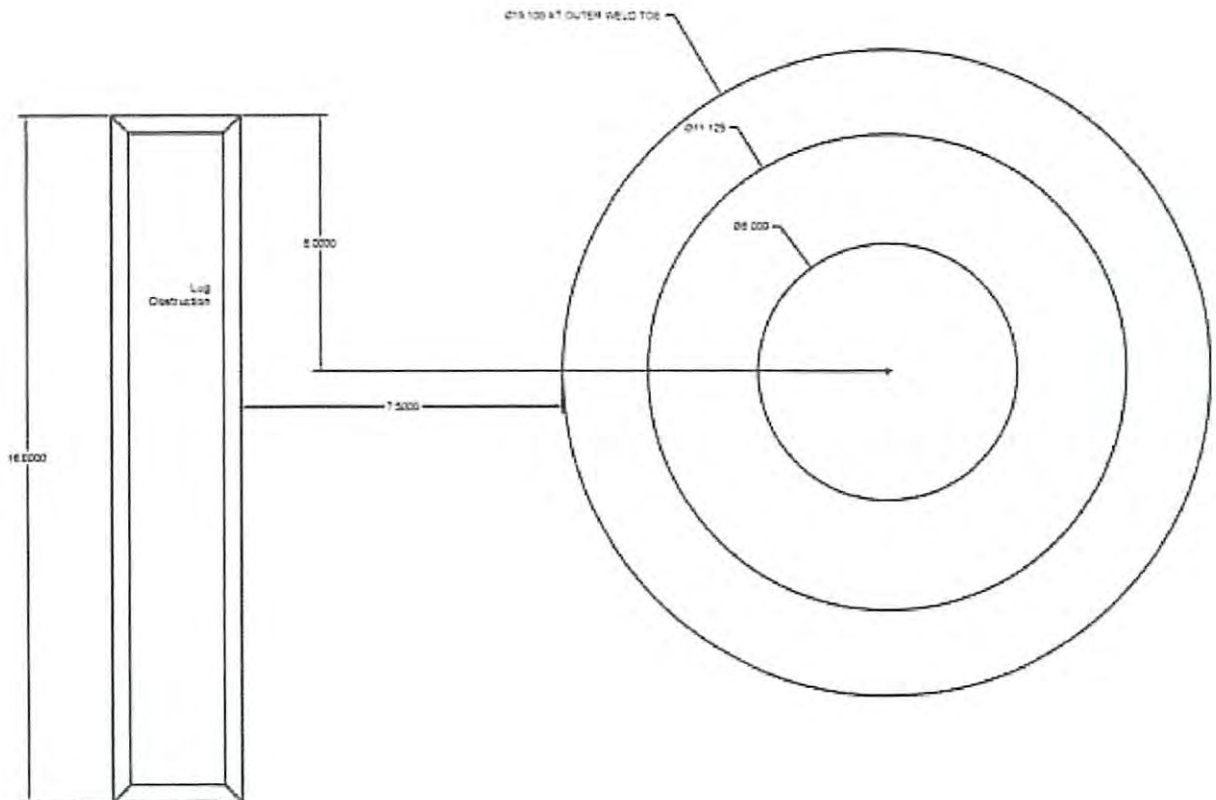
Axial Exam area obstructed 3.5% due to adjacent Lug Obstruction.

Circ. Exam area obstructed 0% due to adjacent lug obstruction.

Inner 15% Exam Volume Coverage

Axial exam area obstructed 12.5% due to adjacent lug obstruction.

Circ. exam area obstructed 0% due to adjacent lug obstruction.



UT Calibration/Examination

Site/Unit: NMP / 1
Summary No.: 282300
Workscope: ISI

Procedure: WDI-SSP-019
Procedure Rev.: 00300
Work Order No.: C90640268-110

Outage No.: N1R21
Report No.: ISI-UT-11-085
Page: 1 of 6

Code: ASME Section XI 2004 Cat./Item: B-D/B3.90 Location: PC EI. 305 D-5
Drawing No.: F45183C-11 Description: N5B Nozzle-to-Vessel
System ID: 39.0
Component ID: 39-WD-089 Size/Length: 18.0" Thickness/Diameter: 7.7"
Limitations: Insulation Ring Start Time: 0400 Finish Time: 0445

Instrument Settings
Serial No.: SAP 101939
Manufacturer: KRAUTKRAMER
Model: USN-52R Linearity: L-11-001
Delay: 0.2330 Range: 15.0
M'tl Cal/Vel: 0.1298 Pulser: Dual
Damping: 1000 Ohms Reject: 0%
PRR/PRF: High SU Freq.: 2.25 MHz
Inst. Freq.: 2.0-8.0 MHz Disp. Mode: Full Wave
Zero: 13.961

Search Unit
Serial No.: F27025
Manufacturer: KB-Aerotech
Size: 0.5x1.0 Model: GAMMA
Freq.: 2.25 MHz Center Freq.: N/A
Exam Angle: 45° Squint Angle: N/A
Measured Angle: 45° Mode: Shear
Exit Point: N/A # of Elements: 1
Config.: N/A Focus: N/A
Shape: Rnd Contour: N/A
Wedge Style: Non-Integral

Ax. Gain (dB): 63 Circ. Gain (dB): 54
1 Screen Div. = 1.5 in. of Sound Path
Type: RG-174 Length: 6' No. Conn.: 0

Calibration Block
Cal. Block No.: NMP1-GE-7.875
Thickness: 7.875" Dia.: 0
Cal. Blk. Temp.: 65° Temp. Tool: SAP 106901
Comp. Temp.: 85° Temp. Tool: SAP 106901
Exam Surface: OD
Surface Condition: Blended

Scan Coverage
Upstream ☐ Downstream ☐ Scan dB: N/A
CW ☒ CCW ☒ Scan dB: 52

Recordable Indication(s): Yes ☐ No ☒ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☒ Reject ☐ Eval ☐

Percent Of Coverage Obtained > 90%: No - 29.6% Reviewed Previous Data: Yes

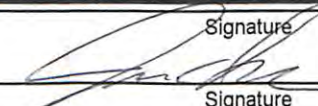
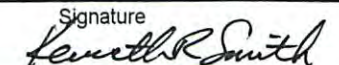
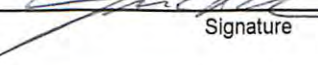
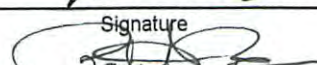


Cal. Checks	Time	Date
Initial Cal.	2100	3/29/2011
Inter. Cal.	0400	3/30/2011
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Final Cal.	0810	3/30/2011

Couplant
Cal. Batch: 09125
Type: ULTRAGEL II
Mfg.: SONOTECH
Exam Batch: 09125
Type: ULTRAGEL II
Mfg.: SONOTECH

Reference Block
Serial No.: SAP 104877
Type: Rompas

Axial Orientated Search Unit				
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path	
ID Notch	81	7.7	11.52"	
N/A				
N/A				
N/A				
N/A				
Circumferential Orientated Search Unit				
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path	
N/A				
N/A				
N/A				
N/A				
Reference/Simulator Block				
Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
22	2.0	80	1.2	2.0"
N/A				
N/A				

Comments: Used for Inner 15%. See IR-2011-457.

Examiner	Level	II-PDI	Signature	Date	Reviewer	Signature	Date
Serth, Joseph				3/30/2011	Smith, Kenneth R., Level III-PDI		4-7-11
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Peterson, Patrick, Level III		4/7/11
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Rose, Charles		

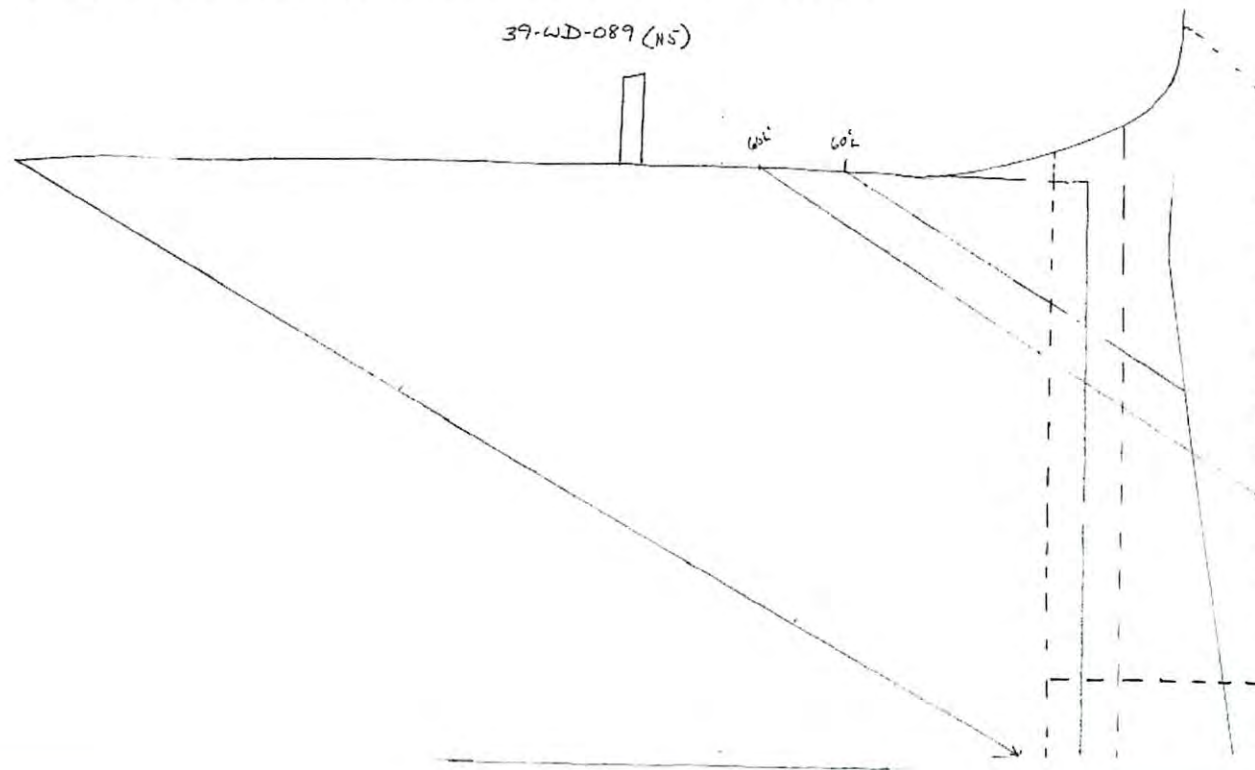


Supplemental Report

Report No.: ISI-UT-11-085Page: 4 of 6Summary No.: 282300Examiner: Serth, JosephLevel: II-PDIReviewer: Smith, Kenneth R., Level III-PDIDate: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level IIIDate: 4/2/11Other: N/ALevel: N/AANII Review: Rose, CharlesDate: 4/8/11

Comments:

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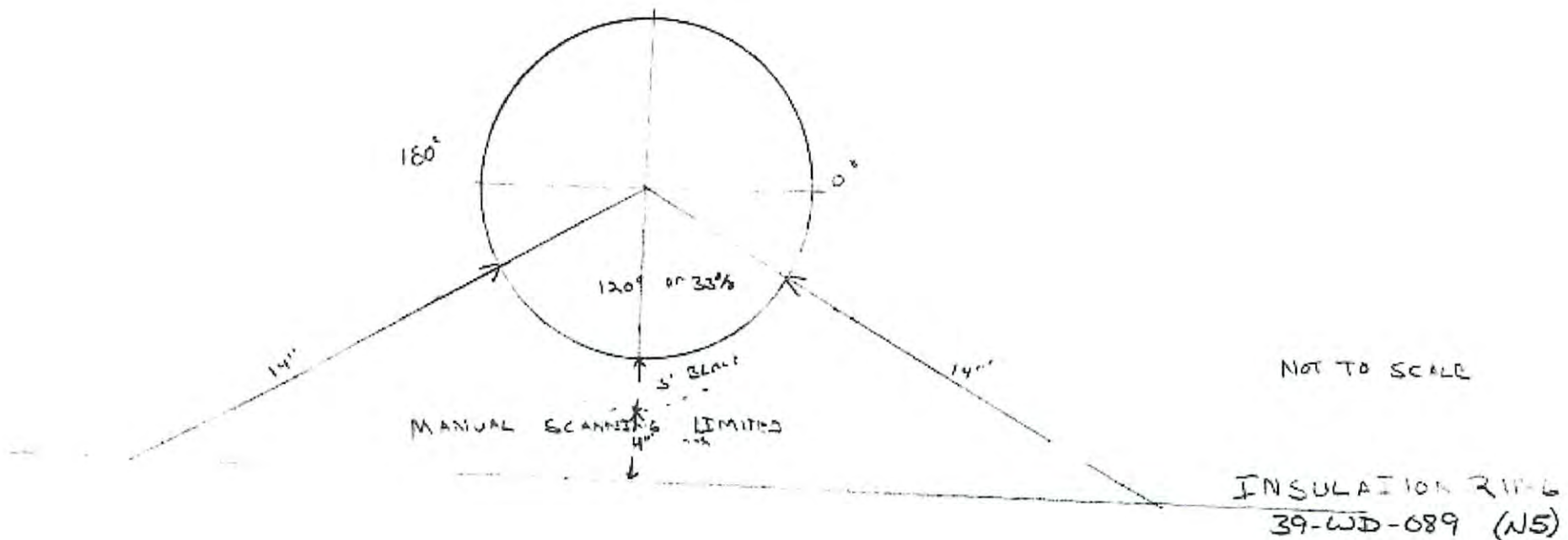


Supplemental Report

Report No.: ISI-UT-11-085Page: 5 of 6Summary No.: 282300Examiner: Serth, JosephLevel: II-PDIReviewer: Smith, Kenneth R., Level III-PDIDate: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level IIIDate: 4/7/11Other: N/ALevel: N/AANII Review: Rose, CharlesDate: 4/8/11

Comments:

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\39-WD-089(N5)SUPP2.jpg



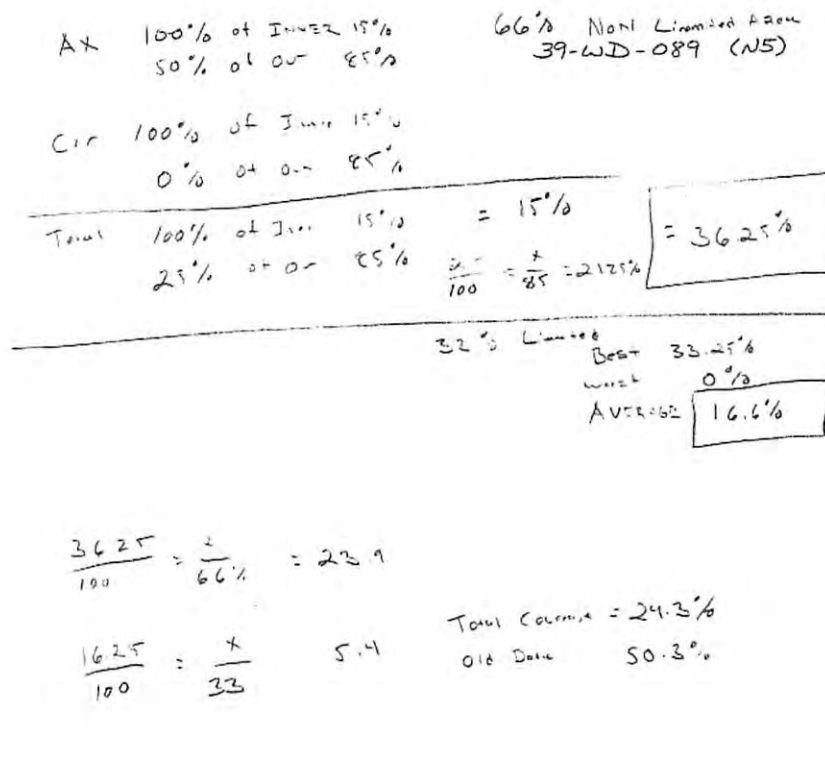


Supplemental Report

Report No.: ISI-UT-11-085Page: 6 of 6Summary No.: 282300Examiner: Serth, JosephLevel: II-PDIReviewer: Smith, Kenneth R., Level III-PDI KRSDate: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level III GPDate: 4/7/11Other: N/ALevel: N/AANII Review: Rose, Charles CRDate: 4/8/11

Comments:

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\39-WD-089(N5)SUPP3.jpg



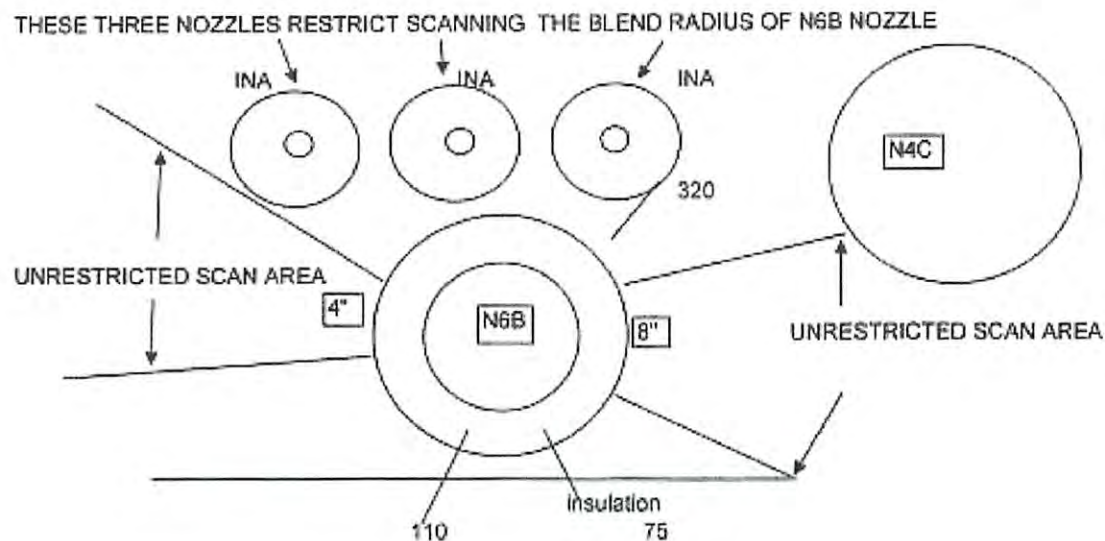


Supplemental Report

Report No.: ISI-UT-11-084Page: 4 of 5Summary No.: 350500Examiner: Serth, JosephLevel: II-PDIReviewer: Smith, Kenneth R., Level III-PDIDate: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level IIIDate: 4/7/11Other: N/ALevel: N/AANII Review: Rose, CharlesDate: 4/8/11

Comments:

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\40-WD-081(N6B).jpg



40-WD-081 (N6B)

$$\frac{12" \text{ of scanned area}}{41.5" \text{ circ area}} = 29\%$$

$$\begin{aligned} &\text{Lower 15\% (Ax and Circ)} = 100\% \\ &\text{Upper 85\% (Ax)} = 50\% \\ &\text{Upper 85\% (Circ)} = 0\% \end{aligned} \quad \begin{aligned} &> = 25\% \\ &> = 41.6\% \text{ of } 29\% = 12.06\% \end{aligned}$$

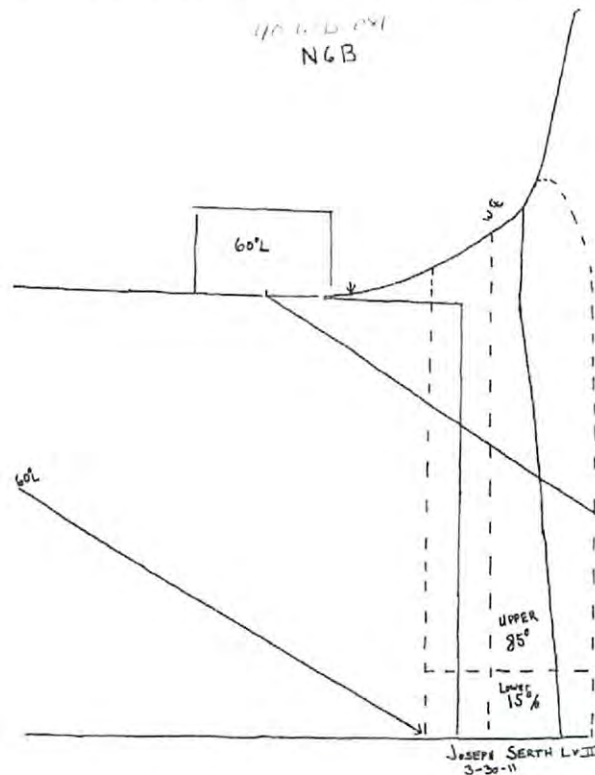


Supplemental Report

Report No.: ISI-UT-11-084Page: 5 of 5Summary No. 350500Examiner: Serth, JosephLevel: II-PDIReviewer: Smith, Kenneth R., Level III-PDIKRSDate: 4-7-11Examiner: N/ALevel: N/ASite Review: Peterson, Patrick, Level IIIPDate: 4/7/11Other: N/ALevel: N/AANII Review: Rose, CharlesCRDate: 4/8/11

Comments:

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\40-WD-081(N6B)SUPP2.jpg



UT Calibration/Examination

Site/Unit: NMP / 1
Summary No.: 436900
Workscope: ISI

Procedure: NDEP-UT-6.24
Procedure Rev.: 1000
Work Order No.: C90640268-140

Outage No.: N1R21
Report No.: ISI-UT-11-044
Page: 1 of 3

Code: ASME Section XI 2004 Ed. Cat./Item: C-B/C2.21 Location: RFF El. 340 A-1
Drawing No.: F45183C-11A Description: Hx 60-46 Head Outlet-to-Nozzle
System ID: 39.0
Component ID: 60-46-WD-006C1 Size/Length: 21" Thickness/Diameter: 1.3"
Limitations: Single Sided Exam Start Time: 1500 Finish Time: 1530

Instrument Settings
Serial No.: SAP 105207 Manufacturer: KRAUTKRAMER Model: USN-60SW Linearity: L-11-006 Delay: 7.0922 Range: 4.000" M'tl Cal/Vel: 0.1246 Pulsar Type: Square Damping: 500 Ohms Reject: 0% PRF: Auto High SU Freq.: 1.5MHz Frequency: 2.0 MHz Rectify: Fullwave Voltage: 450 Pulse Width: 330

Search Unit
Serial No.: 01RBNB Manufacturer: KRAUTKRAMER Size: 0.5 Model: Comp G Freq.: 1.5MHz Center Freq.: N/A Exam Angle: 45° Squint Angle: N/A Measured Angle: 45° Mode: Shear Exit Point: 0.35 # of Elements: 1 Config.: N/A Focus: N/A Shape: Round Contour: N/A Wedge Style: MSWQC

Ax. Gain (dB): 9.1 Circ. Gain (dB): N/A
1 Screen Div. = 0.4 in. of Sound Path

Calibration Block
Cal. Block No.: SAP 102915 Thickness: 0.5-2.0 Dia.: 0 Cal. Blk. Temp.: 75° Temp. Tool: SAP 106901 Comp. Temp.: 72° Temp. Tool: SAP 106901

Scan Coverage
Upstream ☒ Downstream ☒ Scan dB: 15.1
CW ☒ CCW ☒ Scan dB: 15.1
Exam Surface: OD
Surface Condition: Ground

Recordable Indication(s): Yes ☐ No ☒ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☒ Reject ☐ Eval ☐

Percent Of Coverage Obtained > 90%: 50% Reviewed Previous Data: Yes


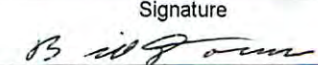


Cal. Checks	Time	Date
Initial Cal.	<u>1300</u>	<u>3/30/2011</u>
Inter. Cal.	<u>N/A</u>	
Inter. Cal.	<u>N/A</u>	
Inter. Cal.	<u>N/A</u>	
Final Cal.	<u>1624</u>	<u>3/30/2011</u>

Couplant
Cal. Batch: 00325
Type: ULTRAGEL II
Mfg.: SONOTECH
Exam Batch: 00325
Type: ULTRAGEL II
Mfg.: SONOTECH

Reference Block
Serial No.: SAP 104882
Type: Rompas

Axial Orientated Search Unit			
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
<u>1.5" Notch</u>	<u>80</u>	<u>5.3</u>	<u>2.126"</u>
<u>N/A</u>			
<u>N/A</u>			
<u>N/A</u>			
<u>N/A</u>			
Circumferential Orientated Search Unit			
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
<u>N/A</u>			
<u>N/A</u>			
<u>N/A</u>			
<u>N/A</u>			
Reference/Simulator Block			
Gain dB	Reflector	Signal Amplitude %	Sweep Division
<u>N/A</u>			
<u>N/A</u>			
<u>N/A</u>			

Comments: See page 3 for comments.

Examiner	Level	<u>II-PDI</u>	Signature	Date	Reviewer	Signature	Date
<u>Tucker, David</u>				<u>3/30/2011</u>	<u>Downs, Bill, Level III</u>		<u>4-2-11</u>
Examiner	Level	<u>N/A</u>	Signature	Date	Site Review	Signature	Date
<u>N/A</u>					<u>Peterson, Patrick, Level III</u>		<u>4/2/11</u>
Other	Level	<u>N/A</u>	Signature	Date	ANII Review	Signature	Date
<u>N/A</u>					<u>Rose, Charles</u>		<u>4/2/11</u>



Supplemental Report

Report No.: ISI-UT-11-044

Page: 3 of 3

Summary No. 436900

Examiner: Tucker, David *WATK TH*

Level: II-PDI

Reviewer: Downs, Bill, Level III

Date: 4-2-11

Examiner: N/A

Level: N/A

Site Review: Peterson, Patrick, Level III

Date: 4/2/11

Other: N/A

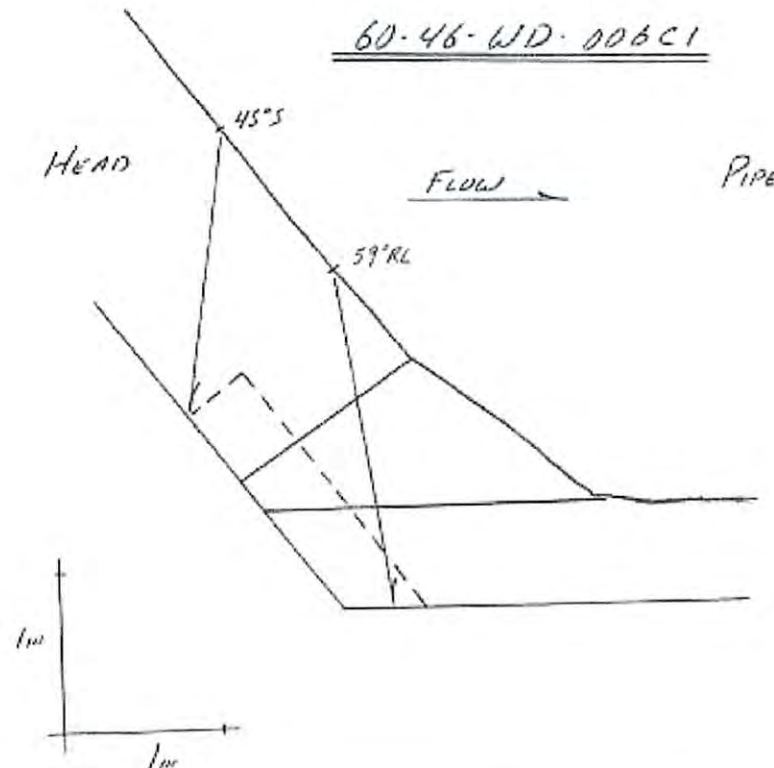
Level: N/A

ANII Review: Rose, Charles *CRC*

Date: 4/2/11

Comments: Exams performed to maintain 5% to 20% ID roll. Circ exam performed on upstream side of base material and weld crown with skew angles to examine the additional required exam volume. See attached coverage plot.

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\60-46-WD-006C1.jpg



UT Calibration/Examination

Site/Unit: NMP / 1
Summary No.: 325300
Workscope: ISI

Procedure: NDEP-UT-6.24
Procedure Rev.: 08/5/11 10801100
Work Order No.: C90640268-120

Outage No.: N1R21
Report No.: ISI-UT-11-087
Page: 1 of 3

Code: ASME Section XI 2004 Ed. Cat./Item: R-A/R1.16 Location: PC EI. 259 E-2
Drawing No.: F45183C-12 Description: Valve 40-09-to-Elbow
System ID: 40.0
Component ID: 40-WD-025 Size/Length: 12.0" Thickness/Diameter: 0.62"
Limitations: Single-side exam Start Time: 0135 Finish Time: 0200

Instrument Settings
Serial No.: SAP 105208
Manufacturer: KRAUTKRAMER
Model: USN-60SW Linearity: L-11-004
Delay: 5.7416 Range: 2.0
M'tl Cal/Vel: 0.1225 Pulser Type: Square
Damping: 500 Ohms Reject: 0%
PRF: Auto High SU Freq.: 1.5MHz
Frequency: 2.0 MHz Rectify: Fullwave
Voltage: 450 Pulse Width: 330

Ax. Gain (dB): 17 Circ. Gain (dB): N/A
10 Screen Div. = 1.4 in. of Depth

Search Unit
Serial No.: 00TDFB
Manufacturer: KRAUTKRAMER
Size: 0.375 Model: Comp G
Freq.: 1.5MHz Center Freq.: N/A
Exam Angle: 45° Squint Angle: N/A
Measured Angle: 45° Mode: Shear
Exit Point: 0.25 # of Elements: 1
Config.: N/A Focus: N/A
Shape: Rnd Contour: 0
Wedge Style: MSWQC

Search Unit Cable
Type: RG-174 Length: 6' No. Conn.: 0

Calibration Block
Cal. Block No.: SAP 102915
Thickness: 0.5-2.0 Dia.: Flat
Cal. Blk. Temp.: 76° Temp. Tool: SAP 106895
Comp. Temp.: 71° Temp. Tool: SAP 106895

Scan Coverage
Upstream ☐ Downstream ☒ Scan dB: 23
CW ☒ CCW ☒ Scan dB: 29
Exam Surface: OD
Surface Condition: Ground

Recordable Indication(s): Yes ☐ No ☒ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☒ Reject ☐ Eval ☐

Percent Of Coverage Obtained > 90%: 50% Reviewed Previous Data: Yes

Cal. Checks	Time	Date
Initial Cal.	0025	4/3/2011
Inter. Cal.	0130	4/3/2011
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Final Cal.	0430	4/3/2011


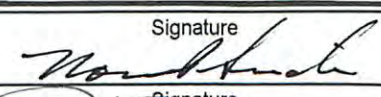
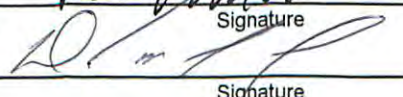


Couplant
Cal. Batch: 00325
Type: ULTRAGEL II
Mfg.: SONOTECH

Exam Batch: 09125
Type: ULTRAGEL II
Mfg.: SONOTECH

Reference Block
Serial No.: SAP 102272
Type: Rompas

Axial Orientated Search Unit				
Calibration Reflector	Signal Amplitude %	Sweep Division	Depth	
1.0" Notch	80	7.1	1.0"	
N/A				
N/A				
N/A				
N/A				
Circumferential Orientated Search Unit				
Calibration Reflector	Signal Amplitude %	Sweep Division	Depth	
N/A				
N/A				
N/A				
N/A				
Reference/Simulator Block				
Gain dB	Reflector	Signal Amplitude %	Sweep Division	Depth
17	FSDH	20	5.3	0.75"
N/A				
N/A				

Comments: See page 3 for comments.

Examiner	Level	II-PDI	Signature	Date	Reviewer	Signature	Date
Moore, Lee L.				4/3/2011	Siniaho, Norman, Level III		4/5/11
Examiner	Level	II-PDI	Signature	Date	Site Review	Signature	Date
Griebel, David M.				4/3/2011	Peterson, Patrick, Level III		4/5/11
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Rose, Charles		4/6/11

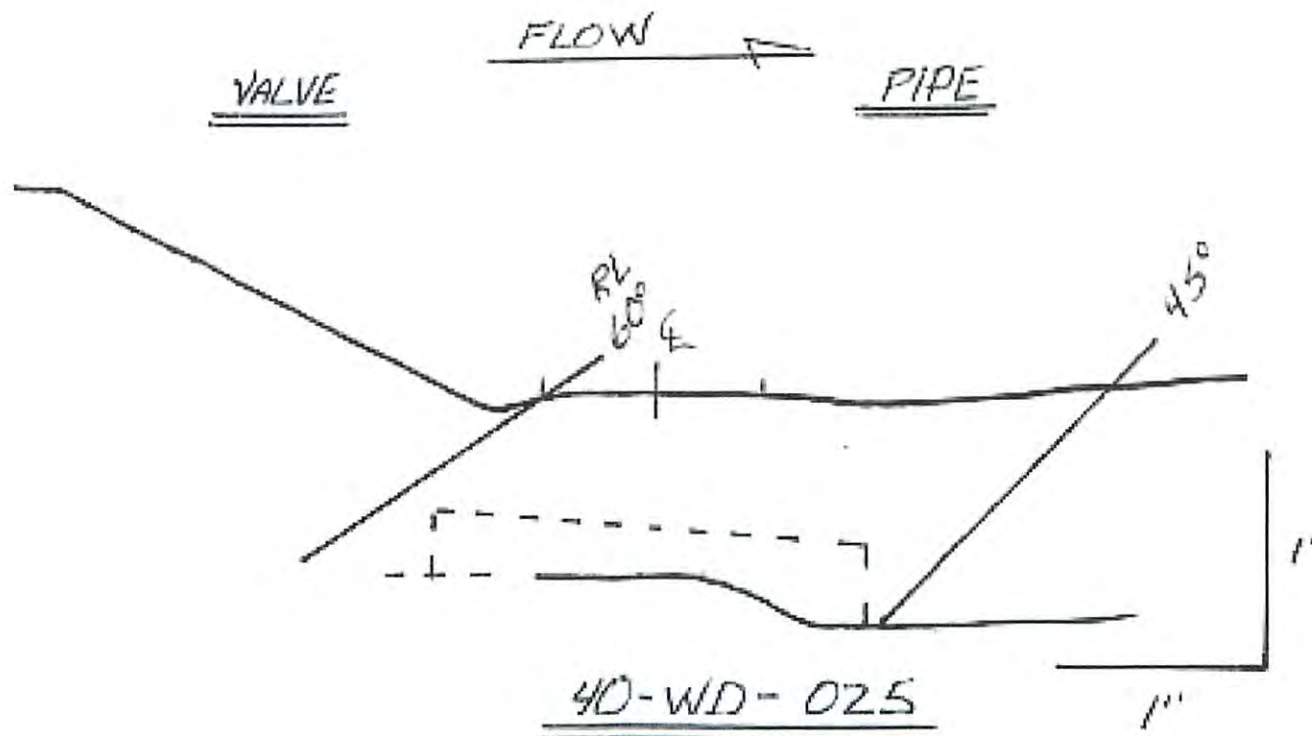


Supplemental Report

Report No.: ISI-UT-11-087Page: 3 of 3Summary No.: 325300Examiner: Moore, Lee L.Level: II-PDIReviewer: Siniaho, Norman, Level IIDate: 4/5/11Examiner: Griebel, David M.Level: II-PDISite Review: Peterson, Patrick, Level IIIDate: 4/5/11Other: N/ALevel: N/AANII Review: Rose, CharlesDate: 4/6/11

Comments: Exams performed to maintain 5% to 20% ID roll. Circ exams performed on both sides of base material and weld crown with skew angles to examine the additional required exam volume. See attached coverage plot.

Sketch or Photo: S:\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\40-WD-025.jpg



UT Calibration/Examination

Site/Unit: NMP / 1
Summary No.: 326900
Workscope: ISI

Procedure: NDEP-UT-6.24
Procedure Rev.: Rev 11 1000 1100
Work Order No.: C90640268-120

Outage No.: N1R21
Report No.: ISI-UT-11-010
Page: 1 of 4

Code: ASME Section XI 2004 Ed. Cat./Item: R-A/R1.16 Location: PC 259 E-2
Drawing No.: F45183C-12 Description: Valve 40-01-to-Pipe
System ID: 40.0
Component ID: 40-WD-029 Size/Length: 12.0" Thickness/Diameter: 0.62"
Limitations: Single side exam due to component geometry; Valve to Pipe Start Time: 0953 Finish Time: 1043

Instrument Settings
Serial No.: SAP 105207
Manufacturer: KRAUTKRAMER
Model: USN-60SW Linearity: L-11-006
Delay: 5.9231 Range: 3.0
M'tl Cal/Vel: 0.1229 Pulsar Type: Square
Damping: 500 Ohms Reject: 0%
PRF: Auto High SU Freq.: 1.5MHz
Frequency: 2.0 MHz Rectify: Fullwave
Voltage: 450 Pulse Width: 330

Ax. Gain (dB): 17.6 Circ. Gain (dB): 17.6
10 Screen Div. = 3.0 in. of Sound Path

Search Unit
Serial No.: 00TDF8
Manufacturer: KRAUTKRAMER
Size: 0.375 Model: Comp-G
Freq.: 1.5MHz Center Freq.: N/A
Exam Angle: 45° Squint Angle: N/A
Measured Angle: 45° Mode: Shear
Exit Point: 0.30" # of Elements: 1
Config.: N/A Focus: N/A
Shape: Round Contour: N/A
Wedge Style: MSWQC

Search Unit Cable
Type: RG-174 Length: 6' No. Conn.: 0

Calibration Block
Cal. Block No.: SAP 102917
Thickness: 0.5-2.0 Dia.: 0
Cal. Blk. Temp.: 75° Temp. Tool: SAP 106895
Comp. Temp.: 74° Temp. Tool: SAP 106895

Scan Coverage
Upstream ☐ Downstream ☒ Scan dB: 32
CW ☒ CCW ☒ Scan dB: 32
Exam Surface: OD
Surface Condition: Ground

Recordable Indication(s): Yes ☐ No ☒ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☒ Reject ☐ Eval ☐

Percent Of Coverage Obtained > 90%: No-50% Reviewed Previous Data: Yes

Cal. Checks	Time	Date
Initial Cal.	0655	3/25/2011
Inter. Cal.	0941	3/25/2011
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Final Cal.	1300	3/25/2011

Couplant
Cal. Batch: 00325
Type: ULTRAGEL II
Mfg.: SONOTECH

Exam Batch: 00325
Type: ULTRAGEL II
Mfg.: SONOTECH

Reference Block
Serial No.: SAP 102272
Type: Rompas

Axial Orientated Search Unit				
Calibration Reflector		Signal Amplitude %	Sweep Division	Sound Path
1" Notch		80	4.8	1.409"
N/A				
N/A				
N/A				
N/A				
Circumferential Orientated Search Unit				
Calibration Reflector		Signal Amplitude %	Sweep Division	Sound Path
N/A				
N/A				
N/A				
N/A				
Reference/Simulator Block				
Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
30.5	FSH	80	3.5	1.041"
N/A				
N/A				

Comments: See page 4 for comments.

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Michael, Dickey	II-PDI	<i>Michael Dickey</i>	3/25/2011	Downs, Bill, Level III	<i>Bill Downs</i>	3-31-11
N/A	N/A			Site Review		
				Peterson, Patrick, Level III	<i>Patrick Peterson</i>	4/1/11
Other	N/A			ANII Review		
N/A				Rose, Charles	<i>Charles Rose</i>	4/2/11



Supplemental Report

Report No.: ISI-UT-11-010

Page: 4 of 4

Summary No.: 326900

Examiner: Michael, Dickey DEM

Level: II-PDI

Reviewer: Downs, Bill, Level III

Date: 4-2-11

Examiner: N/A

Level: N/A

Site Review: Peterson, Patrick, Level III

Date: 4/1/11

Other: N/A

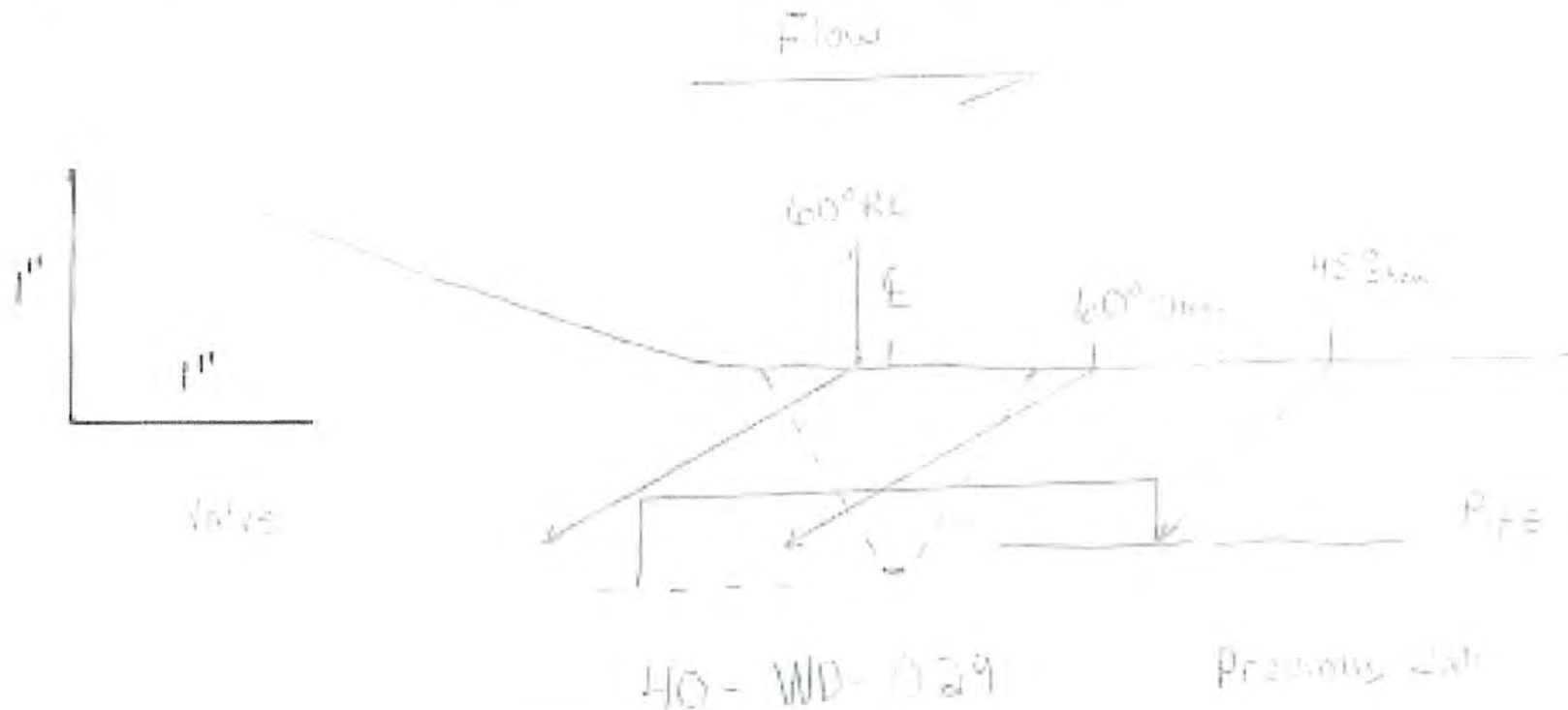
Level: N/A

ANII Review: Rose, Charles

Date: 4/2/11

Comments: Exams performed to maintain 5% to 20% ID roll. Circ exams performed on base material and weld crown with skew angles to examine the additional required exam volume. See attached coverage plot.
Previously recorded geometry observed below recordable levels.

Sketch or Photo: \\Was-nmp-21\NMPSHare\Common\QI-NDE\QI-NDE\U1 RFO's\N1R21\Datasheet Scanned Images\40-WD-029.jpg





Ultrasonic Examination

Site/Unit:	NMP / 1	Procedure:	ISwT-UT37	Outage No.:	N1R22
Summary No.:	034900	Procedure Rev.:	R 0 Ch 0	Report No.:	ISI-VE-13-058
Workscope:	ISI	Work Order No.:	C91476906	Page:	1 of 1
Code:	ASME Section XI 2004 Edition	Cat./Item:	B-A/B1.40	Location:	RB 340
Drawing No.:	F45183C-28	Description:	Closure Head-to-Flange Weld		
System ID:	00.0				
Component ID:	RV-WD-001B	Size/Length:	N/A	Thickness/Diameter:	N/A
Limitations:	Flange configuration				

Comments:

Examined 120 deg to 240 deg. See IHISW Summary Sheet 034900, Cal sheet 140002 and Exam sheet 340006.

Results: Accept ☒ Reject ☐ Eval ☐

Percent Of Coverage Obtained > 90%: **83.7%**

Reviewed Previous Data: **Yes**

Examiner	Level	III*	Signature	Date	Reviewer	Signature	Date
Kleinjan, Michael W.				4/24/2013	Diaz, Hector		4/27/2013
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
I/A					<i>[Signature]</i> L-III		5-23-12
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					<i>[Signature]</i>		5/23/12



IHI Southwest Technologies Examination Summary Record

Utility: Constellation Energy		Site: Nine Mile Point Nuclear Station Unit 1 Outage: N1R22			Summary Sheet No. 034900		
System: Reactor Pressure Vessel		Line Subassembly: Closure Head to Flange Weld			Identification: RV-WD-001B		
NDE Method	Proc/Rev/Chg/ICN	NDE Examination	Calibration Sheet No.	Exam Sheet No.	NRI	Other	Remarks
UT	ISwT-UT37/0/0/0	60° Z1 headside	140002	340006	X	-	
UT	ISwT-UT37/0/0/0	60° Z2 headside	140002	340006	X	-	
UT	ISwT-UT37/0/0/0	60° Z1 cw/ccw	140002	340006	X	-	
UT	ISwT-UT37/0/0/0	60° Z2 cw/ccw	140002	340006	X	-	

Examination Summary:

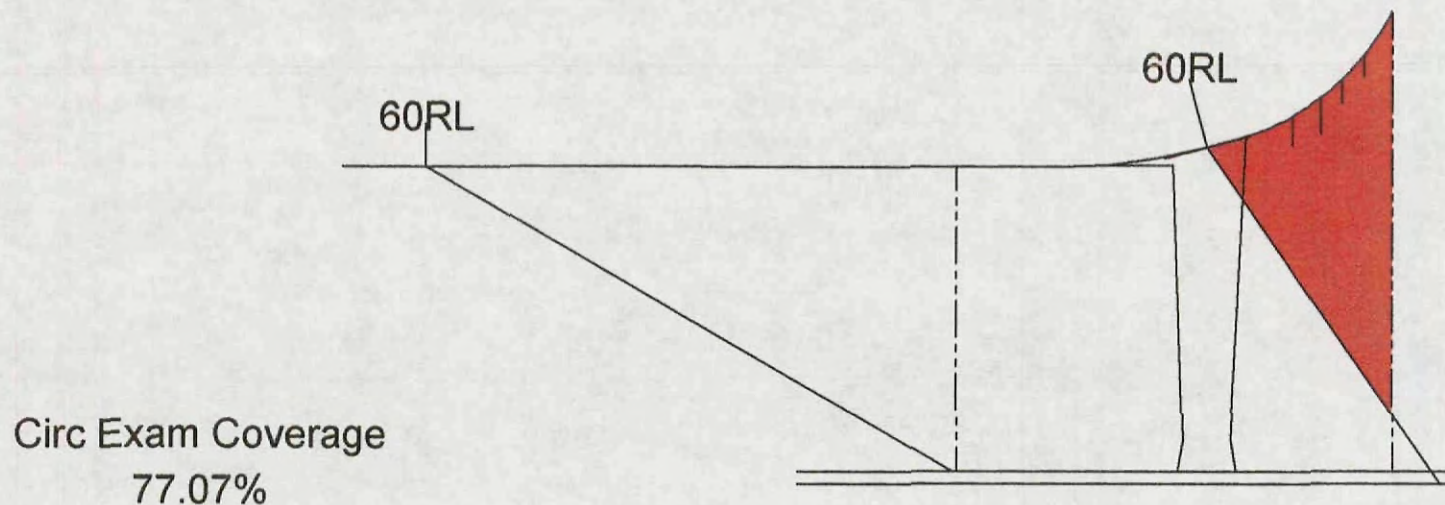
No Recordable Indications.

Examined from 120° to 240° azimuth. Single sided exam due to flange configuration, total exam coverage 83.7%.

This weld is acceptable to the 2004 Edition of the ASME Boiler & Pressure Vessel Code.

Prepared By: Steven J. Todd			
Signature: <i>Steven J. Todd</i>	Date: 4/29/13		
ISwT Project Manager			
Reviewed By: <i>[Signature]</i>	Date: 5-1-13	Reviewed By: ANH	
Signature: <i>[Signature]</i>		Signature: <i>[Signature]</i>	Date: 5/2/13
Constellation Energy Nine Mile Point Station			

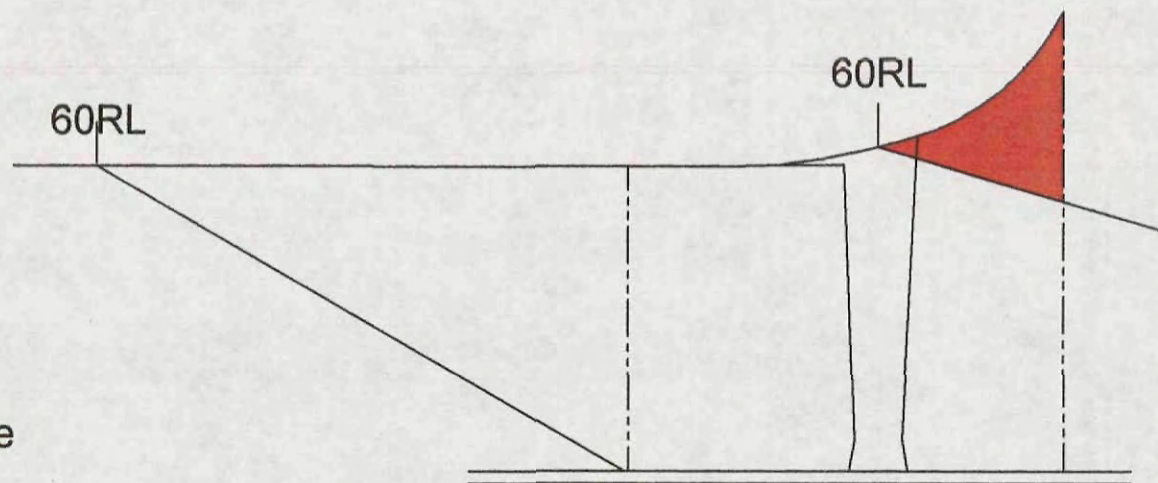
RV-WD-001B



Circ. Coverage

pg. 3 of 4

RV-WD-001B



Axial Exam Coverage
90.59%

Total Exam Coverage
83.83%

Axial Coverage



UT Pipe Weld Examination

Site/Unit: NMP / 1 Procedure: NDEP-UT-6.24 Outage No.: N1R22
 Summary No.: 436300 Procedure Rev.: 01101 Report No.: ISI-UT-13-106
 Workscope: ISI Work Order No.: C91476906 Page: 1 of 3

Code: ASME Section XI 2004 Edition Cat./Item: C-B/C2.21 Location: RB 340
 Drawing No.: F45183C-11 Description: Hx 60-46 Nozzle-to-Head Inlet
 System ID: 39.0
 Component ID: 60-46-WD-001C1 Size/Length: 1.2" / 40.0" Thickness/Diameter: 1.5" / 21.2"
 Limitations: Single sided access Start Time: 1323 Finish Time: 1413

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground
 Lo Location: TDC Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 12125
 Temp. Tool Mfg.: EXTECH Serial No.: QA-NDE-T-083 Surface Temp.: 76 °F

Cal. Report No.: CAL-13-181, CAL-13-182, CAL-13-184

Angle Used	0	45	45T	60	60 RL	
Scanning dB	N/A	27	27	N/A	54.6	

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

Comments:

None

Results: Accept ☒ Reject ☐ Eval ☐

Percent Of Coverage Obtained > 90%: No (50%) Reviewed Previous Data: Yes

Examiner	Level	II-PDI	Signature	Date	Reviewer	Signature	Date
Griebel, David M.			<i>[Signature]</i>	4/28/2013	SIMON CROTHERS L-III	<i>[Signature]</i>	5/4/13
Examiner	Level	II-PDI	Signature	Date	Site Review	Signature	Date
Salley, Michael			<i>[Signature]</i>	4/28/2013	Michael D Canny	<i>[Signature]</i>	5/4/13
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					C. Rose	<i>[Signature]</i>	5/4/12



Supplemental Report

Report No.: ISI-UT-13-106

Page: 2 of 3

Summary No.: 436300

Examiner: Griebel, David M. DMB

Level: II-PDI

Reviewer: Simon Crothos L-III

Date: 5/4/13

Examiner: Salley, Michael MTS

Level: II-PDI

Site Review: Michael D. Cam III

Date: 5/4/13

Other: N/A

Level: N/A

ANII Review: CJG

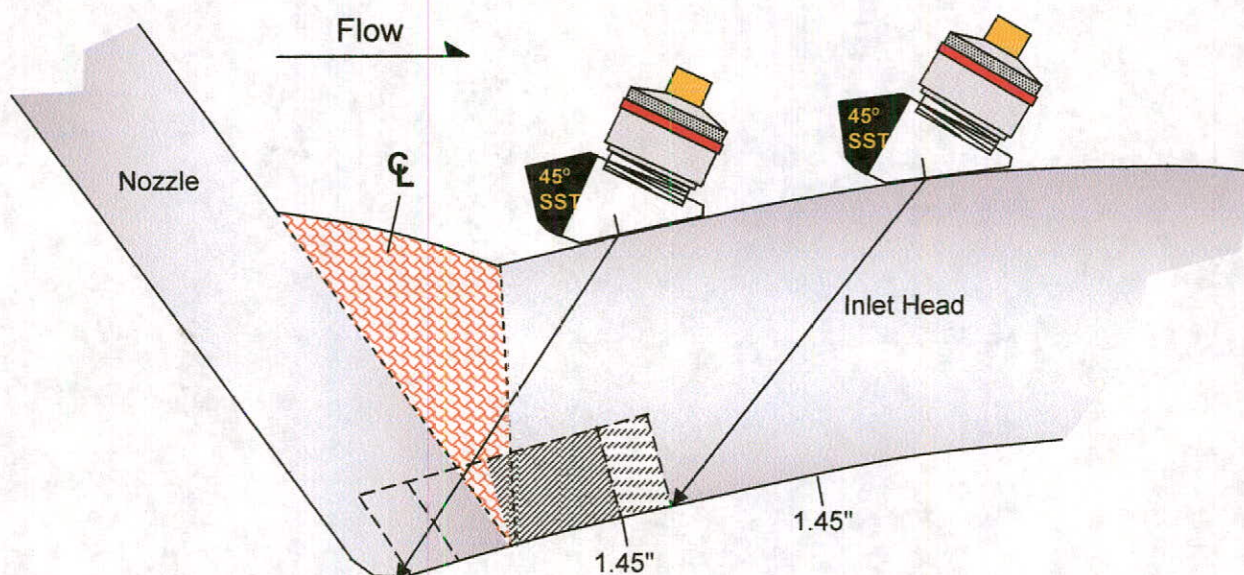
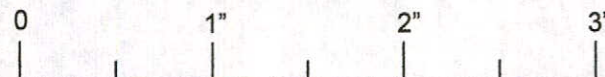
Date: 5/4/13

Comments:

Summary: 436300

Weld: 60-46-WD-001C1

Sketch 1: Coverage (Near Side)



Exam Coverage = 50% as per single sided access rules.



Code Coverage



R-A Coverage

- Weld Crown Width: 1.2"



Supplemental Report

Report No.: ISI-UT-13-106

Page: 3 of 3

Summary No.: 436300

Examiner: Griebel, David M. DML

Level: II-PDI

Reviewer: Simon Crothos L-III

Date: 5/4/13

Examiner: Salley, Michael MTS

Level: II-PDI

Site Review: Michael D. Camm III

Date: 5/4/13

Other: N/A

Level: N/A

ANII Review: Cher

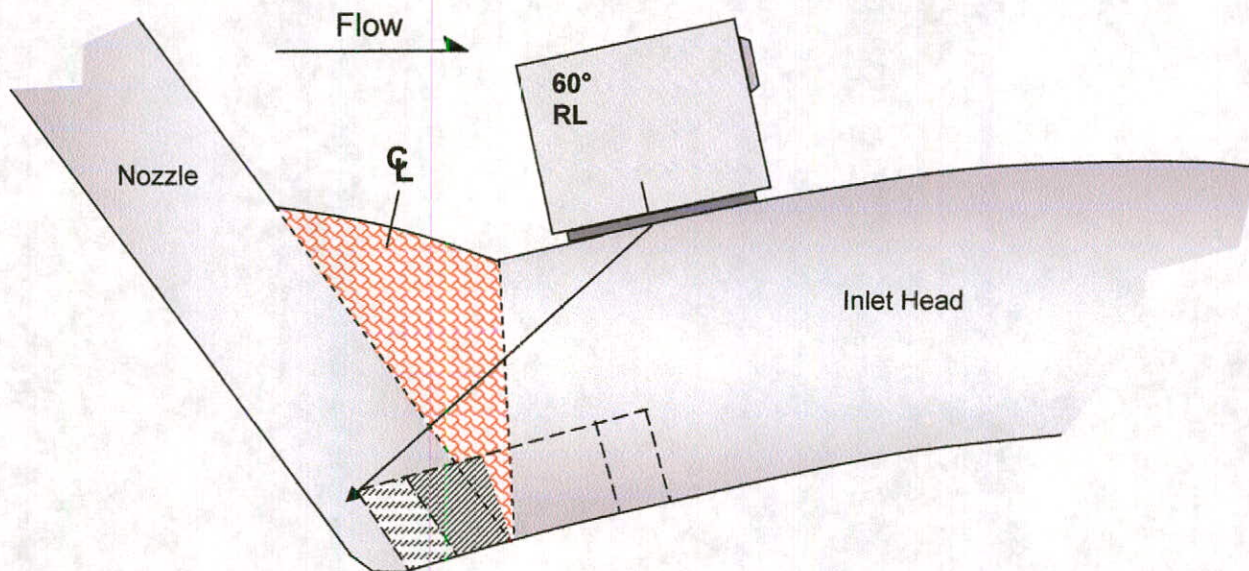
Date: 5/4/13

Comments:

Summary: 436300

Weld: 60-46-WD-001C1

Sketch 2: Coverage (Far Side)



Far side of weld examined as per single sided access rules – No coverage credit taken.

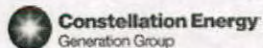


Code Coverage



R-A Coverage

- Weld Crown Width: 1.2"



UT Pipe Weld Examination

Site/Unit: NMP / 1 Procedure: NDEP-UT-6.24 Outage No.: N1R22
 Summary No.: 357500 Procedure Rev.: 01101 Report No.: ISI-UT-13-105
 Workscope: ISI Work Order No.: C91476906 Page: 1 of 2

Code: ASME Section XI 2004 Edition Cat./Item: R-A/R1.11 Location: DW 269
 Drawing No.: F45183C-14 Description: Valve 42.1-02-to-Reducer
 System ID: 42.1
 Component ID: 42.1-WD-017 Size/Length: 0.4" / 6" Thickness/Diameter: 0.200" / 1.5"
 Limitations: Single sided access Start Time: 1305 Finish Time: 1355

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground
 Lo Location: TDC Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 12125
 Temp. Tool Mfg.: EXTECH Serial No.: QA-NDE-T-076 Surface Temp.: 76 °F

Cal. Report No.: CAL-13-176, CAL-13-177, CAL-13-178, CAL-13-179, CAL-13-180

Angle Used	0	45	45T	60	70	70*
Scanning dB	N/A	30	30	41.6	39.6	42

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

Comments:

***2.25 MHz probe for far side exam.**

Results: Accept ☒ Reject ☐ Eval ☐

Percent Of Coverage Obtained > 90%: No (50%)

Reviewed Previous Data: No

Examiner	Level	II-PDI	Signature	Date	Reviewer	Signature	Date
Griebel, David M.			<i>[Signature]</i>	4/25/2013	SIMON CROTHERS L-III	<i>[Signature]</i>	5/3/13
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Haigler, Terry J.			<i>[Signature]</i>	4/25/2013	J.J. CILENTO, L-III	<i>[Signature]</i>	5-3-13
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					<i>[Signature]</i>	<i>[Signature]</i>	5/3/13



Supplemental Report

Report No.: **ISI-UT-13-105**

Page: **2** of **2**

Summary No.: **357500**

Examiner: **Griebel, David M.** *DMC*

Level: **II-PDI**

Reviewer: *Simon Crothers L-III*

Date: **5/3/13**

Examiner: **Haigler, Terry J.** *TJH*

Level: **II**

Site Review: *JJ Glento L-III*

Date: **5-3-13**

Other: **N/A**

Level: **N/A**

ANII Review: *CJG*

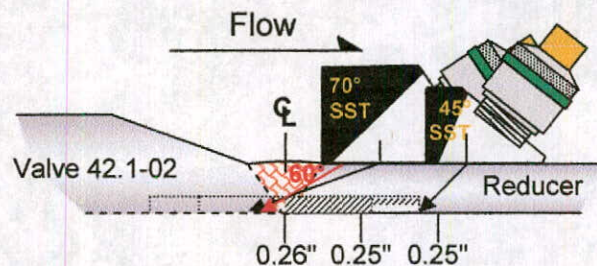
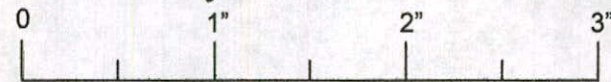
Date: **5/3/13**

Comments:

Summary: 357500

Weld: 42.1-WD-017

Sketch 1: Coverage



Exam Coverage = 50% as per single sided access rules.



Code Coverage



R-A Coverage



Far side of weld examined as per single sided access rules – No coverage credit taken.

- Code / R-A Coverage: 100%
- Weld Crown Width: 0.4"
- Counterbore US: None Detected
- Counterbore DS: None Detected

ISI-VE-15-001



NDE EXAMINATION SUMMARY

EXAMINATION REPORT # ISI-VE-15-001

SI PROJECT # 1400869

Customer: Exelon	Site: NMP	Unit: 1	Outage: N1R23
System: RPV	Component: N1B Nozzle to Shell		Weld ID: 32-WD-044 (N1B)
Examination Procedure:	PDI-UT-12, Rev D (SI-UT-192, Rev 1) PDI-UT-13, Rev G (SI-UT-193, Rev 1)		
Code Edition and Addenda:	ASME Section XI 2004, No Addenda		
Examination Record(s):	NMP1-15-32-WD-044		
Calibration Data Sheet(s):	NMP1-15-CAL-001 NMP1-15-CAL-002 NMP1-15-CAL-003		
Indication Evaluation Sheet(s):	N/A		
Coverage Data Sheet(s):	NMP1-15-32-WD-044 Coverage		
Examination Scan Plan(s):	NMP1-15-32-WD-044 Scan Plan		
Percent Coverage Achieved:	51.55 %		
<p>Summary:</p> <p>No recordable indications noted in the examination volume.</p> <p>See coverage data sheet for coverage estimate details.</p> <p>Weld # 32-WD-044 (N1B) was examined using PDI-UT-12, Rev D (SI-UT-192, Rev 1) / PDI-UT-13, Rev G (SI-UT-193, Rev 1) on 3/26/2015.</p> <p>Examination meets the requirements of ASME BP&V Code, Section XI, Appendix VIII, 2004 Edition, No Addenda and ASME Code Case N-613-1.</p> <p>IR-2015-607 EPRI report for Nine Mile Point Unit 1 Reactor Pressure Vessel Nozzle Examinations was utilized for the examinations.</p>			

Examiner: Wade Holloway	<i>Wade Holloway</i>	Level: III	Date: 3-26-2015
Examiner: N/A		Level:	Date:
SI Review: John J Hayden	<i>John J Hayden</i>	Level: III	Date: 03/29/15
Utility Review: J. J. CILENTO	<i>J. J. CILENTO</i>	Level: III	Date: 3-30-15
ANII Review: C. Rose	<i>C. Rose</i>		Date: 3/30/15



PHASED ARRAY ULTRASONIC EXAMINATION RECORD

Examination Record No.:		NMP1-15-32-WD-044			
Calibration Data Sheet No.:		See Comments Section Below			
Date:	3-26-2015	Time:	Start:	1300	Finish: 1555

Summary Number: 141900		Component ID / Weld No.: 32-WD-044 (N1B)		System: Recirc	
Site: NMP	Unit: 1	Procedure No.: PDI-UT-12, Rev D (SI-UT-192, Rev 1)	Procedure No.: PDI-UT-13, Rev G (SI-UT-193, Rev 1)	Examination Scans Performed	Yes No
Component Configuration: Vessel Nozzle-to-Shell			ISO #: F-45183-C SH: 07	(1) Radial (0° Skew)	<input checked="" type="checkbox"/> <input type="checkbox"/>
Coverage: Full Volume & ½" Each Side of Weld Toe (see below for coverage details)			DWG #: E231-565-4	(2) Radial (180° Skew)	<input checked="" type="checkbox"/> <input type="checkbox"/>
			Limitations: N/A	(3) Circumferential (+90° Skew)	<input checked="" type="checkbox"/> <input type="checkbox"/>
Component Zero Datum: Circ = Zero Stamp Axial = R Nozzle				(4) Circumferential (-90° Skew)	<input checked="" type="checkbox"/> <input type="checkbox"/>
Weld Width: 1.5"	Weld Length: 164"	Nom T: 7.125"	Examination Surface: OD Surface	Notes:	
Temperature: 81°F	Examination Angles: See Page 2 of 2				
Thermometer: 285533	Examination Sensitivity: See Page 2 of 2				
Cal Due: 11-25-2015					

Comments:

No recordable indications were noted in the examination volume.

Examination meets the requirements of ASME B&PV Code, Section XI, Appendix VIII, 2004 edition and ASME Code Case N-613-1.

IR-2015-607 EPRI report for Nine Mile Point Unit 1 Reactor Pressure Vessel Nozzle Examinations was utilized for this examination.

Circumferential Coverage: 30.8 %

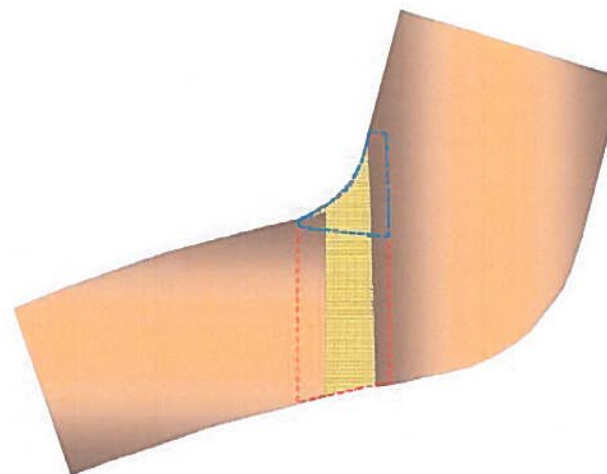
Radial Coverage: 72.3 %

Total Coverage: 51.5 %

The applicable Calibration Data Sheets are listed below:

NMP1-15-CAL-001, NMP1-15-CAL-002, NMP1-15-CAL-003

Examiner: Wade Holloway *Wade Holloway* **Level:** III **Date:** 3/26/15 **Client Review:** J.J. CILENTO *J.J. CILENTO* **Date:** 3-25-15
Examiner: N/A **Level:** N/A **Date:** **ANII Review:** *CP* **Date:** 3/30/15
Reviewer: John Hayden *John Hayden* **Level:** III **Date:** 03/29/15

**PHASED ARRAY ULTRASONIC EXAMINATION COVERAGE****32-WD-044 (N1B) Radial Scan Examination Volume Layout**

Missed Coverage

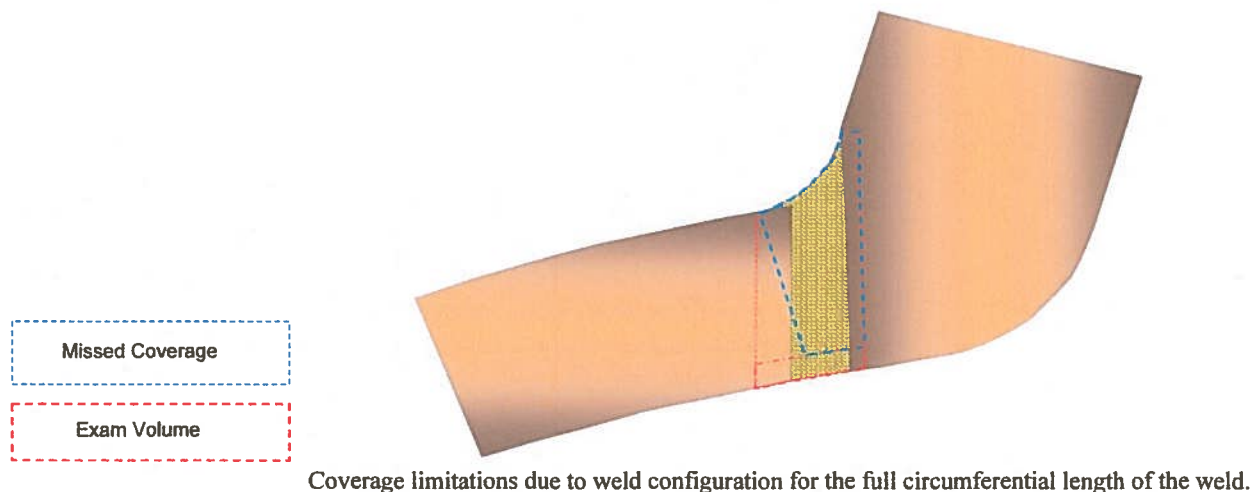
Exam Volume

Coverage limitations due to weld configuration for the full circumferential length of the weld.

Above drawing is not full scale.

Estimated Zone 1 & Zone 2 Radial Coverage =
Exam Volume = Area × Weld Length = 29.8 in ² × 164" = 4887.20 in ³
Volume of Missed Coverage = Area × Length = 8.24 in ² × 164" = 1351.36 in ³
Volume Coverage = (4887.20 in ³ - 1351.36 in ³) / 4887.20 in ³ = 0.723 × 100% = 72.3%
72.3% Total Radial Coverage

PHASED ARRAY ULTRASONIC EXAMINATION COVERAGE
32-WD-044 (N1B) Circumferential Scan Examination Volume Layout

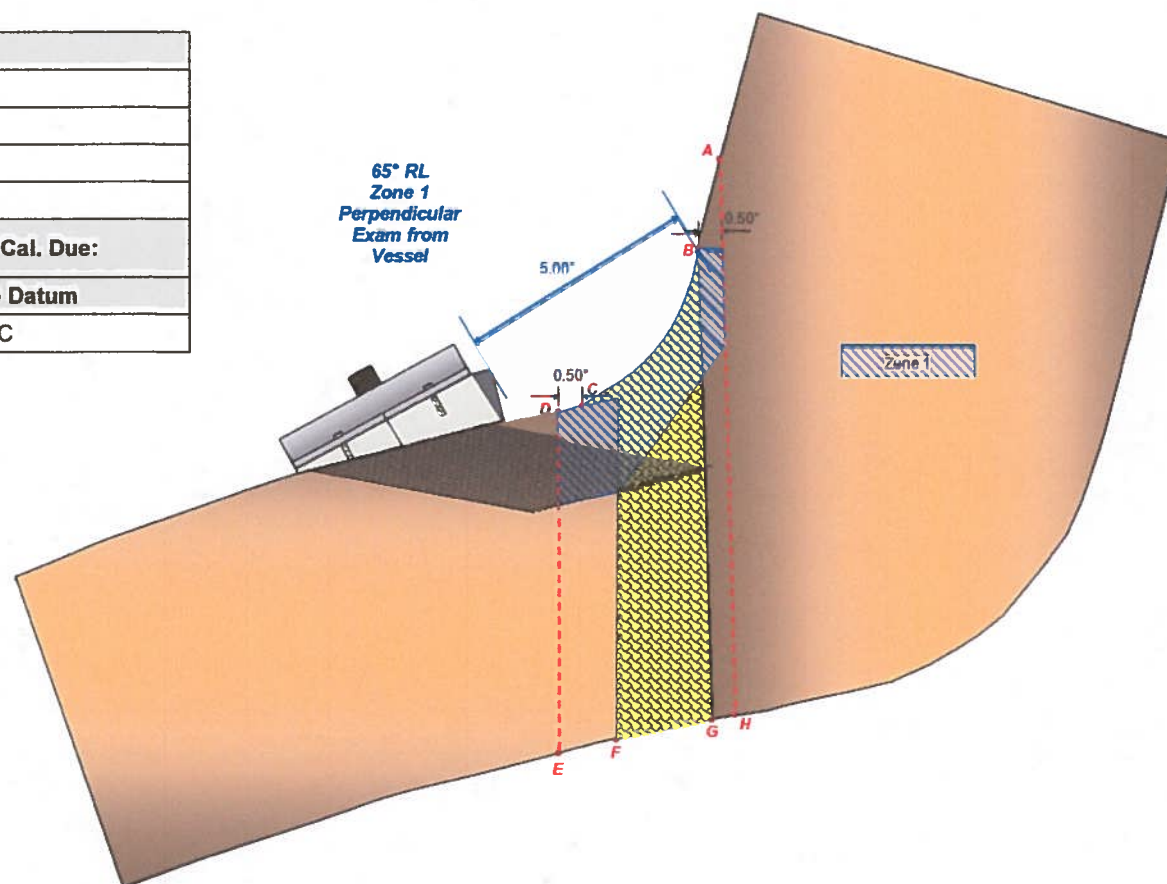


Above drawing is not full scale.

Estimated Inner 15% Circumferential	Estimated Inner Zone 1 & Zone 2 Circumferential
<p>Exam Volume = Area × Weld Length = 3.44 in² × 164.0" = 564.16" in³</p> <p>Volume of Missed Coverage = Area × Length = 0.00 in² × 164.00" = 0.00in³</p> <p>Volume Coverage = 100%</p>	<p>Exam Volume = Area × Weld Length = 26.36 in² × 164.0" = 4323.04 in³</p> <p>Volume of Missed Coverage = Area × Length = 20.6 in² × 164.0" = 3378.4 in³</p> <p>Volume Coverage = (4323.04in³ - 3378.4in³) / 4323.04in³ = 0.218 × 100% = 21.8 %</p>
<p>564.16 in³ + 4323.04in³ = 4887.2 in³ (Total Exam Volume)</p> <p>3378.4 in³ (Missed Coverage)</p> <p>(4887.2 in³ - 3378.4in³) / 4887.2 in³</p> <p>= 0.308 × 100 =</p> <p>30.8% Total Circumferential Coverage</p>	

**Nine Mile Point Unit 1
RPV Nozzle N1B-to-Vessel Shell
NMP1-15-132-WD-044**

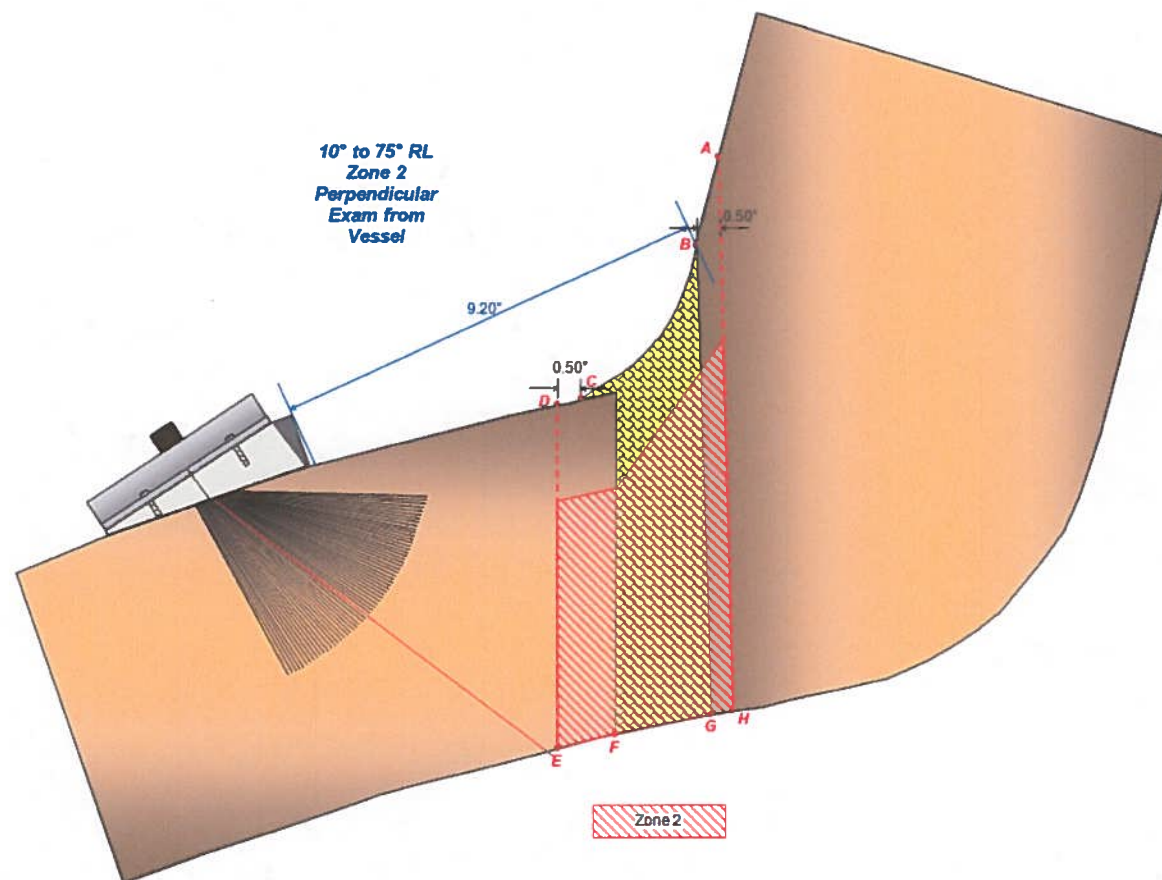
Examination Data		
Date:	3-26-2015	
Examiners:	Wade Holloway	
Start Time:	1300	
Finish Time:	1555	
Examination Temperature	Thermometer S/N	Cal. Due:
Axial Zero Datum		Circ Zero Datum
Rnozzle		TDC



N1B Examination Scans & Sensitivity

Wedge Model	Examination Angle	Probe Skew	Scan Surface	Scan Direction	Wedge Radius	Min R	Max R	Min MP	Max MP	Max Misorientation	Exam Volume %	Exam Gain (dB)
360-141-072	65° RL	Manual	Vessel	Perpendicular to Weld	Flat	N/A	N/A	N/A	N/A	N/A	Zone 1	32

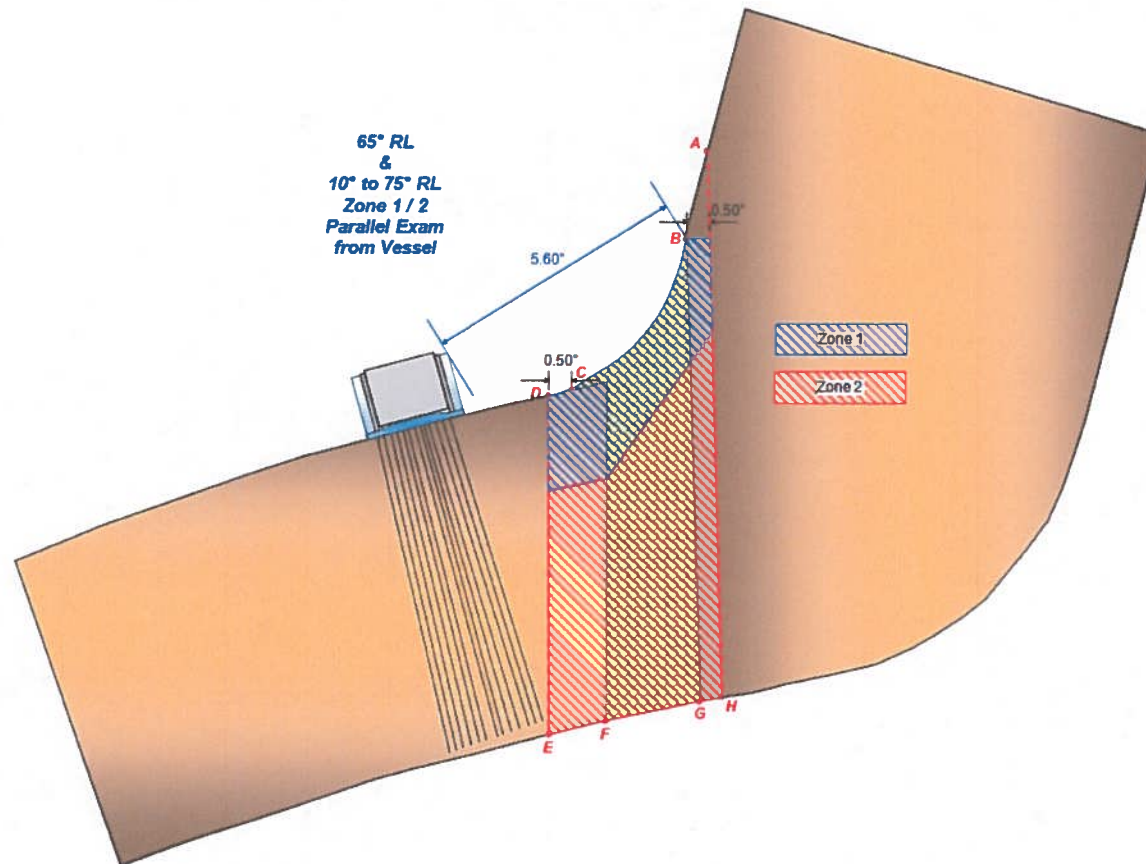
**Nine Mile Point Unit 1
RPV Nozzle N1B-to-Vessel Shell
NMP1-15-132-WD-044**



N1B Examination Scans & Sensitivity

Wedge Model	Examination Angle	Probe Skew	Scan Surface	Scan Direction	Wedge Radius	Min R	Max R	Min MP	Max MP	Max Misorientation	Exam Volume %		Exam Gain (dB)
360-141-072	10° to 75° RL	Manual	Vessel	Perpendicular to Weld	Flat	N/A	N/A	N/A	N/A	N/A	Outer 85%	Zone 2	34

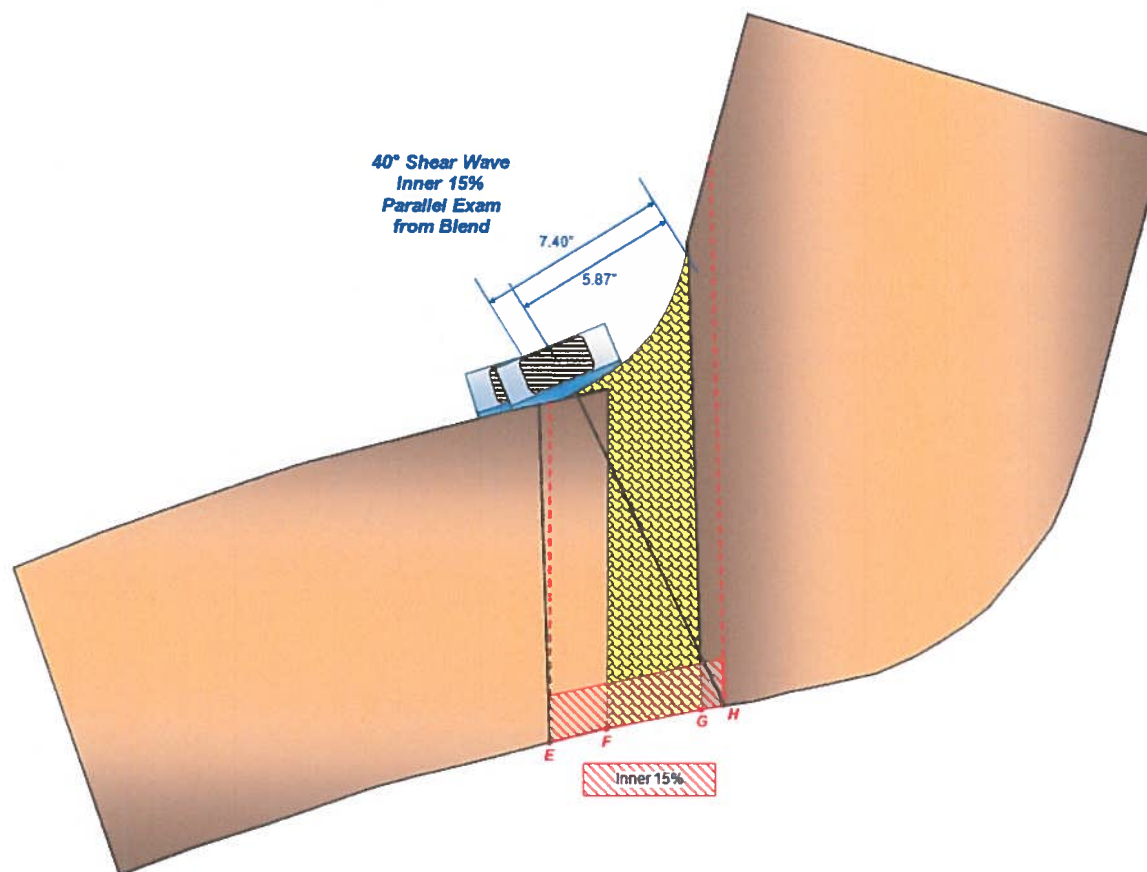
**Nine Mile Point Unit 1
RPV Nozzle N1B-to-Vessel Shell
NMP1-15-132-WD-044**



N1B Examination Scans & Sensitivity

Wedge Model	Examination Angle	Probe Skew	Scan Surface	Scan Direction	Wedge Radius	Min R	Max R	Min MP	Max MP	Max Misorientation	Exam Volume %	Exam Gain (dB)
360-141-072	65° RL	Manual	Vessel	Parallel to Weld	Flat	N/A	N/A	N/A	N/A	N/A	Zone 1	36
360-141-072	10° to 75° RL	Manual	Vessel	Parallel to Weld	Flat	N/A	N/A	N/A	N/A	N/A	Zone 2	36

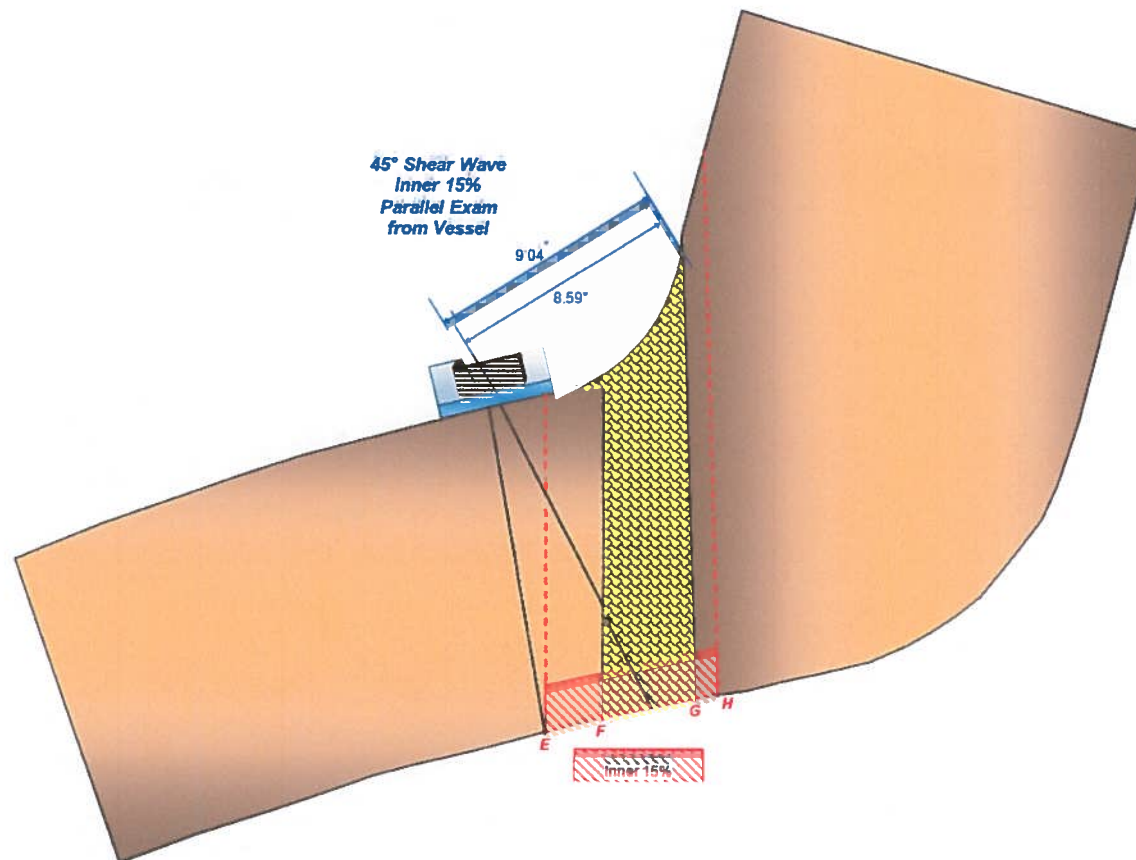
**Nine Mile Point Unit 1
RPV Nozzle N1B-to-Vessel Shell
NMP1-15-132-WD-044**



N1B Examination Scans & Sensitivity

Wedge Model	Examination Angle	Probe Skew	Scan Surface	Scan Direction	Wedge Radius	Min R	Max R	Min MP	Max MP	Max Misorientation	Exam Volume %	Exam Gain (dB)
360-143-037	40° Shear	±90°	Blend	CW – Circ	4"	8.59	9.04	8.02	11.42	8°	Inner 15%	44

**Nine Mile Point Unit 1
RPV Nozzle N1B-to-Vessel Shell
NMP1-15-132-WD-044**



N1B Examination Scans & Sensitivity

Wedge Model	Examination Angle	Probe Skew	Scan Surface	Scan Direction	Wedge Radius	Min R	Max R	Min MP	Max MP	Max Misorientation	Exam Volume %	Exam Gain (dB)
360-143-088	45° Shear	±77°	Vessel	CW – Circ	Flat	5.87	7.40	8.15	10.64	3°	Inner 15%	44

ISI-VE-15-003



NDE EXAMINATION SUMMARY

EXAMINATION REPORT # ISI-VE-15-003

SI PROJECT # 1400869

Customer: Exelon	Site: NMP	Unit: 1	Outage: NIR23
System: RPV	Component: N1D Nozzle to Shell		Weld ID: 32-WD-124 (N1D)
Examination Procedure:	PDI-UT-12, Rev D (SI-UT-192, Rev 1) PDI-UT-13, Rev G (SI-UT-193, Rev 1)		
Code Edition and Addenda:	ASME Section XI 2004, No Addenda		
Examination Record(s):	NMP1-15-32-WD-124		
Calibration Data Sheet(s):	NMP1-15-CAL-008 NMP1-15-CAL-009 NMP1-15-CAL-010		
Indication Evaluation Sheet(s):	N/A		
Coverage Data Sheet(s):	NMP1-15-32-WD-124 Coverage		
Examination Scan Plan(s):	NMP1-15-32-WD-124 Scan Plan		
Percent Coverage Achieved:	51.55 %		
Summary: No indications noted in the examination volume. See coverage data sheet for coverage estimate details. Weld # 32-WD-124 (N1D) was examined using PDI-UT-12, Rev D (SI-UT-192, Rev 1) / PDI-UT-13, Rev G (SI-UT-193, Rev 1) on 3/25/2015. Examination meets the requirements of ASME BP&V Code, Section XI, Appendix VIII, 2004 Edition, No Addenda and ASME Code Case N-613-1. IR-2015-607 EPRI report for Nine Mile Point Unit 1 Reactor Pressure Vessel Nozzle Examinations was utilized for the examinations.			

Examiner: Wade Holloway	<i>Wade Holloway</i>	Level: III	Date: 3-25-2015
Examiner: Chad McDonald	<i>Chad McDonald</i>	Level: II	Date: 3-25-2015
SI Review: John J Hayden	<i>John J Hayden</i>	Level: III	Date: 03/29/15
Utility Review: J. J. CILENTO	<i>JJ Cilento</i>	Level: III	Date: 3-30-15
ANII Review:	<i>Cilento</i>		Date: 3/30/15



PHASED ARRAY ULTRASONIC EXAMINATION RECORD

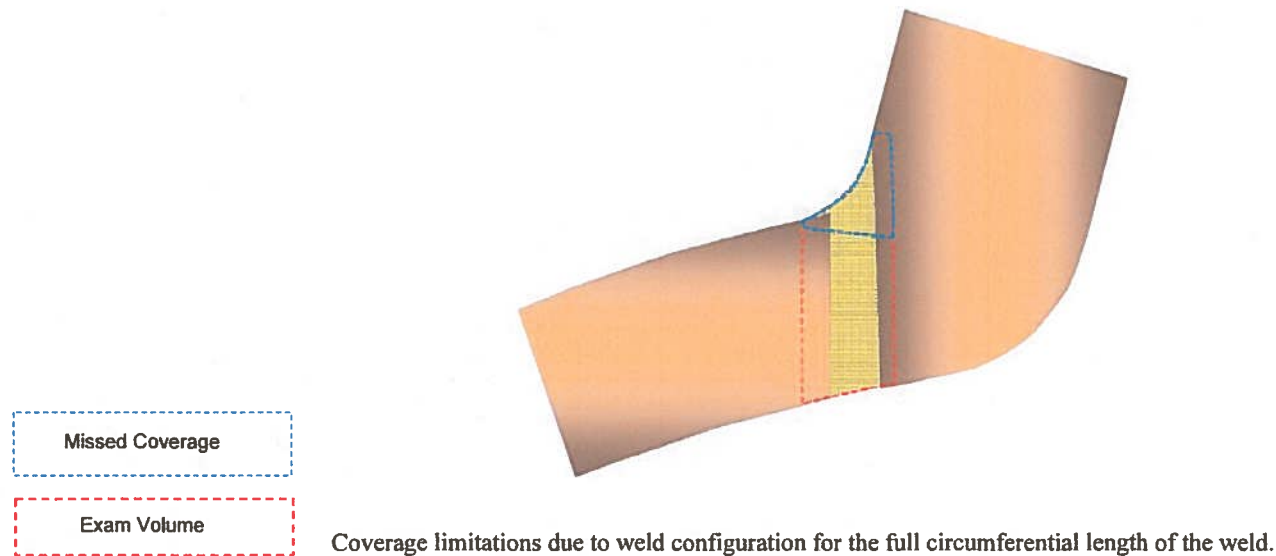
Examination Record No.:		NMP1-15-32-WD-124			
Calibration Data Sheet No.:		See Comments Section Below			
Date:	3-25-2015	Time:	Start:	1400	Finish: 1645

Summary Number: 173200		Component ID / Weld No.: 32-WD-124 (N1D)		System: Recirc	
Site: NMP	Unit: 1	Procedure No.: PDI-UT-12, Rev D (SI-UT-192, Rev 1)	Procedure No.: PDI-UT-13, Rev G (SI-UT-193, Rev 1)	Examination Scans Performed	Yes No
Component Configuration: Vessel Nozzle-to-Shell		ISO #: F-45183-C SH: 07	(1) Radial (0° Skew) <input checked="" type="checkbox"/> <input type="checkbox"/>		
Coverage: Full Volume & ½" Each Side of Weld Toe (see below for coverage details)		DWG #: E231-565-4	(2) Radial (180° Skew) <input checked="" type="checkbox"/> <input type="checkbox"/>		
		Limitations: N/A	(3) Circumferential (+90° Skew) <input checked="" type="checkbox"/> <input type="checkbox"/>		
Component Zero Datum: Circ = Zero Stamp Axial = R Nozzle			(4) Circumferential (-90° Skew) <input checked="" type="checkbox"/> <input type="checkbox"/>		
Weld Width: 1.5"	Weld Length: 164"	Nom T: 7.125"	Examination Surface: OD Surface	Notes:	
Temperature: 70°F	Examination Angles: See Page 2 of 2				
Thermometer: 285533	Examination Sensitivity: See Page 2 of 2				
Cal Due: 11-25-2015					
Comments: No recordable indications were noted in the examination volume. Examination meets the requirements of ASME B&PV Code, Section XI, Appendix VIII, 2004 edition and ASME Code Case N-613-1. IR-2015-607 EPRI report for Nine Mile Point Unit 1 Reactor Pressure Vessel Nozzle Examinations was utilized for this examination. Circumferential Coverage: 30.8% Radial Coverage: 72.3 % Total Coverage: 51.5 % The applicable Calibration Data Sheets are listed below: NMP1-15-CAL-008, NMP1-15-CAL-009, NMP1-15-CAL-010					

Examiner: Chad McDonald <i>Chad McDonald</i>	Level: II	Date: 3-25-15	Client Review: J. J. CILENTO <i>J. J. CILENTO</i>	Date: 3-30-15
Examiner: Wade Holloway <i>Wade Holloway</i>	Level: III	Date: 3-25-15	ANII Review: <i>CH</i>	Date: 3/30/15
Reviewer: John Hayden <i>John Hayden</i>	Level: III	Date: 03/29/15		



PHASED ARRAY ULTRASONIC EXAMINATION COVERAGE
32-WD-124 (N1D) Radial Scan Examination Volume Layout

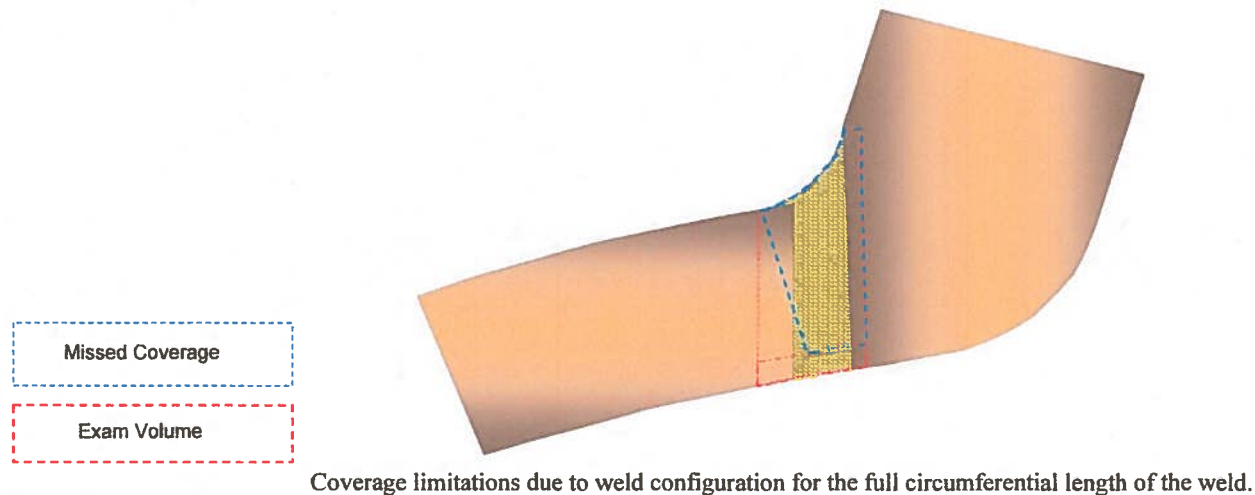


Coverage limitations due to weld configuration for the full circumferential length of the weld.

Above drawing is not full scale.

Estimated Zone 1 & Zone 2 Radial Coverage =
Exam Volume = Area × Weld Length = 29.8 in ² × 164" = 4887.20 in ³
Volume of Missed Coverage = Area × Length = 8.24 in ² × 164" = 1351.36 in ³
Volume Coverage = (4887.20 in ³ - 1351.36 in ³) / 4887.20 in ³ = 0.723 × 100% = 72.3%
72.3% Total Radial Coverage

PHASED ARRAY ULTRASONIC EXAMINATION COVERAGE
32-WD-124 (N1D) Circumferential Scan Examination Volume Layout

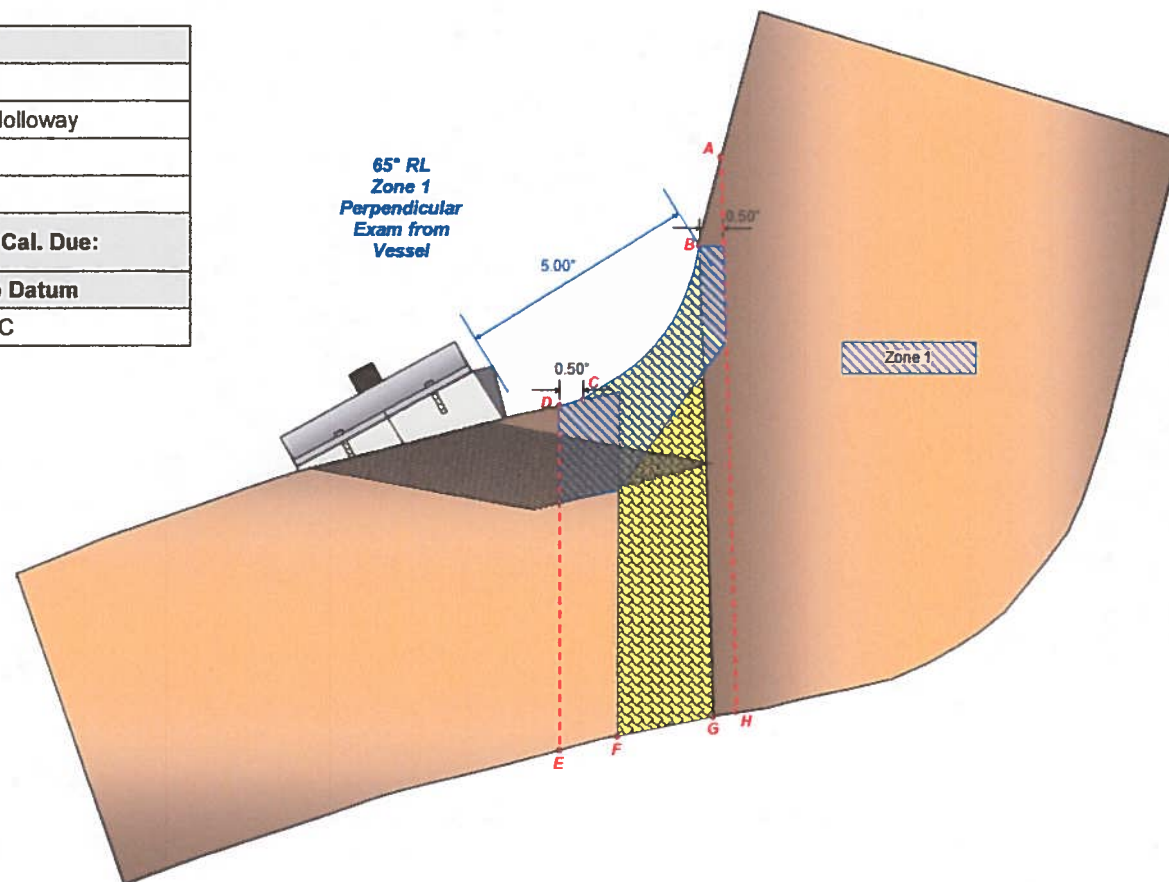


Above drawing is not full scale.

Estimated Inner 15% Circumferential	Estimated Inner Zone 1 & Zone 2 Circumferential
<p>Exam Volume = Area × Weld Length = 3.44 in² × 164.0" = 564.16" in³</p> <p>Volume of Missed Coverage = Area × Length = 0.00 in² × 164.00" = 0.00in³</p> <p>Volume Coverage = 100%</p>	<p>Exam Volume = Area × Weld Length = 26.36 in² × 164.0" = 4323.04 in³</p> <p>Volume of Missed Coverage = Area × Length = 20.6 in² × 164.0" = 3378.4 in³</p> <p>Volume Coverage = (4323.04in³ - 3378.4in³) / 4323.04in³ = 0.218 × 100% = 21.8 %</p>
<p>564.16 in³ + 4323.04in³ = 4887.2 in³ (Total Exam Volume)</p> <p>3378.4 in³ (Missed Coverage)</p> <p>(4887.2 in³ - 3378.4in³) / 4887.2 in³ = 0.308 × 100 = 30.8% Total Circumferential Coverage</p>	

**Nine Mile Point Unit 1
RPV Nozzle N1D-to-Vessel Shell
32-WD-124**

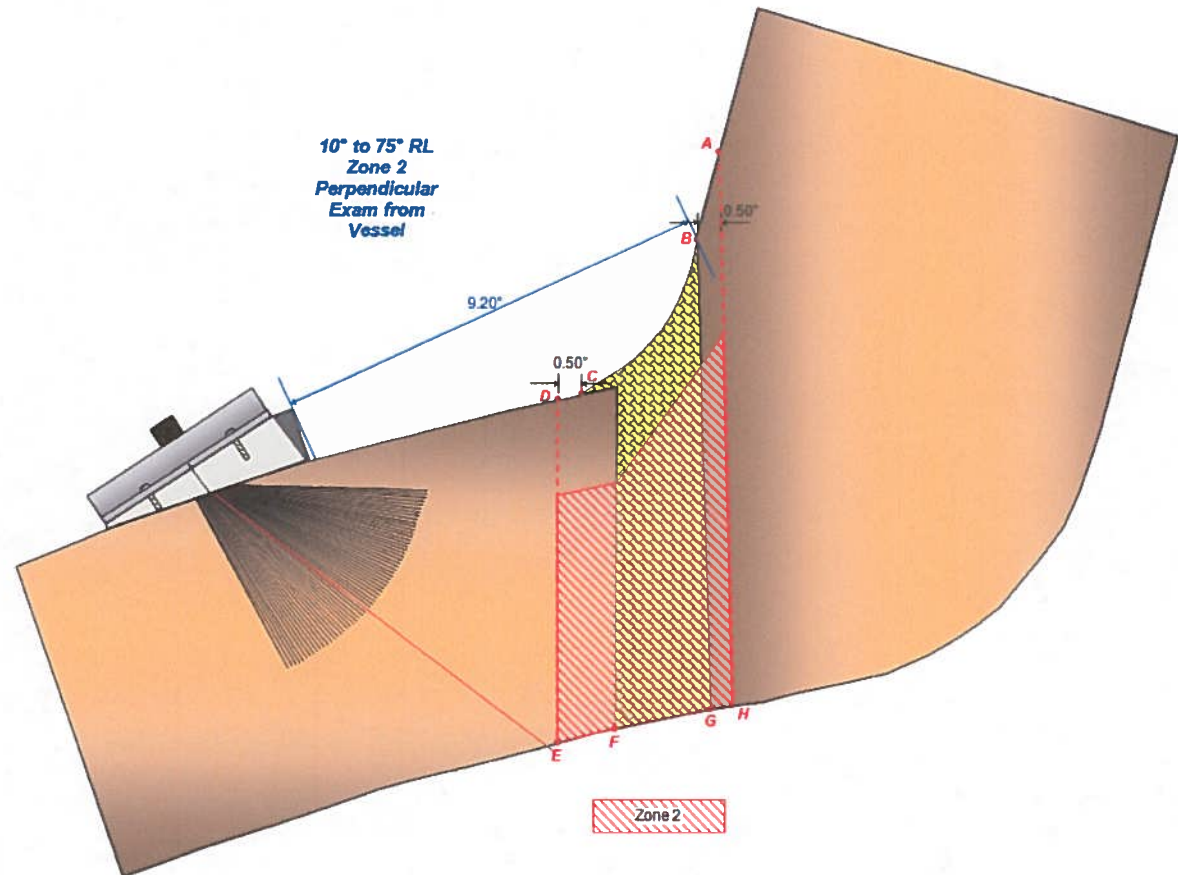
Examination Data		
Date:	3-25-2015	
Examiners:	Chad McDonald / Wade Holloway	
Start Time:	1400	
Finish Time:	1645	
Examination Temperature	Thermometer S/N	Cal. Due:
Axial Zero Datum		Circ Zero Datum
Rnozzle		TDC



N1B Examination Scans & Sensitivity

Wedge Model	Examination Angle	Probe Skew	Scan Surface	Scan Direction	Wedge Radius	Min R	Max R	Min MP	Max MP	Max Misorientation	Exam Volume %	Exam Gain (dB)
360-141-072	65° RL	Manual	Vessel	Perpendicular to Weld	Flat	N/A	N/A	N/A	N/A	N/A	Zone 1	32

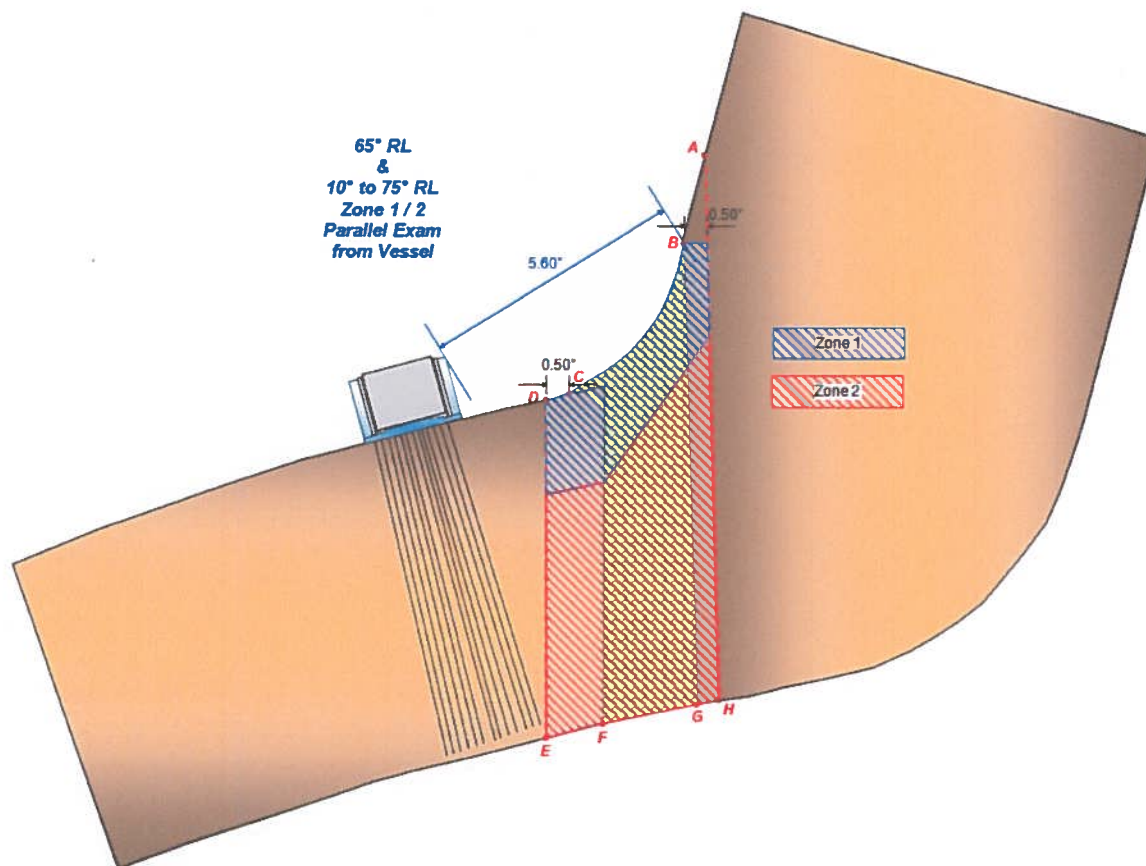
**Nine Mile Point Unit 1
RPV Nozzle N1D-to-Vessel Shell
32-WD-124**



N1B Examination Scans & Sensitivity

Wedge Model	Examination Angle	Probe Skew	Scan Surface	Scan Direction	Wedge Radius	Min R	Max R	Min MP	Max MP	Max Misorientation	Exam Volume %		Exam Gain (dB)
360-141-072	10° to 75° RL	Manual	Vessel	Perpendicular to Weld	Flat	N/A	N/A	N/A	N/A	N/A	Outer 85%	Zone 2	34

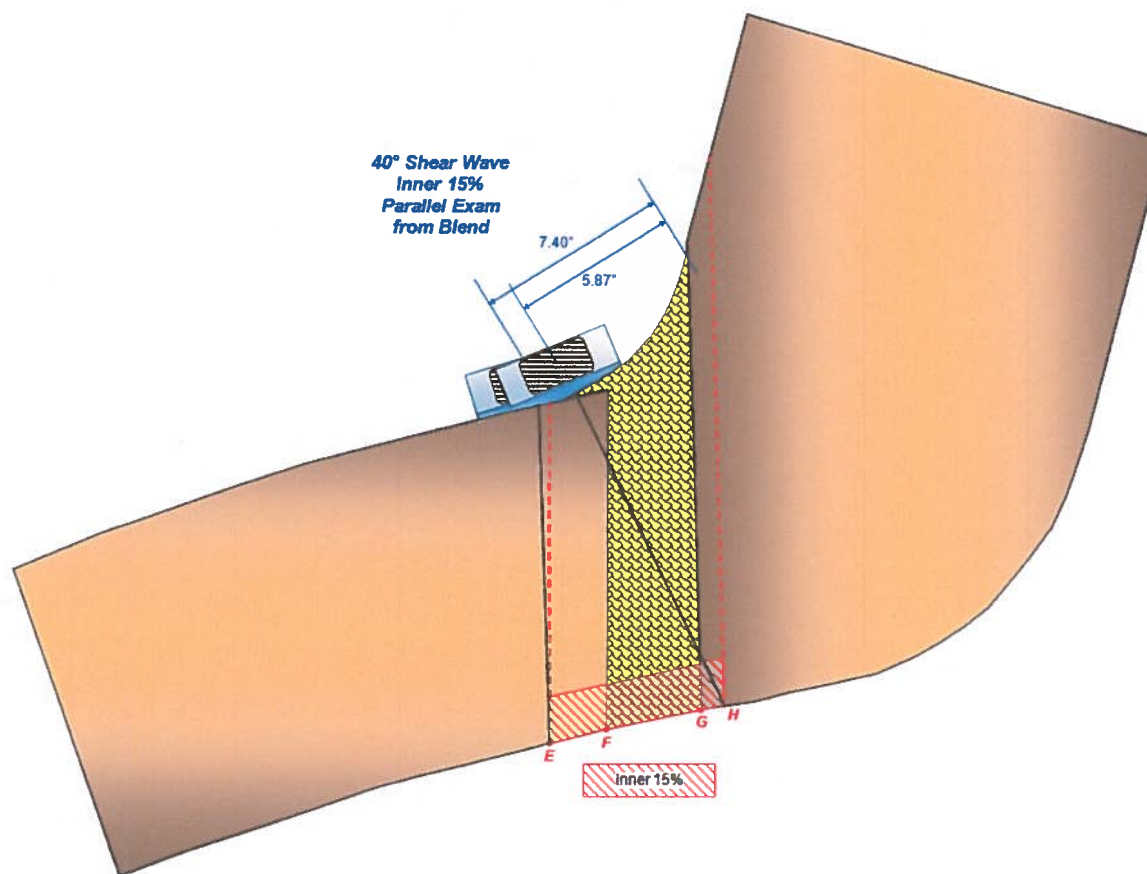
**Nine Mile Point Unit 1
RPV Nozzle N1D-to-Vessel Shell
32-WD-124**



N1B Examination Scans & Sensitivity

Wedge Model	Examination Angle	Probe Skew	Scan Surface	Scan Direction	Wedge Radius	Min R	Max R	Min MP	Max MP	Max Misorientation	Exam Volume %	Exam Gain (dB)
360-141-072	65° RL	Manual	Vessel	Parallel to Weld	Flat	N/A	N/A	N/A	N/A	N/A	Zone 1	36
360-141-072	10° to 75° RL	Manual	Vessel	Parallel to Weld	Flat	N/A	N/A	N/A	N/A	N/A	Zone 2	36

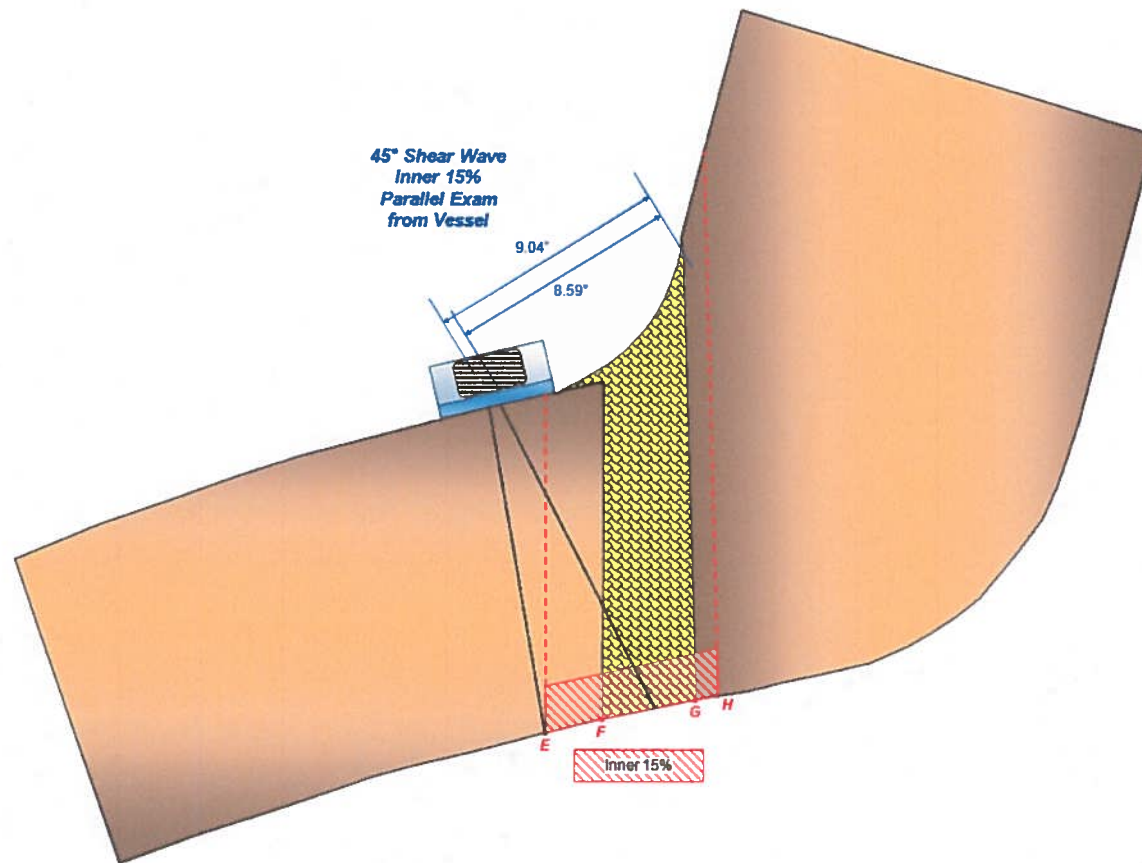
**Nine Mile Point Unit 1
RPV Nozzle N1D-to-Vessel Shell
32-WD-124**



N1B Examination Scans & Sensitivity

Wedge Model	Examination Angle	Probe Skew	Scan Surface	Scan Direction	Wedge Radius	Min R	Max R	Min MP	Max MP	Max Misorientation	Exam Volume %	Exam Gain (dB)
360-143-037	40° Shear	±90°	Blend	CW – Circ	4"	8.59	9.04	8.02	11.42	8°	Inner 15%	44

**Nine Mile Point Unit 1
RPV Nozzle N1D-to-Vessel Shell
32-WD-124**



N1B Examination Scans & Sensitivity

Wedge Model	Examination Angle	Probe Skew	Scan Surface	Scan Direction	Wedge Radius	Min R	Max R	Min MP	Max MP	Max Misorientation	Exam Volume %	Exam Gain (dB)
360-143-088	45° Shear	±77°	Vessel	CW – Circ	Flat	5.87	7.40	8.15	10.64	3°	Inner 15%	44

ISI-VE-15-012



NDE EXAMINATION SUMMARY

EXAMINATION REPORT # ISI-VE-15-012

SI PROJECT # 1400869

Customer: Exelon	Site: NMP	Unit: 1	Outage: N1R23
System: RPV	Component: N9 Nozzle to Shell		Weld ID: 44.1-WD-018
Examination Procedure:	PDI-UT-12, Rev D (SI-UT-192, Rev 1) PDI-UT-13, Rev G (SI-UT-193, Rev 1)		
Code Edition and Addenda:	ASME Section XI 2004, No Addenda		
Examination Record(s):	NMP1-15-44.1-WD-018		
Calibration Data Sheet(s):	NMP1-15-CAL-014 NMP1-15-CAL-015 NMP1-15-CAL-016		
Indication Evaluation Sheet(s):	N/A		
Coverage Data Sheet(s):	NMP1-15-44.1-WD-018 Coverage		
Examination Scan Plan(s):	NMP1-15-44.1-WD-018 Scan Plan		
Percent Coverage Achieved:	64.2 %		
Summary: No recordable indications noted in the examination volume. See coverage data sheet for coverage estimate details. Weld # 44.1-WD-018 (N9) was examined using PDI-UT-12, Rev D (SI-UT-192, Rev 1) / PDI-UT-13, Rev G (SI-UT-193, Rev 1) on 3/25/2015. Examination meets the requirements of ASME BP&V Code, Section XI, Appendix VIII, 2004 Edition, No Addenda and ASME Code Case N-613-1. IR-2015-607 EPRI report for Nine Mile Point Unit 1 Reactor Pressure Vessel Nozzle Examinations was utilized for the examinations.			

Examiner: Chad McDonald	<i>Chad McDonald</i>	Level: II	Date: 3-25-2015
Examiner: Wade Holloway	<i>Wade Holloway</i>	Level: III	Date: 3-25-2015
SI Review: John J Hayden	<i>John J Hayden</i>	Level: III	Date: 03/29/15
Utility Review: J. J. CILENTO	<i>J. J. CILENTO</i>	Level: III	Date: 3-30-15
ANII Review: C. Rex	<i>C. Rex</i>		Date: 3/30/15



PHASED ARRAY ULTRASONIC EXAMINATION RECORD

Examination Record No.:	NMP1-15-44.1-WD-018
Calibration Data Sheet No.:	See Comments Section Below
Date:	3-25-2015
Time:	Start: 1145 Finish: 1345

Summary Number: 379200		Component ID / Weld No.: 44.1-WD-018 (N9)		System: CRD Hydraulic System Return		
Site: NMP	Unit: 1	Procedure No.: PDI-UT-12, Rev D (SI-UT-192, Rev 1)	Procedure No.: PDI-UT-13, Rev G (SI-UT-193, Rev 1)	Examination Scans Performed	Yes	No
Component Configuration: Vessel Nozzle-to-Shell			ISO #: F-45183-C SH:018	(1) Radial (0° Skew)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Coverage: Full Volume & ½" Each Side of Weld Toe (see below for coverage details)			DWG #: E231-567-7	(2) Radial (180° Skew)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			Limitations:	(3) Circumferential (+90° Skew)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Component Zero Datum: Circ = Zero Stamp Axial = R Nozzle				(4) Circumferential (-90° Skew)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Weld Width: 2.63"	Weld Length: 35.0"	Nom T: 7.125"	Examination Surface: OD Surface	Notes:		
Temperature: 81°F	Examination Angles: See Page 2 of 2					
Thermometer: 285533	Examination Sensitivity: See Page 2 of 2					
Cal Due: 11-25-2015						

Comments:

No recordable indications were noted in the examination volume.

Examination meets the requirements of ASME B&PV Code, Section XI, Appendix VIII, 2004 edition and ASME Code Case N-613-1.

IR-2015-607 EPRI report for Nine Mile Point Unit 1 Reactor Pressure Vessel Nozzle Examinations was utilized for this examination.

Circumferential Coverage: 37.3 %

Radial Coverage: 91.1 %

Total Coverage: 64.2 %

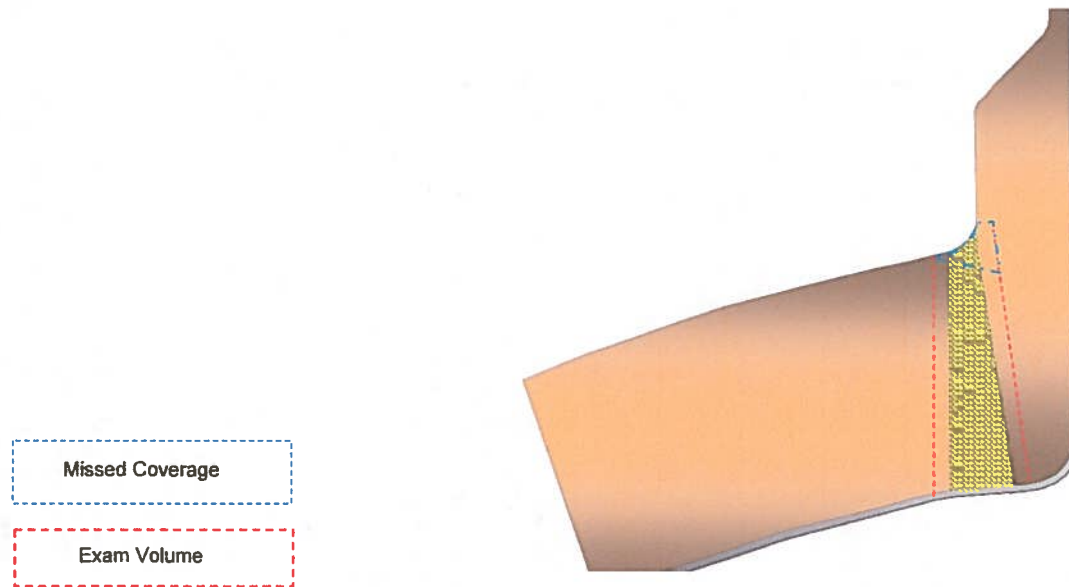
The applicable Calibration Data Sheets are listed below:

NMP1-15-CAL-0014, NMP1-15-CAL-0015, NMP1-15-CAL-0016

Examiner: Chad McDonald <i>Chad McDonald</i>	Level: II	Date: 3-25-15	Client Review: J.J. CILento <i>J.J. CILento</i>	Date: 3-30-15
Examiner: Wade Holloway <i>Wade Holloway</i>	Level: III	Date: 3-25-15	ANII Review: <i>C. Rose</i>	Date: 3/30/15
Reviewer: John Hayden <i>John J. Hayden</i>	Level: III	Date: 03/29/15		

PHASED ARRAY ULTRASONIC EXAMINATION COVERAGE

44.1-WD-018 (N9) Radial Scan Examination Volume Layout

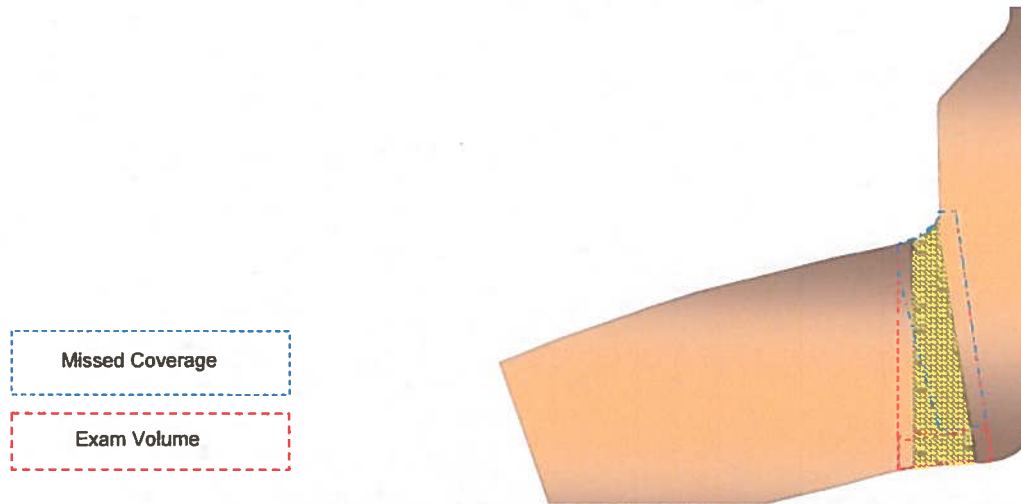


Coverage limitations due to weld configuration for the full circumferential length of the weld.

Above drawing is not full scale.

Estimated Zone 1 & Zone 2 Radial Coverage =	
Exam Volume = Area × Weld Length = 18.0 in ² × 34.93" = 628.74 in ³	
Volume of Missed Coverage = Area × Length = 1.60 in ² × 34.93" = 55.88 in ³	
Volume Coverage = (628.74 in ³ - 55.89 in ³) / 628.74 in ³ = 0.911 × 100% = 91.1%	
91.1% Total Radial Coverage	

PHASED ARRAY ULTRASONIC EXAMINATION COVERAGE
 44.1-WD-018 (N9) Circumferential Scan Examination Volume Layout



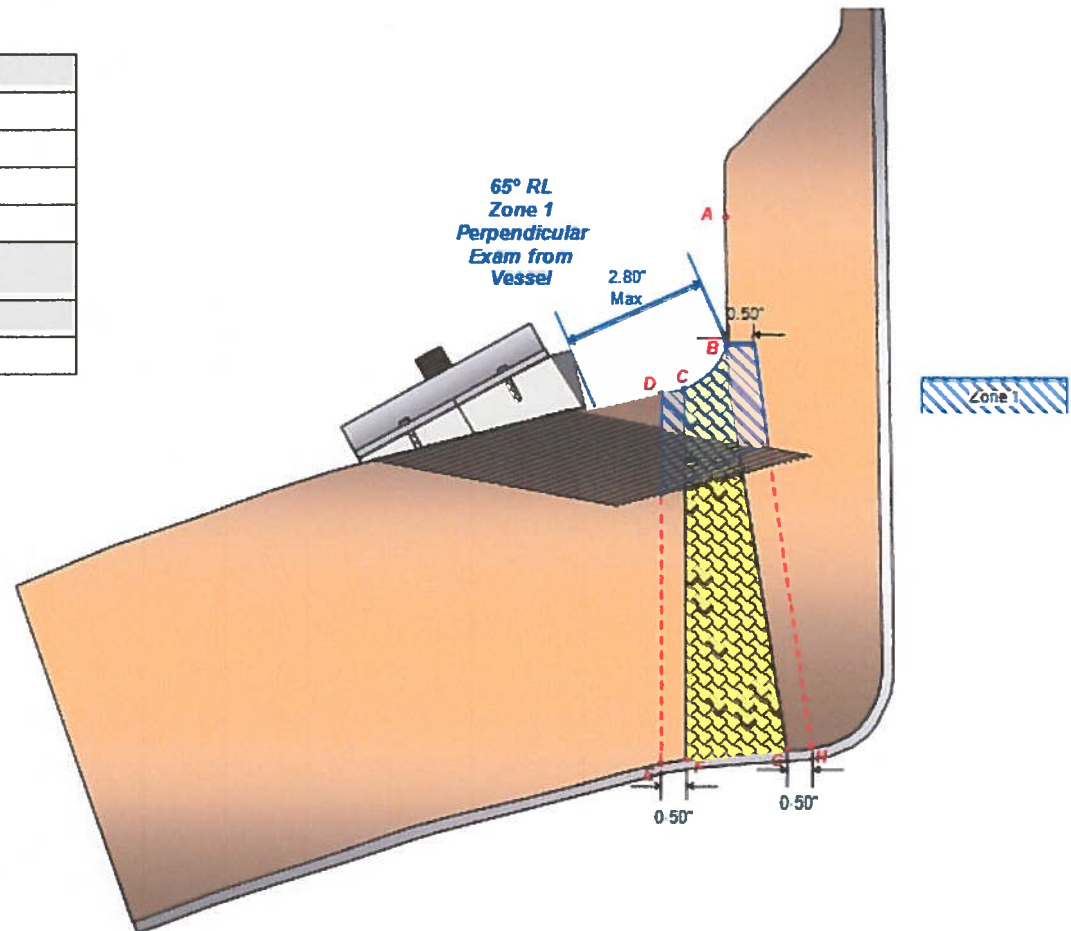
Coverage limitations due to weld configuration for the full circumferential length of the weld.

Above drawing is not full scale.

Estimated Inner 15% Circumferential	Estimated Inner Zone 1 & Zone 2 Circumferential
<p>Exam Volume = Area × Weld Length $= 3.08 \text{ in}^2 \times 34.93'' = 107.58'' \text{ in}^3$</p> <p>Volume of Missed Coverage = Area × Length $= 0.00 \text{ in}^2 \times 164.00'' = 0.00 \text{ in}^3$</p> <p>Volume Coverage = 100%</p>	<p>Exam Volume = Area × Weld Length $= 14.92 \text{ in}^2 \times 34.93'' = 521.15 \text{ in}^3$</p> <p>Volume of Missed Coverage = Area × Length $= 11.28 \text{ in}^2 \times 34.93'' = 394.01 \text{ in}^3$</p> <p>Volume Coverage = $(521.15 \text{ in}^3 - 394.01 \text{ in}^3) / 521.15 \text{ in}^3$ $= 0.244 \times 100\%$ $= 24.4 \%$</p>
<p>$107.58 \text{ in}^3 + 521.15 \text{ in}^3 = 628.73 \text{ in}^3$ (Total Exam Volume)</p> <p>394.01 in^3 (Missed Coverage)</p> <p>$(628.73 \text{ in}^3 - 394.01 \text{ in}^3) / 628.73 \text{ in}^3$</p> <p>$= 0.373 \times 100 =$</p> <p>37.3% Total Circumferential Coverage</p>	

**Nine Mile Point Unit 1
RPV Nozzle N9-to-Vessel Shell
NMP1-15- 44.1-WD-018**

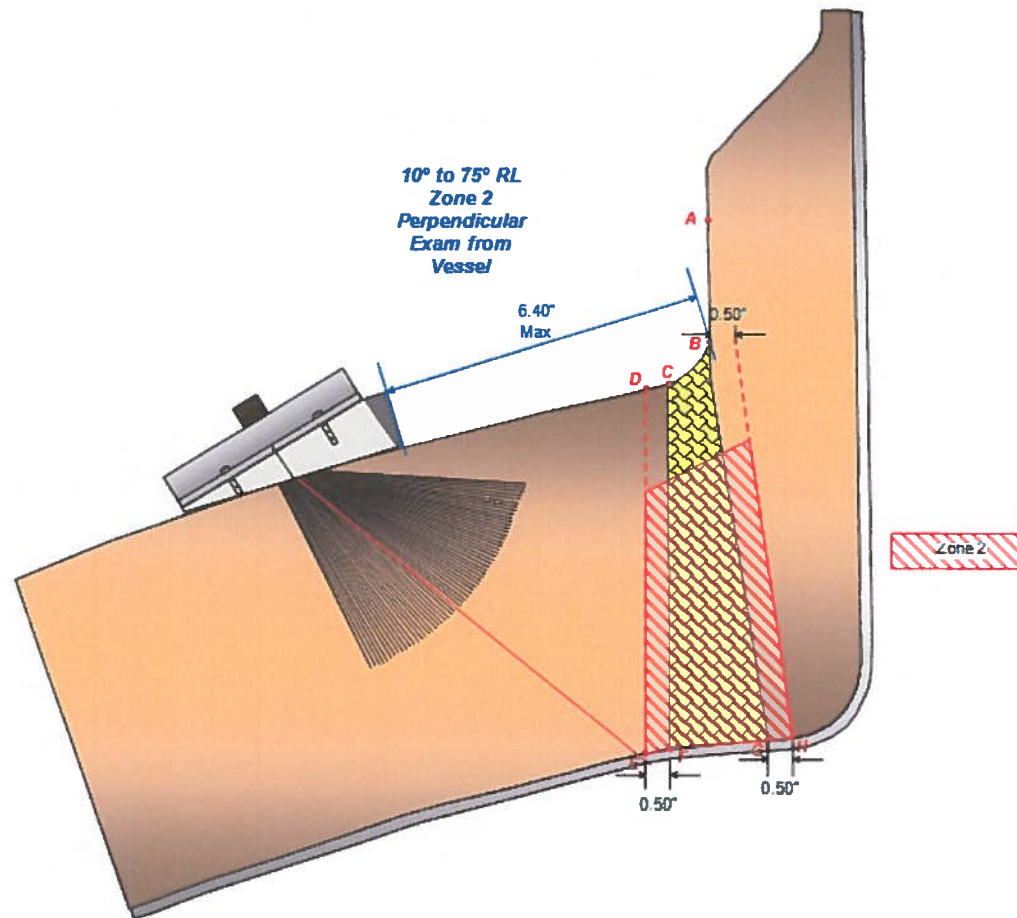
Examination Data		
Date:	3-25-2015	
Examiners:	Chad McDonald	
Start Time:	1145	
Finish Time:	1345	
Examination Temperature	Thermometer S/N	Cal. Due:
Axial Zero Datum		Circ Zero Datum
R Nozzle		TDC



N9 Examination Scans & Sensitivity

Wedge Model	Examination Angle	Probe Skew	Scan Surface	Scan Direction	Exam Volume	Exam Gain (dB)
360-141-072	65° RL	Manual	Vessel	Perpendicular to Weld	Zone 1	32

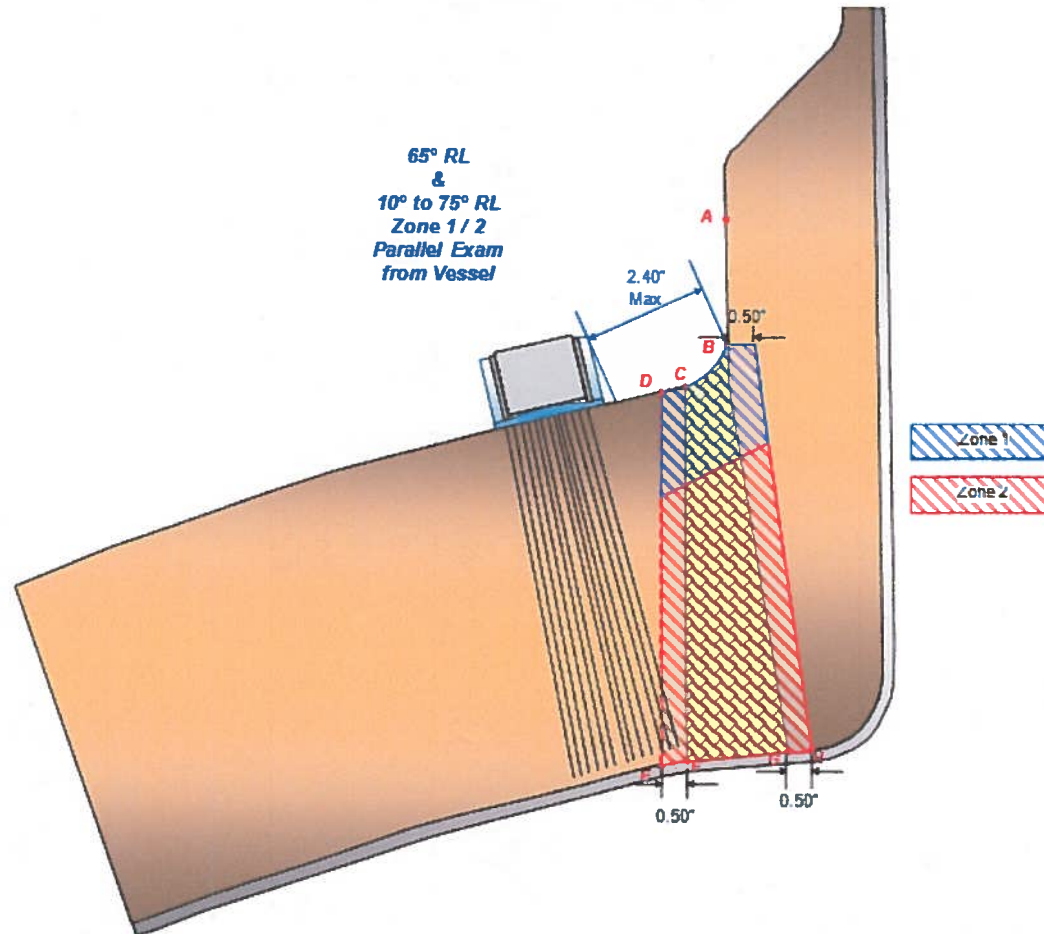
**Nine Mile Point Unit 1
RPV Nozzle N9-to-Vessel Shell
NMP1-15- 44.1-WD-018**



N9 Examination Scans & Sensitivity

Wedge Model	Examination Angle	Probe Skew	Scan Surface	Scan Direction	Exam Volume %	Exam Gain (dB)
360-141-072	10° to 75° RL	Manual	Vessel	Perpendicular to Weld	Zone 2	36

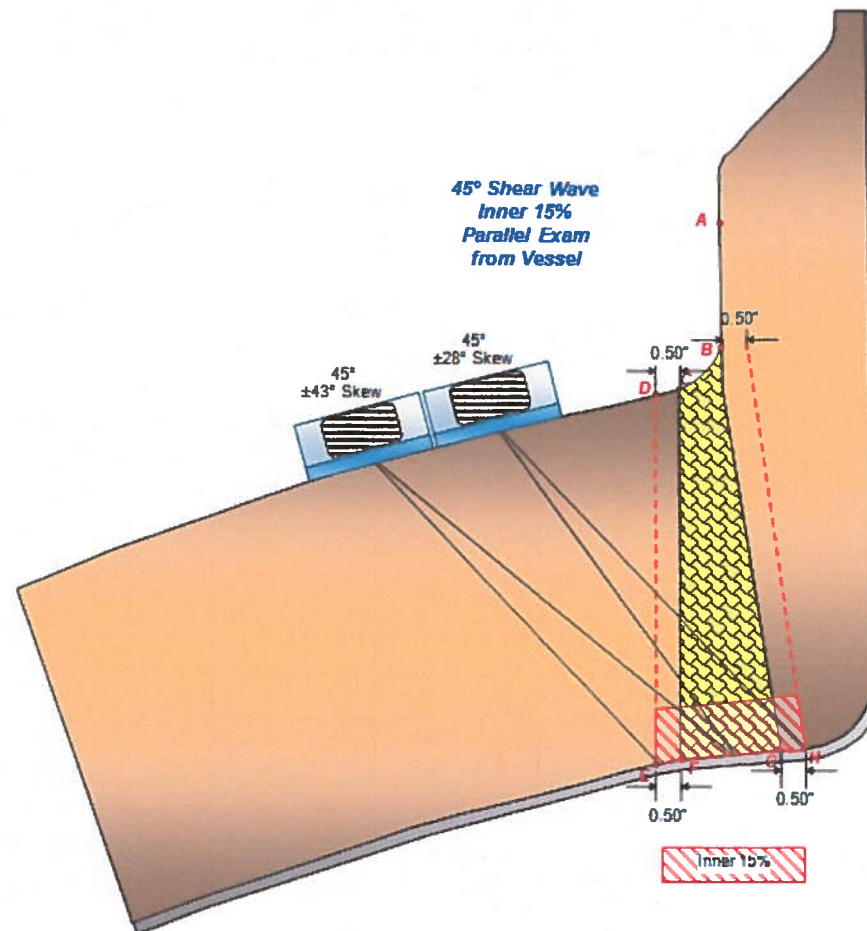
**Nine Mile Point Unit 1
RPV Nozzle N9-to-Vessel Shell
NMP1-15- 44.1-WD-018**



N9 Examination Scans & Sensitivity

Wedge Model	Examination Angle	Probe Skew	Scan Surface	Scan Direction	Exam Volume	Exam Gain (dB)
360-141-072	65° RL	Manual	Vessel	Parallel to Weld CW and CCW	Zone 1	32
360-141-072	10° to 75° RL	Manual	Vessel	Parallel to Weld CW and CCW	Zone 2	36

**Nine Mile Point Unit 1
RPV Nozzle N9-to-Vessel Shell
NMP1-15- 44.1-WD-018**



N9 Examination Scans & Sensitivity

Wedge Model	Examination Angle	Probe Skew	Scan Surface	Scan Direction	Wedge Radius	Min R	Max R	Min MP	Max MP	Max Misorientation	Exam Volume %	Exam Gain (dB)
360-143-088	45° Shear	±28°	Vessel	CW / CCW – Circ	Flat	2.50	5.71	8.56	11.07	14°	Inner 15%	45
360-143-088	45° Shear	±43°	Vessel	CW / CCW – Circ	Flat	2.52	5.81	8.16	10.31	8°	Inner 15%	45

Site/Unit:	NMP / 1	Procedure:	NDEP-PT-3.00	Outage No.:	N1R23
Summary No.:	374600	Procedure Rev.:	01900	Report No.:	ISI-PT-15-002
Workscope:	ISI	Work Order No.:	C92393641	Page:	1 of 1

Code:	ASME Section XI 2004 Edition	Cat./Item:	B-O/B14.10	Location:	DW 237
Drawing No.:	F45183C-28A	Description:	CRD Housing-to-Flange weld		
System ID:	44.0				
Component ID:	RV-CRD-R1	Mat./Thickness:	SS		
Limitations:	Proximity of Surrounding CRD's				

Light Meter Mfg.:	EXTECH	Serial No.:	QA-NDE-MG-009	Illumination:	250 fc
Temp. Tool Mfg.:	Fluke	Serial No.:	QA-NDE-T-100	Surface Temp.:	75 °F
Comparator Block Temp.:	Side A: N/A °F	Side B: N/A °F	Resolution:	N/A	
Lo/Wo Location:	N/A	Surface Condition:	As-Welded		






	Cleaner	Penetrant Visible <input checked="" type="checkbox"/> Fluorescent <input type="checkbox"/>	Remover	Developer
Brand	MAGNAFLUX	MAGNAFLUX	MAGNAFLUX	MAGNAFLUX
Type	SKC-S	SKL-SP2	SKC-S	SKD-S2
Batch No.	12J01K	14C08K	12J01K	12L15K
Time	Evap. 5	Dwell 10	Evap. 5	Develop 10
Time Exam Started:		1215	Time Exam Completed: 0105	

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

84.1% Coverage obtained. Obstructions due to close proximity of surrounding CRD's. Reference report GE 1-3.00-05-003 for typical configuration.

Results: **Accept**  **Reject**  **Eval**  **NRI** 

Percent Of Coverage Obtained > 90%: **84.1%**  **Reviewed Previous Data:** **Yes** 

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Robideau, Travis			3/23/2015		LIII	3-27-15
Examiner	Level II	Signature	Date	Site Review	Signature	Date
Teer, Ryan C			3/23/2015		LII	3-27-15
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A						3/24/15



Liquid Penetrant Examination

Site/Unit:	NMP / 1	Procedure:	NDEP-PT-3.00	Outage No.:	N1R23
Summary No.:	374700	Procedure Rev.:	01900	Report No.:	ISI-PT-15-004
Workscope:	ISI	Work Order No.:	C92393641	Page:	1 of 1

Code:	ASME Section XI 2004 Edition	Cat./Item:	B-O/B14.10	Location:	DW 237
Drawing No.:	F45183C-28A	Description:	CRD Housing-to-Flange weld		
System ID:	44.0				
Component ID:	RV-CRD-R5	Mat./Thickness:	SS		
Limitations:	Proximity of Surrounding CRD's				




Light Meter Mfg.:	EXTECH	Serial No.:	QA-NDE-MG-009	Illumination:	250 fc
Temp. Tool Mfg.:	Fluke	Serial No.:	QA-NDE-T-100	Surface Temp.:	75 °F
Comparator Block Temp.:	Side A: N/A °F	Side B: N/A °F	Resolution:	N/A	
Lo/Wo Location:	N/A	Surface Condition:	As-Welded		






	Cleaner	Penetrant Visible <input checked="" type="checkbox"/> Fluorescent <input type="checkbox"/>	Remover	Developer
Brand	MAGNAFLUX	MAGNAFLUX	MAGNAFLUX	MAGNAFLUX
Type	SKC-S	SKL-SP2	SKC-S	SKD-S2
Batch No.	12J01K	14C08K	12J01K	12L15K
Time	Evap. 5	Dwell 10	Evap. 5	Develop 10
Time Exam Started:		1243	Time Exam Completed: 0129	

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

Comments:

84.1% Coverage obtained. Obstructions due to close proximity of surrounding CRD's. Reference report GE 1-3.00-05-004.

Results:	Accept 	Reject 	Eval 	NRI
Percent Of Coverage Obtained > 90%:	84.1%			Reviewed Previous Data: Yes

Examiner	Level	II	Signature	Date	Reviewer	Signature	Date
Robideau, Travis				3/23/2015			3-27-15
Examiner	Level	II	Signature	Date	Site Review	Signature	Date
Teer, Ryan C				3/23/2015			3-27-15
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A							3/27/15






Site/Unit:	NMP / 1	Procedure:	NDEP-PT-3.00	Outage No.:	N1R23
Summary No.:	374900	Procedure Rev.:	01900	Report No.:	ISI-PT-15-006
Workscope:	ISI	Work Order No.:	C92393641	Page:	1 of 1

Light Meter Mfg.:	EXTECH	Serial No.:	QA-NDE-MG-009	Illumination:	250 fc
Temp. Tool Mfg.:	Fluke	Serial No.:	QA-NDE-T-100	Surface Temp.:	75 °F
Comparator Block Temp.:	Side A: N/A °F	Side B: N/A °F	Resolution:	N/A	
Lo/Wo Location:	N/A	Surface Condition:	As-Welded		

	Cleaner	Penetrant Visible <input checked="" type="checkbox"/> Fluorescent <input type="checkbox"/>	Remover	Developer
Brand	MAGNAFLUX	MAGNAFLUX	MAGNAFLUX	MAGNAFLUX
Type	SKC-S	SKL-SP2	SKC-S	SKD-S2
Batch No.	12J01K	14C08K	12J01K	12L15K
Time	Evap. 5	Dwell 10	Evap. 5	Develop 10
Time Exam Started:		0105	Time Exam Completed: 0149	

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

Results:	Accept	Reject	Eval	NRI
Percent Of Coverage Obtained > 90%:	84.1%			Reviewed Previous Data. Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Robideau, Travis	II		3/23/2015		LIII	3-27-15
Examiner	Level	Signature	Date	Site Review	Signature	Date
Teer, Ryan C	II		3/23/2015		LII	3-27-15
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A					3/27/15



Liquid Penetrant Examination

Site/Unit: NMP / 1 Procedure: NDEP-PT-3.00 Outage No.: N1R23

Summary No.: 375100 Procedure Rev.: 01900 Report No.: ISI-PT-15-003

Workscope: ISI Work Order No.: C92393641 Page: 1 of 1

Code: ASME Section XI 2004 Edition Cat./Item: B-O/B14.10 Location: RW 237

Drawing No.: F45183C-28A Description: CRD Housing-to-Flange weld

System ID: 44.0

Component ID: RV-CRD-T7 Mat./Thickness: SS

Limitations: Proximity of Surrounding CRD's

Light Meter Mfg.: EXTECH Serial No.: QA-NDE-MG-009 Illumination: 250 fc

Temp. Tool Mfg.: Fluke Serial No.: QA-NDE-T-100 Surface Temp.: 75 °F

Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: N/A

Lo/Wo Location: N/A Surface Condition: As-Welded

	Cleaner	Penetrant Visible <input checked="" type="checkbox"/> Fluorescent <input type="checkbox"/>	Remover	Developer
Brand	MAGNAFLUX	MAGNAFLUX	MAGNAFLUX	MAGNAFLUX
Type	SKC-S	SKL-SP2	SKC-S	SKD-S2
Batch No.	12J01K	14C08K	12J01K	12L15K
Time	Evap. 5	Dwell 10	Evap. 5	Develop 10
Time Exam Started: 1230		Time Exam Completed: 0115		

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

Comments:

84.1% coverage obtained. Obstructions due to close proximity of surrounding CRD's.
Reference report GE 1.300-05-003.

Results: Accept ☒ Reject ☐ Eval ☐

NRI

Percent Of Coverage Obtained > 90%: 84.1%

Reviewed Previous Data: Yes

Examiner Level II	Signature	Date	Reviewer	Signature	Date
Robideau, Travis	<i>[Signature]</i>	3/23/2015	Ted Steves	<i>[Signature]</i>	3-27-15
Examiner Level II	Signature	Date	Site Review	Signature	Date
Teer, Ryan C	<i>[Signature]</i>	3/23/2015	C.M. Robins	<i>[Signature]</i>	3-27-15
Other Level N/A	Signature	Date	ANII Review	Signature	Date
N/A			<i>[Signature]</i>		3/27/15



Liquid Penetrant Examination

Site/Unit: NMP / 1 Procedure: NDEP-PT-3.00 Outage No.: N1R23
Summary No.: 375300 Procedure Rev.: 01900 Report No.: ISI-PT-15-005
Workscope: ISI Work Order No.: C92393641 Page: 1 of 1
Code: ASME Section XI 2004 Edition Cat./Item: B-O/B14.10 Location: DW 237
Drawing No.: F45183C-28A Description: CRD Housing-to-Flange weld
System ID: 44.0
Component ID: RV-CRD-U6 Mat./Thickness: SS
Limitations: Proximity of Surrounding CRD's

Light Meter Mfg.: EXTECH Serial No.: QA-NDE-MG-009 Illumination: 250 fc
Temp. Tool Mfg.: Fluke Serial No.: QA-NDE-T-100 Surface Temp.: 75 °F
Comparator Block Temp.: Side A: N/A °F Side B: N/A °F Resolution: N/A
Lo/Wo Location: N/A Surface Condition: As-Welded

	Cleaner	Penetrant Visible <input checked="" type="checkbox"/> Fluorescent <input type="checkbox"/>	Remover	Developer
Brand	MAGNAFLUX	MAGNAFLUX	MAGNAFLUX	MAGNAFLUX
Type	SKC-S	SKL-SP2	SKC-S	SKD-S2
Batch No.	12J01K	14C08K	12J01K	12L15K
Time	Evap. 5	Dwell 10	Evap. 5	Develop 10
Time Exam Started: 0123		Time Exam Completed: 0220		

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

Comments:

84.1% coverage obtained. Obstructions due to close proximity of surrounding CRD's.
Reference report GE 1-3.00-05-006.

Results: Accept ☒ Reject ☐ Eval ☐

NRI

Percent Of Coverage Obtained > 90%: 84.1%Reviewed Previous Data: Yes

Examiner Level II	Signature	Date	Reviewer	Signature	Date
Robideau, Travis		3/23/2015	Ed STELLER	L-III	3-27-15
Examiner Level II	Signature	Date	Site Review	Signature	Date
Teer, Ryan C		3/23/2015	M. Robinson	LII	3-27-15
Other Level N/A	Signature	Date	ANII Review	Signature	Date
N/A					3/27/15

**UT Calibration/Examination**Site/Unit: **NMP / 1**
Summary No.: **305200**
Workscope: **ISI**Procedure: **NDEP-UT-6.24**
Procedure Rev.: **01200**
Work Order No.: **C92393641**Outage No.: **N1R23**
Report No.: **ISI-UT-15-006**
Page: **1** of **3**Code: **ASME Section XI 2004 Edition** Cat./Item: **R-A/R1.11** Location: **DW 259**
Drawing No.: **F45183C-11A** Description: **Valve 39-03-to-Pipe**
System ID: **39.0**
Component ID: **39-WD-470** Size/Length: **0.80" / 36.5"** Thickness/Diameter: **0.84" / 10"**
Limitations: **Single sided exam** Start Time: **1445** Finish Time: **1520**

Instrument Settings		Search Unit	
Serial No.:	0208D0	Serial No.:	SK0064
Manufacturer:	GEIT	Manufacturer:	KBA
Model:	USN-60SW	Linearity:	L-15-003
Delay:	8.0672	Range:	2.5"
M'tl Cal/Vel:	0.1225	Pulser Type:	Square
Damping:	500 Ohms	Reject:	0%
PRF:	Auto High	SU Freq.:	1.5 MHz
Frequency:	2.0 MHz	Rectify:	Fullwave
Voltage:	450	Pulse Width:	330

Ax. Gain (dB): **12.4** Circ. Gain (dB): **N/A**
10 Screen Div. = **0.250** in. of **Sound Path**

Calibration Block	
Cal. Block No.	12-1178
Thickness	0.5-2.0
Dia.:	Flat
Cal. Blk. Temp.	75°
Temp. Tool:	QA-NDE-T-095
Comp. Temp.	74°
Temp. Tool:	QA-NDE-T-095

Recordable Indication(s): Yes ☐ No ☒ (If Yes, Ref. Attached Ultrasonic Indication Report.)Results: Accept ☒ Reject ☐ Info ☐Percent Of Coverage Obtained > 90%: **No** Reviewed Previous Data: **Yes**

Search Unit Cable	
Type:	RG-174
Length:	6'
No. Conn.:	0

Scan Coverage	
Upstream <input type="checkbox"/>	Downstream <input checked="" type="checkbox"/>
CW <input checked="" type="checkbox"/>	CCW <input checked="" type="checkbox"/>
Exam Surface:	O.D.
Surface Condition:	Flush

Cal. Checks	Time	Date
Initial Cal.	1350	3/28/2015
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Final Cal.	1625	3/28/2015

Couplant	
Cal. Batch:	14A001
Type:	ULTRAGEL II
Mfg.:	SONOTECH
Exam Batch:	14A001
Type:	ULTRAGEL II
Mfg.:	SONOTECH

Reference Block	
Serial No.:	789619
Type:	Rompas - 304 SS

Axial Orientated Search Unit			
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
1.0" ID Notch	80%	5.7	1.426"
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Circumferential Orientated Search Unit			
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Reference/Simulator Block				
Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
24.4	FSDH	80%	4.4	1.086"
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

Comments: **See coverage plot for coverage %. Refer to previous report GE-1-6.24-05-0137.**

Examiner	Level	II	Signature	Date	Reviewer	Signature	Date
Hancock, David R				3/28/2015			
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					CILENTO, J. J.		3-29-15
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A							3/30/15



Supplemental Report

Report No.: ISI-UT-15-006Page: 3 of 3Summary No.: 305200Sketch or Photo: O:\Outage Data\Nine Mile\N1RFO23\ISI\305200.jpg

System: <u>39.0</u>				
Position	0°	90°	180°	270°
1	<u>N/A</u>			
2	<u>N/A</u>			
3	<u>.597</u>			
4	<u>.620</u>			
5	<u>.852</u>			

Component ID Number: 39-WD-470

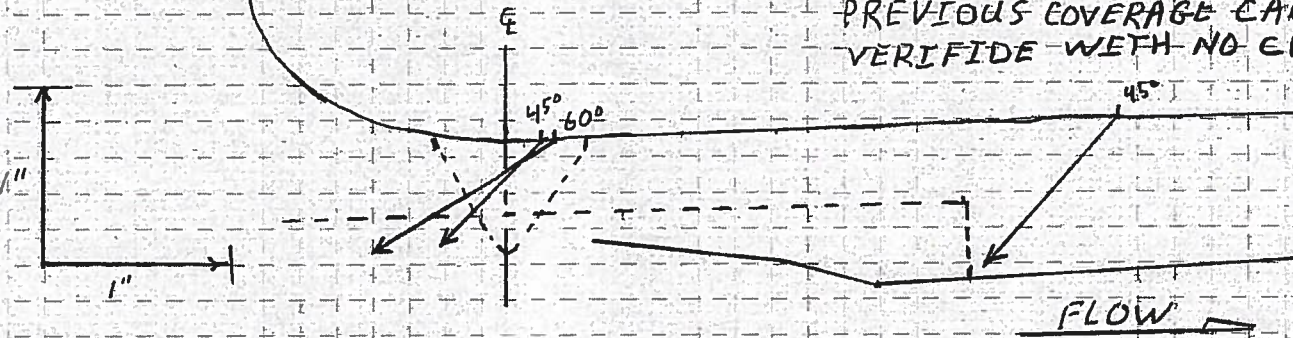
Crown Height: FLUSH

Crown Width: .8"

Nominal Diameter: 10"

Weld Length: 36.5

NOTE: COUNTERBORE VERIFIED USING 0°
1"X1" THERMOCOUPLE @ 0° AND 180°
PREVIOUS COVERAGE CALC. OF 48%
VERIFIED WITH NO CHANGES.



IS L-III 3-29-15
L-III 3-29-15
CK 3/30/15

**UT Calibration/Examination**Site/Unit: NMP / 1
Summary No.: 305500
Workscope: ISIProcedure: NDEP-UT-6.24
Procedure Rev.: 01200
Work Order No.: C92393641Outage No.: N1R23
Report No.: ISI-UT-15-007
Page: 1 of 3Code: ASME Section XI 2004 Edition Cat./Item: R-A/R1.11 Location: DW 259
Drawing No.: F45183C-11A Description: Pipe-to-Valve 39-01
System ID: 39.0
Component ID: 39-WD-471 Size/Length: 0.80" / 36.5" Thickness/Diameter: 0.84" / 10"
Limitations: Single sided exam Start Time: 1445 Finish Time: 1520

Instrument Settings		Search Unit	
Serial No.:	<u>0208D0</u>	Serial No.:	<u>SK0064</u>
Manufacturer:	<u>GEIT</u>	Manufacturer:	<u>KBA</u>
Model:	<u>USN-60SW</u>	Size:	<u>0.5"</u>
Linearity:	<u>L-15-003</u>	Model:	<u>Comp-G</u>
Delay:	<u>8.0672</u>	Freq.:	<u>1.5 MHz</u>
Range:	<u>2.5"</u>	Center Freq.:	<u>N/A</u>
M'tl Cal/Vel:	<u>0.1225</u>	Exam Angle:	<u>45°</u>
Pulser Type:	<u>Square</u>	Squint Angle:	<u>N/A</u>
Damping:	<u>500 Ohms</u>	Measured Angle:	<u>45°</u>
Reject:	<u>0%</u>	Mode:	<u>Shear</u>
PRF:	<u>Auto High</u>	Exit Point	<u>0.35"</u>
SU Freq.:	<u>1.5 MHz</u>	# of Elements:	<u>1</u>
Rectify:	<u>Fullwave</u>	Config.:	<u>Single</u>
Frequency:	<u>2.0 MHz</u>	Focus:	<u>N/A</u>
Rectify:	<u>Fullwave</u>	Shape:	<u>Round</u>
Voltage:	<u>450</u>	Contour:	<u>N/A</u>
Pulse Width:	<u>330</u>	Wedge Style:	<u>Non-Integral</u>

Ax. Gain (dB): 12.4 Circ. Gain (dB): N/A
10 Screen Div. = 0.250 in. of Sound Path

Calibration Block	
Cal. Block No.	<u>12-1178</u>
Thickness	<u>0.5-2.0</u>
Dia.:	<u>Flat</u>
Cal. Blk. Temp.	<u>75°</u>
Temp. Tool:	<u>QA-NDE-T-095</u>
Comp. Temp.	<u>74°</u>
Temp. Tool:	<u>QA-NDE-T-095</u>

Recordable Indication(s): Yes ☐ No ☒ (If Yes, Ref. Attached Ultrasonic Indication Report.)Results: Accept ☒ Reject ☐ Info ☐Percent Of Coverage Obtained > 90%: No Reviewed Previous Data: Yes

Cal. Checks	Time	Date
Initial Cal.	<u>1350</u>	<u>3/28/2015</u>
Inter. Cal.	<u>N/A</u>	
Inter. Cal.	<u>N/A</u>	
Inter. Cal.	<u>N/A</u>	
Final Cal.	<u>1625</u>	<u>3/28/2015</u>

Couplant	
Cal. Batch:	<u>14A001</u>
Type:	<u>ULTRAGEL II</u>
Mfg.:	<u>SONOTECH</u>
Exam Batch:	<u>14A001</u>
Type:	<u>ULTRAGEL II</u>
Mfg.:	<u>SONOTECH</u>

Reference Block	
Serial No.:	<u>789619</u>
Type:	<u>Rompas - 304 SS</u>

Axial Orientated Search Unit				
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path	
1.0" ID Notch	80%	5.7	1.426"	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
Circumferential Orientated Search Unit				
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
Reference/Simulator Block				
Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
24.4	FSDH	80%	4.4	1.086"
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

Comments: See coverage plot for coverage %. Refer to previous report GE-1-6.24-05-0131.

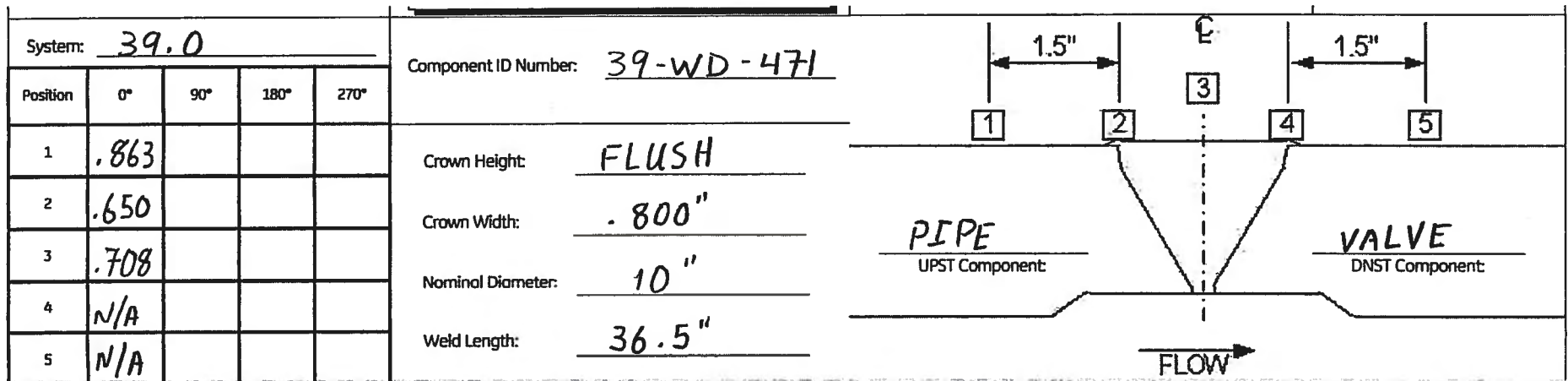
Examiner	Level	II	Signature	Date	Reviewer	Signature	Date
Hancock, David R				3/28/2015		L-III	3-29-15
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					CILENTO, J. J.	L-III	3-29-15
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A							3/30/15



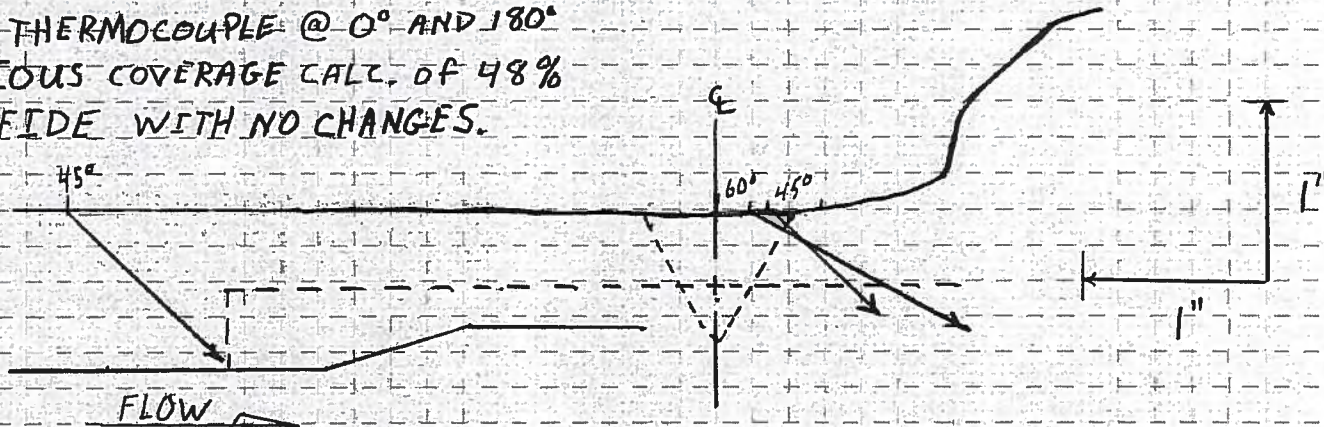
Supplemental Report

Report No.: ISI-UT-15-007Page: 3 of 3Summary No.: 305500

Sketch or Photo: O:\Outage Data\Nine Mile\N1RFO23\ISI\305500.jpg



NOTE: COUNTERBORE VERIFIDE USING 0°
1"X1" THERMOCOUPLE @ 0° AND 180°
PREVIOUS COVERAGE CALC. OF 48%
VERIFIDE WITH NO CHANGES.



IS 3-29-15
JPL 3-29-15
CPL 3/30/15



UT Calibration/Examination

Site/Unit: **NMP / 1** Procedure: **NDEP-UT-6.24** Outage No.: **N1R23**
Summary No.: **145500** Procedure Rev.: **01200** Report No.: **ISI-UT-15-001**
Workscope: **ISI** Work Order No.: **C92393641** Page: **1** of **6**

Code: **ASME Section XI 2004 Edition** Cat./Item: **R-A/R1.16** Location: **DW 237**
Drawing No.: **F45183C-07** Description: **Gate Valve 32-376-to-Pipe**
System ID: **32.0**
Component ID: **32-WD-050** Size/Length: **1.2" / 94.8"** Thickness/Diameter: **1.12" / 28"**
Limitations: **No U/S due to Valve Configuration** Start Time: **1736** Finish Time: **1803**

Instrument Settings
Serial No.: **0255F1** Manufacturer: **GE** Model: **USN-60SW** Linearity: **L-15-002** Delay: **9.8481** Range: **4.0"**
M'tl Cal/Vel: **0.1231** Pulser Type: **Square** Damping: **500 Ohms** Reject: **0%**
PRF: **Auto High** SU Freq.: **1.5** Frequency: **2.0 MHz** Rectify: **Fullwave** Voltage: **450** Pulse Width: **330**
Search Unit
Serial No.: **001NP0** Manufacturer: **KB-Aerotech** Size: **.500** Model: **MSWQC** Freq.: **1.5** Center Freq.: **N/A**
Exam Angle: **45°** Squint Angle: **N/A** Measured Angle: **45°** Mode: **Shear**
Exit Point: **0.4"** # of Elements: **Single** Config.: **Single** Focus: **N/A**
Shape: **Round** Contour: **Flat** Wedge Style: **Non Integral**

Ax. Gain (dB): **15.6** Circ. Gain (dB): **N/A**
10 Screen Div. = **4.0** in. of **Sound Path**
Search Unit Cable
Type: **RG-174** Length: **12'** No. Conn.: **0**

Calibration Block
Cal. Block No. **12-1178** Thickness **0.5-2.0** Dia.: **Flat** CW ☒ CCW ☒ Scan dB: **40.5**
Cal. Blk. Temp. **74°** Temp. Tool: **QA-NDE-T-095** Exam Surface: **O.D.**
Comp. Temp. **63°** Temp. Tool: **QA-NDE-T-081** Surface Condition: **Ground Flush**

Recordable Indication(s): Yes ☒ No ☐ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☒ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: **No-50%** Reviewed Previous Data: **Yes**

Cal. Checks	Time	Date
Initial Cal.	1105	3/21/2015
Inter. Cal.	1736	3/21/2015
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Final Cal.	1857	3/21/2015

Couplant
Cal. Batch: **00325**
Type: **ULTRAGEL II**
Mfg.: **SONOTECH**
Exam Batch: **14A001**
Type: **ULTRAGEL II**
Mfg.: **SONOTECH**

Reference Block
Serial No.: **789619**
Type: **Rompas - 304 SS**

Axial Orientated Search Unit			
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
1.5" ID Notch	80%	5.3	2.12"
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Circumferential Orientated Search Unit			
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Reference/Simulator Block				
Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
15.6	FSDH	16	2.6	1.02"
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

Comments: **Counter Bore located 2.5" D/S from weld centerline.**
Reference DER-1-1999-1211 dispositioned "Use As Is"

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Steinbauer, Troy A			3/21/2015		L-III	3-26-15
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			CILENTO, J. J. L-III		3-27-15
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A					3/27/15



Supplemental Report

Report No.: ISI-UT-15-001Page: 5 of 6Summary No.: 145500Sketch or Photo: O:\Outage Data\Nine Mile\N1RFO23\ISI\145500.jpg

System: _____				
Position	0°	90°	180°	270°
1	N/A			
2	N/A			
3	1.12			
4	1.12			
5	1.2			

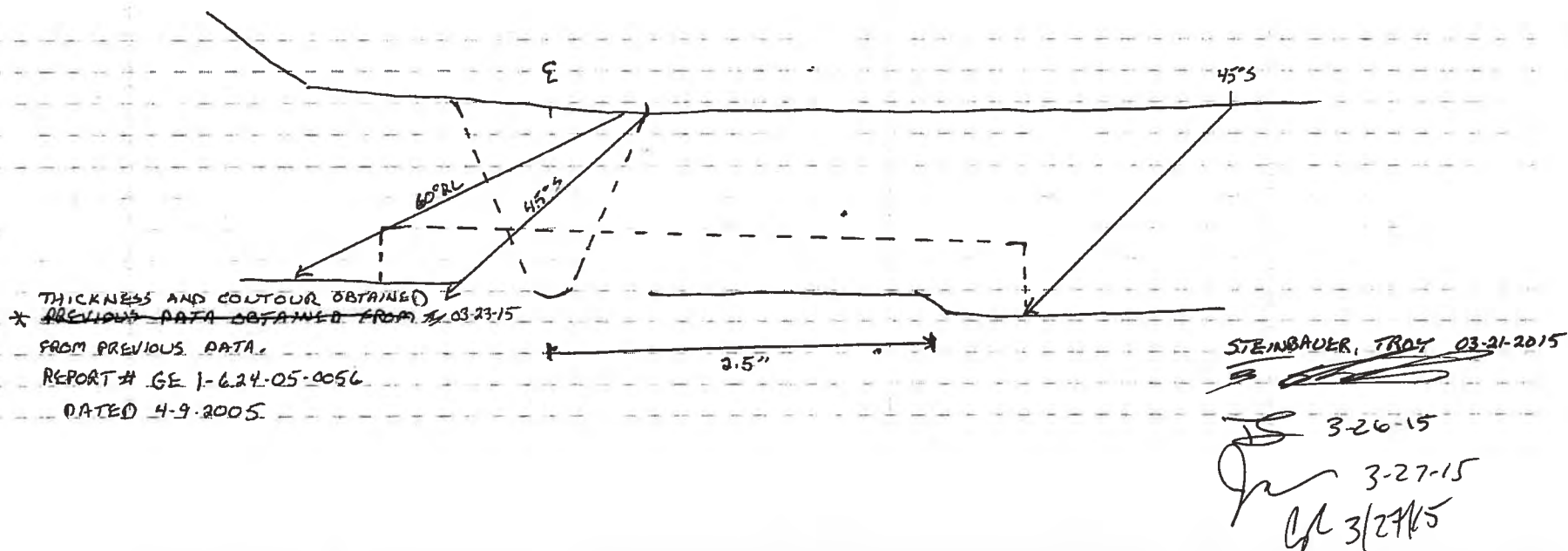
Component ID Number: 32-WD-050

Crown Height: GROUND FLUSH

Crown Width: 1.2"

Nominal Diameter: 28.0"

Weld Length: 94.8"





UT Calibration/Examination

Site/Unit: **NMP / 1**
Summary No.: **244600**
Workscope: **ISI**

Procedure: **NDEP-UT-6.24**
Procedure Rev.: **01200**
Work Order No.: **C92393641**

Outage No.: **N1R23**
Report No.: **ISI-UT-15-002**
Page: **1** of **4**

Code: **ASME Section XI 2004 Edition** Cat./Item: **R-A/R1.20** Location: **RB 306**
Drawing No.: **F45183C-09** Description: **Elbow-to-Pipe**
System ID: **37.0**
Component ID: **37-WD-006** Size/Length: **2.0" / 7.5"** Thickness/Diameter: **0.218" / 2.0"**
Limitations: **Single sided exam D/S side due to elbow configuration** Start Time: **1144** Finish Time: **1208**

Instrument Settings
Serial No.: **0208D0**
Manufacturer: **GEIT**
Model: **USN-60SW** Linearity: **L-15-003**
Delay: **5.0238** Range: **0.9"**
M'tl Cal/Vel: **0.1256** Pulser Type: **Square**
Damping: **500 Ohms** Reject: **0%**
PRF: **Auto High** SU Freq.: **2.25 MHz**
Frequency: **2.25 MHz** Rectify: **Fullwave**
Voltage: **450** Pulse Width: **220**

Search Unit
Serial No.: **001K10**
Manufacturer: **KB-Aerotech**
Size: **0.250"** Model: **Comp G**
Freq.: **2.25 MHz** Center Freq.: **N/A**
Exam Angle: **45°** Squint Angle: **N/A**
Measured Angle: **45°** Mode: **Shear**
Exit Point **0.2"** # of Elements: **1**
Config.: **Single** Focus: **N/A**
Shape: **Round** Contour: **N/A**
Wedge Style: **Non-Integral**

Ax. Gain (dB): **19.6** Circ. Gain (dB): **N/A**
10 Screen Div. = **0.9** in. of **Sound Path**

Calibration Block
Cal. Block No. **12-1180**
Thickness **0.5" - 2.0"** Dia.: **Flat**
Cal. Blk. Temp. **65°** Temp. Tool: **QA-NDE-T-095**
Comp. Temp. **67.5°** Temp. Tool: **QA-NDE-T-095**

Scan Coverage
Upstream ☐ Downstream ☒ Scan dB: **31.6**
CW ☒ CCW ☒ Scan dB: **34.6**
Exam Surface: **O.D.**
Surface Condition: **As Found**

Recordable Indication(s): Yes ☐ No ☒ (If Yes, Ref. Attached Ultrasonic Indication Report.)
Results: Accept ☒ Reject ☐ Info ☐
Percent Of Coverage Obtained > 90%: **No** Reviewed Previous Data: **No**

Cal. Checks	Time	Date
Initial Cal.	1005	3/24/2015
Inter. Cal.	1143	3/24/2015
Inter. Cal.	1210	3/24/2015
Inter. Cal.	N/A	
Final Cal.	1301	3/24/2015

Couplant
Cal. Batch: **13B074**
Type: **ULTRAGEL II**
Mfg.: **MAGNAFLUX**
Exam Batch: **13B074**
Type: **ULTRAGEL II**
Mfg.: **MAGNAFLUX**

Reference Block
Serial No.: **94-6005**
Type: **SS**

Axial Orientated Search Unit				
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path	
0.5" ID Notch	82%	7.8	0.7"	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
Circumferential Orientated Search Unit				
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
Reference/Simulator Block				
Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
19.6	NSDH	39%	5.0	0.445"
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

Comments: **Base metal exam on D/S side of socket weld (Fillet Weld). 100% Circ coverage, 50% Axial coverage. Total coverage = 75%**

Examiner Reid, Wallace W	Level II-PDI	Signature <i>Wallace W Reid</i>	Date 3/24/2015	Reviewer <i>Red Steiner</i>	Signature <i>L-III</i>	Date 3-28-15
Examiner N/A	Level N/A	Signature	Date	Site Review <i>CILENTO, J. J.</i>	Signature <i>JJ Cilent</i>	Date 3-28-15
Other N/A	Level N/A	Signature	Date	ANII Review <i>Chen</i>	Signature <i>3/28/15</i>	Date



Supplemental Report

Report No.: ISI-UT-15-002Page: 4 of 4Summary No.: 244600Examiner: Reid, Wallace W *Wallace W Reid*Level: II-PDIReviewer: Ted STEUER *L-III*Date: 3-28-15Examiner: N/ALevel: N/ASite Review: CILENTO, J.J. *L-III*Date: 3-28-15Other: N/ALevel: N/AANII Review: *[Signature]*Date: 3/28/15

Comments:

Sketch or Photo: O:\Outage Data\Nine Mile\N1RFO23\ISI\244600.jpg

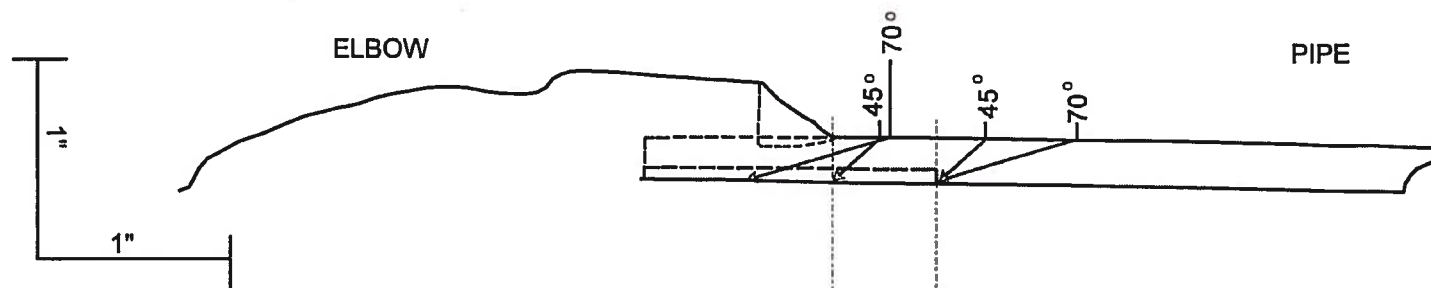
Weld : 37-WD-006 (Base Metal Only)

Crown Width .5"


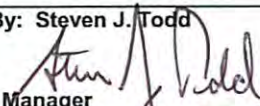

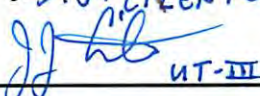
"T" at 0 (elb extradose) .210"

Diameter 2.0"

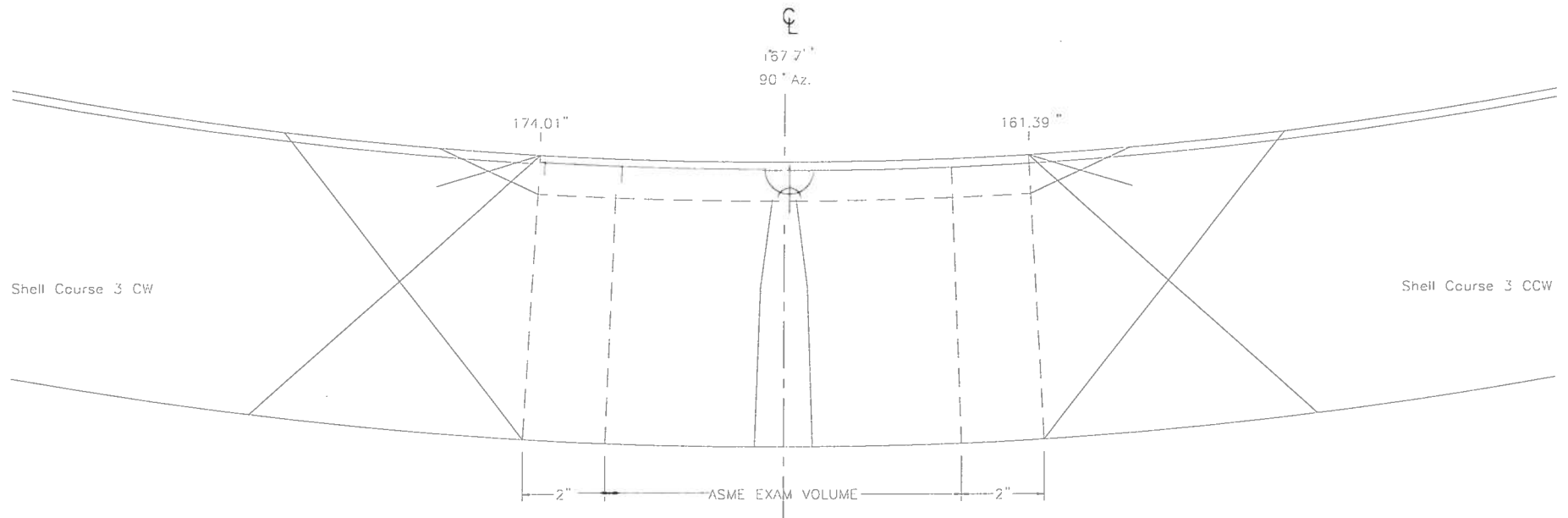
"T" at 180 (elb interdose) .210"



Exam boundry = Inner 1/3 of basemetal

 IHI Southwest Technologies Examination Summary Record							
Utility: Exelon Generation		Site: Nine Mile Point Unit 1 Nuclear Station Outage: N1R24			Summary Sheet No. 052800		
System: Reactor Pressure Vessel		Line Subassembly: Vertical Weld @ 90°			Identification: RV-WD-133		
NDE Method	Proc/Rev/Chg/ICN	NDE Examination	Calibration Sheet No.	Exam Sheet No.	NRI	Other	Remarks
AUT	ISWT-PDI-AUT5/2/0/1	Probe 1	1100014	16 - 18	X	-	Examination number 16 was not performed due to the proximity of the feedwater sparger.
AUT	ISWT-PDI-AUT5/2/0/1	Probe 2	1100015	16 - 18	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 3	1100016	16 - 18	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 4	1100017	16 - 18	X	-	
Examination Summary: This weld was examined from the inside surface using AIRIS-21 and Dynaray examination equipment. No recordable indications were detected during this examination. Examination Angles for each ID probe included: PA60°-80°L, PA40°-50°S, PA30°-60°L, & PA0°L. The examination was limited due to the proximity of the feedwater sparger piping and the tie rod at 90°							
Indication Summary: No recordable indications were detected during this examination.							
Limitation Summary: The examination was limited due to the proximity of the feedwater sparger piping and the tie rod @ 90-degree. The total examination coverage was 54.5%.							
Prepared By: Steven J. Todd Signature:  Date: 04/01/2017 IHI Project Manager				Reviewed By: Richard A. Riddles  Lv III April 2, 2017			
Reviewed By: J. J. CILENTO Signature:  Date: 4-4-17 Exelon				Reviewed By: Signature: Date: ANII			

Coverage Patches 01, 02





IHI Southwest Technologies Examination Summary Record

Utility: Exelon Generation		Site: Nine Mile Point Unit 1 Nuclear Station Outage: N1R24			Summary Sheet No. 052900		
System: Reactor Pressure Vessel		Line Subassembly: Vertical Weld @ 210°			Identification: RV-WD-134		
NDE Method	Proc/Rev/Chg/ICN	NDE Examination	Calibration Sheet No.	Exam Sheet No.	NRI	Other	Remarks
AUT	ISwT-PDI-AUT5/2/0/1	Probe 1	1100002	19 - 21	X	-	Examination number 19 was not performed due to the proximity of the feedwater sparger.
AUT	ISwT-PDI-AUT5/2/0/1	Probe 2	1100003	19 - 21	X	-	
AUT	ISwT-PDI-AUT5/2/0/1	Probe 3	1100004	19 - 21	X	-	
AUT	ISwT-PDI-AUT5/2/0/1	Probe 4	1100005	19 - 21	X	-	

Examination Summary:

This weld was examined from the inside surface using AIRIS-21 and Dynaray examination equipment. No recordable indications were detected during this examination. Examination Angles for each ID probe included: PA60°-80°L, PA40°-50°S, PA30°-60°L, & PA0°L. The examination was limited due to the proximity of the feedwater sparger piping and the tie rod at 90°

Indication Summary:

No recordable indications were detected during this examination.

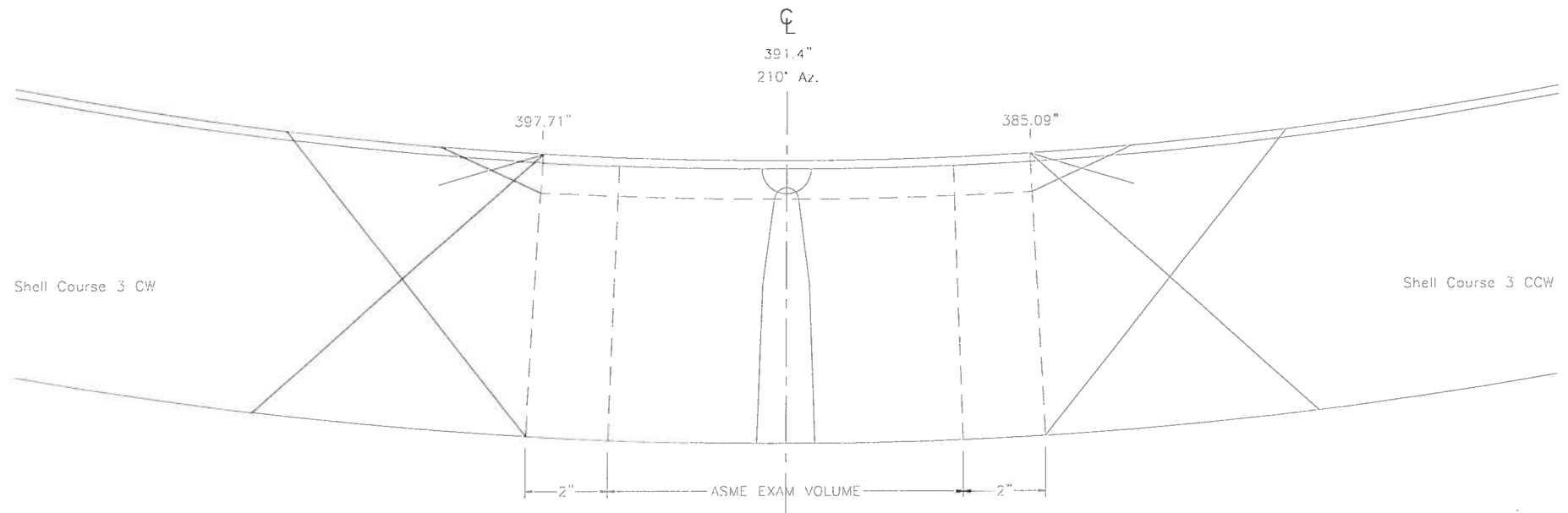
Limitation Summary:

The examination was limited due to the proximity of the core spray sparger piping. The examination coverage was 53.0%.

Handwritten signature and date: 4-4-17

Prepared By: Steven J. Todd		Reviewed By: Richard A. Riddles	
Signature: <i>[Signature]</i>	Date: 04/01/2017	Signature: <i>[Signature]</i>	Date: Lv III April 2, 2017
Reviewed By: J.J. GILBERTO		Reviewed By:	
Signature: <i>[Signature]</i>	Date: 4-4-17	Signature:	Date:
Exelon		ANII	

Coverage Patches 01A, 02



Nominal Clad $t = 7/32$ "
 Shell Course 3 $t_{\text{Min}} = 7 \frac{1}{8}$ "
 Vessel Diameter at Flange = 213.6"
 Vessel Azimuths = 1.8637 inches / degree

Cross Sectional Coverage
 Supplement 4 Total 6.78"
 Supplement 6 Total 56.85"
 Supplement 4 P-Scan 6.78"
 Supplement 4 T-Scan 6.78"
 Supplement 6 P-Scan 56.85"
 Supplement 6 T-Scan 56.85"



IHI Southwest Technologies Examination Summary Record

Utility: Exelon Generation		Site: Nine Mile Point Unit 1 Nuclear Station		Summary Sheet No. 053000			
System: Reactor Pressure Vessel		Line Subassembly: Vertical Weld @ 330°		Identification: RV-WD-135			
NDE Method	Proc/Rev/Chg/ICN	NDE Examination	Calibration Sheet No.	Exam Sheet No.	NRI	Other	Remarks
AUT	ISWT-PDI-AUT5/2/0/1	Probe 1	1100002	22 & 24	X	-	Examination number 22 was not performed due to the proximity of the feedwater sparger.
AUT	ISWT-PDI-AUT5/2/0/1	Probe 2	1100003	22 & 24	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 3	1100004	22 & 24	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 4	1100005	22 & 24	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 1	1100002	23	X	-	One indication recorded and found to be allowable in accordance with the 2004 Edition of ASME Code with no Addenda.
AUT	ISWT-PDI-AUT5/2/0/1	Probe 2	1100003	23	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 3	1100004	23	-	X	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 4	1100005	23	X	-	
							Reference Indication Resolution #1100004.

Examination Summary:

This weld was examined from the inside surface using AIRIS-21 and Dynaray examination equipment. One (1) recordable indication was detected during this examination. Examination Angles for each ID probe included: PA60°-80°L, PA40°-50°S, PA30°-60°L, & PA0°L. The examination was limited due to the proximity of the feedwater sparger piping and downcomer piping.

Indication Summary:

One (1) recordable indication was detected and determined to be allowable in accordance with the 2004 Edition of ASME Section XI Code.

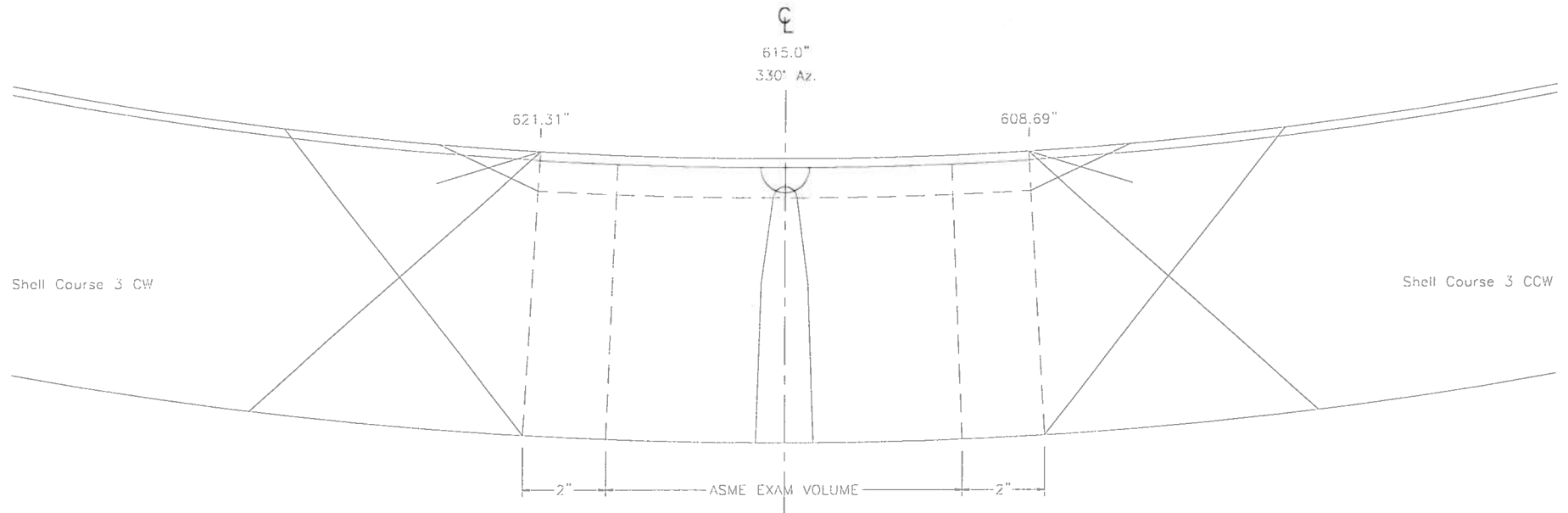
UT Results 2017							UT Results 2007				
		Flaw Location			Flaw Dimension		Flaw Location			Flaw Dimension	
Indication Number	Flaw Type	X Azimuth Location (in.)	Y Elevation Location (in.)	Z Depth Location (in.)	L (in.)	T-Wall (a/t%)	X Location (in.)	Y Location (in.)	Z Location (in.)	L (in.)	T-Wall (a/t%)
23-1	Subsurface	615.4	462.9	4.17	0.7	1.4	No Recordable Indications				

Limitation Summary:

The examination was limited due to the proximity of the core spray sparger piping. The examination coverage was 50.3%.

Prepared By: Steven J. Todd		Reviewed By: Richard A. Riddles	
Signature:	Date: 04/01/2017	Signature:	Date: April 2, 2017
Reviewed By: J. J. CILENTO		Reviewed By:	
Signature:	Date: 4-4-17	Signature: ANII	Date:

Coverage Patches 01, 02A and 02B combined, 03



Nominal Clad T = 7/32"
 Shell Course 3 T Min = 7 1/8"
 Vessel Diameter at Flange = 213.6"
 Vessel Azimuths = 1.8637 inches / degree

Cross Sectional Coverage
 Supplement 4 Total 6.78"
 Supplement 6 Total 56.85"
 Supplement 4 P-Scan 6.78"
 Supplement 4 I-Scan 6.78"
 Supplement 6 P-Scan 56.85"
 Supplement 6 I-Scan 56.85"



IHI Southwest Technologies Examination Summary Record

Utility: Exelon Generation		Site: Nine Mile Point Unit 1 Nuclear Station Outage: N1R24		Summary Sheet No. 053700			
System: Reactor Pressure Vessel		Line Subassembly: Vertical Weld @ 18°		Identification: RV-WD-142			
NDE Method	Proc/Rev/Chg/ICN	NDE Examination	Calibration Sheet No's.	Exam Sheet No.	NRI	Other	Remarks
AUT	ISWT-PDI-AUT5/2/0/1	Probe 1	1100014	1	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 2	1100015	1	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 3	1100016	1	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 4	1100017	1	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 1	1100010	2	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 2	1100011	2	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 3	1100012	2	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 4	1100013	2	X	-	

Examination Summary:

This weld was examined from the inside surface using AIRIS-21 and Dynaray examination equipment. No recordable indications were detected during this examination. Limited examination due to the proximity of the core shroud support. The examination coverage was 75.3%. Examination Angles for each probe included: PA60°-80°L, PA40°-50°S, PA30°-60°L, & PA0°L.

Indication Summary:

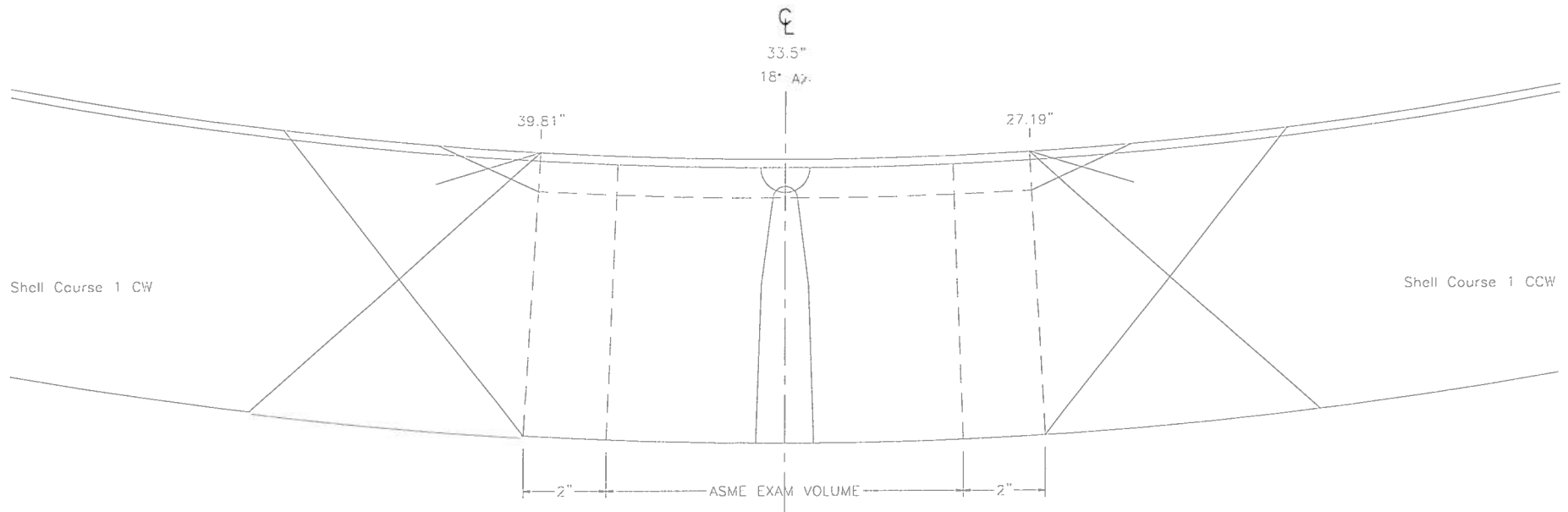
No recordable indications were detected during this examination.

Limitation Summary:

This examination was limited due to the proximity of the core shroud support plate. The examination coverage was 75.3%.

Prepared By: Steven J. Todd Signature: <i>Steven J. Todd</i> Date: 4/01/2017 IHI Project Manager		Reviewed By: Richard A. Riddles <i>Richard A. Riddles</i> Lv III April 2, 2017	
Reviewed By: J.J. CILENTO Signature: <i>J.J. CILENTO</i> Date: 4-4-17 Exelon		Reviewed By: GARY GUSTOFSON Signature: <i>GARY GUSTOFSON</i> Date: 4/5/17 ANII	

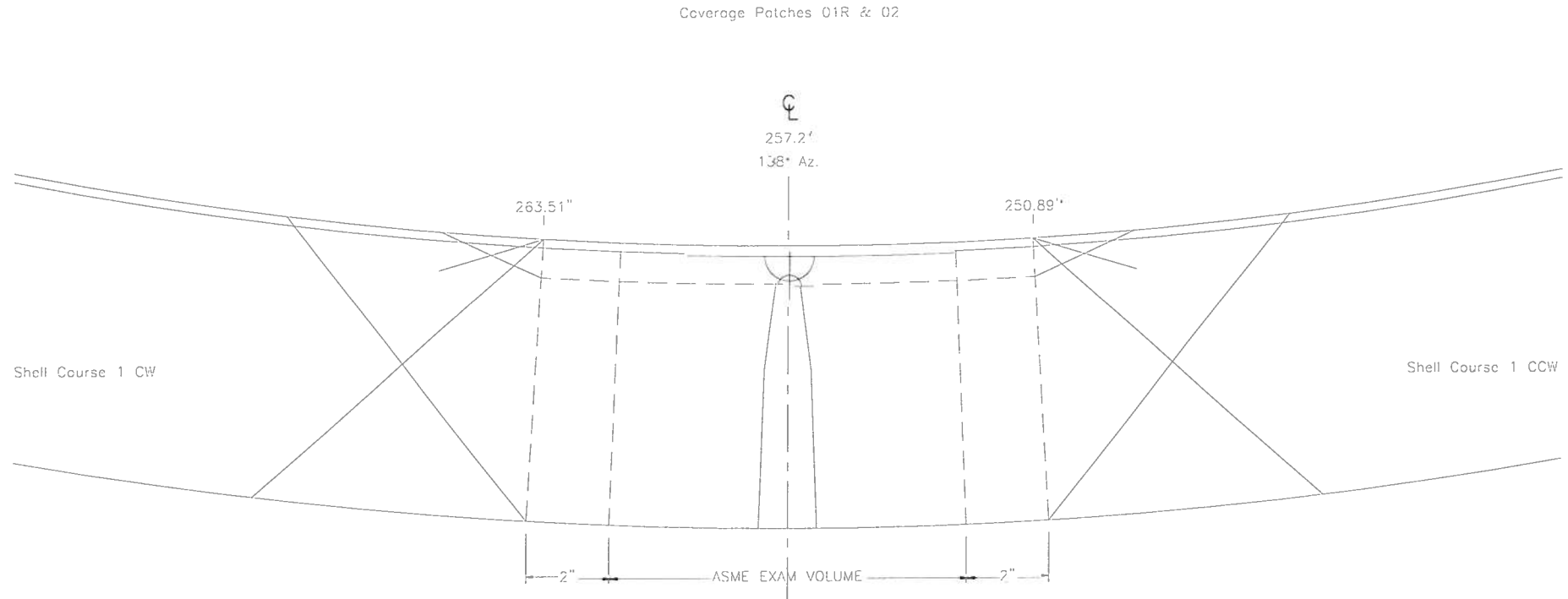
Achieved Coverage Patches 01, 02



Nominal Clad T = 7/32"
 Shell Course 1 T Min = 7 1/8"
 Vessel Diameter at Flange = 213.6"
 Vessel Azimuths = 1.8637 inches / degree

Cross Sectional Coverage
 Supplement 4 Total 6.76"
 Supplement 6 Total 56.85"
 Supplement 4 P-Scan 6.78"
 Supplement 4 T-Scan 6.78"
 Supplement 6 P-Scan 56.85"
 Supplement 6 T-Scan 56.85"

<div style="display: flex; align-items: center;"> <div> IHI Southwest Technologies Examination Summary Record </div> </div>							
Utility: Exelon Generation		Site: Nine Mile Point Unit 1 Nuclear Station Outage: N1R24			Summary Sheet No. 053800		
System: Reactor Pressure Vessel		Line Subassembly: Vertical Weld @ 138°			Identification: RV-WD-143		
NDE Method	Proc/Rev/Chg/ICN	NDE Examination	Calibration Sheet No.	Exam Sheet No.	NRI	Other	Remarks
AUT	ISwT-PDI-AUT5/2/0/1	Probe 1	1100014	3	X	-	
AUT	ISwT-PDI-AUT5/2/0/1	Probe 2	1100015	3	X	-	
AUT	ISwT-PDI-AUT5/2/0/1	Probe 3	1100016	3	X	-	
AUT	ISwT-PDI-AUT5/2/0/1	Probe 4	1100017	3	X	-	
AUT	ISwT-PDI-AUT5/2/0/1	Probe 1	1100010	4	X	-	
AUT	ISwT-PDI-AUT5/2/0/1	Probe 2	1100011	4	X	-	
AUT	ISwT-PDI-AUT5/2/0/1	Probe 3	1100012	4	X	-	
AUT	ISwT-PDI-AUT5/2/0/1	Probe 4	1100013	4	X	-	
<p>Examination Summary:</p> <p>This weld was examined from the inside surface using AIRIS-21 and Dynaray examination equipment. No recordable indications were detected during this examination. Limited examination due to the proximity of the core shroud support plate. The examination coverage was 75.6%. Examination Angles for each probe included: PA60°-80°L, PA40°-50°S, PA30°-60°L, & PA0°L.</p> <p>Indication Summary:</p> <p>No recordable indications were detected during this examination.</p> <p>Limitation Summary:</p> <p>This examination was limited due to the proximity of the core shroud support plate. The examination coverage was 75.6%.</p>							
Prepared By: Steven J. Todd Signature: IHI Project Manager				Reviewed By: Richard A. Riddles Signature: Lv III April 2, 2017			
Reviewed By: J. J. CILBERTO Signature: Exelon				Reviewed By: GARY GUSTOFSON Signature: ANII			
Date: 04/01/2017				Date: 4-4-17			
Date: 4/5/17				Date: 4/5/17			

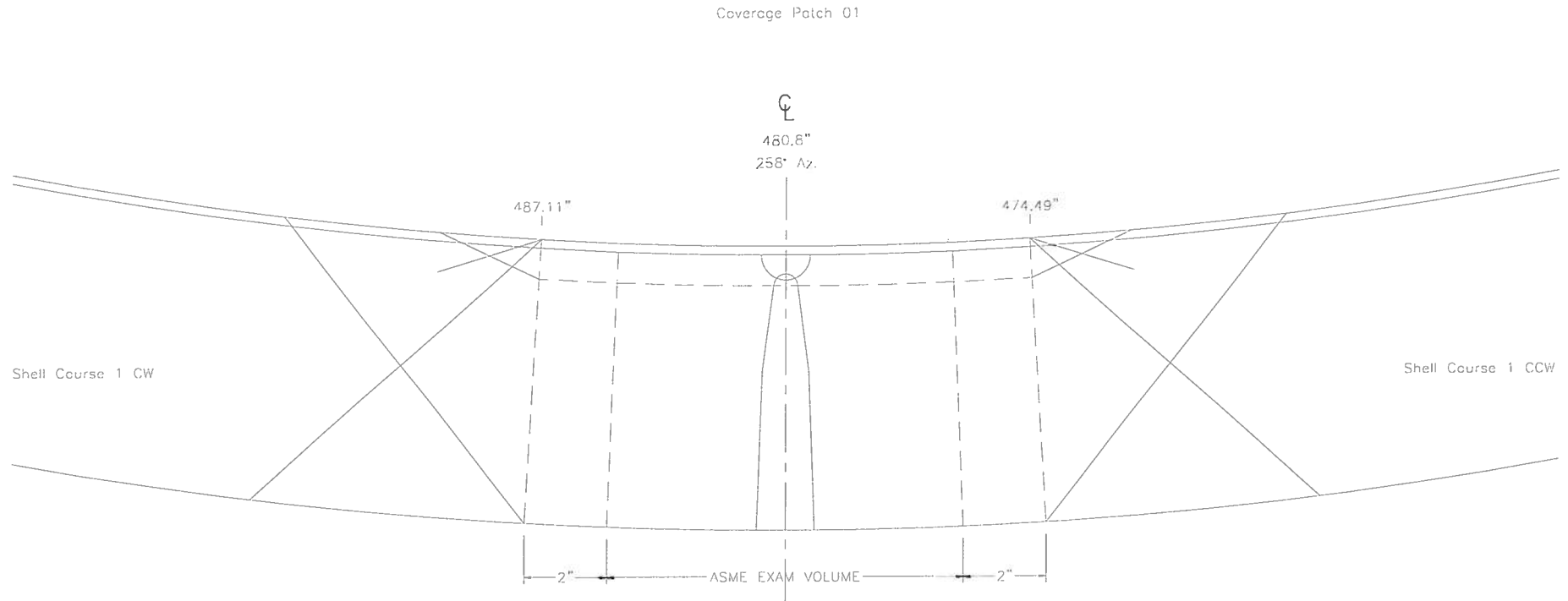


Nominal Clad T = 7/32"
 Shell Course 1 T Min = 7 1/8"
 Vessel Diameter at Flange = 213.6"
 Vessel Azimuths = 1.8637 inches / degree

Cross Sectional Coverage

Supplement 4 Total	6.78"
Supplement 6 Total	56.65"
Supplement 4 P-Scan	6.78"
Supplement 4 T-Scan	6.78"
Supplement 6 P-Scan	56.65"
Supplement 6 T-Scan	56.65"

IHI Southwest Technologies Examination Summary Record							
Utility: Exelon Generation		Site: Nine Mile Point Unit 1 Nuclear Station Outage: N1R24			Summary Sheet No. 053900		
System: Reactor Pressure Vessel		Line Subassembly: Vertical Weld @ 258°			Identification: RV-WD-144		
NDE Method	Proc/Rev/Chg/ICN	NDE Examination	Calibration Sheet No.	Exam Sheet No.	NRI	Other	Remarks
AUT	ISWT-PDI-AUT5/2/0/1	Probe 1	1100014	5A & 5B	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 2	1100015	5A & 5B	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 3	1100016	5A & 5B	X	-	
AUT	ISWT-PDI-AUT5/2/0/1	Probe 4	1100017	5A & 5B	X	-	
<p>Examination Summary:</p> <p>This weld was examined from the inside surface using AIRIS-21 and Dynaray examination equipment. No recordable indications were detected during this examination. Limited examination due to the proximity of the core shroud support plate. The examination coverage was 50.1%. Examination Angles for each probe included: PA60°-80°L, PA40°-50°S, PA30°-60°L, & PA0°L.</p> <p>Indication Summary:</p> <p>No recordable indications were detected during this examination.</p> <p>Limitation Summary:</p> <p>This examination was limited due to the proximity of the core shroud support plate. The examination coverage was 50.1%.</p>							
Prepared By: Steven J. Todd Signature: IHI Project Manager Reviewed By: J.J. CILENTO Signature: Exelon				Reviewed By: Richard A. Riddles Signature: Lv III April 2, 2017 Reviewed By: GARY GUSTAFSON Signature: ANII			



Nominal Clad T = 7/32"
Shell Course 1 T Min = 7 1/8"
Vessel Diameter at Flange = 213.6"
Vessel Azimuths = 1.8637 inches / degree

Cross Sectional Coverage
Supplement 4 Total 6.78"
Supplement 6 Total 56.85"
Supplement 4 P-Scan 6.78"
Supplement 4 T-Scan 6.78"
Supplement 6 P-Scan 56.85"
Supplement 6 T-Scan 56.85"



UT Calibration/Examination

Site/Unit: **NMP / 1**
Summary No.: **035000**
Workscope: **ISI**

Procedure: **GEH-UT-300**
Procedure Rev.: **12**
Work Order No.: **C93069198**

Outage No.: **N1R24**
Report No.: **ISI-UT-17-108**
Page: **1** of **2**

Code: **ASME Section XI 2004 Edition** Cat./Item: **B-A/B1.40** Location: **340' RFF**
Drawing No.: **F45183C-28** Description: **Closure Head-to-Flange Weld**
System ID: **00.0**
Component ID: **RV-WD-001C** Size/Length: **N/A / 360"** Thickness/Diameter: **4.52" / N/A**
Limitations: **Limited scan area due to head to flange configuration** Start Time: **1532** Finish Time: **1754**

Instrument Settings		Search Unit	
Serial No.: 0208CY	Serial No.: 22BC-09004		
Manufacturer: GEIT	Manufacturer: Sigma		
Model: USN-60SW Linearity: L-17-007	Size: 2 (1.1 x 0.62) Model: SDC3		
Delay: 8.1919 Range: 4.0"	Freq.: 3.0 MHz Center Freq.: N/A		
M'tl Cal/Vel: 0.2323 Pulsar Type: Square	Exam Angle: 60° Squint Angle: N/A		
Damping: 500 Ohms Reject: 0%	Measured Angle: 60° Mode: RL		
PRF: Auto High SU Freq.: 3.0 MHz	Exit Point 0.75" # of Elements: 2		
Frequency: 2.25 MHz Rectify: Fullwave	Config.: Dual Focus: 10"		
Voltage: 450 Pulse Width: 170	Shape: Rect. Contour: N/A		
Gate Mode: Peak Display Delay: 0	Wedge Style: Integral		
Ax. Gain (dB): 69.0 Circ. Gain (dB): N/A	Search Unit Cable		
10 Screen Div. = 2.0 in. of Depth	Type: RG-174 Length: 9' No. Conn.: 0		
Calibration Block		Scan Coverage	
Cal. Block No.: CAL-WLLY-038	Upstream <input type="checkbox"/> Downstream <input checked="" type="checkbox"/> Scan dB: 83.0		
Thickness 4" Dia.: N/A	CW <input checked="" type="checkbox"/> CCW <input checked="" type="checkbox"/> Scan dB: 83.0		
Cal. Blk. Temp. 64 Temp. Tool: 0003082936	Exam Surface: O.D.		
Comp. Temp. 76 Temp. Tool: 0003082936	Surface Condition: Plate		
Recordable Indication(s): Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If Yes, Ref. Attached Ultrasonic Indication Report.)			
Results: Accept <input checked="" type="checkbox"/> Reject <input type="checkbox"/> Info <input type="checkbox"/>			
Percent Of Coverage Obtained > 90%: No-78.5% Reviewed Previous Data: Yes			

Cal. Checks	Time	Date
Initial Cal.	1502	3/24/2017
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Final Cal.	1826	3/24/2017

Couplant
Cal. Batch: **17B028**
Type: **ULTRAGEL II**
Mfg.: **MAGNAFLUX**
Exam Batch: **17B028**
Type: **ULTRAGEL II**
Mfg.: **MAGNAFLUX**

Reference Block
Serial No.: **N/A**
Type: **N/A**

Axial Oriented Search Unit				
Calibration Reflector	Signal Amplitude %	Sweep Division	Depth	
0.6"	80%	3.0	0.6"	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
Circumferential Oriented Search Unit				
Calibration Reflector	Signal Amplitude %	Sweep Division	Depth	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
Reference/Simulator Block				
Gain dB	Reflector	Signal Amplitude %	Sweep Division	Depth
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

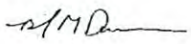

Comments: Cal for near surface exam. Exams performed a minimum of 14 dB above reference. Exam from 240° - 360° only (stud holes 42-64). Ref Rpt W-1-010-07-011. Dual: On

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Johnson, Jimmy	II	<i>Jimmy Johnson</i>	3/24/2017	<i>Ted Siever</i>	<i>Ted Siever</i>	4-2-17
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			<i>CILENTO, J.J.</i>	<i>J.J. Cileto</i>	4-2-17
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			<i>GARY GUSTAFSON</i>	<i>Gary Gustafson</i>	4/3/17



HITACHI

Manual RPV Weld Exam Plan

Plant and Unit ID:	Nine Mile Point Unit 1	Component:	RV-WD-001
Outage:	N1R24	Cal. Block:	NMP1-Closure Head Calibration Block & IIW2 Block
Procedures:			
Examination:	GEH-UT-300	Sizing:	GEH-UT-304
Examination:		Sizing:	
Extents:		Examiner:	Analyst:
Examine 360°. See attached drawings for limits.		N/A	N/A
60°RL Near Surface T-Scan			
60°RL Full Volume T-Scan			
60°RL Inner 15% T-Scan			
Limitations:	Scanning will be limited to to the configuration of the closure head flange.		
Previous Results:	NRI		
Comments:	Verify requirements with the Nozzle Inner Radius Requirements sheet prior to examination. Notify the RPV Lead ASAP of limitations. Verify cal block S/N: NMP1-Closure Head Calibration Block & IIW2 Block		
 Brad M. Dummer Prepared By:	02/28/2017 Date:	 Ted Steele Reviewed By:	3-14-17 Date:



HITACHI

Nine Mile Point Unit 1 (N1R24) Closure Head Flange Weld Coverage Plot

Nine Mile Unit 1 Top Head Flange Weld RV-WD-001

60° S4 Exam Volume = 5.1 Sq. In.

60° S6 FV Exam Volume = 23.2 Sq. In.

60° S6 NS Exam Volume = 9.8 Sq. In.

60°T S4 Exam Volume Achieved = 5.1 Sq. In.

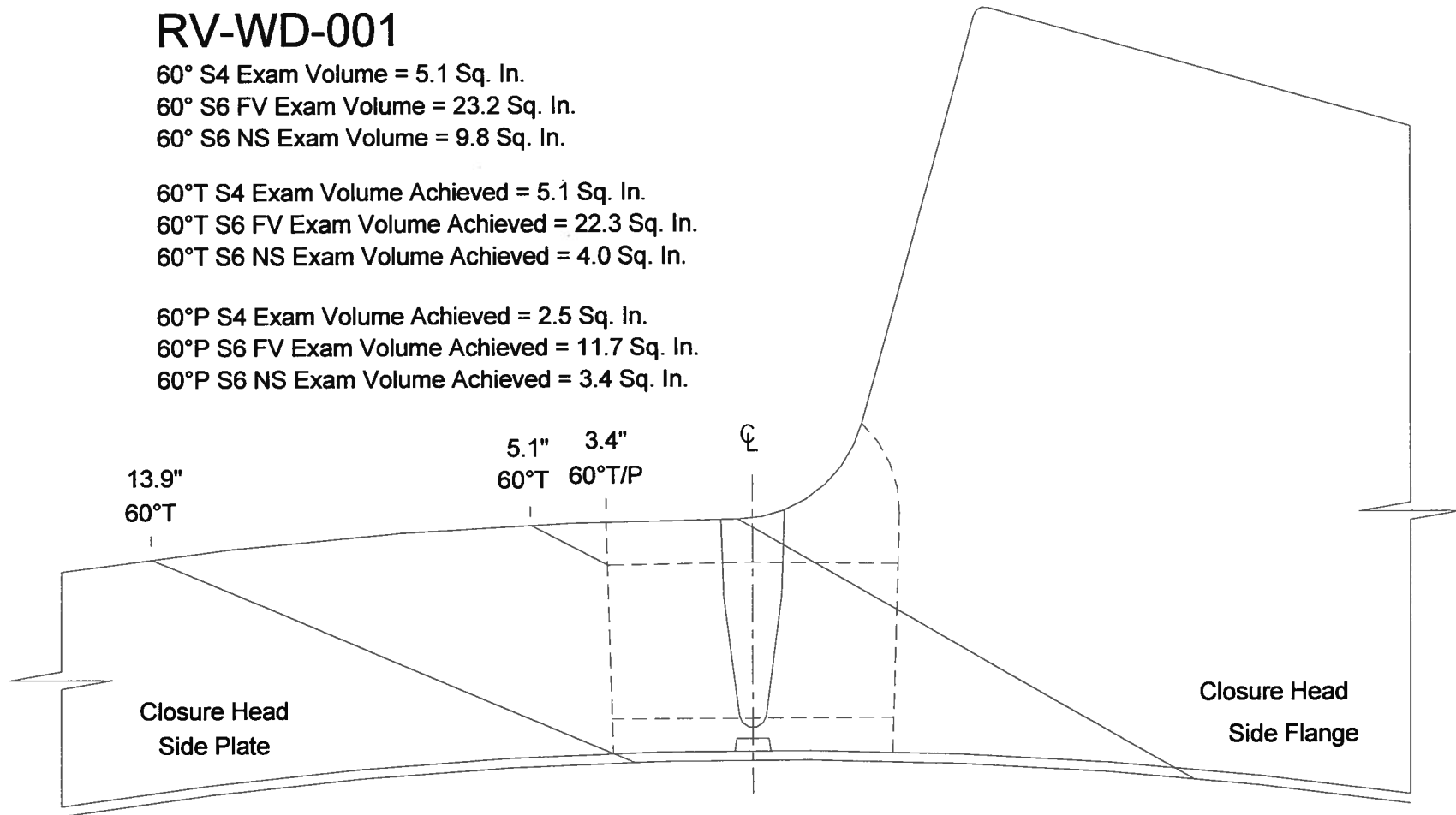
60°T S6 FV Exam Volume Achieved = 22.3 Sq. In.

60°T S6 NS Exam Volume Achieved = 4.0 Sq. In.

60°P S4 Exam Volume Achieved = 2.5 Sq. In.

60°P S6 FV Exam Volume Achieved = 11.7 Sq. In.

60°P S6 NS Exam Volume Achieved = 3.4 Sq. In.





UT Calibration/Examination

Site/Unit: NMP / 1
Summary No.: 081700
Workscope: ISI

Procedure: ER-AA-335-030
Procedure Rev.: 05
Work Order No.: C93069198

Outage No.: N1R24
Report No.: ISI-UT-17-002
Page: 1 of 6

Code: ASME Section XI 2004 Cat./Item: R-A/R1.11 Location: 261' TB
Drawing No.: F45183C-02B Description: Pipe-to-Tee
System ID: 01.0
Component ID: 01-WD-456 Size/Length: 0.50" / 7.50" Thickness/Diameter: 0.344" / 2.0"
Limitations: Scan limited to accessible areas due to proximity of floor Start Time: 1417 Finish Time: 1447

Instrument Settings
Serial No.: 15C01N68
Manufacturer: GEIT
Model: USN-60SW Linearity: L-17-012
Delay: 5.2075 Range: 0.850"
M'tl Cal/Vel: 0.1215 Pulsar Type: Square
Damping: 500 Ohms Reject: 0%
PRF: Auto High SU Freq.: 5.0 MHz
Frequency: 5.0 MHz Rectify: Fullwave
Voltage: 450 Pulse Width: 100
Gate Mode: N/A Display Delay: 0
Ax. Gain (dB): 16 Circ. Gain (dB): N/A
1 Screen Div. = 0.085 in. of Sound Path

Search Unit
Serial No.: SC1914
Manufacturer: KBA
Size: 0.25" Model: Comp-G
Freq.: 5.0 MHz Center Freq.: N/A
Exam Angle: 35° Squint Angle: N/A
Measured Angle: 35° Mode: Shear
Exit Point 0.20" # of Elements: 1
Config.: Non-Integral Focus: N/A
Shape: Round Contour: N/A
Wedge Style: MSWQC

Search Unit Cable
Type: RG-174 Length: 6' No. Conn.: 0

Cal. Checks	Time	Date
Initial Cal.	1140	3/25/2017
Inter. Cal.	1447	3/25/2017
Inter. Cal.	1458	3/25/2017
Inter. Cal.	N/A	
Final Cal.	1532	3/25/2017

Couplant
Cal. Batch: 17B028
Type: ULTRAGEL II
Mfg.: MAGNAFLUX
Exam Batch: 17B028
Type: ULTRAGEL II
Mfg.: MAGNAFLUX

Axial Oriented Search Unit			
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
0.50" Notch	81%	7.1	0.608"
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Circumferential Oriented Search Unit			
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Reference/Simulator Block				
Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
16	NSDH	20%	4.3	0.365"
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

Calibration Block
Cal. Block No. 12-1179
Thickness 0.5 in - 2.0 in. Dia.: Flat
Cal. Blk. Temp. 68 Temp. Tool: 0003111035
Comp. Temp. 69 Temp. Tool: 0003111035

Scan Coverage
Upstream ☐ Downstream ☐ Scan dB: N/A
CW ☒ CCW ☒ Scan dB: 28
Exam Surface: O.D.
Surface Condition: As Welded

Reference Block
Serial No.: 788448
Type: Rompas C/S

Recordable Indication(s): Yes ☐ No ☒ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☒ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: No-67% Reviewed Previous Data: N/A

Comments: Performed UT exam per Scan Plan. Utilized 35° Shear for Circ Scan to Achieve coverage. No counterbore detected.

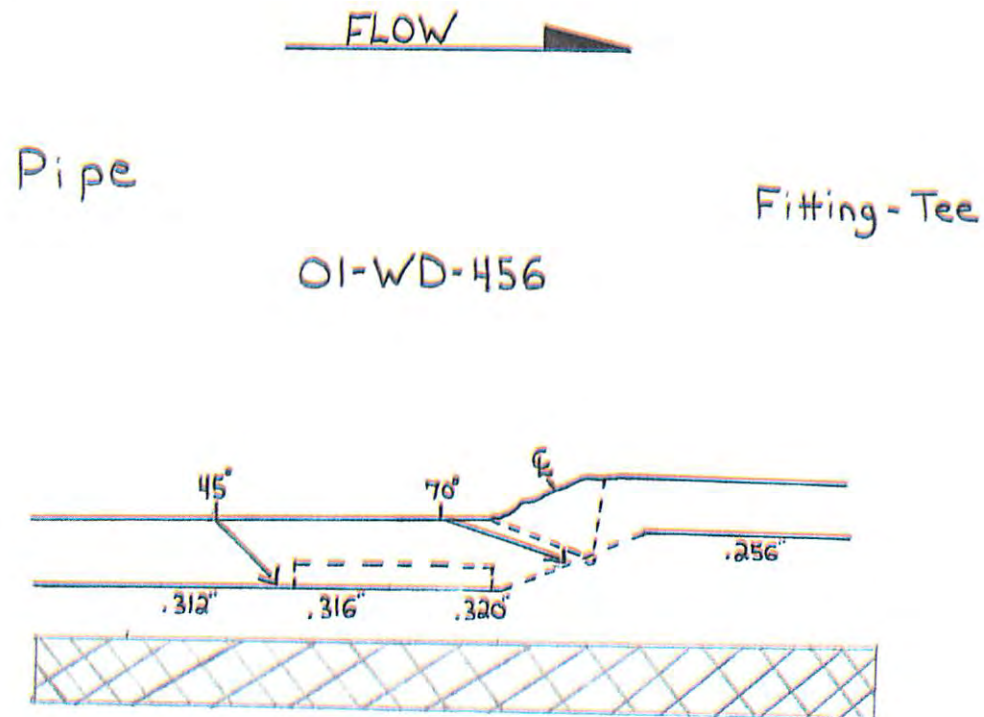
Examiner	Level	Signature	Date	Reviewer	Signature	Date
Teer, Ryan C	II		3/25/2017	Red Siever		4-1-17
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			CILINTY, J.J.		4-2-17
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			GARY GUSTAFSON		4/2/17



Supplemental Report

Report No.: ISI-UT-17-002Page: 6 of 6Summary No.: 081700*RCT*

Sketch or Photo: O:\Outage Data\Nine Mile\N1RFO24\ISI\081700.jpg



Obstruction From 2.5' to 5' Underneath
 Pipe due to clearance between pipe
 and Floor. Achieved 67% Coverage
 Drawing represents clearance between
 piping and Floor.

JS 4-1-17
JS 4-17-
JS
Jm 4-2-17

Exam ID: 01-WD-456

Description: Pipe-to-Tee

OD:2 WALL T: .344

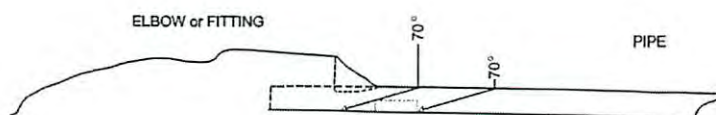
MAT'L: CS

PROCEDURE: ER-AA-335-030

CAL BLOCK: ALT BLOCK

Code Item	Code Cat	Other
R1.11	R-A	

Degradation Mechanism: Elements subject to Thermal Fatigue



Exam boundry = Inner 1/3 of basemetal

Exam Instructions:

Exam item is a carbon steel socket weld.

Exam area is the pipe basemetal 1" from the toe of the weld only.

Will need to take a thickness reading in two places on the base metal. Include a "profile" of the pipe to show exam volume

Scan at + 12 dB. NOTE: If scanning at +12 dB is not feasible due to noise levels, note on the data sheet the reason and what level was used to scan

Approved by: Ted Siever L-III

01-WD-456



Unit 1
Nine Mile Point Nuclear Station Fourth ISI Interval Limited Coverage NDE Reports
UT Calibration/Examination

Site/Unit: NMP / 1
Summary No.: 215200
Workscope: ISI

Procedure: ER-AA-335-031
Procedure Rev.: 8
Work Order No.: C93069198

Outage No.: N1R24
Report No.: ISI-UT-17-010
Page: 1 of 5

Code: ASME Section XI 2004 Edition Cat./Item: R-A/R1.11 Location: 263' DW
Drawing No.: F45183C-20 Description: Valve 33-01R-to-Pipe
System ID: 33.0
Component ID: 33-WD-048C1 Size/Length: 0.90" / 22" Thickness/Diameter: 0.432" / 6.0"
Limitations: Single sided access due to configuration Start Time: 1447 Finish Time: 1500

Instrument Settings
Serial No.: 15C01N68
Manufacturer: GEIT
Model: USN-60SW Linearity: L-17-012
Delay: 5.8250 Range: 1.40"
M'tl Cal/Vel: 0.1222 Pulser Type: Square
Damping: 500 Ohms Reject: 0%
PRF: Auto High SU Freq.: 2.25 MHz
Frequency: 2.25 MHz Rectify: Fullwave
Voltage: 450 Pulse Width: 220
Gate Mode: N/A Display Delay: 0
Ax. Gain (dB): 21 Circ. Gain (dB): N/A
1 Screen Div. = 0.14 in. of Sound Path

Search Unit
Serial No.: 001SX2
Manufacturer: KBA
Size: 0.25" Model: Comp G
Freq.: 2.25 MHz Center Freq.: N/A
Exam Angle: 45° Squint Angle: N/A
Measured Angle: 45° Mode: Shear
Exit Point 0.20" # of Elements: 1
Config.: Non Integral Focus: N/A
Shape: Round Contour: N/A
Wedge Style: MSWQC

Search Unit Cable
Type: RG-174 Length: 6' No. Conn.: 0

Scan Coverage
Upstream ☒ Downstream ☒ Scan dB: 33
CW ☒ CCW ☒ Scan dB: 33
Exam Surface: O.D.
Surface Condition: Prepped

Calibration Block
Cal. Block No. 12-1180
Thickness 0.5 in - 2.0 in. Dia.: Flat
Cal. Blk. Temp. 65 Temp. Tool: 0003111035
Comp. Temp. 65 Temp. Tool: 0003111035

Recordable Indication(s): Yes ☐ No ☒ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Results: Accept ☒ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: No - 50% Reviewed Previous Data: Yes

Cal. Checks	Time	Date
Initial Cal.	1415	3/27/2017
Inter. Cal.	1445	3/27/2017
Inter. Cal.	1501	3/27/2017
Inter. Cal.	N/A	
Final Cal.	1757	3/27/2017

Couplant
Cal. Batch: 17B028
Type: ULTRAGEL II
Mfg.: MAGNAFLUX
Exam Batch: 17B028
Type: ULTRAGEL II
Mfg.: MAGNAFLUX

Reference Block
Serial No.: 94-6005
Type: Rompas

Axial Oriented Search Unit			
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
0.5" ID Notch	81%	5.1	0.708"
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Circumferential Oriented Search Unit			
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Reference/Simulator Block				
Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
21	NSDH	40%	3.4	0.460"
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

Comments: No counter bore detected.

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Teer, Ryan C	II		3/27/2017	Ted Siever	Ted Siever L-III	3-31-17
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			CILENTO, J. J	UT-III	4-2-17
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			GARY GUSTOFSON		4/2/17




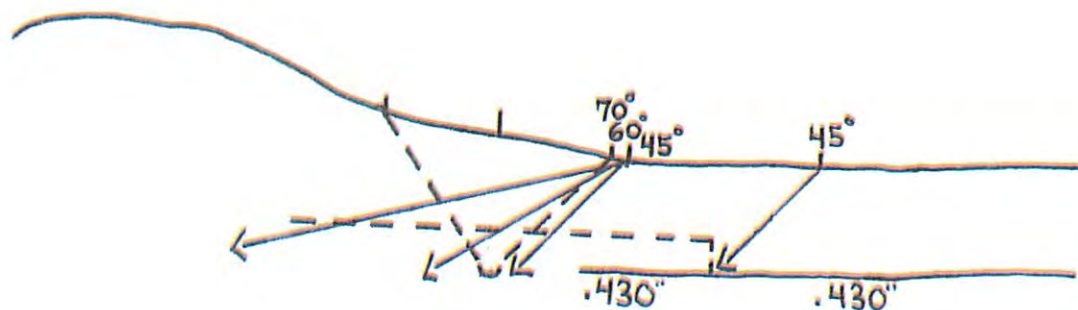
Supplemental Report

Report No.: ISI-UT-17-010Page: 5 of 5Summary No.: 215200RCT

Sketch or Photo: O:\Outage Data\Nine Mile\N1RFO24\ISI\215200.jpg

Valve 33-WD-048C1 Pipe

FLOW 



* Thickness and Contour taken From Data
Report: 1-6.24-99-0265 Dated 5-12-99
Single Sided exam due to Configuration

IS 331-17
JW 4-2-17

Exam ID: 33-WD-048C1

Description: Valve 33-01R-to-Pipe

OD: 6 WALL T: .432

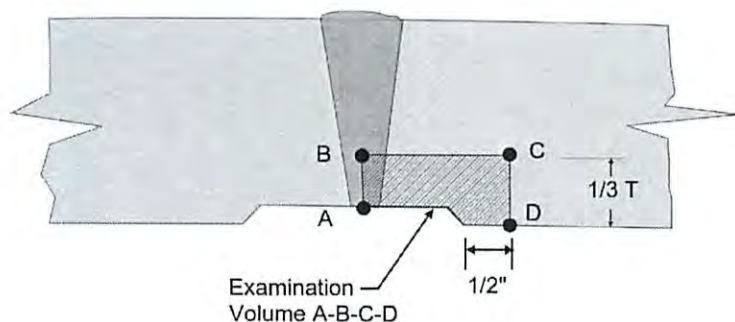
MAT'L: SS

PROCEDURE: ER-AA-335-031

CAL BLOCK: ALT BLOCK

Code Item	Code Cat	Other
R1.11	R-A	

Degradation Mechanism: Elements subject to Thermal Fatigue



Exam Instructions:

- 1) Scan as shown in figure. The absolute minimum scan includes the weld plus 1/2".
If there is a CB, scan at least 1/2" beyond the CB
- 2) Either locate the counterbore or state that no counterbore can be detected on data the sheet
- 3) Scan at + 12 dB. NOTE: If scanning at +12 dB is not feasible due to noise levels, note on the data sheet the reason and what level was used to scan

Approved by: Ted Siever L-III

TS

33-WD-048C1



UT Calibration/Examination

Site/Unit: NMP / 1
Summary No.: 220700
Workscope: ISIProcedure: ER-AA-335-030
Procedure Rev.: 05
Work Order No.: C93069198Outage No.: N1R24
Report No.: ISI-UT-17-011
Page: 1 of 5Code: ASME Section XI 2004 Edition Cat./Item: R-A/R1.11 Location: 260' DW
Drawing No.: F45183C-20 Description: Tee-to-Reducer
System ID: 33.2
Component ID: 33-WD-055 Size/Length: 0.90" / 20.5" Thickness/Diameter: 0.432" / 6.0"
Limitations: Limited to single sided access due to T-box configuration on weld. Start Time: 1540 Finish Time: 1551

Instrument Settings		Search Unit	
Serial No.:	<u>15C01N68</u>	Serial No.:	<u>0000K5</u>
Manufacturer:	<u>GEIT</u>	Manufacturer:	<u>KBA</u>
Model:	<u>USN-60SW</u>	Size:	<u>0.25"</u>
Linearity:	<u>L-17-012</u>	Model:	<u>Comp G</u>
Delay:	<u>3.4372</u>	Freq.:	<u>5 MHz</u>
Range:	<u>1.4"</u>	Center Freq.:	<u>N/A</u>
M'tl Cal/Vel:	<u>0.1215</u>	Exam Angle:	<u>45°</u>
Pulser Type:	<u>Square</u>	Squint Angle:	<u>N/A</u>
Damping:	<u>500 Ohms</u>	Measured Angle:	<u>45°</u>
Reject:	<u>0%</u>	Mode:	<u>Shear</u>
PRF:	<u>Auto High</u>	Exit Point:	<u>0.30"</u>
SU Freq.:	<u>5 MHz</u>	# of Elements:	<u>1</u>
Frequency:	<u>5.0 MHz</u>	Config.:	<u>Single</u>
Rectify:	<u>Fullwave</u>	Focus:	<u>N/A</u>
Voltage:	<u>450</u>	Shape:	<u>Round</u>
Pulse Width:	<u>100</u>	Contour:	<u>N/A</u>
Gate Mode:	<u>N/A</u>	Wedge Style:	<u>MSWQC</u>
Display Delay:	<u>0</u>		
Ax. Gain (dB):	<u>22.0</u>		
Circ. Gain (dB):	<u>N/A</u>		
1 Screen Div. =	<u>0.14</u>		
in. of	<u>Sound Path</u>		

Calibration Block		Search Unit Cable	
Cal. Block No.	<u>12-1179</u>	Type:	<u>RG-174</u>
Thickness	<u>0.5 in - 2.0 in.</u>	Length:	<u>6'</u>
Dia.:	<u>Flat</u>	No. Conn.:	<u>0</u>
Cal. Blk. Temp.	<u>65</u>		
Temp. Tool:	<u>0003111035</u>		
Comp. Temp.	<u>75</u>		
Temp. Tool:	<u>0003111035</u>		
Recordable Indication(s):	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
(If Yes, Ref. Attached Ultrasonic Indication Report.)			

Results: Accept ☒ Reject ☐ Info ☐
Percent Of Coverage Obtained > 90%: No-61.75% Reviewed Previous Data: Yes

Cal. Checks	Time	Date
Initial Cal.	1232	3/27/2017
Inter. Cal.	1538	3/27/2017
Inter. Cal.	1606	3/27/2017
Inter. Cal.	N/A	
Final Cal.	1735	3/27/2017

Couplant
Cal. Batch: 17B028
Type: ULTRAGEL II
Mfg.: MAGNAFLUX
Exam Batch: 17B028
Type: ULTRAGEL II
Mfg.: MAGNAFLUXReference Block
Serial No.: 788448
Type: Rompas

Axial Oriented Search Unit			
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
0.50" ID Notch	85%	5.1	0.708"
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
Circumferential Oriented Search Unit			
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A
Reference/Simulator Block			
Gain dB	Reflector	Signal Amplitude %	Sweep Division
22	NSDH	33%	3.2
N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A

Comments: No counterbore detected. Observed ID root geometry at below recordable levels intermittent 360°.

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Teer, Ryan C	II		3/27/2017	Ted Siever		3-31-17
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			CILENTO, J.J.		3-31-17
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			GARY GUSTAFSON		4/1/17

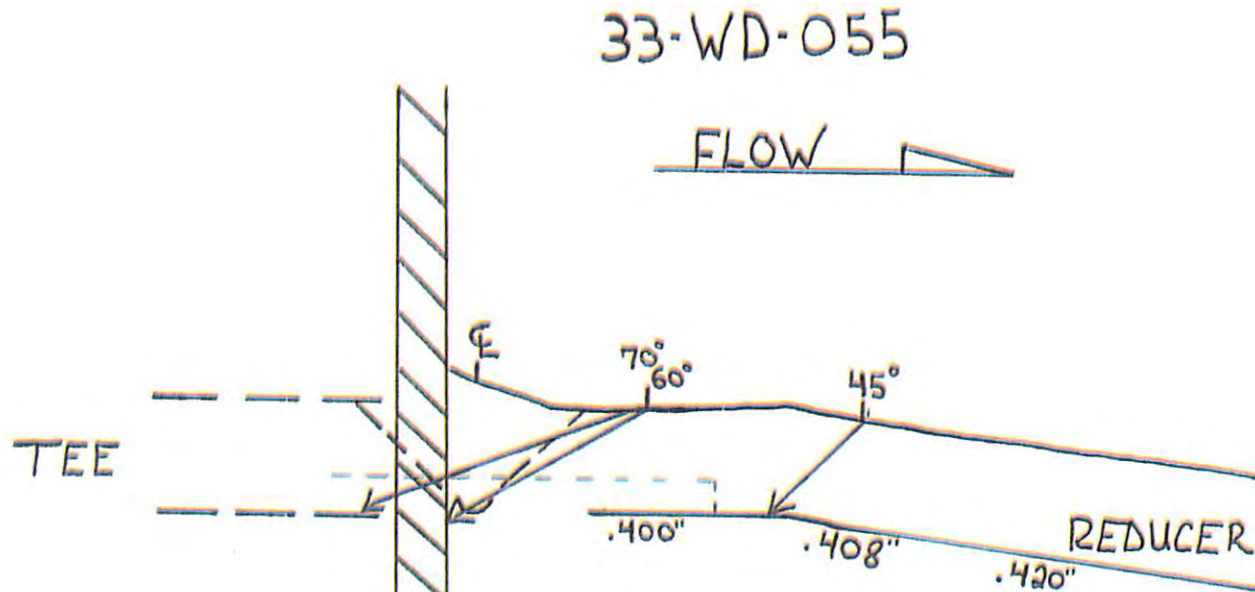


Supplemental Report

Report No.: ISI-UT-17-011Page: 5 of 5Summary No.: 220700

RCT

Sketch or Photo: O:\Outage Data\Nine Mile\N1RFO24\ISI\220700.jpg



"T" BOX OBSTRUCTION

* Contour taken from previous data
 Report: 1-6.02-97-0025 dated 3-21-97
 Single Sided Access due to "T" Box Configuration
 Coverage Calculations taken From Previous Report:
 1-ANP-835-09-001 Dated 3-25-09

JS 3-31-17
 J 3-31-17

Exam ID: 33-WD-055

Description: Tee-to-Reducer

OD: 6 WALL T: .432

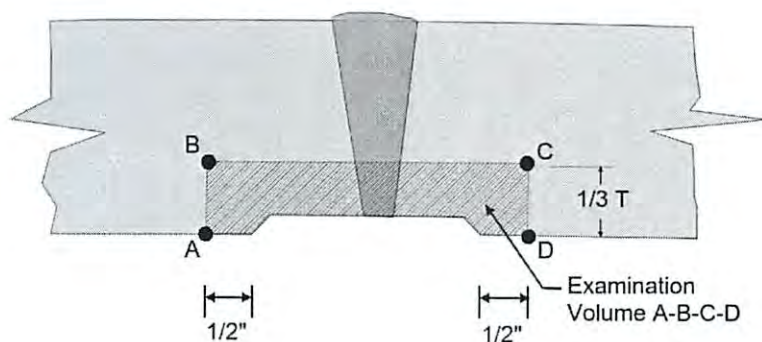
MAT'L: CS

PROCEDURE: ER-AA-335-030

CAL BLOCK: ALT BLOCK

Code Item	Code Cat	Other
R1.11	R-A	

Degradation Mechanism: Elements subject to Thermal Fatigue



Exam Instructions:

- 1) Scan as shown in figure. The absolute minimum scan includes the weld plus 1/2".
 If there is a CB, scan at least 1/2" beyond the CB
- 2) Either locate the counterbore or state that no counterbore can be detected on data the sheet
- 3) Scan at + 12 dB. NOTE: If scanning at +12 dB is not feasible due to noise levels, note on the data sheet the reason and what level was used to scan

Approved by: Ted Siever L-III

IS

33-WD-055



UT Calibration/Examination

Site/Unit: NMP / 1 Procedure: ER-AA-335-031 Outage No.: N1R25
 Summary No.: N1-ISI-244000 Procedure Rev.: 8 Report No.: ISI-UT-19-066
 Workscope: AUG Work Order No.: C93621566-40 Page: 1 of 5

Code: ASME Sect XI, 2004Ed Cat./Item: R-A/R1.16 Location: RB 340'
 Drawing No.: F45183C-09 Description: Flange-to-Reducer
 System ID: 37.0
 Component ID: 37-WD-003 Size/Length: 1.0" / 14" Thickness/Diameter: 0.338" / 4"
 Limitations: See comments Start Time: 1512 Finish Time: 1550

Instrument Settings
 Serial No.: 17F00E81 Manufacturer: GEIT
 Model: USN-60SW Linearity: L-19-009
 Delay: 4.6434 Range: 1.5"
 M'tl Cal/Vel: 0.1242 Pulsar Type: Square
 Damping: 500 Ohms Reject: 0%
 PRF: Auto High SU Freq.: 2.25 MHz
 Frequency: 2.25 MHz Rectify: Fullwave
 Voltage: 450 Pulse Width: 220
 Gate Mode: IP Display Delay: 0.0
 Ax. Gain (dB): 19.5 Circ. Gain (dB): N/A
10 Screen Div. = 1.5 in. of Sound Path

Search Unit
 Serial No.: SB2059 Manufacturer: GEIT
 Size: 0.25" Model: Comp-G
 Freq.: 2.25 MHz Center Freq.: N/A
 Exam Angle: 45° Squint Angle: N/A
 Measured Angle: 45° Mode: Shear
 Exit Point 0.25" # of Elements: 1
 Config.: Single Focus: N/A
 Shape: Round Contour: N/A
 Wedge Style: MSWQC

Search Unit Cable
 Type: RG-174 Length: 6' No. Conn.: 0

Calibration Block
 Cal. Block No. 12-1177
 Thickness 0.5 in - 2.0 in. Dia.: Flat
 Cal. Blk. Temp. N/A Temp. Tool: N/A
 Comp. Temp. N/A Temp. Tool: N/A
 Recordable Indication(s): Yes ☐ No ☒ (If Yes, Ref. Attached Ultrasonic Indication Report.)

Scan Coverage
 Upstream ☒ Downstream ☒ Scan dB: 31.5
 CW ☒ CCW ☒ Scan dB: 31.5
 Exam Surface: O.D.
 Surface Condition: Ground Flush

Results: Accept ☒ Reject ☐ Info ☐
 Percent Of Coverage Obtained > 90%: No-50% Reviewed Previous Data: Yes

Cal. Checks	Time	Date
Initial Cal.	1301	3/27/2019
Inter. Cal.	1510	3/27/2019
Inter. Cal.	N/A	
Inter. Cal.	N/A	
Final Cal.	1622	3/27/2019

Couplant
 Cal. Batch: 18C072
 Type: ULTRAGEL II
 Mfg.: MAGNAFLUX
 Exam Batch: 18C072
 Type: ULTRAGEL II
 Mfg.: MAGNAFLUX

Reference Block
 Serial No.: 18-1921
 Type: SS Rompas

Axial Oriented Search Unit				
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path	
0.5" Notch	80%	4.7	0.698"	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
Circumferential Oriented Search Unit				
Calibration Reflector	Signal Amplitude %	Sweep Division	Sound Path	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	
Reference/Simulator Block				
Gain dB	Reflector	Signal Amplitude %	Sweep Division	Sound Path
19.5	FSDH	18%	6.7	1.0"
N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A

Comments: Limitation due to reducer and weld configuration, 60° and 70° used for code coverage. Single sided exam from reducer side. NRI. No counterbore detected.

Examiner	Level	II-PDI	Signature	Date	Reviewer	Signature	Date
Riccardelli, Michael				3/27/2019	JW Setzer - Level III		3/31/19
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					PATRICK IRWIN L-III		3/31/2019
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					BRANDON POWERS		4/1/19



Supplemental Report

Report No.: ISI-UT-19-066

Page: 4 of 5

Summary No.: N1-ISI-244000

Sketch or Photo:

Crown Width 1.0"

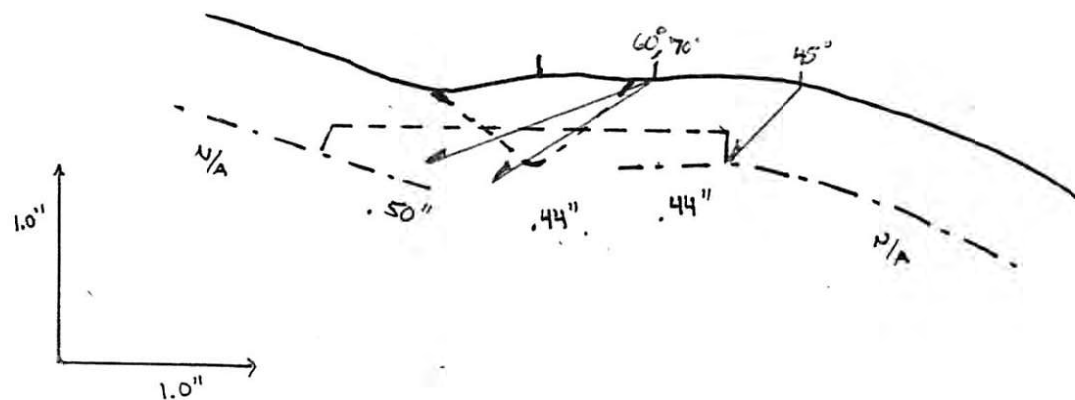
Flow 

Crown Height .05"

Drawn By: Brandon Olson

C/L

Exam Coverage = 50% as per single sided access rules.



Up Stream Component FLANGE

Down Stream Component REDUCER



Supplemental Report

Report No.: ISI-UT-19-066

Page: 5 of 5

Summary No.: N1-ISI-244000

Examiner: Riccardelli, Michael

Level: II-PDI

Reviewer: JW Setzer - Level III

Date: 3/31/19

Examiner: N/A

Level: N/A

Site Review: PATRICK IRWIN L-III

Date: 3/31/2019

Other: N/A

Level: N/A

ANII Review: Brian Paul Powers

Date: 4/1/19

Comments: 37-WD-003

Sketch or Photo: O:\Outage Data\Nine Mile\N1RFO25\ISI\Pictures\244000-2.JPG

O:\Outage Data\Nine Mile\N1RFO25\ISI\Pictures\244000-1.JPG





HITACHI

Nine Mile Unit 1 R25 - Spring of 2019

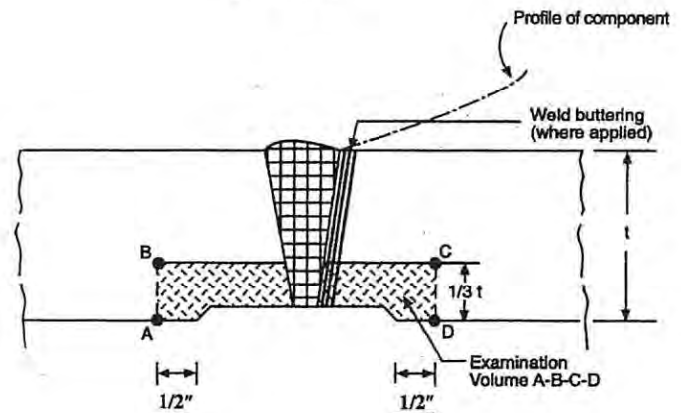
Component ID 37-WD-003
Configuration Flange-to-Reducer
Previous Data ☒
Code Year 2004 Ed, No Addenda
Code Class 1
ASME Category R-A
ASME Item R1.16

Procedure ER-AA-335-031
Thickness .338"
Diameter 4"
Material 1 A376 TP304
Material 2

Calibration N/A
Block 1

Scan Sensitivity Requirements

Figure



Degradation Mechanism

IGSCC

Comments

1. If this weld is new and "Base Line" data is being obtained, then perform TC's, otherwise validate thicknesses and physical measurements of existing TC's and produce a new TC Data Sheet.
2. For R1.20, Scan as shown in figures and validate any transition in thickness (CB or counter-bore) and note on data sheet if CB is detected. If CB is not detected scan area to 1/2" past toe of weld.
3. Look for areas of excessive ID noise, especially in thinner sections of the component. Scan both sides of weld unless physical limitation prevent, if so all limitations must be documented with pictures and dimensions.
4. For R1.11, Scanning with less than +12 dB may be permissible in the cases where the signal response from the ID roll is not easily discernible with higher angles (typically 60° 70°), scanning sensitivity may be set using the average baseline noise level in lieu of the ID roll.

Joseph

03-19-2019

Prepared By / Date

J. L. L.

3-27-19

Approved By / Date