

10 CFR 50.55a

June 18, 2020

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

Calvert Cliffs Nuclear Power Plant, Units 1 and 2
Renewed Facility Operating License Nos. DPR-53 and DPR-69
NRC Docket Nos. 50-317 and 50-318

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 June 30, 2019, for the Calvert Cliffs Nuclear Power Plant, Units 1 and 2. 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 June 18, 2021.

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

Respectfully,



David P. Helker
Sr. Manager, Licensing
Exelon Generation Company, LLC

Attachments: 1) Relief Request ISI-04-25
2) Calvert Cliffs Nuclear Power Plant Unit 1 Fourth Inservice Inspection (ISI) Interval Limited Coverage Non-Destructive Examination (NDE) Reports
3) Calvert Cliffs Nuclear Power Plant Unit 2 Fourth Inservice Inspection (ISI) Interval Limited Coverage Non-Destructive Examination (NDE) Reports

cc: Regional Administrator, Region I, USNRC
USNRC Senior Resident Inspector, CCNPP
Project Manager USNRC, CCNPP
S. Seaman, State of Maryland

Attachment 1

Relief Request ISI-04-25

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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-D, C-A, C-B, R-A
Item Number:	B3.90, B3.110, B3.130, C1.10, C2.21, R1.11, R1.16, R1.20
Description:	Limited Examination Coverage
Component Number:	See Tables ISI-04-25.1 and ISI-04-25.2 for a list of Component IDs

2. Applicable Code Edition and Addenda

The Calvert Cliffs Nuclear Power Plant, Units 1 and 2 (CCNPP) fourth interval Inservice Inspection (ISI) program was based on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, 2004 Edition with No Addenda.

CCNPP maintains the responsibility to ensure examinations were performed in accordance with the requirements of ASME, Section XI, Appendix VIII, "Performance Demonstration for Ultrasonic Examinations 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. Tables ISI-04-25.1 and ISI-04-25.2 identify whether each listed examination was performed in accordance with the requirements of ASME, Section XI, Appendix VIII.

3. Applicable Code Requirement:

The extent of examination requirement for Examination Category B-D, Item Numbers B3.90, B3.110 and B3.130, per Table IWB-2500-1, requires a volumetric examination of all nozzle-to-vessel welds.

The extent of examination requirement for Examination Category C-A, Item Number C1.10, per Table IWC-2500-1, requires a volumetric examination of shell circumferential welds of essentially 100% of the weld length.

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 all nozzle-to-shell welds.

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 ISI-04-04 (ML090020097) was submitted and then approved by the NRC in a Safety Evaluation Report (SER) dated November 19, 2009 (ML093220090) in order to utilize ASME Code Case N-716.

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CCNPP 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. Impracticality 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 as conformance would require extensive structural modifications to the component or surrounding structure.

Due to the original design of these components, CCNPP is unable to satisfy the ASME Section XI requirements to perform the volumetric examinations to the extent required for welds, greater than 90% of the volume. CCNPP 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 Code requirements to examine these components are impractical due to component configuration, interference from permanent plant equipment, single-sided access, etc.

Tables ISI-04-25.1 and ISI-04-25.2 provide a summary of the examination limitations for each component for which relief is requested. The tables also indicate the outage the component was examined, the coverage percentage obtained for each component, and other pertinent design information. These tables are the cumulative lists of all the limited ASME Section XI examinations performed during the fourth ISI interval. Attachments 2 and 3 provide coverage plots which were extracted from the Non-Destructive Examination (NDE) summary sheets that detail the examination limitations.

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

6. Proposed Alternative and Basis for Use

CCNPP has performed the ASME Section XI required examinations to the maximum extent practical (Code Coverage) which are documented in Tables ISI-04-25.1 and ISI-04-25.2. 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

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without major modification to the components. As a minimum, all components received the required volumetric examination 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 ten-year ISI interval for Calvert Cliffs Nuclear Power Plant, Units 1 and 2.

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 Inservice Inspection Relief Request 2ISI-014 was authorized per NRC SER dated June 2, 2020 (ADAMS Accession No. ML20141L053).

Watts Bar Nuclear Plant, Unit 1 Second Inservice Inspection Relief Request 1-ISI-21 was authorized per NRC SER dated April 12, 2019 (ADAMS Accession No. ML19071A009).

Byron Station, Units 1 and 2 Third Inservice Inspection Relief Requests I3R-12 and I3R-15 were authorized per NRC SER dated January 25, 2018 (ADAMS Accession No. ML17349A960).

Limerick Generating Station, Units 1 and 2 Third Inservice Inspection Relief Request I3R-23 was authorized per NRC SE dated August 7, 2018 (ADAMS Accession No. ML18192C172).

Surry Power Station, Unit 2 Fourth Inservice Inspection Relief Requests were authorized per NRC SE dated February 17, 2017 (ADAMS Accession No. ML16365A118).

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Table ISI-04-25.1
CCNPP, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
4-405 (004100)	Nozzle to Head Welds – Spray Nozzle (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.110	1RFO19 (2010)	A508, CL. 2 (Nozzle) A-533, Gr B (Shell)	11 7/8" (Nozzle ID) / 3 7/8" (Shell)	2235 psig / 653 deg-F	0°, 45°, 45°T, 60°, 60°T	66.4%	Yes	Examination limited due to nozzle configuration. (Att. 2 Pg. No. 2-4)
SG-11-W7 (103205)	11B Primary Head to Cold Leg B Nozzle (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.130	1RFO19 (2010)	SA-508 CL. 3a Channel Head and Nozzle	30 (ID) / 4 9/16"	2235 psig / 604 deg-F	0°, 35°, 45°, 45°T, 60°, 60°T	74.24%	Yes	Examination limited due to nozzle configuration. (Att. 2 Pg. Nos. 5-11)
SG-12-W5 (106055)	12 Primary Outlet Nozzle to Primary Head (Hot Leg) (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.130	1RFO19 (2010)	SA-508 CL. 3a Channel Head and Nozzle	42" (ID) / 7"	2235 psig / 604 deg-F	0°, 35°, 45°, 45°T, 60°, 60°T	84.3%	Yes	Examination limited due to the proximity of the nozzle radius. (Att. 2 Pg. No. 12-14)
SG-12-W6 (106105)	12A Primary Head to Cold Leg A Nozzle (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.130	1RFO19 (2010)	SA-508 CL. 3a Channel Head and Nozzle	30 (ID) / 4 9/16"	2235 psig / 604 deg-F	0°, 35°, 45°, 45°T, 60°, 60°T	74.24%	Yes	Examination limited due to nozzle configuration. (Att. 2 Pg. Nos. 15-21)
SG-12-W7 (108255)	12B Primary Head to Cold Leg B Nozzle (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.130	1RFO19 (2010)	SA-508 CL. 3a Channel Head and Nozzle	30 (ID) / 4 9/16"	2235 psig / 604 deg-F	0°, 35°, 45°, 45°T, 60°, 60°T	74.24%	Yes	Examination limited due to nozzle configuration. (Att. 2 Pg. Nos. 22-28)
SCHE-11-N1 (252100)	Inlet Nozzle to Channel Barrel (SI)	IWC-2500-4 (a), (b), or (d) Surface (PT/MT) and Volumetric (UT)	C-B C2.21	1RFO20 (2012)	SA105 II Channel / SA 182 F304 Nozzle	10" / 0.843"	150 psig / 130 deg-F	45°, 45°T, 70°	50.0%	Yes	UT examination limited due to single sided access. Essentially 100% coverage was achieved for surface examination. (Att. 2 Pg. Nos. 29-31)

Notes:

- The following systems and their abbreviations are listed here: Chemical and Volume Control (CVC), Feedwater (FW), Main Steam (MS), Reactor Coolant (RC), Safety Injection (SI)

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Table ISI-04-25.1
CCNPP, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
4-404 (004050)	Nozzle To Head Welds (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.110	1RFO21 (2014)	A508, CL. 2 (Nozzle) A-533, Gr B (Shell)	11 7/8" (Nozzle ID) / 3 7/8" (Shell)	2235 psig / 653 deg-F	35 °, 45°, 45°T, 60°	31.8%	Yes	Examination limited due to nozzle configuration. (Att. 2 Pg. Nos. 32-37)
SG-11-W5 (100805)	11 Primary Outlet Nozzle to Primary Head (Hot Leg) (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.130	1RFO21 (2014)	SA-508 CL. 3a Channel Head and Nozzle	42" (ID) / 7	2235 psig / 604 deg-F	0°, 35 °, 45°	81.6%	Yes	Examination limited due to nozzle configuration. (Att. 2 Pg. Nos. 38-43)
SCHE-11-1 (252000)	Flange to Channel Barrel SCHE-11 (SI)	IWC-2500-1 Volumetric (UT)	C-A C1.10	1RFO21 (2014)	SA105 II Channel & Flange	44" / 1.125"	150 psig / 130 deg-F	45°, 45°T, 70°	62.5%	Yes	Examination limited due to single sided access. (Att. 2 Pg. Nos. 44-50)
SCHE-12-2 (252350)	Tube Sheet to Channel Cover SCHE- 12 (SI)	IWC-2500-1 Volumetric (UT)	C-A C1.10	1RFO21 (2014)	SA105 II Channel & Flange	44" / 1.125"	150 psig / 130 deg-F	45°, 45°T, 70°	75.2%	Yes	Examination limited due to single sided access. (Att. 2 Pg. Nos. 51-55)
16-405A (004150)	Nozzle to Head Weld (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.110	1RFO22 (2016)	A508, CL. 2 (Nozzle) SA-533, Gr B CL 1 (Shell)	7 1/4" / 3 7/8"	2235 psig / 653 deg-F	35°, 45°, 45°T, 60°, 60°T	60.5%	Yes	Examination limited due to nozzle configuration. (Att. 2 Pg. Nos. 56-60)
16-405B (004200)	Nozzle to Head Weld (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.110	1RFO22 (2016)	A508, CL. 2 (Nozzle) SA-533, Gr B CL 1 (Shell)	7 1/4" / 3 7/8"	2235 psig / 653 deg-F	35°, 45°, 45°T, 60°, 60°T	60.5%	Yes	Examination limited due to nozzle configuration. (Att. 2 Pg. Nos. 61-65)

Notes:

- The following systems and their abbreviations are listed here: Chemical and Volume Control (CVC), Feedwater (FW), Main Steam (MS), Reactor Coolant (RC), Safety Injection (SI)

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Table ISI-04-25.1
CCNPP, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
12-PSL-10 (110950-RI)	Elbow to Pipe Weld (RC)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.11	1RFO22 (2016)	Stainless Steel Pipe / Cast Stainless Safe End	12" / 1.312"	2235 psig / 653 deg-F	45°, 45°T	48.2%	Yes	Examination limited due to CSS material properties. (Att. 2 Pg. Nos. 66-70)
SG-11-W6 (CCNP-1-100955)	11A Primary Head to Cold Leg A Nozzle (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.130	1RFO23 (2018)	SA-508 CL. 3a Channel Head and Nozzle	30 (ID) / 4 9/16	2235 psig / 604 deg-F	35°, 45°, 45°T, 60°, 60°T	73.8%	Yes	Examination limited due to nozzle configuration (taper). (Att. 2 Pg. Nos. 71-78)
10-205A (CCNP-1-002400)	Nozzle to Shell Welds (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.90	1RFO23 (2018)	SA508, CL. 1 (Nozzle) A-533, Gr B CL 1 (Shell)	42" / 10 3/4"	2235 psig / 604 deg-F	5°L, 25°L, 35°L, 40°L, 45°DL, 45°L, 45°S, 50°L	72.7%	Yes	Examination limited due to nozzle configuration. (Att. 2 Pg. Nos. 79-81)
10-205B (CCNP-1-002450)	Nozzle to Shell Welds (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.90	1RFO23 (2018)	SA508, CL. 1 (Nozzle) A-533, Gr B CL 1 (Shell)	42" / 10 3/4"	2235 psig / 604 deg-F	5°L, 25°L, 35°L, 40°L, 45°DL, 45°L, 45°S, 50°L	72.7%	Yes	Examination limited due to nozzle configuration. (Att. 2 Pg. Nos. 82-84)
SCHE-12-N2 (CCNP-1-252450)	Outlet Nozzle to Shell (SI)	IWC-2500-4 (a), (b), or (d) Surface (PT/MT) and Volumetric (UT)	C-B C2.21	1RFO23 (2018)	SA105 II Channel / SA 182 F304 Nozzle	10" / 0.843"	150 psig / 130 deg-F	45°, 45°T, 70°	44.15%	Yes	UT examination limited due to single sided access. Essentially 100% coverage was achieved for surface examination. (Att. 2 Pg. Nos. 85-87)
12-SC-1004-2 (CCNP-1-113200-RI)	Safe End to Elbow (SI)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.20	1RFO23 (2018)	Stainless Steel Pipe / Cast Stainless Safe End	12" / 1.125"	2235 psig / 604 deg-F	45°, 45°T, 60°, 60°RL, 60°T	50.0%	Yes	Examination limited due to single sided access. (Att. 2 Pg. Nos. 88-90)

Notes:

- The following systems and their abbreviations are listed here: Chemical and Volume Control (CVC), Feedwater (FW), Main Steam (MS), Reactor Coolant (RC), Safety Injection (SI)

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Table ISI-04-25.1
CCNPP, Unit 1
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
12-SI-1009-9 (CCNP-1- 114000-RI)	Pipe to Valve 1-SI-217 (SI)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.16	1RFO23 (2018)	Stainless Steel Pipe	12" / 1.125"	2235 psig / 550 deg-F	45°, 45°T, 60°, 60°RL	50.0%	Yes	Examination limited due to single sided access. (Att. 2 Pg. Nos. 91-93)
12-SI-1010-13 (CCNP-1- 115150-RI)	Pipe to Safe End (SI)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.20	1RFO23 (2018)	Stainless Steel Pipe / Cast Stainless Safe End	12" / 1.125"	2235 psig / 550 deg-F	45°, 45°T, 60°, 60°RL	50.0%	Yes	Examination limited due to single sided access. (Att. 2 Pg. Nos. 94-96)
12-SI-1011-12 (CCNP-1- 115950-RI)	Pipe to Safe End (SI)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.20	1RFO23 (2018)	Stainless Steel Pipe / Cast Stainless Safe End	12" / 1.125"	2235 psig / 550 deg-F	45°, 45°T, 60°, 60°RL	50.0%	Yes	Examination limited due to single sided access. (Att. 2 Pg. Nos. 97-99)
12-SI-1012-12 (CCNP-1- 116700-RI)	Elbow to Safe End (SI)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.20	1RFO23 (2018)	Stainless Steel Pipe / Cast Stainless Safe End	12" / 1.125"	2235 psig / 550 deg-F	45°, 45°T, 60°, 60°RL	50.0%	Yes	Examination limited due to single sided access. (Att. 2 Pg. Nos. 100-102)

Notes:

- The following systems and their abbreviations are listed here: Chemical and Volume Control (CVC), Feedwater (FW), Main Steam (MS), Reactor Coolant (RC), Safety Injection (SI)

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CCNPP, Unit 2
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
4-404 (103080)	Surge Line Nozzle (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.110	2RFO18 (2011)	A508, CL. 2 (Nozzle) A-533, Gr B (Shell)	11 7/8" (Nozzle ID) / 3 7/8" (Shell)	2235 psig / 653 deg-F	0°, 35°, 45°, 45°T, 60°, 60°T	56.0%	Yes	Examination limited due to nozzle configuration, heater sleeves, and MNSA. (Att. 3 Pg. Nos. 2-14)
4-405 (103090)	Spray Nozzle to Upper Head (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.110	2RFO18 (2011)	A508, CL. 2 (Nozzle) A-533, Gr B (Shell)	4 ½" (Nozzle ID) / 3 7/8 " (Shell)	2235 psig / 653 deg-F	0°, 35°, 45°, 45°T, 60°, 60°T	65.0%	Yes	Examination limited due to nozzle configuration. (Att. 3 Pg. Nos. 15-22)
SG-21-W7 (109015)	Primary Head to CL "B" Nozzle Extension (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.130	2RFO18 (2011)	SA-508 CL. 3a Channel Head and Nozzle	30" (ID) / 4 9/16"	2235 psig / 604 deg-F	0°, 35°, 35°T, 45°, 45°T, 60°	78.0%	Yes	Examination limited due to outer diameter contour. (Att. 3 Pg. Nos. 23-30)
12-SI-2009-9 (115080-RI)	Pipe to Valve 2-SI-217 Weld (SI)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.16	2RFO18 (2011)	Stainless Steel Piping	12" / 1.125"	2235 psig / 550 deg-F	0°, 45°, 45°T, 60°, 60°L	50.0%	Yes	Examination limited due to single sided access. (Att. 3 Pg. No. 31 & 32)
SCHE-21-N1 (201400)	Inlet Nozzle (SI)	IWC-2500-4 (a), (b), or (d) Surface (PT/MT) and Volumetric (UT)	C-B C2.21	2RFO18 (2011)	SA105 II Channel / SA 182 F304 Nozzle	10" / 0.843"	150 psig / 130 deg-F	45°, 45°T, 70°	33.5%	Yes	UT Examination limited due to single sided access. Essentially 100% coverage was achieved for surface examination. (Att. 3 Pg. No. 33 & 34)
16-405A (103100)	Safety and Relief Nozzle Upper Head' (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.110	2RFO19 (2013)	A508, CL. 2 (Nozzle) SA-533, Gr B CL 1 (Shell)	7 ¼" / 3 7/8"	2235 psig / 653 deg-F	0°, 35°, 45°, 45°T, 60°, 60°T	58.0%	Yes	Examination limited due to nozzle configuration. (Att. 3 Pg. Nos. 35-42)

Notes:

- The following systems and their abbreviations are listed here: Chemical and Volume Control (CVC), Feedwater (FW), Main Steam (MS), Reactor Coolant (RC), Safety Injection (SI)

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Table ISI-04-25.2
CCNPP, Unit 2
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
SG-21-W5 (107155)	HL Nozzle Extension to Primary Head (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.130	2RFO19 (2013)	SA-508 CL. 3a Channel Head and Nozzle	42" (ID) / 7"	2235 psig / 604 deg-F	0°, 35°, 35°T, 45°, 45°T, 60°	80.2%	Yes	Examination limited due to outer diameter geometry. (Att. 3 Pg. Nos. 43-50)
SG-21-W6 (108135)	Primary Head to CL "A" Nozzle Extension (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.130	2RFO19 (2013)	SA-508 CL. 3a Channel Head and Nozzle	30 (ID) / 4 9/16"	2235 psig / 604 deg-F	0°, 35°, 35°T, 45°, 45°T, 60°	73.8%	Yes	Examination limited due to outer diameter geometry. (Att. 3 Pg. Nos. 51-58)
SG-22-W5 (110015)	HL Nozzle Extension to Primary Head (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.130	2RFO19 (2013)	SA-508 CL. 3a Channel Head and Nozzle	42" (ID) / 7"	2235 psig / 604 deg-F	0°, 35°, 35°T, 45°, 45°T, 60°	80.2%	Yes	Examination limited due to outer diameter geometry. (Att. 3 Pg. Nos. 59-66)
SG-22-W6 (111015)	Primary Head to CL "A" Nozzle Extension (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.130	2RFO19 (2013)	SA-508 CL. 3a Channel Head and Nozzle	30 (ID) / 4 9/16"	2235 psig / 604 deg-F	0°, 35°, 35°T, 45°, 45°T, 60°	73.8%	Yes	Examination limited due to outer diameter geometry. (Att. 3 Pg. Nos. 67-74)
SG-22-W7 (112015)	Primary Head to CL "B" Nozzle Extension (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.130	2RFO19 (2013)	SA-508 CL. 3a Channel Head and Nozzle	30" (ID) / 4 9/16"	2235 psig / 604 deg-F	0°, 35°, 35°T, 45°, 45°T, 60°	73.8%	Yes	Examination limited due to outer diameter geometry. (Att. 3 Pg. Nos. 75-82)
3-PS-2001-28 (137520-RI)	Pipe to Elbow (RC)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.11	2RFO19 (2013)	Stainless Steel Pipe	3" / 0.438"	2235 psig / 550 deg-F	45°, 45°T, 60°, 70°	89.0%	Yes	Examination limited due to intrados configuration. (Att. 3 Pg. No. 83 & 84)

Notes:

- The following systems and their abbreviations are listed here: Chemical and Volume Control (CVC), Feedwater (FW), Main Steam (MS), Reactor Coolant (RC), Safety Injection (SI)

ATTACHMENT 1
10 CFR 50.55a Relief Request ISI-04-25
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticality--
Revision 0
(Page 10 of 12)

Table ISI-04-25.2
CCNPP, Unit 2
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
12-SI-2012-7 (118060-RI)	Pipe to Valve 2-SI-247 (SI)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.16	2RFO19 (2013)	Stainless Steel Pipe	12" / 1.125"	2235 psig / 550 deg-F	45°, 45°T, 60°S, 60°L	50.0%	Yes	Examination limited due to single sided access. (Att. 3 Pg. No. 85 & 86)
12-SI-2010-8 (116140-RI)	Valve 2-SI- 227 to Elbow (SI)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.20	2RFO19 (2013)	Stainless Steel Pipe	12" / 1.125"	2235 psig / 550 deg-F	45°, 45°T, 60°, 60°L, 70°	50.0%	Yes	Examination limited due to single sided access. (Att. 3 Pg. No. 87 & 88)
6-MS-2007-2 (289000-RI)	Pipe to Elbow Weld (MS)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.20	2RFO19 (2013)	Carbon Steel Pipe	6" / 0.28"	850 psig / 520 deg-F	45°, 45°T, 70°	84.0%	Yes	Examination limited due to pipe encapsulation. (Att. 3 Pg. No. 89 & 90)
6-MS-2007-9 (289450-RI)	Pipe to Valve 2-MOV-4070 Weld (MS)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.20	2RFO19 (2013)	Carbon Steel Pipe	6" / 0.28"	850 psig / 520 deg-F	45°, 45°T, 70°	67.0%	Yes	Examination limited due to single sided access. (Att. 3 Pg. No. 91 & 92)
SCHE-22-2 (201700)	Channel Cover to Shell Flange (SI)	IWC-2500-1 Volumetric (UT)	C-A C1.10	2RFO20 (2015)	SA105 II Channel & Flange	44" / 1.125	150 psig / 130 deg-F	45°, 45°T, 70°T	83.3%	Yes	Examination limited due to single sided access. (Att. 3 Pg. Nos. 93-96)
16-405B (103110)	Safety and Relief Nozzle Upper Head (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.110	2RFO21 (2017)	A508, CL. 2 (Nozzle) SA-533, Gr B CL 1 (Shell)	7 ¼" / 3 7/8"	2235 psig / 653 deg-F	35°, 45°, 45°T, 60°, 60°T	60.5%	Yes	Examination limited due to nozzle configuration. (Att. 3 Pg. Nos. 97- 102)

Notes:

- The following systems and their abbreviations are listed here: Chemical and Volume Control (CVC), Feedwater (FW), Main Steam (MS), Reactor Coolant (RC), Safety Injection (SI)

ATTACHMENT 1
10 CFR 50.55a Relief Request ISI-04-25
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticality--
Revision 0
(Page 11 of 12)

Table ISI-04-25.2
CCNPP, Unit 2
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
SCHE-21-1 (201300)	Channel Flange to Channel Cover (SI)	IWC-2500-1 Volumetric (UT)	C-A C1.10	2RFO21 (2017)	SA105 II Channel & Flange	44" / 1.125	150 psig / 130 deg-F	0°, 45°, 45°T, 70°	62.5%	Yes	Examination limited due to single sided access. (Att. 3 Pg. Nos. 103-107)
12-PSL-12 (113120-RI)	Elbow to Safe End Weld (RC)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.11	2RFO21 (2017)	Stainless Steel Pipe / Cast Stainless Safe End	12" / 1.312"	2235 psig / 653 deg-F	45°, 45°T	53.1%	Yes	Examination limited due to the weld crown configuration. (Att. 3 Pg. Nos. 108-112)
4-PS-2003-4 (136040-RI)	Tee to Pipe Weld (RC)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.11	2RFO21 (2017)	Stainless Steel Pipe	4" / 0.438"	2235 psig / 550 deg-F	45°, 45°T, 60°, 60°T, 70°	50.0%	Yes	Examination limited due to single sided access. (Att. 3 Pg. Nos. 113 & 114)
2-CV-2005-13 (152160-RI)	Pipe to Reducer Weld (CVC)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.20	2RFO21 (2017)	Stainless Steel Pipe	2" / 0.344"	2235 psig / 450 deg-F	35°T, 45°, 45°T, 60°, 70°	50.0%	Yes	Examination limited due to single sided access. (Att. 3 Pg. Nos. 115 & 116)
2-CV-2005-16 (152190-RI)	Reducer to Pipe Weld (CVC)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.20	2RFO21 (2017)	Stainless Steel Pipe	2" / 0.344"	2235 psig / 450 deg-F	35°T, 45°, 45°T, 60°, 70°	25.0%	Yes	Examination limited due to single sided access and interference from welded support. (Att. 3 Pg. Nos. 117 & 118)
2-CV-2018-23 (155310-RI)	Pipe to Pipe Weld (CVC)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.20	2RFO21 (2017)	Stainless Steel Pipe	2" / 0.344"	2235 psig / 450 deg-F	35°T, 45°, 45°T, 60°, 70°	75.0%	Yes	Examination limited due to interference from welded support. (Att. 3 Pg. Nos. 119-121)

Notes:

- The following systems and their abbreviations are listed here: Chemical and Volume Control (CVC), Feedwater (FW), Main Steam (MS), Reactor Coolant (RC), Safety Injection (SI)

ATTACHMENT 1
10 CFR 50.55a Relief Request ISI-04-25
Proposed Alternative in Accordance with 10 CFR 50.55a(g)(5)(iii)
--Inservice Inspection Impracticability--
Revision 0
(Page 12 of 12)

Table ISI-04-25.2
CCNPP, Unit 2
List of Components with Limited Examination Coverage

Component ID (Summary Number)	Weld Description (System) ¹	Exam Requirements (Figure No.) and Method	Exam Category / Item Number	Outage Examined	Material of Construction	Diameter / Thickness	Normal Operating Conditions (Pressure / Temperature)	Exam Angle / Mode	Actual Coverage	Appendix VIII Qualified Exam	Remarks
SCHE-21-N2 (CCNP-2- 201500)	Outlet Nozzle (SI)	IWC-2500-4 (a), (b), or (d) Surface (PT/MT) and Volumetric (UT)	C-B C2.21	2RFO22 (2019)	SA105 II Channel / SA 182 F304 Nozzle	10" / 0.843"	150 psig / 130 deg-F	45°, 45°T, 70°	46.6%	Yes	UT Examination limited due to single sided access. Essentially 100% coverage was achieved for surface examination. (Att. 3 Pg. Nos. 122-125)
10-205A (CCNP-2- 101210)	Outlet Nozzle @ 0° (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.90	2RFO22 (2019)	SA508, CL. 1 (Nozzle) A-533, Gr B CL 1 (Shell)	42" / 10 ¾"	2235 psig / 604 deg-F	5°L, 25°L, 35°L, 40°L, 45°DL, 45°L, 45°S, 50°L	72.7%	Yes	Examination limited due to nozzle configuration. (Att. 3 Pg. Nos. 126-129)
10-205B (CCNP-2- 101220)	Outlet Nozzle @ 180° (RC)	IWB-2500-7 Volumetric (UT)	B-D B3.90	2RFO22 (2019)	SA508, CL. 1 (Nozzle) A-533, Gr B CL 1 (Shell)	42" / 10 ¾"	2235 psig / 604 deg-F	5°L, 25°L, 35°L, 40°L, 45°DL, 45°L, 45°S, 50°L	72.7%	Yes	Examination limited due to nozzle configuration. (Att. 3 Pg. Nos. 130-133)
2-CV-2005-29 (CCNP-2- 152430-RI)	Elbow to Safe End Weld (CVC)	IWB-2500-8(c) IWB-2500-9, 10, & 11 Volumetric (UT)	R-A R1.11	2RFO22 (2019) (PSI)	Stainless Steel Pipe	2" / 0.344"	2235 psig / 450 deg-F	0°-85°PA	88.1%	Yes	Examination limited due to overlay configuration. (Att. 3 Pg. Nos. 134-142)

Notes:

- The following systems and their abbreviations are listed here: Chemical and Volume Control (CVC), Feedwater (FW), Main Steam (MS), Reactor Coolant (RC), Safety Injection (SI)

Attachment 2

Calvert Cliffs Nuclear Power Plant Unit 1
Fourth Inservice Inspection (ISI) Interval Limited Coverage
Non-Destructive Examination (NDE) Reports

UT Vessel Examination

Site/Unit: CCNP / 1 Procedure: NDE-5455-CC Outage No.: 1RFO19
Summary No.: 004100 Procedure Rev.: 00 Report No.: CC10-IU-008
Workscope: ISI Work Order No.: C120090655 Page: 1 of 2

Code: ASME Section XI 2004 Ed Cat./Item: B-D/B3.110 Location: C86-PZR
Drawing No.: 10219-0015, A-3 Description: NOZZLE TO HEAD WELDS - Spray Nozzle
System ID: 064
Component ID: 4-405 Size/Length: 1.8" Thickness/Diameter: 4.5"/
Limitations: Nozzle Configuration Start Time: 2216 Finish Time: 2352

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground
Lo Location: Vessel 0° Wo Location: Weld C/L Couplant: ULTRAGEL II Batch No.: 06225
Temp. Tool Mfg.: FLUKE Serial No.: 20Y08828 Surface Temp.: 94 °F

Cal. Report No.: CC10-ICA-016, 017, 018

Angle Used	0	45	45T	60	60T	N/A
Scanning dB	46.0	61.0	61.0	60.0	60.0	N/A

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

Comments:

LIFT OFF AT NOZZLE BLEND RADIUS. * REFERENCE REPORT # 2000BU028, DATED 3/23/2000. FOR COVERAGE PLOT AND CALCULATIONS.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: 66.4 Reviewed Previous Data: Yes

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
GAHAN, TIMOTHY L			<i>Timothy Gahan</i>	2/23/2010	Stauffer, Janet	<i>Janet A Stauffer</i>	3/2/10
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
HENDRICKSON, MATT			<i>Matt Hendrickson</i>	2/23/2010	Beck, Timothy	<i>Timothy Beck</i>	3-4-10
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					McIntyre Jeffrey	<i>Jeffrey McIntyre</i>	3-8-10

Supplemental Report

Report No.: **CC10-IU-008**

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

Summary No.: **004100**

Examiner: **GAHAN, TIMOTHY L** *TG* Level: **II PDI** Reviewer: **Stauffer, Janet** *JPS* Date: **3/2/10**
 Examiner: **HENDRICKSON, MATT** *MKH* Level: **II PDI** Site Review: **Beck, Timothy** *TJB* Date: **3-4-10**
 Other: **N/A** Level: **N/A** ANII Review: **McIntyre, Jeffrey** *JM* Date: **3-8-10**

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideall_Server\Ideall_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\LTP 004100 Near Surface Resol.JPG

Near Surface Resolution

Cal Block # CCU-25
Summary # 004100

35°		
Hole	Amplitude	Sweep
	A	
	N	

45°		
Hole	Amplitude	Sweep
.100	N/A	N/A
.200	30	.2
.300	20	.4
.400	18	.6

60°		
Hole	Amplitude	Sweep
.100	60	.2
.200	70	.4
.300	60	.5
.400	40	.65

Transducers Used			
Angle	Ser. Number	Size	Freq.
45 °	C02306	.50" x 1.0"	2.25 MHz
60 °	D09006	.50" x 1.0"	2.25 MHz

Pressurizer Spray Nozzle to Head Weld

NDE Report No 2000BU028

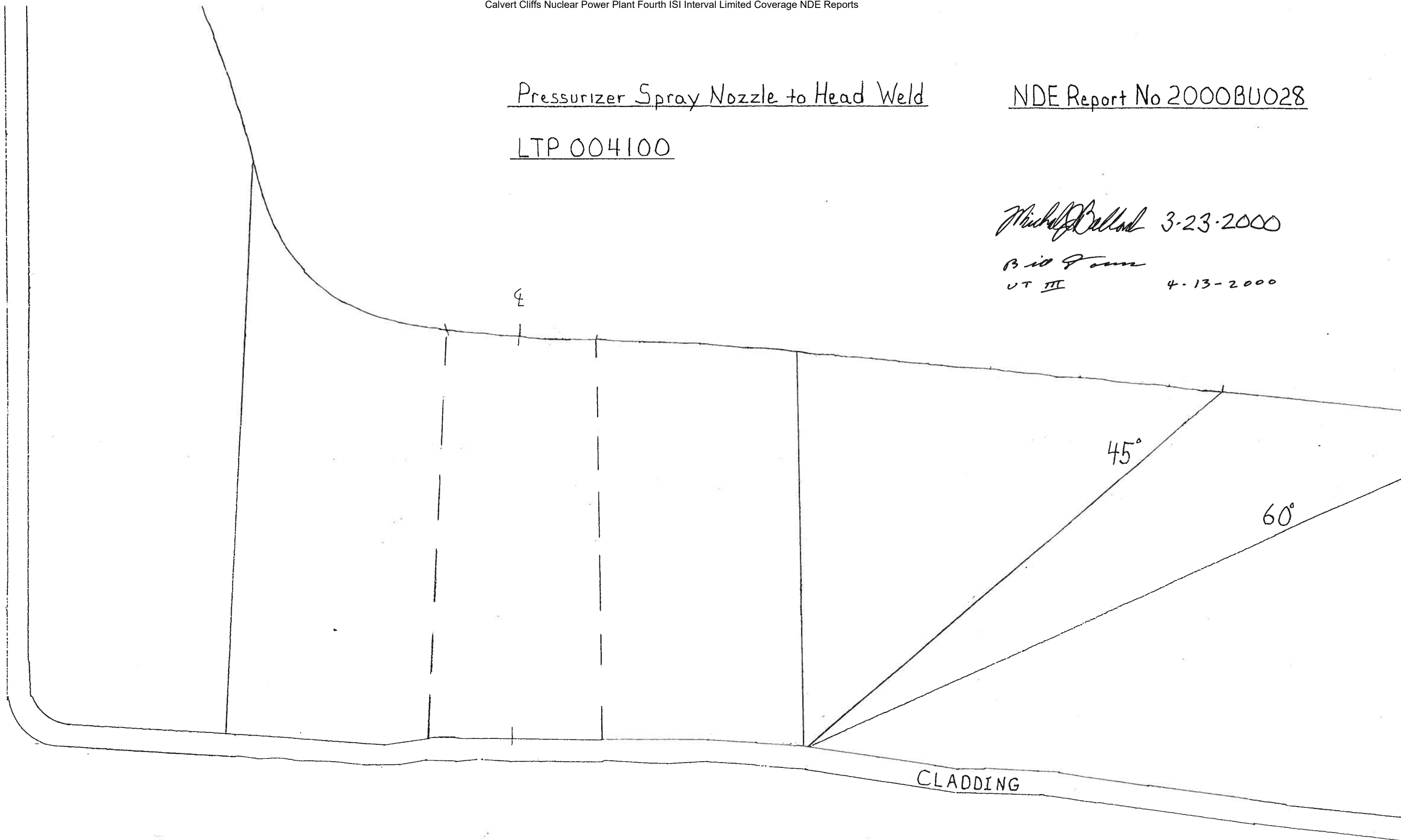
LTP 004100

Michael Ballard 3-23-2000

Bio Form

UT III

4-13-2000



**FACTORY MUTUAL
INSURANCE COMPANY**

Page: 2 of 8

fm

Date: 3/13/18

132

Date: 3-15-10

ANII Review: McIntyre, Jeffrey

He

Date: 3-16-10

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\ldeal_Server\ldeal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-065 Coverage Calcs pg1.JPG



Reviewed by: B. J. G. J. J. Date: 3-15-40

Page: 2 of 4

Supplemental Report

Report No.: **CC10-IU-065**

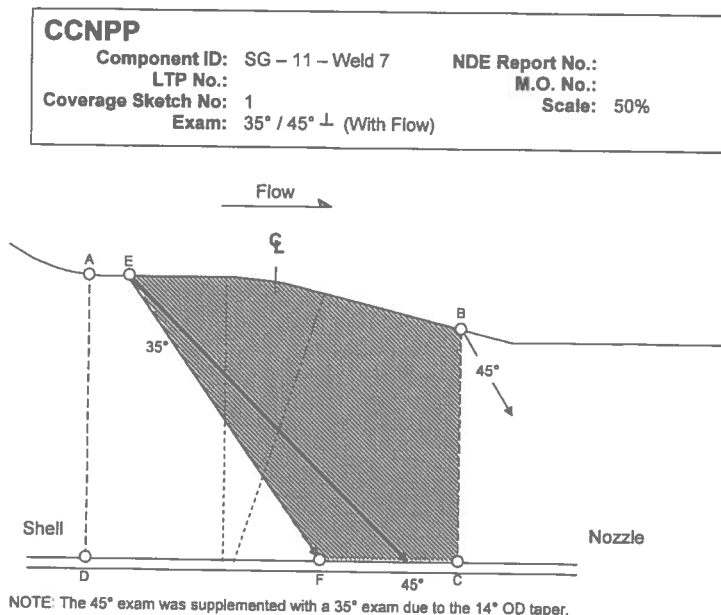
Page: **3** of **8**

Summary No.: **103205**

Examiner: **GAHAN, TIMOTHY L** *TG* Level: **II PDI** Reviewer: **Stauffer, Janet** *JS* Date: **3/13/10**
Examiner: **HENDRICKSON, MATT** Level: **II PDI** Site Review: **Downs, William R.** *WR* Date: **3-15-10**
Other: **N/A** Level: **N/A** ANII Review: **McIntyre, Jeffrey** *JM* Date: **3-16-10**

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideal_Server\Ideal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-065 Coverage Calcs pg2.JPG



Exam Area

- ABCD = 32.89 in²

With Flow

- Examined ABCD - AEFD
- $32.89 - (5.2(0.7 + 4.3)/2) = 19.94 \text{ in}^2$
- $19.94 / 32.89 = 60.47\%$

Prepared by: *Timothy Gahan* Date: **3-7-2010**

Reviewed by: *Bill Downs* Date: **3-15-10**

Page: **2** of **13**

Supplemental Report

Report No.: **CC10-IU-065**

Page: **4** of **8**

Summary No.: **103205**

Examiner: **GAHAN, TIMOTHY L** *TG*

Level: **II PDI**

Reviewer: **Stauffer, Janet** *JS*

Date: **3/13/10**

Examiner: **HENDRICKSON, MATT**

Level: **II PDI**

Site Review: **Downs, William R.** *WR*

Date: **3-15-10**

Other: **N/A**

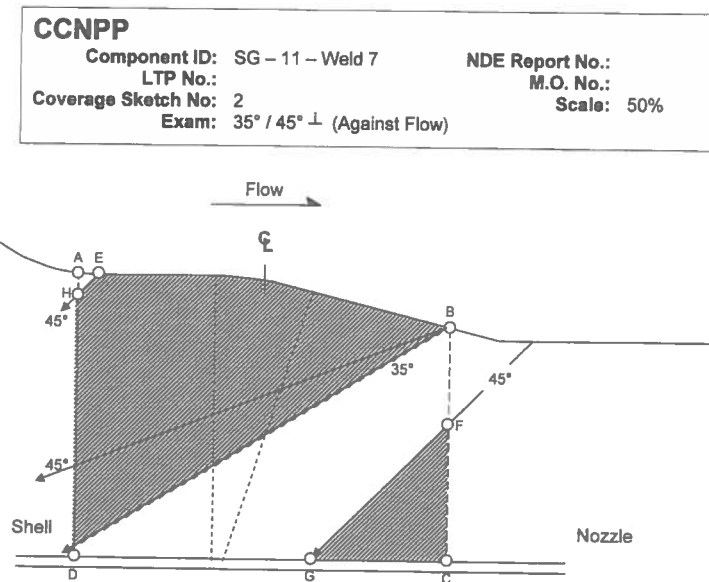
Level: **N/A**

ANII Review: **McIntyre, Jeffery** *JM*

Date: **3-16-10**

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideas_Server\Ideas_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-065 Coverage Calcs pg3.JPG



Exam Area

- ABCD = 32.89 in²

Against Flow

- Examined ABD - AEH + FCG
- $(6.7 \times 5.2)/2 - (0.4 \times 0.4)/2 + (2.5 \times 2.5)/2 = 20.47$ in²
- $20.47 / 32.89 = 62.22\%$

Prepared by: *Timothy Gahan* Date: **3-7-2010**

Reviewed by: *William R. Downs* Date: **3-15-10**

Page: **4** of **8**

Supplemental Report

Report No.: **CC10-IU-065**

Page: **5** of **8**

Summary No.: **103205**

Examiner: **GAHAN, TIMOTHY L** *TG*

Level: **II PDI**

Reviewer: **Stauffer, Janet** *JMS*

Date: **3/13/10**

Examiner: **HENDRICKSON, MATT**

Level: **II PDI**

Site Review: **Downs, William R.** *WRD*

Date: **3-15-10**

Other: **N/A**

Level: **N/A**

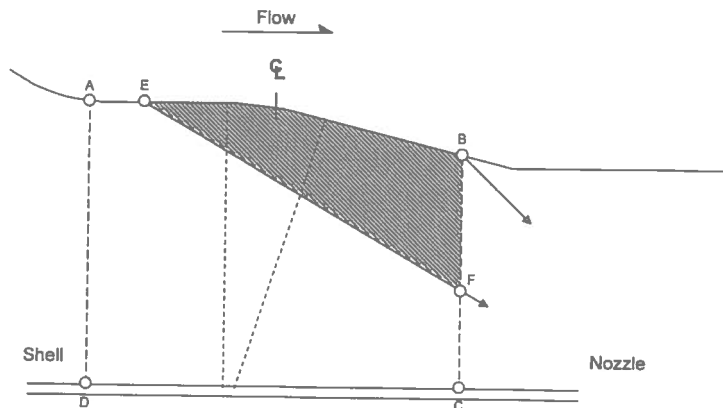
ANII Review: **McIntyre, Jeffery** *JM*

Date: **3-16-10**

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideal_Server\Ideal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-065 Coverage Calcs pg4.JPG

CCNPP	
Component ID: SG - 11 - Weld 7	NDE Report No.:
LTP No.:	M.O. No.:
Coverage Sketch No: 3	Scale: 50%
Exam: 60° ⊥ (With Flow)	



Exam Area

- ABCD = 32.89 in²

With Flow

- Examined EBF
- $(5.8 \times 2.5)/2 = 7.25 \text{ in}^2$
- $7.25 / 32.89 = 22.04\%$

Prepared by: *Timothy Gahan* Date: **3-7-2010**

Reviewed by: *Brian Gahan* Date: **3-15-10**

Page: **2** of **11**

Supplemental Report

Report No.: **CC10-IU-065**

Page: **6** of **8**

Summary No.: **103205**

Examiner: **GAHAN, TIMOTHY L** *TG* Level: **II PDI**

Reviewer: **Stauffer, Janet** *JMS*

Date: **3/13/10**

Examiner: **HENDRICKSON, MATT** Level: **II PDI**

Site Review: **Downs, William R.** *WDR*

Date: **3-15-10**

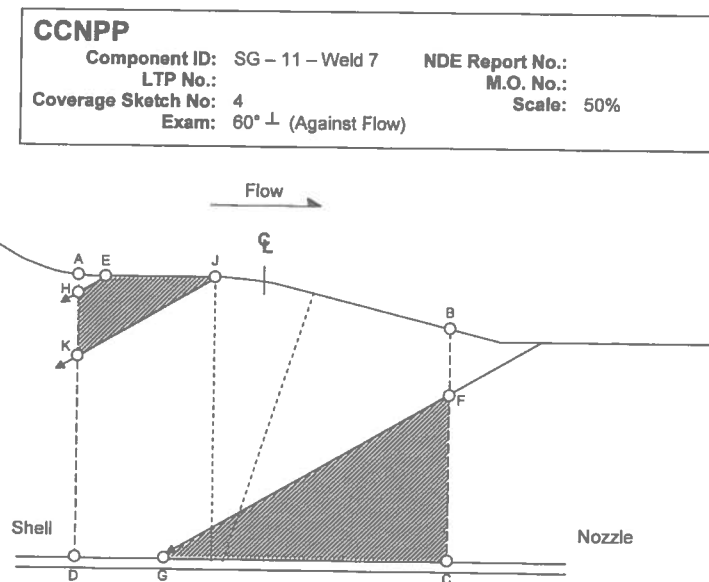
Other: **N/A** Level: **N/A**

ANII Review: **McIntyre, Jeffrey** *JM*

Date: **3-16-10**

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideal_Server\Ideal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-065 Coverage Calcs pg5.JPG



Exam Area

- ABCD = 32.89 in²

Against Flow

- AJK - AEH + FCG
- $(2.5 \times 1.5)/2 - (0.5 \times 0.3)/2 + (3 \times 5)/2 = 9.30 \text{ in}^2$
- $9.30 / 32.89 = 28.28\%$

Prepared by: *Timothy Gahan* Date: **3-7-2010**

Reviewed by: *William R. Downs* Date: **3-15-10**

Page: **6** of **8**

Supplemental Report

Report No.: **CC10-IU-065**

Page: **7** of **8**

Summary No.: **103205**

Examiner: **GAHAN, TIMOTHY L** *TG*

Level: **II PDI**

Reviewer: **Stauffer, Janet** *JMS*

Date: **3/13/10**

Examiner: **HENDRICKSON, MATT**

Level: **II PDI**

Site Review: **Downs, William R.** *WRD*

Date: **3-15-10**

Other: **N/A**

Level: **N/A**

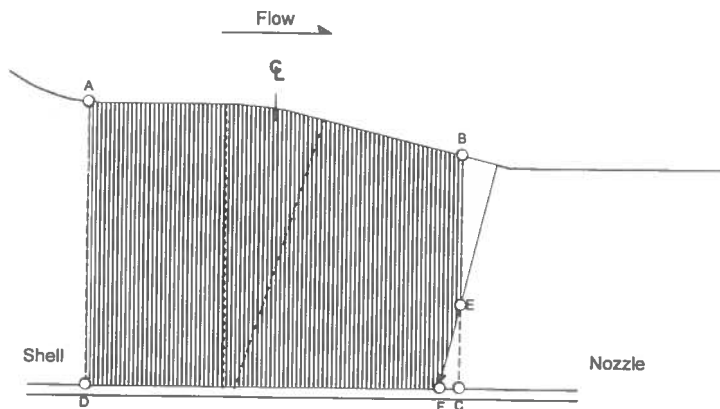
ANII Review: **McIntyre, Jeffrey** *JM*

Date: **3-16-10**

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideal_Server\Ideal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-065 Coverage Calcs pg6.JPG

CCNPP		
Component ID:	SG - 11 - Weld 7	NDE Report No.:
LTP No.:		M.O. No.:
Coverage Sketch No:	5	Scale: 50%
Exam:	45° || & 60° || & 0° WRV	



Exam Area

- $ABCD = 32.89 \text{ in}^2$

With Flow

- Examined $ABCD - ECF$
- $32.89 - (1.6 \times 0.4)/2 = 32.57 \text{ in}^2$
- $32.57 / 32.89 = 99.03\%$

Prepared by: *Timothy Gahan* Date: **3-7-2010**

Reviewed by: *Bill Downs* Date: **3-15-10**

Page: **7** of **A**

Supplemental Report

Report No.: **CC10-IU-065**

Page: **8** of **8**

Summary No.: **103205**

Examiner: **GAHAN, TIMOTHY L** *TG* Level: **II PDI**

Reviewer: **Stauffer, Janet** *JM*

Date: **3/13/10**

Examiner: **HENDRICKSON, MATT** Level: **II PDI**

Site Review: **Downs, William R.** *WRD*

Date: **3-15-10**

Other: **N/A** Level: **N/A**

ANII Review: *McIntyre, Jeffrey*

Date: **3-16-10**

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideas_Server\Ideas_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-065 Coverage Calcs pg7.JPG

CCNPP

Component ID: SG - 11 - Weld 7 NDE Report No.:
LTP No.: M.O. No.:

Coverage Calculation

Coverage Sketch	Angle	Sound Direction	Coverage
1	45°	With Flow	60.47%
2	45°	Against Flow	62.22%
3	60°	With Flow	22.04%
4	60°	Against Flow	28.28%
5	45°	CW	99.03%
5	45°	CCW	99.03%
5	60°	CW	99.03%
5	60°	CCW	99.03%
5	0°	WRV	99.03%
TOTAL			668.16
668.16 / 9 Sound Beams = 74.24			
Achieved 74.24% Coverage			

Prepared by: *Timothy Gahan* Date: **3-7-2010**

Reviewed by: *Bob Downs* Date: **3-15-10**

Page: **2** of **11**

UT Vessel Examination

Site/Unit: CCNP / 1 Procedure: NDE-5455-CC Outage No.: 1RFO19
 Summary No.: 106055 Procedure Rev.: 00 Report No.: CC10-IU-039
 Workscope: ISI Work Order No.: C120090653 Page: 1 of 2

Code: ASME Section XI 2004 Ed Cat./Item: B-D/B3.130 Location: CPB-12HLEG
 Drawing No.: 12034-0004, -0005 Description: 12 PRIMARY OUTLET NOZZLE TO PRIMARY HEAD (HOT LEG)
 System ID: 064
 Component ID: SG-12 - W5 Size/Length: 3.0"/132.0" Thickness/Diameter: 7.0"/42.0"
 Limitations: Proximity of Nozzle Radius Start Time: 1550 Finish Time: 1810

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Machined
 Lo Location: N/A Wo Location: N/A Couplant: ULTRAGEL II Batch No.: 06225
 Temp. Tool Mfg.: FLUKE Serial No.: 20Y08828 Surface Temp.: 91 °F

Cal. Report No.: CC10-ICA-035, 036, 037, 038

Angle Used	0	45	45T	60	60T	35
Scanning dB	30.0	49.5	49.5	55.0	55.0	49.0

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

Comments:

See Report Number CC06-IU-046 for thickness, contour and coverage plot. Weld was scribed. Verified calibration reflectors @ scanning speed.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: No / 84.3% Reviewed Previous Data: Yes

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
ZOLLNER, BRIAN			<i>Brian Zollner</i>	2/25/2010	Stauffer, Janet	<i>Janet A Stauffer</i>	3/4/10
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
TOLOSKY, RYAN J			<i>Ryan J Tolosky</i>	2/25/2010	Beck, Timothy	<i>Timothy Beck</i>	3-4-10
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					McIntyre Jeffrey	<i>Jeffrey McIntyre</i>	3-8-10

Supplemental Report

Report No.: **CC10-IU-039**

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

Summary No.: **106055**

Examiner: **ZOLLNER, BRIAN** *BZ*

Level: **II PDI**

Reviewer: **Stauffer, Janet** *JMS*

Date: **3/4/10**

Examiner: **TOLOSKY, RYAN J** *RT*

Level: **II PDI**

Site Review: **Beck, Timothy** *TBS*

Date: **3-4-10**

Other: **N/A**

Level: **N/A**

ANII Review: *McIntyre, Jeff* *JMc*

Date: **3-8-10**

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideal_Server\Ideal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-039 near sur res.JPG

Near Surface Resolution

Cal Block # CCU-25
Summary # 106055

35°		
Hole	Amplitude	Sweep
.100	25%	1.4
.200	50%	1.8
.300	40%	2.0
.400	30%	2.4

45°		
Hole	Amplitude	Sweep
.100	N/A	N/A
.200	30%	0.2
.300	20%	0.4
.400	18%	0.6

60°		
Hole	Amplitude	Sweep
.100	60%	0.2
.200	70%	0.4
.300	60%	0.5
.400	40%	0.65

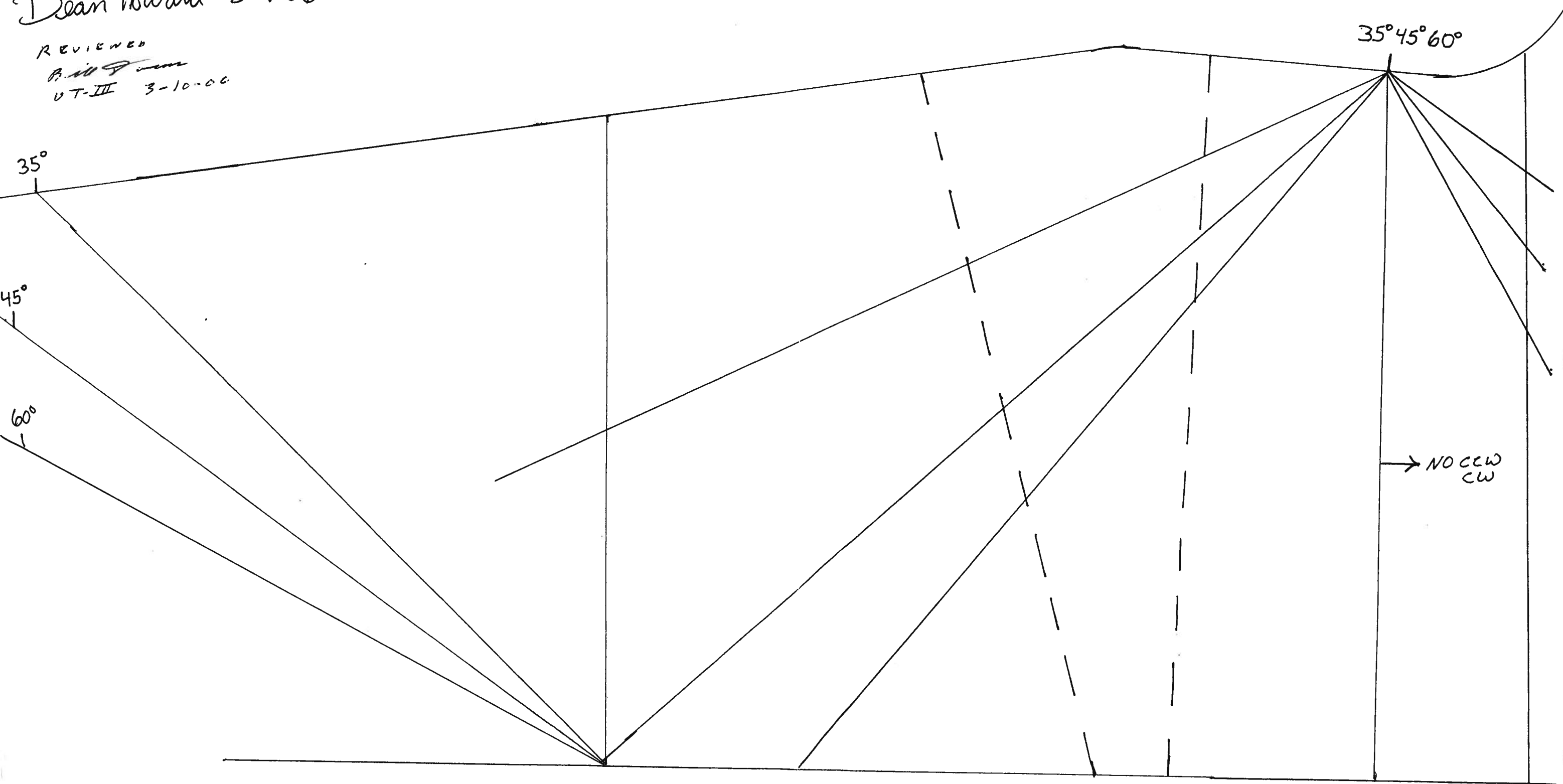
Transducers Used			
Angle	Ser. Number	Size	Freq.
35 °	L03117	.50" x 1.0"	2.25 MHz
45 °	C02306	.50" x 1.0"	2.25 MHz
60 °	D09006	.50" x 1.0"	2.25 MHz

LTP# 106055

SG-12-W5

Dean Howard 3-4-06

REVIEWED
B. J. J. J.
UT-III 3-10-06



Supplemental Report

Report No.: **CC10-IU-038**

Page: **2** of **9**

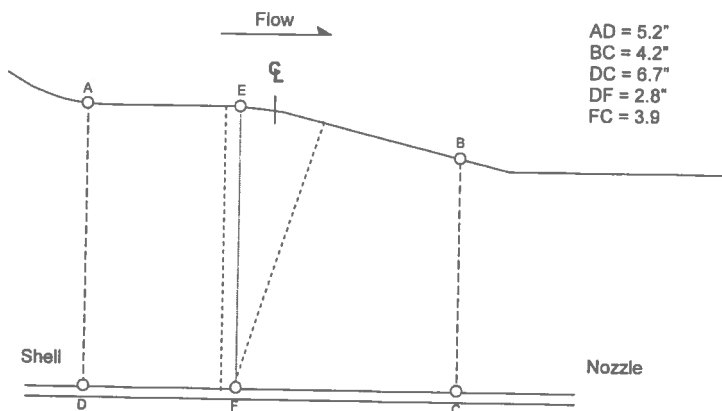
Summary No.: **106105**

Examiner: TOLOSKY, RYAN J <i>RT</i>	Level: II PDI	Reviewer: Downs, William R. <i>WD</i>	Date: 3-13-10
Examiner: ZOLLNER, BRIAN <i>BZ</i>	Level: II PDI	Site Review: Beck, Timothy <i>TS</i>	Date: 3-14-10
Other: N/A	Level: N/A	ANII Review: McIntyre, Jeffrey <i>JM</i>	Date: 3-16-10

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Iideal_Server\Iideal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-038 Coverage Calcs pg1.JPG

CCNPP	
Component ID: SG-12-Weld 6	NDE Report No.: CC10-IU-038
LTP No.: 106105	M.O. No.: C120090653
Sketch: Exam Area	Scale: 50%



- Exam Area
- ABCD
 - AEFD + EBCF
 - $(2.8 \times 5.2) + 3.9((5.2 + 4.2)/2) = 32.89 \text{ in}^2$

Prepared by: *Ryan Tolosky* Date: **2/25/2010**

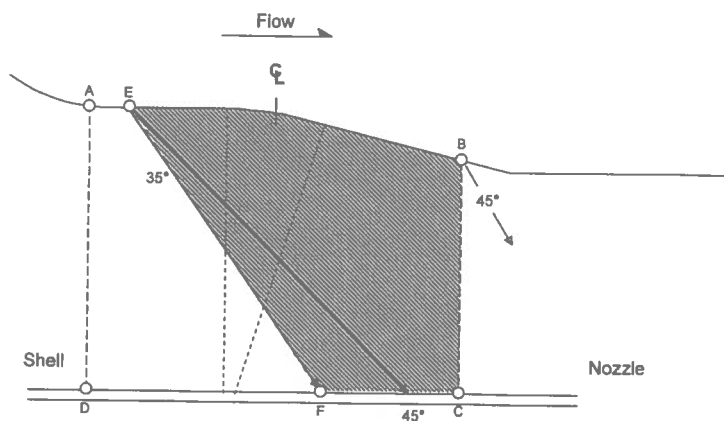
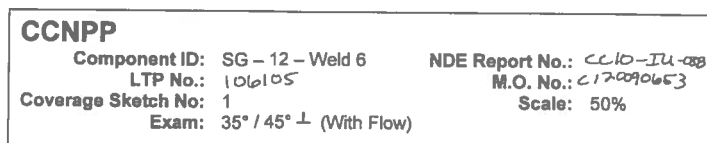
Reviewed by: *Brian Zollner* Date: **3-13-10**

Page: **2** of **9**

Page: 3 of 9

ANII Review: McIntyre, Jeffrey Jim Date: 3-16-70

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\ldeal_Server\ldeal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-038 Coverage Calcs pg2.JPG



NOTE: The 45° exam was supplemented with a 35° exam due to the 14° OD taper.

Exam Area

- $ABCD = 32.89 \text{ in}^2$

With Flow

- Examined ABCD – AEFD
- $32.89 - (5.2(0.7 + 4.3)/2) = 19.94 \text{ in}^2$
- $19.94 / 32.89 = 60.47\%$

Page: 2 of 1

Supplemental Report

Report No.: **CC10-IU-038**

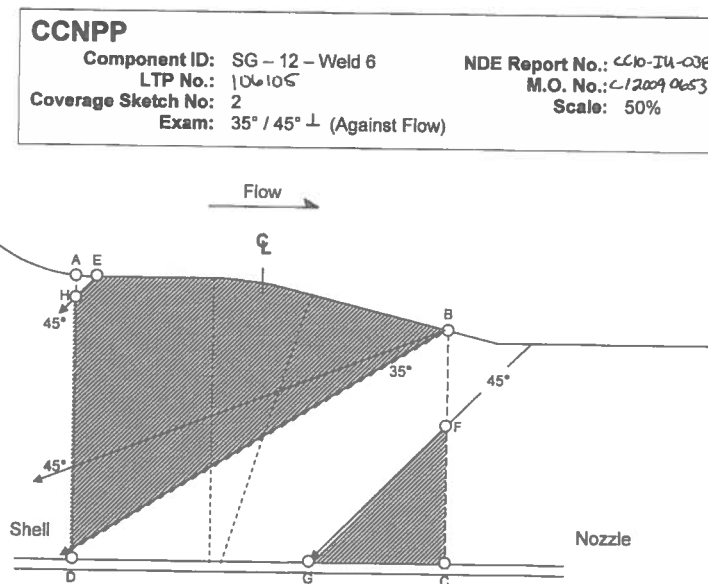
Page: **4** of **9**

Summary No.: **106105**

Examiner: TOLOSKY, RYAN J	Level: II PDI	Reviewer: Downs, William R.	Date: 3-13-10
Examiner: ZOLLNER, BRIAN	Level: II PDI	Site Review: Beck, Timothy	Date: 3-14-10
Other: N/A	Level: N/A	ANII Review: McIntyre, Jeffrey	Date: 3-16-10

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideall_Server\Ideall_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-038 Coverage Calcs pg3.JPG



Exam Area

- ABCD = 32.89 in²

Against Flow

- Examined ABD - AEH + FCG
- $(5.7 \times 5.2)/2 - (0.4 \times 0.4)/2 + (2.5 \times 2.5)/2 = 20.47$ in²
- $20.47 / 32.89 = 62.22\%$

Prepared by: Ryan Tolosky Date: 2/25/2010

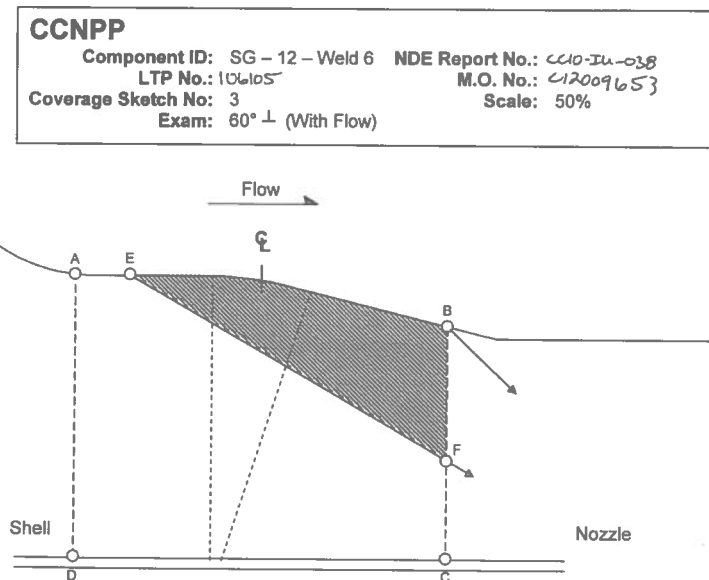
Reviewed by: Brian Zollner Date: 3-13-10

Page: 4 of 9

Page: 5 of 9

Other: N/A Level: N/A ANII Review: McIntyre, Jeffery Jhu Date: 3-16-10

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\ldeal_Server\ldeal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-038 Coverage Calcs pg4.JPG



Exam Area

- $ABCD = 32.89 \text{ in}^2$

- Examined EBF
- $(5.8 \times 2.5)/2 = 7.25 \text{ in}^2$
- $7.25 / 32.89 = \underline{22.04\%}$

Page: 7 of 11

Supplemental Report

Report No.: **CC10-IU-038**

Page: **6** of **9**

Summary No.: **106105**

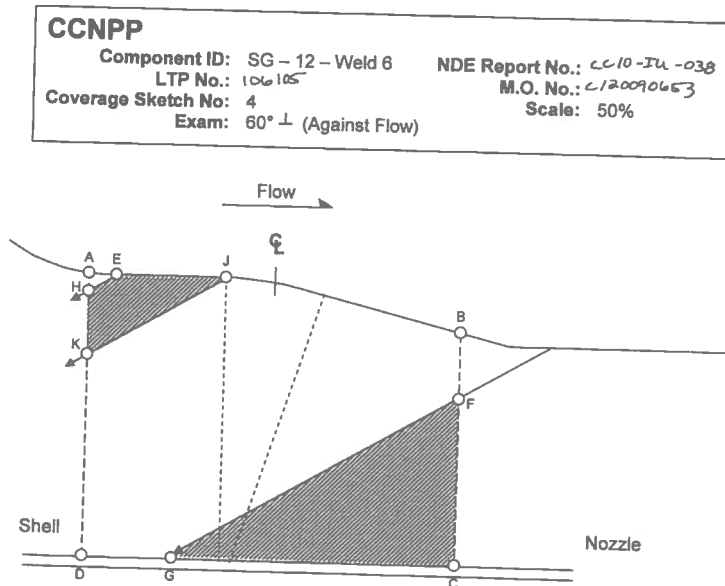
Examiner: **TOLOSKY, RYAN J** *RT* Level: **II PDI** Reviewer: **Downs, William R.** *BS* Date: **3-13-10**

Examiner: **ZOLLNER, BRIAN** *BZ* Level: **II PDI** Site Review: **Beck, Timothy** *tb* Date: **3-14-10**

Other: **N/A** Level: **N/A** ANII Review: *McIntyre, Jeffery* *JA* Date: **3-16-10**

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideal_Server\Ideal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-038 Coverage Calcs pg5.JPG



Exam Area
• ABCD = 32.89 in²

Against Flow
• AJK - AEH + FCG
• $(2.5 \times 1.5)/2 - (0.5 \times 0.3)/2 + (3 \times 5)/2 = 9.30 \text{ in}^2$
• $9.30 / 32.89 = 28.28\%$

Prepared by: *Ryan Tolosky* Date: *2/25/2010*

Reviewed by: *Brian Zollner* Date: *3-13-10*

Page: *6/9*

Supplemental Report

Report No.: CC10-IU-038

Page: 8 of 9

Summary No.: 106105

Examiner: TOLOSKY, RYAN J *RT* Level: II PDI Reviewer: Downs, William R. *P.S.* Date: 3-13-10

Examiner: ZOLLNER, BRIAN *BZ* Level: II PDI Site Review: Beck, Timothy *TS* Date: 3-14-10

Other: N/A Level: N/A ANII Review: McIntyre, Jeffrey *MC* Date: 3-16-10

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideas_Server\Ideas_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-038 Coverage Calcs pg7.JPG

CCNPP

Component ID: SG - 12 - Weld 6 NDE Report No.: CC10-IU-038
LTP No.: 106105 M.O. No.: C120090653

Coverage Calculation

Coverage Sketch	Angle	Sound Direction	Coverage
1	45°	With Flow	60.47%
2	45°	Against Flow	62.22%
3	60°	With Flow	22.04%
4	60°	Against Flow	28.28%
5	45°	CW	99.03%
5	45°	CCW	99.03%
5	60°	CW	99.03%
5	60°	CCW	99.03%
5	0°	WRV	99.03%
TOTAL			668.16
668.16 / 9 Sound Beams = 74.24			
Achieved 74.24% Coverage			

Prepared by: Ryan Tolosky Date: 2/25/2010

Reviewed by: Brian Zollner Date: 3-13-10

Page: ___ of ___

Supplemental Report

Report No.: **CC10-IU-037**

Page: **2** of **8**

Summary No.: **108255**

Examiner: **GAHAN, TIMOTHY L** *TG*

Level: **II PDI**

Reviewer: **Stauffer, Janet** *JMS*

Date: **3/13/10**

Examiner: **HENDRICKSON, MATT**

Level: **II PDI**

Site Review: **Downs, William R.** *WD*

Date: **3-15-10**

Other: **N/A**

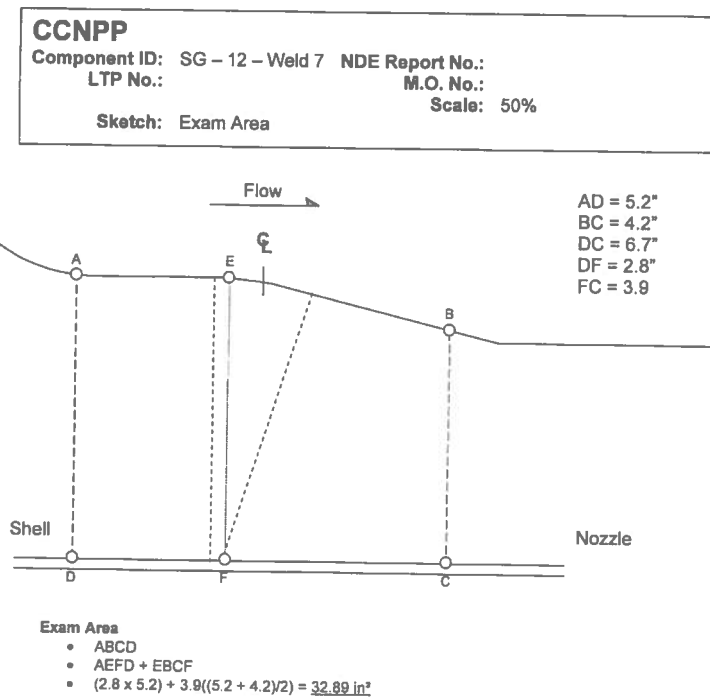
Level: **N/A**

ANII Review: *McIntyre, Jeffery* *AM*

Date: **3-16-10**

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideal_Server\Ideal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-037 Coverage Calcs pg1.JPG



Prepared by: *Timothy Gahan* Date: **2-26-2010**

Reviewed by: *Bill Downs* Date: **3-15-10**

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

Supplemental Report

Report No.: **CC10-IU-037**

Page: **3** of **8**

Summary No.: **108255**

Examiner: **GAHAN, TIMOTHY L** *TG*

Level: **II PDI**

Reviewer: **Stauffer, Janet** *JMS*

Date: **3/13/10**

Examiner: **HENDRICKSON, MATT**

Level: **II PDI**

Site Review: **Downs, William R.** *BS*

Date: **3-15-10**

Other: **N/A**

Level: **N/A**

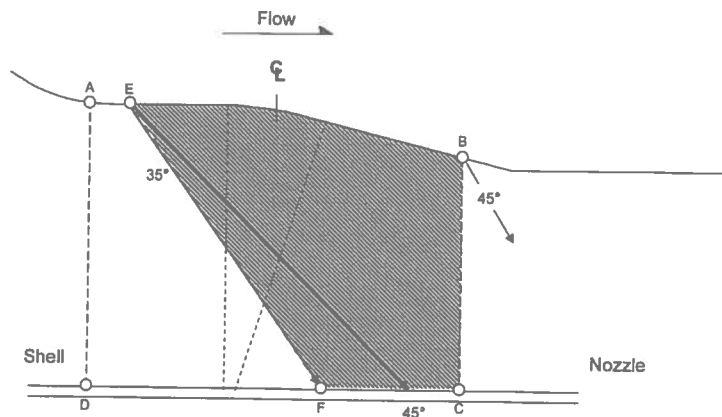
ANII Review: **McIntyre, Jeffrey** *JM*

Date: **3-16-10**

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideal_Server\Ideal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-037 Coverage Calcs pg2.JPG

CCNPP	
Component ID: SG - 12 - Weld 7	NDE Report No.:
LTP No.:	M.O. No.:
Coverage Sketch No: 1	Scale: 50%
Exam: 35° / 45° ⊥ (With Flow)	



NOTE: The 45° exam was supplemented with a 35° exam due to the 14" OD taper.

Exam Area

- ABCD = 32.89 in²

With Flow

- Examined ABCD - AEFD
- $32.89 - (5.2(0.7 + 4.3)/2) = 19.94 \text{ in}^2$
- $19.94 / 32.89 = 60.47\%$

Prepared by: *Timothy Gahan* Date: **2-26-2010**

Reviewed by: *Bill Downs* Date: **3-15-10**

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

Supplemental Report

Report No.: **CC10-IU-037**

Page: **4** of **8**

Summary No.: **108255**

Examiner: **GAHAN, TIMOTHY L** *TG* Level: **II PDI**

Reviewer: **Stauffer, Janet** *JS*

Date: **3/13/10**

Examiner: **HENDRICKSON, MATT** Level: **II PDI**

Site Review: **Downs, William R.** *WD*

Date: **3-15-10**

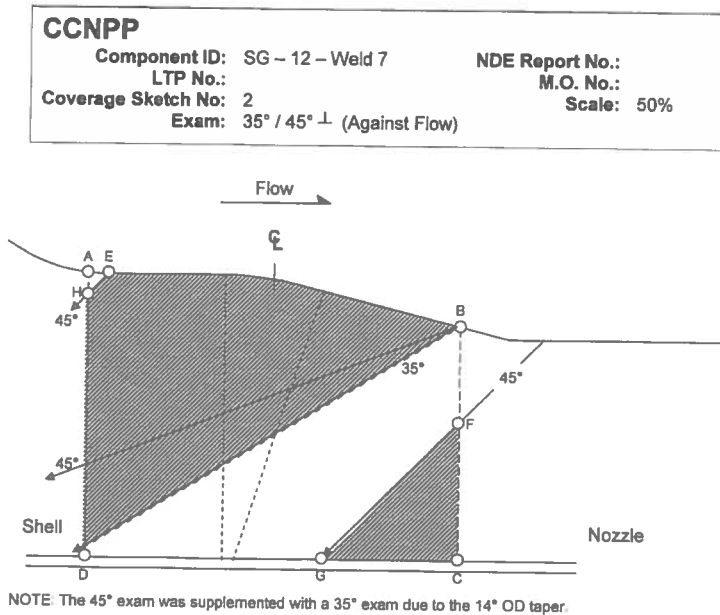
Other: **N/A** Level: **N/A**

ANII Review: *Mohlyre, Jeffery* *JM*

Date: **3-16-10**

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideal_Server\Ideal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-037 Coverage Calcs pg3.JPG



Exam Area

- ABCD = 32.89 in²

Against Flow

- Examined ABD - AEH + FCG
- $(6.7 \times 5.2)/2 - (0.4 \times 0.4)/2 + (2.5 \times 2.5)/2 = 20.47$ in²
- $20.47 / 32.89 = 62.22\%$

Prepared by: *Timothy Gahan* Date: **2-26-2010**

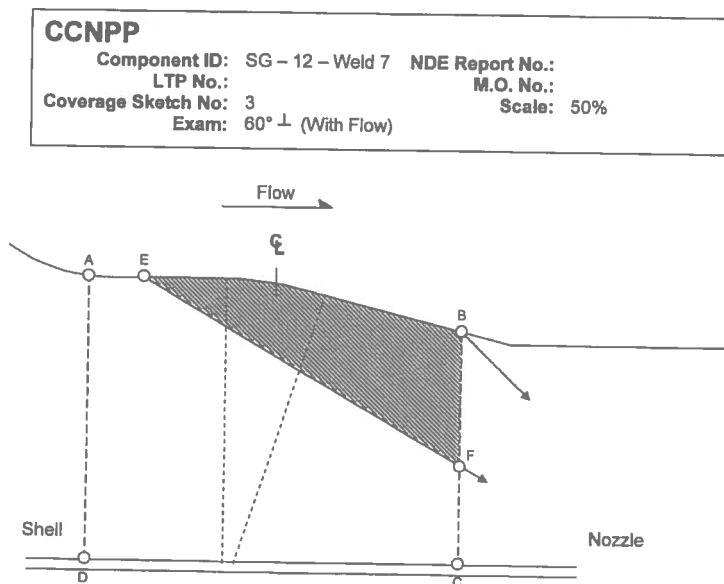
Reviewed by: *Bill Brown* Date: **3-15-10**

Page: *2* of *8*

Page: 5 of 8

Date: 8-16-10

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\ldeal_Server\ldeal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-037 Coverage Calcs pg4.JPG



Exam Area

- $ABCD = 32.89 \text{ in}^2$

- Examined EBF
- $(5.8 \times 2.5)/2 = 7.25 \text{ in}^2$
- $7.25 / 32.89 = 22.04\%$

Prepared by: Timothy Babin Date: 2-26-2010

Reviewed by: B. [Signature] Date: 3-15-10

Page: ~~2~~ of ~~1~~

Supplemental Report

Report No.: CC10-IU-037

Page: 6 of 8

Summary No.: 108255

Examiner: GAHAN, TIMOTHY L TG

Level: II PDI

Reviewer: Stauffer, Janet *gm*

Date: 3/13/10

Examiner: HENDRICKSON, MATT

Level: II PDI

Site Review: Downs, William R. *WR*

Date: 3-15-10

Other: N/A

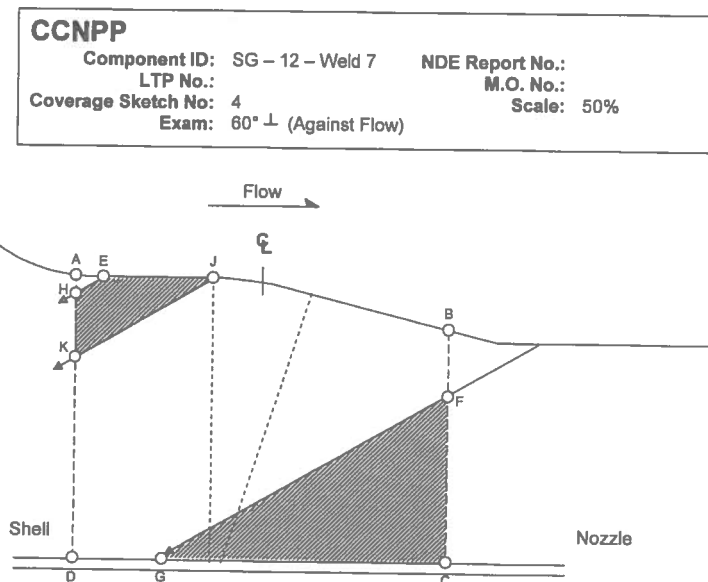
Level: N/A

ANII Review: McIntyre, Jeffrey *JA*

Date: 3-16-10

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideall_Server\Ideall_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-037 Coverage Calcs pg5.JPG



Exam Area

- ABCD = 32.89 in²

Against Flow

- AJK - AEH + FCG
- $(2.5 \times 1.5)/2 - (0.5 \times 0.3)/2 + (3 \times 5)/2 = 9.30 \text{ in}^2$
- $9.30 / 32.89 = 28.28\%$

Prepared by: Timothy Gahan Date: 2-26-2010

Reviewed by: B. H. H. H. Date: 3-15-10

Page: 2 of 13

Supplemental Report

Report No.: CC10-IU-037

Page: 7 of 8

Summary No.: 108255

Examiner: GAHAN, TIMOTHY L TG Level: II PDI

Reviewer: Stauffer, Janet *jm*

Date: 3/13/10

Examiner: HENDRICKSON, MATT Level: II PDI

Site Review: Downs, William R. *WRD*

Date: 3-15-10

Other: N/A Level: N/A

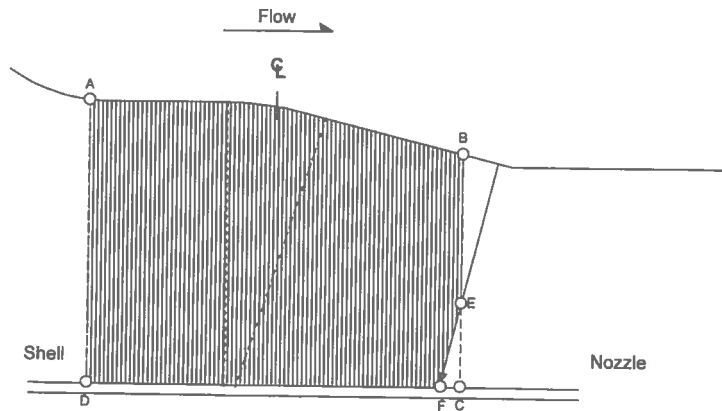
ANII Review: McIntyre, Jeffrey *JMc*

Date: 3-16-10

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideal_Server\Ideal_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-037 Coverage Calcs pg6.JPG

CCNPP	
Component ID: SG - 12 - Weld 7	NDE Report No.:
LTP No.:	M.O. No.:
Coverage Sketch No: 5	Scale: 50%
Exam: 45° || & 60° || & 0° WRV	



Exam Area

- ABCD = 32.89 in²

With Flow

- Examined ABCD - ECF
- $32.89 - (1.6 \times 0.4)/2 = 32.57$ in²
- $32.57 / 32.89 = 99.03\%$

Prepared by: Timothy Gahan Date: 2-26-2010

Reviewed by: Bill Sumner Date: 3-15-10

Page: 7 of 8

Supplemental Report

Report No.: CC10-IU-037

Page: 8 of 8

Summary No.: 108255

Examiner: GAHAN, TIMOTHY L TG Level: II PDI

Reviewer: Stauffer, Janet JM

Date: 3/13/10

Examiner: HENDRICKSON, MATT Level: II PDI

Site Review: Downs, William R. BS

Date: 3-15-10

Other: N/A Level: N/A

ANII Review: McIntyre, Jeffrey JH

Date: 3-16-10

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideas_Server\Ideas_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_1_2010 photos & supplements\CC10-IU-037 Coverage Calcs pg7.JPG

CCNPP

Component ID: SG - 12 - Weld 7 NDE Report No.:
LTP No.: M.O. No.:

Coverage Calculation

Coverage Sketch	Angle	Sound Direction	Coverage
1	45°	With Flow	60.47%
2	45°	Against Flow	62.22%
3	60°	With Flow	22.04%
4	60°	Against Flow	28.28%
5	45°	CW	99.03%
5	45°	CCW	99.03%
5	60°	CW	99.03%
5	60°	CCW	99.03%
5	0°	WRV	99.03%
TOTAL			668.16
668.16 / 9 Sound Beams = 74.24			
Achieved 74.24% Coverage			

Prepared by: Timothy Gahan Date: 2-26-2010

Reviewed by: Brad P. ... Date: 3-15-10

Page: 2 of 8

UT Vessel Examination

Site/Unit: **CCNP / 1**
Summary No.: **252100**
Workscope: **ISI**

Procedure: **NDE-5454-CC**
Procedure Rev.: **00**
Work Order No.: **C91108997**

Outage No.: **1RFO20**
Report No.: **CC12-IU-001**
Page: **1** of **3**

Code: **ASME Section XI 2004 Ed** Cat./Item: **C-B/C2.21** Location: **A15-ECCS11**
Drawing No.: **B-3** Description: **INLET NOZZLE TO CHANNEL BARREL**
System ID: **052**
Component ID: **SCHE-11-N1** Size/Length: **1.4"/44.5"** Thickness/Diameter: **1.125" / 14"**
Limitations: **Single sided access due to configuration.** Start Time: **0930** Finish Time: **1145**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **As Prepped**

Lo Location: **TDC** Wo Location: **N/A** Couplant: **ULTRAGEL II** Batch No.: **09325**

Temp. Tool Mfg.: **FLUKE** Serial No.: **10Y16172** Surface Temp.: **86** °F

Cal. Report No.: **CC12-ICA-001, 002, 003**

Angle Used	0	45	45T	60	60T	70
Scanning dB	N/A	41.8	44.8	N/A	N/A	63.6

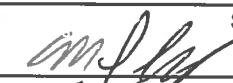

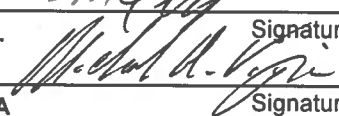

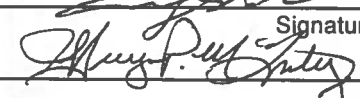
Indication(s): Yes ☐ No ☒ Scan Coverage: Upstream ☐ Downstream ☒ CW ☒ CCW ☒

Comments:

70°T = 66.6 scanning dB. No exams from nozzle side. Maintained 10-15% ID Roll. Performed supplemental 70° RL exam.

Results: Accept ☒ Reject ☐ EngDisp ☐

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
SALLEY, MICHAEL	II		1/17/2012	Crothers, Simon		1/23/12
Examiner	Level	Signature	Date	Site Review	Signature	Date
VIGNE, MICHAEL	II L		1/17/2012	Beck, Timothy		1-23-12
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			McIntyre, Jeffrey		1-24-12

Supplemental Report

Report No.: CC12-IU-001

Page: 2 of 3

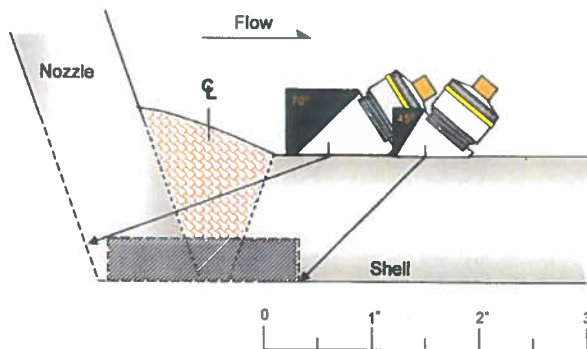
Summary No.: 252100

Examiner: <u>SALLEY, MICHAEL</u> <i>ms</i>	Level: <u>II</u>	Reviewer: <u>Crothers, Simon</u> <i>SC</i>	Date: <u>1/23/12</u>
Examiner: <u>VIGNE, MICHAEL</u> <i>MDV</i>	Level: <u>II L</u>	Site Review: <u>Beck, Timothy</u> <i>TBS</i>	Date: <u>1-23-12</u>
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u>McIntyre, Jeffrey</u> <i>JM</i>	Date: <u>1-24-12</u>

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideall_Server\Ideall_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\252100 Sketch pg. 1.JPG

LTP: 252100



Exam Area:

- $(1.75 \times 0.4) = 0.70 \text{ in}^2$

Axial Coverage:

- Direction 1 (From US side): 0%
- Direction 2 (From DS side): 100%

Supplemental Report

Report No.: CC12-IU-001

Page: 3 of 3

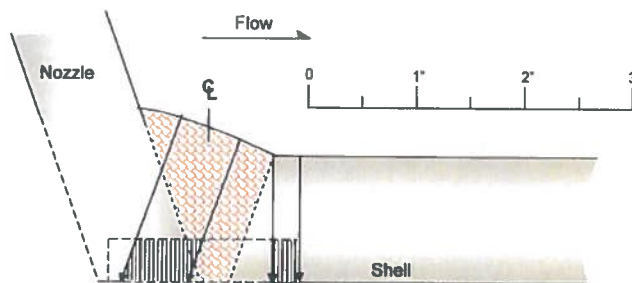
Summary No.: 252100

Examiner: SALLEY, MICHAEL *MS* Level: II Reviewer: Crothers, Simon *SC* Date: 1/23/12
Examiner: VIGNE, MICHAEL *MDV* Level: II L Site Review: Beck, Timothy *TS* Date: 1-23-12
Other: N/A Level: N/A ANII Review: McIntyre, Jeffrey *JM* Date: 1-24-12

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideas_Server\Ideas_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\252100 Sketch pg. 2.JPG

LTP: 252100



Exam Area:

- $(1.75 \times 0.4) = 0.70 \text{ in}^2$

Examined:

- $(0.63 \times 0.4) + (0.25 \times 0.4) = 0.35 \text{ in}^2 = 50\%$

Circ Coverage:

- CW = 50%
- CCW = 50%

Coverage Calc

Exam	Coverage
Ax Upst	0%
Ax Dnst	100%
CW	50%
CCW	50%

Total: 200%

Total / 4: **50%**

UT Vessel Examination



Site/Unit: **CCNP / 1**
Summary No.: **004050**
Workscope: **ISI**

Procedure: **NDE-5455-CC**
Procedure Rev.: **00100**
Work Order No.: **C91997737**

Outage No.: **1RFO21 (2014)**
Report No.: **CC14-IU-017**
Page: **1** of **10**

Code: **ASME Section XI 2004 Ed** Cat./Item: **B-D/B3.110** Location: **C69-PZR**
Drawing No.: **12019-0015/15532-0005,18,23** Description: **NOZZLE TO HEAD WELDS**
System ID: **064**
Component ID: **4-404** Size/Length: **1.5" / 74"** Thickness/Diameter: **4.2" / N/A**
Limitations: **NZ / Heater sleeves / Blanks** Start Time: **1355** Finish Time: **1448**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **Ground**

Lo Location: **Extrados** Wo Location: **Weld CL** Couplant: **ULTRAGEL II** Batch No.: **11525**

Temp. Tool Mfg.: **FLUKE** Serial No.: **17960597** Surface Temp.: **100** °F

Cal. Report No.: **CC14-ICA-039, 040, 041, 042**

Angle Used	0	45	45T	60	60T	35
Scanning dB	N/A	18	24	56	N/A	37

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

Comments:

Performed 0° interfering conditions exam, none noted. Verified weld location with pressurizer nozzle drawing 12019-0010

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: **No (31.8%)** Reviewed Previous Data: **Yes**

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
HAIGLER, TERRY J.			<i>Terry J. Haigler</i>	2/23/2014	CROTHERS, SIMON L-III	<i>Simon Crothers</i>	3/1/14
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
ZOLLNER, BRIAN			<i>Brian Zollner</i>	2/23/2014	<i>T. Obfield</i> L-III	<i>T. Obfield</i>	3-5-14
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					<i>Kurt A. Saloski</i>	<i>Kurt A. Saloski</i>	3/5/14

Supplemental Report

Report No.: **CC14-IU-017**

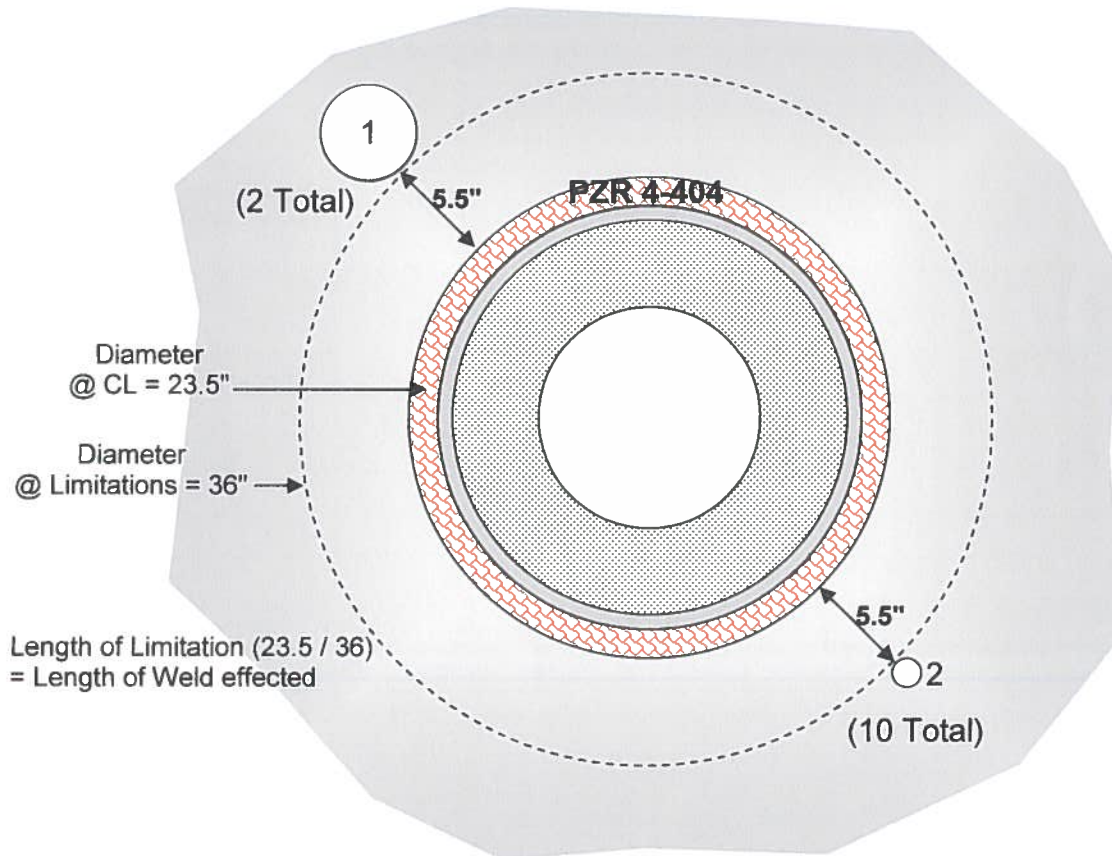
Page: **2** of **10**

Summary No.: **004050**

Sketch or Photo:

Summary: **004050**

Sketch 1: Overview / Limitations



Lim.	Description	Length of Limitation	Length of Weld Effected	Distance From Toe
1	Heater Sleeve Blank	2 @ 5" = 10"	6.5"	5.5"
2	Heater Sleeve	10 @ 1.5" = 15"	9.8"	5.5" (Average)

Supplemental Report

Report No.: CC14-IU-017

Page: 3 of 10

Summary No.: 004050

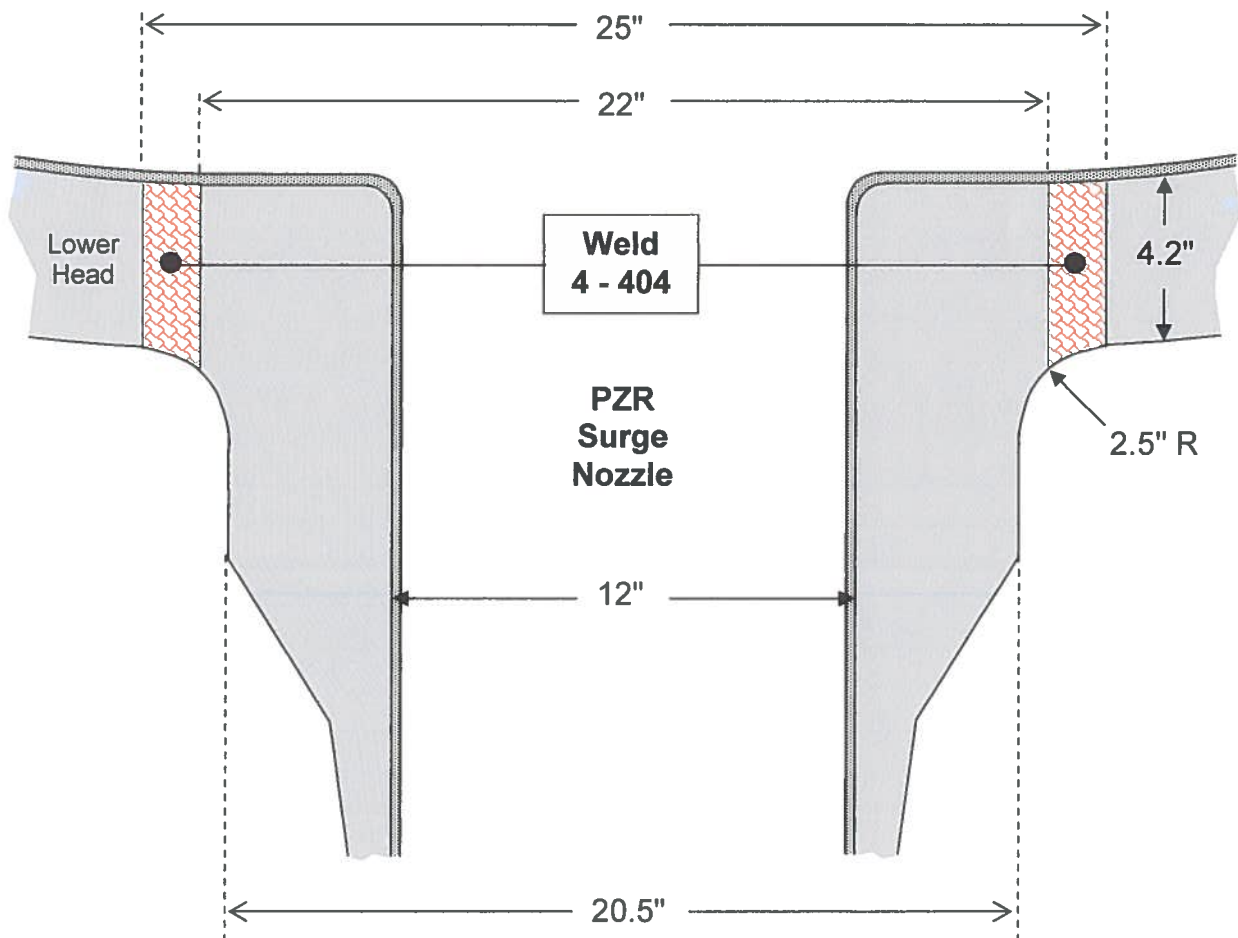
Sketch or Photo:

Summary: 004050

Sketch 2: Weld Location

Scale: 20%

Reference Drawing: 12019-0010



Supplemental Report

Report No.: **CC14-IU-017**

Page: **4** of **10**

Summary No.: **004050**

Sketch or Photo:

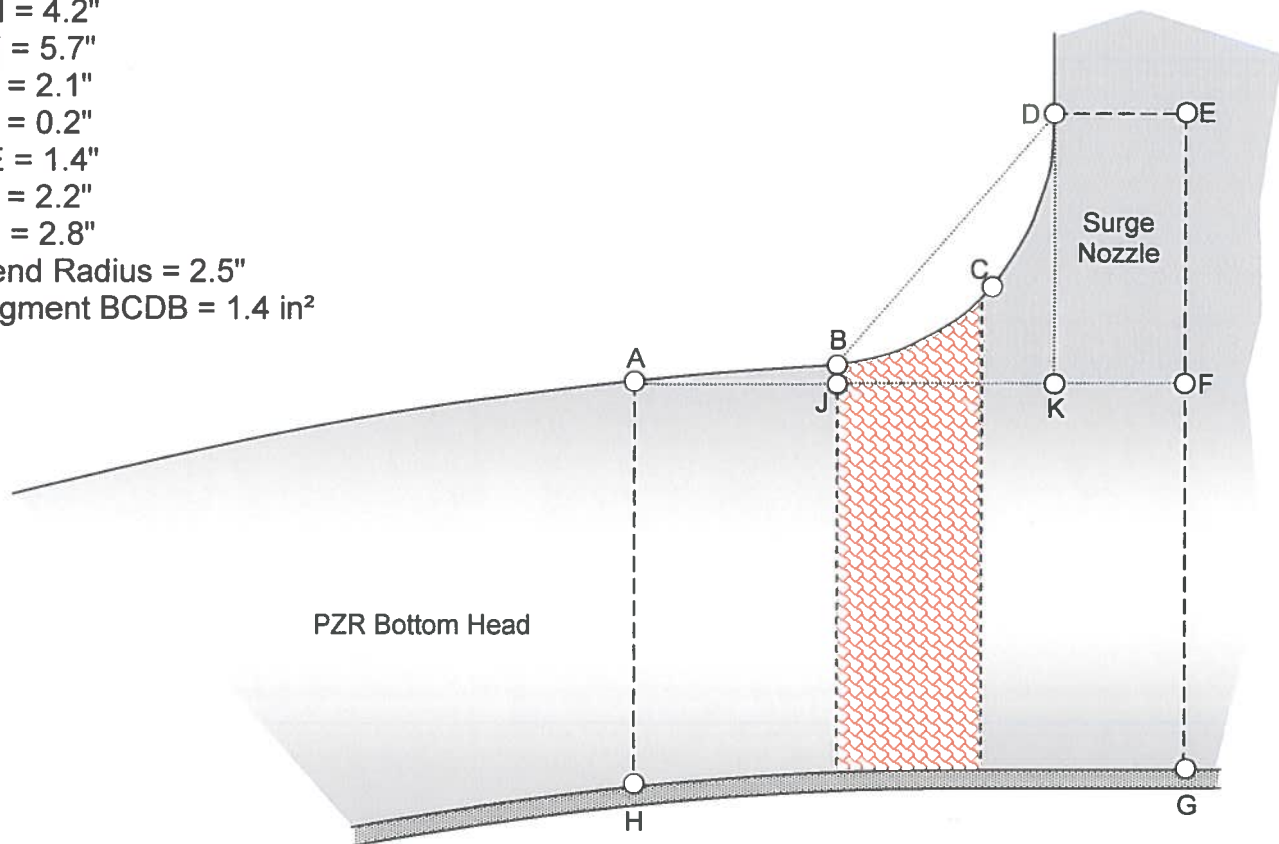
Summary: **004050**

Sketch 3: **Weld Dimensions / Fit-up**

Scale: **50%**



AH = 4.2"
 AF = 5.7"
 AJ = 2.1"
 BJ = 0.2"
 DE = 1.4"
 JK = 2.2"
 EF = 2.8"
 Blend Radius = 2.5"
 Segment BCDB = 1.4 in²



Weld Width:	1.5"
Thickness (Excluding Clad):	4.2"
Weld Length:	74"
Exam Area:	29.97 in ²

$$\begin{aligned}
 \text{Exam area} &= \text{ABCDEFGH} = (\text{AFGH}) + (\text{ABJ}) + (\text{BDKJ}) - (\text{BCDB}) + (\text{DEFK}) \\
 &= (5.7 \times 4.2) + (2.1 \times 0.2)/2 + 2.2(0.2 + 2.8)/2 - (1.4) + (1.4 \times 2.8) = 29.97 \text{ in}^2
 \end{aligned}$$

Profile constructed from Dwg. 12019-0010 and field measurements.

Sketch or Photo:

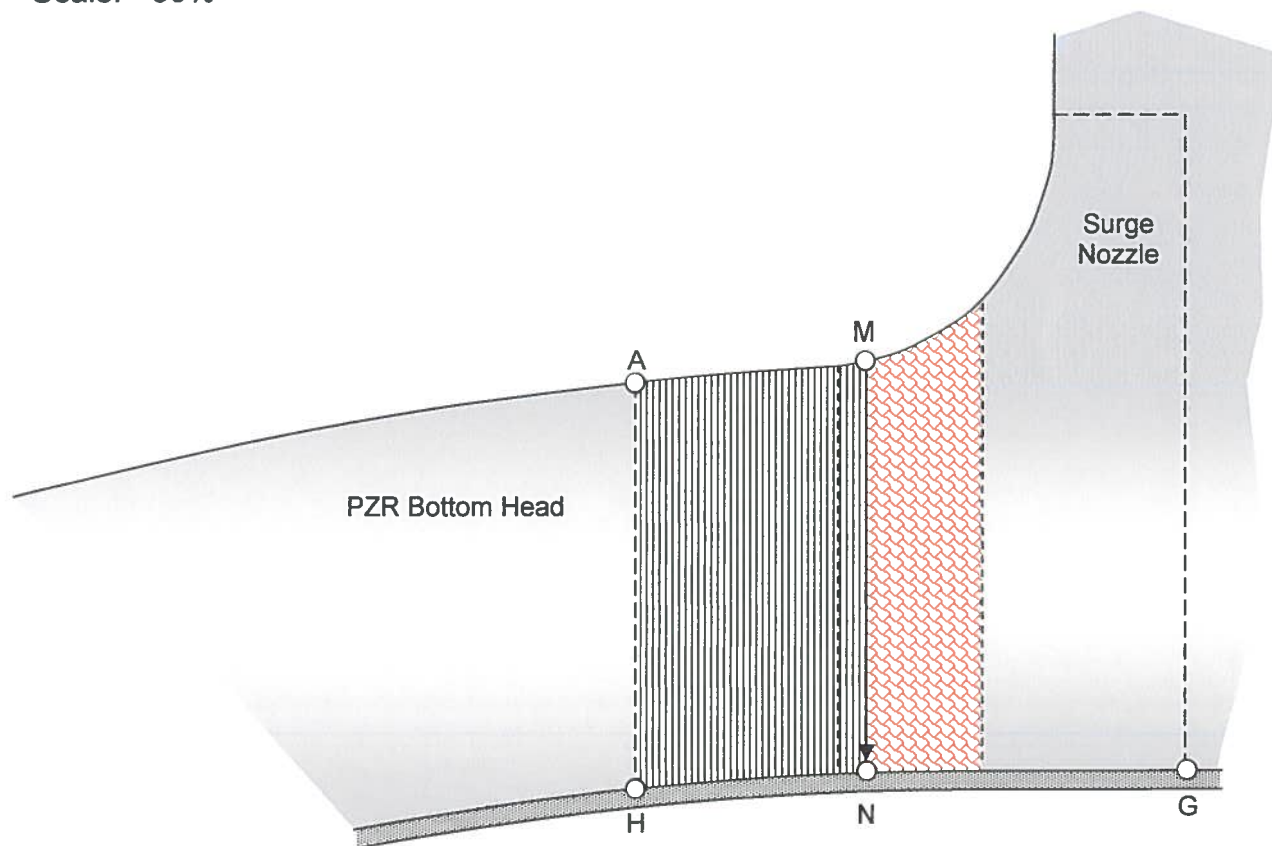
Summary: 004050

Sketch 8: $45^\circ \rightarrow / \leftarrow$

Limitation: None

Length: 74"

Scale: 50%



Exam Area: 29.97 in²

Examined: AMNH

Examined: $(2.4 \times 4.2) = 10.08 \text{ in}^2$

Supplemental Report

Report No.: **CC14-IU-017**

Page: **10** of **10**

Summary No.: **004050**

Sketch or Photo:

ASME Code Coverage Calculation

Component Information	Beam Directions
LTP: 004050 Component: PZR 4-404 Exam Area: 29.97 in ² Exam Length: 74"	<p>↑ = Looking Toward Nz</p> <p>↓ = Looking Away from Nz</p> <p>← = CW</p> <p>→ = CCW</p>

Cov. Sketch	Beam Angle & Direction	Area Examined	Exam Area	Length Examined	Exam Length	Percent Coverage
3	45° / 60°↑	(15.54 / 29.97)	x (57.7 / 74)	x 100 =		40.43%
4	35°/45°/60°↑	(15.18 / 29.97)	x (6.5 / 74)	x 100 =		4.45%
5	35°/45°/60°↑	(13.65 / 29.97)	x (9.8 / 74)	x 100 =		6.03%
6	35° / 45°↓	(2.76 / 29.97)	x (74 / 74)	x 100 =		9.21%
7	45°←	(10.08 / 29.97)	x (74 / 74)	x 100 =		33.63%
7	45°→	(10.08 / 29.97)	x (74 / 74)	x 100 =		33.63%
		(/ ~)	x (/ ~)	x 100 =		~
		(/ ~)	x (/ ~)	x 100 =		~
Total Percent:						127.38%
Code Examination Coverage (Total Percent / 4 Sound Beams):						31.8%

UT Vessel Examination

Site/Unit: CCNP / 1 Procedure: NDE-5455-CC Outage No.: 1RFO21 (2014)
Summary No.: 100805 Procedure Rev.: 00100 Report No.: CC14-IU-020
Workscope: ISI Work Order No.: C91997745 Page: 1 of 6

Code: _____ Cat./Item: B-D/B3.130 Location: CPB-11HLEG
Drawing No.: 12010A-0015 SH0001 Description: 11 PRIMARY INLET NOZZLE TO PRIMARY HEAD (HOT LEG)
System ID: 064
Component ID: SG-11- W5 Size/Length: 4.9" / 178.5" Thickness/Diameter: 7.3" / 57"
Limitations: Nozzle Start Time: 2155 Finish Time: 2245

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Machined

Lo Location: TDC Wo Location: Weld CL Couplant: ULTRAGEL II Batch No.: 11525

Temp. Tool Mfg.: FLUKE Serial No.: 17960600 Surface Temp.: 107 °F

Cal. Report No.: CC14-ICA-020, 022, 024

Angle Used	0	45	45T	60	60T	35
Scanning dB	26	44	N/A	N/A	N/A	46

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

Comments:

Interfering conditions exam documented in PSI report 7811-1-5.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: No (81.6%) Reviewed Previous Data: Yes

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
TUCKER, DAVID K			<i>David K Tucker</i>	2/25/2014	CROTHERS, SIMON L-III	<i>Simon Crothers</i>	2/28/14
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
BULL, W. KEITH			<i>W. Keith Bull</i>	2/25/2014	T Oldfield L-III	<i>T Oldfield</i>	3-4-14
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					KURT A. SUTSKI	<i>Kurt A. Sutski</i>	3/5/14

Supplemental Report

Report No.: **CC14-IU-020**

Page: **2** of **6**

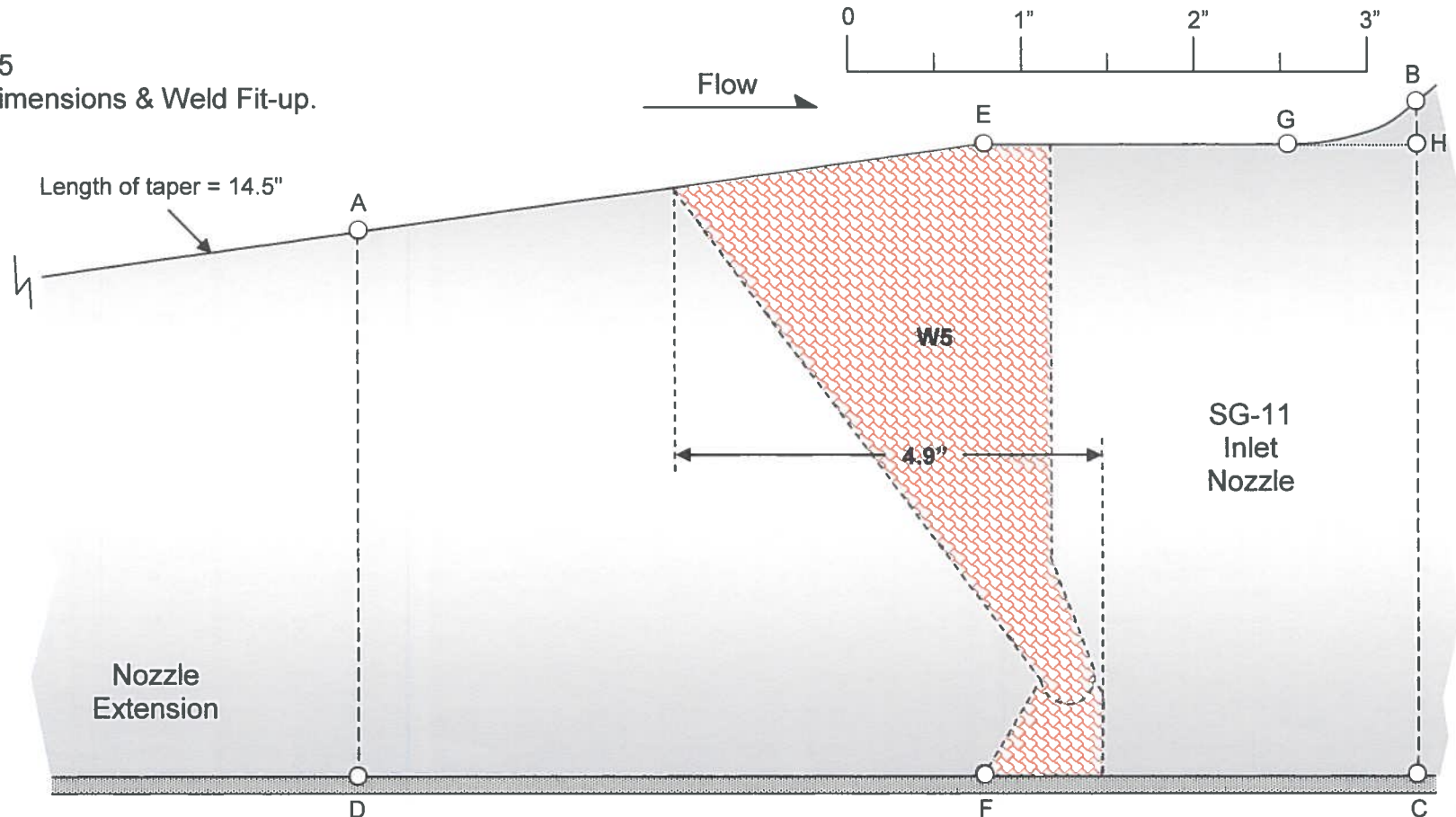
Summary No.: **100805**

Sketch or Photo:

LTP: 100805

Sketch 1: Dimensions & Weld Fit-up.

Scale: 50%



Weld Width:	4.9"
Thickness (excluding clad):	7.3"
Weld Length:	149"
Exam Area:	85.8 in ²

Exam Area

- ABCD
- AEFD + EHCF + GHB
- $7.2(6.3 + 7.3)/2 + (7.3 \times 5.0) + (1.5 \times 0.5)/2 = 85.8 \text{ in}^2$

Weld dimensions and fit up per Dwg: 12010A-0015SH0001.
OD contour & thickness readings taken on component.

Supplemental Report

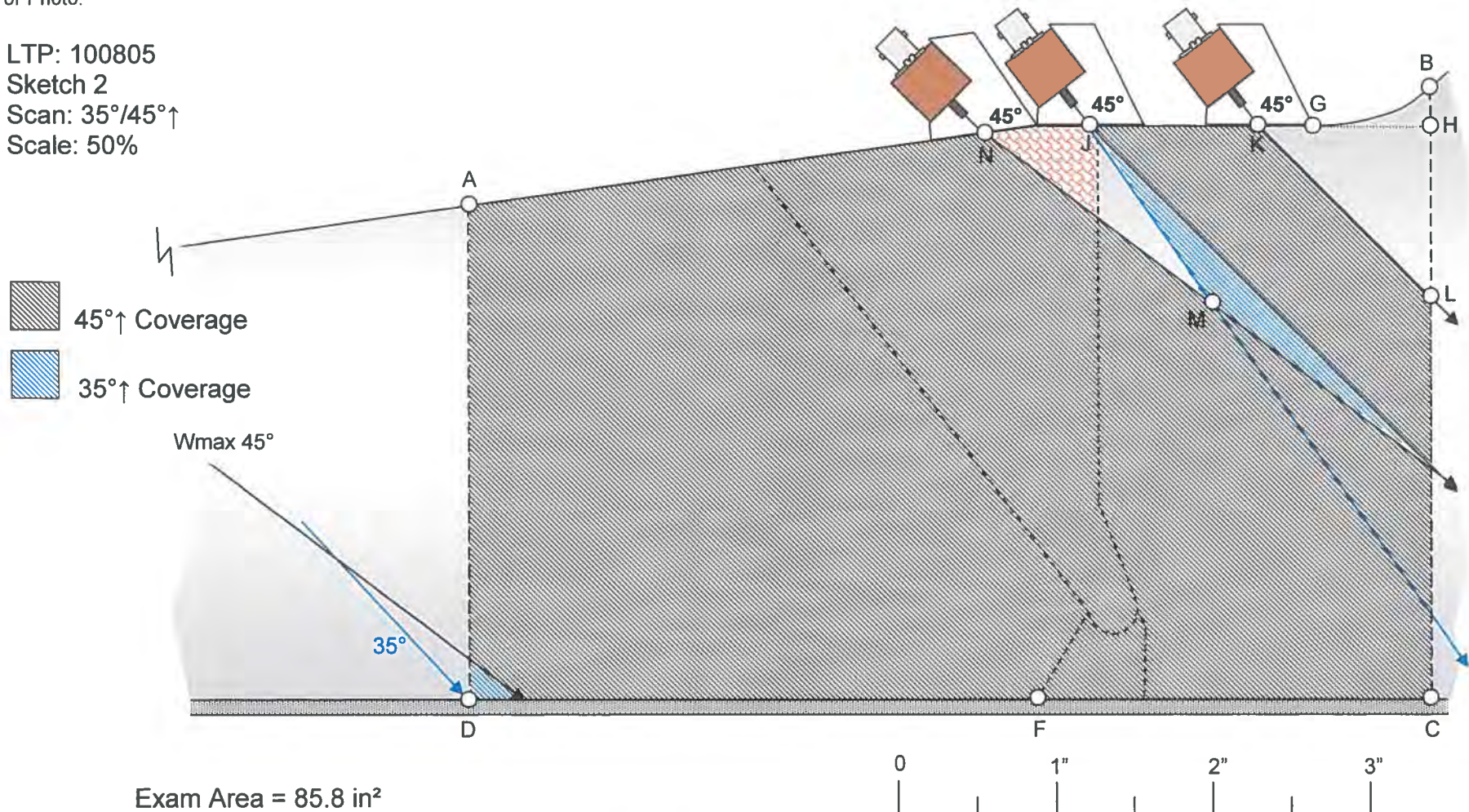
Report No. CC14-IU-020

Page: 3 of 6

Summary No.: 100805

Sketch or Photo:

LTP: 100805
Sketch 2
Scan: 35°/45°↑
Scale: 50%



Exam Area = 85.8 in²
Examined 85.8 – NJM – KHL – GHB
Examined 85.8 – (3.6 x 0.8)/2 – (2.2 x 2.2)/2 – (1.5 x 0.5)/2
Examined 81.57 in²

Supplemental Report

Report No.: **CC14-IU-020**

Page: **4** of **6**

Summary No.: **100805**

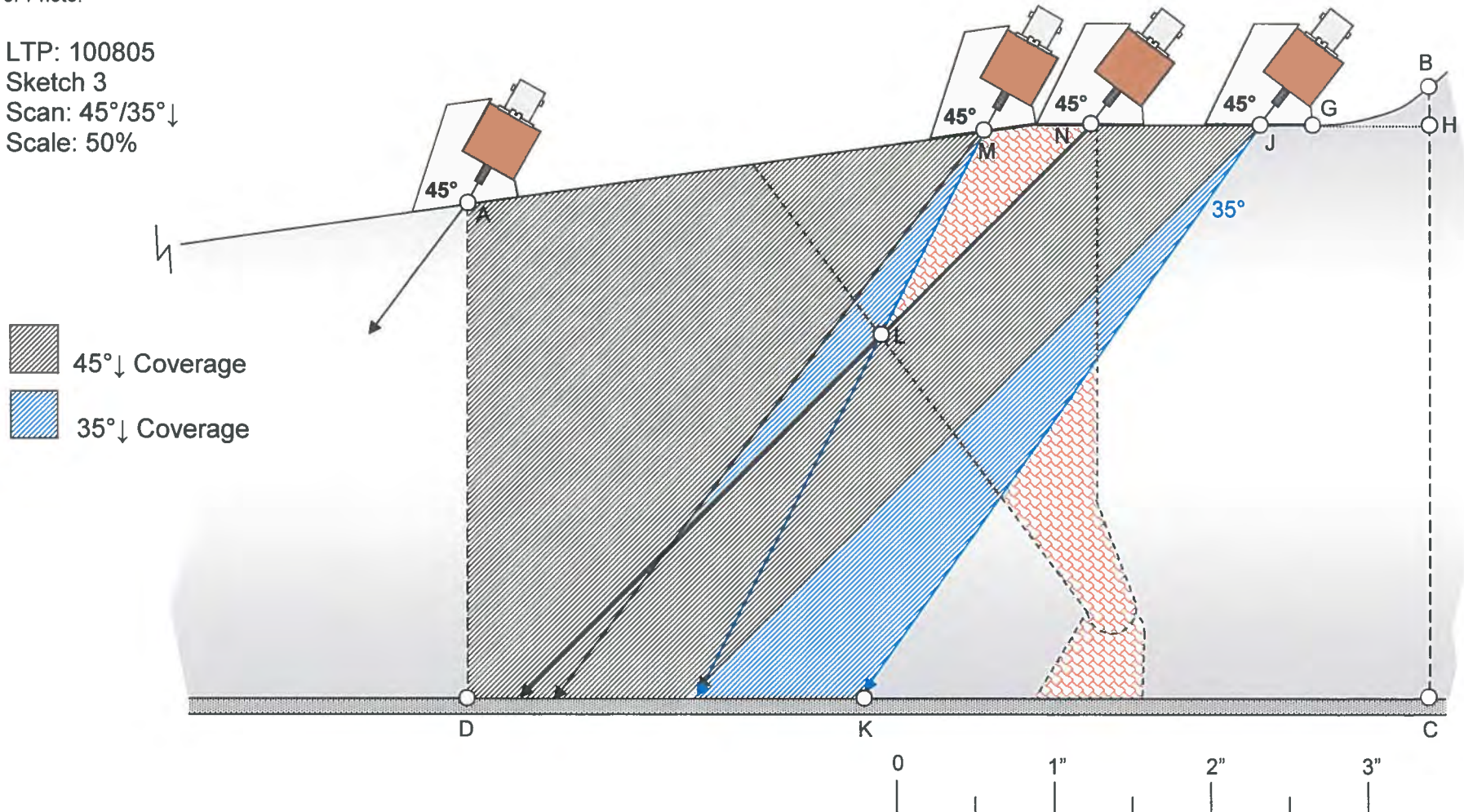
Sketch or Photo:

LTP: 100805

Sketch 3

Scan: 45°/35°↓

Scale: 50%



Exam Area = 85.8 in²

Examined 85.8 – MNL - HCKJ - GHB

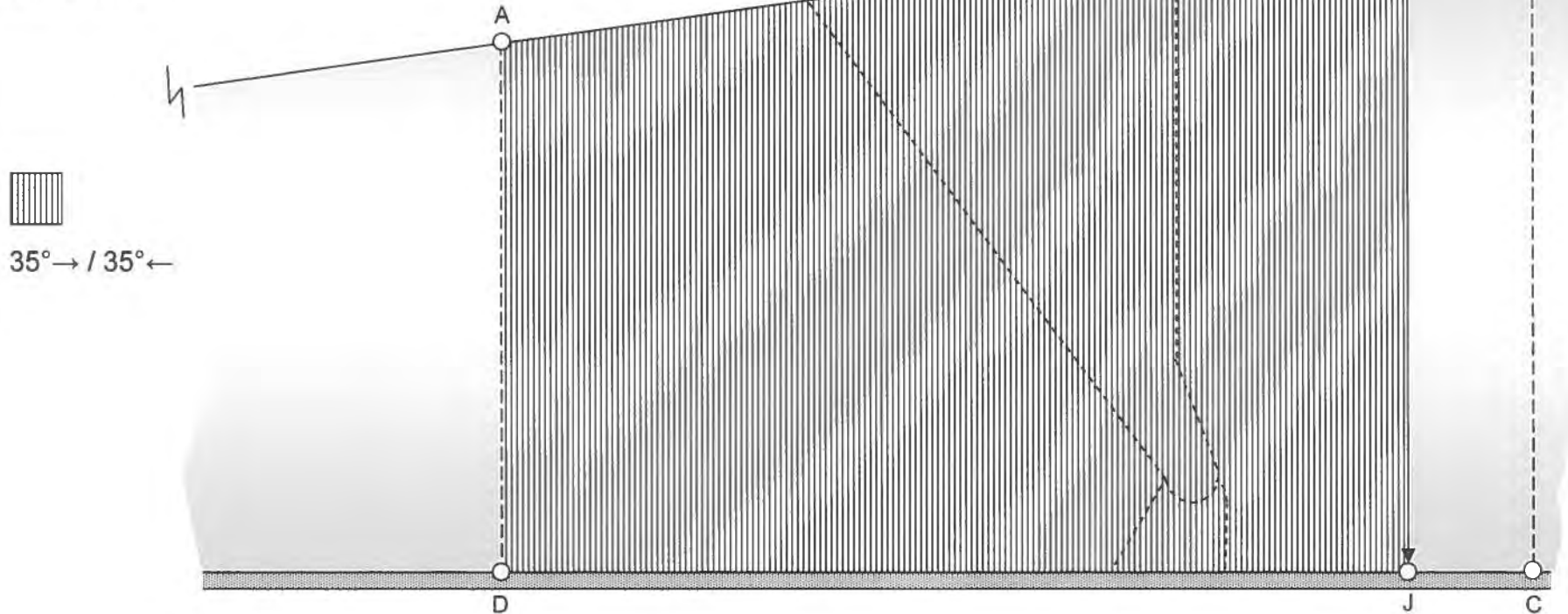
Examined 85.8 – $(3.8 \times 0.9)/2 - 7.3(7.2 + 2.2)/2 - (1.5 \times 0.5)/2$

Examined 49.41 in²

Additional - Supplemental Reports

Sketch or Photo:

Scale: 50%



Examined 74.5 in²



Supplemental Report

Report No.: **CC14-IU-020**

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

Summary No.: **100805**

Sketch or Photo:

ASME Code Coverage Calculation

Component Information	Beam Directions
LTP: 100805 Component: SG-11 W5 Exam Area: 85.8 in ² Exam Length: 149"	↑ = With Flow ↓ = Against Flow → = CW ← = CCW

Cov. Sketch	Beam Angle & Direction	Area Examined	Exam Area	Length Examined	Exam Length	Percent Coverage
2	45°/35°↑	(81.57 /	85.8) x (	149.0 /	149.0) x 100 =	95.07%
3	45°/35°↓	(49.41 /	85.8) x (	149.0 /	149.0) x 100 =	57.59%
4	35°→	(74.48 /	85.8) x (	149.0 /	149.0) x 100 =	86.81%
4	35°←	(74.48 /	85.8) x (	149.0 /	149.0) x 100 =	86.81%
		( / ~	) x (	/ ~	) x 100 =	~
		( / ~	) x (	/ ~	) x 100 =	~
		( / ~	) x (	/ ~	) x 100 =	~
Total Percent:						326.28%
Code Examination Coverage (Total Percent / 4 Sound Beams):						81.6%

UT Vessel Examination

Site/Unit: CCNP / 1
Summary No.: 252000
Workscope: ISI

Procedure: NDE-5454-CC
Procedure Rev.: 00000
Work Order No.: C91997715

Outage No.: 1RFO21 (2014)
Report No.: CC14-IU-001
Page: 1 of 11

Code: ASME Section XI 2004 Ed Cat./Item: C-A/C1.10 Location: A15-ECCS11
Drawing No.: 12013-0012 Description: FLANGE TO CHANNEL BARREL SCHE-11
System ID: 052
Component ID: SCHE-11-1 Size/Length: 1.4" / 141.4" Thickness/Diameter: 1.125" / 45"
Limitations: Single Sided Access Start Time: 0931 Finish Time: 1249

Examination Surface: Inside ☐ Outside ☒ Surface Condition: As Welded

Lo Location: TDC Wo Location: Weld CL Couplant: ULTRAGEL II Batch No.: 11525

Temp. Tool Mfg.: FLUKE Serial No.: 17960600 Surface Temp.: 83 °F

Cal. Report No.: CC14-ICA-001, 004, 005, 006

Angle Used	0	45	45T	60	60T	70
Scanning dB	N/A	40	40	N/A	N/A	65

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

Comments:

Performed 0° interfering conditions exam. None noted. Recorded two LOF indications, acceptable per IWC-3510-1. Observed backwall response from vertical divider plate @ 0° and 180° during parallel exam.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: No (62.5%) Reviewed Previous Data: Yes

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
SALLEY, MICHAEL			<i>[Signature]</i>	2/3/2014	SIMON CROTHERS L-III	<i>[Signature]</i>	2/18/14
Examiner	Level	II L	Signature	Date	Site Review	Signature	Date
ISELL, FORREST D			<i>[Signature]</i>	2/3/2014	Russell E. Jones	<i>[Signature]</i>	3/1/14
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					KURT A. SLOSKI	<i>[Signature]</i>	3/5/14

Supplemental Report

Report No.: **CC14-IU-001**

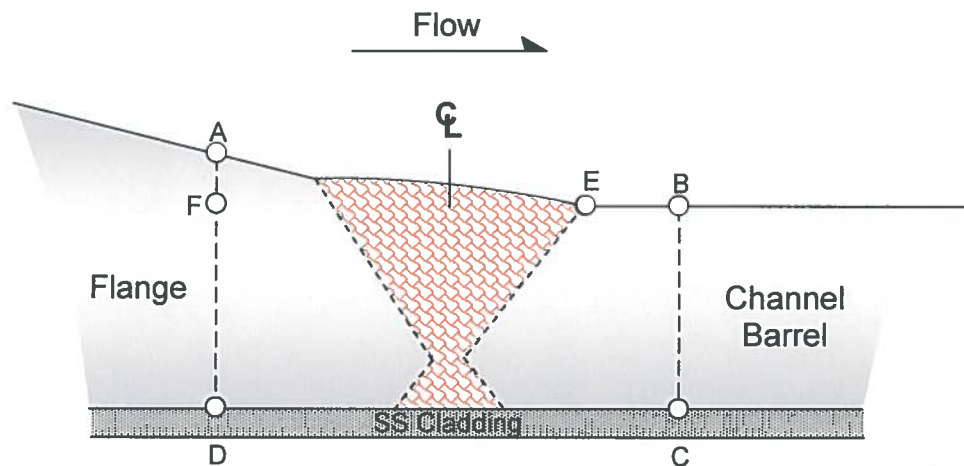
Page: **2** of **11**

Summary No.: **252000**

Sketch or Photo:

252000

Sketch 1: Dimensions & Fit Up



Weld Crown Width:	1.4"
Thickness (excluding clad):	1.05"
Weld Length:	141.4"
Exam Area:	2.76 in ²

Exam Area

- ABCD
- FBCD + AEF
- $(2.4 \times 1.05) + (1.9 \times 0.25)/2 = \underline{2.76 \text{ in}^2}$



Supplemental Report

Report No.: CC14-IU-001

Page: 3 of 11

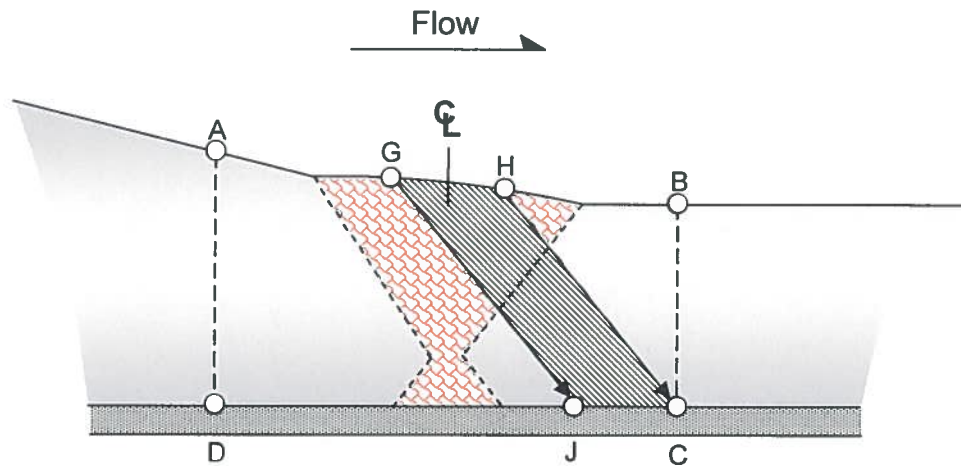
Summary No.: 252000

Sketch or Photo:

252000

Sketch 2: Coverage

Exam: 45° US



Exam Area: 2.76 in²

Examined: GHCJ

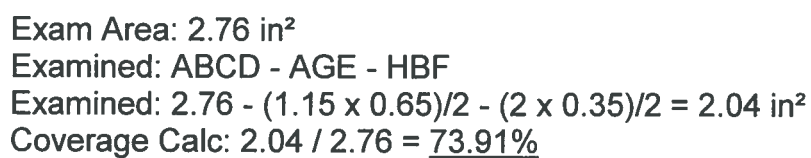
Examined: (1.5 x 0.4) = 0.60 in²

Coverage Calc: 0.60 / 2.76 = 21.74%



Page: 4 of 11

Exam: 45° / 70° DS



Supplemental Report

Report No.: **CC14-IU-001**

Page: **5** of **11**

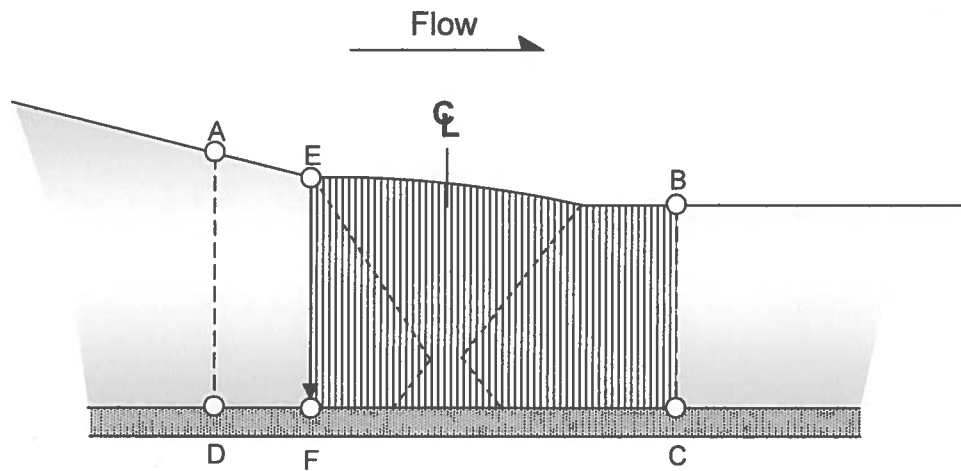
Summary No.: **252000**

Sketch or Photo:

252000

Sketch 4: Coverage

Exam: 45° CW / CCW



Exam Area: 2.76 in²

Examined: ABCD - AEFD

Examined: $2.76 - 0.5(1.3 + 1.2)/2 = 2.13 \text{ in}^2$

Coverage Calc: $2.13 / 2.76 = \underline{77.17\%}$

Coverage Calc	
Exam	Coverage
Ax Upst	21.74%
Ax Dnst	73.91%
CW	77.17%
CCW	77.17%
Total:	
250%	
Total / 4:	
62.5%	

Additional - Supplemental Reports

Supplemental Report

Report No.: **CC14-IU-001**

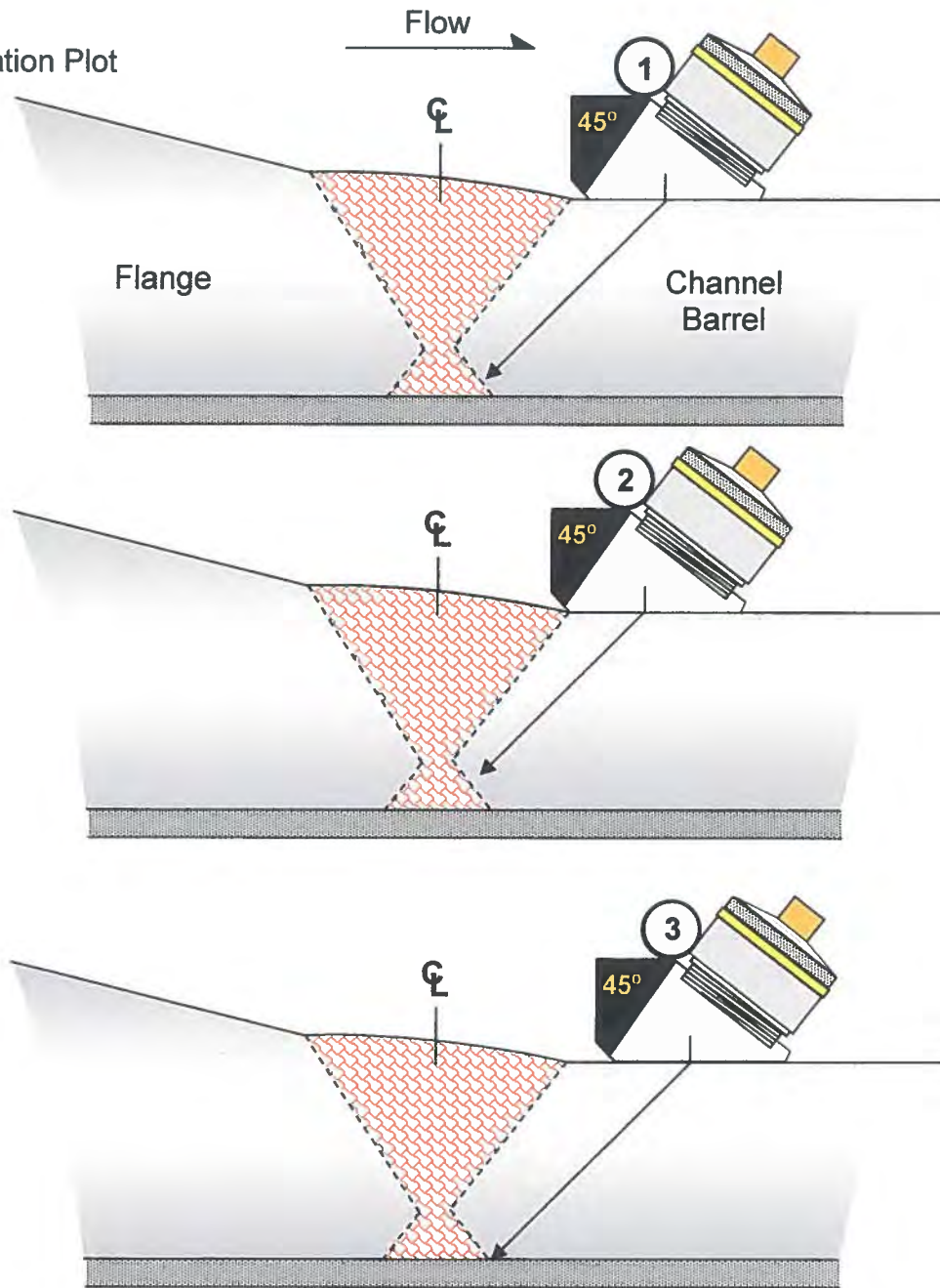
Page: **6** of **11**

Summary No.: **252000**

Sketch or Photo:

252000

Sketch 5: Indication Plot



1
2
3

Flaw #1: LOF @ 21.7". Acceptable per IWC-3510-1

Flaw #2: LOF @ 91.2". Acceptable per IWC-3510-1

ID Geometry, seen intermittently 360°



Supplemental Report

Report No.: **CC14-IU-001**

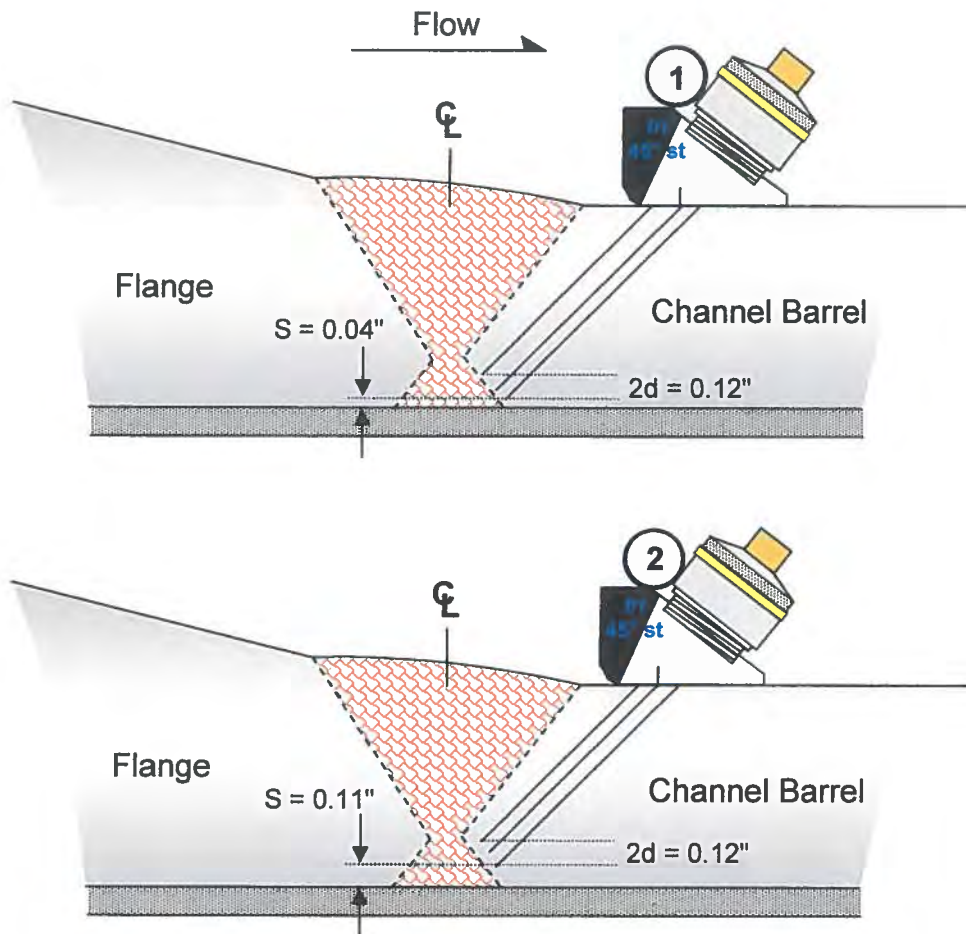
Page: **7** of **11**

Summary No.: **252000**

Sketch or Photo:

252000

Sketch 6: Indication Sizing Plot



① Flaw #1: LOF. Acceptable per IWC-3510-1

② Flaw #2: LOF. Acceptable per IWC-3510-1



UT Vessel Examination

Site/Unit: CCNP / 1 Procedure: NDE-5454-CC Outage No.: 1RFO21 (2014)
Summary No.: 252350 Procedure Rev.: 00000 Report No.: CC14-IU-002
Workscope: ISI Work Order No.: C91997715 Page: 1 of 5

Code: ASME Section XI 2004 Ed Cat./Item: C-A/C1.10 Location: A15-ECCS12
Drawing No.: 12015-0012 Description: TUBE SHEET TO CHANNEL COVER SCHE-12
System ID: 052
Component ID: SCHE-12-2 Size/Length: 1.4" / 141.4" Thickness/Diameter: 1.125" / 45"
Limitations: Single Sided Access Start Time: 1715 Finish Time: 1914

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground
Lo Location: TDC Wo Location: Weld CL Couplant: ULTRAGEL II Batch No.: 11525
Temp. Tool Mfg.: FLUKE Serial No.: 17960591 Surface Temp.: 86 °F

Cal. Report No.: CC14-ICA-007, 008 & 009

Angle Used	0	45	45T	60	60T	70
Scanning dB	N/A	33.6	33.6	N/A	N/A	52.5



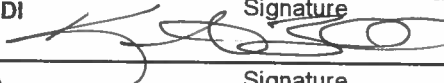
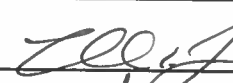
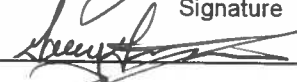
Indication(s): Yes ☐ No ☒ Scan Coverage: Upstream ☒ Downstream ☐ CW ☒ CCW ☒

Comments:

Performed 0° Interfering conditions Exam. None noted. Observed backwall response from vertical divider plate @ 0° and 180° during parallel exam.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: No (75.2%) Reviewed Previous Data: Yes

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
TUCKER, DAVID K				2/14/2014	SIMON CROTHERS L-III		2/18/14
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
BULL, W. KEITH				2/14/2014	Russel E. Jones		3/1/14
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					GARY GUSTAFSON		3/2/14

Supplemental Report

Report No.: CC14-IU-002

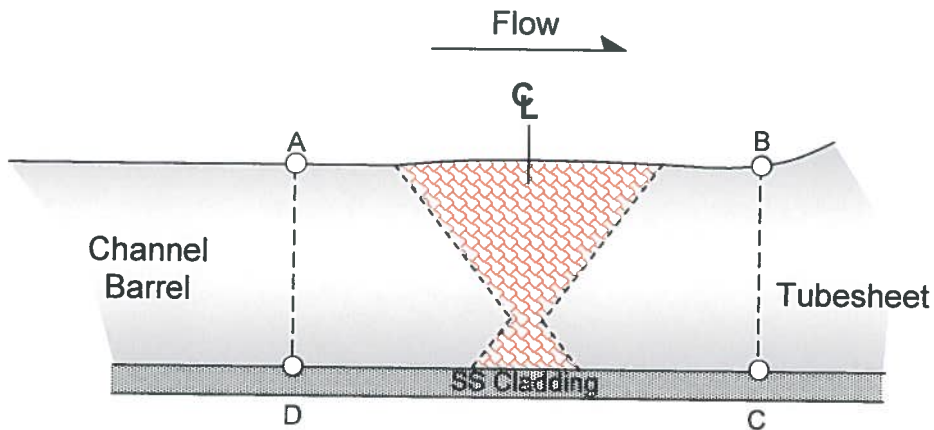
Summary No.: 252350

Page: 2 of 5

Sketch or Photo:

252350

Sketch 1: Dimensions & Fit Up



Weld Crown Width:	1.4"
Thickness (excluding clad):	1.05"
Weld Length:	141.4"
Exam Area (ABCD) (2.4 x 1.05"):	2.52 in ²



Supplemental Report

Report No.: CC14-IU-002

Page: 3 of 5

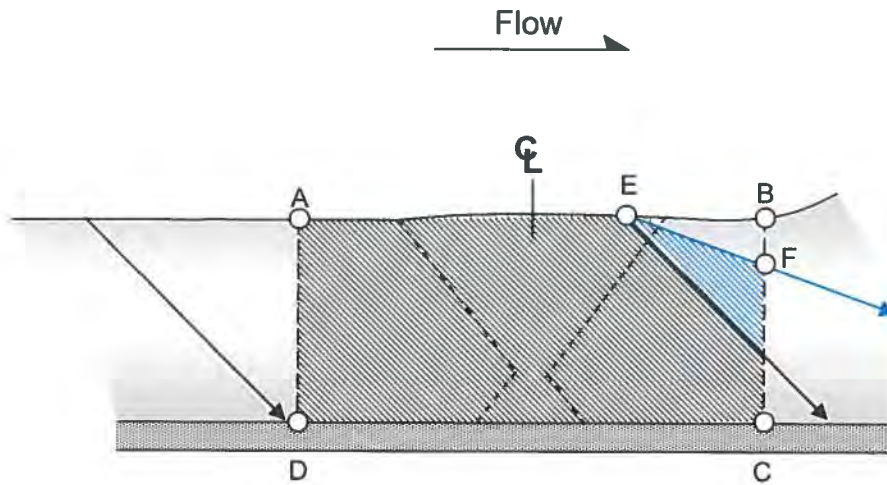
Summary No.: 252350

Sketch or Photo:

252350

Sketch 2: Coverage

Exam: 45° / 70° US



Exam Area: 2.52 in²

Examined: (ABCD - EBF)

Examined: 2.52 - (0.7 x 0.25) = 2.35 in²

Coverage Calc: 2.35 / 2.52 = 93.25%



Supplemental Report

Report No.: CC14-IU-002

Page: 4 of 5

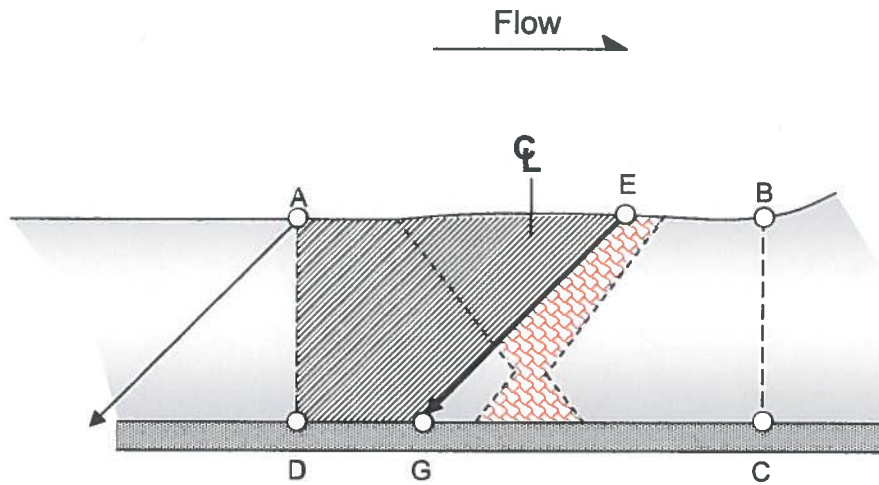
Summary No.: 252350

Sketch or Photo:

252350

Sketch 3: Coverage

Exam: 45° DS



Exam Area: 2.52 in²

Examined: (AEGD)

Examined: $1.05(1.7 + 0.65)/2 = 1.23 \text{ in}^2$

Coverage Calc: $1.23 / 2.52 = \underline{48.81\%}$

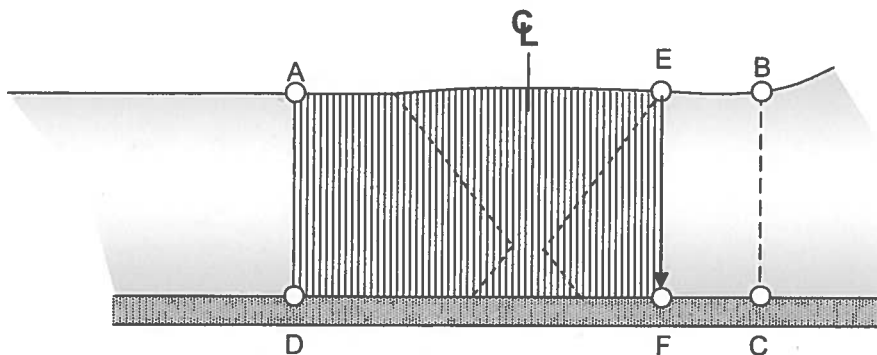


Page: 5 of 5

Exam: 45° CW / CCW



Flow



Exam Area: 2.52 in²
Examined: (AEFD)
Examined: (1.05 x 1.9) = 2.00 in²
Coverage Calc: 2.00 / 2.52 = 79.37%

Coverage Calc	
<i>Exam</i>	<i>Coverage</i>
Ax Upst	93.25%
Ax Dnst	48.81%
CW	79.37%
CCW	79.37%
Total:	300.8%
Total / 4:	75.2%

Attachment 2 Page 55 of 102

Supplemental Report

Report No.: CC16-IU-023

Summary No.: 004150

Page: 2 of 6

Sketch or Photo:

Summary: 004150

Sketch 1: Dimensions & weld fit-up

Scale: 50%



AE = 4.2"

AJ = 5.9"

BC = 1.1"

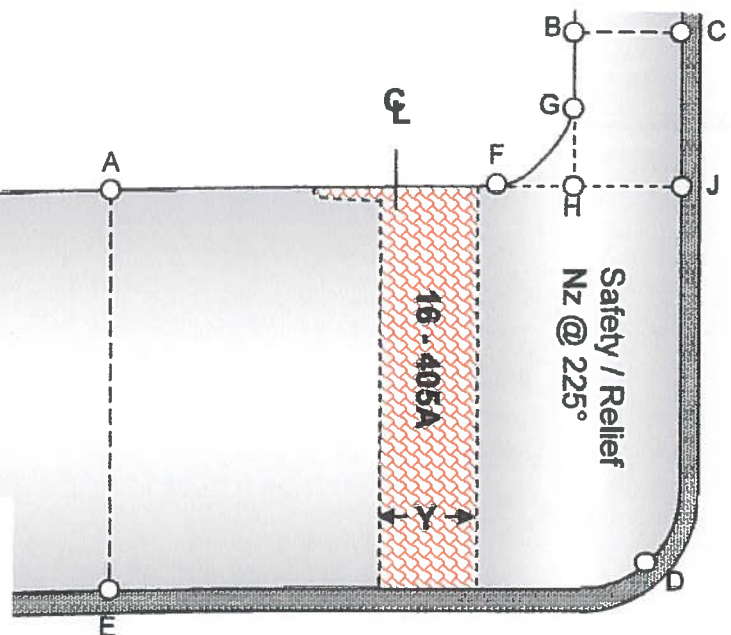
CJ = 1.6"

HG = 0.8"

HF = 0.8"

PZR Head

Weld Width:	1.7" on OD
Weld Width:	1.0" (Y)
Thickness (Excluding Clad):	4.2"
Weld Length:	22" @ CL
Exam Area:	26.86 in ²
Profile constructed from OD contour and thickness readings, and as-built drawing No. 12019 - 0021	



$$\begin{aligned}
 \text{Exam Area (ABCDE)} &= \text{AJDE} + \text{BCJH} + \text{GHF} \\
 &= (5.9 \times 4.2) + (1.1 \times 1.6) + (0.8 \times 0.8)/2 \\
 &= 26.86 \text{ in}^2
 \end{aligned}$$

Note: The procedure requires the use of 2 angle beams, 45° + 60°, 4 directions each. These 8 exams were performed.

The 2004 ASME Code requires the use of 1 angle beam, 45°, 4 directions. The following sketches and calculations are to determine Code coverage, so only the 45° is displayed. The 60° & 35° are included when they obtained additional coverage.

Supplemental Report

Report No.: **CC16-IU-023**

Page: **3** of **6**

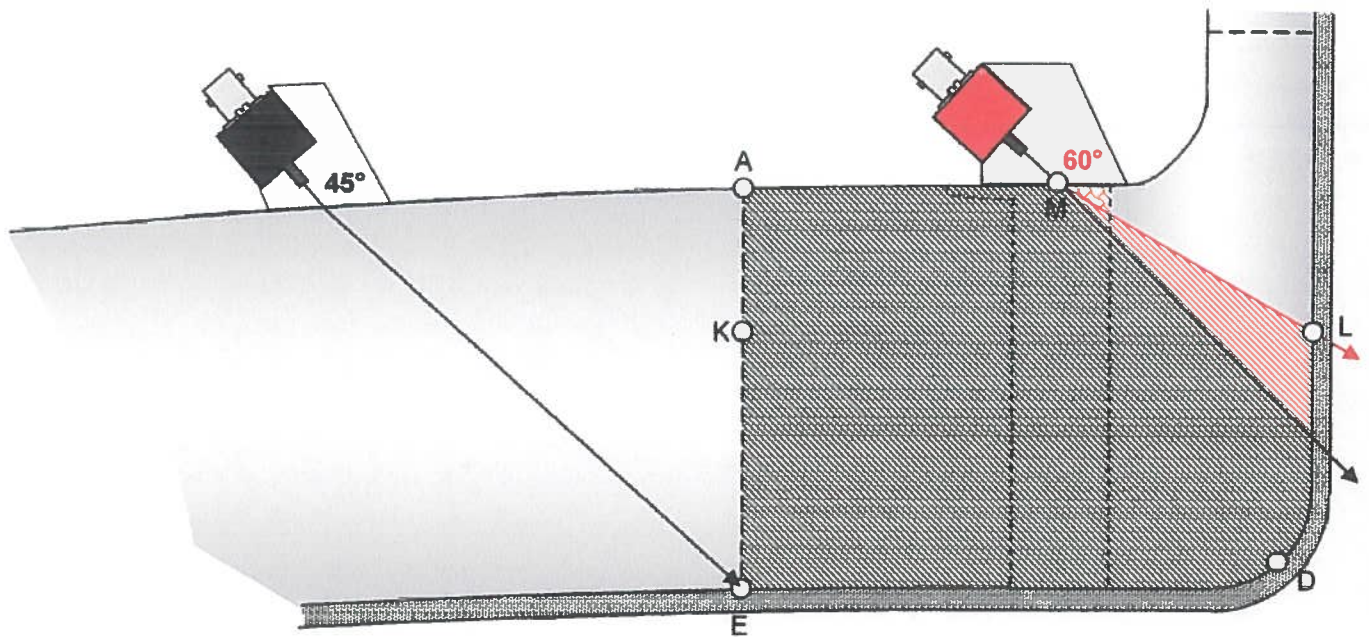
Summary No.: **004150**

Sketch or Photo:

Summary: 004150

Sketch 2: Radial Exam ↑

Scale: 50%



- Exam Area = 26.86 in²
- Examined: AMLK + KLDE
- $1.5(3.3 + 5.9)/2 + (5.9 \times 2.7) = 22.83 \text{ in}^2$



Supplemental Report

Report No.: **CC16-IU-023**

Page: **4** of **6**

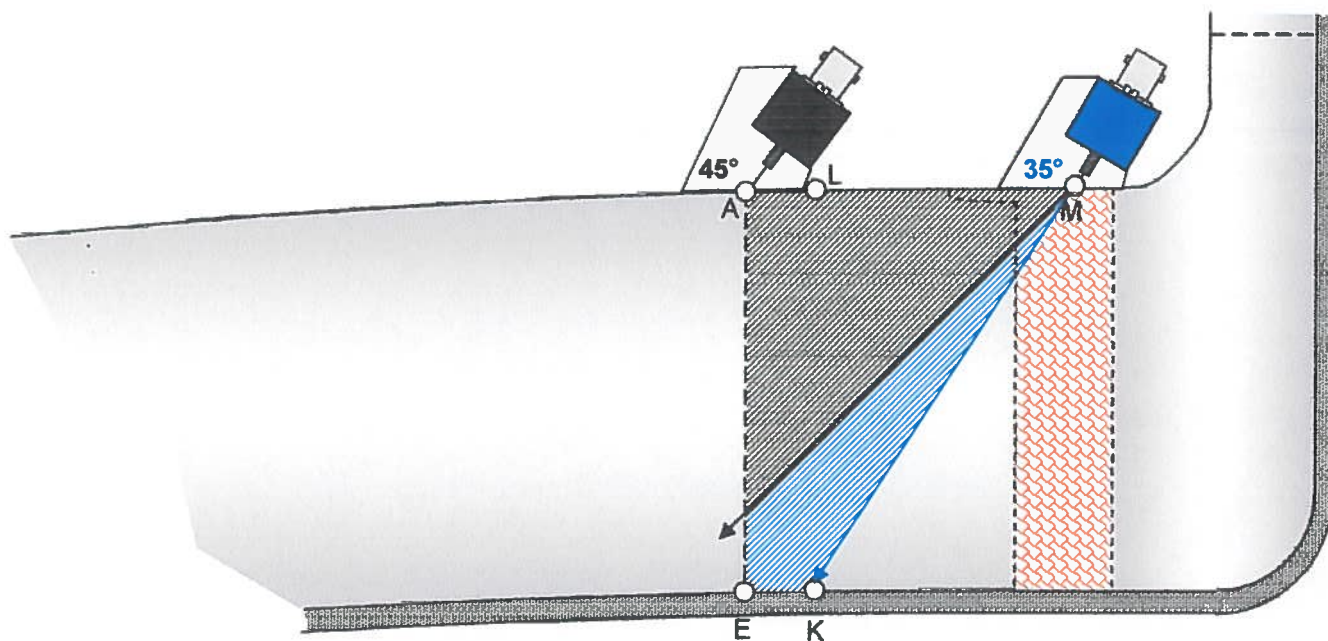
Summary No.: **004150**

Sketch or Photo:

Summary: 004150

Sketch 3: Radial Exam ↓

Scale: 50%



- Exam Area = 26.86 in²
- Examined: ALKE + LMK
- $(0.7 \times 4.2) + (2.7 \times 4.2)/2 = 8.61 \text{ in}^2$



Supplemental Report

Report No.: **CC16-IU-023**

Page: **5** of **6**

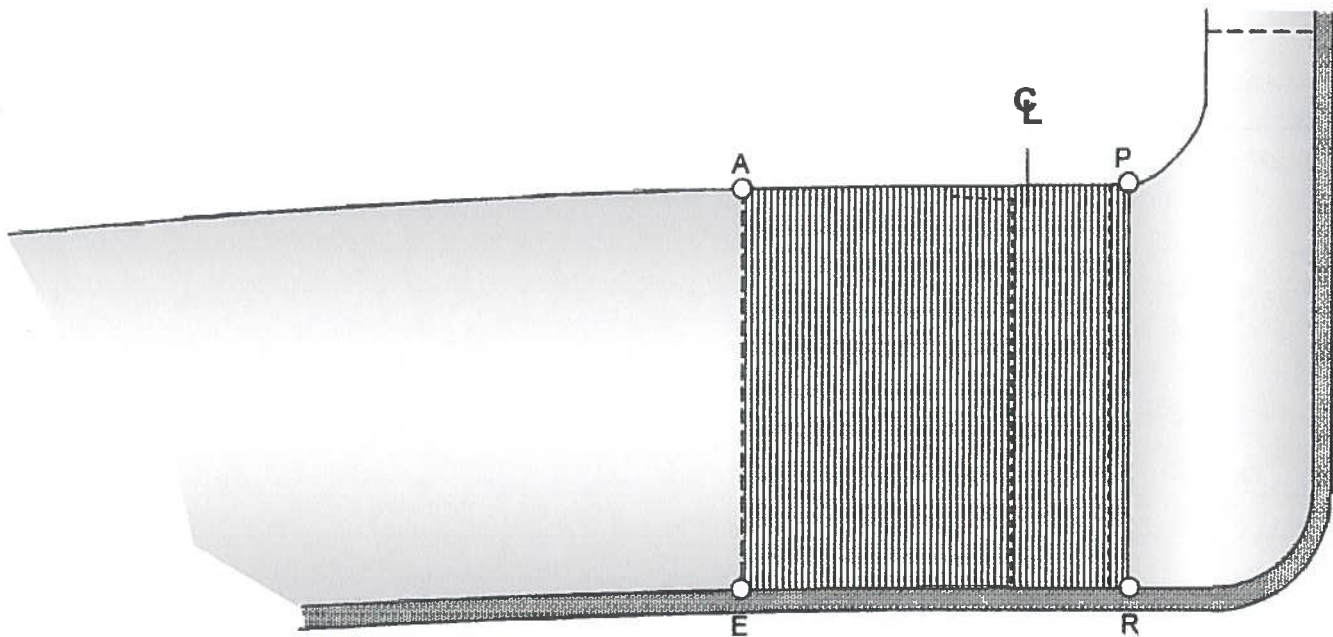
Summary No.: **004150**

Sketch or Photo:

Summary: 004150

Sketch 4: CW & CCW exams

Scale: 50%



- Exam Area = 26.86 in²
- Examined: APRE
- (4.0 x 4.2) = 16.80 in²



Supplemental Report

Report No.: CC16-IU-023

Summary No.: 004150




Page: 6 of 6

Sketch or Photo:

ASME Code Coverage Calculation

Component Information	Beam Directions
Summary: 004150 Component: 16-405A Exam Area: 26.86 in ² Exam Length: 22"	↑ = Radial Towards Nz. ↓ = Radial Away from Nz. ← = CW → = CCW

Cov. Sketch	Beam Angle & Direction	Area Examined	Exam Area	Length Examined	Exam Length	Percent Coverage
2	45/60 ↑	(22.83 /	26.86) x	(22.00 /	22) x 100 =	85.00%
3	35/45 ↓	(8.61 /	26.86) x	(22.00 /	22) x 100 =	32.06%
4	45←	(16.80 /	26.86) x	(22.00 /	22) x 100 =	62.55%
4	45→	(16.80 /	26.86) x	(22.00 /	22) x 100 =	62.55%
		(/ ~) x	(/ ~) x	(/ ~) x	(/ ~) x 100 =	~
		(/ ~) x	(/ ~) x	(/ ~) x	(/ ~) x 100 =	~
		(/ ~) x	(/ ~) x	(/ ~) x	(/ ~) x 100 =	~
		(/ ~) x	(/ ~) x	(/ ~) x	(/ ~) x 100 =	~
		(/ ~) x	(/ ~) x	(/ ~) x	(/ ~) x 100 =	~
		(/ ~) x	(/ ~) x	(/ ~) x	(/ ~) x 100 =	~
		(/ ~) x	(/ ~) x	(/ ~) x	(/ ~) x 100 =	~
		(/ ~) x	(/ ~) x	(/ ~) x	(/ ~) x 100 =	~
		(/ ~) x	(/ ~) x	(/ ~) x	(/ ~) x 100 =	~
Total Percent:						242.16%
Code Examination Coverage (Total Percent / 4 Sound Beams):						60.5%

Personnel	Name	Signature	Level	Date
Prepared By:	Mathew Hassel		II	2/21/16
Reviewed By:			III	2-24-16

Summary No.: 004200

Sketch or Photo:

Summary: 004200

Sketch 1: Dimensions & weld fit-up

Scale: 50%

AE = 4.2"

AJ = 5.9"

BC = 1.1"

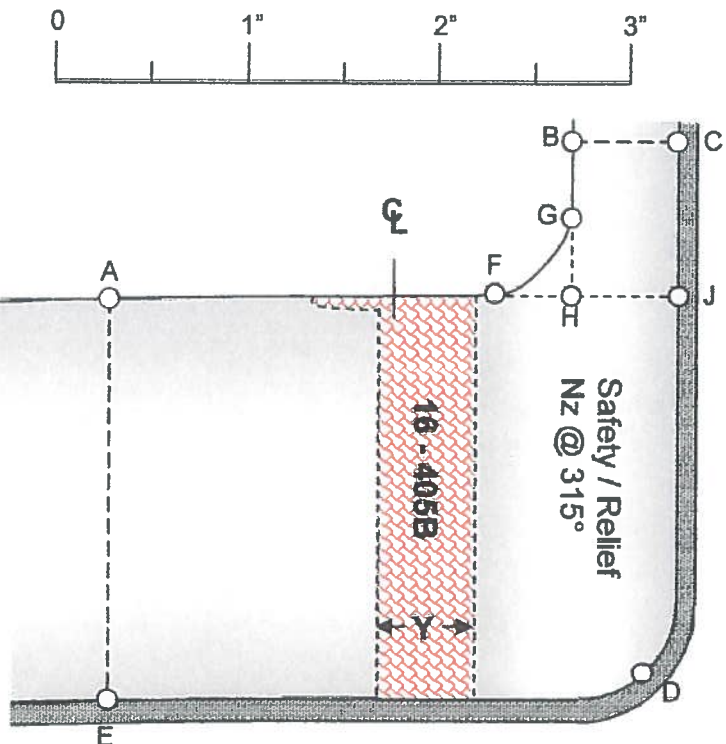
CJ = 1.6"

HG = 0.8"

HF = 0.8"

PZR Head

Weld Width:	1.7" on OD
Weld Width:	1.0" (Y)
Thickness (Excluding Clad):	4.2"
Weld Length:	22" @ CL
Exam Area:	26.86 in ²
Profile constructed from OD contour and thickness readings, and as-built drawing No. 12019 - 0021	



$$\begin{aligned}
 \text{Exam Area (ABCDE)} &= \text{AJDE} + \text{BCJH} + \text{GHF} \\
 &= (5.9 \times 4.2) + (1.1 \times 1.6) + (0.8 \times 0.8)/2 \\
 &= 26.86 \text{ in}^2
 \end{aligned}$$

Note: The procedure requires the use of 2 angle beams, 45° + 60°, 4 directions each. These 8 exams were performed.

The 2004 ASME Code requires the use of 1 angle beam, 45°, 4 directions. The following sketches and calculations are to determine Code coverage, so only the 45° is displayed. The 60° & 35° are included when they obtained additional coverage.

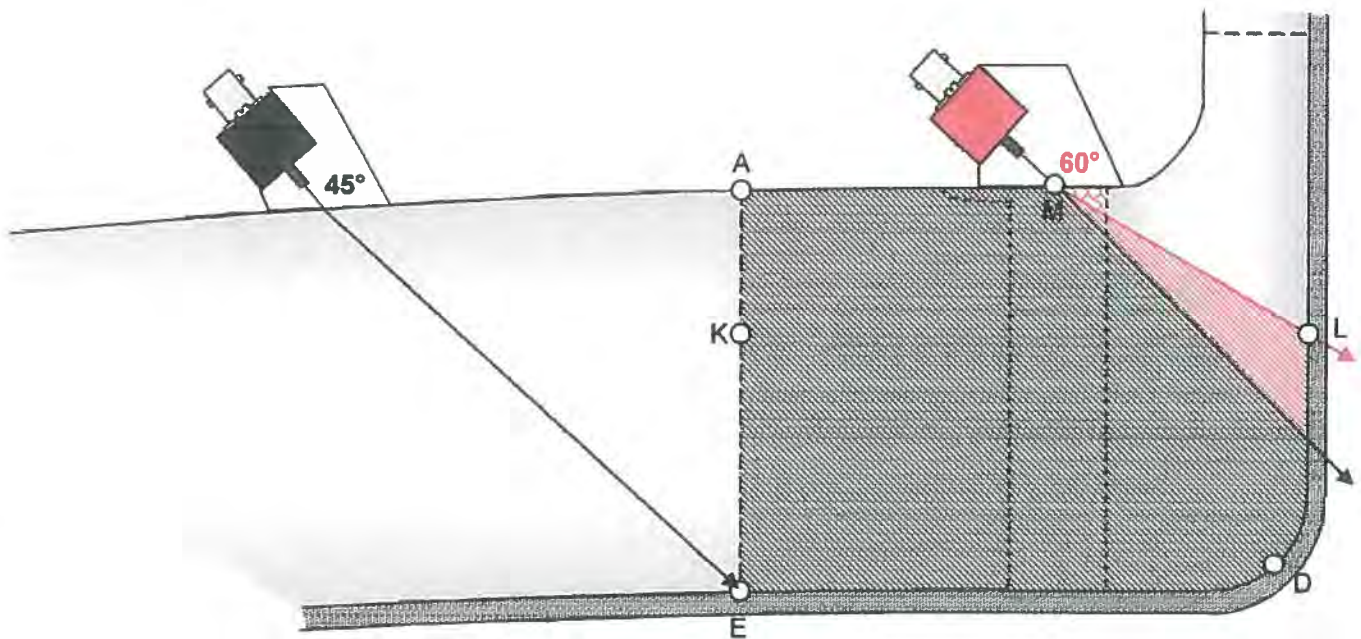
Summary No.: **004200**

Sketch or Photo:

Summary: 004200

Sketch 2: Radial Exam ↑

Scale: 50%



- Exam Area = 26.86 in²
- Examined: AMLK + KLDE
- $1.5(3.3 + 5.9)/2 + (5.9 \times 2.7) = 22.83 \text{ in}^2$



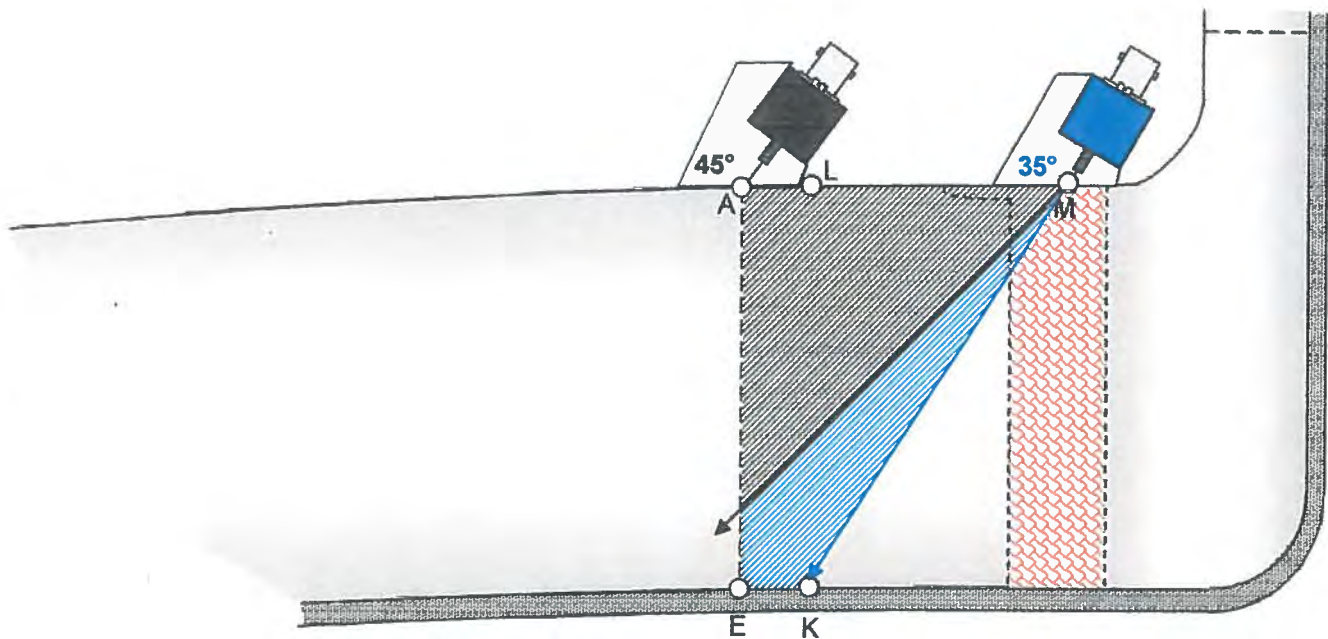
Summary No.: **004200**

Sketch or Photo:

Summary: 004200

Sketch 3: Radial Exam ↓

Scale: 50%



- Exam Area = 26.86 in²
- Examined: ALKE + LMK
- $(0.7 \times 4.2) + (2.7 \times 4.2)/2 = 8.61 \text{ in}^2$



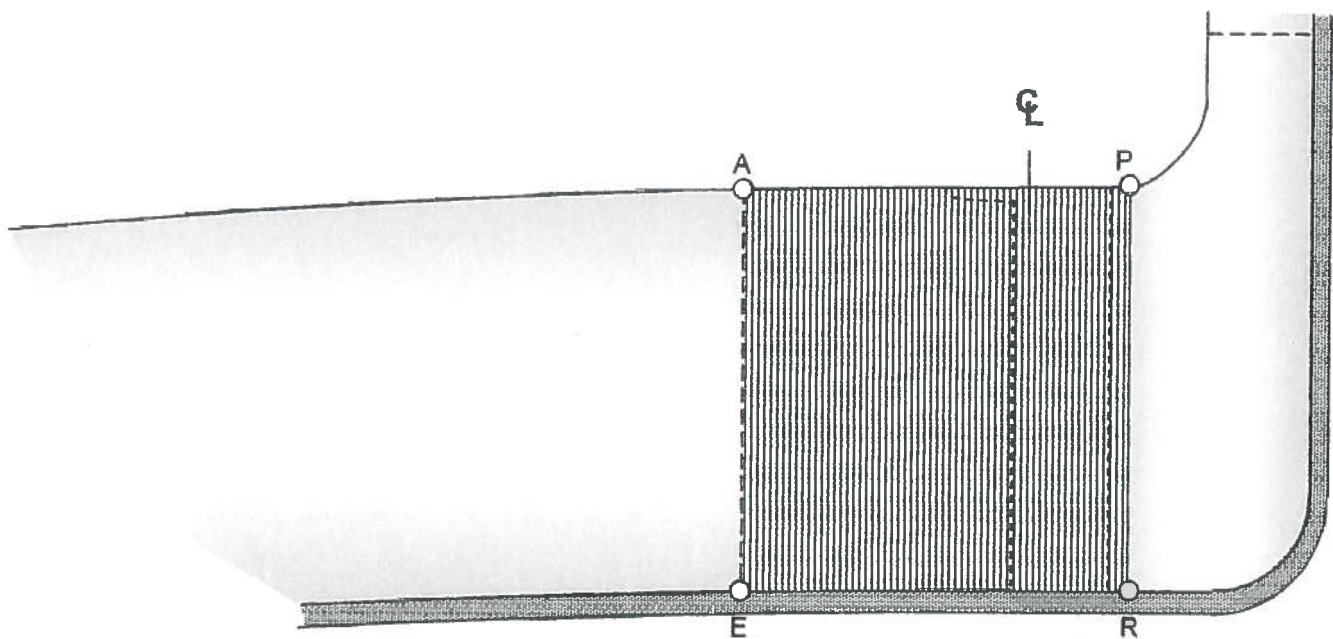
Summary No.: **004200**

Sketch or Photo:

Summary: 004200

Sketch 4: CW & CCW exams

Scale: 50%



- Exam Area = 26.86 in²
- Examined: APRE
- (4.0 x 4.2) = 16.80 in²





Sketch or Photo:

ASME Code Coverage Calculation

Component Information	Beam Directions
Summary: 004002	↑ = Radial Towards Nz.
Component: 16-405B	↓ = Radial Away from Nz.
Exam Area: 26.86 in ²	← = CW
Exam Length: 22"	→ = CCW

Cov. Sketch	Beam Angle & Direction	Area Examined	Exam Area	Length Examined	Exam Length	Percent Coverage
2	45/60 ↑	(22.83 /	26.86) x	(22.00 /	22) x 100 =	85.00%
3	35/45 ↓	(8.61 /	26.86) x	(22.00 /	22) x 100 =	32.06%
4	45←	(16.80 /	26.86) x	(22.00 /	22) x 100 =	62.55%
4	45→	(16.80 /	26.86) x	(22.00 /	22) x 100 =	62.55%
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
Total Percent:						242.16%
Code Examination Coverage (Total Percent / 4 Sound Beams):						60.5%

Personnel	Name	Signature	Level	Date
Prepared By:	Mathew Hassel		II	2/21/16
Reviewed By:	SIMON CROTHERS		III	2/25/16



UT Pipe Weld Examination

Site/Unit: **CCNP / 1**Procedure: **ER-AA-335-048**Outage No.: **1RFO22 (2016)**Summary No.: **110950-RI**Procedure Rev.: **0**Report No.: **CC16-IU-029**Workscope: **ISI**Work Order No.: **C93055471-160**Page: **1** of **6**Code: **ASME SEC XI 2004 Ed**Cat./Item: **R-AR1-112**Location: **11 Pump Bay**Drawing No.: **60798, 12024-0009**Description: **ELBOW TO PIPE**System ID: **064**Component ID: **12-PSL - 10**Size/Length: **1.7" / 40"**Thickness/Diameter: **1.312" / 12"**Limitations: **None**Start Time: **1156**Finish Time: **1220**Examination Surface: Inside ☐ Outside ☒Surface Condition: **Flat-Topped**Lo Location: **TDC**Wo Location: **CL of weld**Couplant: **ULTRAGEL II**Batch No.: **11525**Temp. Tool Mfg.: **FLUKE**Serial No.: **17960638**Surface Temp.: **74** °FCal. Report No.: **CC16-ICA-024 and CC16-ICA-025**

Angle Used

0	45	45T	60	N/A	N/A
N/A	55	49	N/A	N/A	N/A

Scanning dB

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

Comments:

NoneResults: Accept ☒ Reject ☐ EngDisp ☐Percent Of Coverage Obtained > 90%: **No - 48.2% ***Reviewed Previous Data: **YES*****"BEST-EFFORT" EXAMINATION DUE TO CSS MTL. PROPERTIES.**

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Hassel, Matthew, S.	II	<i>Matthew S. Hassel</i>	2/22/2016	<i>Timothy G. Sed</i>	<i>Timothy G. Sed</i>	2-24-16
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			CILENTO, J.J. UT-III	<i>J.J. Cilent</i>	2-25-16
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			<i>Aja Coleman</i>	<i>Aja Coleman</i>	2-28-16

Supplemental Report

Report No.: **CC16-IU-029**

Page: **2** of **6**

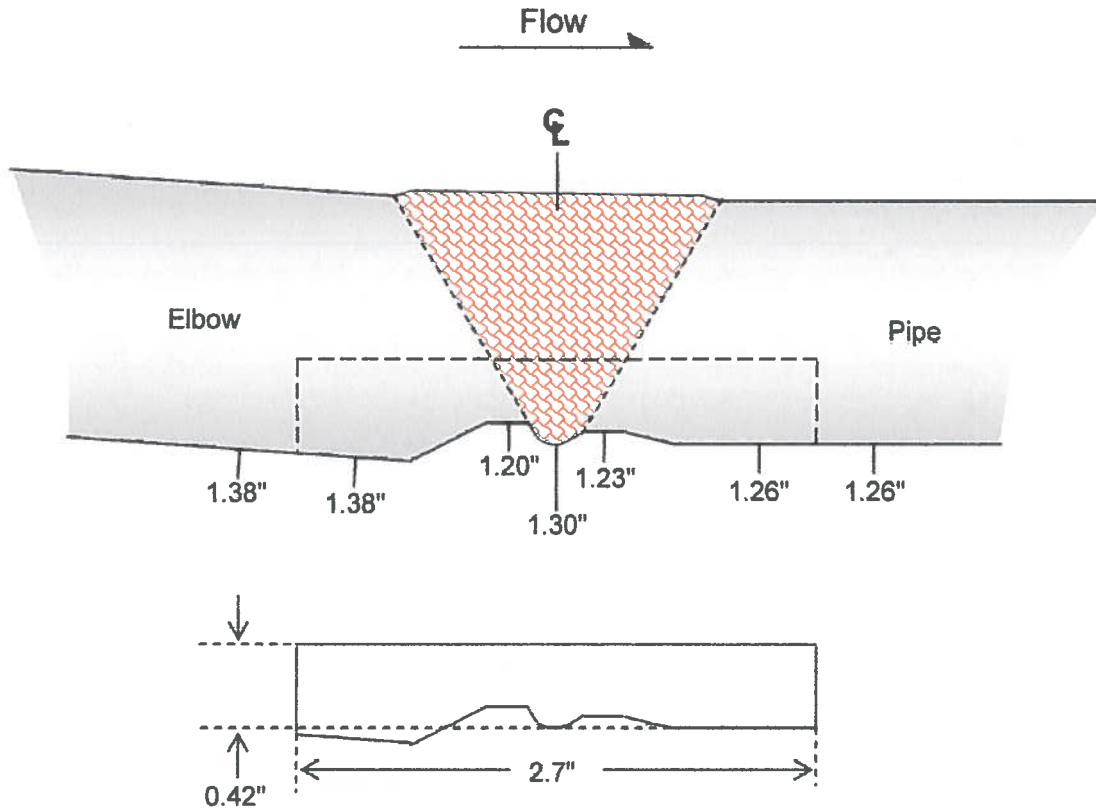
Summary No.: **110950-RI**

Sketch or Photo:

Summary: 110950-RI

Weld: 12-PSL-10

Sketch 1: Profile @ L0



Exam Area: $(2.7" \times 0.42") = 1.13 \text{ in}^2$

Weld Crown Width: 1.7"

Counterbore US: Under Crown

Counterbore DS: Under Crown



Supplemental Report

Report No.: **CC16-IU-029**

Page: **3** of **6**

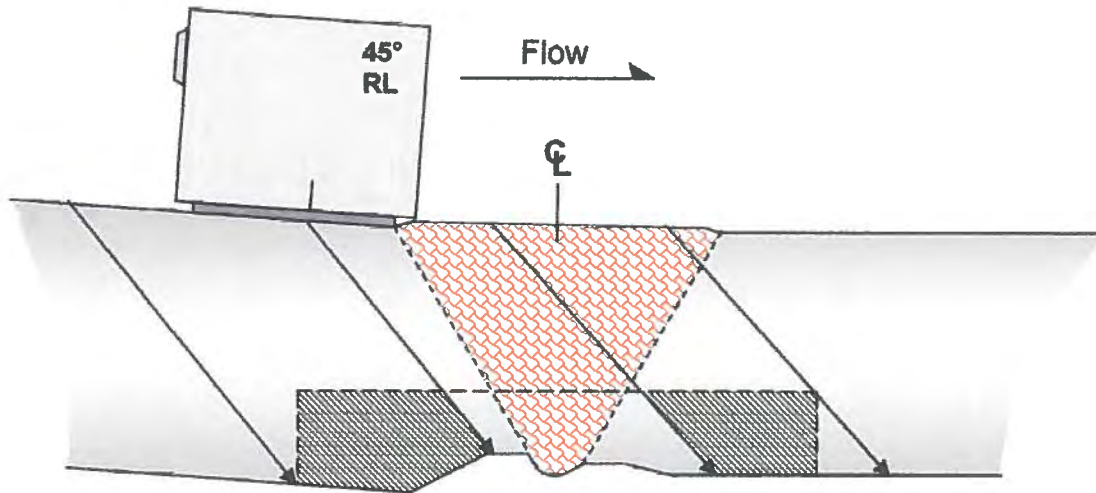
Summary No.: **110950-RI**

Sketch or Photo:

Summary: 110950-RI

Weld: 12-PSL-10

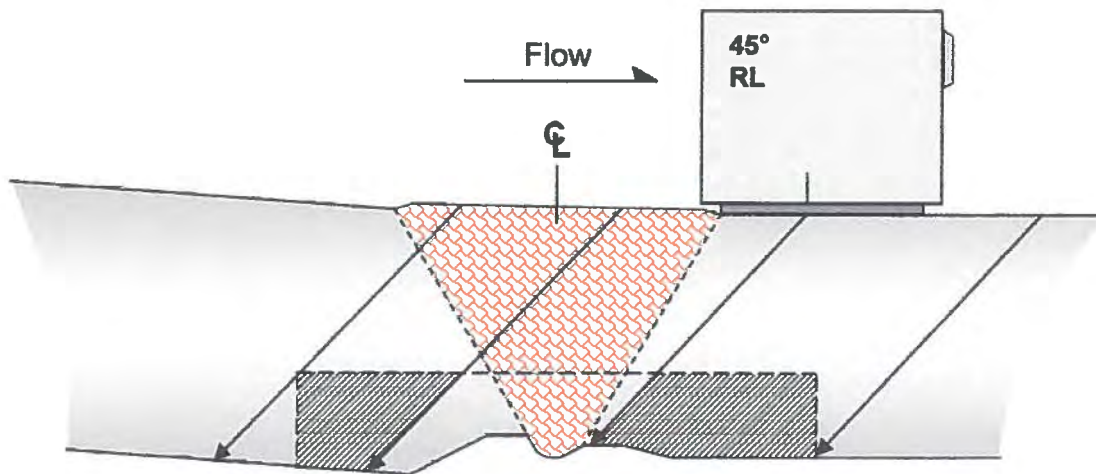
Sketch 2: Axial Coverage



Exam Area: 1.13 in²

Beam Direction: Downstream

Examined: $1.13 - (1.0 \times 0.4) = 0.73 \text{ in}^2$



Exam Area: 1.13 in²

Beam Direction: Upstream

Examined: $1.13 - (1.0 \times 0.4) = 0.73 \text{ in}^2$

Additional - Supplemental Reports

Supplemental Report

Report No.: **CC16-IU-029**

Summary No.: **110950-RI**

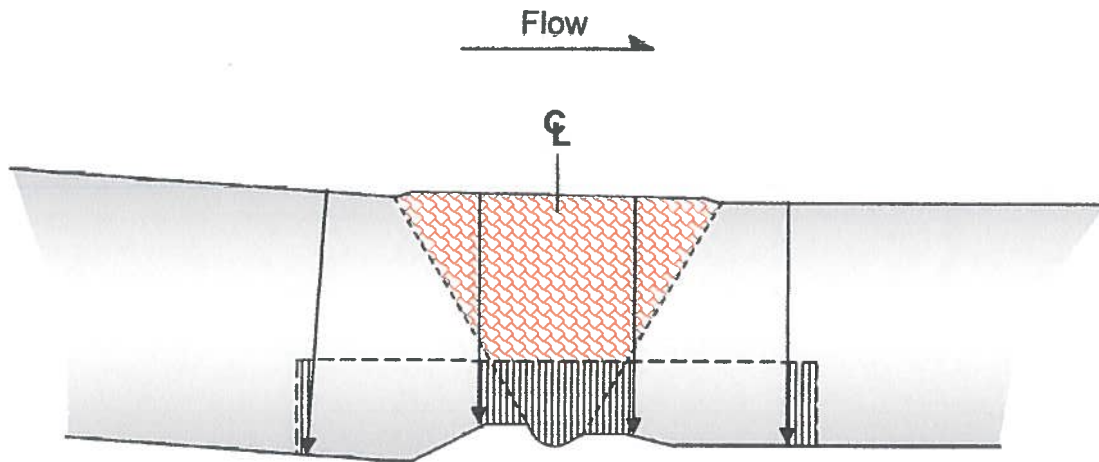
Page: **4** of **6**

Sketch or Photo:

Summary: 110950-RI

Weld: 12-PSL-10

Sketch 3: Circ Coverage



Exam Area: 1.13 in²

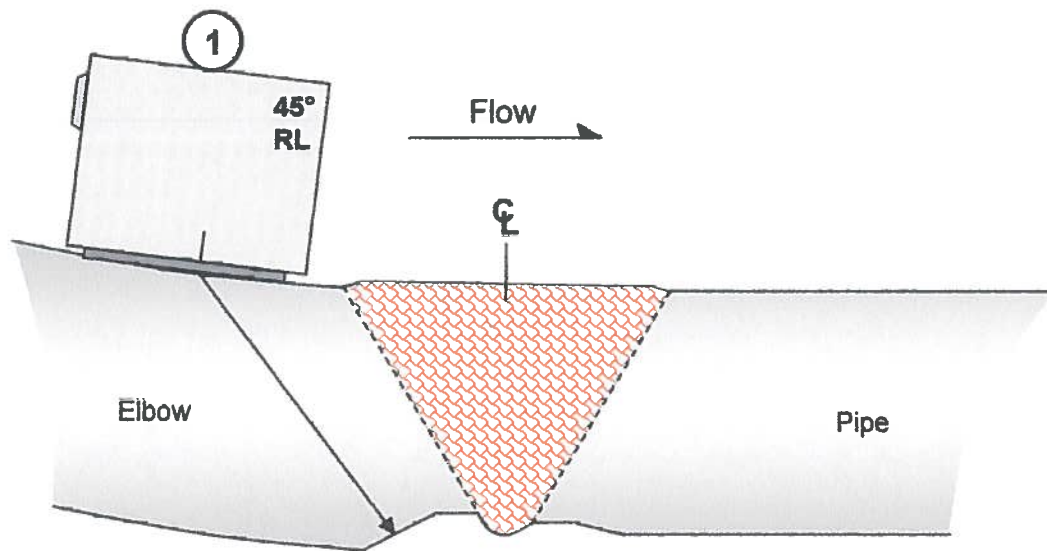
Beam Direction: CW & CCW

Examined: $0.46(0.1 + 0.05)/2 + (0.33 \times 0.8) + (0.15 \times 0.42) = 0.36 \text{ in}^2$

Coverage Calc		
Exam	Length	Result
Ax Dnst	0.73 / 1.13	64.60%
Ax Upst	0.73 / 1.13	64.60%
Circ CW	0.36 / 1.13	31.86%
Circ CCW	0.36 / 1.13	31.86%
Total:		192.92%
Total / 4:		48.2%

Supplemental ReportReport No.: **CC16-IU-029**Page: **5** of **6**Summary No.: **110950-RI**

Sketch or Photo:

Summary: 110950-RI**Weld: 12-PSL-10****Sketch 4: Indication Plot**

① Counterbore, seen intermittently 360°



Supplemental Report

Report No.: **CC18-IU-042**

Page: **2** of **10**

Summary No.: **CCNP-1-100955**

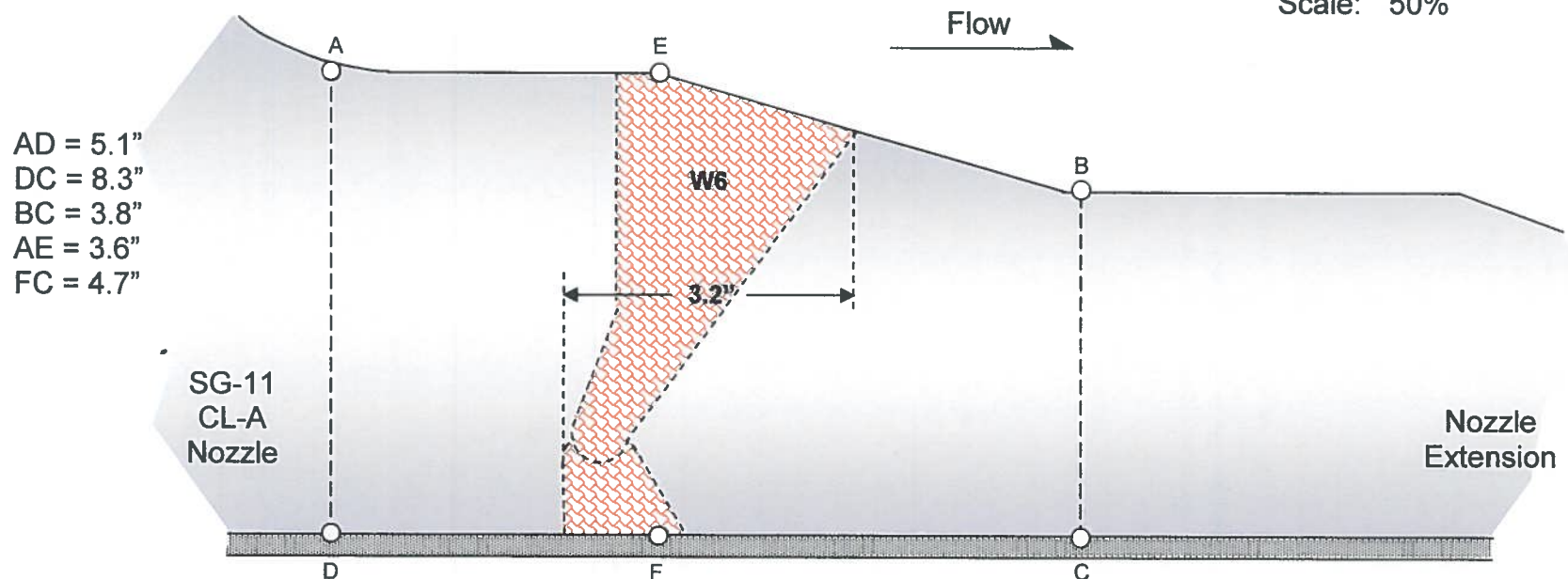
Sketch or Photo:

Summary: 100955

Weld: 6

Sketch 1: Dimensions & Fit-up

Scale: 50%



Weld Width:	3.2"
Thickness (excluding clad):	5.1"
Weld Length:	127"
Exam Area:	39.3 in ²

Exam Area

- ABCD
- AEFD + EBCF
- $(3.6 \times 5.1) + 4.7(5.1 + 3.8)/2 = 39.3 \text{ in}^2$

Weld dimensions and fit up per Dwg: 12010A-0015SH0001.
OD contour & thickness readings taken on component.

Supplemental Report

Report No.: **CC18-IU-042**

Page: **3** of **10**

Summary No.: **CCNP-1-100955**

Sketch or Photo:

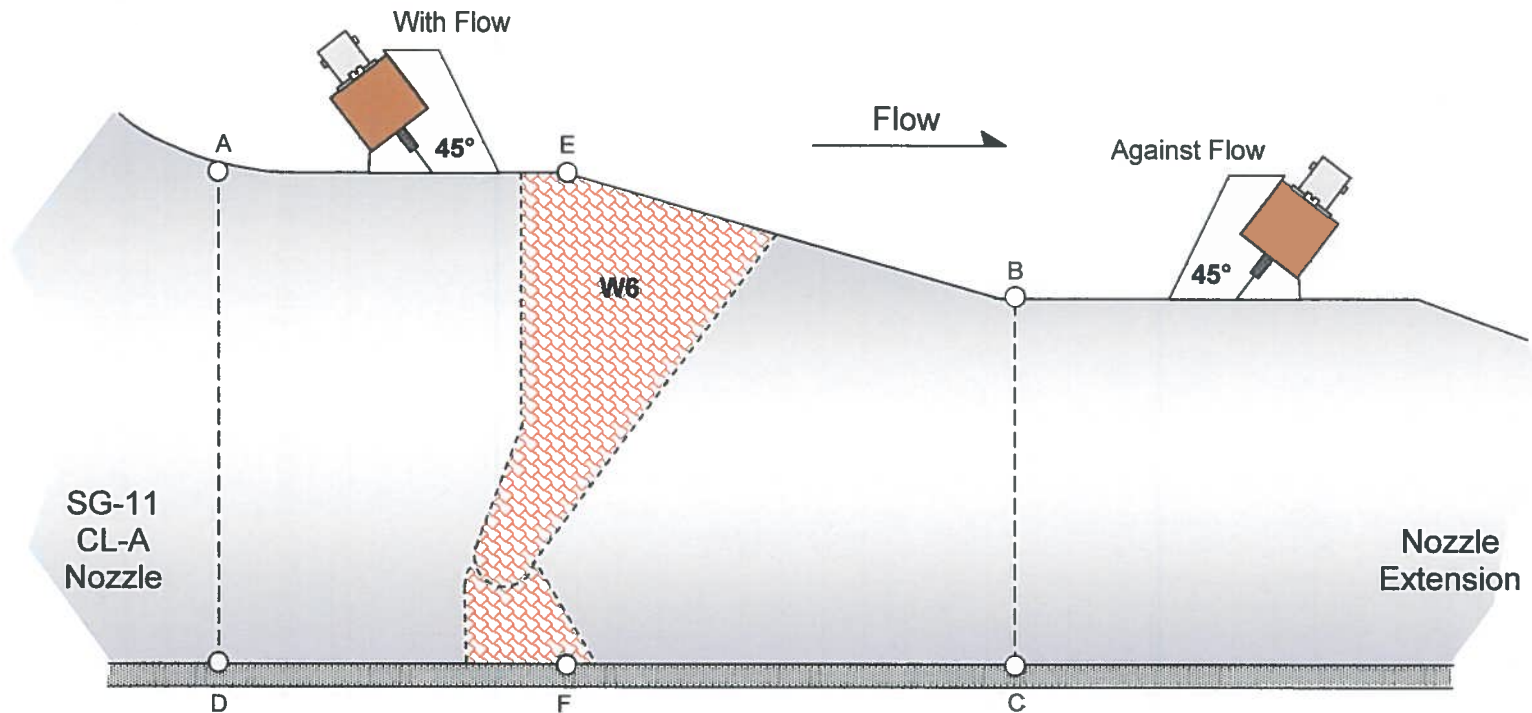
Scan Direction	Symbol
Looking with Flow	↑
Looking Against Flow	↓
Looking CW	→
Looking CCW	←

Summary: 100955

Weld: 6

Sketch 2: Scan Overview

Scale: 50%



Supplemental Report

Report No.: **CC18-IU-042**

Page: **4** of **10**

Summary No.: **CCNP-1-100955**

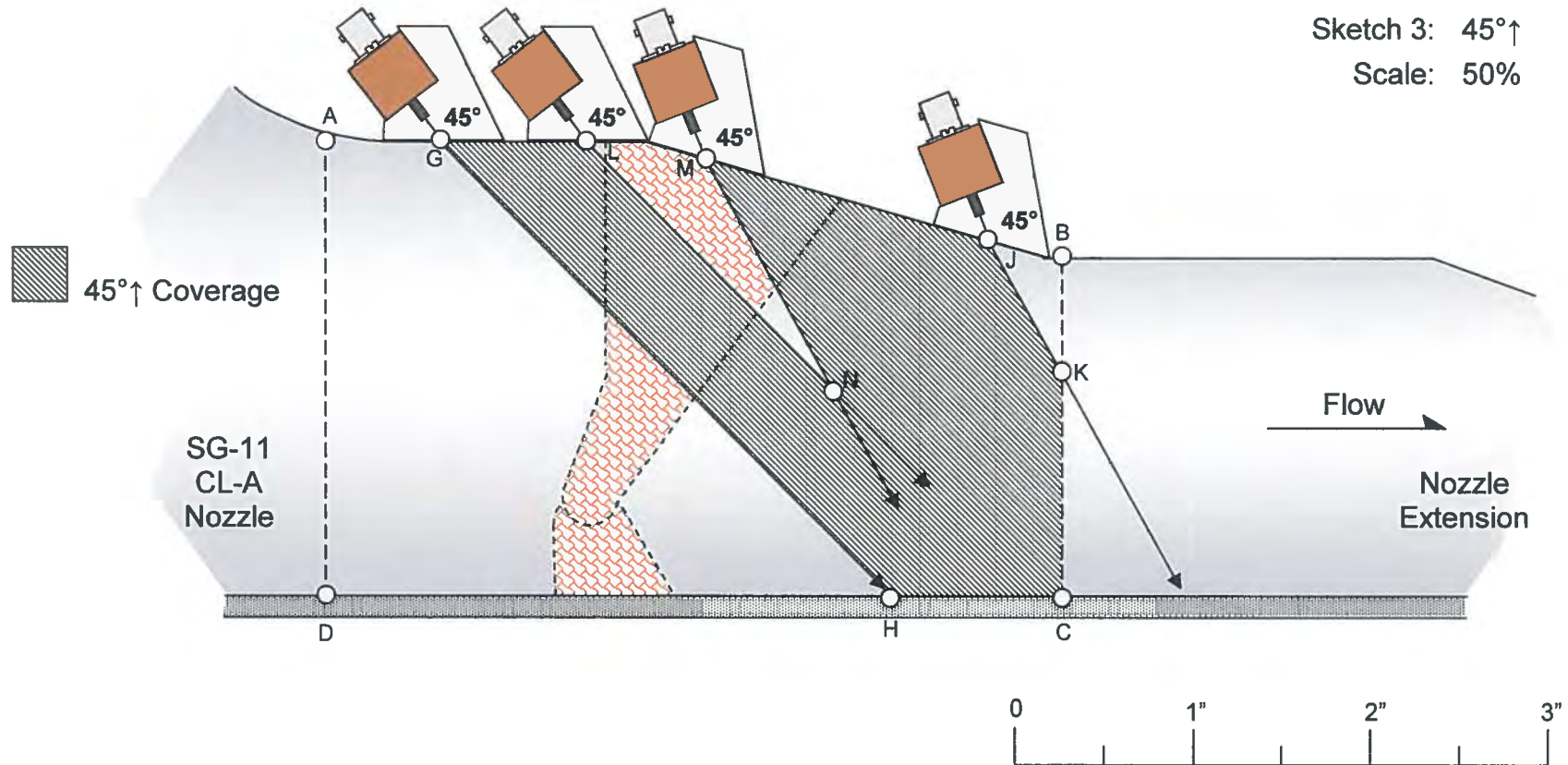
Sketch or Photo:

Summary: 100955

Weld: 6

Sketch 3: 45°↑

Scale: 50%



Exam Area = 39.3 in²

Examined 39.3 – ADHG – JBK – LMN

Examined 39.3 – $5.1(6.4 + 1.3)/2 - (1.8 \times 0.6)/2 - (4.0 \times 0.8)/2 = 17.5$ in²

Summary No.: **CCNP-1-100955**

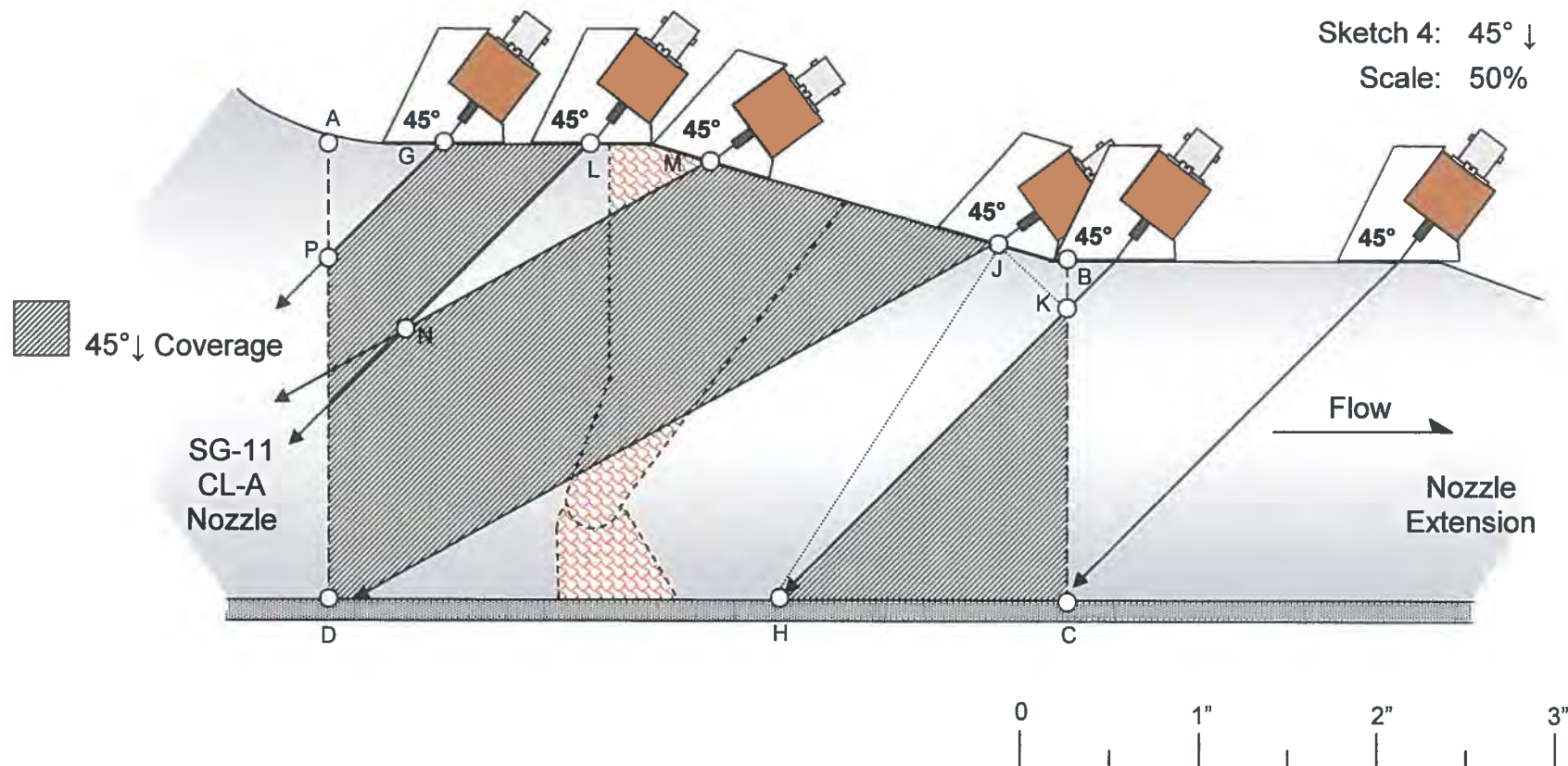
Sketch or Photo:

Summary: 100955

Weld: 6

Sketch 4: $45^\circ \downarrow$

Scale: 50%



Exam Area = 39.3 in²

Examined 39.3 – AGP - LMN - DJH - JHK - JKB

Examined $39.3 - (1.3 \times 1.3)/2 - (3.9 \times 0.8)/2 - (8.5 \times 2.3)/2 - (4.6 \times 1.1)/2 - (1.1 \times 0.4)/2 = 24.4 \text{ in}^2$

Supplemental Report

Report No.: **CC18-IU-042**

Page: **6** of **10**

Summary No.: **CCNP-1-100955**

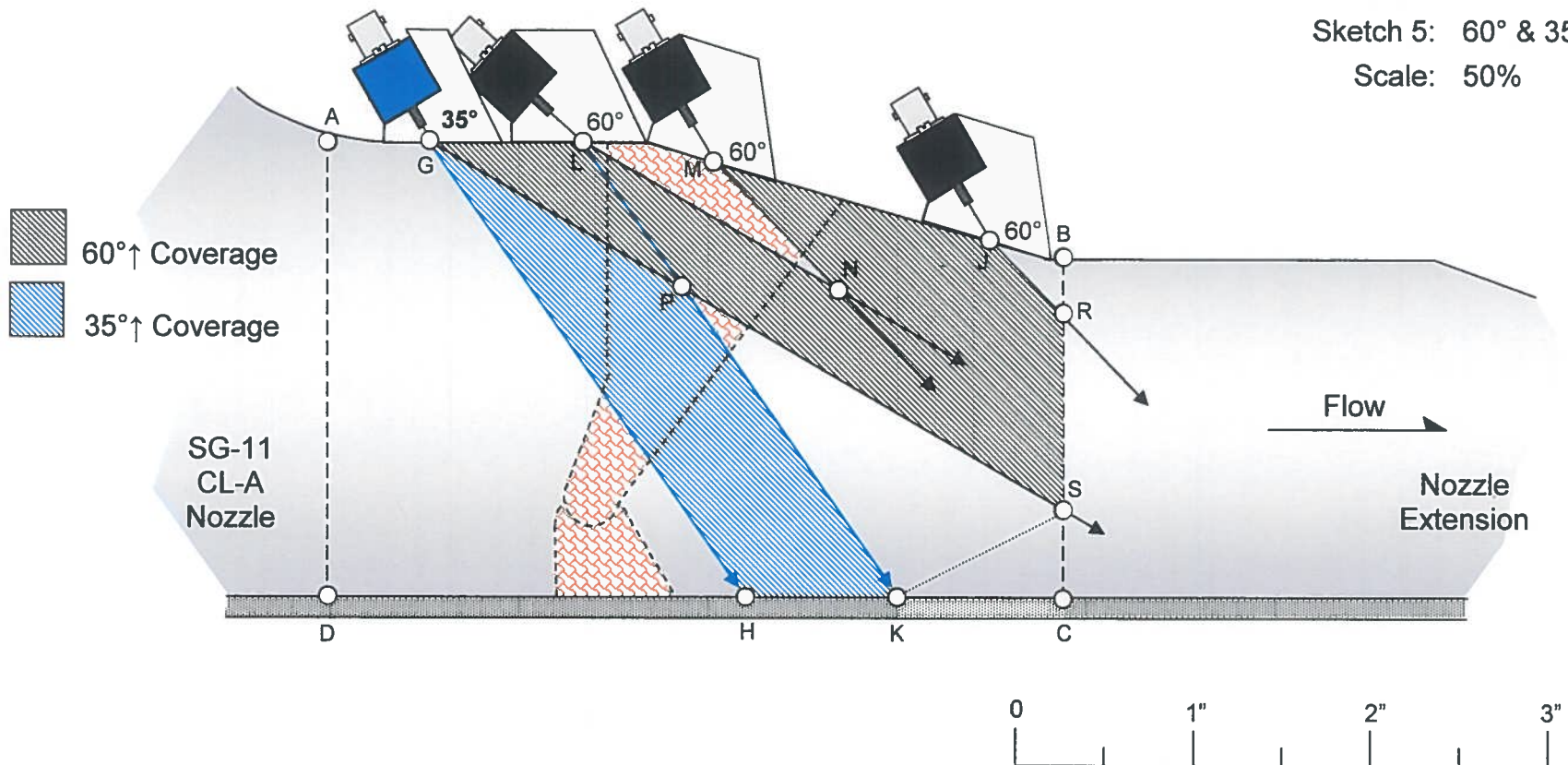
Sketch or Photo:

Summary: 100955

Weld: 6

Sketch 5: 60° & 35°↑

Scale: 50%



Exam Area = 39.3 in²

Examined 39.3 – ADHG – LMN - JRB - SPK - SKC

Examined 39.3 – $5.1(4.7 + 1.1)/2 - (3.3 \times 0.5)/2 - (1.2 \times 0.4)/2 - (5.0 \times 1.8)/2 - (1.9 \times 1.0)/2 = 18.0$ in²

Supplemental Report

Report No.: **CC18-IU-042**

Page: **7** of **10**

Summary No.: **CCNP-1-100955**

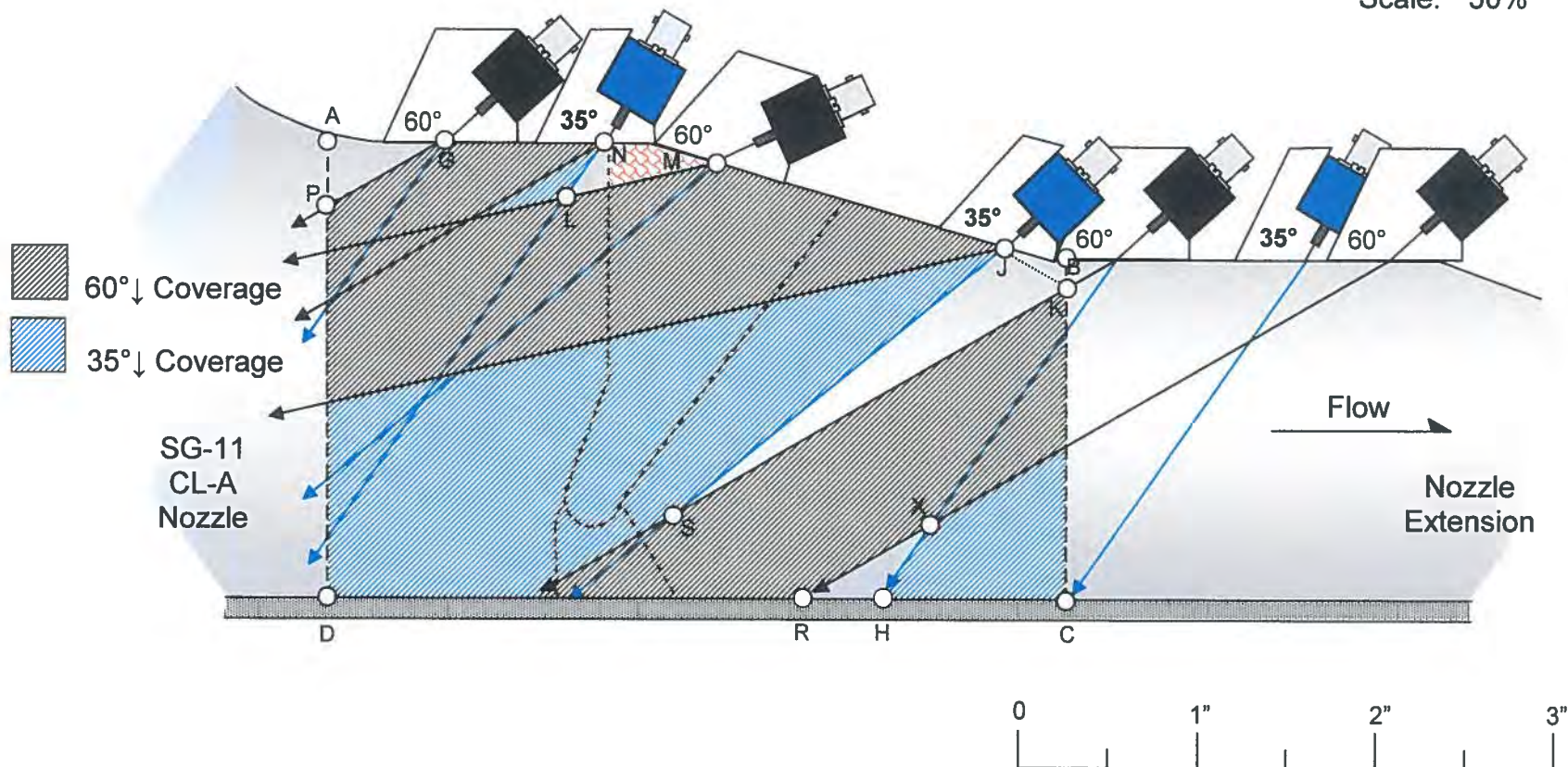
Sketch or Photo:

Summary: 100955

Weld: 6

Sketch 6: 60° & 35° ↓

Scale: 50%



Exam Area = 39.3 in²

Examined 39.3 – AGP - LMN - JKS - JKB - RHX

Examined 39.3 – $(1.3 \times 0.7)/2 - (1.8 \times 0.5)/2 - (5.1 \times 0.7)/2 - (0.8 \times 0.3)/2 - (1.6 \times 0.4)/2 = 36.2 \text{ in}^2$

Supplemental Report

Report No.: **CC18-IU-042**

Page: **8** of **10**

Summary No.: **CCNP-1-100955**

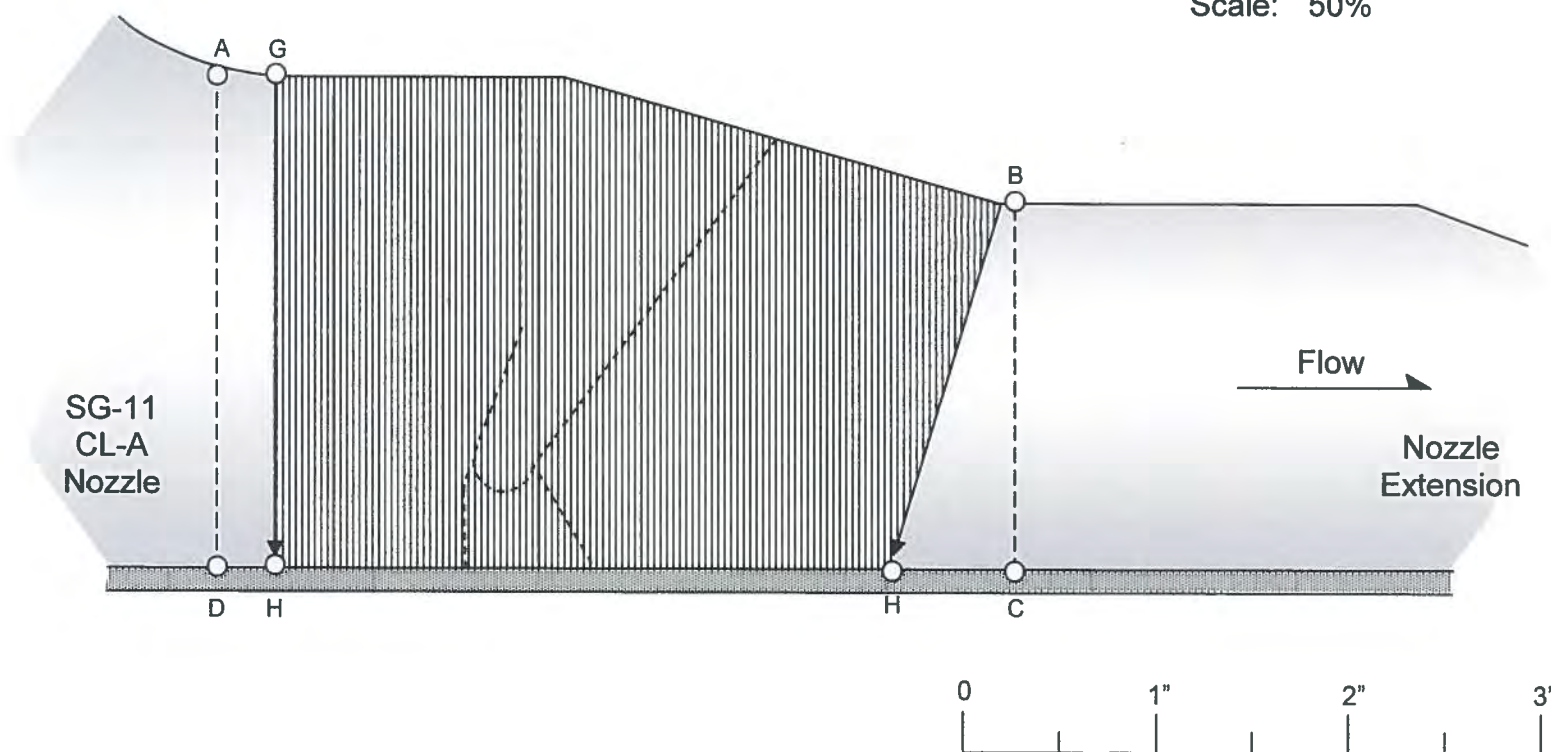
Sketch or Photo:

Summary: 100955

Weld: 6

Sketch 7: 45° & 35° / → & ←

Scale: 50%



Exam Area = 39.3 in²

Examined 39.3 – AGHD – HCB

Examined 39.3 – (5.1 x 0.6) – (1.2 x 3.8)/2 = 34 in²

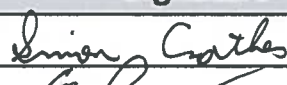
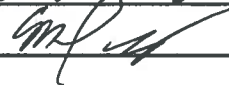
Summary No.: **CCNP-1-100955**

Sketch or Photo:

ASME Code Coverage Calculation

Component Information	Beam Directions
LTP: 100955 Component: SG-11 W6 Exam Area: 39.3 in ² Exam Length: 127"	↑ = With Flow ↓ = Against Flow → = CW ← = CCW

Cov. Sketch	Beam Angle & Direction	Area Examined	Exam Area	Length Examined	Exam Length	Percent Coverage
3	45°↑	(17.5 / 39.3)	x (127.0 / 127.0)	x 100 =		44.53%
4	45°↓	(24.4 / 39.3)	x (127.0 / 127.0)	x 100 =		62.09%
5	60°↑ / 35°↑	(18.0 / 39.3)	x (127.0 / 127.0)	x 100 =		45.80%
6	60°↓ / 35°↓	(36.2 / 39.3)	x (127.0 / 127.0)	x 100 =		92.11%
7	45°→	(34.0 / 39.3)	x (127.0 / 127.0)	x 100 =		86.51%
7	45°←	(34.0 / 39.3)	x (127.0 / 127.0)	x 100 =		86.51%
7	60°→	(34.0 / 39.3)	x (127.0 / 127.0)	x 100 =		86.51%
7	60°←	(34.0 / 39.3)	x (127.0 / 127.0)	x 100 =		86.51%
		(/ ~)	x (/ ~)	x 100 =		~
Total Percent:						590.57%
Code Examination Coverage (Total Percent / 8 Sound Beams):						73.8%

Personnel	Name	Signature	Level	Date
Prepared By:	Simon Crothers		III	3/2/18
Reviewed By:	Michael S. Gille		III	3/3/18

WesDyne International

Reactor Vessel Weld Results Summary

CALVERT CLIFFS UNIT 1

WELD NO. 10-205A **DESCRIPTION** Outlet Nozzle @ 0°

WesDyne # WN0 **EPP SKETCH:** SHEET 3 OF 17

LIMITATIONS NO ☐ YES ☒ **COMBINED COVERAGE**
72.70%

UT RESULTS NI ☐ RI ☒ **NO. OF UT INDICATIONS** 10
STATUS Code Allowable

EXAM DOCUMENTATION

☒ ANALYSIS LOG

☒ ACQUISITION LOG

☒ SCAN PRINTOUT

☒ COVERAGE BREAKDOWN

INDICATION DOCUMENTATION

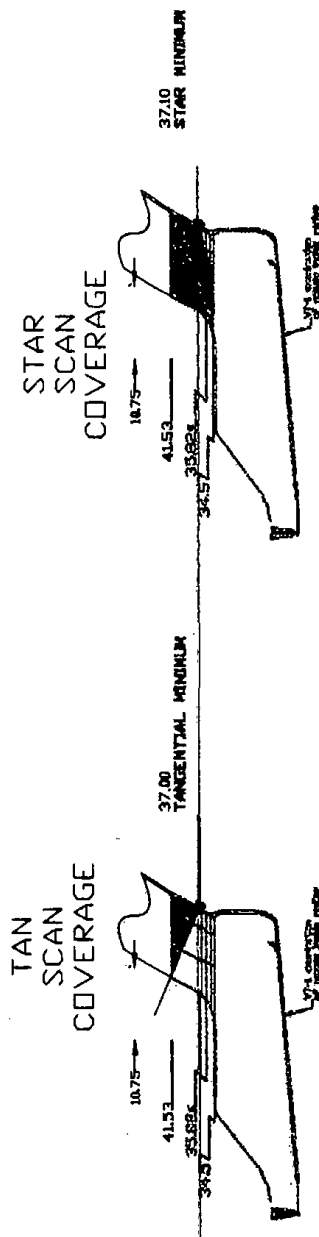
☒ ASSESSMENT SHEET

☒ PARAGON HARD COPY

☐ OTHER (specify)

WESDYNE ANALYST: Conrad S. Wyffels *CW* **Level:** III **Date:** 3/5/18

Component ID: 10-205A
(Summary Number: CCNP-1-002400)



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Calvert Cliffs Unit 1

RPV COVERAGE ESTIMATE BREAKDOWNS

DIRECTION / ORIENTATION

PARALLEL SCANS
PERP. SCANS

CCW / CW
IN / OUT

WELD DESCRIPTION Outlet Nozzle to Shell @ 0°

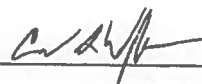
WELD NO. 10-205A (WN0)

BEAM ANGLES

BEAM DIRECTION	<u>Bore Scan</u> 50°, 35°, 5°, 40°, 25°	<u>Star Scan</u> 45° L Dual 45° L Single 45° Shear	<u>Tan Scan</u> 45° L Dual 45° L Single 45° Shear		
	EXAM VOLUME	EXAM VOLUME	EXAM VOLUME	EXAM VOLUME	EXAM VOLUME
CCW			45.40		
CW			45.40		
OUT (away from bore)	100	100*			
IN (toward bore)		94.62			
UT COVERAGE = 72.70% See exam volume EPP sketch sheet 3, 4, and 5 of 17		* Combination of Bore and Star scans			

Limitation: Due the nozzle to vessel configuration.

ANALYST: Conrad S. Wyffels



Level: III

Date: 3/5/2018

WesDyne International Reactor Vessel Weld Results Summary

CALVERT CLIFFS UNIT 1

WELD NO. 10-205B **DESCRIPTION** Outlet Nozzle @ 180°

WesDyne # WN180 **EPP SKETCH:** SHEET 3 OF 17

LIMITATIONS

NO ☐

YES ☒

COMBINED COVERAGE
72.70%

UT RESULTS

NI ☐

RI ☒

NO. OF UT INDICATIONS 7

STATUS Code Allowable

EXAM DOCUMENTATION

INDICATION DOCUMENTATION

☒ ANALYSIS LOG

☒ ASSESSMENT SHEET

☒ ACQUISITION LOG

☒ PARAGON HARD COPY

☒ SCAN PRINTOUT

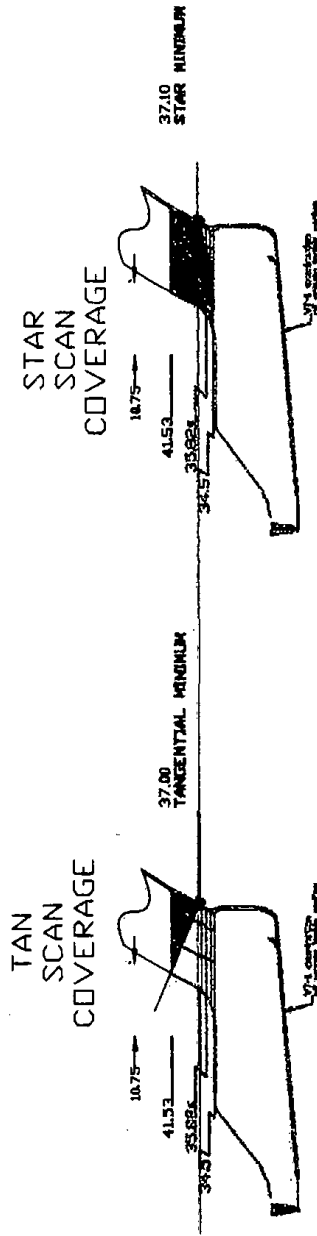
☐ OTHER (specify)

☒ COVERAGE BREAKDOWN

WESDYNE ANALYST: Conrad S. Wyffels

Level: III Date: 3/5/18

Component ID: 10-205B
(Summary Number: CCNP-1-002450)



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Calvert Cliffs Unit 1

RPV COVERAGE ESTIMATE BREAKDOWNS

DIRECTION / ORIENTATION

PARALLEL SCANS

CCW / CW

PERP. SCANS

IN / OUT

WELD

DESCRIPTION

Outlet Nozzle to Shell @ 180°

WELD NO.

10-205B (WN180)

BEAM ANGLES

BEAM DIRECTION	<u>Bore Scan</u> 50°, 35°, 5°, 40°, 25°	<u>Star Scan</u> 45° L Dual 45° L Single 45° Shear	<u>Tan Scan</u> 45° L Dual 45° L Single 45° Shear		
	EXAM VOLUME	EXAM VOLUME	EXAM VOLUME	EXAM VOLUME	EXAM VOLUME
CCW			45.40		
CW			45.40		
OUT (away from bore)	100	100*			
IN (toward bore)		94.62			
UT COVERAGE = 72.70% See exam volume EPP sketch sheet 3, 4, and 5 of 17		* Combination of Bore and Star scans			

Limitation: Due the nozzle to vessel configuration.

ANALYST: Conrad S. Wyffels



Level: III

Date: 3/5/2018



UT Pipe Weld Examination

Site/Unit: **CCNP / 1**
Summary No.: **252450**
Workscope: **ISI**

Procedure: **ER-AA-335-048**
Procedure Rev.: **0**
Work Order No.: **C93537455-115**

Outage No.: **1RFO23 (2018)**
Report No.: **CC18-IU-001**
Page: **1** of **4**

Code: **ASME SEC XI 2004 Ed** Cat./Item: **C-B/C2.21** Location: **12 ECCS Pump Room**
Drawing No.: **12015-12** Description: **OUTLET NOZZLE TO SHELL**
System ID: **052**
Component ID: **SCHE-12-N2** Size/Length: **1.4" / 40"** Thickness/Diameter: **1.125" / 10"**
Limitations: **Single Sided Access** Start Time: **1330** Finish Time: **1425**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **Ground**

Lo Location: **TDC** Wo Location: **WELD CL** Couplant: **ULTRAGEL II** Batch No.: **16K001**

Temp. Tool Mfg.: **FLUKE** Serial No.: **17960595** Surface Temp.: **95** °F

Cal. Report No.: **CC18-ICA-011, CC18-ICA-012**

Angle Used	0	45	45T	60	70	N/A
Scanning dB	N/A	35	41	N/A	52	N/A

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

Comments:

Performed UT of SCHE-12-N2

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: **No -44.15%**

Reviewed Previous Data: **YES**

Examiner	Level	II-PDI	Signature	Date	Reviewer	Signature	Date
Moore, Lee			<i>Lee L. Moore</i>	2/15/2018	SIMON CROTHERS L-III	<i>Simon Crothers</i>	2/20/18
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					GARY GUSTAFSON	<i>Gary Gustafson</i>	2/21/18
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					<i>John Coleman</i>	<i>John Coleman</i>	2/22/18

Supplemental Report

Report No.: **CC18-IU-001**

Page: **2** of **4**

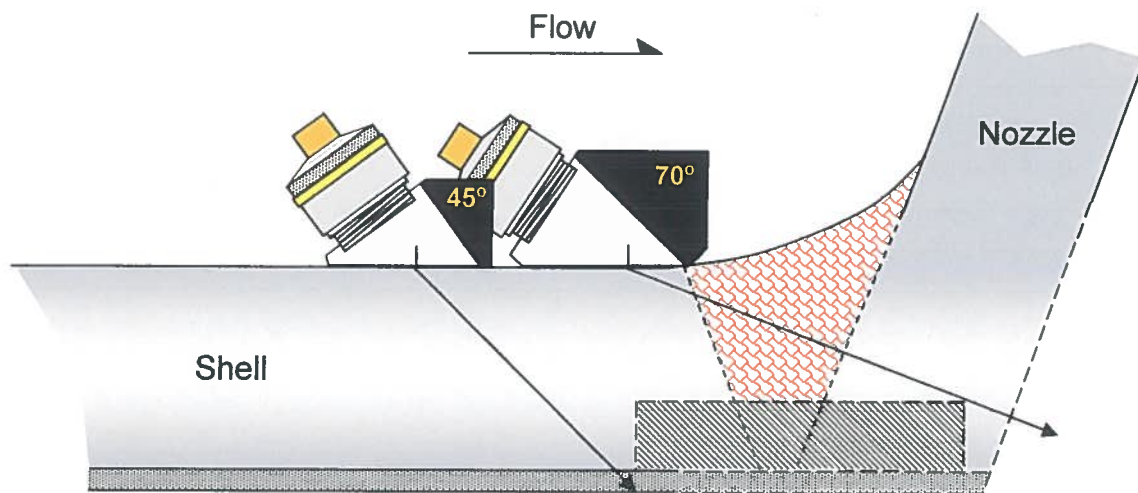
Summary No.: **252450**

Sketch or Photo:

Summary: 252450

Weld: SCHE-12-N2

Sketch 1: Axial Exam Coverage



Weld Crown Width:	1.4"
Thickness (excluding clad):	1.05"
Weld Length:	40"
Exam Area (1.7 x 0.35"):	0.60 in ²



Supplemental Report

Report No.: **CC18-IU-001**

Page: **3** of **4**

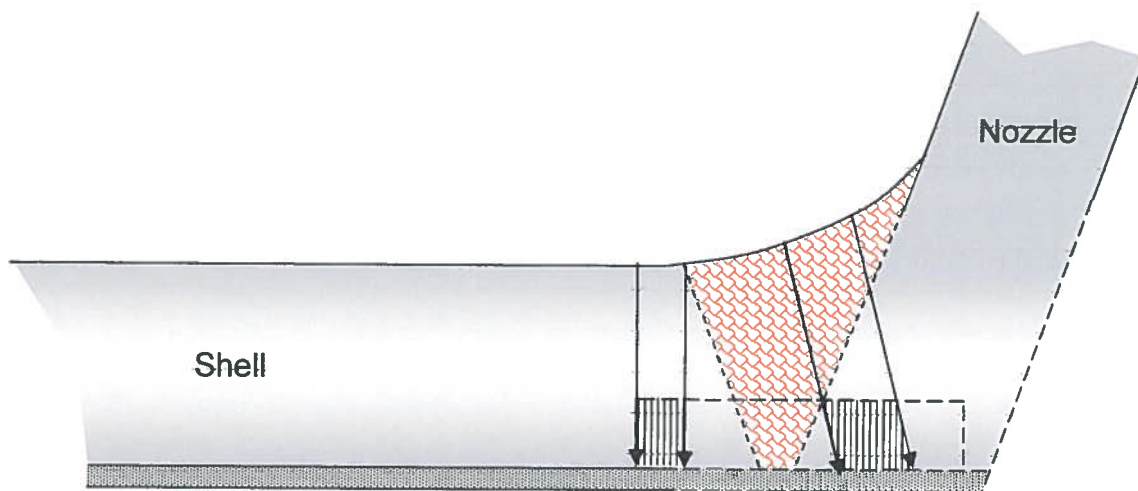
Summary No.: **252450**

Sketch or Photo:

Summary: 252450

Weld: SCHE-12-N2

Sketch 2: Circ Exam Coverage



Exam area = 0.6 in²

Axial Coverage:

- From shell side = 100%
- From nozzle side = 0%

Circ Coverage

- $(0.25 \times 0.35) + (0.4 \times 0.35) = 0.23 \text{ in}^2$
- $0.23 / 0.6 = 38.3\%$

Calc:

- $(100\% + 0\% + 38.3\% + 38.3\%) / 4 = 44.2\%$





UT Pipe Weld Examination

Site/Unit: **CCNP / 1**
Summary No.: **CCNP-1-113200-RI**
Workscope: **ISI**

Procedure: **ER-AA-335-031**
Procedure Rev.: **8**
Work Order No.: **C93537468-230**

Outage No.: **1RFO23**
Report No.: **CC18-IU-039**
Page: **1** of **4**

Code: **ASME Sect XI, 2004Ed** Cat./Item: **R-A/R1.20** Location: **CPB-12HLEG**
Drawing No.: **91101, 91146** Description: **SAFE END TO ELBOW**
System ID: **SI**
Component ID: **12-SC-1004 - 2** Size/Length: **1.20" / 40.0"** Thickness/Diameter: **1.125" / 12"**
Limitations: **Single Sided Access** Start Time: **0212** Finish Time: **0327**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **Ground**
Lo Location: **Extrados** Wo Location: **WELD CL** Couplant: **ULTRAGEL II** Batch No.: **16K001**
Temp. Tool Mfg.: **FLUKE** Serial No.: **17960638** Surface Temp.: **81** °F

Cal. Report No.: **CC18-ICA-053, 054, 056, 057 and 058**

Angle Used	0	45	45T	60	60RL	60T
Scanning dB	N/A	30.5	30.5	36.0	41.0	38.0

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

Comments:

Safe End side of component is Spun Cast Stainless Steel and is not within the scope of Procedure ER-AA-335-031 R8, so exam is considered single sided access. A supplemental best effort exam was performed from the Safe End side with Procedure ER-AA-335-048 R0. 45° RL Scan Gain (dB): AX=48, Circ=43. Performed 60° circ exam from base metal, skewed into weld root area.

Results: Accept ☒ Reject ☐ EngDisp ☐

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

Examiner	Level	II-PDI	Signature	Date	Reviewer	Signature	Date
Griebel, David M.				2/25/2018	SIMON CROTHERS L-11		3/2/18
Examiner	Level	II-PDI	Signature	Date	Site Review	Signature	Date
Zollner, Brian D.				2/25/2018	Michael Satterly		3/3/18
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Hi Coleman		3/5/18

Supplemental Report

Report No.: **CC18-IU-039**

Page: **2** of **4**

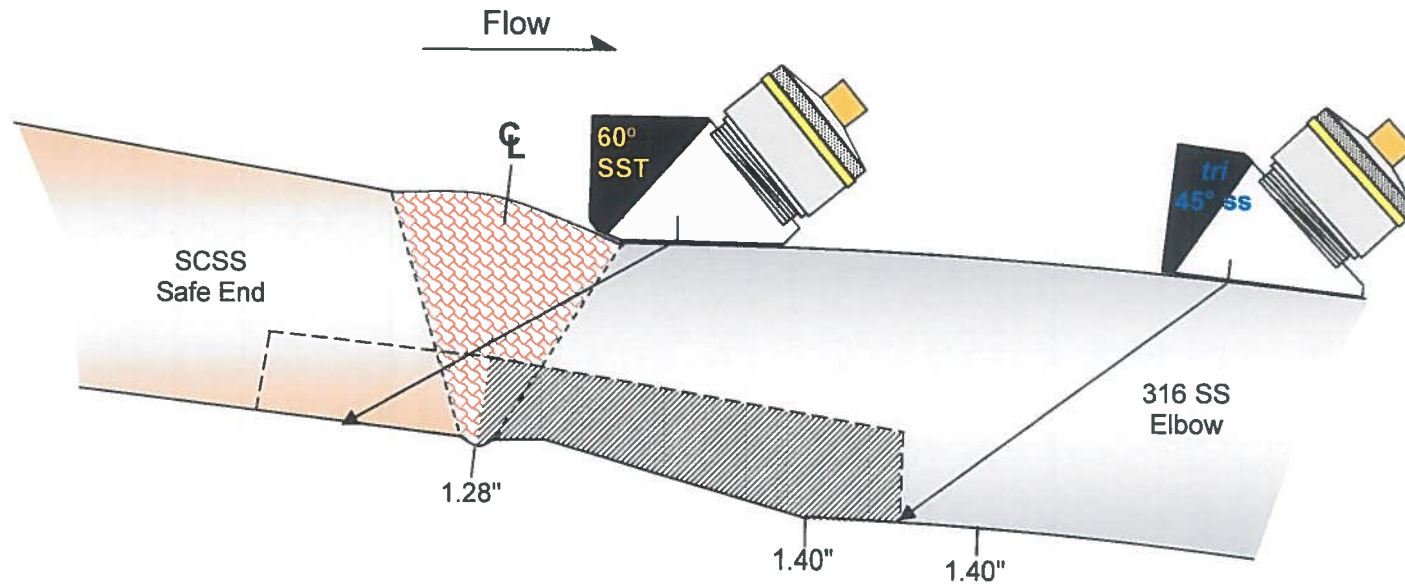
Summary No.: **CCNP-1-113200-RI**

Sketch or Photo:

Summary: 113200-RI

Weld: 12-SC-1004-2

Sketch 1: Exam Coverage



Code Coverage: 50% as per single sided access rules.

Weld Crown Width: 1.2"

Counterbore US: None detected

Counterbore DS: 1.75" from root

Supplemental Report

Report No.: **CC18-IU-039**

Page: **3** of **4**

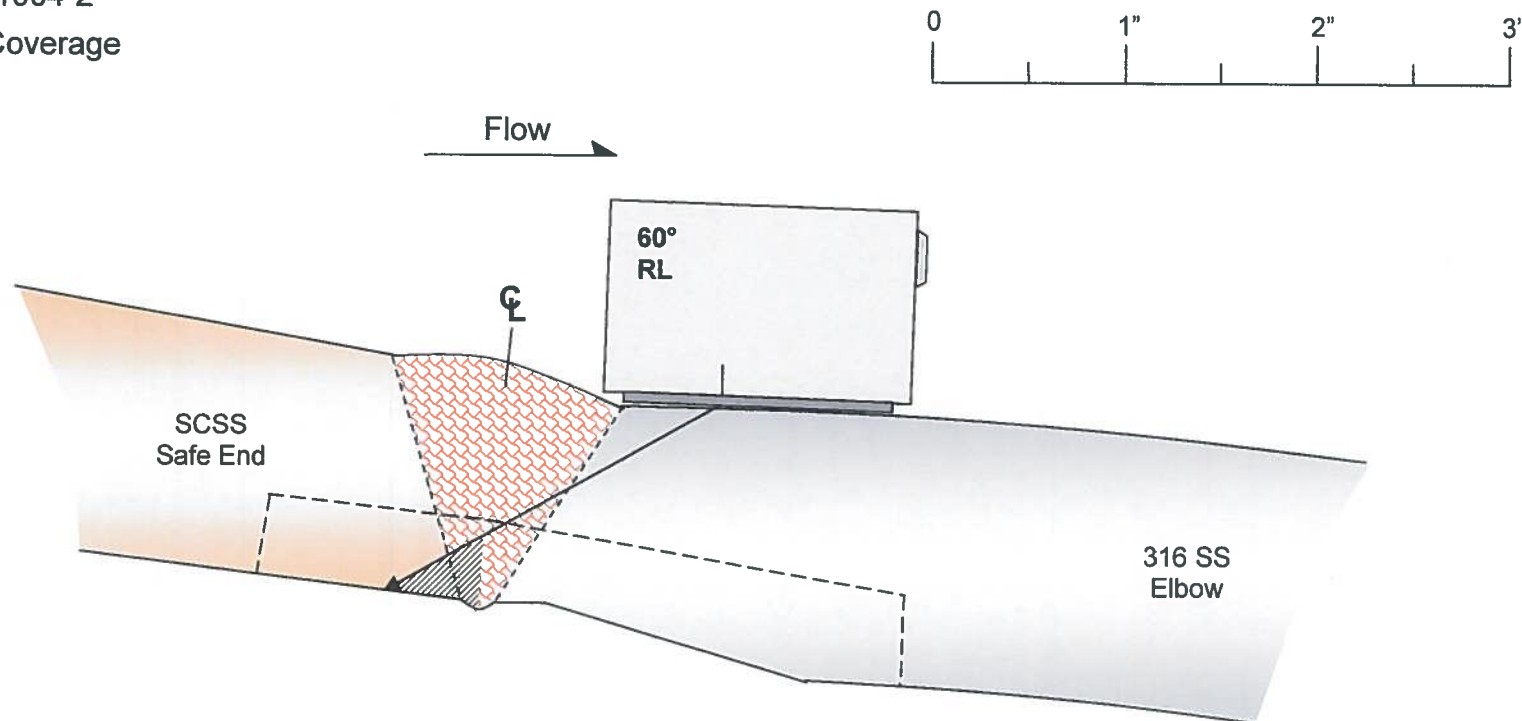
Summary No.: **CCNP-1-113200-RI**

Sketch or Photo:

Summary: 113200-RI

Weld: 12-SC-1004-2

Sketch 2: Exam Coverage



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



UT Pipe Weld Examination

Site/Unit: **CCNP / 1**
Summary No.: **CCNP-1-114000-RI**
Workscope: **ISI**

Procedure: **ER-AA-335-031**
Procedure Rev.: **8**
Work Order No.: **C93537467-215**

Outage No.: **1RFO23**
Report No.: **CC18-IU-048**
Page: **1** of **3**

Code: **ASME Sect XI, 2004Ed** Cat./Item: **R-A/R1.16** Location: **CPB-11**
Drawing No.: **91100 SH0001** Description: **PIPE TO VALVE 1-SI-217**
System ID: **SI**
Component ID: **12-SI-1009 - 9** Size/Length: **1.85" / 40.1"** Thickness/Diameter: **1.125" / 12"**
Limitations: **Single Sided Access** Start Time: **2202** Finish Time: **2259**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **Ground**

Lo Location: **TDC** Wo Location: **WELD CL** Couplant: **ULTRAGEL II** Batch No.: **16K001**

Temp. Tool Mfg.: **FLUKE** Serial No.: **17960594** Surface Temp.: **73** °F

Cal. Report No.: **CC18-ICA-085, 086 and 088**

Angle Used	0	45	45T	60	60RL	N/A
Scanning dB	N/A	31	37	40	64	N/A

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

Comments:

Initial Sec XI Exam. Performed 0° interfering conditions exam, none noted.

Results: Accept ☒ Reject ☐ EngDisp ☐

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

Examiner	Level	II-PDI	Signature	Date	Reviewer	Signature	Date
Moore, Lee			<i>Lee Moore</i>	3/2/2018	SIMON CROTHERS L-III	<i>Simon Crothers</i>	3/3/18
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Michael Salley	<i>MS</i>	3/4/18
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Ag Coleman	<i>agc</i>	3/5/18

Supplemental Report

Report No.: **CC18-IU-048**

Page: **2** of **3**

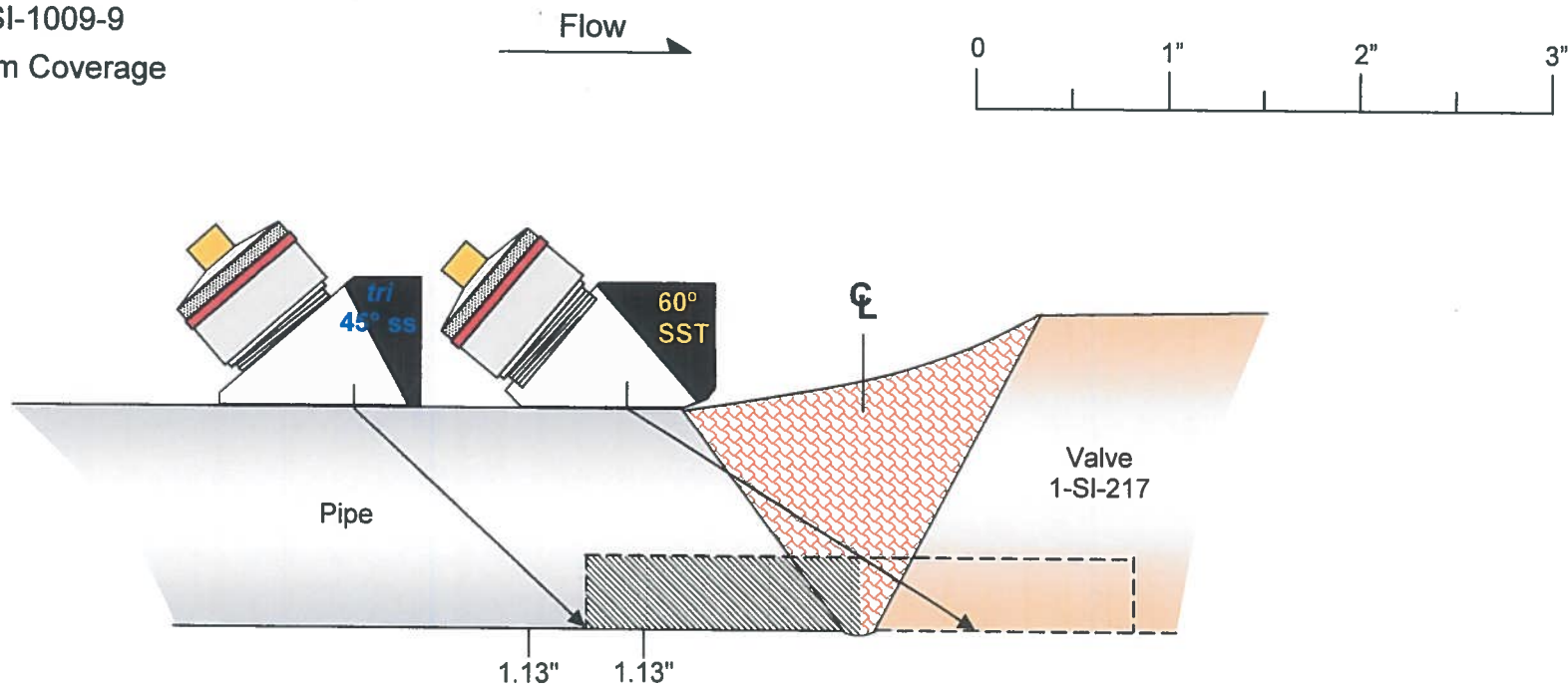
Summary No.: **CCNP-1-114000-RI**

Sketch or Photo:

Summary: 114000-RI

Weld: 12-SI-1009-9

Sketch 1: Exam Coverage



Code Coverage: 50% as per single sided access rules.

Weld Crown Width: 1.85"

Counterbore US: None Detected

Counterbore DS: None Detected

Supplemental Report

Report No.: **CC18-IU-048**

Page: **3** of **3**

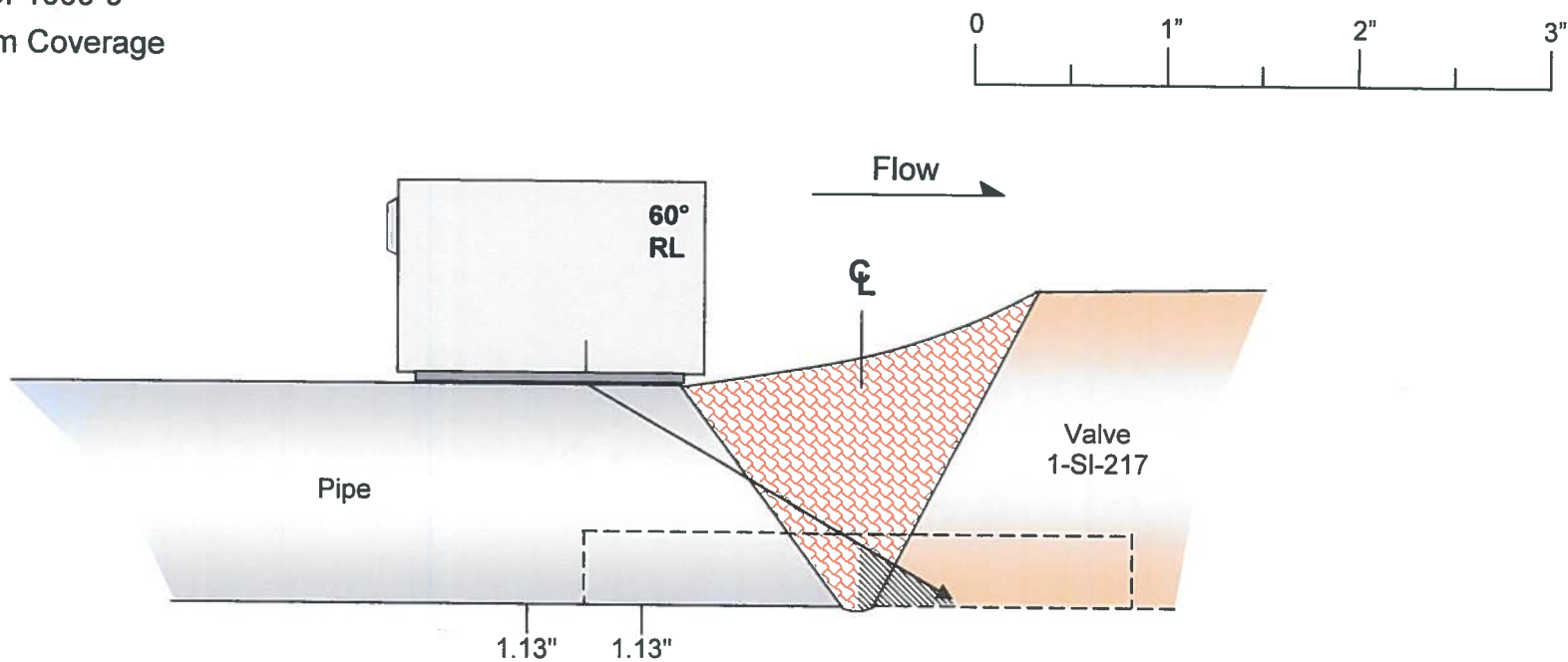
Summary No.: **CCNP-1-114000-RI**

Sketch or Photo:

Summary: 114000-RI

Weld: 12-SI-1009-9

Sketch 2: Exam Coverage



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



UT Pipe Weld Examination

Site/Unit: **CCNP / 1**
Summary No.: **CCNP-1-115150-RI**
Workscope: **ISI**

Procedure: **ER-AA-335-031**
Procedure Rev.: **8**
Work Order No.: **C93537467-245**

Outage No.: **1RFO23**
Report No.: **CC18-IU-043**
Page: **1** of **4**

Code: **ASME Sect XI, 2004Ed** Cat./Item: **R-A/R1.20** Location: _____
Drawing No.: **91100SH0002** Description: **PIPE TO SAFE END**
System ID: **SI**
Component ID: **12-SI-1010 - 13** Size/Length: **1.8" / 40.1"** Thickness/Diameter: **1.125" / 12"**
Limitations: **Single Sided Access** Start Time: **1312** Finish Time: **1410**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **Ground**

Lo Location: **U/S Elbow Extradose** Wo Location: **WELD CL** Couplant: **ULTRAGEL II** Batch No.: **16K001**

Temp. Tool Mfg.: **FLUKE** Serial No.: **17960594** Surface Temp.: **83** °F

Cal. Report No.: **CC18-ICA-066 - CC18-ICA-070**

Angle Used	0	45	45T	60	60RL	
Scanning dB	N/A	27	31	44	47	

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

Comments:

Safe End side of component is Spun Cast Stainless Steel and is not within the scope of Procedure ER-AA-335-031 R8, so exam is considered single sided access. A supplemental best effort exam was performed from the Safe End side with Procedure ER-AA-335-0480. 45° RL scan gain (dB): AX = 48, CIRC = 43

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: **No - 50%**

Reviewed Previous Data: **Yes**

Examiner	Level	II-PDI	Signature	Date	Reviewer	Signature	Date
Fish, Edward W.			<i>Edward W. Fish</i>	3/1/2018	SIMON CROTHEAS L-11	<i>Simon Crothas</i>	3/2/18
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Michael Salley	<i>Michael Salley</i>	3/2/18
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Aja Cohen	<i>Aja Cohen</i>	3/2/18

Supplemental Report

Report No.: **CC18-IU-043**

Page: **2** of **4**

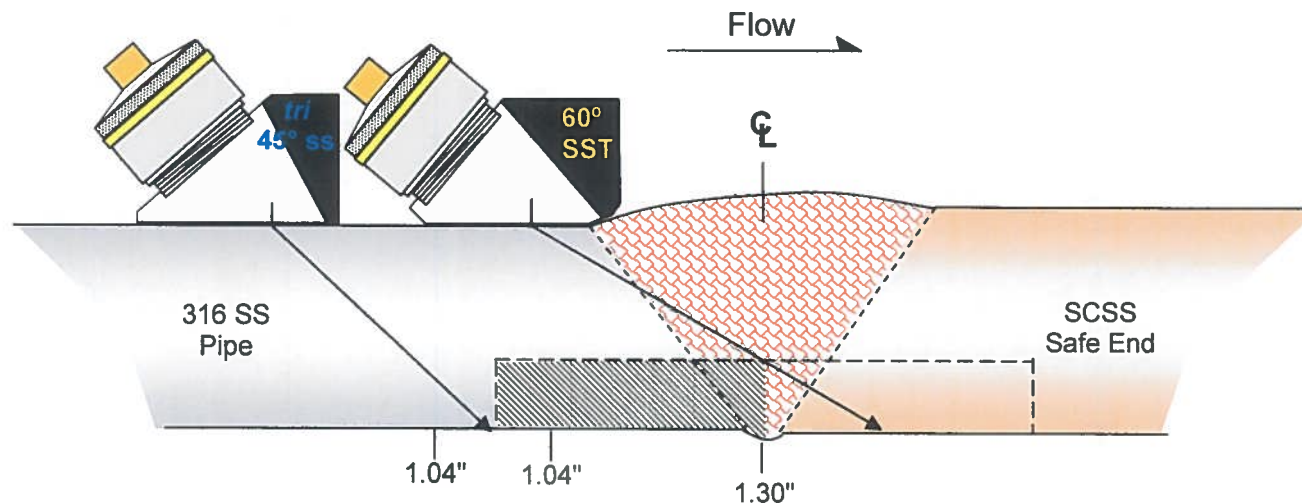
Summary No.: **CCNP-1-115150-RI**

Sketch or Photo:

Summary: 115150-RI

Weld: 12-SI-1012-13

Sketch 1: Exam Coverage



Code Coverage: 50% as per single sided access rules.

Weld Crown Width: 1.8"

Counterbore US: None Detected

Counterbore DS: None Detected

Supplemental Report

Report No.: **CC18-IU-043**

Page: **3** of **4**

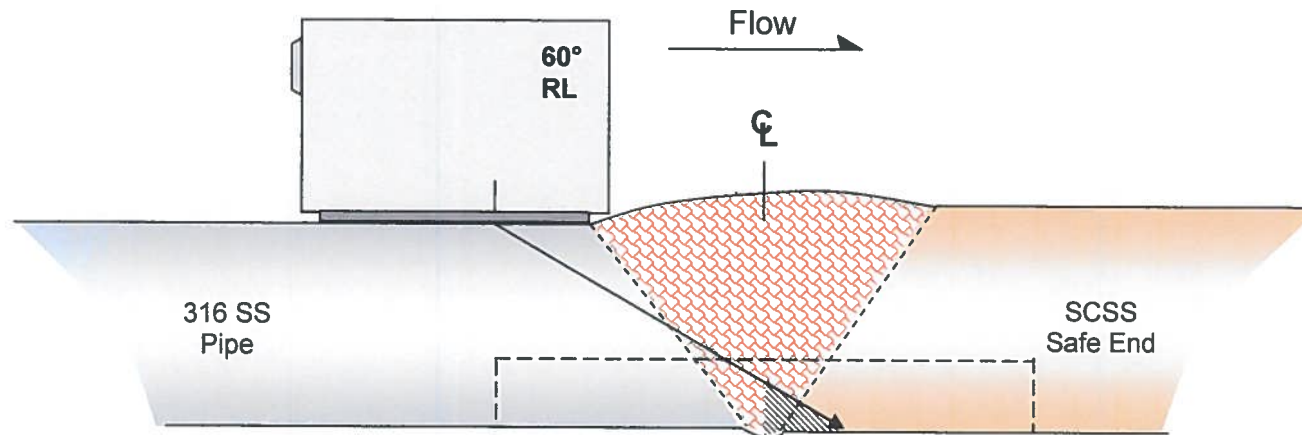
Summary No.: **CCNP-1-115150-RI**

Sketch or Photo:

Summary: 115150-RI

Weld: 12-SI-1012-13

Sketch 2: Exam Coverage



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



UT Pipe Weld Examination

Site/Unit: **CCNP / 1**
Summary No.: **CCNP-1-115950-RI**
Workscope: **ISI**

Procedure: **ER-AA-335-031**
Procedure Rev.: **8**
Work Order No.: **C93537468-240**

Outage No.: **1RFO23**
Report No.: **CC18-IU-037**
Page: **1** of **4**

Code: **ASME Sect XI, 2004Ed** Cat./Item: **R-A/R1.20** Location: **CPB-12**
Drawing No.: **91100SH0003** Description: **PIPE TO SAFE END**
System ID: **SI**
Component ID: **12-SI-1011 - 12** Size/Length: **1.4" / 40.1"** Thickness/Diameter: **1.125" / 12"**
Limitations: **Single sided access** Start Time: **1015** Finish Time: **1136**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **Ground**
Lo Location: **Extrados of US Elbow** Wo Location: **WELD CL** Couplant: **ULTRAGEL II** Batch No.: **16K001**
Temp. Tool Mfg.: **FLUKE** Serial No.: **17960592** Surface Temp.: **83** °F

Cal. Report No.: **CC18-ICA-048 through CC18-ICA-052**

Angle Used	0	45	45T	60	60RL	N/A
Scanning dB	N/A	29.0	33.0	44.0	48.0	N/A

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

Comments:

Safe End side of component is Spun Cast Stainless Steel and is not within the scope of Procedure ER-AA-335-031 R8, so exam is considered single sided access. A supplemental best effort exam was performed from the Safe End side with Procedure ER-AA-335-048 R0.

Results: Accept ☒ Reject ☐ EngDisp ☐

45° RL Scan gain (dB): **AX = 48, Circ = 43.**

Percent Of Coverage Obtained > 90%: **No - 50%**

Reviewed Previous Data: **Yes**

Examiner	Level	II-PDI	Signature	Date	Reviewer	Signature	Date
Fish, Edward W.				2/25/2018	SIMON CROTHERS L-111		3/2/18
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Michael S. Haley		3/2/18
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Aja Coleman		3/2/18

Supplemental Report

Report No.: **CC18-IU-037**

Page: **2** of **4**

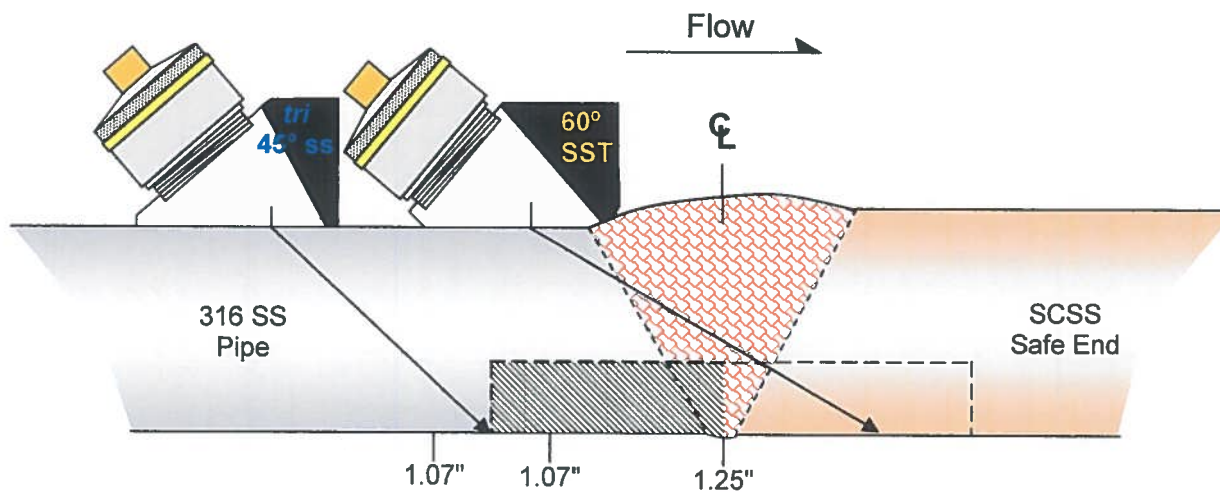
Summary No.: **CCNP-1-115950-RI**

Sketch or Photo:

Summary: 115950-RI

Weld: 12-SI-1011-12

Sketch 1: Exam Coverage



Code Coverage: 50% as per single sided access rules.

Weld Crown Width: 1.4"

Counterbore US: None Detected

Counterbore DS: None Detected

Supplemental Report

Report No.: **CC18-IU-037**

Page: **3** of **4**

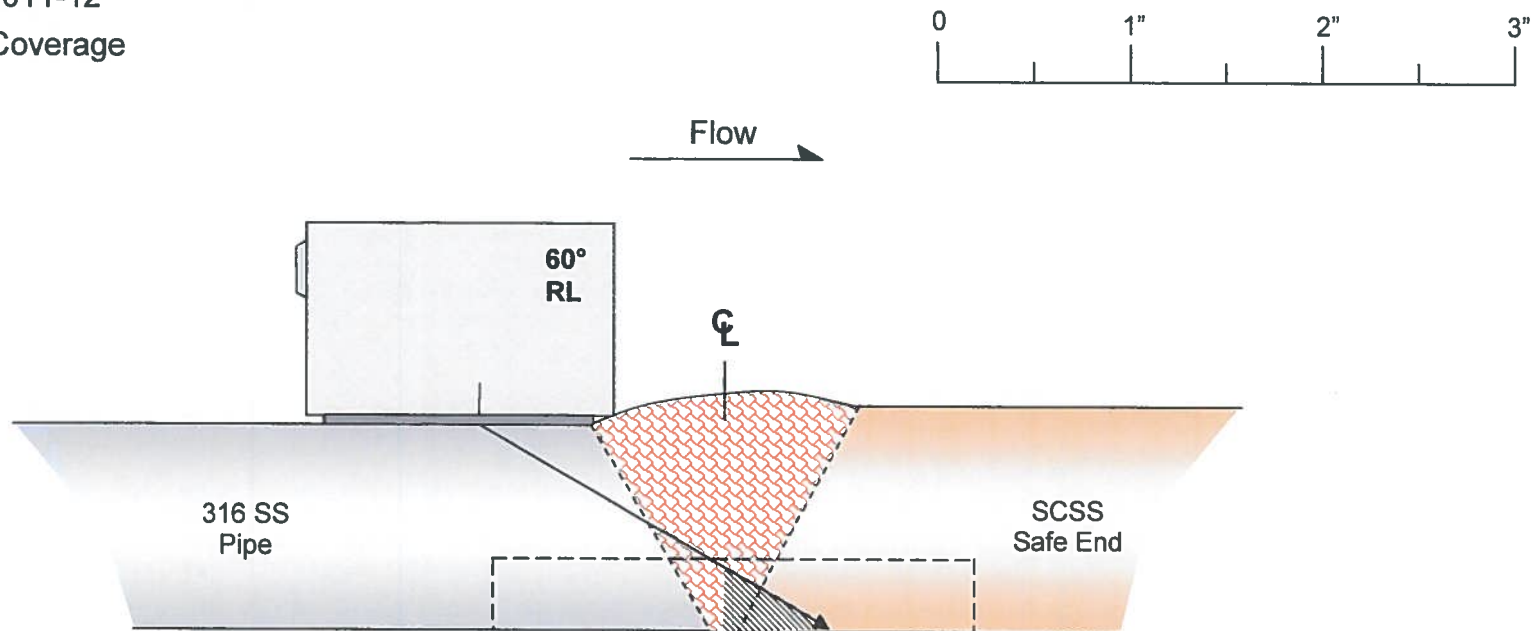
Summary No.: **CCNP-1-115950-RI**

Sketch or Photo:

Summary: 115950-RI

Weld: 12-SI-1011-12

Sketch 2: Exam Coverage



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



UT Pipe Weld Examination

Site/Unit: <u>CCNP / 1</u>	Procedure: <u>ER-AA-335-031</u>	Outage No.: <u>1RFO23</u>
Summary No.: <u>CCNP-1-116700-RI</u>	Procedure Rev.: <u>8</u>	Report No.: <u>CC18-IU-036</u>
Workscope: <u>ISI</u>	Work Order No.: <u>C93537468-245</u>	Page: <u>1</u> of <u>4</u>

Code: <u>ASME Sect XI, 2004Ed</u>	Cat./Item: <u>R-A/R1.20</u>	Location: <u>CPB-12</u>
Drawing No.: <u>91100SH0004</u>	Description: <u>ELBOW TO SAFE END</u>	
System ID: <u>SI</u>		
Component ID: <u>12-SI-1012 - 12</u>	Size/Length: <u>1.3" / 40.1"</u>	Thickness/Diameter: <u>1.125" / 12"</u>
Limitations: <u>Single sided access</u>	Start Time: <u>1530</u>	Finish Time: <u>1658</u>

Examination Surface: Inside <input type="checkbox"/> Outside <input checked="" type="checkbox"/>	Surface Condition: <u>Ground</u>		
Lo Location: <u>Extrados</u>	Wo Location: <u>WELD CL</u>	Couplant: <u>ULTRAGEL II</u>	Batch No.: <u>16K001</u>
Temp. Tool Mfg.: <u>FLUKE</u>	Serial No.: <u>17960592</u>	Surface Temp.: <u>83</u> °F	

Cal. Report No.: CC18-ICA-048 through CC18-ICA-052

Angle Used	0	45	45T	60	60RL	N/A
Scanning dB	N/A	29.0	33.0	44.0	48.0	N/A


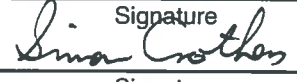


Indication(s): Yes ☐ No ☒ Scan Coverage: Upstream ☒ Downstream ☒ CW ☒ CCW ☒

Comments:

Initial Sec XI Exam. Performed 0° interfering conditions exam, none noted. Safe End side of component is Spun Cast Stainless Steel and is not within the scope of Procedure ER-AA-335-031 R8, so exam is considered single sided access. A supplemental best effort exam was performed from the Safe End side with Procedure ER-AA-335-048 R0.

Results: Accept ☒ Reject ☐ EngDisp ☐ 45° RL Scan gain (dB): AX = 48, Circ = 43.

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

Examiner	Level	II-PDI	Signature	Date	Reviewer	Signature	Date
Fish, Edward W.				2/25/2018	SIMON CROTHERS L-III		3/2/18
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					Michael Salley		3/2/2018
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Aja Culen		3/3/18

Supplemental Report

Report No.: **CC18-IU-036**

Page: **2** of **4**

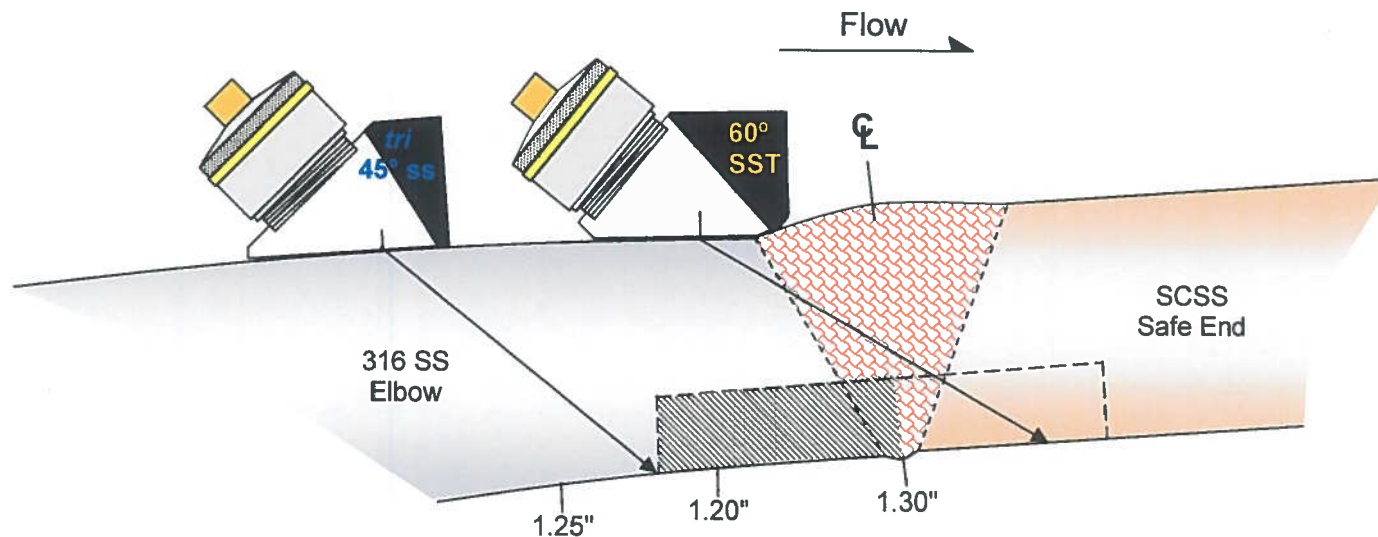
Summary No.: **CCNP-1-116700-RI**

Sketch or Photo:

Summary: 116700-RI

Weld: 12-SI-1012-12

Sketch 1: Exam Coverage



Code Coverage: 50% as per single sided access rules.

Weld Crown Width: 1.3"

Counterbore US: None Detected

Counterbore DS: None Detected

Supplemental Report

Report No.: **CC18-IU-036**

Page: **3** of **4**

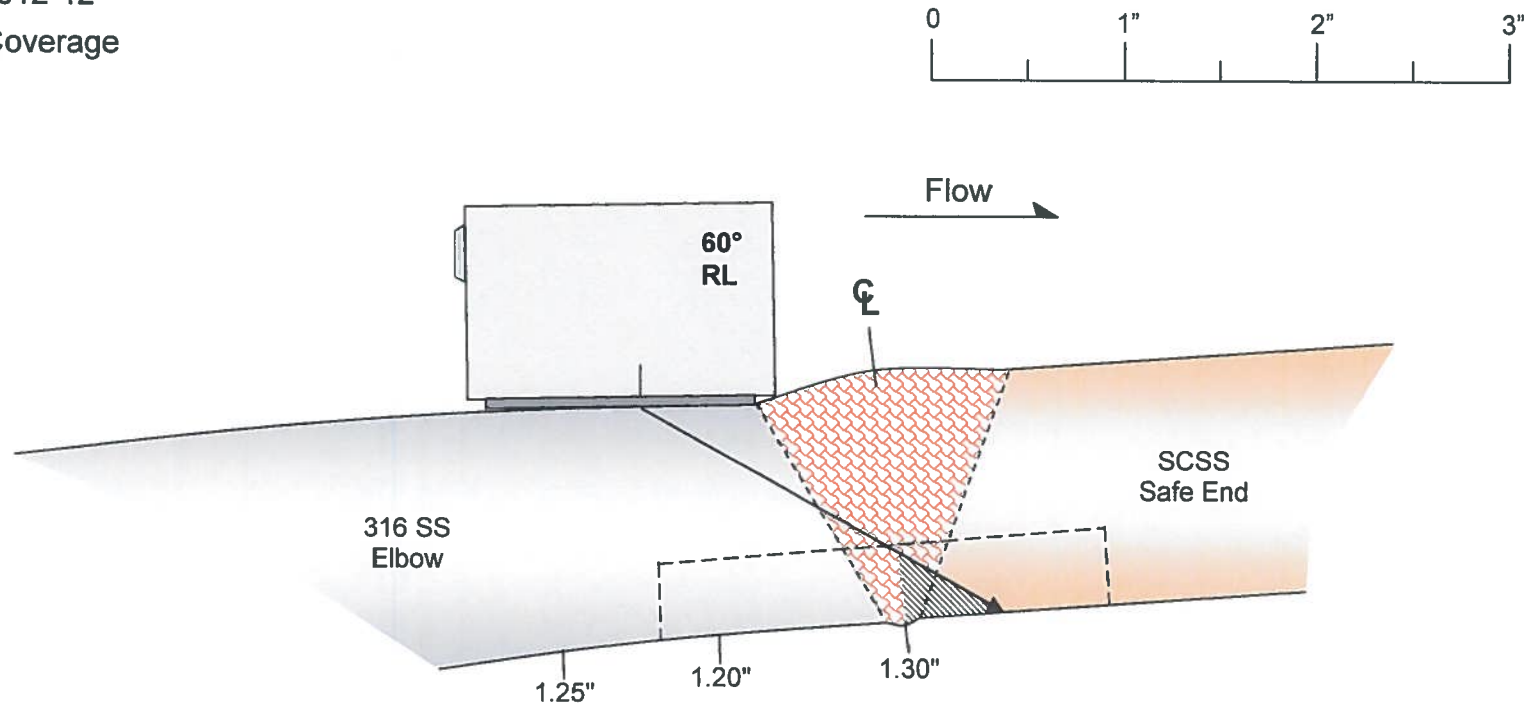
Summary No.: **CCNP-1-116700-RI**

Sketch or Photo:

Summary: 116700-RI

Weld: 12-SI-1012-12

Sketch 2: Exam Coverage



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

Attachment 3

Calvert Cliffs Nuclear Power Plant Unit 2
Fourth Inservice Inspection (ISI) Interval Limited Coverage
Non-Destructive Examination (NDE) Reports

Supplemental Report

Report No.: **CC11-IU-035**

Page: **2** of **14**

Summary No.: **103080**

Examiner: **HOWARD, DEAN M** *DH* Level: **II PDI**

Reviewer: **Crothers, Simon** *SC*

Date: **2/25/11**

Examiner: **HENDRICKSON, MATT** *MCH* Level: **II PDI**

Site Review: *[Signature]*

Date: **2/26/11**

Other: **N/A** Level: **N/A**

ANII Review: **MCINTYRE, JEFFREY P.** *Jm*

Date: **2-26-11**



Sketch or Photo:

LTP: 103080
Scale: 50%
Sketch 1 of 11
Component Dimensions



Weld Width:	1.6"
Thickness (excluding clad):	4.5"
Weld Length:	83"
Exam Area:	28.5 in ²

Exam Area = ABCDEF

- ADEF + BDC
- $(6.1 \times 4.5) + (1.8 \times 1.2)/2 = 28.5 \text{ in}^2$

Supplemental Report

Report No.: **CC11-IU-035**

Page: **3** of **14**

Summary No.: **103080**

Examiner: **HOWARD, DEAN M** *DH*

Level: **II PDI**

Reviewer: **Crothers, Simon** *SC*

Date: **2/25/11**

Examiner: **HENDRICKSON, MATT** *MTH*

Level: **II PDI**

Site Review: *[Signature]*

Date: **2/26/11**

Other: **N/A**

Level: **N/A**

ANII Review: **MCINTYRE, JEFFREY P.** *JM*

Date: **2-26-11**





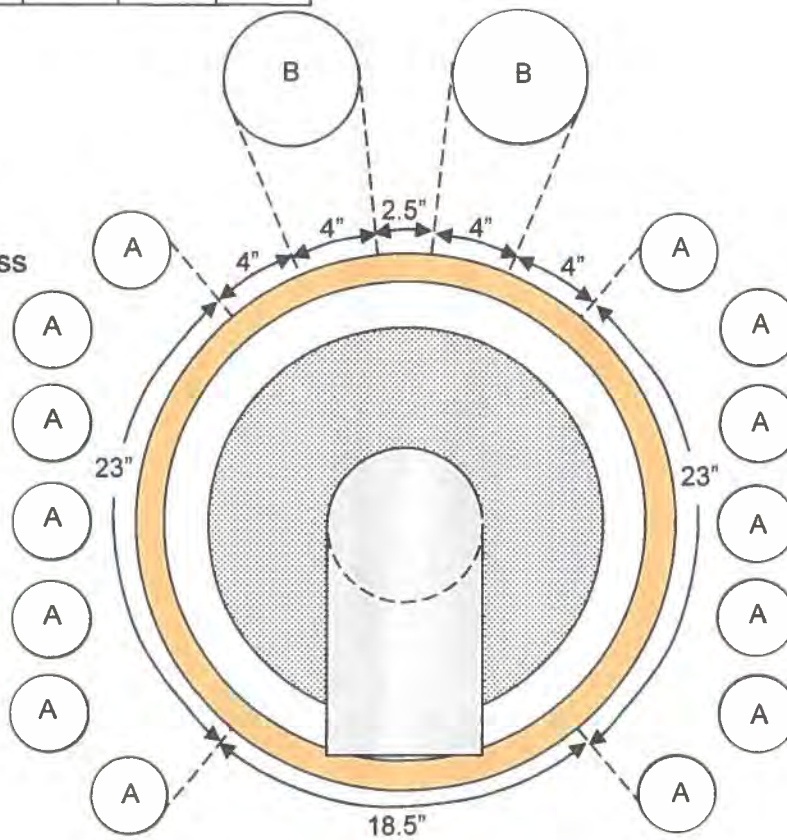
LTP: 103080

Scale: 10%

Sketch 2 of 11

Exam Limitations

 Surge Nz. Boss
 Weld 4-404



Limitation	Distance From Nz. Boss	Weld Length Affected
14 x Heater Sleeves (A):	7.7" Average	46"
2 x MNSA (B):	10"	8"

Remaining Weld Length = 29"

Supplemental Report

Report No.: **CC11-IU-035**

Page: **4** of **14**

Summary No.: **103080**

Examiner: **HOWARD, DEAN M** *DH* Level: **II PDI**

Reviewer: **Crothers, Simon** *SC*

Date: **2/25/11**

Examiner: **HENDRICKSON, MATT** *MH* Level: **II PDI**

Site Review: *[Signature]*

Date: **2/26/11**

Other: **N/A** Level: **N/A**

ANII Review: **MCINTYRE, JEFFREY P.** *JPM*

Date: **2-26-11**



Sketch or Photo:

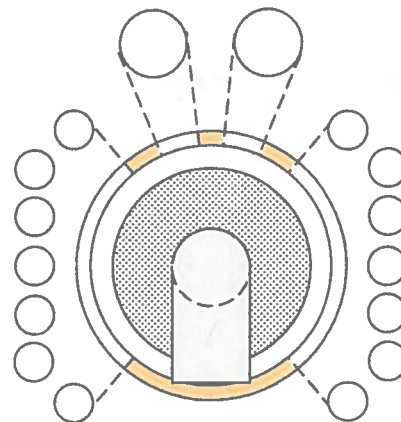
LTP: 103080
Scale: 50%
Sketch 3 of 11
45°↑
29" of 83"

Lower Head

Surge Nozzle

 45°↑ Coverage

Exam Area = 28.5 in²
Examined ADEF – GDH
 $(6.1 \times 4.5) - (2.25 \times 2.25)/2 = 24.9 \text{ in}^2$
 $(24.9 / 28.5) \times (29 / 83) = 31\%$



 Applicable Area of Sketch

Supplemental Report

Report No.: **CC11-IU-035**

Page: **5** of **14**

Summary No.: **103080**

Examiner: **HOWARD, DEAN M** *DH* Level: **II PDI**

Reviewer: **Crothers, Simon** *SC*

Date: **2/25/11**

Examiner: **HENDRICKSON, MATT** *MCH* Level: **II PDI**

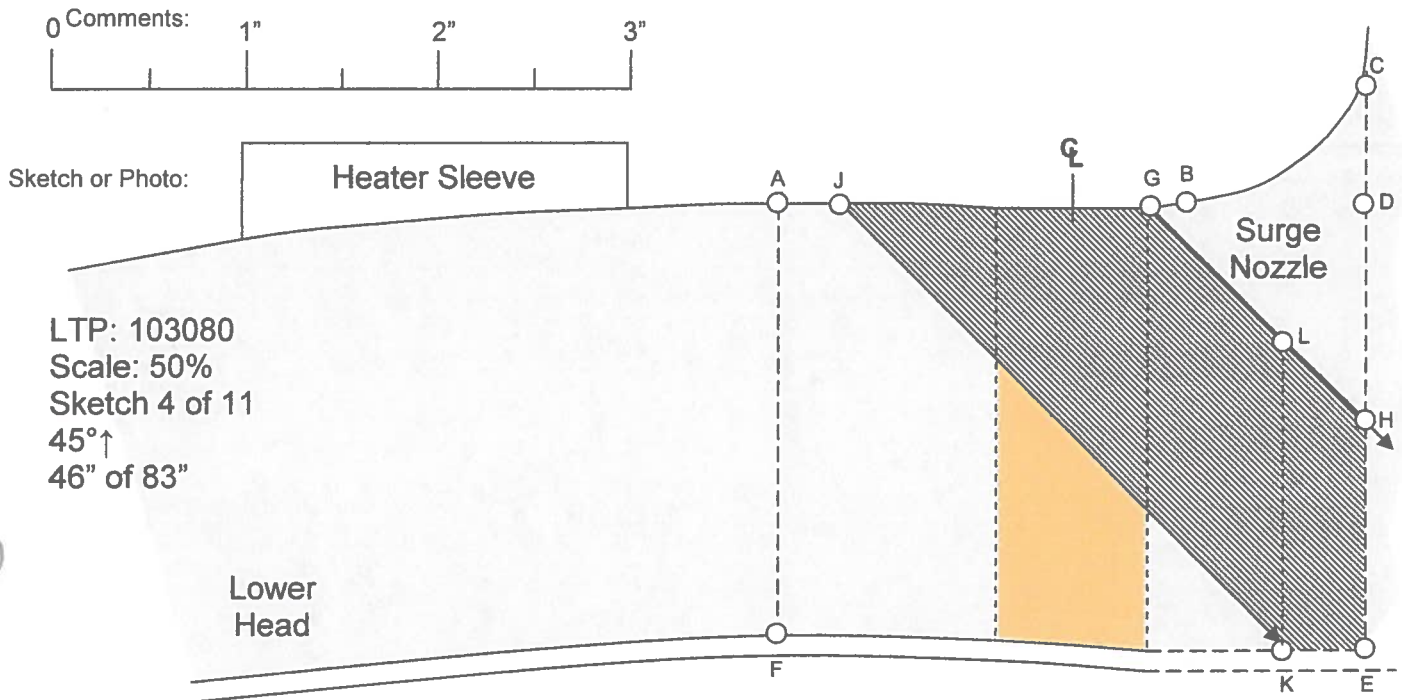
Site Review: *[Signature]*

Date: **2/26/11**

Other: **N/A** Level: **N/A**

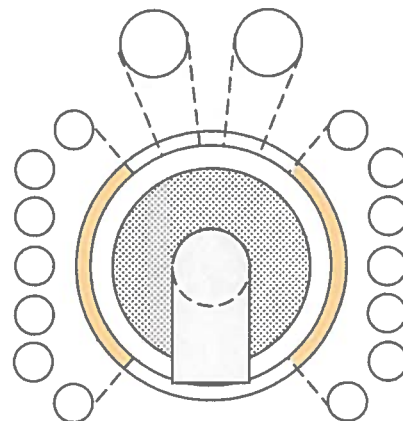
ANII Review: **MCINTYRE, JEFFREY P.** *[Signature]*

Date: **2-26-11**



 45°↑ Coverage

Exam Area = 28.5 in²
Examined JGLK + LHEK
 $(2.2 \times (2 + 6.4)/2) + (0.8 \times (2.4 + 3.2)/2) = 11.5 \text{ in}^2$
 $(11.5 / 28.5) \times (46 / 83) = 22\%$



 Applicable Area of Sketch

Supplemental Report

Report No.: CC11-IU-035

Page: 6 of 14

Summary No.: 103080

Examiner: HOWARD, DEAN M *DH* Level: II PDI

Reviewer: Crothers, Simon *SC*

Date: 2/25/11

Examiner: HENDRICKSON, MATT *MH* Level: II PDI

Site Review: *[Signature]*

Date: 2/26/11

Other: N/A Level: N/A

ANII Review: MCINTYRE, JEFFREY P. *JPM*

Date: 2-26-11



Sketch or Photo:

MNSA

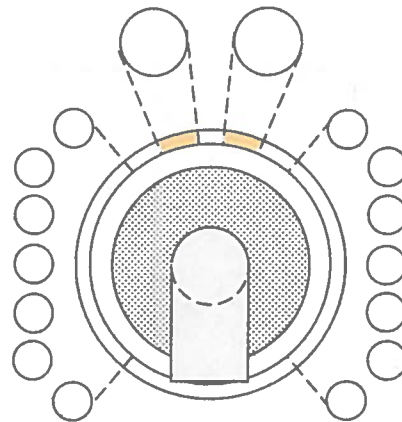
LTP: 103080
Scale: 50%
Sketch 5 of 11
45°↑
8" of 83"

Lower Head

Surge Nozzle

45°↑ Coverage

Exam Area = 28.5 in²
Examined ADEF - JHF
 $(6.1 \times 4.5) - (2.2 \times 2.2)/2 - (3 \times 2.8)/2 = 20.8 \text{ in}^2$
 $(20.8 / 28.5) \times (8 / 83) = 7\%$



Applicable Area of Sketch

Page: 7 of 14

ANII Review: MCINTYRE, JEFFREY P. *jm* Date: 2-26-11

Supplemental Report

Report No.: CC11-IU-035

Page: 8 of 14

Summary No.: 103080

Examiner: HOWARD, DEAN M *DH* Level: II PDI

Reviewer: Crothers, Simon *SC* Date: 2/25/11

Examiner: HENDRICKSON, MATT *MTH* Level: II PDI

Site Review: [Signature] Date: 2/26/11

Other: N/A Level: N/A

ANII Review: MCINTYRE, JEFFREY P. *JPM* Date: 2-26-11



Sketch or Photo:

LTP: 103080
Scale: 50%
Sketch 7 of 11
60°↑
29" of 83"

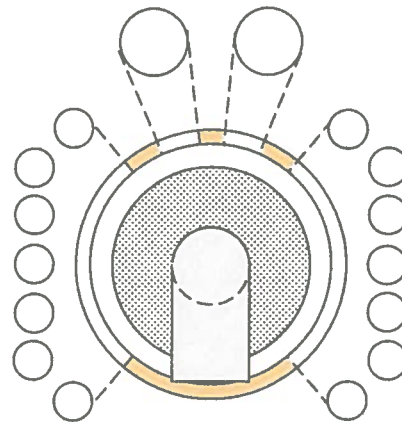
Lower Head

Surge Nozzle

 60°↑ Coverage

Exam Area = 28.5 in²
Examined ADEF – GDH
(6.1 x 4.5) – (2.25 x 1.3)/2 = 26 in²

(26 / 28.5) x (29 / 83) = 32%



 Applicable Area of Sketch

Supplemental Report

Report No.: **CC11-IU-035**

Page: **9** of **14**

Summary No.: **103080**

Examiner: **HOWARD, DEAN M** *DH* Level: **II PDI**

Reviewer: **Crothers, Simon** *SC*

Date: **2/25/11**

Examiner: **HENDRICKSON, MATT** *MKH* Level: **II PDI**

Site Review: *[Signature]*

Date: **2/26/11**

Other: **N/A** Level: **N/A**

ANII Review: **MCINTYRE, JEFFREY P.** *JPM*

Date: **2-26-11**



Sketch or Photo:

Heater Sleeve

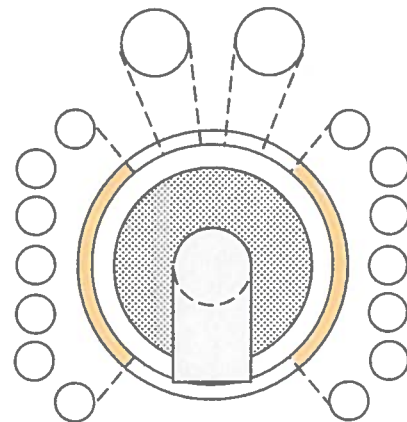
LTP: 103080
Scale: 50%
Sketch 8 of 11
60° / 35°↑
46" of 83"

Lower Head

Surge Nozzle

60° / 35°↑ Coverage

Exam Area = 28.5 in²
Examined ADEF – GDH – AJKF
 $(6.1 \times 4.5) - (2.25 \times 1.3)/2 - 4.5(0.45 + 3.6)/2 = 16.9 \text{ in}^2$
 $(16.9 / 28.5) \times (46 / 83) = 33\%$



Applicable Area of Sketch

Supplemental Report

Report No.: **CC11-IU-035**

Page: **10** of **14**

Summary No.: **103080**

Examiner: **HOWARD, DEAN M** *DH* Level: **II PDI**

Reviewer: **Crothers, Simon** *SC*

Date: **2/25/11**

Examiner: **HENDRICKSON, MATT** *MH* Level: **II PDI**

Site Review: *NOEJ*

Date: **2/26/11**

Other: **N/A** Level: **N/A**

ANII Review: **MCINTYRE, JEFFREY P.** *Jm*

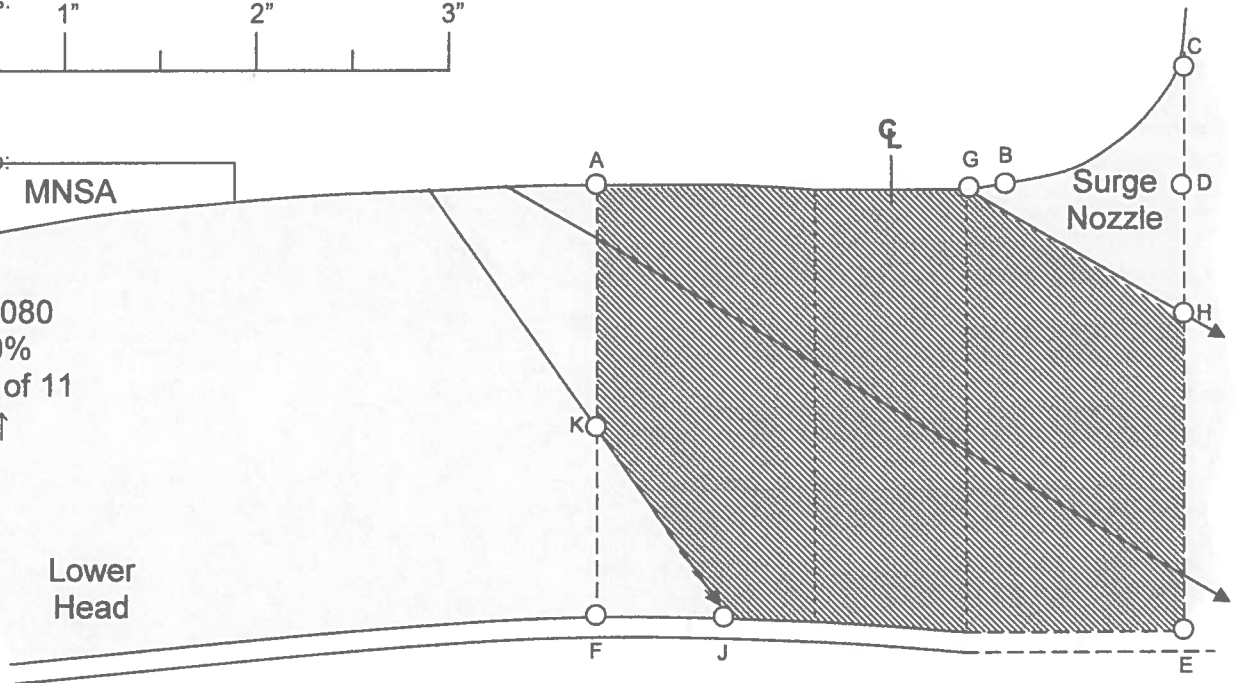
Date: **2-26-11**



Sketch or Photo:

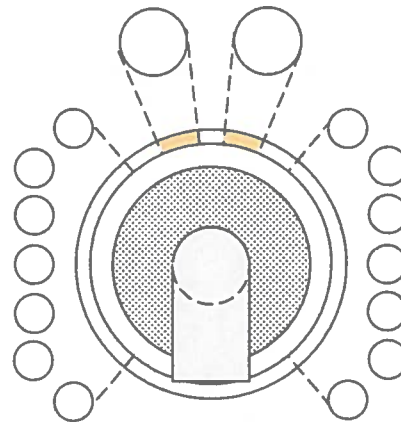
MNSA

LTP: 103080
Scale: 50%
Sketch 9 of 11
60° / 35°↑
8" of 83"



60° / 35°↑ Coverage

Exam Area = 28.5 in²
Examined ADEF – GDH – KJF
 $(6.1 \times 4.5) - (2.25 \times 1.3)/2 - (1/3 \times 2)/2 = 24.7 \text{ in}^2$
 $(24.7 / 28.5) \times (8 / 83) = 8\%$



Applicable Area of Sketch

Supplemental Report

Report No.: **CC11-IU-035**

Page: **11** of **14**

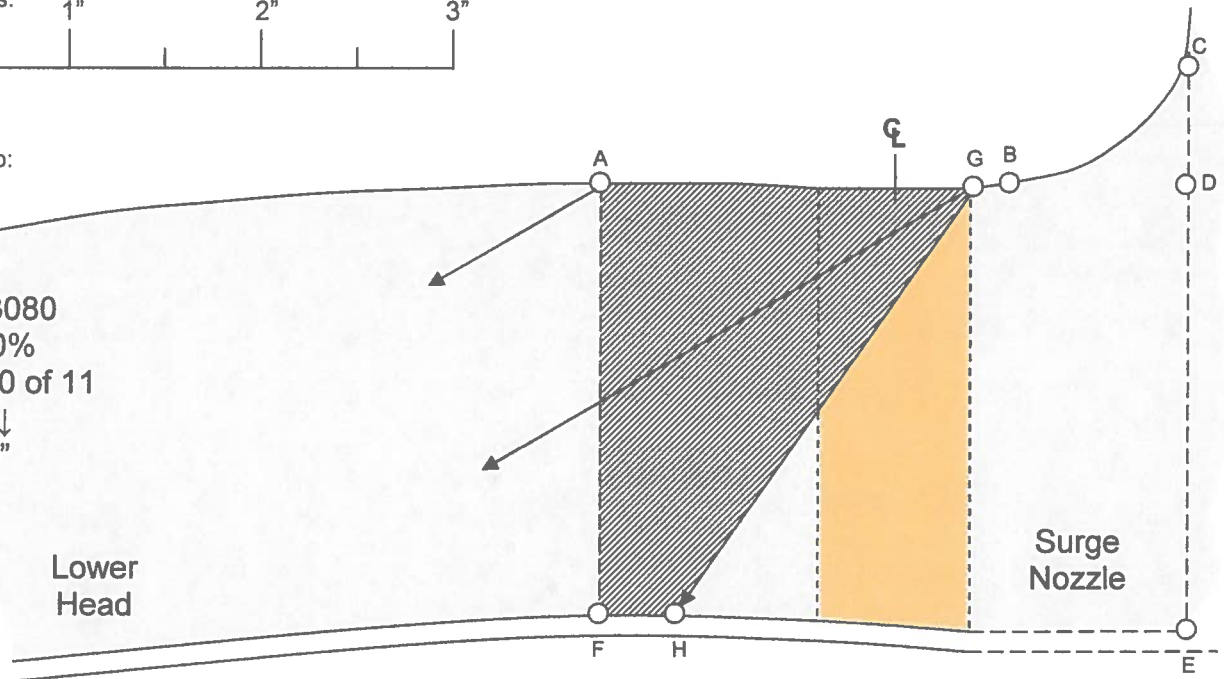
Summary No.: **103080**

Examiner: HOWARD, DEAN M <i>DH</i>	Level: II PDI	Reviewer: Crothers, Simon <i>SC</i>	Date: 2/25/11
Examiner: HENDRICKSON, MATT <i>MH</i>	Level: II PDI	Site Review: <i>[Signature]</i>	Date: 2/24/11
Other: N/A	Level: N/A	ANII Review: MCINTYRE, JEFFREY P. <i>JM</i>	Date: 2-26-11



Sketch or Photo:

LTP: 103080
Scale: 50%
Sketch 10 of 11
60° / 35° ↓
83" of 83"



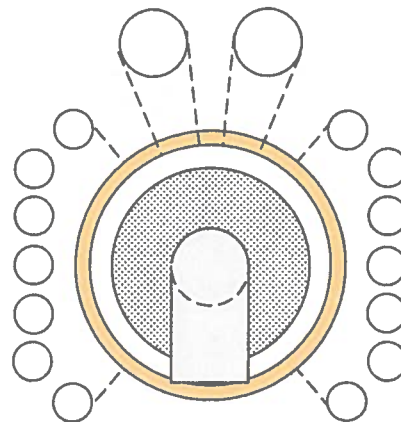
60° / 35° ↓ Coverage

Exam Area = 28.5 in²

Examined AGHF

$4.5(3.85 \times 0.8)/2 = 10.5 \text{ in}^2$

$(10.5 / 28.5) \times (83 / 83) = 37\%$



Applicable Area of Sketch

Supplemental Report

Report No.: **CC11-IU-035**

Page: **12** of **14**

Summary No.: **103080**

Examiner: **HOWARD, DEAN M** *DK* Level: **II PDI**

Reviewer: **Crothers, Simon** *SC* Date: **2/25/11**

Examiner: **HENDRICKSON, MATT** *MH* Level: **II PDI**

Site Review: *[Signature]* Date: **2/26/11**

Other: **N/A** Level: **N/A**

ANII Review: **MCINTYRE, JEFFREY P.** *Jha* Date: **2-26-11**




Sketch or Photo:

LTP: 103080
Scale: 50%
Sketch 11 of 11
45°↔ / 60°↔ / 0° WRV
83" of 83"

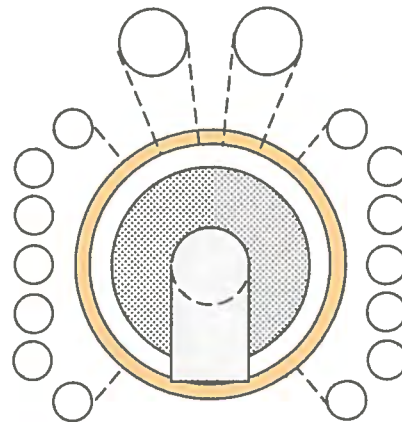
Lower Head

Surge Nozzle

 45°↔ / 60°↔ / 0° WRV Coverage

Exam Area = 28.5 in²
Examined AGHF
(3.85 x 4.5) = 17.3 in²

$(17.3 / 28.5) \times (83 / 83) = 61\%$



 Applicable Area of Sketch

**ASME SECTION XI
EXAMINATION COVERAGE**

**MIN-3-311
Revision 00500
Page 11 of 12**

Page 1 of 1

Attachment 1: Incomplete Examination Report

Section 1: Component Information	
LTP No.: <u>103080-RI</u>	Configuration: <u>Surge Nz. to Lower Head</u>
Component ID: <u>4-404</u>	Outage No.: <u>2-RFO-2011 (18)</u>
NDE Report No.: <u>CC11-1U-035</u>	ASME Code Class: <u>B-D / B3.110</u>
Code Examination Requirements: <u>Full Volume / Weld + ½ "T" of base metal each side.</u>	
Interfering Conditions and Limitations:	
1. Nozzle Configuration.	
2. Heater Sleeves (14).	
3. MNSA (2).	

Section 2: Examinations Affected				
Surface Exams	UT: Pipe & Vessel ≤ 2"	UT: Vessel > 2"		
MT: _____	Axial: US _____ DS _____	0° WRV <u>X</u>	45°⊥ <u>X</u>	60°⊥ <u>X</u> 35°⊥ <u>X</u>
PT: _____	Circ: US _____ DS _____	0° Lam <u>NA</u>	45° || <u>X</u>	60° || <u>X</u>
Code Examination Coverage Achieved: <u>56%</u>				
Comments: <u>See attached sketches of limitations and coverage.</u>				

Personnel	Date
Prepared By: <u>Dean Howard</u>	2.17.11
Reviewed By: <u>[Signature]</u>	2/26/11
Level III: <u>Simon Crothers</u>	2 / 25 / 11

Report Page 13 of 14

**ASME SECTION XI
EXAMINATION COVERAGE**

**MIN-3-311
Revision 00500
Page 12 of 12**

Page 1 of 1

Attachment 2: Calculation Sheet for UT Exams of Vessels > 2"

LTP No.: <u>103080-RI</u>		Configuration: <u>Surge Nz. to Lower Head</u>	
Component ID: <u>4-404</u>		Outage No.: <u>2-RFO-2011 (18)</u>	
NDE Report No.: <u>CC11-1U-035</u>		ASME Code Class: <u>B-D / B3.110</u>	
Exam Area (Cross-section): <u>28.5 in²</u>		Exam Length: <u>83 in.</u>	
Beam Directions: ↑ = <u>Lk. In</u> ↓ = <u>Lk. Out</u> ← = <u>CW</u> → = <u>CCW</u>			

Beam Angle & Direction	Area Examined	Exam Area	Length Examined	Exam Length	Percent Coverage
45°↑	(24.9 /	28.5) x (	29 /	83) x 100 =	31
45°↑	(11.5 /	28.5) x (	46 /	83) x 100 =	22
45°↑	(20.8 /	28.5) x (	8 /	83) x 100 =	7
45°↓	(7.4 /	28.5) x (	83 /	83) x 100 =	26
	( /	) x (	/	) x 100 =	
60°↑	(26 /	28.5) x (	29 /	83) x 100 =	32
60° / 35°↑	(16.9 /	28.5) x (	46 /	83) x 100 =	33
60° / 35°↑	(24.7 /	28.5) x (	8 /	83) x 100 =	8
60° / 35°↓	(10.5 /	28.5) x (	83 /	83) x 100 =	37
	( /	) x (	/	) x 100 =	
45°←	(17.3 /	28.5) x (	83 /	83) x 100 =	61
45°→	(17.3 /	28.5) x (	83 /	83) x 100 =	61
60°←	(17.3 /	28.5) x (	83 /	83) x 100 =	61
60°→	(17.3 /	28.5) x (	83 /	83) x 100 =	61
	( /	) x (	/	) x 100 =	
0° WRV	(17.3 /	28.5) x (	83 /	83) x 100 =	61
	( /	) x (	/	) x 100 =	
Total Percent Coverage:					501
Code Examination Coverage Achieved (Total Percent Coverage / 9 Sound Beams):					56%

Personnel	Date
Prepared By: <u>Dean Howard</u>	<u>2.17.11</u>
Reviewed By: <u>[Signature]</u>	<u>2/26/11</u>
Level III: <u>Simon Crothers</u>	<u>2/25/11</u>

Supplemental Report

Report No.: CC11-IU-034

Page: 2 of 9

Summary No.: 103090

Examiner: HENDRICKSON, MATT *MBH* Level: II PDI

Reviewer: Crothers, Simon *SC*

Date: 2/25/11

Examiner: HOWARD, DEAN M *DH* Level: II PDI

Site Review: *[Signature]*

Date: 2/26/11

Other: N/A Level: N/A

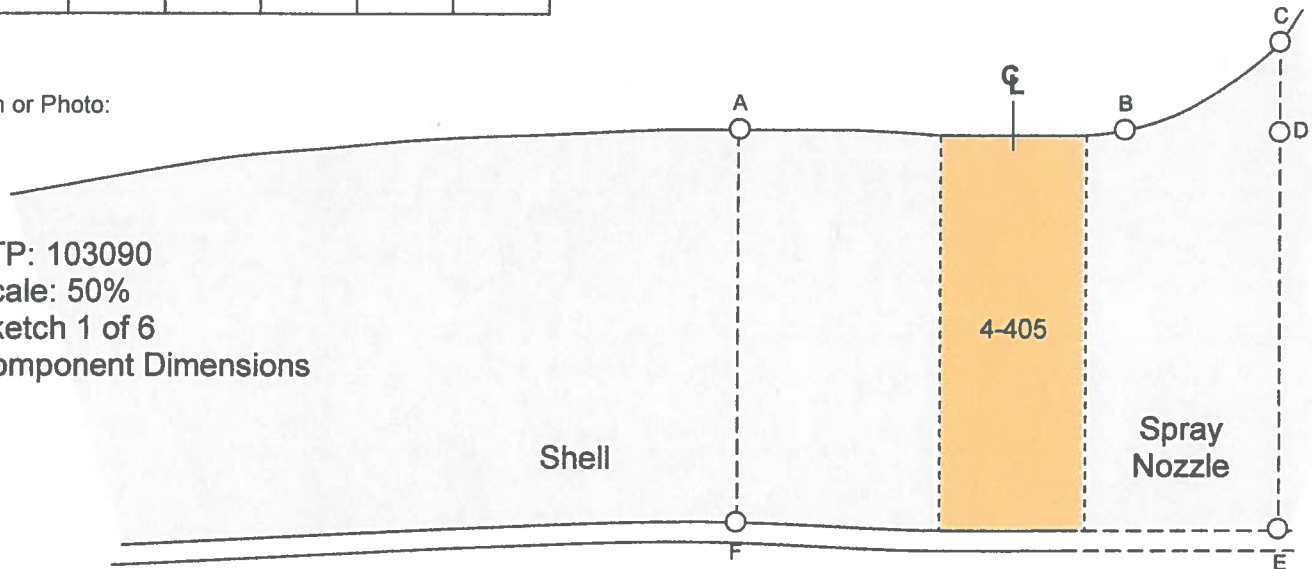
ANII Review: MCINTYRE, JEFFREY P. *[Signature]*

Date: 2-26-11



Sketch or Photo:

LTP: 103090
Scale: 50%
Sketch 1 of 6
Component Dimensions



Weld Width:	1.5"
Thickness (excluding clad):	4.1"
Weld Length:	50"
Exam Area:	23.7 in ²

Exam Area = ABCDEF

- ADEF + BDC
- $(5.6 \times 4.1) + (1.6 \times 0.9)/2 = 23.7 \text{ in}^2$

Page: 3 of 9

Date: 2-26-11

Supplemental Report

Report No.: CC11-IU-034

Page: 4 of 9

Summary No.: 103090

Examiner: HENDRICKSON, MATT *mx* Level: II PDI

Reviewer: Crothers, Simon *SC*

Date: 2/25/11

Examiner: HOWARD, DEAN M *DK* Level: II PDI

Site Review: *ROEJ*

Date: 2/26/11

Other: N/A Level: N/A

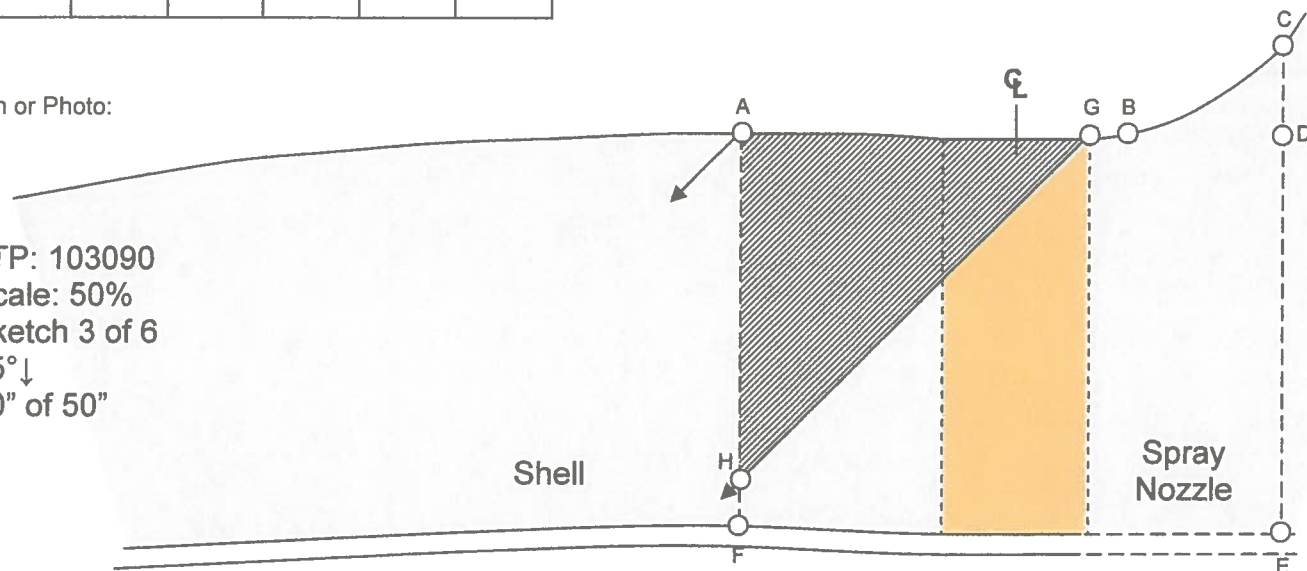
ANII Review: MCINTYRE, JEFFREY P. *JPM*

Date: 2-26-11



Sketch or Photo:

LTP: 103090
Scale: 50%
Sketch 3 of 6
45° ↓
50" of 50"



 45° ↓ Coverage

Exam Area = 23.7 in²
Examined AGH
(3.55 x 3.55)/2 = 6.3 in²

6.3 / 23.7 = 27%

Supplemental Report

Report No.: CC11-IU-034

Page: 5 of 9

Summary No.: 103090

Examiner: HENDRICKSON, MATT *Max*

Level: II PDI

Reviewer: Crothers, Simon *SC*

Date: 2/25/11

Examiner: HOWARD, DEAN M *DH*

Level: II PDI

Site Review: *[Signature]*

Date: 2/26/11

Other: N/A

Level: N/A

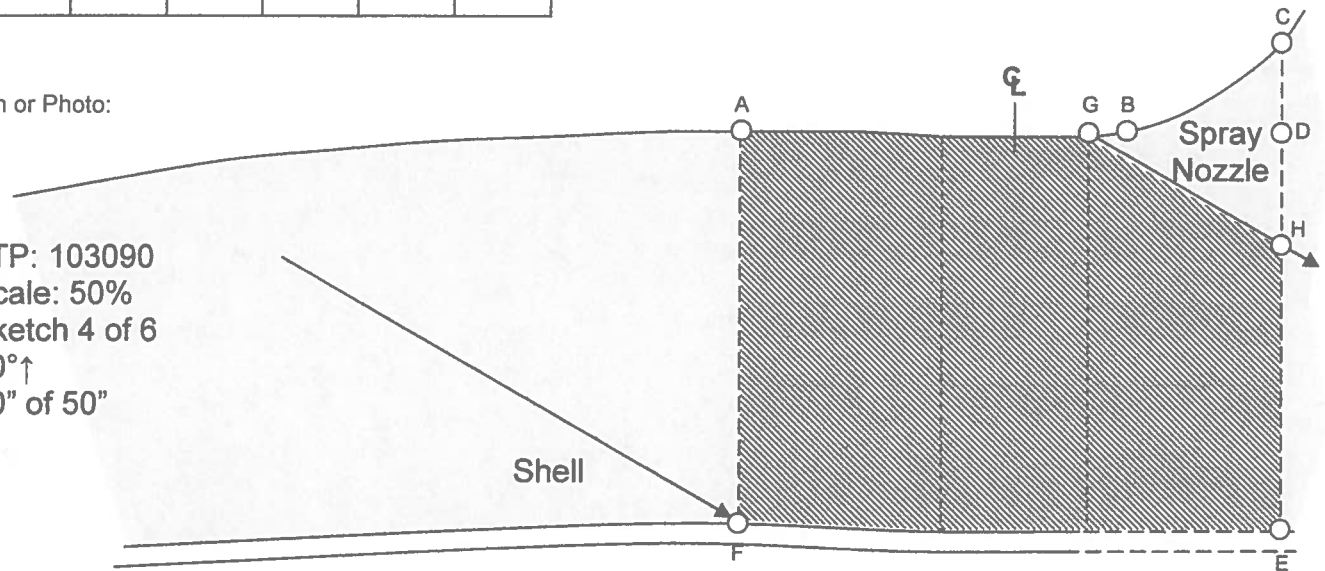
ANII Review: MCINTYRE, JEFFREY P. *Jm*

Date: 2-26-11



Sketch or Photo:

LTP: 103090
Scale: 50%
Sketch 4 of 6
60°↑
50" of 50"



 60°↑ Coverage

Exam Area = 23.7 in²
Examined ADEF – GDH
 $(5.6 \times 4.1) - (2.05 \times 1.18)/2 = 21.8 \text{ in}^2$

$21.8 / 23.7 = 92\%$

Supplemental Report

Report No.: CC11-IU-034

Page: 6 of 9

Summary No.: 103090

Examiner: HENDRICKSON, MATT *max*

Level: II PDI

Reviewer: Crothers, Simon *SC*

Date: 2/25/11

Examiner: HOWARD, DEAN M *DH*

Level: II PDI

Site Review: *RES*

Date: 2/26/11

Other: N/A

Level: N/A

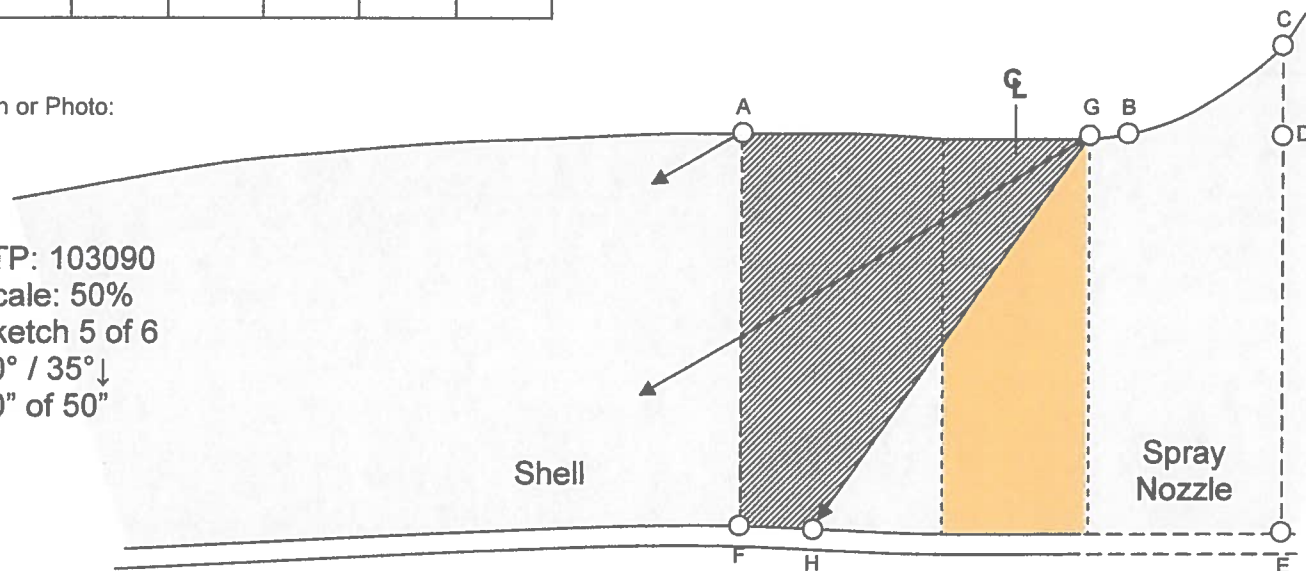
ANII Review: MCINTYRE, JEFFREY P. *JPM*

Date: 2-26-11



Sketch or Photo:

LTP: 103090
Scale: 50%
Sketch 5 of 6
60° / 35° ↓
50" of 50"



 60° / 35° ↓ Coverage

Exam Area = 23.7 in²

Examined AGHF

$4.1 \times (3.55 + 0.8) / 2 = 8.9 \text{ in}^2$

$8.9 / 23.7 = 38\%$

Supplemental Report

Report No.: CC11-IU-034

Page: 7 of 9

Summary No.: 103090

Examiner: HENDRICKSON, MATT *MH* Level: II PDI

Reviewer: Crothers, Simon *SC*

Date: 2/25/11

Examiner: HOWARD, DEAN M *DH* Level: II PDI

Site Review: *DOE*

Date: 2/26/11

Other: N/A Level: N/A

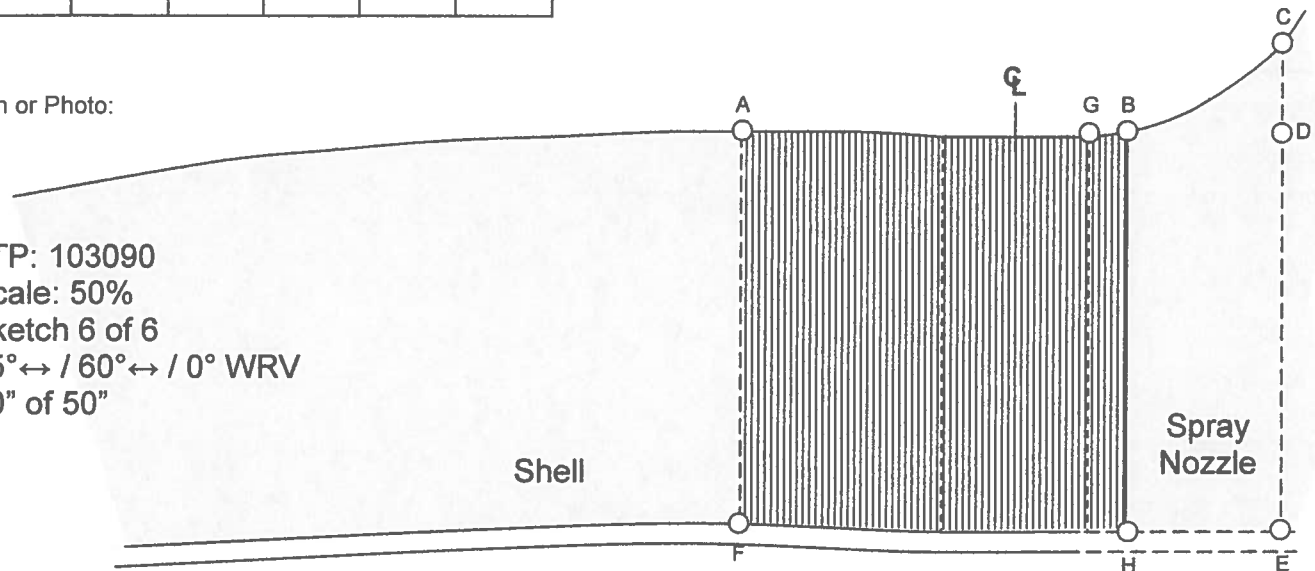
ANII Review: MCINTYRE, JEFFREY P. *JM*


Date: 2-26-11



Sketch or Photo:

LTP: 103090
Scale: 50%
Sketch 6 of 6
45° ↔ / 60° ↔ / 0° WRV
50" of 50"



 45° ↔ / 60° ↔ / 0° WRV Coverage

Exam Area = 23.7 in²
Examined ABHF
(3.95 x 4.1) = 16.2 in²

16.2 / 23.7 = 68%

**ASME SECTION XI
EXAMINATION COVERAGE**

**MIN-3-311
Revision 00500
Page 11 of 12**

Page 1 of 1

Attachment 1: Incomplete Examination Report

Section 1: Component Information	
LTP No.: <u>103090</u>	Configuration: <u>Spray Nz. to Upper Hd.</u>
Component ID: <u>4-405</u>	Outage No.: <u>2-RFO-2011 (18)</u>
NDE Report No.: <u>CC11-IU-034</u>	ASME Code Class: <u>B-D / B3.110</u>
Code Examination Requirements: <u>Full Volume / Weld + ½ "T" of base metal each side.</u>	
Interfering Conditions and Limitations: Nozzle Configuration.	

Section 2: Examinations Affected			
Surface Exams	UT: Pipe & Vessel ≤ 2"	UT: Vessel > 2"	
MT: _____	Axial: US _____ DS _____	0° WRV <u>X</u>	45°⊥ <u>X</u> 60°⊥ <u>X</u> 35°⊥ <u>X</u>
PT: _____	Circ: US _____ DS _____	0° Lam <u>NA</u>	45°|| <u>X</u> 60°|| <u>X</u>
Code Examination Coverage Achieved: <u>65%</u>			
Comments: <u>See attached coverage sketches.</u>			

Personnel	Date
Prepared By: <u>[Signature]</u>	<u>2-17-2011</u>
Reviewed By: <u>Simon Crothers</u>	<u>2/25/11</u>
Level III: <u>[Signature]</u>	<u>2/26/11</u>

Report Page 8 of 9

**ASME SECTION XI
EXAMINATION COVERAGE**

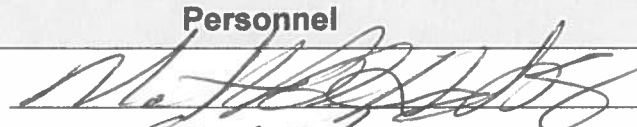

**MIN-3-311
Revision 00500
Page 12 of 12**

Page 1 of 1

Attachment 2: Calculation Sheet for UT Exams of Vessels > 2"

LTP No.: <u>103090</u>		Configuration: <u>Spray Nz. to Upper Hd.</u>	
Component ID: <u>4-405</u>		Outage No.: <u>2-RFO-2011 (18)</u>	
NDE Report No.: <u>CC11-IU-034</u>		ASME Code Class: <u>B-D / B3.110</u>	
Exam Area (Cross-section): <u>23.7 in²</u>		Exam Length: <u>50 in.</u>	
Beam Directions: ↑= <u>Lk. In</u> ↓= <u>Lk. Out</u> ←= <u>CW</u> →= <u>CCW</u>			

Beam Angle & Direction	Area Examined	Exam Area	Length Examined	Exam Length	Percent Coverage
45°↑	(<u>20.9</u> / <u>23.7</u>) x (<u>50</u> / <u>50</u>) x 100=	<u>88</u>			
45°↓	(<u>6.3</u> / <u>23.7</u>) x (<u>50</u> / <u>50</u>) x 100=	<u>27</u>			
60°↑	(<u>21.8</u> / <u>23.7</u>) x (<u>50</u> / <u>50</u>) x 100=	<u>92</u>			
60° / 35°↓	(<u>8.9</u> / <u>23.7</u>) x (<u>50</u> / <u>50</u>) x 100=	<u>38</u>			
	(/) x (/) x 100=				
45°←	(<u>16.2</u> / <u>23.7</u>) x (<u>50</u> / <u>50</u>) x 100=	<u>68</u>			
45°→	(<u>16.2</u> / <u>23.7</u>) x (<u>50</u> / <u>50</u>) x 100=	<u>68</u>			
60°←	(<u>16.2</u> / <u>23.7</u>) x (<u>50</u> / <u>50</u>) x 100=	<u>68</u>			
60°→	(<u>16.2</u> / <u>23.7</u>) x (<u>50</u> / <u>50</u>) x 100=	<u>68</u>			
	(/) x (/) x 100=				
0° WRV	(<u>16.2</u> / <u>23.7</u>) x (<u>50</u> / <u>50</u>) x 100=	<u>68</u>			
	(/) x (/) x 100=				
	(/) x (/) x 100=				
	(/) x (/) x 100=				
	(/) x (/) x 100=				
	(/) x (/) x 100=				
	(/) x (/) x 100=				
	(/) x (/) x 100=				
	(/) x (/) x 100=				
	(/) x (/) x 100=				
Total Percent Coverage: <u>585</u>					
Code Examination Coverage Achieved (Total Percent Coverage / 9 Sound Beams): <u>65%</u>					

Personnel	Date
Prepared By: 	<u>2/17/2011</u>
Reviewed By: 	<u>2/26/11</u>
Level III: <u>Simon Crothers</u>	<u>2/25/11</u>

Supplemental Report

Report No.: **CC11-IU-065**
Page: **2** of **9**

Summary No.: **109015**

Examiner: **HOWARD, DEAN M** *Dean Howard*
Examiner: **N/A**
Other: **N/A**

Level: **II PDI**
Level: **N/A**
Level: **N/A**

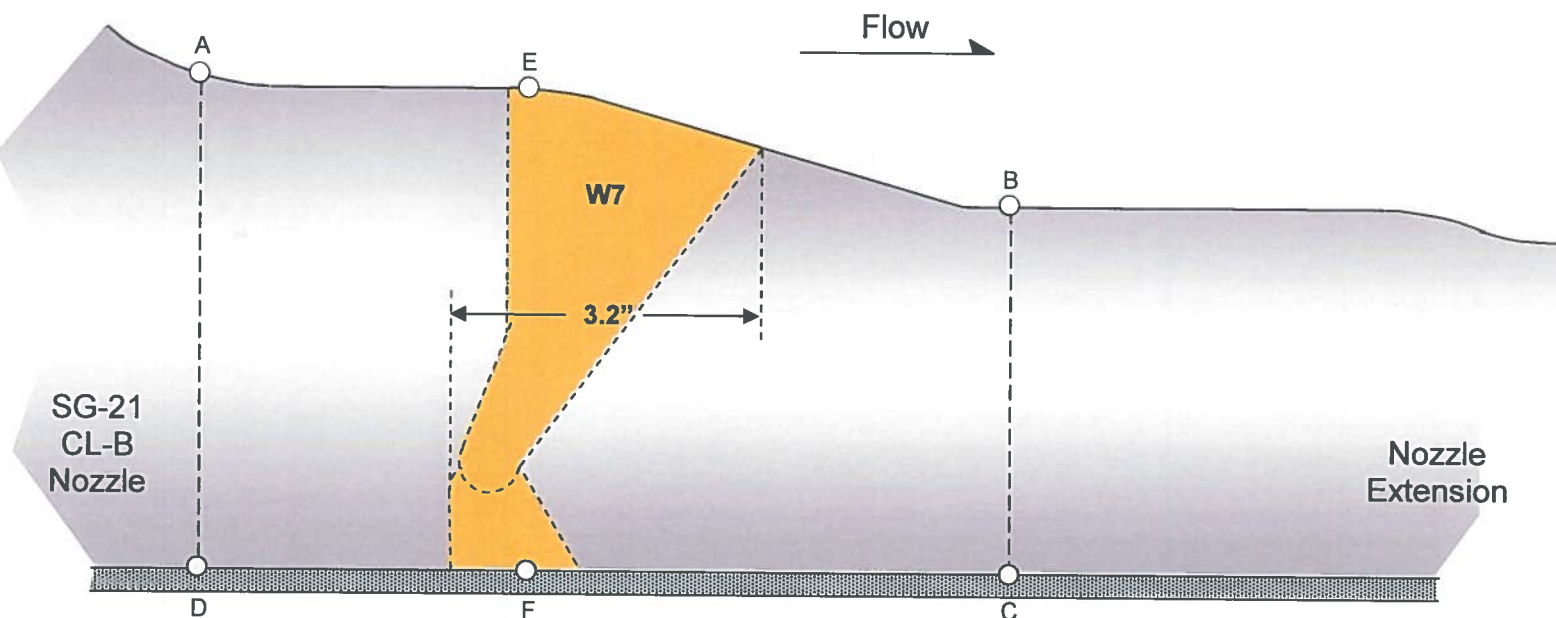
Reviewer: *Russel Jones*
Site Review: *Timothy G. Bell*
ANII Review: **MCINTYRE, JEFFREY P.** *Jim*

Date: *3/9/11*
Date: *3-9-11*
Date: *3-9-11*

Comments:

LTP: 109015
Page 2 of 9
Scale: 50%
Sketch of Photo:

AD = 5.2"
DC = 8.4"
BC = 3.8"
AE = 3.4"
FC = 5.0"



Weld Width:	3.2"
Thickness (excluding clad):	5.1"
Weld Length:	101"
Exam Area:	39.6 in ²

Exam Area

- ABCD
- AEFD + EBCF
- $(3.4 \times 5.1) + 5(5.1 + 3.8)/2 = 39.6 \text{ in}^2$

Weld dimensions and fit up per Dwg: 12010A-0015SH0001.
OD contour & thickness readings taken on component.

Supplemental Report

Report No.: CC11-IU-065

Page: 3 of 9

Summary No.: 109015

Examiner: HOWARD, DEAN M *Dean Howard*

Level: II PDI

Reviewer: *[Signature]*

Date: 3/9/11

Examiner: N/A

Level: N/A

Site Review: *Timothy L. Keck* *W/S*

Date: 3-9-11

Other: N/A

Level: N/A

ANII Review: MCINTYRE, JEFFREY P. *JPM*

Date: 3-9-11

Comments:

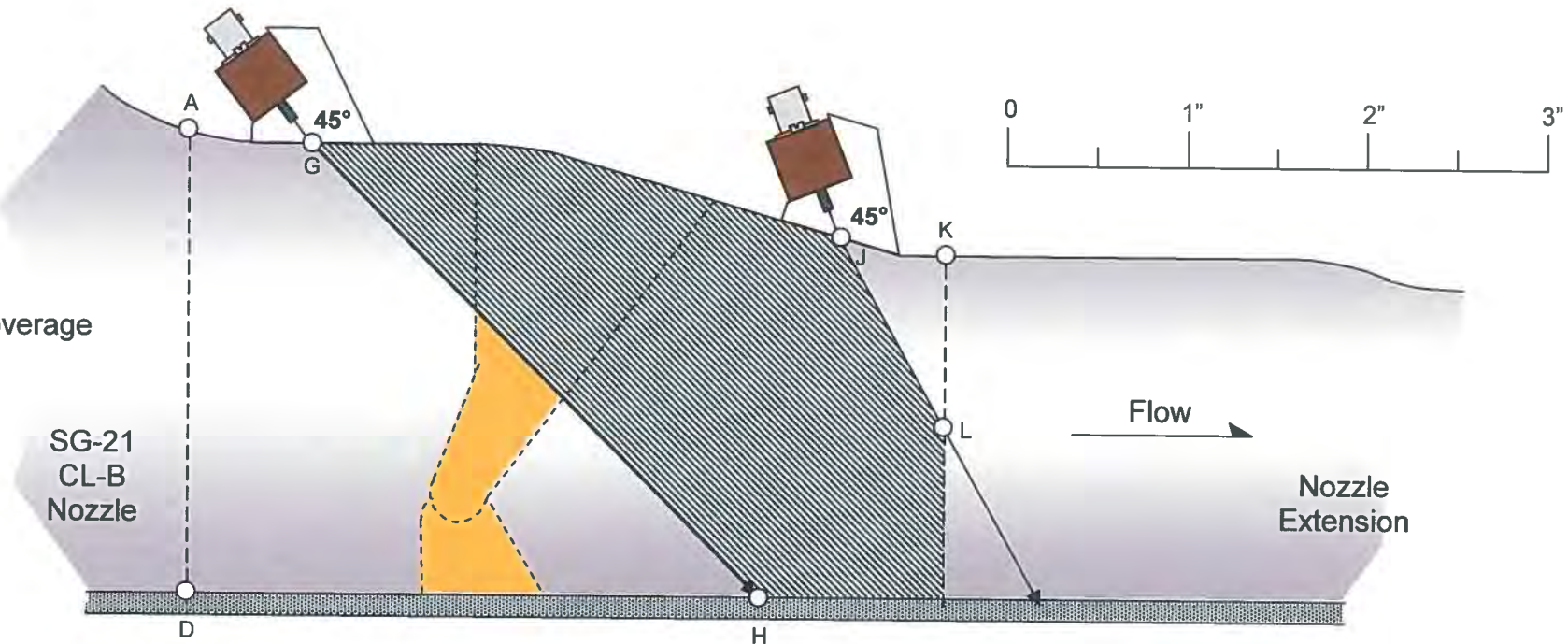
LTP: 109015

Page 3 of 9

Scale: 50%

Sketch or Photo:

 45° Coverage



Exam Area = 39.6 in²

Examined 39.6 – AGHD – JKL

Examined 39.6 – 5.1(6.4 + 1.3)/2 – (1.1 x 1.9)/2 = 18.9 in²

18.9 / 39.6 = 48%

Supplemental Report

Report No.: **CC11-IU-065**

Page: **4** of **9**

Summary No.: **109015**

Examiner: **HOWARD, DEAN M** *Dean Howard*

Level: **II PDI**

Reviewer: *see 5.1*

Date: **3/9/11**

Examiner: **N/A**

Level: **N/A**

Site Review: *Timothy A. Keoh*

Date: **3-9-11**

Other: **N/A**

Level: **N/A**

ANII Review: **MCINTYRE, JEFFREY P.** *Jha*

Date: **3-9-11**

Comments:

LTP: 109015

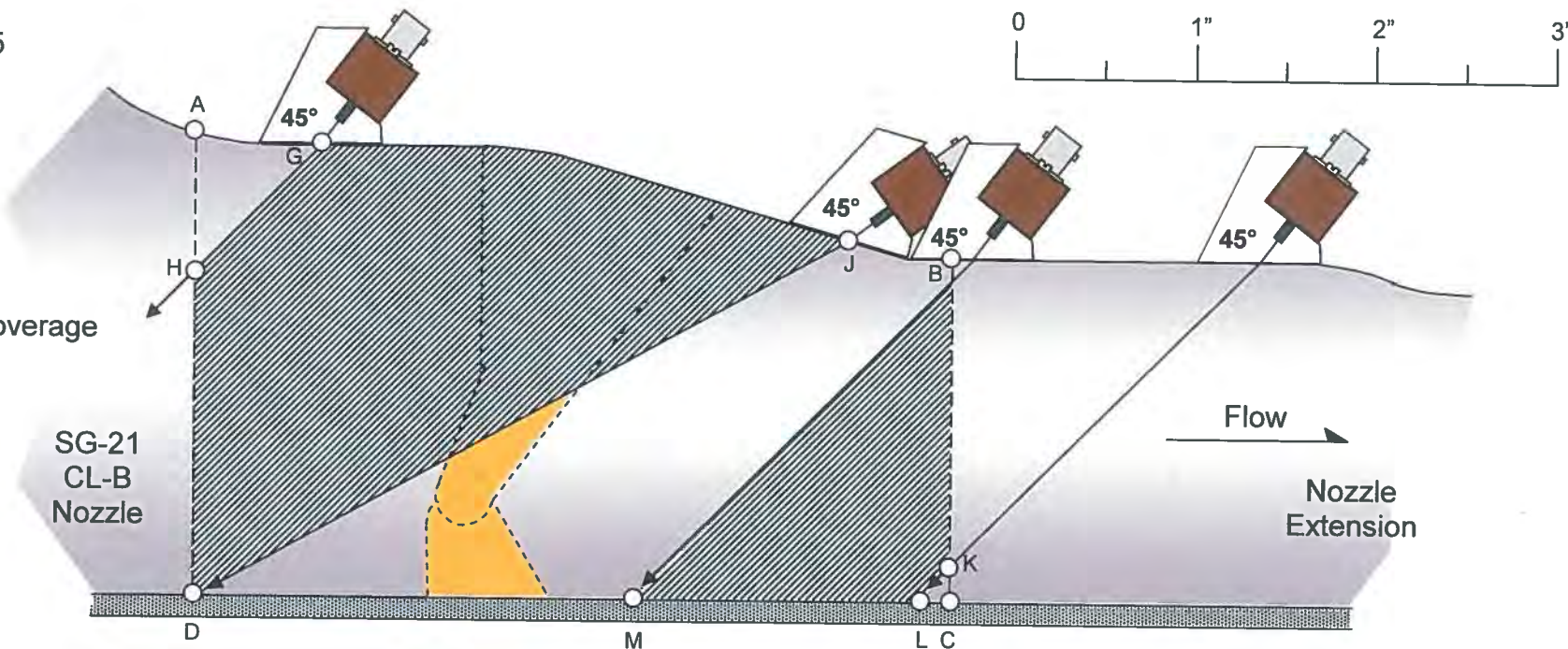
Page 4 of 9

Scale: 50%

Sketch or Photo:

 45° ↓ Coverage

SG-21
CL-B
Nozzle



Exam Area = 39.6 in²

Examined 39.6 – AGH – JBMD – KCL

Examined 39.6 – $(1.4 \times 1.4)/2$ – $3.8(4.8 + 1.2)/2$ – $(0.3 \times 0.3)/2$ = 27.2 in²

$27.2 / 39.6 = \underline{69\%}$

Supplemental Report

Report No.: CC11-IU-065

Page: 5 of 9

Summary No.: 109015

Examiner: HOWARD, DEAN M *Dean Howard*

Level: II PDI

Reviewer: *[Signature]*

Date: 3/9/11

Examiner: N/A

Level: N/A

Site Review: *Timmer & Seel* *as*

Date: 3-9-11

Other: N/A

Level: N/A

ANII Review: MCINTYRE, JEFFREY P. *JP*

Date: 3-9-11



Comments:

LTP: 109015

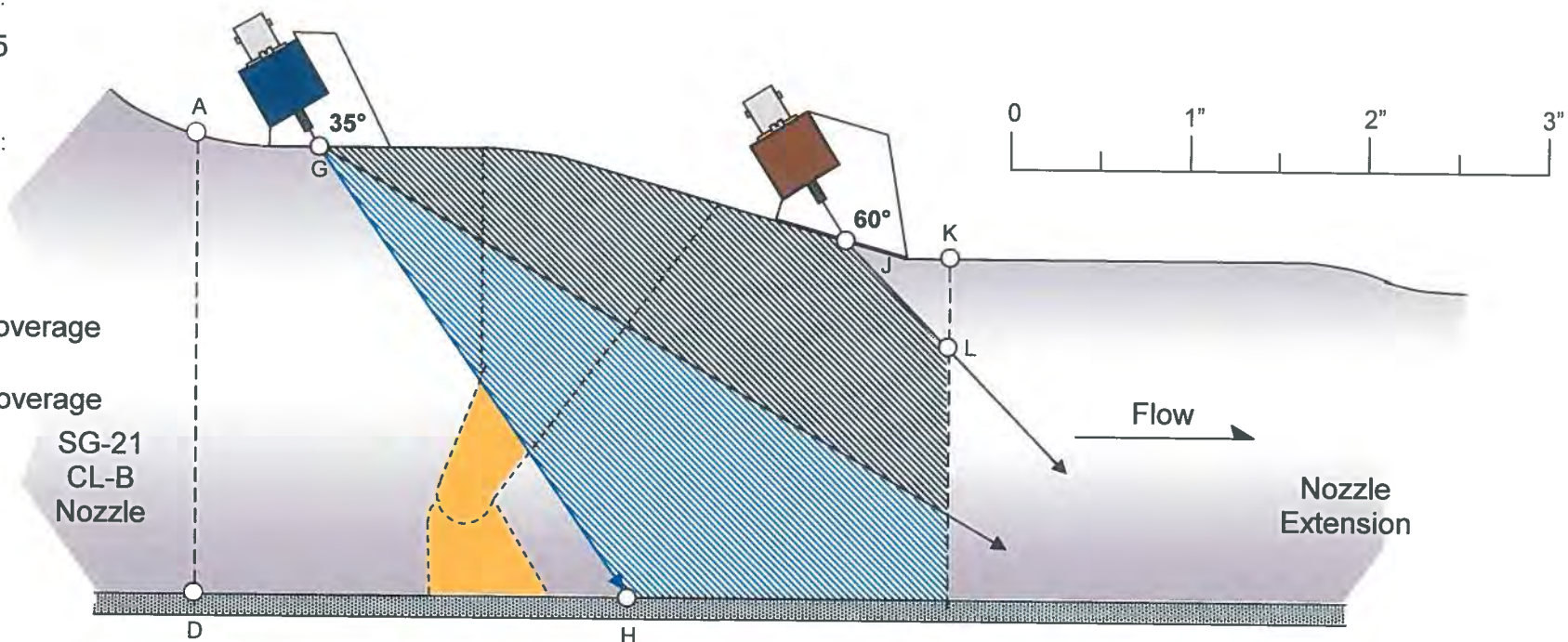
Page 5 of 9

Scale: 50%

Sketch or Photo: *60° / 35°*

 60° Coverage
 35° Coverage

SG-21
CL-B
Nozzle



Exam Area = 39.6 in²

Examined 39.6 – AGHD – JKL

Examined 39.6 – 5.1(4.9 + 1.3)/2 – (1.1 x 1.1)/2 = 23.2 in²

23.2 / 39.6 = 59%

Supplemental Report

Report No.: **CC11-IU-065**

Page: **6** of **9**

Summary No.: **109015**

Examiner: **HOWARD, DEAN M** *Dean Howard*

Level: **II PDI**

Reviewer: *Timothy C. Red*

Date: *5/9/11*

Examiner: **N/A**

Level: **N/A**

Site Review: *Timothy C. Red* *TS*

Date: *3-9-11*

Other: **N/A**

Level: **N/A**

ANII Review: **MCINTYRE, JEFFREY P.** *John*

Date: *3-9-11*

Comments:

LTP: 109015

Page 6 of 9

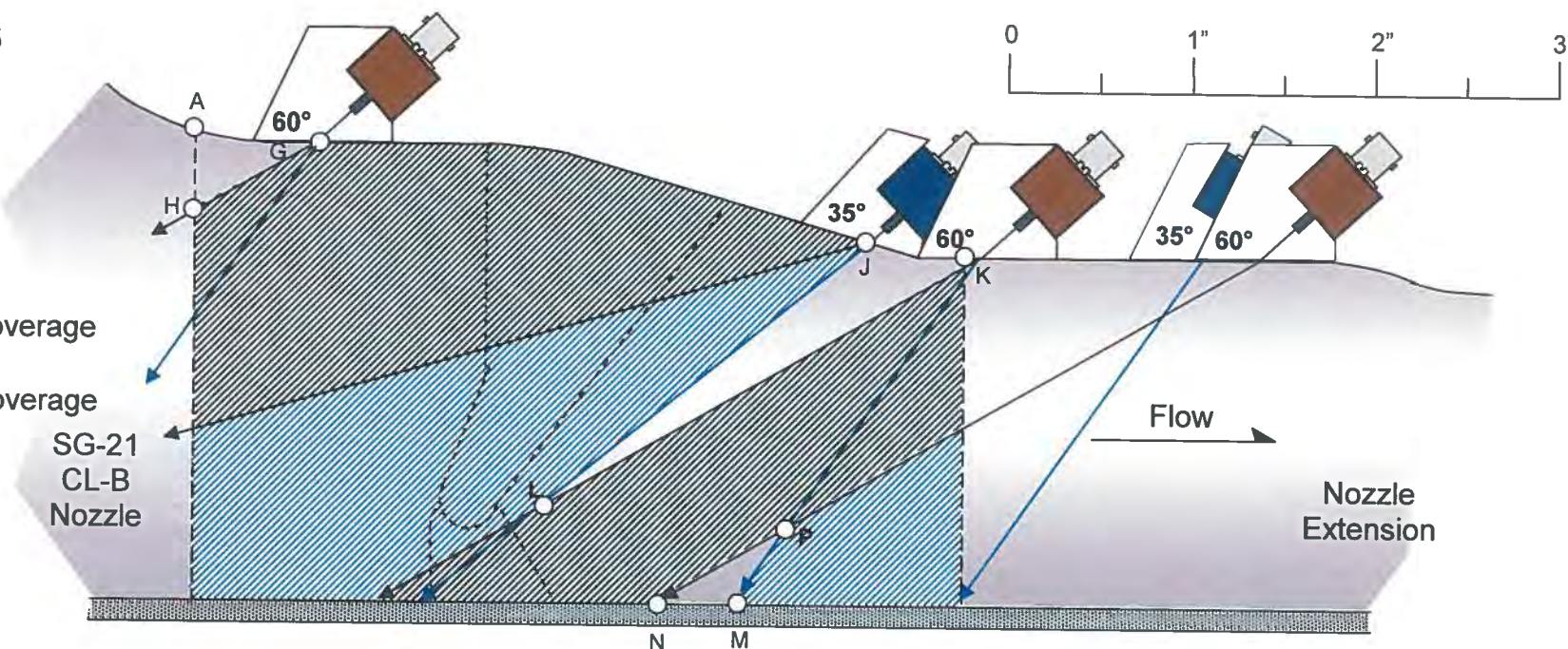
Scale: 50%

Sketch or Photo:

60° ↓ 35° ↓

60° ↓ Coverage
35° ↓ Coverage

SG-21
CL-B
Nozzle



Exam Area = 39.6 in²

Examined 39.6 – AGH – JKL – MNP

Examined 39.6 – (1.4 x 0.8)/2 – (1.1 x 2.8)/2 – (0.9 x 0.8)/2 = 37.1 in²

37.1 / 39.6 = 94%

Supplemental Report

Report No.: **CC11-IU-065**

Page: **7** of **9**

Summary No.: **109015**

Examiner: **HOWARD, DEAN M.** *Dean Howard*

Level: **II PDI**

Reviewer: *[Signature]*

Date: **3/9/11**

Examiner: **N/A**

Level: **N/A**

Site Review: *Timothy A. Best* *EWB*

Date: **3-9-11**

Other: **N/A**

Level: **N/A**

ANII Review: **MCINTYRE, JEFFREY P.** *[Signature]*

Date: **3-9-11**

Comments:

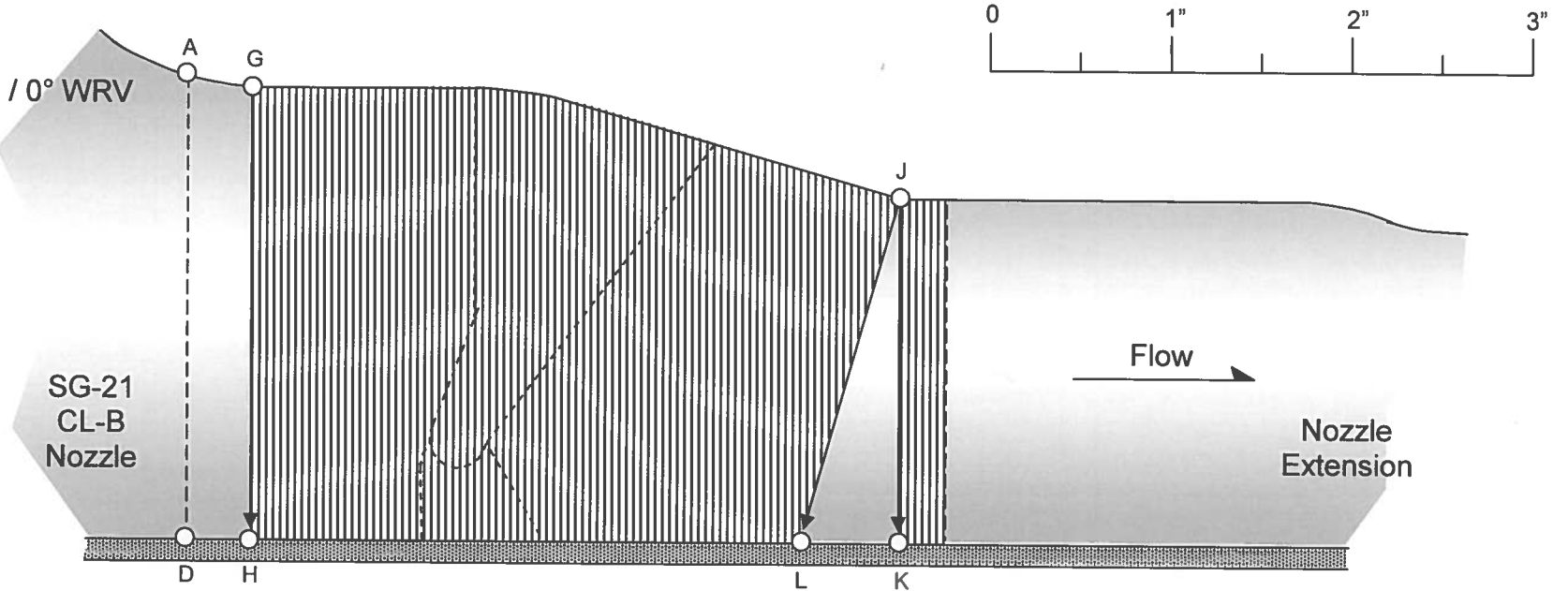
LTP: 109015


Page 7 of 9

Scale: 50%

Sketch or Photo:

45° ↔ / 35° ↔ / 0° WRV



 45° ↔ / 35° ↔ / 0° WRV Coverage

Exam Area = 39.6 in²

Examined 39.6 – AGHD – JKL

Examined 39.6 – (5.1 x 0.7) – (1.1 x 3.8)/2 = 33.9 in²

33.9 / 39.6 = 86%

Supplemental Report

Report No.: CC11-IU-065

Page: 8 of 9

Summary No.: 109015

Examiner: HOWARD, DEAN M *DH* Level: II PDI Reviewer: Jones, Russel *RJ* Date: 3/8/11
 Examiner: N/A Level: N/A Site Review: Beck, Timothy *TB* Date: 3-9-11
 Other: N/A Level: N/A ANII Review: McIntyre, Jeffrey *JM* Date: 3-9-11

Comments:

Sketch or Photo: \\nas-msw-08\cggapps\IDDEAL\Ideall_Server\Ideall_CCNP\Data\IDDEAL SUPPLEMENT DOCUMENTS\Unit_2_2011 photos & supplements\LTP # 109015 pg 8 of 9.JPG

ASME SECTION XI EXAMINATION COVERAGE

MIN-3-311
Revision 00500
Page 11 of 12

Page 1 of 1

Attachment 1: Incomplete Examination Report

Section 1: Component Information	
LTP No.: <u>109015</u>	Configuration: <u>Nz. to Nz. Extension</u>
Component ID: <u>SG-21-W7</u>	Outage No.: <u>2 - RFO - 2011 (18)</u>
NDE Report No.: _____	ASME Code Class: <u>B-D / B3.130</u>
Code Examination Requirements: <u>Full Volume / Weld + 1/2 "T" of base metal each side.</u>	
Interfering Conditions and Limitations: <u>OD Configuration.</u>	

Section 2: Examinations Affected	
Surface Exams	UT: Pipe & Vessel ≤ 2"
MT: _____	0° WRV <u>x</u> 45° <u>x</u> 60° <u>x</u> 35° <u>x</u>
PT: _____	0° Lam <u>NA</u> 45° <u>x</u> 35° <u>x</u>
Code Examination Coverage Achieved: <u>78%</u>	
Comments: _____	
60° Circ Exam is ineffective due to ID / OD ratio.	
Circ exams performed with 45° and 35°.	

Personnel	Date
Prepared By: <u>Dean Howard</u>	<u>03/06/2011</u>
Reviewed By: _____	
Level III: <u>Russel Jones</u>	

Report Page 8 of 9

Page: 9 of 9

Date: 3-9-11

UT Pipe Weld Examination

Site/Unit: **CCNP / 2**
Summary No.: **115080-RI**
Workscope: **ISI**

Procedure: **NDE-5449-CC**
Procedure Rev.: **1**
Work Order No.: **C90635234**

Outage No.: **2-RFO-2011 (18)**
Report No.: **CC11-IU-039**
Page: **1** of **2**

Code: **ASME Section XI 2004 Ed** Cat./Item: **R-A-U2/R1.16** Location: **21 Pump Bay**
Drawing No.: **91298SH0002** Description: **PIPE TO VALVE 2-SI-217**
System ID: **052**
Component ID: **12-SI-2009 - 9** Size/Length: **1.4"/40.0"** Thickness/Diameter: **1.125"/12.0"**
Limitations: **Single sided access** Start Time: **2225** Finish Time: **2312**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **As Ground**
Lo Location: **TDC** Wo Location: **Weld C/L** Couplant: **ULTRAGEL II** Batch No.: **10325**
Temp. Tool Mfg.: **FLUKE** Serial No.: **20Y08829** Surface Temp.: **77** °F

Cal. Report No.: **CC11-ICA-028, -029, -030, -047**

Angle Used	0	45	45T	60	60L	N/A
Scanning dB	46.0	33.5	33.5	32.5	56.0	N/A

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

Comments:

Performed 0° exam for interfering conditions. None noted.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: **No / 50%**

Reviewed Previous Data: **NO**

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
HOWARD, DEAN M			<i>Dean Howard</i>	2/19/2011	Crothers, Simon	<i>Simon Crothers</i>	2/25/11
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
HENDRICKSON, MATT			<i>Matt Hendrickson</i>	2/19/2011	<i>MC</i>	<i>L-11</i>	2/26/11
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					MCINTYRE, JEFFREY P.	<i>Jeffrey P. McIntyre</i>	2-26-11

Supplemental Report

Report No.: **CC11-IU-039**

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

Summary No.: **115080-RI**

Examiner: **HOWARD, DEAN M** *DH* Level: **II PDI**

Reviewer: **Crothers, Simon** *SC*

Date: **2/25/11**

Examiner: **HENDRICKSON, MATT** *MRT* Level: **II PDI**

Site Review: *SCF*

Date: **2/26/11**

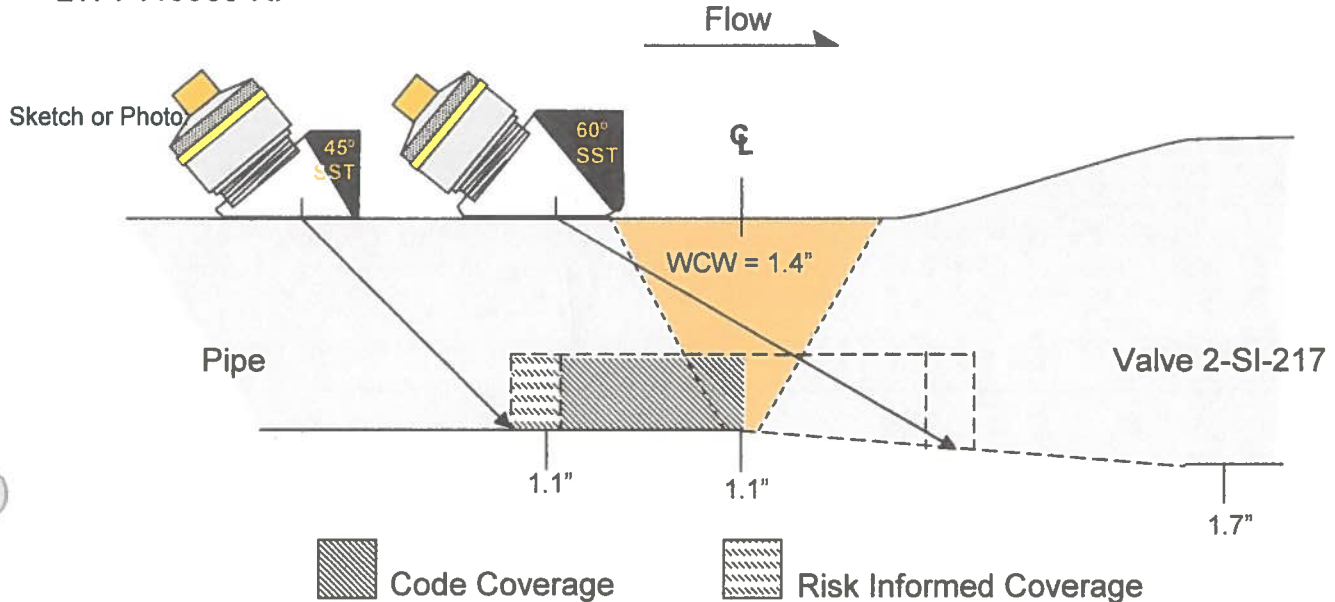
Other: **N/A** Level: **N/A**

ANII Review: **MCINTYRE, JEFFREY P.** *JPM*

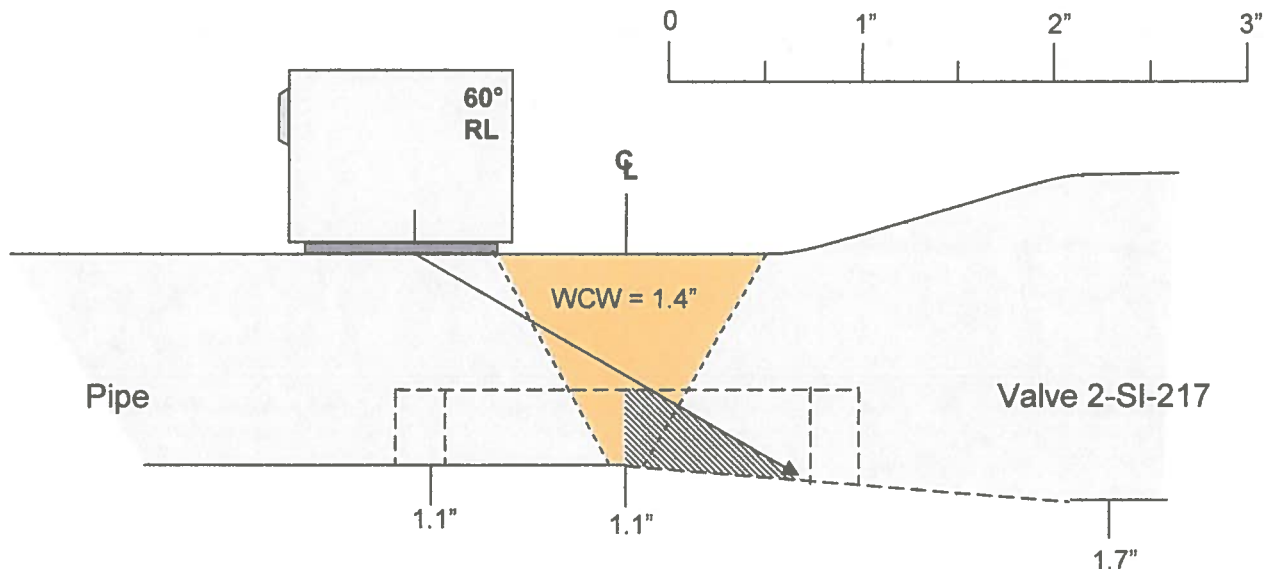
Date: **2-26-11**

Comments:

LTP: 115080-RI



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



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

UT Vessel Examination

Site/Unit: CCNP / 2	Procedure: NDE-5454-CC	Outage No.: 2-RFO-2011 (18)
Summary No.: 201400	Procedure Rev.: 00	Report No.: CC11-IU-049
Workscope: ISI	Work Order No.: C90634353	Page: 1 of 3

Code: ASME Section XI 2004 Ed	Cat./Item: C-B/C2.21	Location: A15-ECCS21
Drawing No.: B-3	Description: INLET NOZZLE	
System ID: 052		
Component ID: SCHE-21-N1	Size/Length: 1.3"/39.0"	Thickness/Diameter: 1.2"/12.0"
Limitations: Single Sided Access	Start Time: 1046	Finish Time: 1115

Examination Surface: Inside <input type="checkbox"/> Outside <input checked="" type="checkbox"/>	Surface Condition: Ground Smooth		
Lo Location: TDC	Wo Location: Weld CL	Couplant: ULTRAGEL II	Batch No.: 10325
Temp. Tool Mfg.: FLUKE	Serial No.: 20Y08829	Surface Temp.: 78 °F	
Cal. Report No.: CC11-ICA-074, -075			

0	45	45T	60	60T	70
N/A	36.5	36.5	N/A	N/A	45.7

Indication(s): Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Scan Coverage: Upstream <input type="checkbox"/> Downstream <input checked="" type="checkbox"/>	CW <input checked="" type="checkbox"/> CCW <input checked="" type="checkbox"/>
--	---	--

Comments: **None**

Results: Accept <input checked="" type="checkbox"/> Reject <input type="checkbox"/> EngDisp <input type="checkbox"/>			
Percent Of Coverage Obtained > 90%: No / 33.5%	Reviewed Previous Data: Yes		

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
SISTEK, ROBERT			<i>Robert Sistek</i>	2/24/2011	Crothers, Simon	<i>Simon Crothers</i>	2/28/11
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					<i>Simon Crothers</i>		2/28/11
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					MCINTYRE, JEFFREY P.	<i>Jeffrey P. McIntyre</i>	2-28-11

Supplemental Report

Report No.: CC11-IU-049

Page: 2 of 3

Summary No.: 201400

Examiner: SISTEK, ROBERT *RPS* Level: II PDI

Reviewer: Crothers, Simon *SC* Date: 2/28/11

Examiner: N/A Level: N/A

Site Review: *[Signature]* Date: 2/28/11

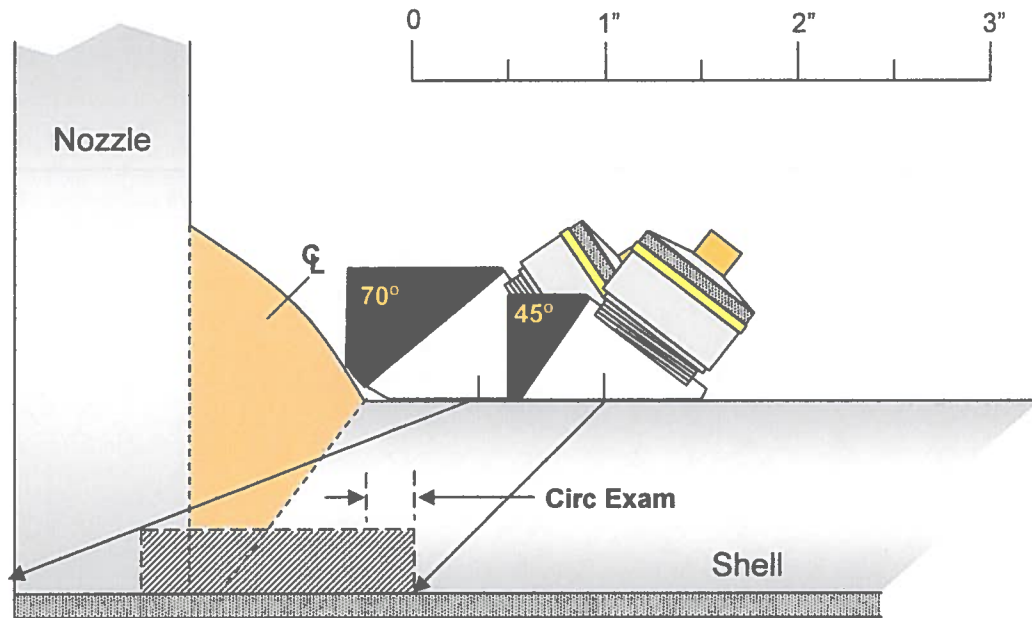
Other: N/A Level: N/A

ANII Review: MCINTYRE, JEFFREY P. *Jm* Date: 2-28-11

Comments:

LTP: 201400

Sketch or Photo:



Coverage Calc:

Exam Area: $(1.4 \times 0.33) = 0.46 \text{ in}^2$

Axial Exam

- From Shell: Examined $0.46 \text{ in}^2 = 100\%$
- From Nozzle: 0%

Circ Exam

- Examined $(0.25 \times 0.33) = 0.08 \text{ in}^2$
- CW = 17%
- CCW = 17%

$(100 + 0 + 17 + 17) / 4 = \underline{33.5\%}$

UT Vessel Examination

Site/Unit: CCNP / 2 Procedure: NDE-5455-CC Outage No.: 2-RFO-2013 (19)
Summary No.: 103100 Procedure Rev.: 00000 Report No.: CC13-IU-027
Workscope: ISI Work Order No.: C91513320 Page: 1 of 8

Code: ASME Section XI 2004 Ed Cat./Item: B-D/B3.110 Location: C69 -PZR
Drawing No.: A-3 Description: SAFETY AND RELIEF NOZZLE UPPER HEAD @225°
System ID: 064-A
Component ID: 16-405A Size/Length: 1.7" / 22" Thickness/Diameter: 4.2" / 6"
Limitations: Nozzle Start Time: 2235 Finish Time: 2255

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground Flush

Lo Location: TDC Wo Location: Weld CL Couplant: ULTRAGEL II Batch No.: 11525

Temp. Tool Mfg.: FLUKE Serial No.: 17960591 Surface Temp.: 95 °F

Cal. Report No.: CC13-ICA-052, CC13-ICA-053, CC13-ICA-054, CC13-ICA-055

Angle Used	0	45	45T	60	60T	35
Scanning dB	27.0	49.0	49.0	56.0	56.0	43.0

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

Comments:

Interfering conditions exam doc in 1983 report.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: No (58%) Reviewed Previous Data: Yes

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
TUCKER, DAVID K			<i>David K Tucker</i>	2/24/2013	CROTHERS, SIMON	<i>Simon Crothers</i>	3/3/13
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					JONES, RUSSEL E.	<i>T Oldfield</i>	3-4-13
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					<i>Donna Carson</i>	<i>Eley</i>	3-4-13

Supplemental Report

Report No.: CC13-IU-027

Page: 2 of 8

Summary No.: 103100

Examiner: TUCKER, DAVID K *DKT* Level: II PDI Reviewer: CROTHERS, SIMON *SC* Date: 3/03/13
 Examiner: N/A Level: N/A Site Review: JONES, RUSSEL E. *3-4-13* Date: 3-4-13
 Other: N/A Level: N/A ANII Review: J. Smith *3-4-13* Date: 3-4-13

Comments:

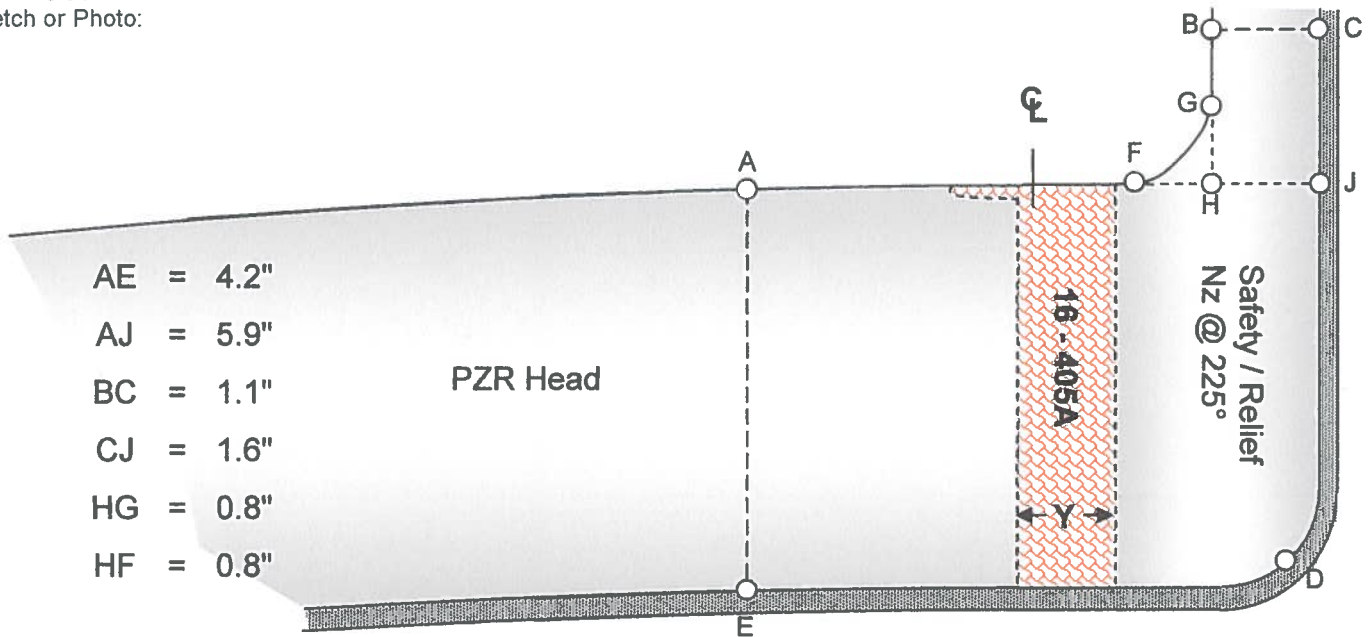
LTP: 103100

Sketch: 1

Dimensions & weld fit-up

Scale: 50%

Sketch or Photo:



Weld Width:	1.7" on OD
Weld Width:	1.0" (Y)
Thickness (Excluding Clad):	4.2"
Weld Length:	22" @ CL
Exam Area:	26.86 in²
Profile constructed from OD contour and thickness readings, and as-built drawing No. 12019 - 0021	

Exam Area (ABCDE)

= AJDE + BCJH + GHF

= (5.9 x 4.2) + (1.1 x 1.6) + (0.8 x 0.8)/2

= 26.86 in²

Supplemental Report

Report No.: CC13-IU-027

Page: 3 of 8

Summary No.: 103100

Examiner: TUCKER, DAVID K *DKT* Level: II PDI Reviewer: CROTHERS, SIMON *SC* Date: 3/03/13

Examiner: N/A Level: N/A Site Review: JONES, RUSSEL E. *Tim Oldfield 3-4-13* Date: 3-4-13

Other: N/A Level: N/A ANII Review: Joseph Conway Date: 3.4.13

Comments:

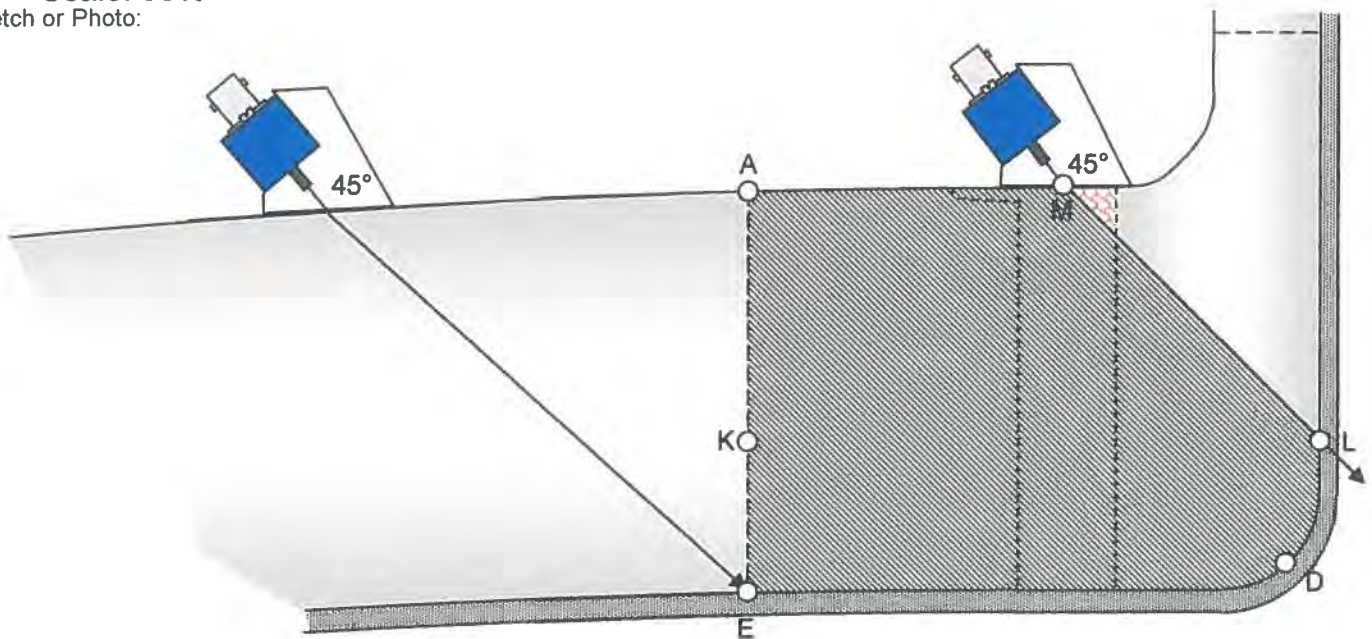
LTP: 103100

Sketch: 2

Scan: 45°↑

Scale: 50%

Sketch or Photo:



- Exam Area = 26.86 in²
- Examined: AMLK + KLDE
- $2.6(3.3 + 5.9)/2 + (5.9 \times 1.6) = 21.4 \text{ in}^2$
- $21.4 / 26.86 = \underline{79.67\%}$

Supplemental Report

Report No.: CC13-IU-027

Page: 4 of 8

Summary No.: 103100

Examiner:	<u>TUCKER, DAVID K</u> <i>DKT</i>	Level:	<u>II PDI</u>	Reviewer:	<u>CROTHERS, SIMON</u> <i>SC</i>	Date:	<u>3/3/13</u>
Examiner:	<u>N/A</u>	Level:	<u>N/A</u>	Site Review:	<u>Tim Oldfield</u> <i>3-4-13</i> <u>JONES, RUSSEL E.</u> <i>120</i>	Date:	<u>3-4-13</u>
Other:	<u>N/A</u>	Level:	<u>N/A</u>	ANII Review:	<u>JOHN CHASE</u> <i>C</i>	Date:	<u>3.4.13</u>

Comments:

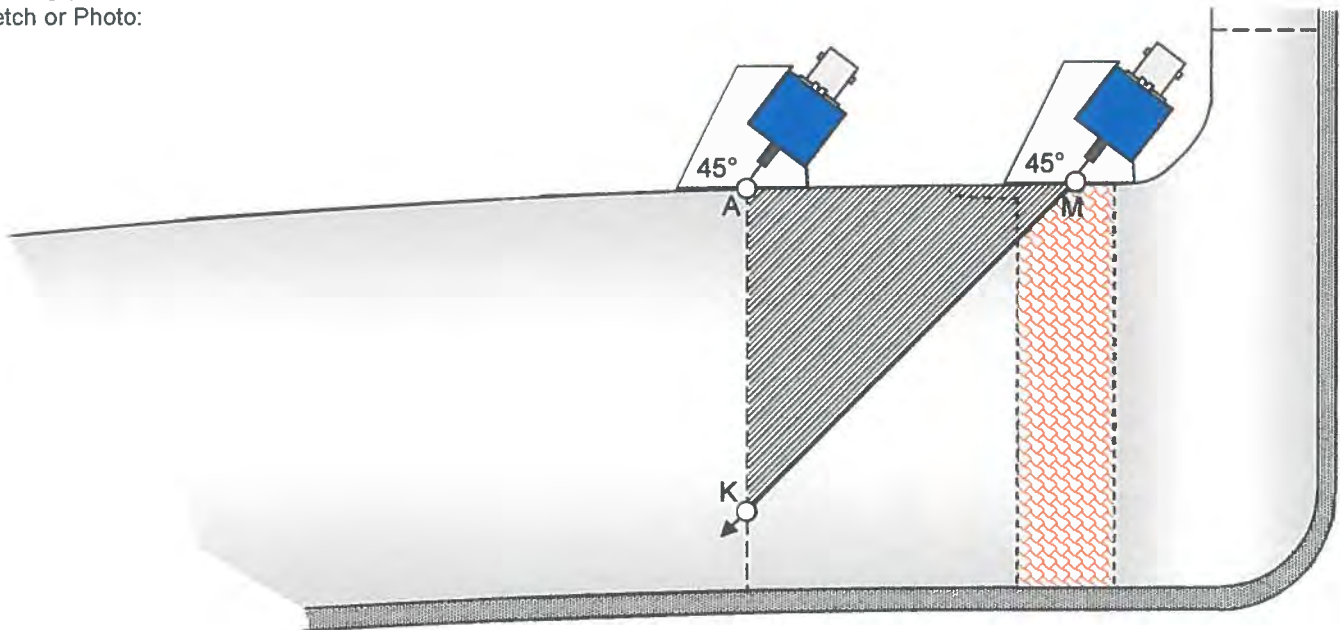
LTP: 103100

Sketch: 3

Scan: 45°↓

Scale: 50%

Sketch or Photo:



- Exam Area = 26.86 in²
- Examined: AMK
- $(3.4 \times 3.4)/2 = 5.78 \text{ in}^2$
- $5.78 / 26.86 = \underline{21.52\%}$

Supplemental Report

Report No.: CC13-IU-027

Page: 5 of 8

Summary No.: 103100

Examiner: TUCKER, DAVID K *DKT* Level: II PDI Reviewer: CROTHERS, SIMON *SC* Date: 3/3/13

Examiner: N/A Level: N/A Site Review: JONES, RUSSEL E. *Tim O'Brien 3-4-13* Date: 3-4-13

Other: N/A Level: N/A ANII Review: Joshua Connors 'L Date: 3.4.13

Comments:

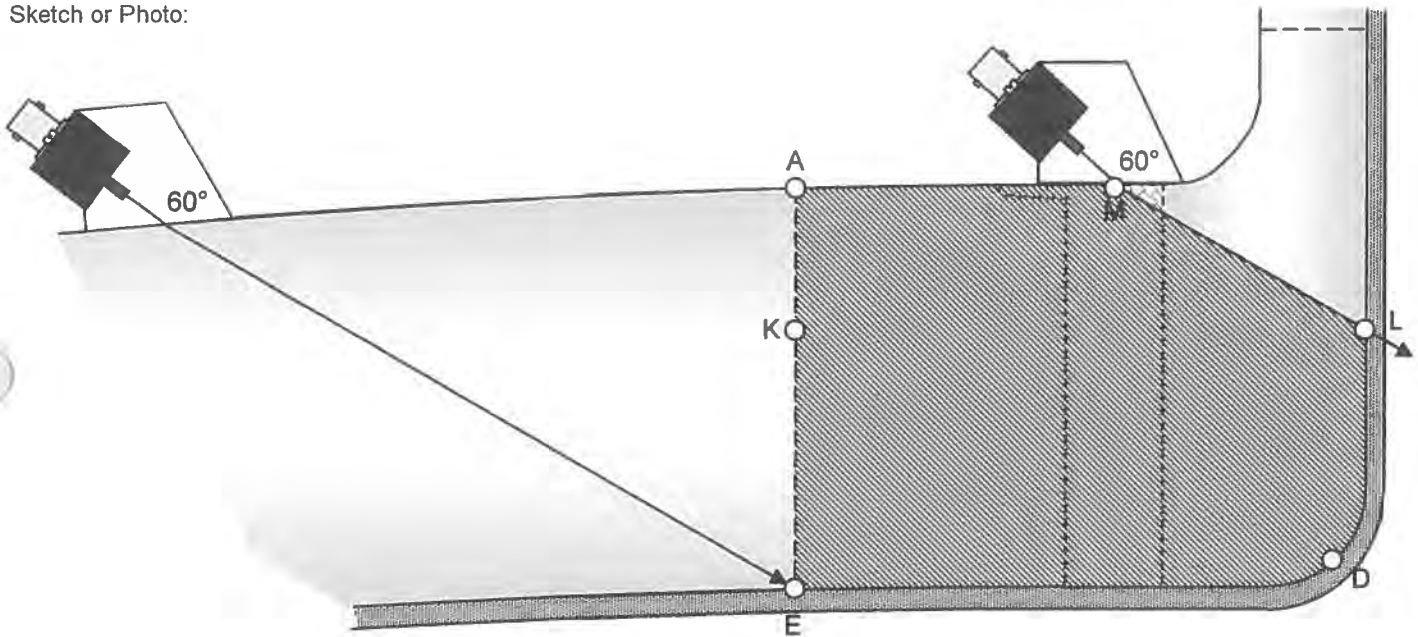
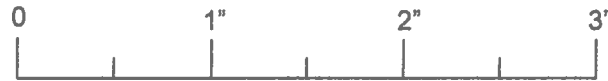
LTP: 103100

Sketch: 4

Scan: 60°↑

Scale: 50%

Sketch or Photo:



- Exam Area = 26.86 in²
- Examined: AMLK + KLDE
- $1.5(1.65 + 5.9)/2 + (5.9 \times 2.7) = 21.59 \text{ in}^2$
- $21.59 / 26.86 = \underline{80.38\%}$

Supplemental Report

Report No.: CC13-IU-027

Page: 6 of 8

Summary No.: 103100

Examiner: TUCKER, DAVID K *DKT* Level: II PDI

Reviewer: CROTHERS, SIMON *SC*

Date: 3/3/13

Examiner: N/A Level: N/A

Site Review: JONES, RUSSEL E. *TRD*

Date: 3-4-13

Other: N/A Level: N/A

ANII Review: Josua Conner

Date: 3.4.13

Comments:

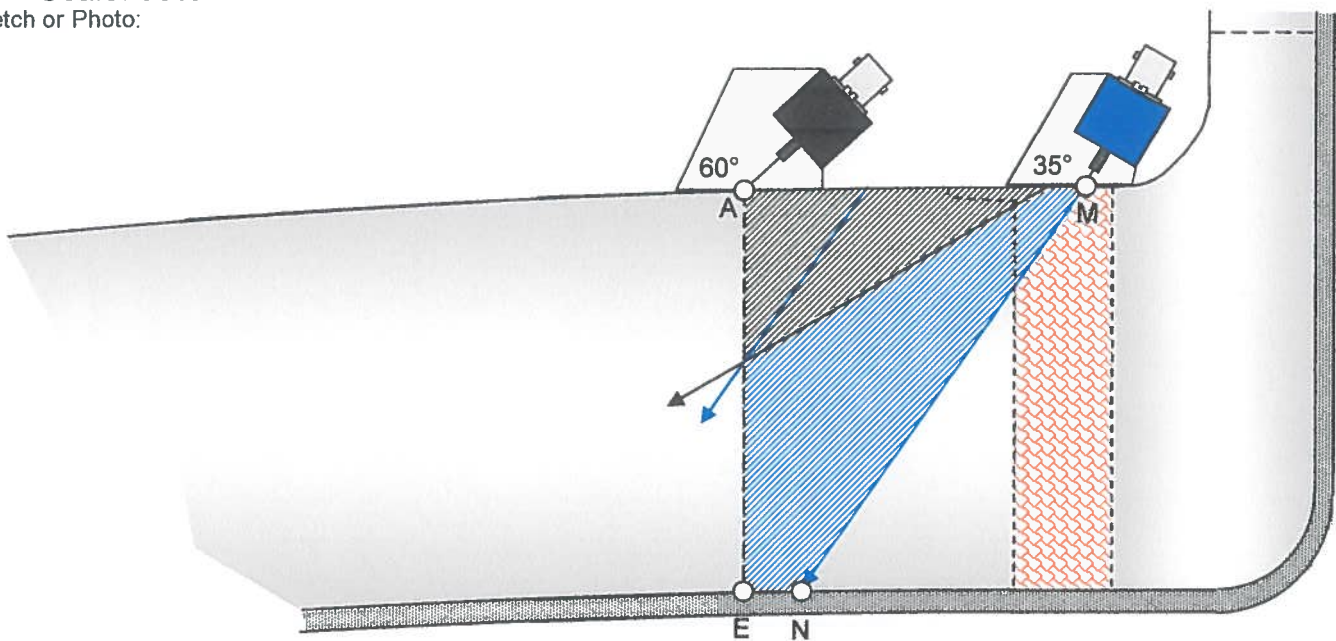
LTP: 103100

Sketch: 5

Scan: 60°↓ / 35°↓

Scale: 50%

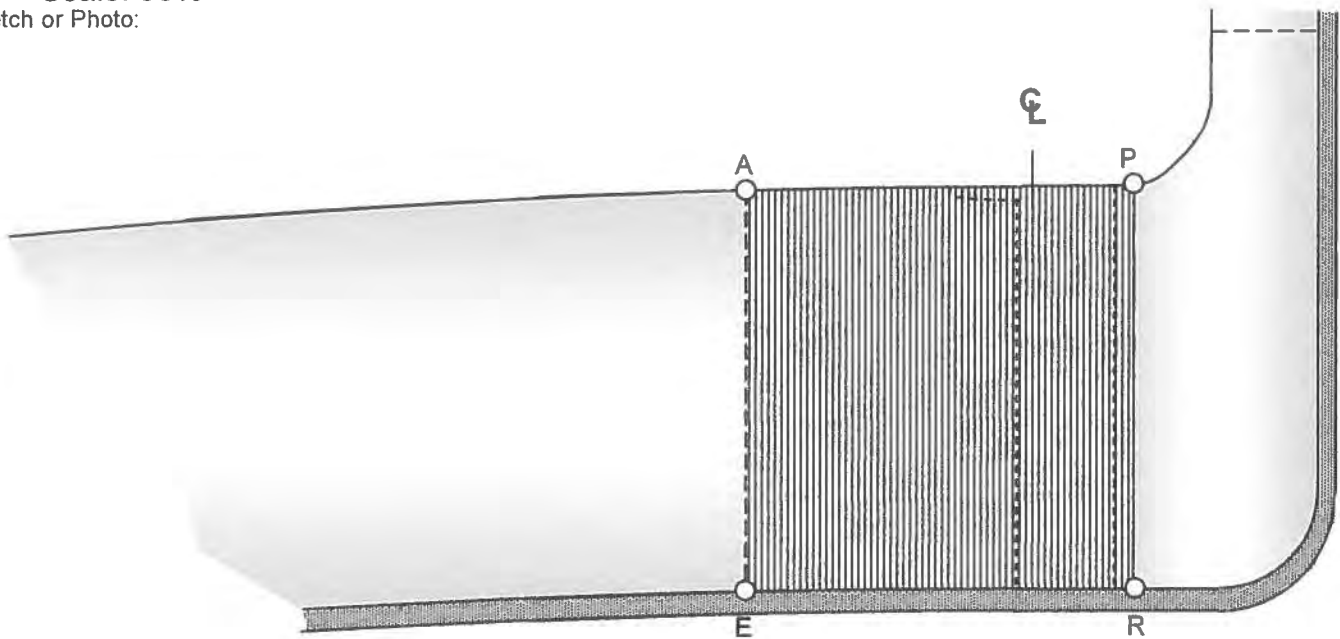
Sketch or Photo:



- Exam Area = 26.86 in²
- Examined: AMNE
- $4.2(3.5 + 0.6)/2 = 8.61$ in²
- $8.61 / 26.86 = \underline{32.06\%}$

Page: 7 of 8

Other: N/A Level: N/A ANII Review: Jessica Corbin ic Date: 3.4.13



- Attachment 3 Page 41 of 142

Supplemental Report

Report No.: **CC13-IU-027**

Page: **8** of **8**

Summary No.: **103100**

Examiner: **TUCKER, DAVID K** *DKT* Level: **II PDI** Reviewer: **CROTHERS, SIMON** *SC* Date: **3/3/13**
 Examiner: **N/A** Level: **N/A** Site Review: **JONES, RUSSEL E.** *Tim Bluff 3-4-13* Date: **3-4-13**
 Other: **N/A** Level: **N/A** ANII Review: **Justin Carson** *IL* Date: **3-4-13**

Comments:

ASME Code Coverage Calculation

Component Information	Beam Directions
LTP: 103100 Sketch or Photo of Component: 16-405A Exam Area: 26.86 in ² Exam Length: 22"	↑ = Toward Nz ↓ = Away from Nz → = CW ← = CCW

Cov. Sketch	Beam Angle & Direction	Area Examined	Exam Area	Length Examined	Exam Length	Percent Coverage
2	45°↑	(21.40 /	26.86) x (	22.0 /	22.0) x 100 =	79.67%
3	45°↓	(5.78 /	26.86) x (	22.0 /	22.0) x 100 =	21.52%
4	60°↑	(21.59 /	26.86) x (	22.0 /	22.0) x 100 =	80.38%
5	60°↓ / 35°↓	(8.61 /	26.86) x (	22.0 /	22.0) x 100 =	32.06%
6	45°→	(16.80 /	26.86) x (	22.0 /	22.0) x 100 =	62.55%
6	45°←	(16.80 /	26.86) x (	22.0 /	22.0) x 100 =	62.55%
6	60°→	(16.80 /	26.86) x (	22.0 /	22.0) x 100 =	62.55%
6	60°←	(16.80 /	26.86) x (	22.0 /	22.0) x 100 =	62.55%
		( / ~	) x (	/ ~	) x 100 =	~
		( / ~	) x (	/ ~	) x 100 =	~
		( / ~	) x (	/ ~	) x 100 =	~
		( / ~	) x (	/ ~	) x 100 =	~
		( / ~	) x (	/ ~	) x 100 =	~
		( / ~	) x (	/ ~	) x 100 =	~
Total Percent:						463.83%
Code Examination Coverage (Total Percent / 8 Sound Beams):						58.0%

UT Vessel Examination

Site/Unit: CCNP / 2 Procedure: NDE-5455-CC Outage No.: 2-RFO-2013 (19)
Summary No.: 107155 Procedure Rev.: 00000 Report No.: CC13-IU-049
Workscope: ISI Work Order No.: C91513345 Page: 1 of 8

Code: ASME Section XI 2004 Ed Cat./Item: B-D/B3.130 Location: CBP-21
Drawing No.: 12010A-0015SH0001 Description: HL NOZZLE EXTENSION TO PRIMARY HEAD
System ID: 064-A
Component ID: SG-21 - W5 Size/Length: 4.9" / 149" Thickness/Diameter: 7" / 42"
Limitations: OD Geometry Start Time: 0430 Finish Time: 0536

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Machined

Lo Location: TDC Wo Location: Top of Taper Couplant: ULTRAGEL II Batch No.: 11525

Temp. Tool Mfg.: FLUKE Serial No.: 17960594 Surface Temp.: 94 °F

Cal. Report No.: CC13-ICA-105, CC13-ICA-106, CC13-ICA-107, CC13-ICA-108

Angle Used	0	45	45T	60	60T	35/35T
Scanning dB	32.6	42.4	42.4	51.0	N/A	42.2

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

Comments:

Interfering conditions exam documentation in PSI report 7811-3-5.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: No (80.2%) Reviewed Previous Data: Yes

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
TUCKER, DAVID K			<i>David K Tucker</i>	2/28/2013	CROTHERS, SIMON	<i>Simon Crothers</i>	3/10/13
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
BULL, W. KEITH			<i>W. Keith Bull</i>	2/28/2013	Tim Oldfield L-III	<i>Tim Oldfield</i>	3-12-13
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					WILLIAM J YAEGER	<i>William J. Yeager</i>	3-13-13

Supplemental Report

Report No.: CC13-IU-049

Page: 2 of 8

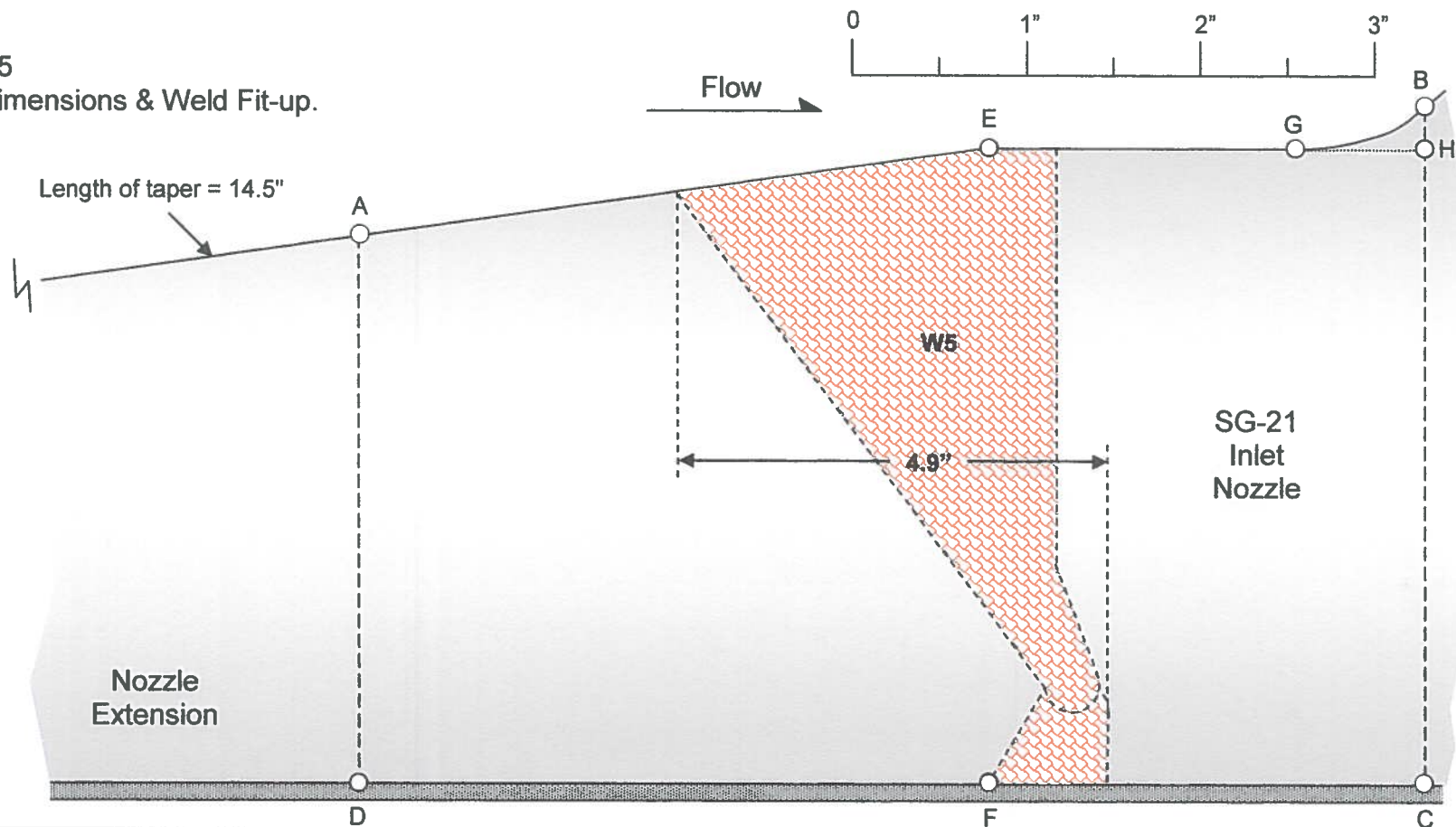
Summary No.: 107155

Sketch or Photo:

LTP: 107155

Sketch 1: Dimensions & Weld Fit-up.

Scale: 50%



Weld Width:	4.9"
Thickness (excluding clad):	7.3"
Weld Length:	149"
Exam Area:	85.8 in ²

Exam Area

- ABCD
- AEFD + EHCf + GHB
- $7.2(6.3 + 7.3)/2 + (7.3 \times 5.0) + (1.5 \times 0.5)/2 = 85.8 \text{ in}^2$

Weld dimensions and fit up per Dwg: 12010A-0015SH0001.
OD contour & thickness readings taken on component.

Supplemental Report

Report No.: CC13-IU-049

Page: 3 of 8

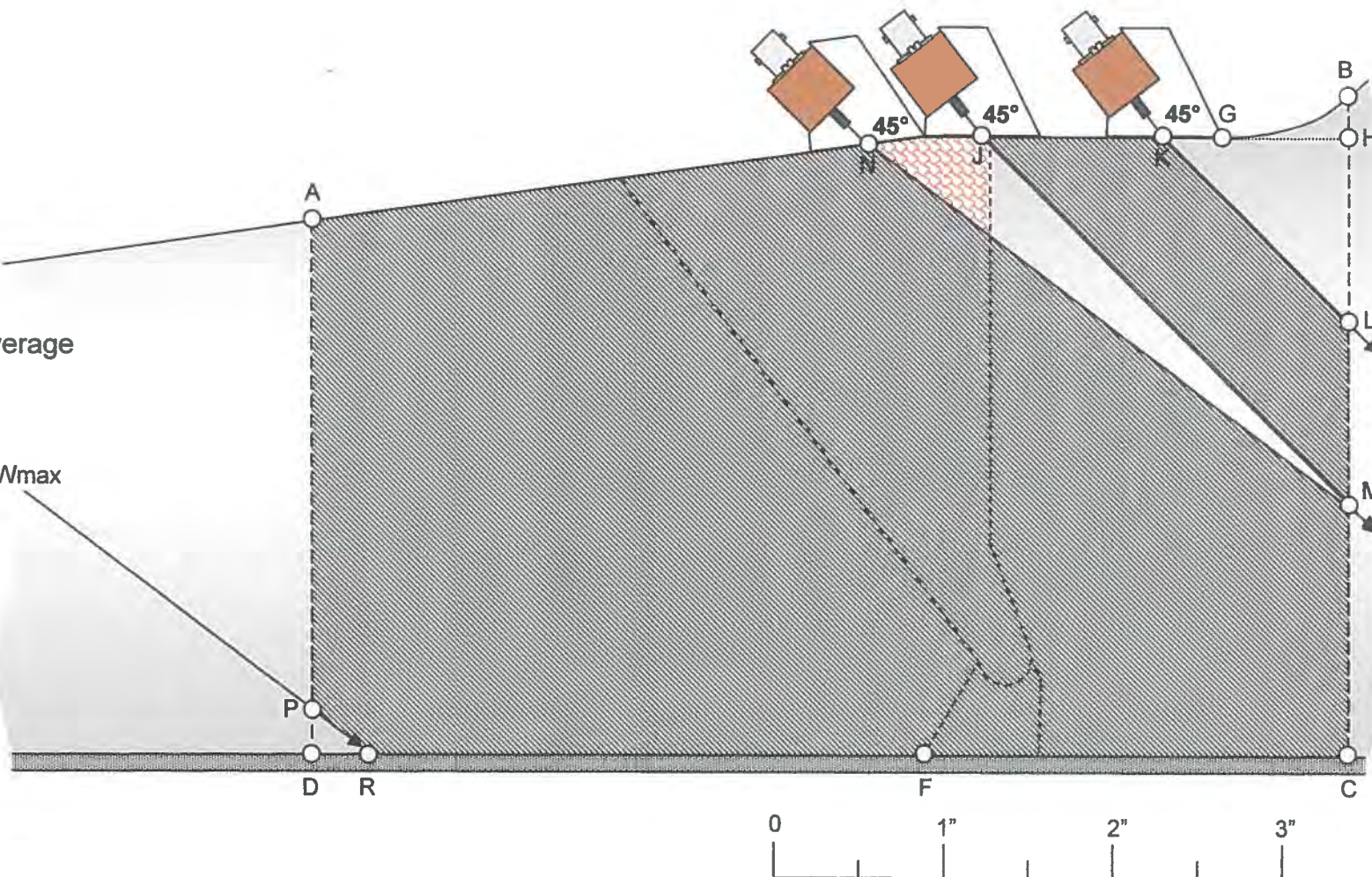
Summary No.: 107155

Sketch or Photo:

LTP: 107155
Sketch 2
Scan: 45°↑
Scale: 50%

 45°↑ Coverage

Wmax



Exam Area = 85.8 in²

Examined 85.8 – DRP – NJM – KHL – GHB

Examined 85.8 – (0.7 x 0.5)/2 – (7.1 x 0.9)/2 – (2.2 x 2.2)/2 – (1.5 x 0.5)/2 = 79.6 in²

Supplemental Report

Report No.: CC13-IU-049

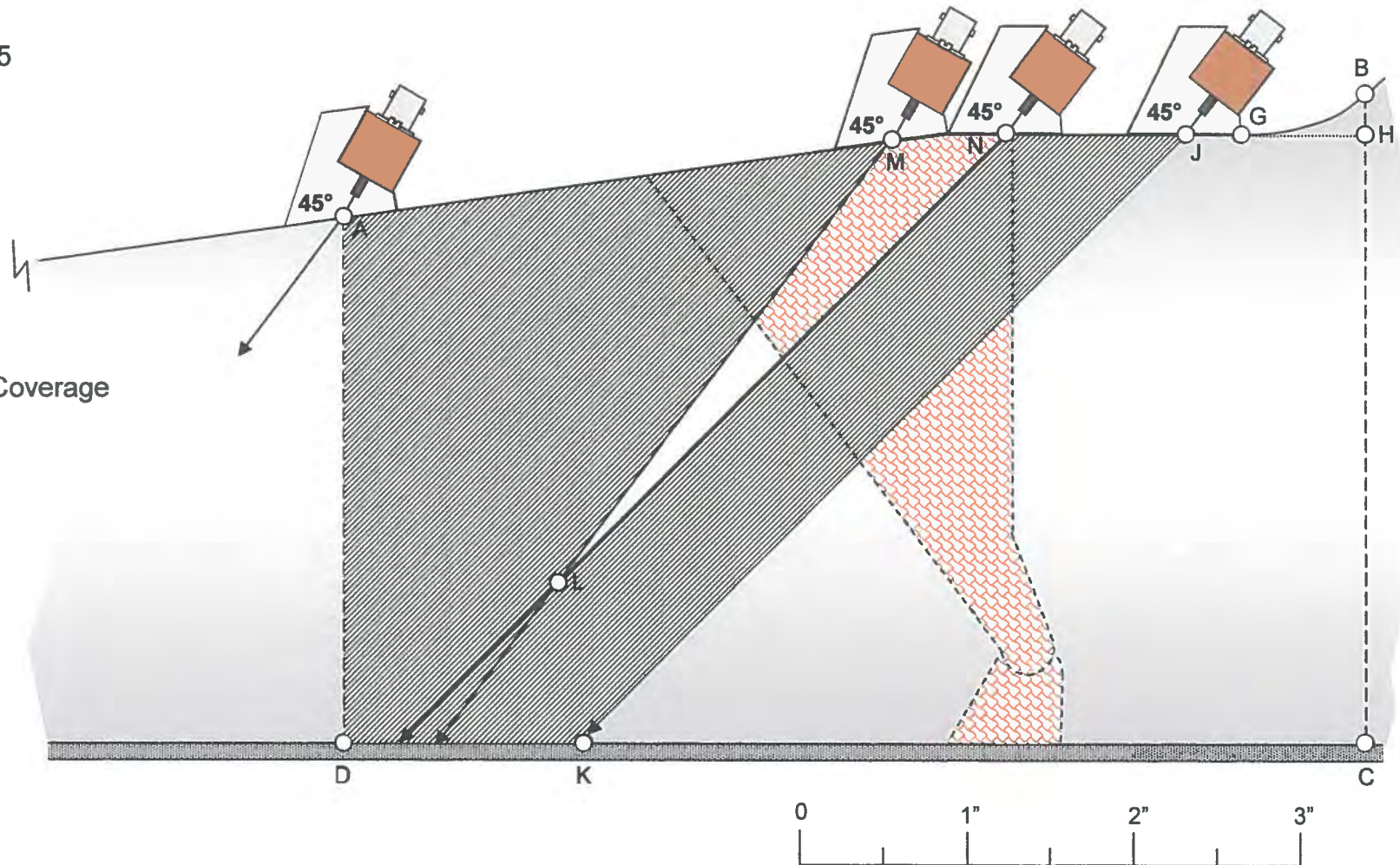
Page: 4 of 8

Summary No.: 107155

Sketch or Photo:

LTP: 107155
Sketch 3
Scan: 45°↓
Scale: 50%

 45°↓ Coverage



Exam Area = 85.8 in²

Examined 85.8 – MNL - HCKJ - GHB

Examined 85.8 – (7.6 x 0.9)/2 - 7.3(9.4 + 2.2)/2 - (1.5 x 0.5)/2 = 39.7 in²

Supplemental Report

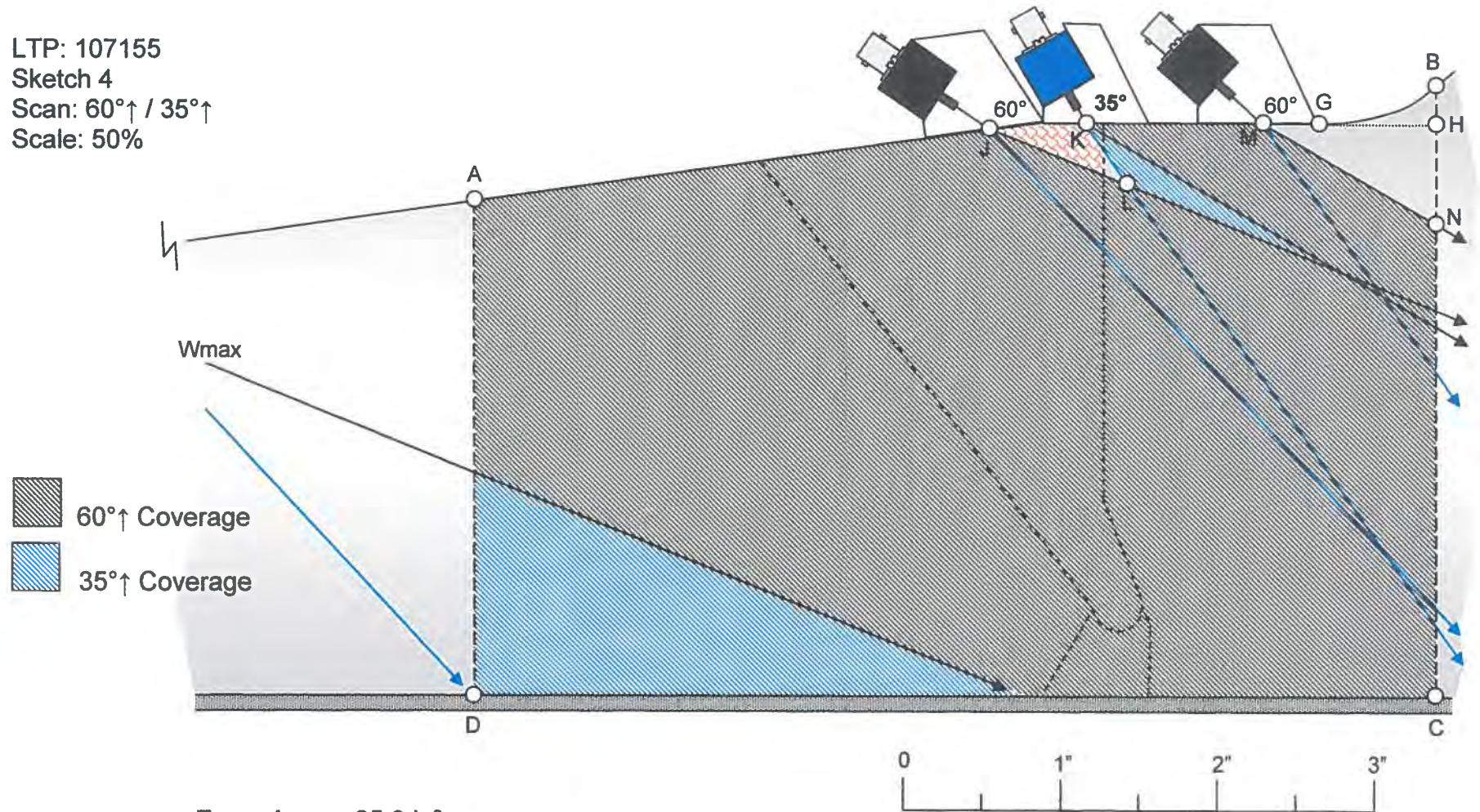
Report No.: CC13-IU-049

Page: 5 of 8

Summary No. 107155

Sketch or Photo:

LTP: 107155
Sketch 4
Scan: 60°↑ / 35°↑
Scale: 50%



Exam Area = 85.8 in²

Examined 85.8 - JKL - MHN - GHB

Examined 85.8 - $(1.8 \times 0.5)/2 - (2.2 \times 1.3)/2 - (1.5 \times 0.5)/2 = 83.5 \text{ in}^2$

Supplemental Report

Report No.: CC13-IU-049

Page: 6 of 8

Summary No.: 107155



Sketch or Photo:

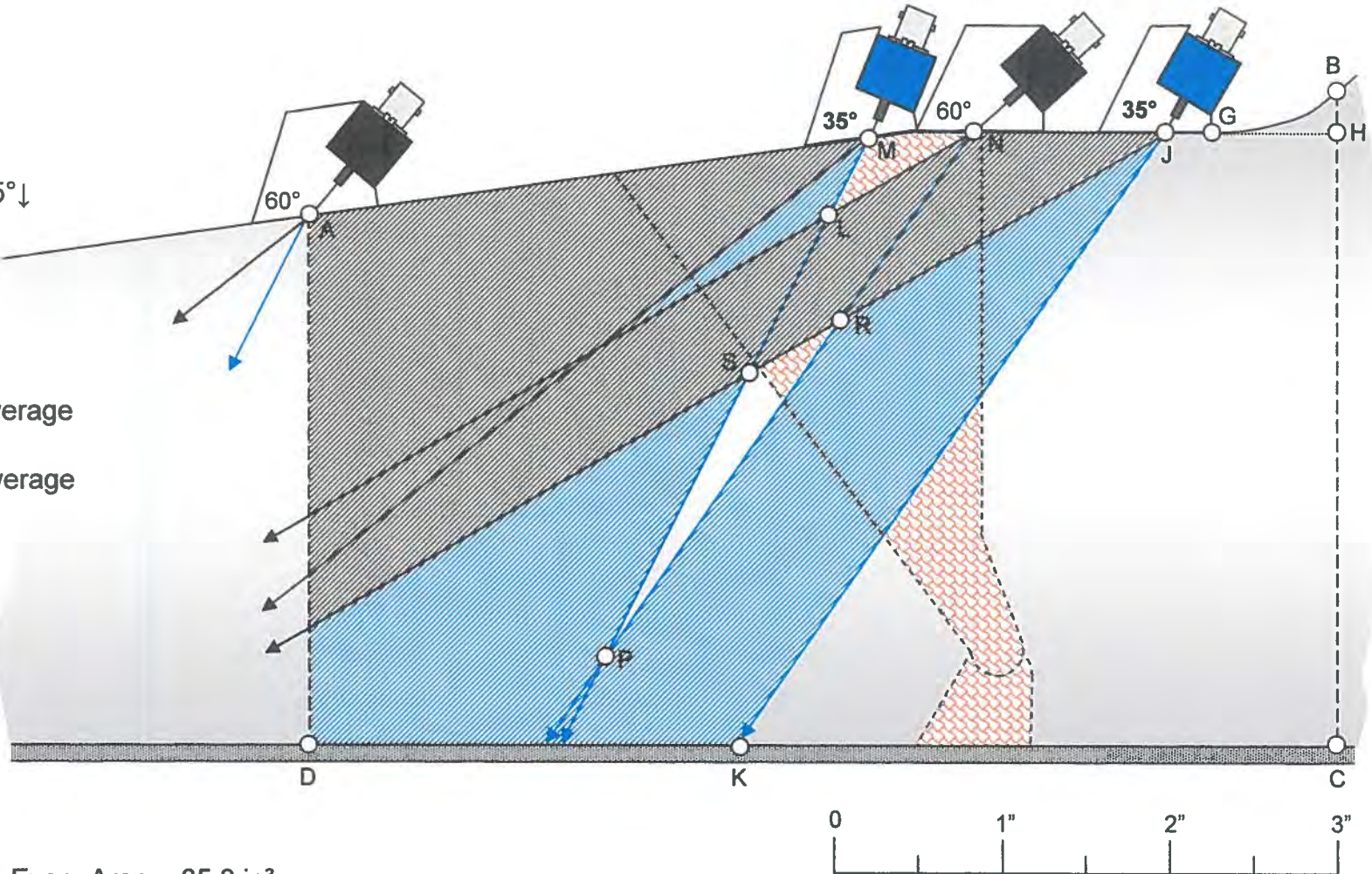
LTP: 107155

Sketch 5

Scan: 60°↓ / 35°↓

Scale: 50%

 60°↓ Coverage
 35°↓ Coverage



Exam Area = 85.8 in²

Examined 85.8 - HCKJ - GHB - MNL - PRS

Examined 85.8 - $7.3(7.1 + 2.1)/2 - (1.5 \times 0.5)/2 - (2.0 \times 0.6)/2 - (4.9 \times 0.5)/2 = 50.0 \text{ in}^2$

Supplemental Report

Report No.: CC13-IU-049

Page: 8 of 8

Summary No.: 107155

Examiner: TUCKER, DAVID K *DT* Level: II PDI Reviewer: CROTHERS, SIMON *SC* Date: 3/10/13
 Examiner: BULL, W. KEITH *KB* Level: II PDI Site Review: Robert L. III Date: 3-12-13
 Other: N/A Level: N/A ANII Review: William J. Yung Date: 3-13-13

Comments:

ASME Code Coverage Calculation

Component Information	Beam Directions
LTP: 107155 Component: SG-21 W5 Exam Area: 85.8 in ² Exam Length: 149"	↑ = With Flow ↓ = Against Flow → = CW ← = CCW

Cov.	Beam Angle	Area	Exam	Length	Exam	Percent
Sketch	& Direction	Examined	Area	Examined	Length	Coverage
2	45°↑	(79.6 /	85.8) x (	149.0 /	149.0) x 100 =	92.77%
3	45°↓	(39.7 /	85.8) x (	149.0 /	149.0) x 100 =	46.27%
4	60°↑ / 35°↑	(83.5 /	85.8) x (	149.0 /	149.0) x 100 =	97.32%
5	60°↓ / 35°↓	(50.0 /	85.8) x (	149.0 /	149.0) x 100 =	58.28%
6	45°→	(74.5 /	85.8) x (	149.0 /	149.0) x 100 =	86.83%
6	45°←	(74.5 /	85.8) x (	149.0 /	149.0) x 100 =	86.83%
6	60°→	(74.5 /	85.8) x (	149.0 /	149.0) x 100 =	86.83%
6	60°←	(74.5 /	85.8) x (	149.0 /	149.0) x 100 =	86.83%
		( / ~	) x ( / ~	) x 100 =		~
Total Percent:						641.96%
Code Examination Coverage (Total Percent / 8 Sound Beams):						80.2%

UT Vessel Examination

Site/Unit: CCNP / 2 Procedure: NDE-5455-CC Outage No.: 2-RFO-2013 (19)
Summary No.: 108135 Procedure Rev.: 00000 Report No.: CC13-IU-050
Workscope: ISI Work Order No.: C91513345 Page: 1 of 8

Code: ASME Section XI 2004 Ed Cat./Item: B-D/B3.130 Location: CPB-21/SG
Drawing No.: 12010-0015Sh0001 Description: PRIMARY HEAD TO CL 'A' NOZZLE EXTENSION
System ID: 064-A
Component ID: SG-21 - W6 Size/Length: 3.2" / 104" Thickness/Diameter: 5" / 30"
Limitations: OD Geometry Start Time: 0312 Finish Time: 0418

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Machined
Lo Location: TDC Wo Location: Top of Taper Couplant: ULTRAGEL II Batch No.: 11525
Temp. Tool Mfg.: FLUKE Serial No.: 17960594 Surface Temp.: 94 °F

Cal. Report No.: CC13-ICA-109, CC13-ICA-110, CC13-ICA-111, CC13-ICA-112

Angle Used	0	45	45T	60	60T	35/35T
Scanning dB	31.9	44.6	44.6	49.9	N/A	42.3

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

Comments:

Interfering conditions exam documentation in PSI report 7811-3-6.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: No (73.8%) Reviewed Previous Data: Yes

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
TUCKER, DAVID K			<i>David K Tucker</i>	2/28/2013	SIMON CROTHERS L-III	<i>Simon Crothers</i>	3/9/13
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
BULL, W. KEITH			<i>W. Keith Bull</i>	2/28/2013	Tim Oldfield L-III	<i>Tim Oldfield</i>	3-12-13
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					WILLIAM J. VAEGER	<i>William J. Vaeger</i>	3-12-13

Supplemental Report

Report No.: CC13-IU-050

Page: 2 of 8

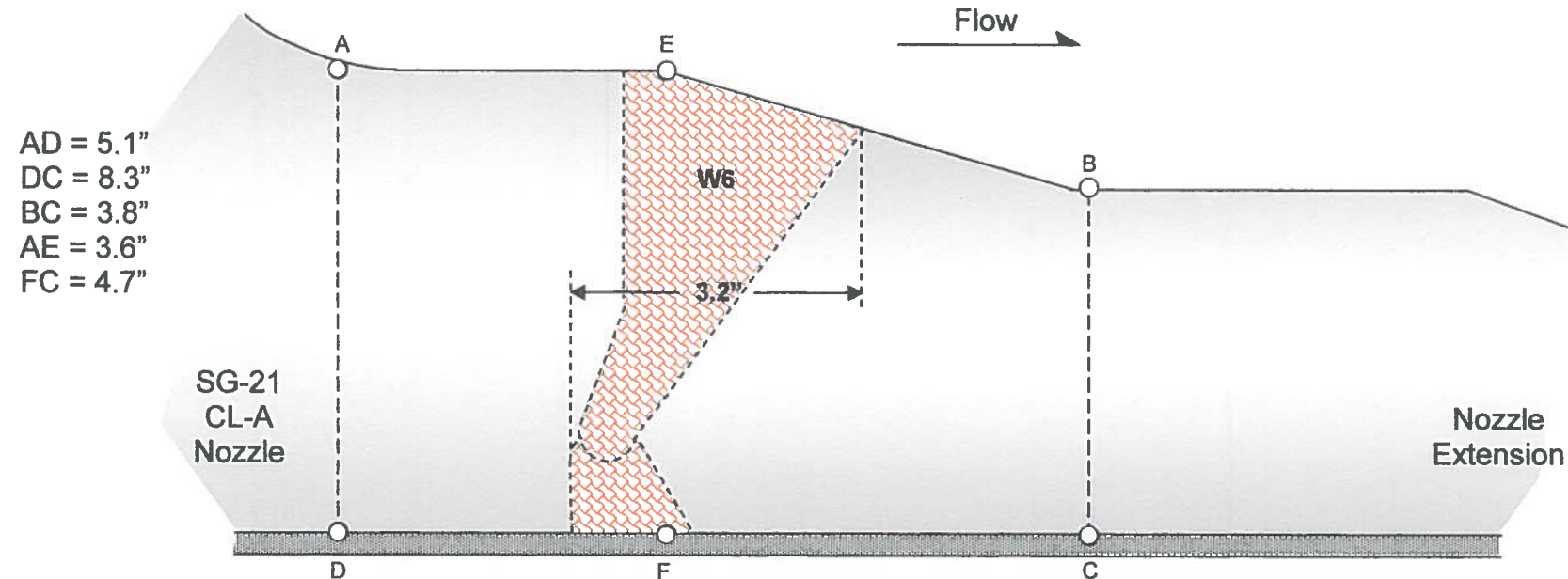
Summary No.: 108135

Sketch or Photo:

LTP: 108135

Sketch 1: Dimensions & Weld Fit-up.

Scale: 50%



Weld Width:	3.2"
Thickness (excluding clad):	5.1"
Weld Length:	104"
Exam Area:	39.3 in ²

Exam Area

- ABCD
- AEFD + EBCF
- $(3.6 \times 5.1) + 4.7(5.1 + 3.8)/2 = \underline{39.3 \text{ in}^2}$

Weld dimensions and fit up per Dwg: 12010A-0015SH0001.
OD contour & thickness readings taken on component.

Supplemental Report

Report No.: CC13-IU-050

Page: 3 of 8

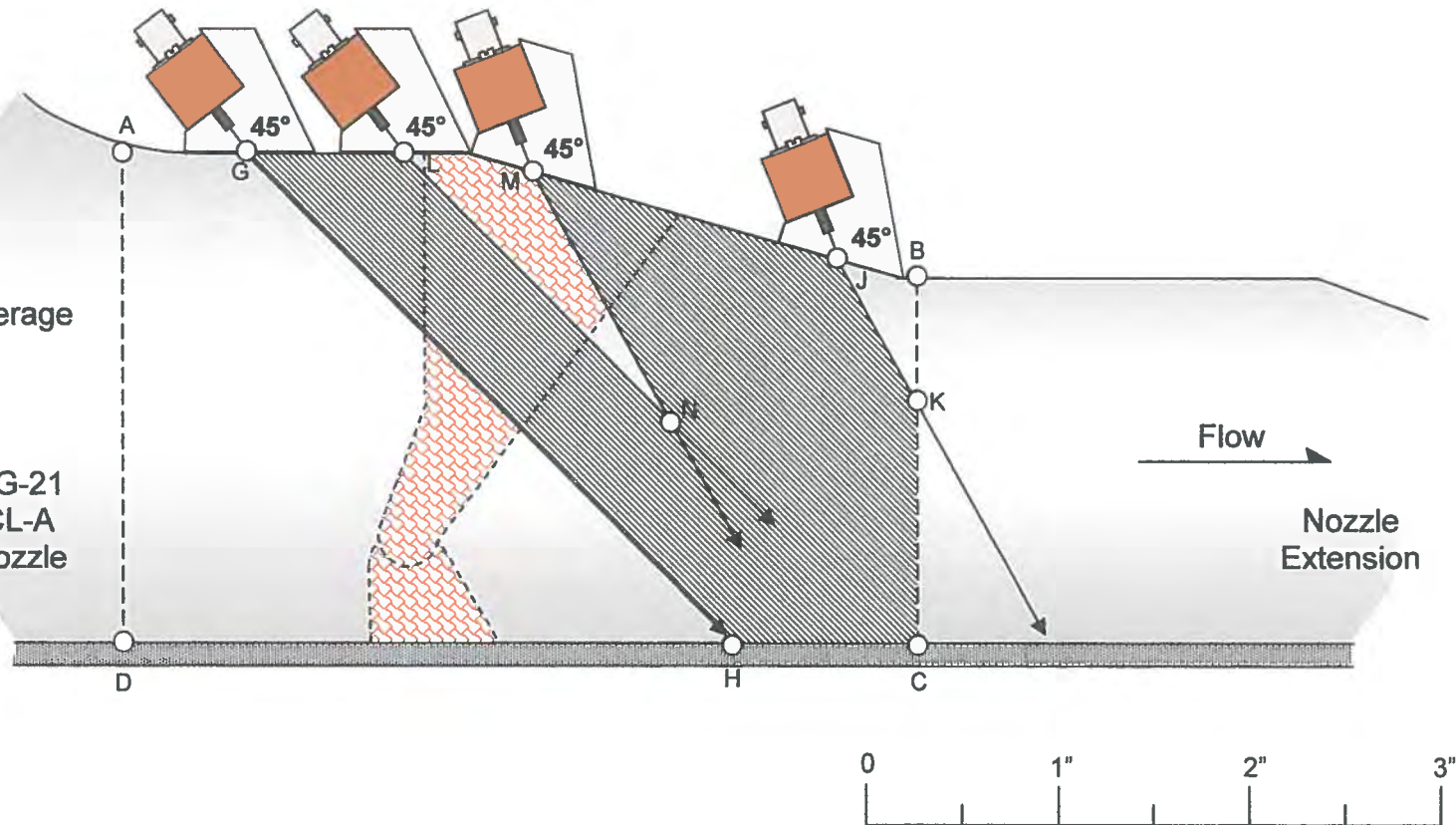
Summary No.: 108135

Sketch or Photo:

LTP: 108135
Sketch 2
Scan: 45°↑
Scale: 50%

 45°↑ Coverage

SG-21
CL-A
Nozzle



Exam Area = 39.3 in²

Examined 39.3 – ADHG – JBK – LMN

Examined 39.3 – $5.1(6.4 + 1.3)/2 - (1.8 \times 0.6)/2 - (4.0 \times 0.8)/2 = 17.5 \text{ in}^2$

Supplemental Report

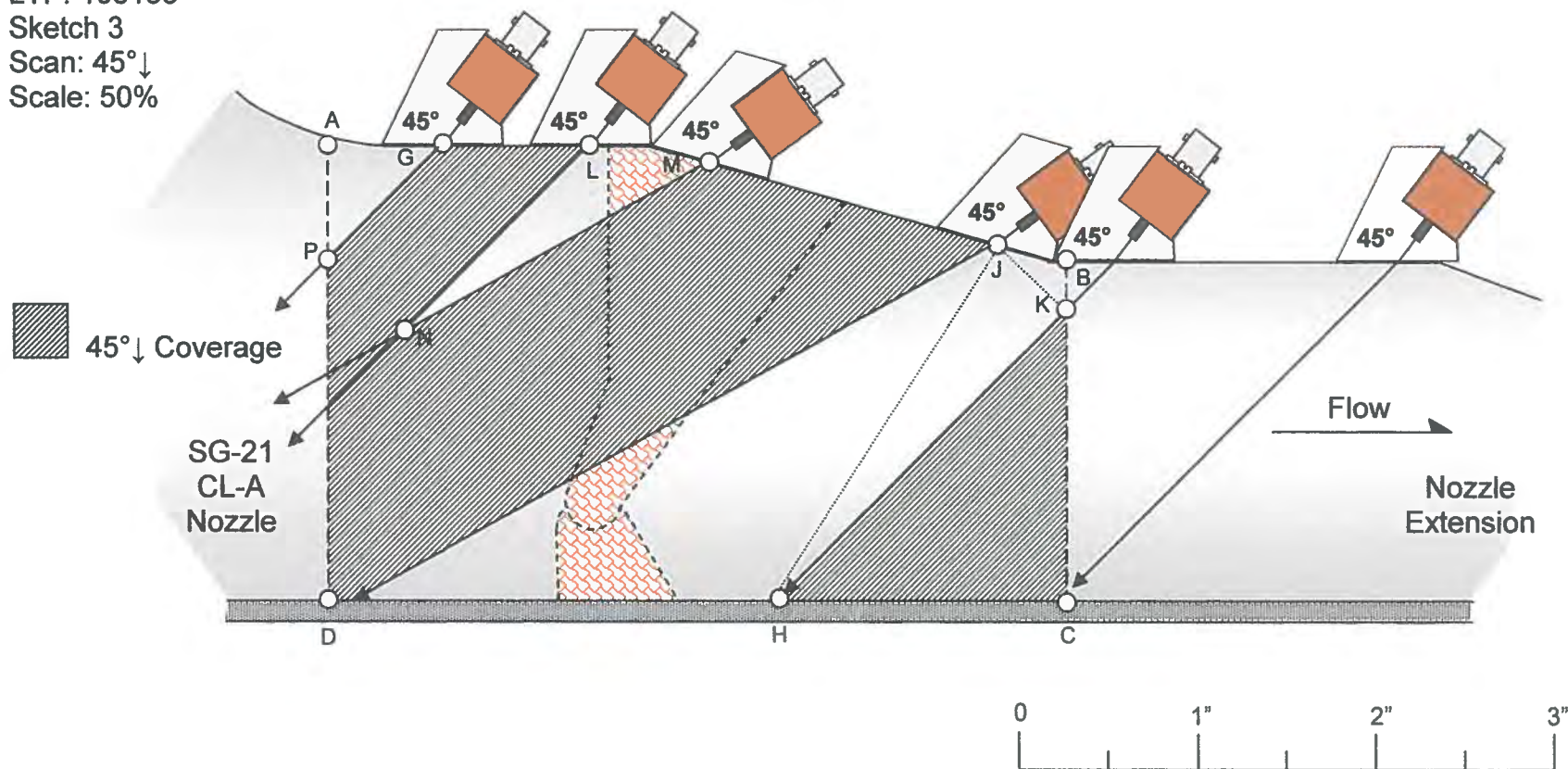
Report No.: CC13-IU-050

Page: 4 of 8

Summary No.: 108135

Sketch or Photo:

LTP: 108135
Sketch 3
Scan: 45°
Scale: 50%



Exam Area = 39.3 in²

Examined 39.3 – AGP - LMN - DJH - JHK - JKB

Examined 39.3 – $(1.3 \times 1.3)/2 - (3.9 \times 0.8)/2 - (8.5 \times 2.3)/2 - (4.6 \times 1.1)/2 - (1.1 \times 0.4)/2 = 24.4 \text{ in}^2$

Supplemental Report

Report No.: CC13-IU-050

Page: 5 of 8

Summary No.: 108135



Sketch or Photo:

LTP: 108135

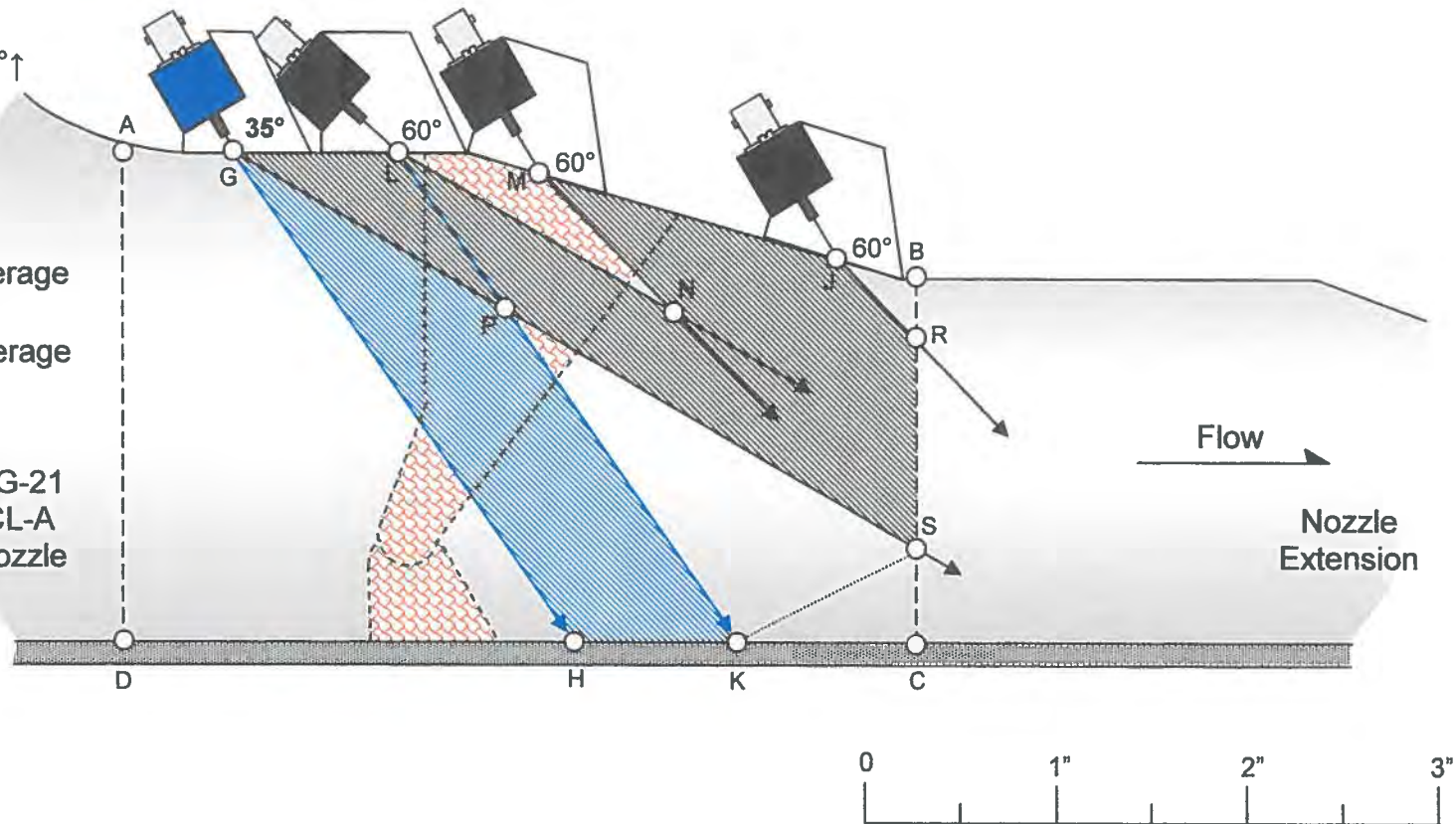
Sketch 4

Scan: 60°↑ / 35°↑

Scale: 50%

 60°↑ Coverage
 35°↑ Coverage

SG-21
CL-A
Nozzle



Exam Area = 39.3 in²

Examined 39.3 – ADHG – LMN - JRB - SPK - SKC

Examined 39.3 – $5.1(4.7 + 1.1)/2 - (3.3 \times 0.5)/2 - (1.2 \times 0.4)/2 - (5.0 \times 1.8)/2 - (1.9 \times 1.0)/2 = 18.0 \text{ in}^2$

Supplemental Report

Report No.: CC13-IU-050

Page: 6 of 8

Summary No.: 108135

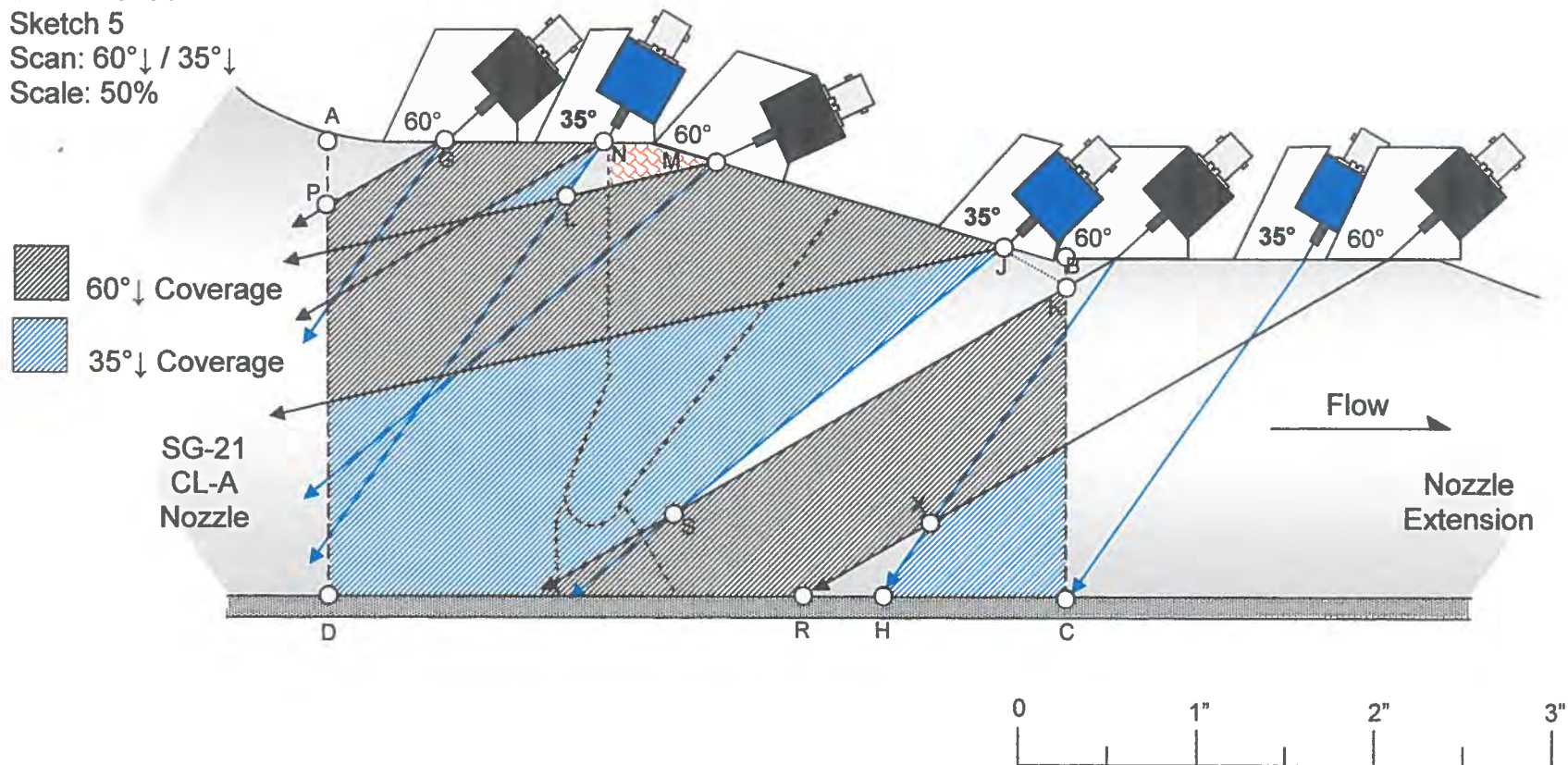
Sketch or Photo:

LTP: 108135

Sketch 5

Scan: 60°↓ / 35°↓

Scale: 50%



Exam Area = 39.3 in²

Examined 39.3 – AGP - LMN - JKS - JKB - RHX

Examined 39.3 – $(1.3 \times 0.7)/2 - (1.8 \times 0.5)/2 - (5.1 \times 0.7)/2 - (0.8 \times 0.3)/2 - (1.6 \times 0.4)/2 = 36.2$ in²

Sketch or Photo:

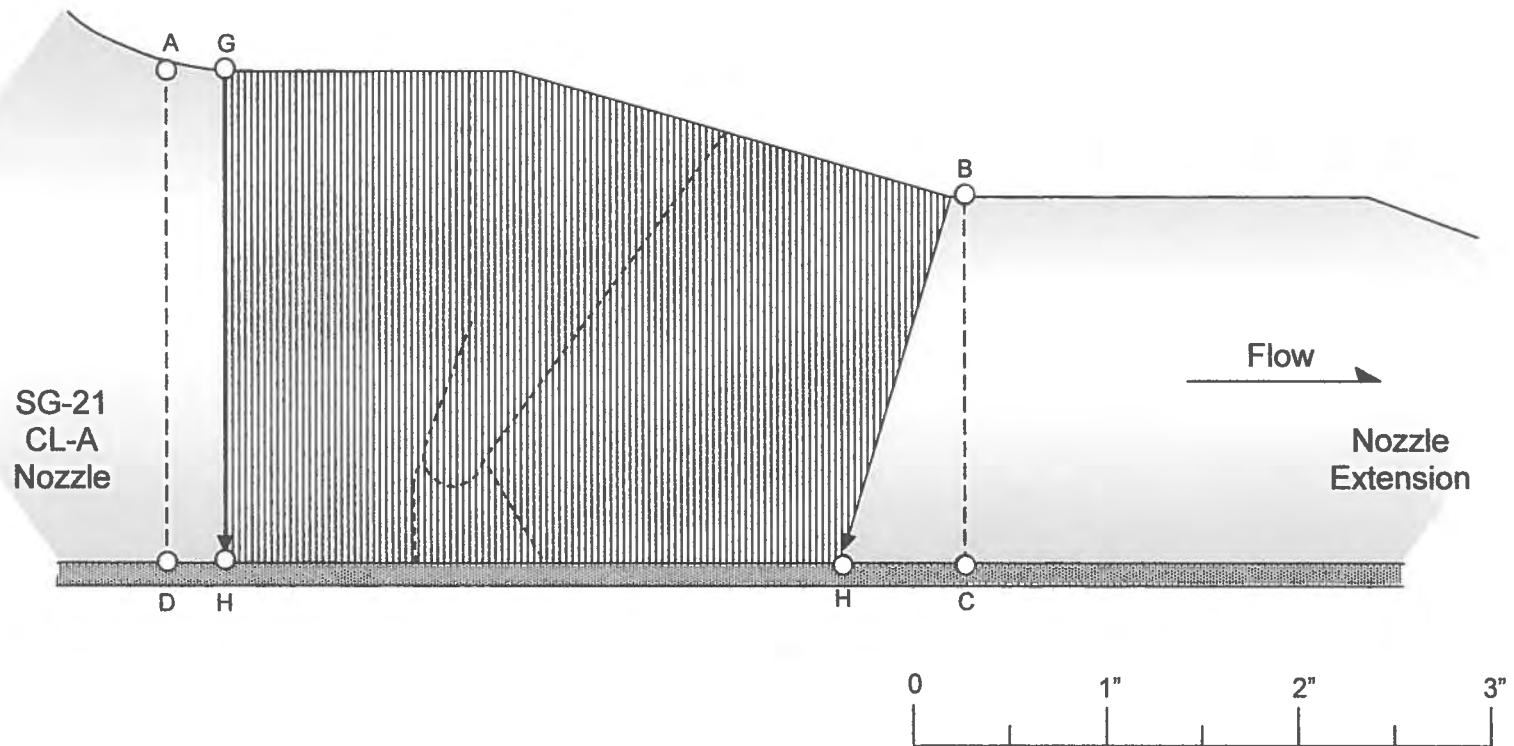
LTP: 108135

Sketch 6

Scan: 45°→ / 45°← / 60°→ / 60°← / 0° WRV

Scale: 50%

 45°→ / 45°← / 60°→ / 60°← / 0° WRV



Exam Area = 39.3 in²

Examined 39.3 – AGHD – HCB

Examined $39.3 - (5.1 \times 0.6) - (1.2 \times 3.8)/2 = 34 \text{ in}^2$

Supplemental Report

Report No.: CC13-IU-050

Page: 8 of 8

Summary No.: 108135

Sketch or Photo:

ASME Code Coverage Calculation

Component Information	Beam Directions
LTP: 108135 Component: SG-21 W6 Exam Area: 39.3 in ² Exam Length: 104"	↑ = With Flow ↓ = Against Flow → = CW ← = CCW

Cov. Sketch	Beam Angle & Direction	Area Examined	Exam Area	Length Examined	Exam Length	Percent Coverage
2	45°↑	(17.5 /	39.3)	x (104.0 /	104.0)	x 100 = 44.53%
3	45°↓	(24.4 /	39.3)	x (104.0 /	104.0)	x 100 = 62.09%
4	60°↑ / 35°↑	(18.0 /	39.3)	x (104.0 /	104.0)	x 100 = 45.80%
5	60°↓ / 35°↓	(36.2 /	39.3)	x (104.0 /	104.0)	x 100 = 92.11%
6	45°→	(34.0 /	39.3)	x (104.0 /	104.0)	x 100 = 86.51%
6	45°←	(34.0 /	39.3)	x (104.0 /	104.0)	x 100 = 86.51%
6	60°→	(34.0 /	39.3)	x (104.0 /	104.0)	x 100 = 86.51%
6	60°←	(34.0 /	39.3)	x (104.0 /	104.0)	x 100 = 86.51%
		( / ~	)	x ( / ~	)	x 100 = ~
Total Percent:						590.57%
Code Examination Coverage (Total Percent / 8 Sound Beams):						73.8%

UT Vessel Examination

Site/Unit: CCNP / 2 Procedure: NDE-5455-CC Outage No.: 2-RFO-2013 (19)
Summary No.: 110015 Procedure Rev.: 00000 Report No.: CC13-IU-052
Workscope: ISI Work Order No.: C91513283 Page: 1 of 8

Code: ASME Section XI 2004 Ed Cat./Item: B-D/B3.130 Location: 10' CTMT
Drawing No.: 12010A-0015SH0001 Description: HL NOZZLE EXTENSION TO PRIMARY HEAD
System ID: 064-A
Component ID: SG-22 - W5 Size/Length: 4.9" / 149" Thickness/Diameter: 7" / 42"
Limitations: OD Geometry Start Time: 2/28/13 2120 Finish Time: 3/1/13 0311

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Machined
Lo Location: TDC Wo Location: Top of Taper Couplant: ULTRAGEL II Batch No.: 11525
Temp. Tool Mfg.: FLUKE Serial No.: 17960594 Surface Temp.: 94 °F

Cal. Report No.: CC13-ICA-117, CC13-ICA-118, CC13-ICA-119, CC13-ICA-120

Angle Used	0	45	45T	60	60T	35/35T
Scanning dB	32.6	44.4	44.4	54.1	N/A	39.8

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

Comments:

Interfering conditions exam documented in PSI report 7811-4-5.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: No (80.2%) Reviewed Previous Data: Yes

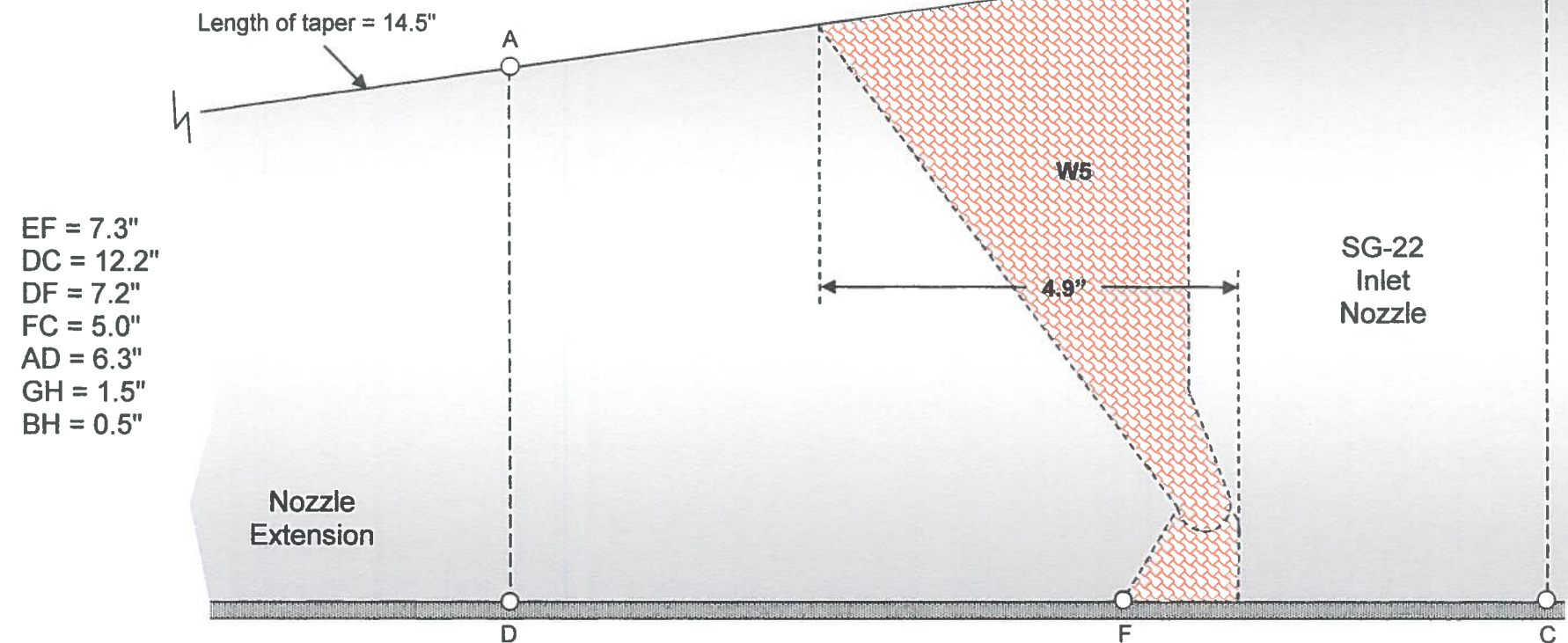
Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
TUCKER, DAVID K			<i>David K Tucker</i>	3/1/2013	SIMON CROTHERS L-III	<i>Simon Crothers</i>	3/12/13
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
BULL, W. KEITH			<i>W. Keith Bull</i>	3/1/2013	Tim Oldfield L-III	<i>Tim Oldfield</i>	3-13-13
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					WILLIAM J YAEGER	<i>William J Yeager</i>	3-13-13

Summary No.: 110015

LTP: 110015

Sketch 1: Dimensions & Weld Fit-up.

Scale: 50%



Weld Width:	4.9"
Thickness (excluding clad):	7.3"
Weld Length:	149"
Exam Area:	85.8 in ²

Exam Area

- ABCD
- AEFD + EHCF + GHB
- $7.2(6.3 + 7.3)/2 + (7.3 \times 5.0) + (1.5 \times 0.5)/2 = 85.8 \text{ in}^2$

Weld dimensions and fit up per Dwg: 12010A-0015SH0001.
OD contour & thickness readings taken on component.

Supplemental Report

Report No.: CC13-IU-052

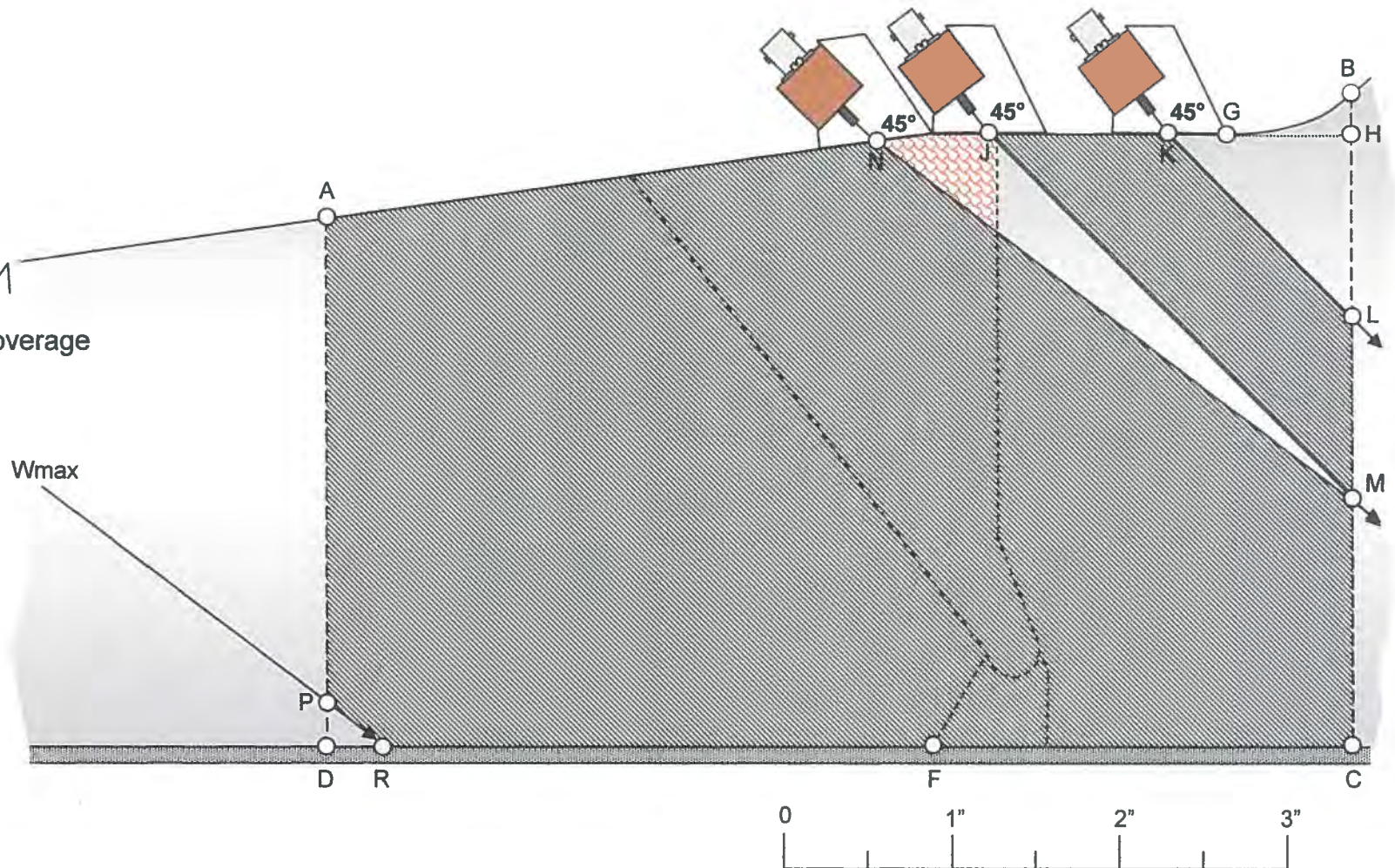
Page: 3 of 8

Summary No.: 110015

Sketch or Photo:

LTP: 110015
Sketch 2
Scan: 45°↑
Scale: 50%

 45°↑ Coverage



Exam Area = 85.8 in²

Examined 85.8 – DRP – NJM – KHL – GHB

Examined 85.8 – (0.7 x 0.5)/2 – (7.1 x 0.9)/2 – (2.2 x 2.2)/2 – (1.5 x 0.5)/2 = 79.6 in²

Supplemental Report

Report No.: CC13-IU-052

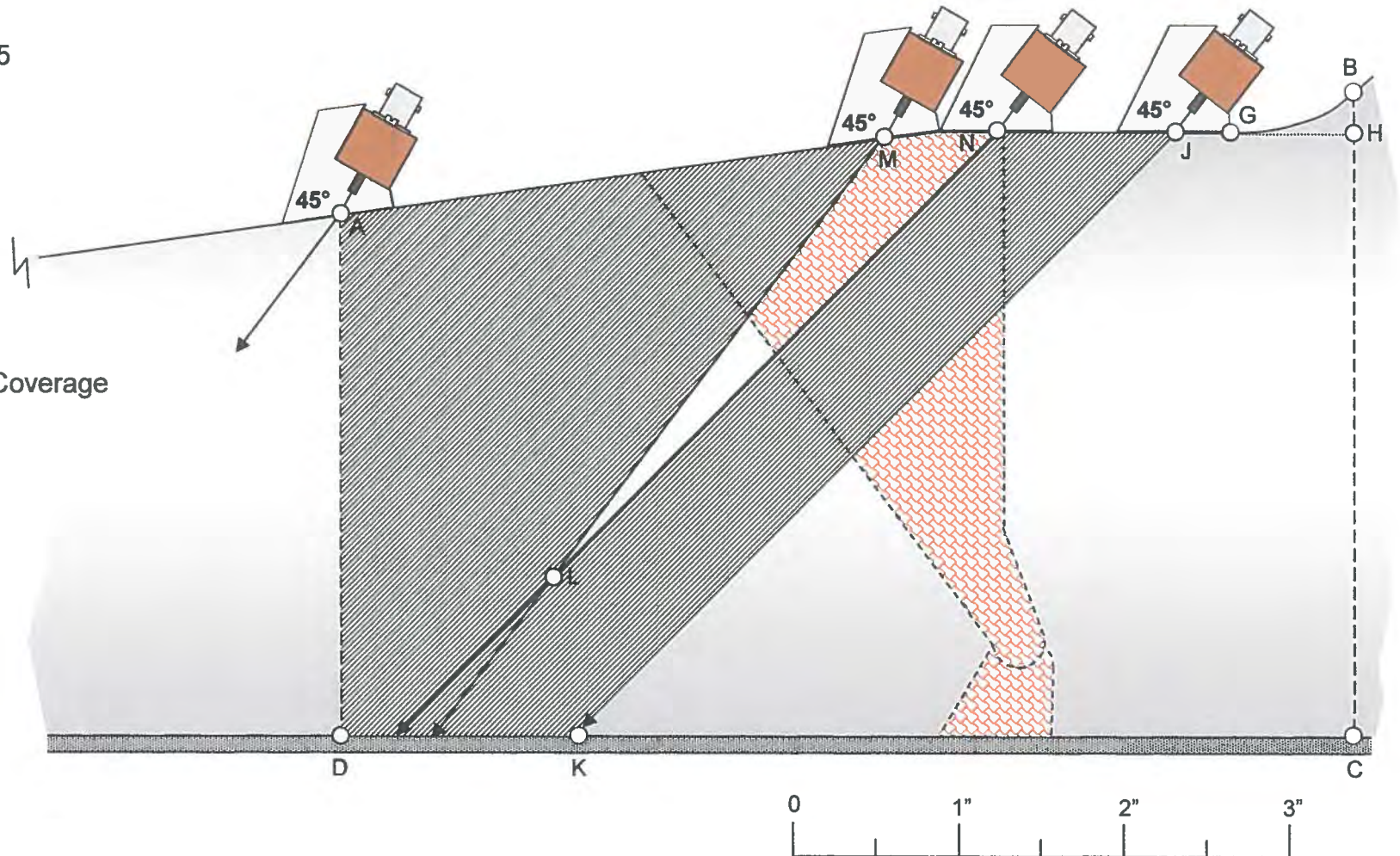
Page: 4 of 8

Summary No.: 110015

Sketch or Photo:

LTP: 110015
Sketch 3
Scan: 45°↓
Scale: 50%

 45°↓ Coverage



Exam Area = 85.8 in²

Examined 85.8 – MNL - HCKJ - GHB

Examined 85.8 – $(7.6 \times 0.9)/2 - 7.3(9.4 + 2.2)/2 - (1.5 \times 0.5)/2 = 39.7 \text{ in}^2$

Additional - Supplemental Reports

Supplemental Report

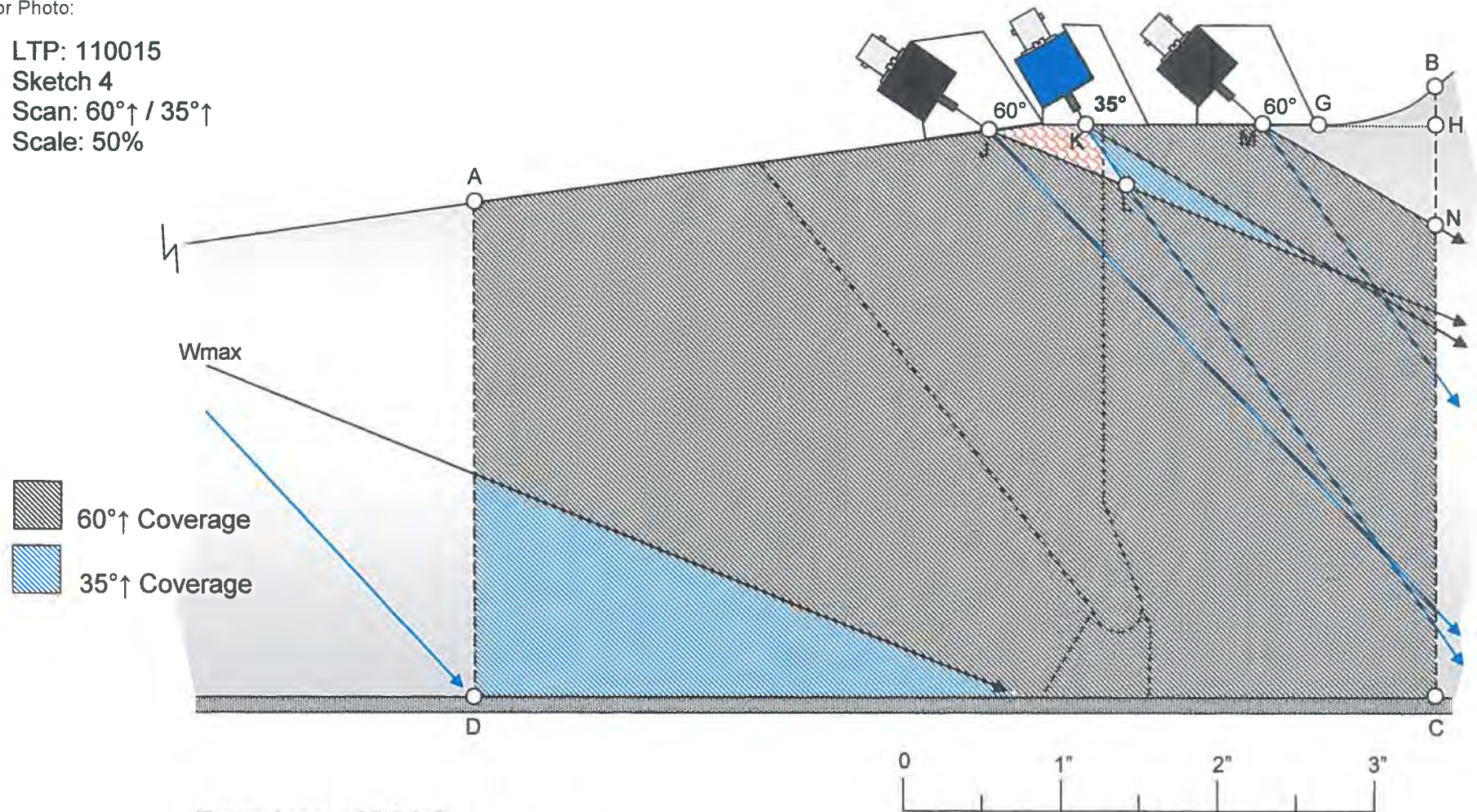
Report No.: CC13-IU-052

Page: 5 of 8

Summary No.: 110015

Sketch or Photo:

LTP: 110015
Sketch 4
Scan: 60°↑ / 35°↑
Scale: 50%



Exam Area = 85.8 in²

Examined 85.8 - JKL - MHN - GHB

Examined 85.8 - $(1.8 \times 0.5)/2 - (2.2 \times 1.3)/2 - (1.5 \times 0.5)/2 = 83.5$ in²

Supplemental Report

Report No.: CC13-IU-052

Page: 6 of 8

Summary No.: 110015

Sketch or Photo:

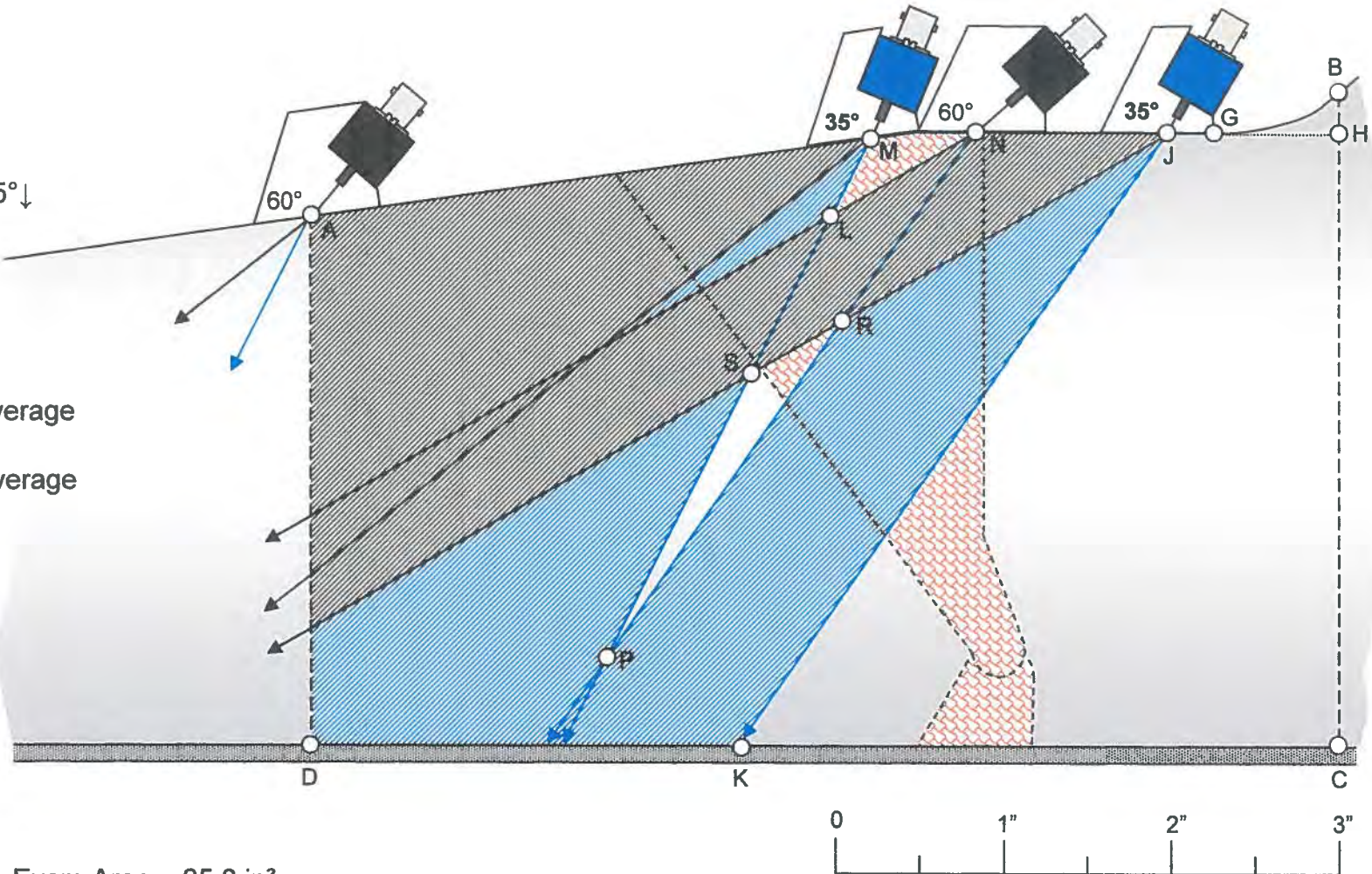
LTP: 110015

Sketch 5

Scan: 60°↓ / 35°↓

Scale: 50%

 60°↓ Coverage
 35°↓ Coverage



Exam Area = 85.8 in²

Examined 85.8 - HCKJ - GHB - MNL - PRS

Examined 85.8 - $7.3(7.1 + 2.1)/2 - (1.5 \times 0.5)/2 - (2.0 \times 0.6)/2 - (4.9 \times 0.5)/2 = 50.0 \text{ in}^2$

Supplemental Report

Report No.: CC13-IU-052

Page: 7 of 8

Summary No.: 110015

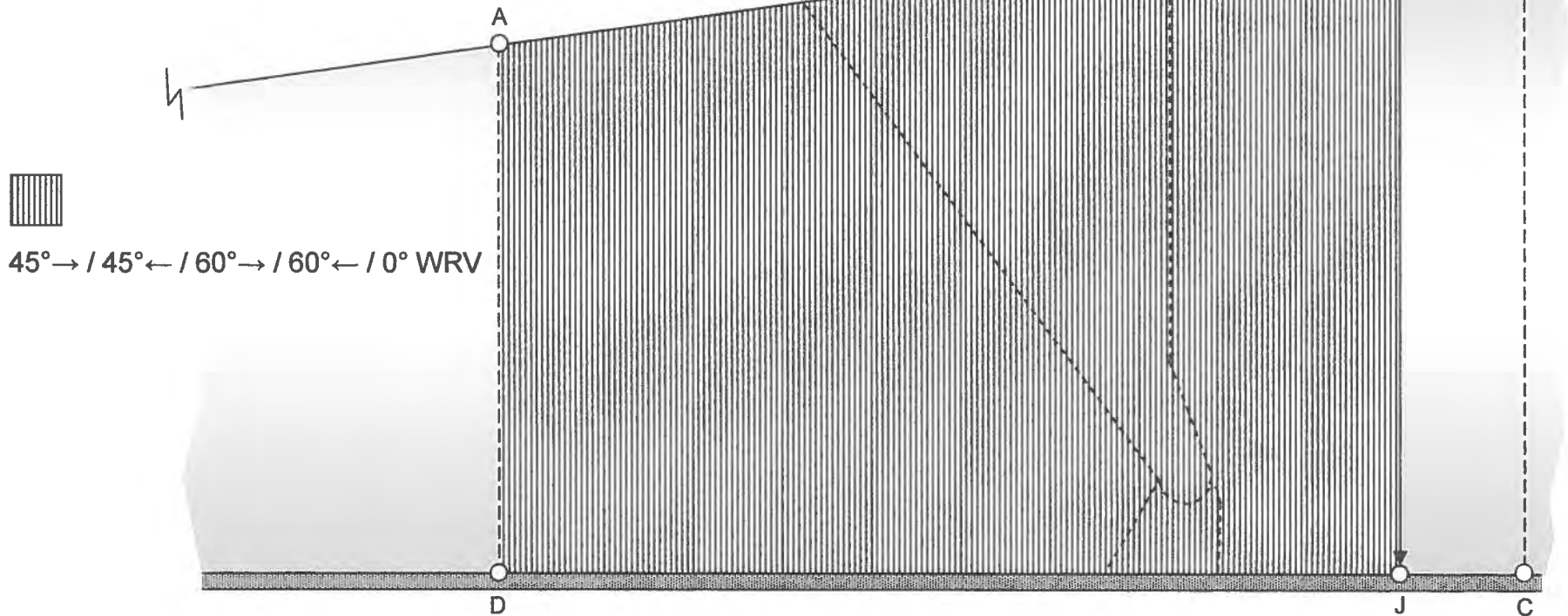
Sketch or Photo:

LTP: 110015

Sketch 6

Scan: 45°→ / 45°← / 60°→ / 60°← / 0° WRV

Scale: 50%



Exam Area = 85.8 in²

Examined 85.8 - GH CJ - GH B

Examined 85.8 - (7.3 x 1.5) - (1.5 x 0.5)/2 = 74.5 in²



Supplemental Report

Report No.: **CC13-IU-052**

Page: **8** of **8**

Summary No.: **110015**

Examiner: **TUCKER, DAVID K** *[Signature]* Level: **II PDI**

Reviewer: *[Signature]* Date: **3/12/13**

Examiner: **BULL, W. KEITH** *[Signature]* Level: **II PDI**

Site Review: *[Signature]* Date: **3-13-13**

Other: **N/A** Level: **N/A**

ANII Review: *[Signature]* Date: **3-13-13**

Comments:

ASME Code Coverage Calculation

Component Information	Beam Directions
LTP: 110015	↑ = With Flow
Component: SG-22 W5	↓ = Against Flow
Exam Area: 85.8 in ²	→ = CW
Exam Length: 149"	← = CCW

Cov. Sketch	Beam Angle & Direction	Area Examined	Exam Area	Length Examined	Exam Length	Percent Coverage
2	45°↑	(79.6 /	85.8) x (	149.0 /	149.0) x 100 =	92.77%
3	45°↓	(39.7 /	85.8) x (	149.0 /	149.0) x 100 =	46.27%
4	60°↑ / 35°↑	(83.5 /	85.8) x (	149.0 /	149.0) x 100 =	97.32%
5	60°↓ / 35°↓	(50.0 /	85.8) x (	149.0 /	149.0) x 100 =	58.28%
6	45°→	(74.5 /	85.8) x (	149.0 /	149.0) x 100 =	86.83%
6	45°←	(74.5 /	85.8) x (	149.0 /	149.0) x 100 =	86.83%
6	60°→	(74.5 /	85.8) x (	149.0 /	149.0) x 100 =	86.83%
6	60°←	(74.5 /	85.8) x (	149.0 /	149.0) x 100 =	86.83%
		( / ~	) x ( / ~	) x 100 =		~
Total Percent:						641.96%
Code Examination Coverage (Total Percent / 8 Sound Beams):						80.2%

UT Vessel Examination

Site/Unit: CCNP / 2 Procedure: NDE-5455-CC Outage No.: 2-RFO-2013 (19)
Summary No.: 111015 Procedure Rev.: 00000 Report No.: CC13-IU-051
Workscope: ISI Work Order No.: C91513283 Page: 1 of 8

Code: ASME Section XI 2004 Ed Cat./Item: B-D/B3.130 Location: CPB-21SG
Drawing No.: 12010A-SH0001 Description: PRIMARY HEAD TO CL 'A' NOZZLE EXTENSION
System ID: 064-A
Component ID: SG-22 - W6 Size/Length: 3.2" / 104" Thickness/Diameter: 5" / 30"
Limitations: OD Geometry Start Time: 2/28/13 2216 Finish Time: 3/1/13 0118

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Machined
Lo Location: TDC Wo Location: Top of Taper Couplant: ULTRAGEL II Batch No.: 11525
Temp. Tool Mfg.: FLUKE Serial No.: 17960594 Surface Temp.: 94 °F

Cal. Report No.: CC13-ICA-113, CC13-ICA-114, CC13-ICA-115, CC13-ICA-116

Angle Used	0	45	45T	60	60T	35/35T
Scanning dB	30.4	44.6	44.6	49.9	N/A	39.4

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

Comments:

Interfering conditions exam documented in PSI report 7811-4-6.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: No (73.8%) Reviewed Previous Data: Yes

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
TUCKER, DAVID K			<i>David K. Tucker</i>	3/1/2013	SIMON CROTHERS L-III	<i>Simon Crothers</i>	3/12/13
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
BULL, W. KEITH			<i>W. Keith Bull</i>	3/1/2013	Tim Oldfield L-III	<i>Tim Oldfield</i>	3-12-13
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					WILLIAM J. YAEGER	<i>William J. Yeager</i>	3-12-13

Supplemental Report

Report No.: CC13-IU-051

Page: 2 of 8

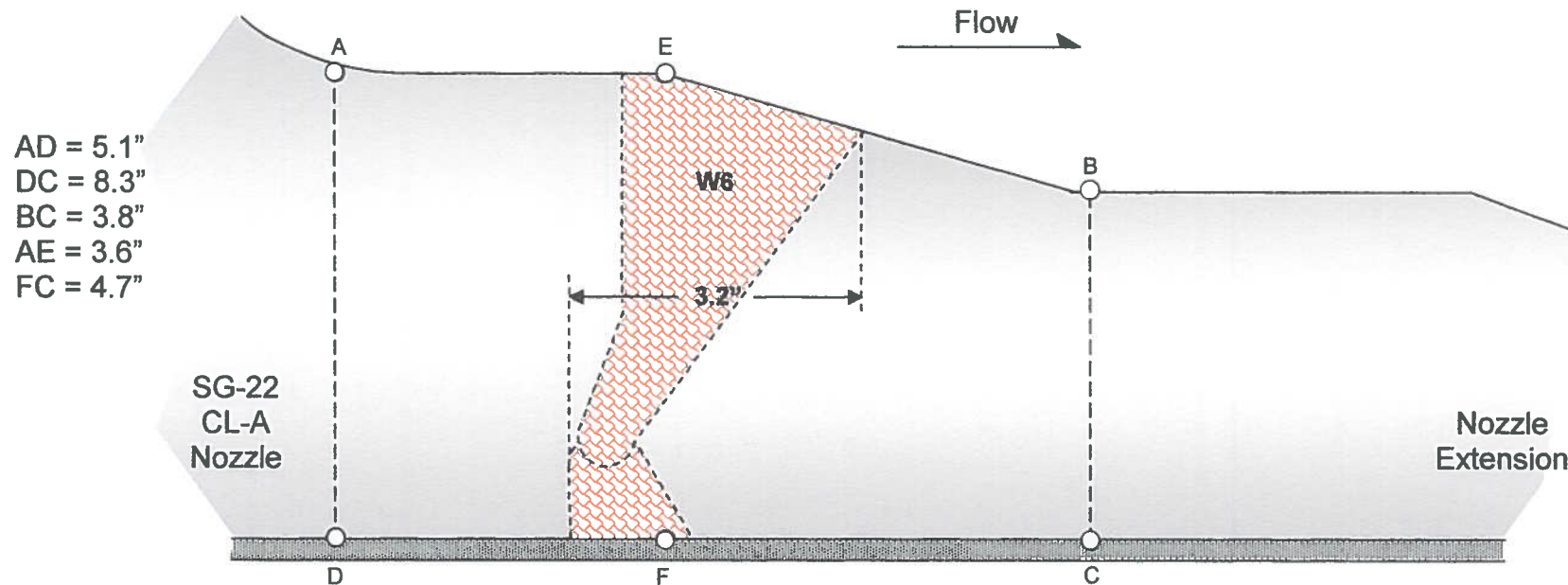
Summary No.: 111015

Sketch or Photo:

LTP: 111015

Sketch 1: Dimensions & Weld Fit-up.

Scale: 50%



Weld Width:	3.2"
Thickness (excluding clad):	5.1"
Weld Length:	104"
Exam Area:	39.3 in ²

Exam Area

- ABCD
- AEFD + EBCF
- $(3.6 \times 5.1) + 4.7(5.1 + 3.8)/2 = \underline{39.3 \text{ in}^2}$

Weld dimensions and fit up per Dwg: 12010A-0015SH0001.
OD contour & thickness readings taken on component.

Sketch or Photo:

Sketch 2
Scan: 45°
Scale: 50%

45° Coverage

SG-22
CL-A
Nozzle

Flow

Nozzle Extension

0 1" 2" 3"

Exam Area = 39.3 in²
 Examined 39.3 – ADHG – JBK - LMN
 Examined 39.3 – 5.1(6.4 + 1.3)/2 – (1.8 x 0.6)/2 – (4.0 x 0.8)/2 = 17.5 in²

Supplemental Report

Report No.: CC13-IU-051

Page: 4 of 8

Summary No.: 111015

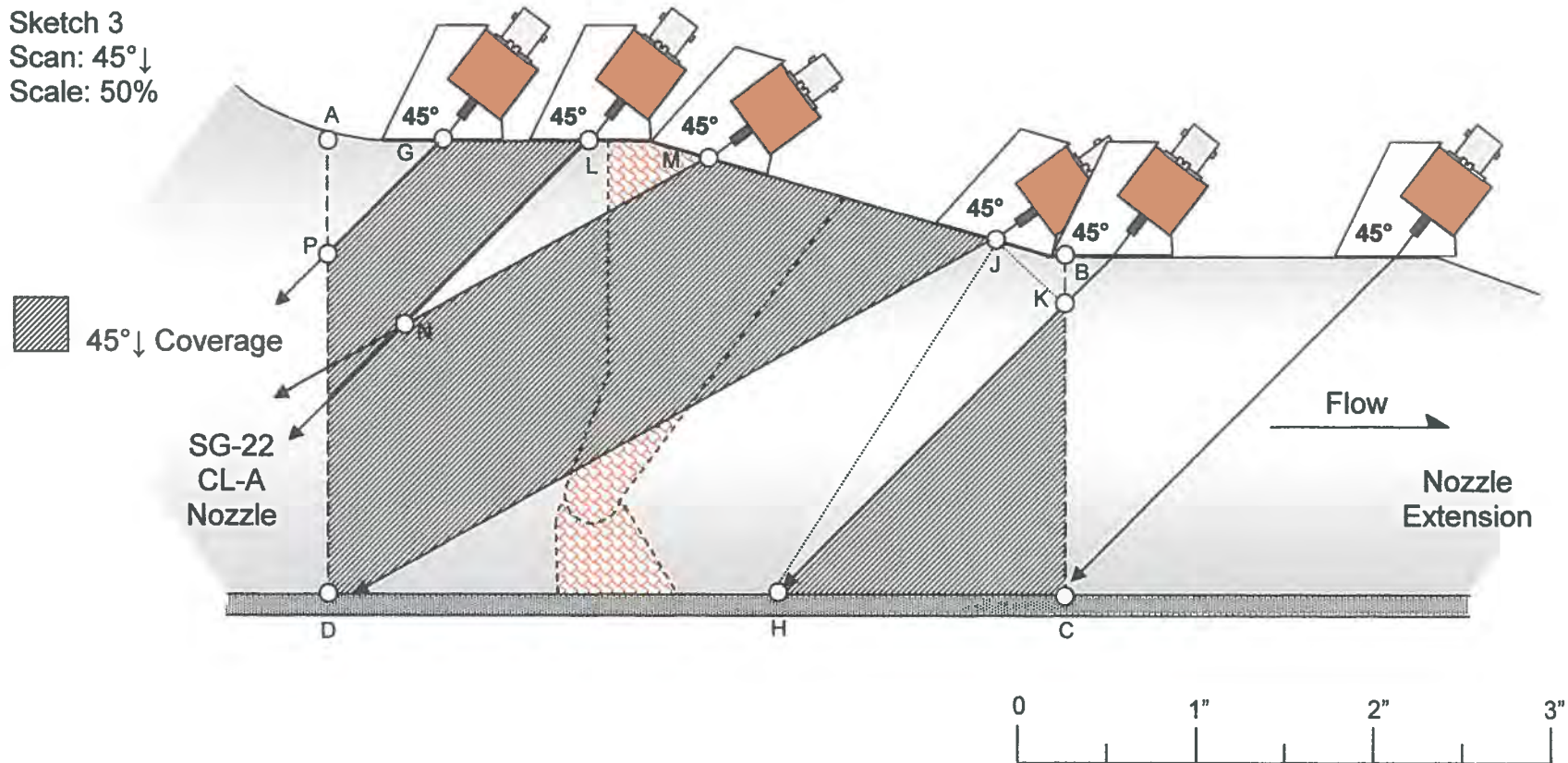
Sketch or Photo:

LTP: 111015

Sketch 3

Scan: 45°↓

Scale: 50%



Exam Area = 39.3 in²

Examined 39.3 – AGP - LMN - DJH - JHK - JKB

Examined 39.3 – $(1.3 \times 1.3)/2 - (3.9 \times 0.8)/2 - (8.5 \times 2.3)/2 - (4.6 \times 1.1)/2 - (1.1 \times 0.4)/2 = 24.4 \text{ in}^2$

Supplemental Report

Report No.: CC13-IU-051

Page: 5 of 8

Summary No.: 111015



Sketch or Photo:

LTP: 111015

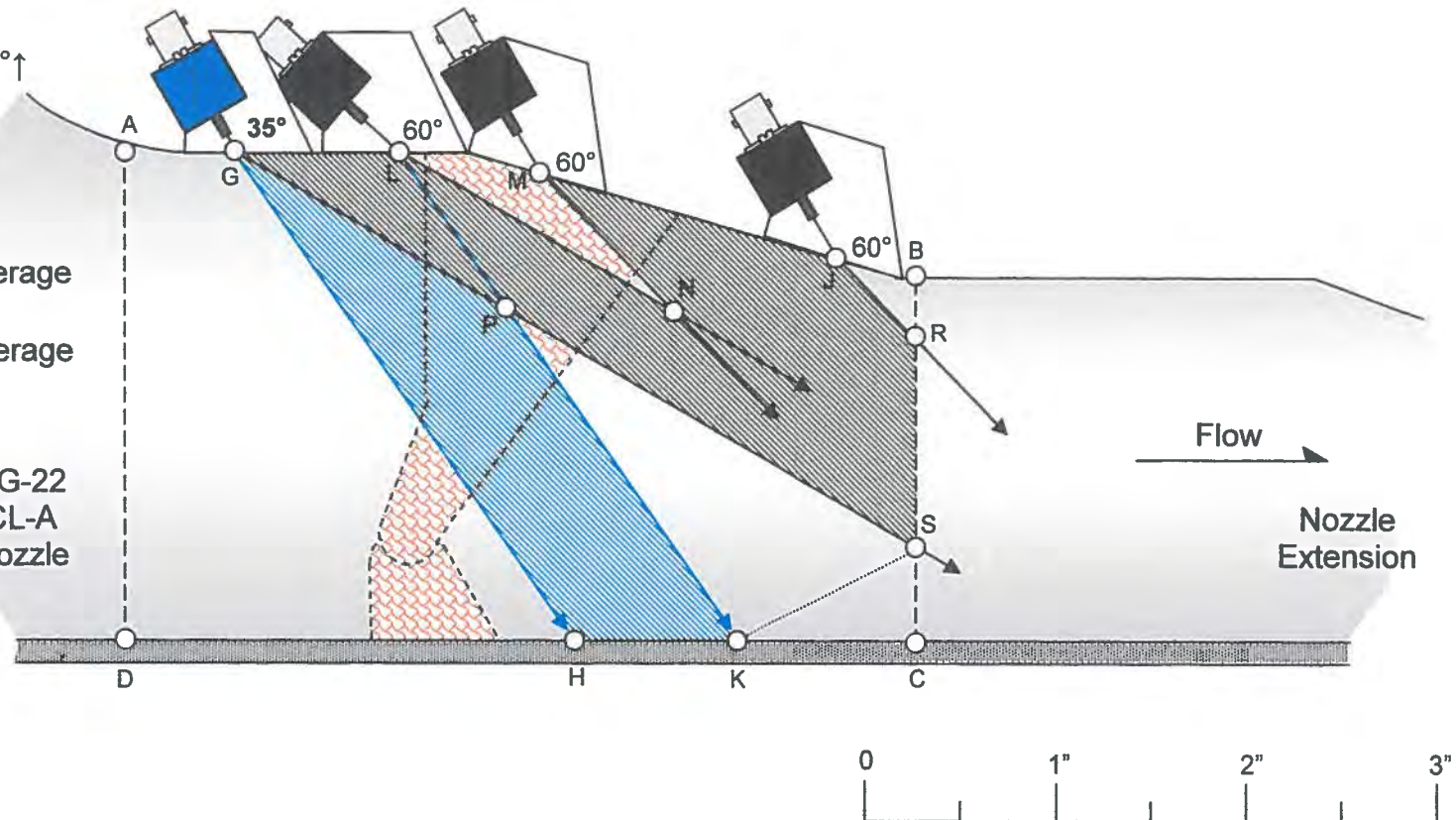
Sketch 4

Scan: 60°↑ / 35°↑

Scale: 50%

 60°↑ Coverage
 35°↑ Coverage

SG-22
CL-A
Nozzle



Exam Area = 39.3 in²

Examined 39.3 – ADHG – LMN – JRB – SPK – SKC

Examined 39.3 – $5.1(4.7 + 1.1)/2 - (3.3 \times 0.5)/2 - (1.2 \times 0.4)/2 - (5.0 \times 1.8)/2 - (1.9 \times 1.0)/2 = 18.0 \text{ in}^2$

Supplemental Report

Report No.: CC13-IU-051

Page: 6 of 8

Summary No.: 111015

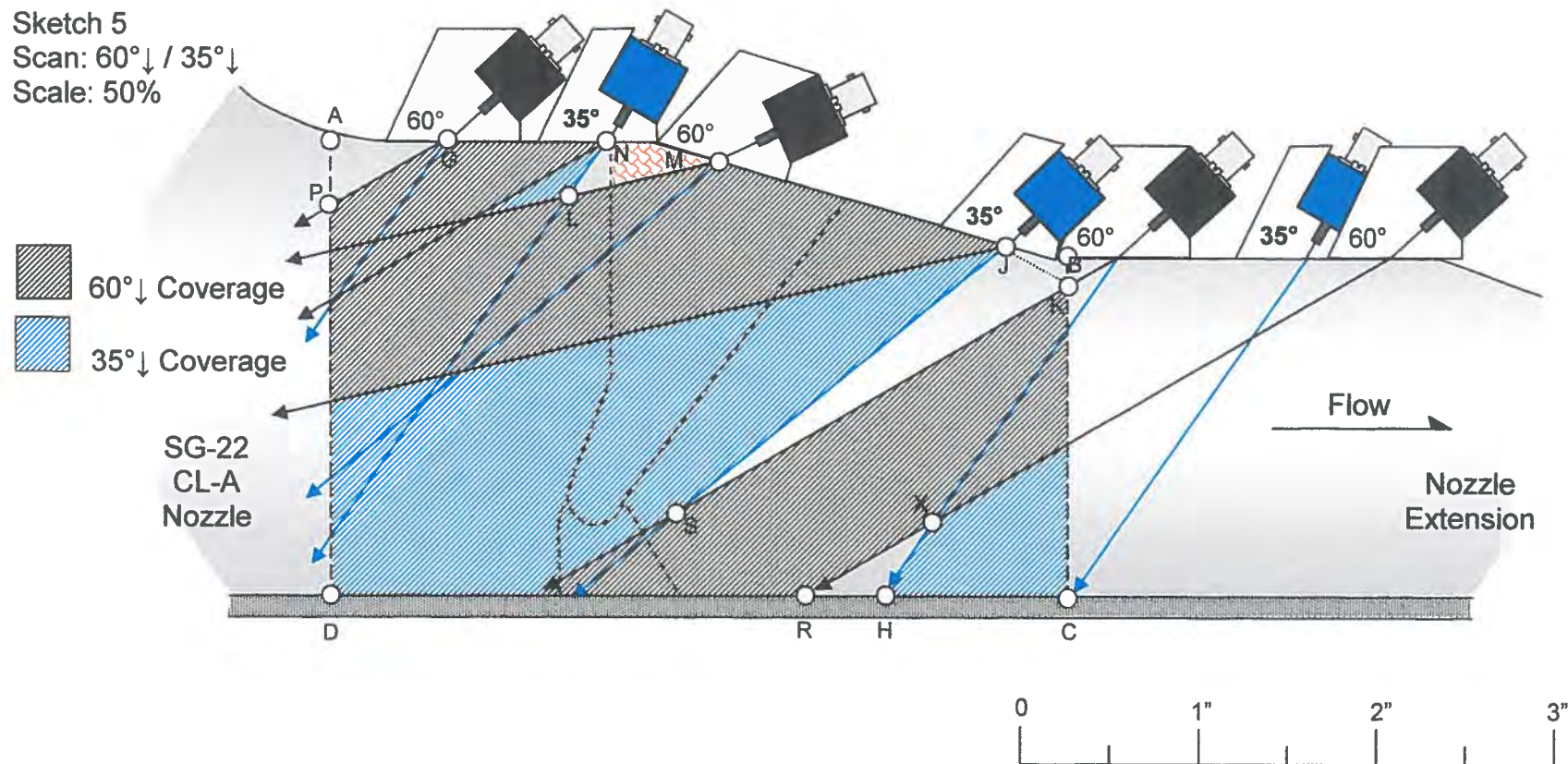
Sketch or Photo:

LTP: 111015

Sketch 5

Scan: 60°↓ / 35°↓

Scale: 50%



Exam Area = 39.3 in²

Examined 39.3 – AGP - LMN - JKS - JKB - RHX

Examined 39.3 – $(1.3 \times 0.7)/2 - (1.8 \times 0.5)/2 - (5.1 \times 0.7)/2 - (0.8 \times 0.3)/2 - (1.6 \times 0.4)/2 = 36.2 \text{ in}^2$

Supplemental Report

Report No.: CC13-IU-051

Page: 7 of 8

Summary No.: 111015

Sketch or Photo:

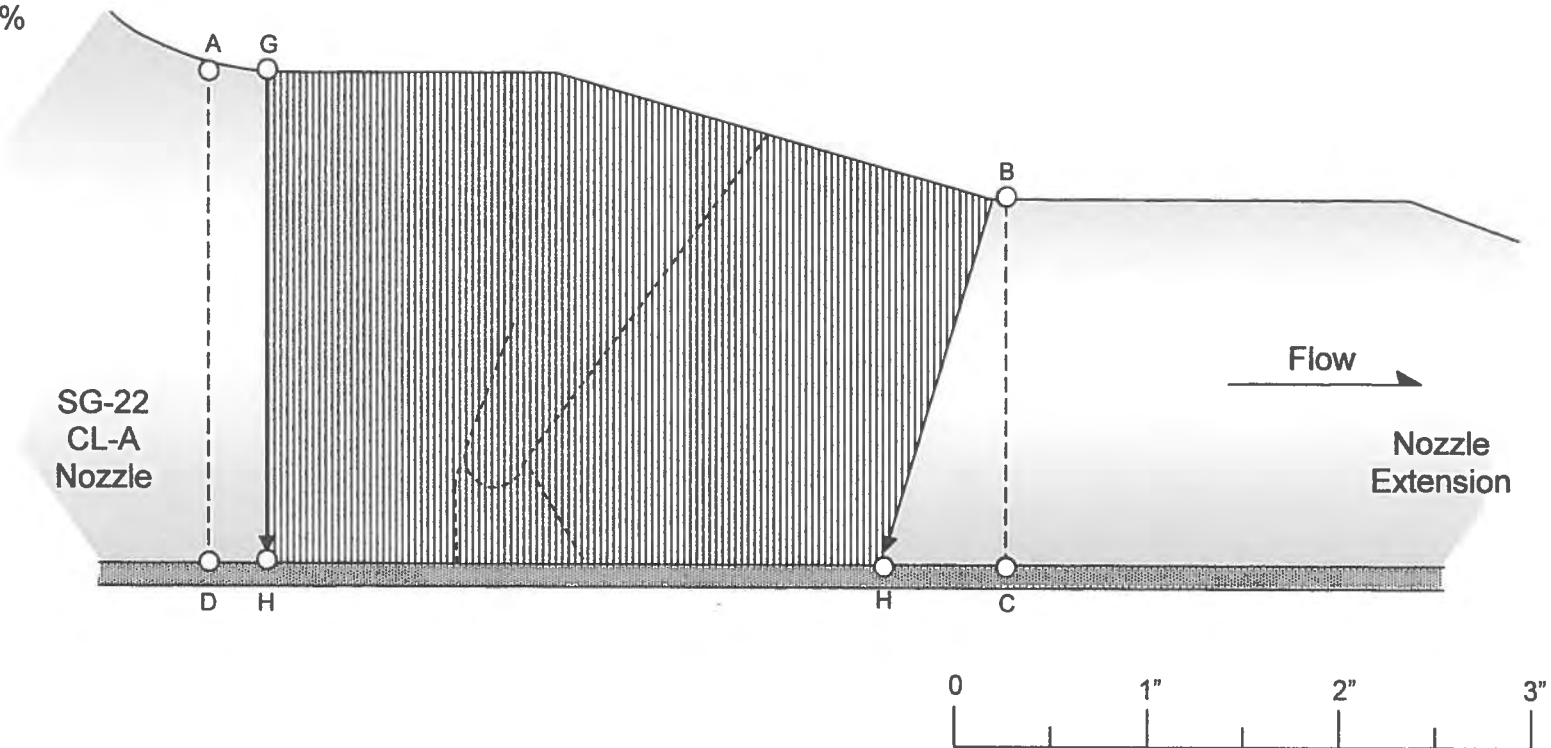
LTP: 111015

Sketch 6

Scan: 45°→ / 45°← / 60°→ / 60°← / 0° WRV

Scale: 50%

 45°→ / 45°← / 60°→ / 60°← / 0° WRV



Exam Area = 39.3 in²

Examined 39.3 – AGHD – HCB

Examined 39.3 – (5.1 x 0.6) – (1.2 x 3.8)/2 = 34 in²

Supplemental Report

Report No.: **CC13-IU-051**

Page: **8** of **8**

Summary No.: **111015**

Examiner: **TUCKER, DAVID K** *[Signature]* Level: **II PDI**

Reviewer: *[Signature]* Date: **3/12/13**

Examiner: **BULL, W. KEITH** *[Signature]* Level: **II PDI**

Site Review: *[Signature]* Date: **3-12-13**

Other: **N/A** Level: **N/A**

ANII Review: *[Signature]* Date: **3-12-13**

Comments:

ASME Code Coverage Calculation

Component Information	Beam Directions
LTP: 111015	↑ = With Flow
Component: SG-22 W6	↓ = Against Flow
Exam Area: 39.3 in ²	→ = CW
Exam Length: 104"	← = CCW

Cov.	Beam Angle	Area	Exam	Length	Exam	Percent
Sketch	& Direction	Examined	Area	Examined	Length	Coverage
2	45°↑	(17.5 / 39.3)	x (104.0 / 104.0)	x 100 =	44.53%	
3	45°↓	(24.4 / 39.3)	x (104.0 / 104.0)	x 100 =	62.09%	
4	60°↑ / 35°↑	(18.0 / 39.3)	x (104.0 / 104.0)	x 100 =	45.80%	
5	60°↓ / 35°↓	(36.2 / 39.3)	x (104.0 / 104.0)	x 100 =	92.11%	
6	45°→	(34.0 / 39.3)	x (104.0 / 104.0)	x 100 =	86.51%	
6	45°←	(34.0 / 39.3)	x (104.0 / 104.0)	x 100 =	86.51%	
6	60°→	(34.0 / 39.3)	x (104.0 / 104.0)	x 100 =	86.51%	
6	60°←	(34.0 / 39.3)	x (104.0 / 104.0)	x 100 =	86.51%	
		(/ ~)	x (/ ~)	x 100 =	~	
Total Percent:						590.57%
Code Examination Coverage (Total Percent / 8 Sound Beams):						73.8%

UT Vessel Examination

Site/Unit: <u>CCNP / 2</u>	Procedure: <u>NDE-5455-CC</u>	Outage No.: <u>2-RFO-2013 (19)</u>
Summary No.: <u>112015</u>	Procedure Rev.: <u>00000</u>	Report No.: <u>CC13-IU-053</u>
Workscope: <u>ISI</u>	Work Order No.: <u>C91513351</u>	Page: <u>1</u> of <u>8</u>

Code: <u>ASME Section XI 2004 Ed</u>	Cat./Item: <u>B-D/B3.130</u>	Location: <u>CPB-22</u>
Drawing No.: <u>12010-0015Sh0001</u>	Description: <u>PRIMARY HEAD TO CL 'B' NOZZLE EXTENSION</u>	
System ID: <u>064-A</u>		
Component ID: <u>SG-22 - W7</u>	Size/Length: <u>3.2" / 104"</u>	Thickness/Diameter: <u>5" / 30"</u>
Limitations: <u>OD Geometry</u>	Start Time: <u>2/28/13 2222</u>	Finish Time: <u>3/1/13 0130</u>

Examination Surface: Inside <input type="checkbox"/> Outside <input checked="" type="checkbox"/>	Surface Condition: <u>Machined</u>	
Lo Location: <u>TDC</u>	Wo Location: <u>Top of Taper</u>	Couplant: <u>ULTRAGEL II</u>
Temp. Tool Mfg.: <u>FLUKE</u>	Serial No.: <u>17960594</u>	Surface Temp.: <u>94</u> °F

Cal. Report No.: CC13-ICA-113, CC13-ICA-114, CC13-ICA-115, CC13-ICA-116

Angle Used	0	45	45T	60	60T	35/35T
Scanning dB	30.4	44.6	44.6	49.9	N/A	39.4

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

Comments:

Interfering conditions exam documented in PSI report 7811-4-7.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: No (73.8%) Reviewed Previous Data: Yes

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
TUCKER, DAVID K			<i>David K Tucker</i>	3/1/2013	SIMON CROTHERS L-III	<i>Simon Crothers</i>	3/12/13
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
BULL, W. KEITH			<i>W Keith Bull</i>	3/1/2013	Tim Oldfield L-III	<i>Tim Oldfield</i>	3-12-13
Other	Level		Signature	Date	ANII Review	Signature	Date
					WILLIAM J YAEGER	<i>William J. Yeager</i>	3-12-13

Supplemental Report

Report No.: CC13-IU-053

Page: 2 of 8

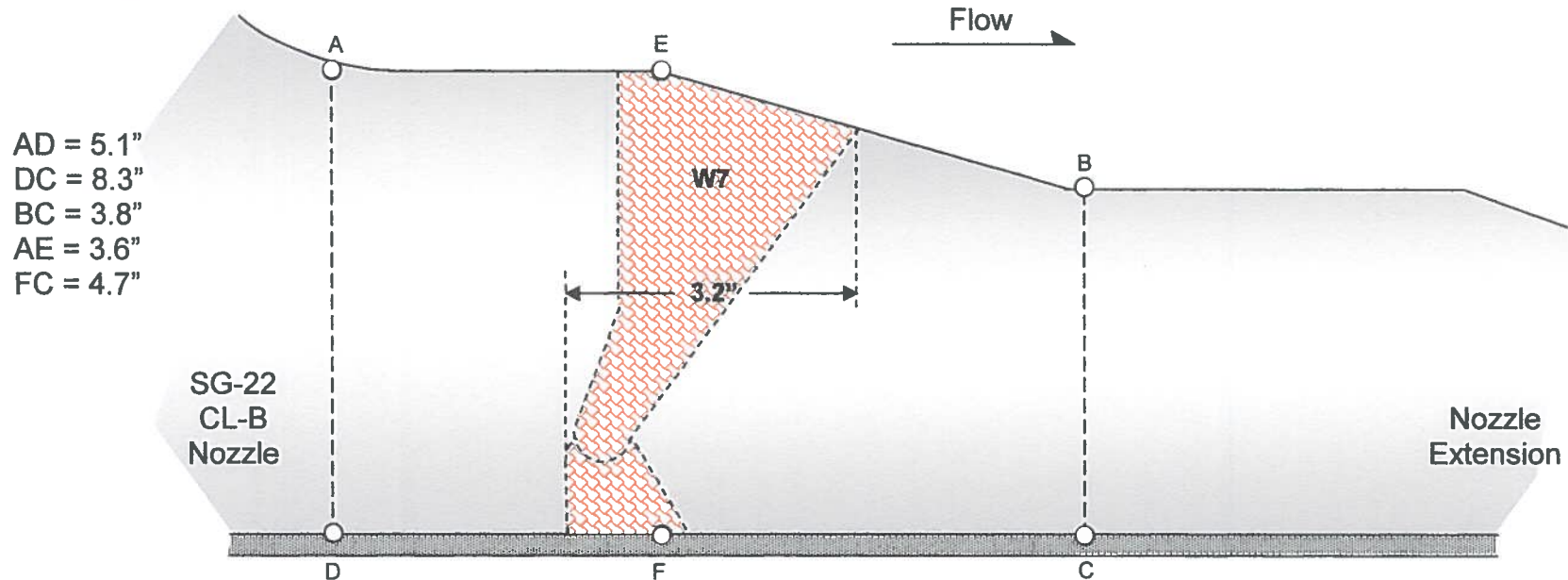
Summary No.: 112015

Sketch or Photo:

LTP: 112015

Sketch 1: Dimensions & Weld Fit-up.

Scale: 50%



Weld Width:	3.2"
Thickness (excluding clad):	5.1"
Weld Length:	104"
Exam Area:	39.3 in ²

Exam Area

- ABCD
- AEFD + EBCF
- $(3.6 \times 5.1) + 4.7(5.1 + 3.8)/2 = \underline{39.3 \text{ in}^2}$

Weld dimensions and fit up per Dwg: 12010A-0015SH0001.
OD contour & thickness readings taken on component.

Supplemental Report

Report No.: CC13-IU-053

Page: 3 of 8

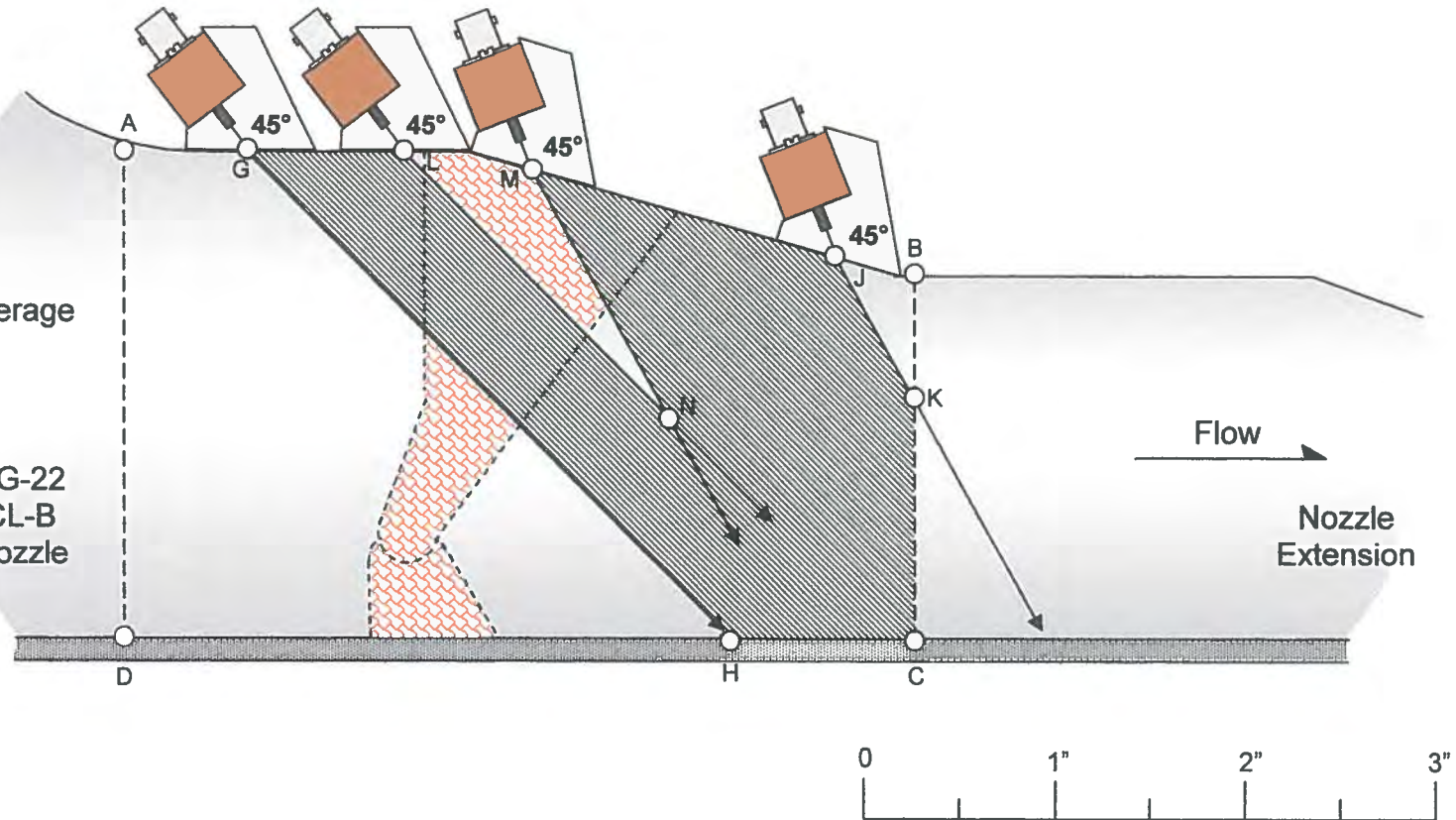
Summary No.: 112015

Sketch or Photo:

LTP: 112015
Sketch 2
Scan: 45°↑
Scale: 50%

 45°↑ Coverage

SG-22
CL-B
Nozzle



Exam Area = 39.3 in²

Examined 39.3 – ADHG – JBK - LMN

Examined 39.3 – 5.1(6.4 + 1.3)/2 – (1.8 x 0.6)/2 – (4.0 x 0.8)/2 = 17.5 in²

Supplemental Report

Report No.: CC13-IU-053

Page: 4 of 8

Summary No.: 112015

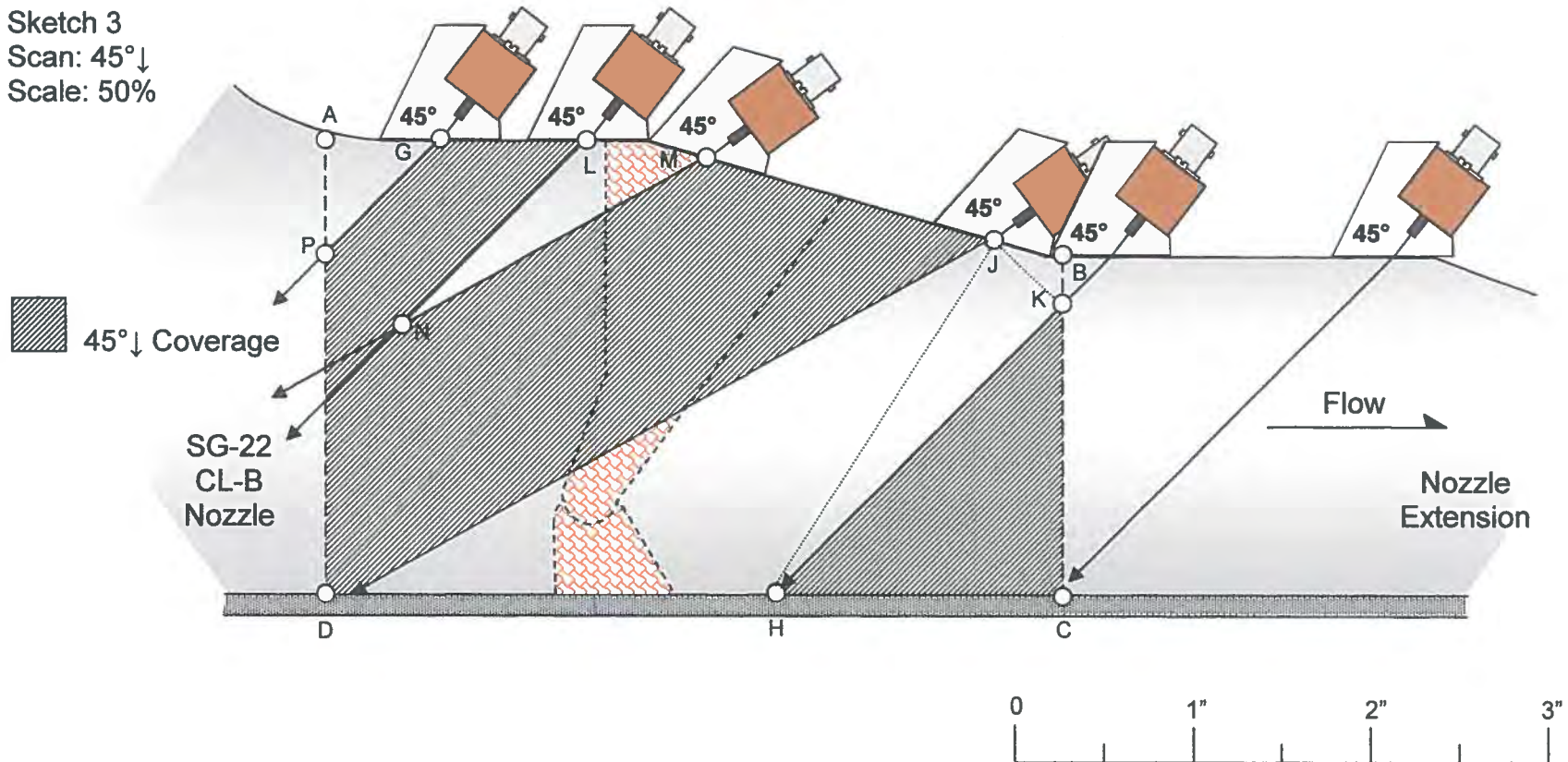
Sketch or Photo:

LTP: 112015

Sketch 3

Scan: 45°↓

Scale: 50%



Exam Area = 39.3 in²

Examined 39.3 – AGP - LMN - DJH - JHK - JKB

Examined 39.3 – $(1.3 \times 1.3)/2 - (3.9 \times 0.8)/2 - (8.5 \times 2.3)/2 - (4.6 \times 1.1)/2 - (1.1 \times 0.4)/2 = 24.4 \text{ in}^2$

Supplemental Report

Report No.: CC13-IU-053

Page: 5 of 8

Summary No.: 112015



Sketch or Photo:

LTP: 112015

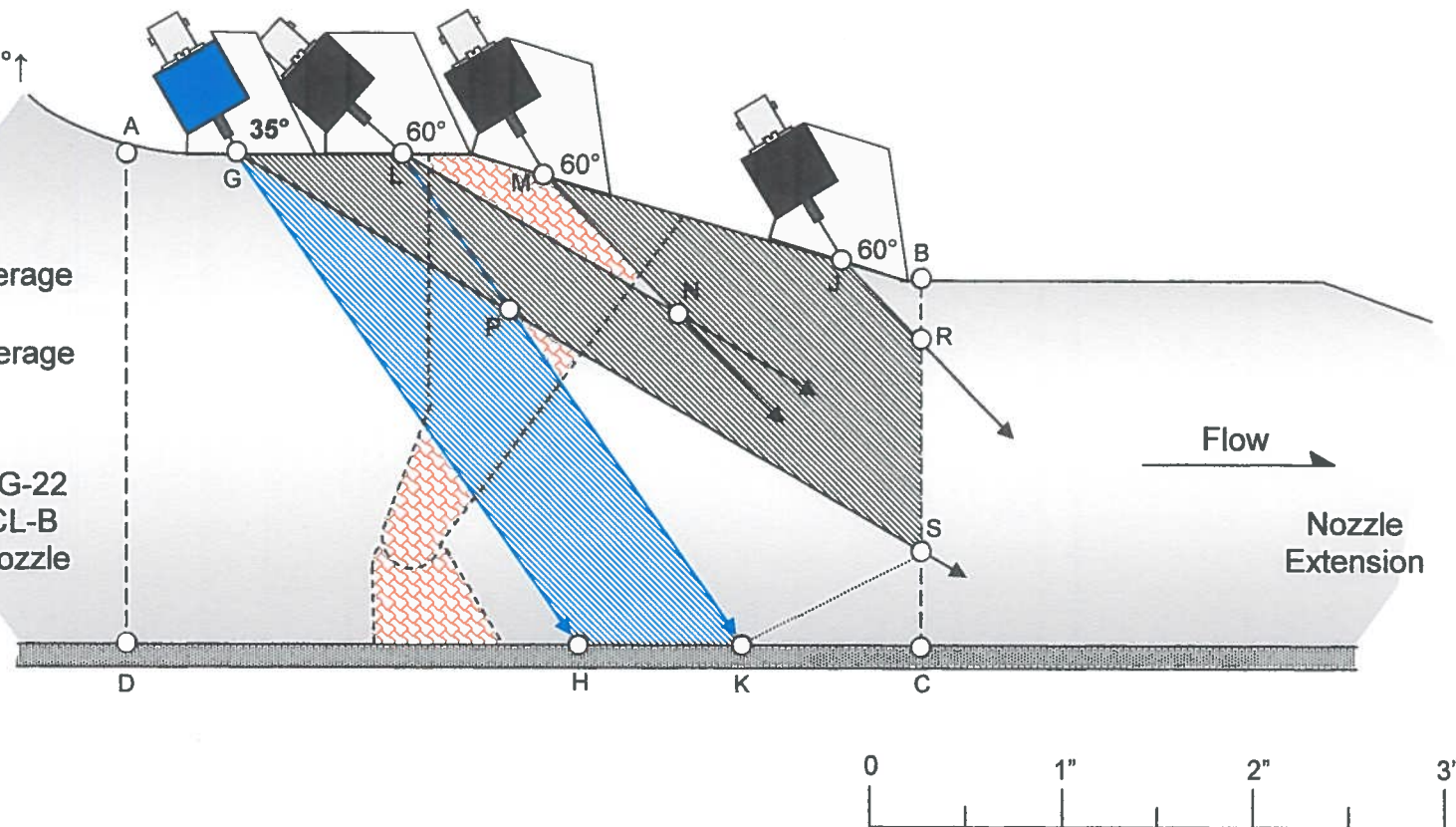
Sketch 4

Scan: 60°↑ / 35°↑

Scale: 50%

 60°↑ Coverage
 35°↑ Coverage

SG-22
CL-B
Nozzle



Exam Area = 39.3 in²

Examined 39.3 – ADHG – LMN – JRB – SPK – SKC

Examined 39.3 – $5.1(4.7 + 1.1)/2 - (3.3 \times 0.5)/2 - (1.2 \times 0.4)/2 - (5.0 \times 1.8)/2 - (1.9 \times 1.0)/2 = 18.0 \text{ in}^2$

Supplemental Report

Report No.: CC13-IU-053

Page: 6 of 8

Summary No.: 112015

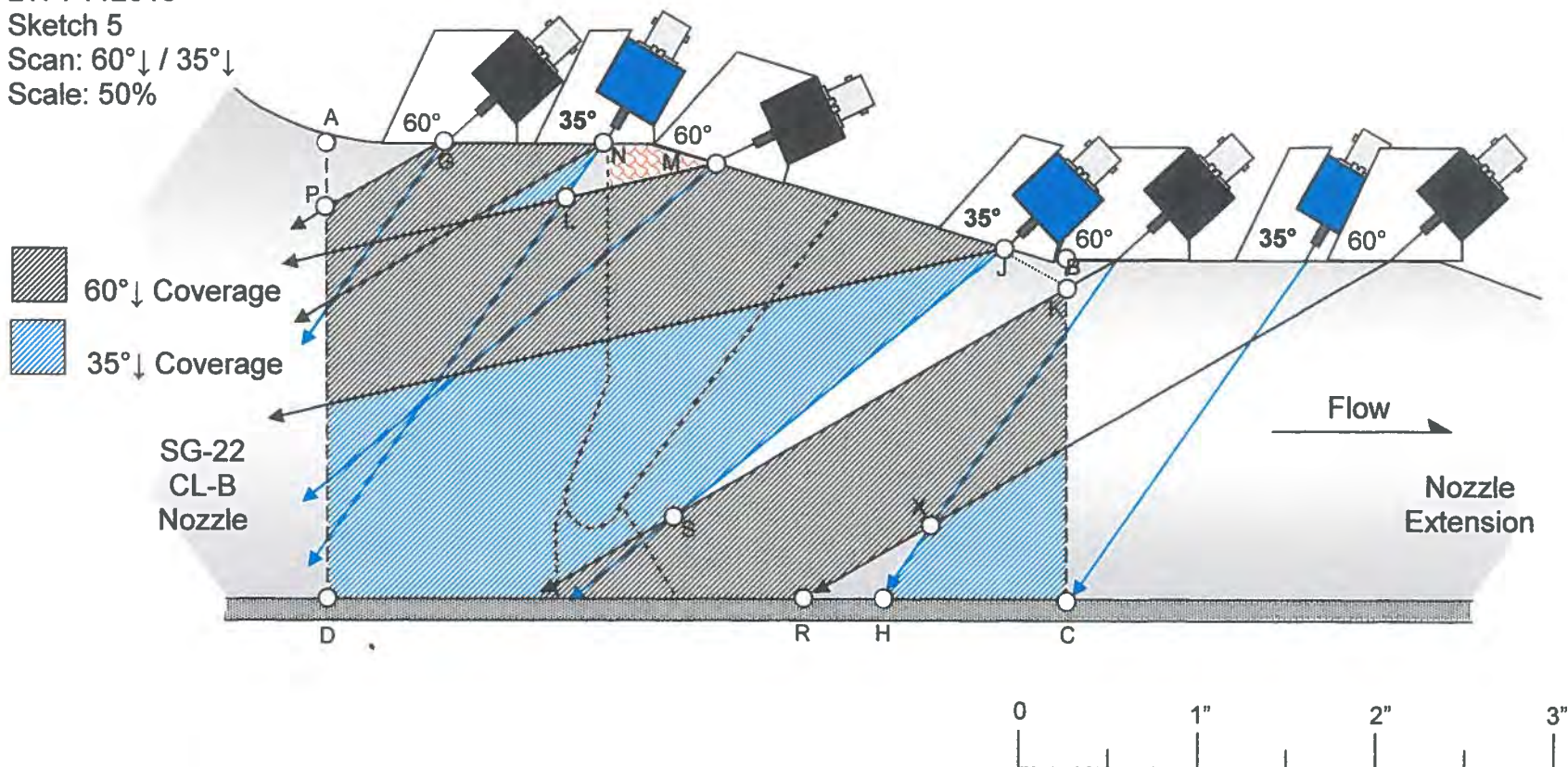
Sketch or Photo:

LTP: 112015

Sketch 5

Scan: 60° ↓ / 35° ↓

Scale: 50%



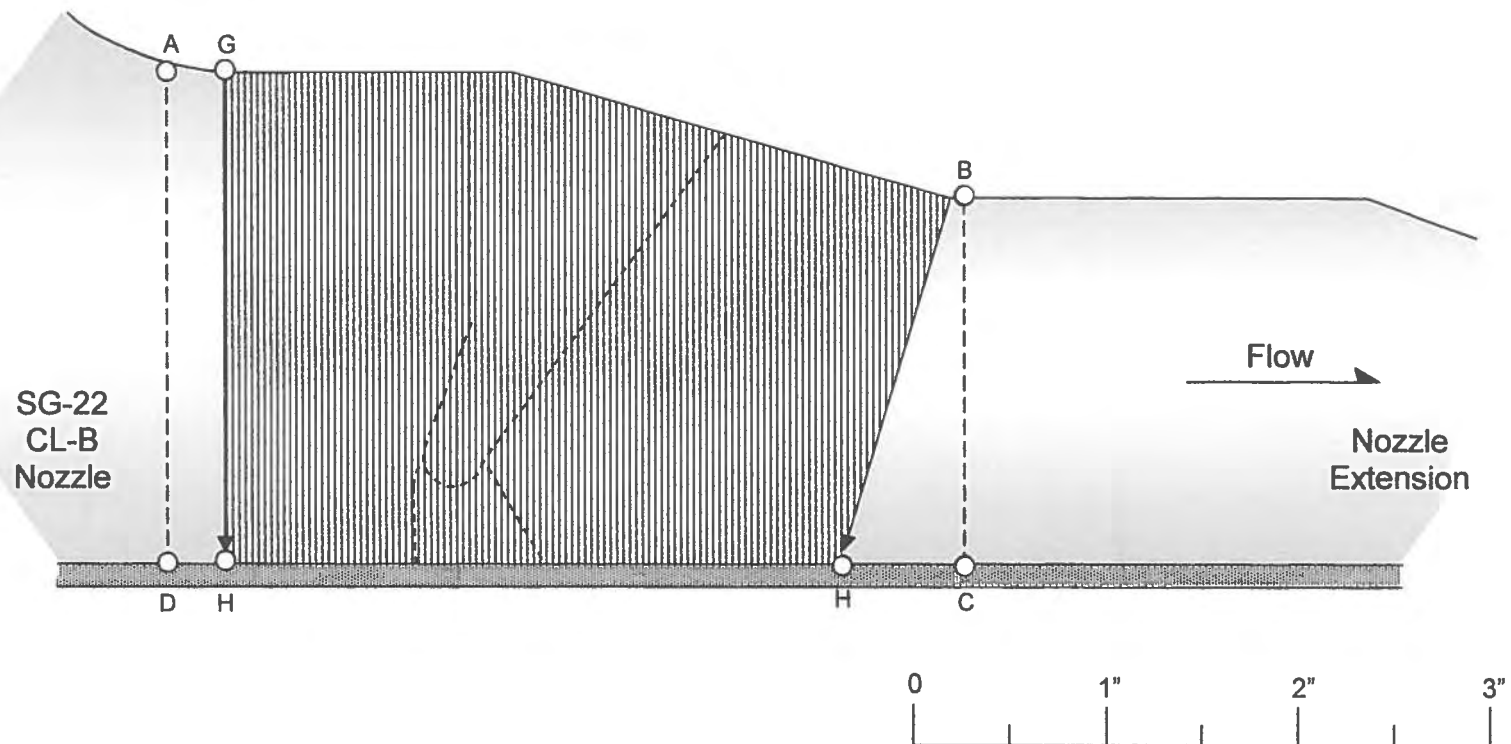
Exam Area = 39.3 in²

Examined 39.3 – AGP – LMN – JKS – JKB – RHX

Examined $39.3 - (1.3 \times 0.7)/2 - (1.8 \times 0.5)/2 - (5.1 \times 0.7)/2 - (0.8 \times 0.3)/2 - (1.6 \times 0.4)/2 = 36.2 \text{ in}^2$

Sketch or Photo:

Scale: 50%

 45°→ / 45°← / 60°→ / 60°← / 0° WRV

Examined 39.3 – (5.1 x 0.6) – (1.2 x 3.8)/2 = 34 in²

Supplemental Report

Report No.: CC13-IU-053
Page: 8 of 8

Summary No.: 112015

Examiner: TUCKER, DAVID K *DT* Level: II PDI

Reviewer: Simon Crothers Date: 3/12/13

Examiner: BULL, W. KEITH *KB* Level: II PDI

Site Review: T. O'Neil Date: 3-12-13

Other: _____ Level: _____

ANII Review: William J. Yarns Date: 3-12-13

Comments:

ASME Code Coverage Calculation

Component Information	Beam Directions
LTP: 112015	↑ = With Flow
Component: SG-22 W7	↓ = Against Flow
Exam Area: 39.3 in ²	→ = CW
Exam Length: 104"	← = CCW

Cov. Sketch	Beam Angle & Direction	Area Examined	Exam Area	Length Examined	Exam Length	Percent Coverage
2	45°↑	(17.5 /	39.3)	x (104.0 /	104.0)	x 100 = 44.53%
3	45°↓	(24.4 /	39.3)	x (104.0 /	104.0)	x 100 = 62.09%
4	60°↑ / 35°↑	(18.0 /	39.3)	x (104.0 /	104.0)	x 100 = 45.80%
5	60°↓ / 35°↓	(36.2 /	39.3)	x (104.0 /	104.0)	x 100 = 92.11%
6	45°→	(34.0 /	39.3)	x (104.0 /	104.0)	x 100 = 86.51%
6	45°←	(34.0 /	39.3)	x (104.0 /	104.0)	x 100 = 86.51%
6	60°→	(34.0 /	39.3)	x (104.0 /	104.0)	x 100 = 86.51%
6	60°←	(34.0 /	39.3)	x (104.0 /	104.0)	x 100 = 86.51%
		( / ~	)	x ( / ~	)	x 100 = ~
Total Percent:						590.57%
Code Examination Coverage (Total Percent / 8 Sound Beams):						73.8%

UT Pipe Weld Examination

Site/Unit: CCNP / 2 Procedure: NDE-5449-CC Outage No.: 2-RFO-2013 (19)
Summary No.: 137520-RI Procedure Rev.: 00100 Report No.: CC13-IU-015
Workscope: ISI Work Order No.: C91513320 Page: 1 of 2

Code: ASME Section XI 2004 Ed Cat./Item: R-A-U2/R1.11 Location: C69-PZR
Drawing No.: 91305SH0001, SH0002 Description: PIPE TO ELBOW
System ID: 064-A
Component ID: 3-PS-2001 - 28 Size/Length: 0.7"/11.25" Thickness/Diameter: 0.438"/3.0"
Limitations: Intrados Start Time: 1430 Finish Time: 1630

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground
Lo Location: TDC Wo Location: CL of weld Couplant: ULTRAGEL II Batch No.: 11525
Temp. Tool Mfg.: FLUKE Serial No.: 17960591 Surface Temp.: 72 °F

Cal. Report No.: CC13-ICA-038, CC13-ICA-039, CC13-ICA-040, CC13-ICA-041, CC13-ICA-042

Angle Used	0	45	45T	60	70 *	70 **
Scanning dB	N/A	26	30	40	57	51

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

Comments:

Performed 0° for interfering conditions exam for increased R-A volume. None noted. * = 5.0 MHz ** = 2.25 MHz

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: NO (89%) Reviewed Previous Data: NO

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
HAIGLER, TERRY J.			<i>Terry J. Haigler</i>	2/24/2013	CROTHERS, SIMON	<i>Simon Crothers</i>	3/3/13
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					JONES, RUSSEL	<i>Tim Oldfield</i>	3-4-13
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					WILLIAM J. HAIGLER	<i>William J. Haigler</i>	3-7-13

Supplemental Report

Report No.: CC13-IU-015

Page: 2 of 2

Summary No.: 137520-RI

Examiner: HAIGLER, TERRY J. T.J.H.

Level: II PDI

Reviewer: CROTHERS, SIMON SC

Date: 3/3/13

Examiner: N/A

Level: N/A

Site Review: Tim Oldfield 3-4-13
JONES, RUSSEL IZO

Date: 3-4-13

Other: N/A

Level: N/A

ANII Review: William Tyneker Wny

Date: 3-7-13

Comments:
LTP: 137520-RI

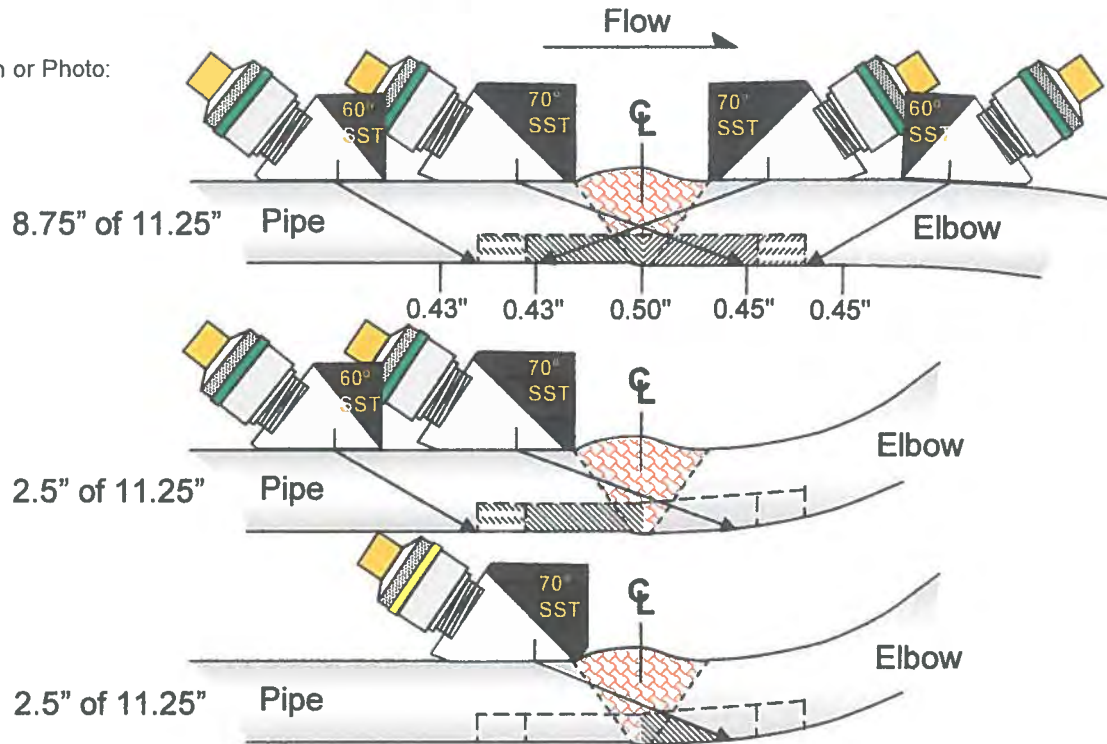


Code Coverage



Risk Informed Coverage

Sketch or Photo:



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



Scan Limitation

No exams performed on intrados of elbow for 2.5" due to poor contact.
Weld length = 11.25"

Coverage Calc:

- US Axial: 100% (11.25" of 11.25") = 100%
- DS Axial: 100% (8.75" of 11.25") = 78%
- US Circ: 100% (11.25" of 11.25") = 100%
- DS Circ: 100% (8.75" of 11.25") = 78%

- WCW = 0.7"
- Counterbore US: None Detected
- Counterbore DS: None Detected

Code / RI Coverage: $(100\% + 78\% + 100\% + 78\%) / 4 = 89\%$

UT Pipe Weld Examination

Site/Unit: **CCNP / 2**
Summary No.: **118060-RI**
Workscope: **ISI**

Procedure: **NDE-5449-CC**
Procedure Rev.: **00100**
Work Order No.: **C91513351**

Outage No.: **2-RFO-2013 (19)**
Report No.: **CC13-IU-033**
Page: **1** of **2**

Code: **ASME Section XI 2004 Ed** Cat./Item: **R-A-U2/R1.16** Location: **CPB-22**
Drawing No.: **91298SH0003** Description: **PIPE TO VALVE 2-SI-247**
System ID: **052**
Component ID: **12-SI-2012 - 7** Size/Length: **1.4" / 40"** Thickness/Diameter: **1.125"/12.0"**
Limitations: **Single sided access** Start Time: **0900** Finish Time: **1100**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **Ground**

Lo Location: **TDC** Wo Location: **CL of weld** Couplant: **ULTRAGEL II** Batch No.: **11525**

Temp. Tool Mfg.: **FLUKE** Serial No.: **17960591** Surface Temp.: **72** °F

Cal. Report No.: **CC13-ICA-069, CC13-ICA-070, CC13-ICA-071, CC13-ICA-072**

Angle Used	0	45	45T	60	*60	**60
Scanning dB	N/A	32	32	N/A	42	60

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

Comments:

* 60° Shear **60° Longitudinal. Performed 0° for interfering conditions exam for increased R-A volume. None noted. Exam performed with equipment, techniques and personnel qualified for examination of IGSCC.

Results: Accept ☒ Reject ☐ EngDisp ☐

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

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
HAIGLER, TERRY J.			<i>Terry J. Haigler</i>	3/1/2013	SIMON CROTHERS L-II	<i>Simon Crothers</i>	3/6/13
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
GRIEBEL, DAVID			<i>David Griebel</i>	3/1/2013	Tim Oldfield L-III	<i>Tim Oldfield</i>	3-6-13
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					WILLIAM J. YAEGER	<i>William J. Yeager</i>	3-6-13

Supplemental Report

Report No.: **CC13-IU-033**

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

Summary No.: **118060-RI**

Examiner: **HAIGLER, TERRY J.** *TJH*

Level: **II PDI**

Reviewer: *Simon Crothers*

Date: **3/6/13**

Examiner: **GRIEBEL, DAVID** *DWG*

Level: **II PDI**

Site Review: *F. Blakely*

Date: **3-6-13**

Other: **N/A**

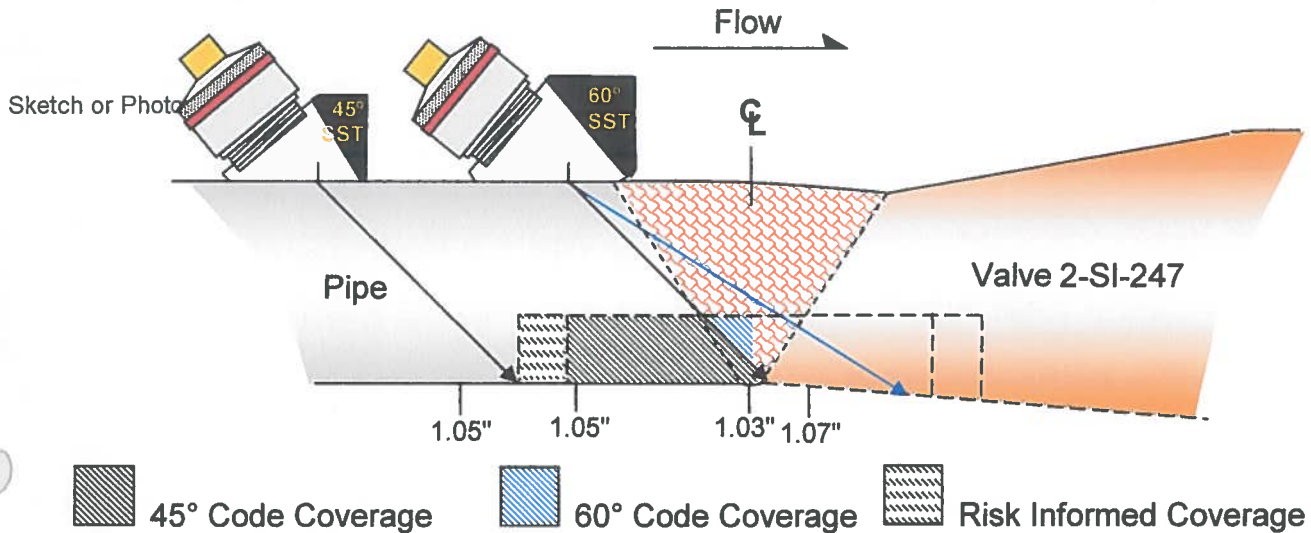
Level: **N/A**

ANII Review: *William J. Yager*

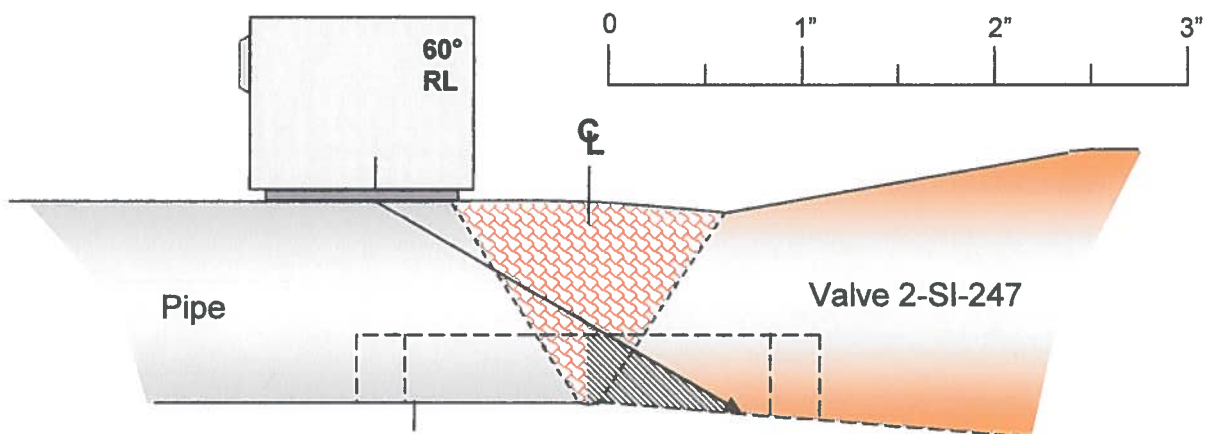
Date: **3-6-13**

Comments:

LTP: 118060-RI



- Code / RI Coverage = 50% per single sided access rules.
- Weld Crown Width = 1.4".
- Counterbore US: None Detected.
- Counterbore DS: None Detected.



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

UT Pipe Weld Examination

Site/Unit: CCNP / 2 Procedure: NDE-5449-CC Outage No.: 2-RFO-2013 (19)
Summary No.: 116140-RI Procedure Rev.: 00100 Report No.: CC13-IU-029
Workscope: ISI Work Order No.: C91513345 Page: 1 of 2

Code: ASME section XI 2004 Ed Cat./Item: R-A-U2/R1.20 Location: 21 Pump Bay
Drawing No.: 91298SH0001 Description: VALVE 2-SI-227 TO ELBOW
System ID: 052
Component ID: 12-SI-2010 - 8 Size/Length: 1.5" / 40.0" Thickness/Diameter: 1.125" / 12.0"
Limitations: Single sided access Start Time: 1400 Finish Time: 1700

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground

Lo Location: TDC Wo Location: CL of weld Couplant: ULTRAGEL II Batch No.: 11525

Temp. Tool Mfg.: FLUKE Serial No.: 17960591 Surface Temp.: 85 °F

Cal. Report No.: CC13-ICA-060, CC13-ICA-061, CC13-ICA-062, CC13-ICA-063, CC13-ICA-064

Angle Used	0	45	45T	60	60L	70
Scanning dB	N/A	30	35	40.2	60	57

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

Comments:

Performed 0° for interfering conditions exam for increased R - A volume. None noted.

Results: Accept ☒ Reject ☐ EngDisp ☐

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

Examiner	Level	II	PDI	Signature	Date	Reviewer	Signature	Date
HAIGLER, TERRY J.				<i>Terry J. Haigler</i>	2/27/2013	CROTHERS, SIMON	<i>Simon Crothers</i>	3/3/13
Examiner	Level	II		Signature	Date	Site Review	Signature	Date
VIGNE, MICHAEL				<i>Michael A. Vigne</i>	2/27/2013	JONES, RUSSEL	<i>Tim Oldfield</i>	3-5-13
Other	Level	N/A		Signature	Date	ANII Review	Signature	Date
N/A						<i>James Carson</i>	<i>Chley</i>	3-5-13

Supplemental Report

Report No.: **CC13-IU-029**

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

Summary No.: **116140-RI**

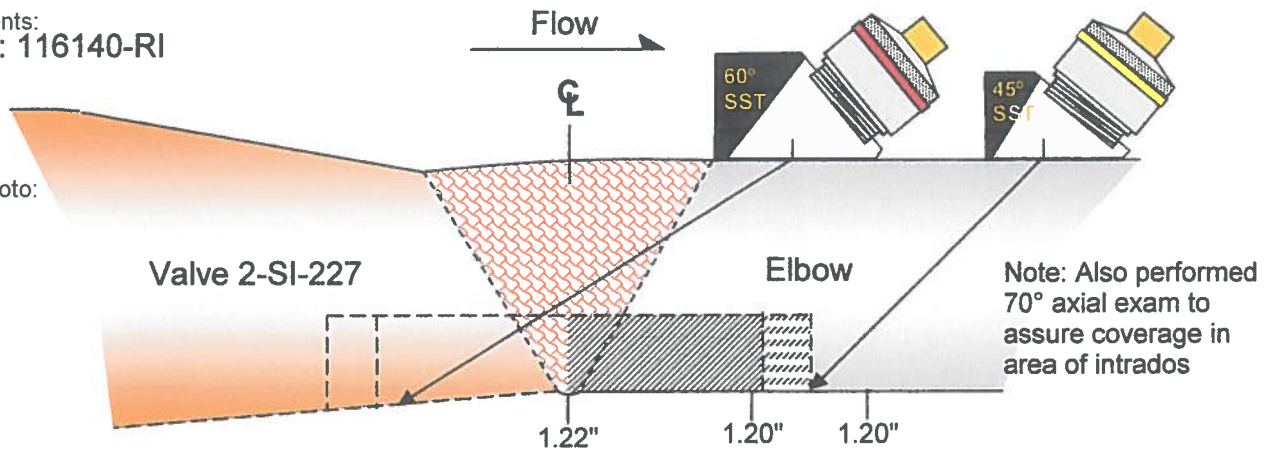
Examiner: **HAIGLER, TERRY J.** *T.J.H.* Level: **II PDI** Reviewer: **CROTHERS, SIMON** *SC* Date: **3/3/13**

Examiner: **VIGNE, MICHAEL** *MV* Level: **II** Site Review: **JONES, RUSSEL** *3-4-12* *RR* Date: **3-5-13**

Other: **N/A** Level: **N/A** ANII Review: _____ Date: _____

Comments:
LTP: 116140-RI

Sketch or Photo:

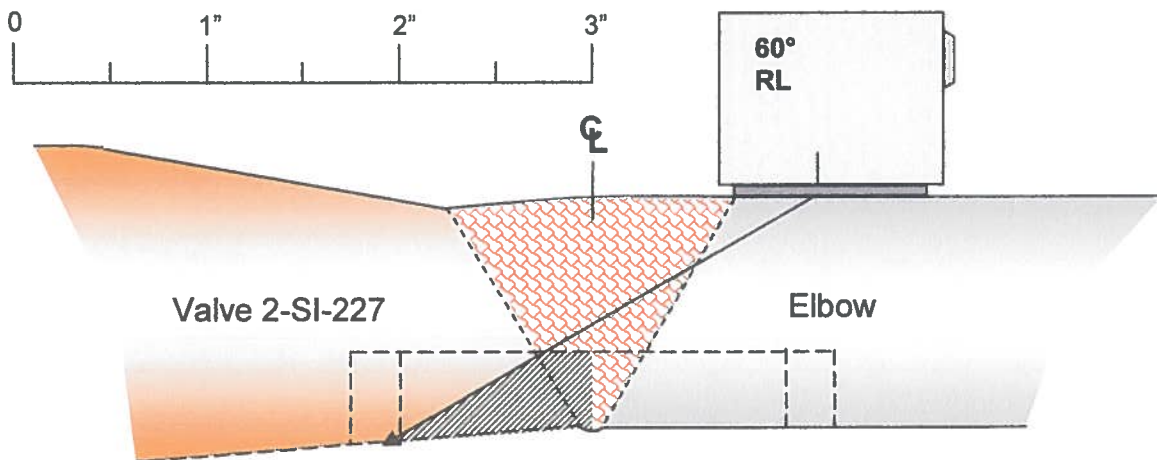


Code Coverage



Risk Informed Coverage

- Code / RI Coverage = 50% per single sided access rules.
- Weld Crown Width = 1.5".
- Counterbore US: None Detected.
- Counterbore DS: None Detected.



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

UT Pipe Weld Examination

Site/Unit: CCNP / 2 Procedure: NDE-5448-CC Outage No.: 2-RFO-2013 (19)
Summary No.: 289000-RI Procedure Rev.: 00001 Report No.: CC13-IU-010
Workscope: ISI Work Order No.: C91513353 Page: 1 of 3

Code: ASME section XI 2004 Ed Cat./Item: R-A-U2/R1.20 Location: A27-MSIVRM
Drawing No.: 62345SH0001 Description: PIPE TO ELBOW
System ID: 083
Component ID: 6-MS-2007 - 2 Size/Length: 0.9" / 21" Thickness/Diameter: 0.280"/6.0"
Limitations: Pipe encapsulation. Start Time: 1132 Finish Time: 1630

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground
Lo Location: TDC Wo Location: CL of weld Couplant: ULTRAGEL II Batch No.: 11525
Temp. Tool Mfg.: FLUKE Serial No.: 17960597 Surface Temp.: 86 °F

Cal. Report No.: CC13-ICA-025, CC13-ICA-026, CC13-ICA-027

Angle Used	0	45	45T	60	70	
Scanning dB	N/A	34.4	34.4	N/A	45	N/A

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

Comments:

Performed 0° interfering conditions exam for increased R - A volume. None noted. Code coverage = 87.5%. Risk informed coverage = 84%

Results: Accept ☒ Reject ☐ EngDisp ☐

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

Examiner	Level	II	PDI	Signature	Date	Reviewer	Signature	Date
HAIGLER, TERRY J.				<i>Terry J. Haigler</i>	2/19/2013	SIMON CROTHERS L-III	<i>Simon Crothers</i>	2/23/13
Examiner	Level	II	PDI	Signature	Date	Site Review	Signature	Date
GRIEBEL, DAVID				<i>David Griebel</i>	2/19/2013	Tim Oldfield	<i>T. Oldfield</i>	3-2-13
Other	Level	N/A		Signature	Date	ANII Review	Signature	Date
N/A						WILLIAM J. YAEGER	<i>William J. Yeager</i>	3-3-13

Supplemental Report

Report No.: CC13-IU-010
Page: 3 of 3

Summary No.: 289000-RI

Examiner: HAIGLER, TERRY J. TAJH Level: II PDI

Reviewer: Simon Crothers Date: 2/23/13

Examiner: GRIEBEL, DAVID D/G Level: II PDI

Site Review: T. Oldfield Date: 3-2-13

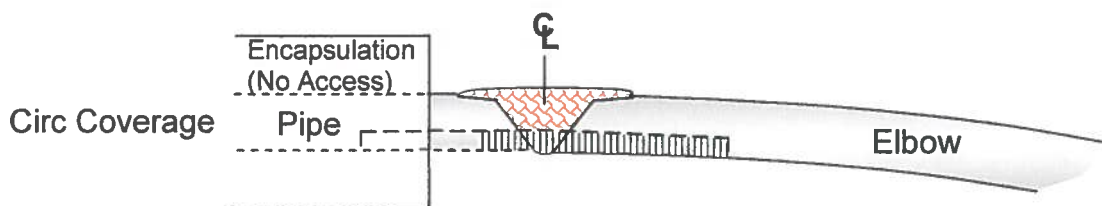
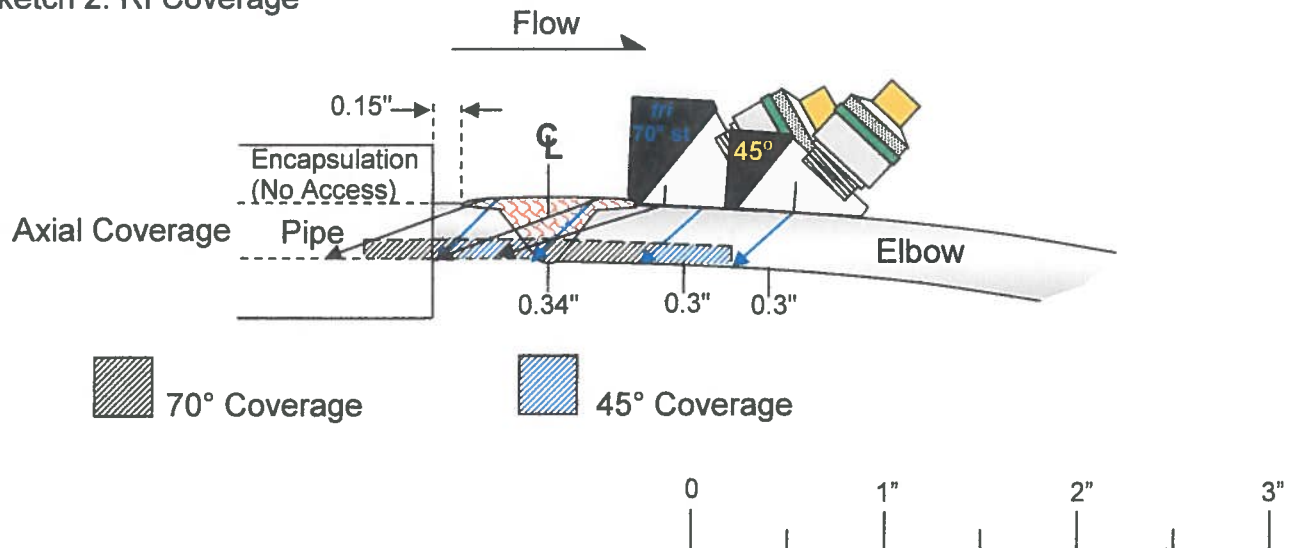
Other: N/A Level: N/A

ANII Review: William J. Greer Date: 3-3-13

Comments:

LTP: 289000-RI

Sketch 2: RI Coverage



RI Coverage Calc:

- Exam Area = $(0.1 \times 1.9") = 0.19 \text{ in}^2$
- Axial Exam = 100%
- Circ Exam = $(0.1 \times 1.3") = 0.13 \text{ in}^2 = 68\%$
- RI Coverage: $(100\% + 68\%)/2 = \underline{84\%}$

UT Pipe Weld Examination

Site/Unit: CCNP / 2 Procedure: NDE-5448-CC Outage No.: 2-RFO-2013 (19)
Summary No.: 289450-RI Procedure Rev.: 00001 Report No.: CC13-IU-008
Workscope: ISI Work Order No.: C91513353 Page: 1 of 3

Code: ASME Section XI 2004 Ed Cat./Item: R-A-U2/R1.20 Location: A27-MSIV
Drawing No.: 62345SH0001 Description: PIPE TO VALVE 2-MOV-4070
System ID: 083
Component ID: 6-MS-2007 - 9 Size/Length: 0.5" / 21" Thickness/Diameter: 0.280"/6.0"
Limitations: Single sided access. Start Time: 1132 Finish Time: 1630

Examination Surface: Inside ☐ Outside ☒ Surface Condition: Ground

Lo Location: TDC Wo Location: CL of weld Couplant: ULTRAGEL II Batch No.: 11525

Temp. Tool Mfg.: FLUKE Serial No.: 17960597 Surface Temp.: 68 °F

Cal. Report No.: CC13-ICA-019, CC13-ICA-020, CC13-ICA-021

Angle Used	0	45	45T	60	70	
Scanning dB	N/A	34.4	34.4	N/A	39	N/A

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

Comments:

Performed 0° interfering conditions exams for increased R - A volume. None noted. Code coverage = 75%. Risk informed coverage = 67%.

Results: Accept ☒ Reject ☐ EngDisp ☐

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

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
HAIGLER, TERRY J.			<i>Terry J. Haigler</i>	2/19/2013	SIMON CROTHERS L-II	<i>Simon Crothers</i>	2/23/13
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
GRIEBEL, DAVID			<i>David Griebel</i>	2/19/2013	Tim Oldfield L-III	<i>Tim Oldfield</i>	3-2-13
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					WILLIAM J YAEGER	<i>William J. Yeager</i>	3-3-13

Supplemental Report

Report No.: **CC13-IU-008**

Page: **3** of **3**

Summary No.: **289450-RI**

Examiner: **HAIGLER, TERRY J.** *TJH* Level: **II PDI**

Reviewer: *Simon Crothers* Date: **2/23/13**

Examiner: **GRIEBEL, DAVID** *DG* Level: **II PDI**

Site Review: *T. Oldfield* Date: **3-2-13**

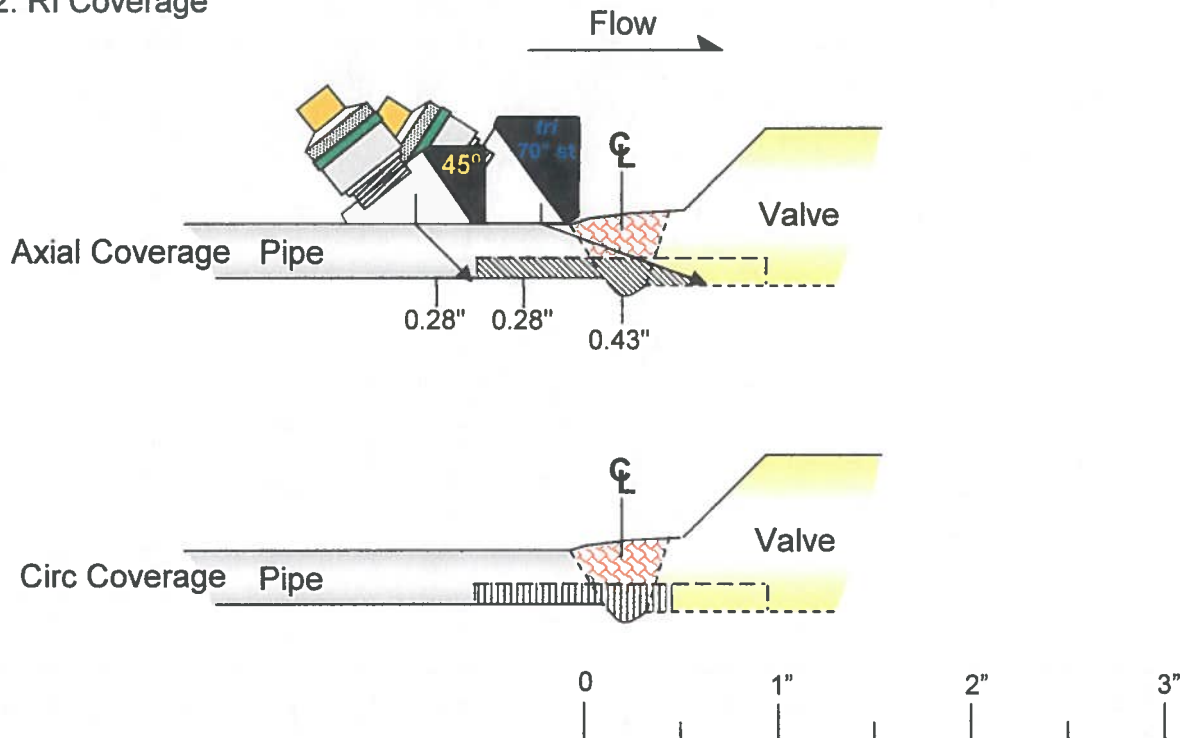
Other: **N/A** Level: **N/A**

ANII Review: *William J. Upm* Date: **3-3-13**

Comments:

LTP: 289450-RI

Sketch 2: RI Coverage



RI Coverage Calc:

- Exam Area = $(0.1 \times 1.5'') = 0.15 \text{ in}^2$
- Axial Exam = $0.1(0.85 + 1.15)/2 = 0.10 \text{ in}^2 = 67\%$
- Circ Exam = $(0.1 \times 1.0'') = 0.10 \text{ in}^2 = 67\%$
- RI Coverage: $(67\% + 67\%)/2 = \underline{67\%}$



UT Vessel Examination

Site/Unit: **CCNP / 2**
Summary No.: **201700**
Workscope: **ISI**

Procedure: **NDE-5454-CC**
Procedure Rev.: **00000**
Work Order No.: **C92772445**

Outage No.: **2-RFO-2015 (20)**
Report No.: **CC15-IU-001**
Page: **1** of **4**

Code: **ASME Section XI 2004 Ed** Cat./Item: **C-A/C1.10** Location: **A15-ECCS22**
Drawing No.: **B-3** Description: **CHANNEL COVER TO SHELL FLANGE**
System ID: **052**
Component ID: **SCHE-22-2** Size/Length: **1.5" / 141.4"** Thickness/Diameter: **1.13" / 45"**
Limitations: **Single Sided Access** Start Time: **1157** Finish Time: **1304**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **Ground**
Lo Location: **TDC** Wo Location: **Weld CL** Couplant: **ULTRAGEL II** Batch No.: **10325**
Temp. Tool Mfg.: **FLUKE** Serial No.: **17960593** Surface Temp.: **90** °F

Cal. Report No.: **CC15-ICA-001, CC15-ICA-002**

Angle Used	0	45	45T	60	60T	70T
Scanning dB	N/A	36	36	N/A	N/A	46

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

Comments:
N/A

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: **No (83.3%)** Reviewed Previous Data: **Yes**

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
HOWARD, DEAN M			<i>Dean Howard</i>	2/14/2015	SIMON CROTHERS L-11	<i>Simon Crothers</i>	2/19/15
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					<i>Jon C. Hawkins</i>		2-20-15
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					<i>Daniel R Williams</i>		2-22-15

Supplemental Report

Report No.: **CC15-IU-001**

Page: **2** of **4**

Summary No.: **201700**

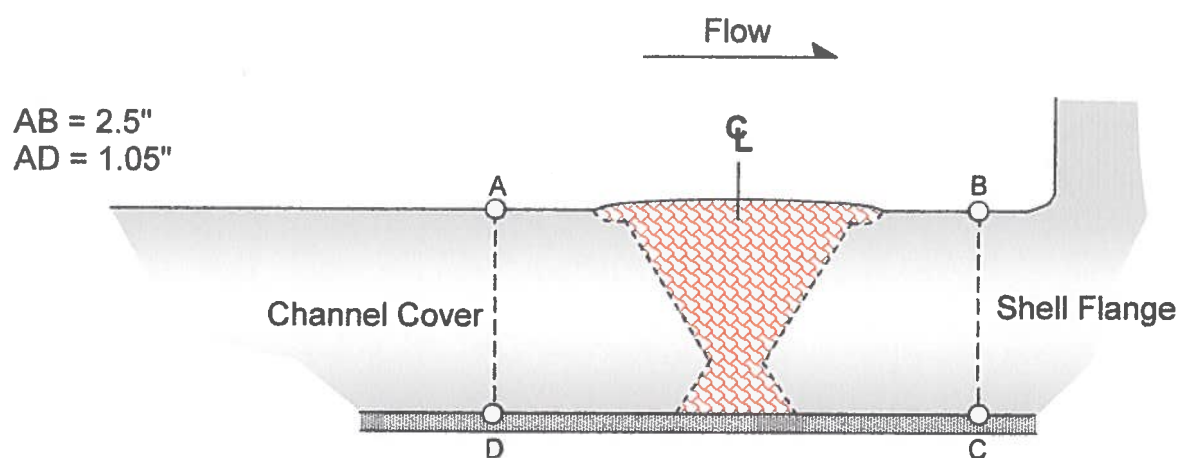
Sketch or Photo:

Summary: **201700**

Weld: **SCHE-22-2**

Sketch 1: **Dimensions**

Scale: **100%**



Weld Crown Width: **1.5"**

Thickness (Excluding Glad): **1.05"**

Exam Area (ABCD): $(2.5" \times 1.05") = 2.63 \text{ in}^2$

Supplemental Report

Report No.: **CC15-IU-001**

Page: **3** of **4**

Summary No.: **201700**

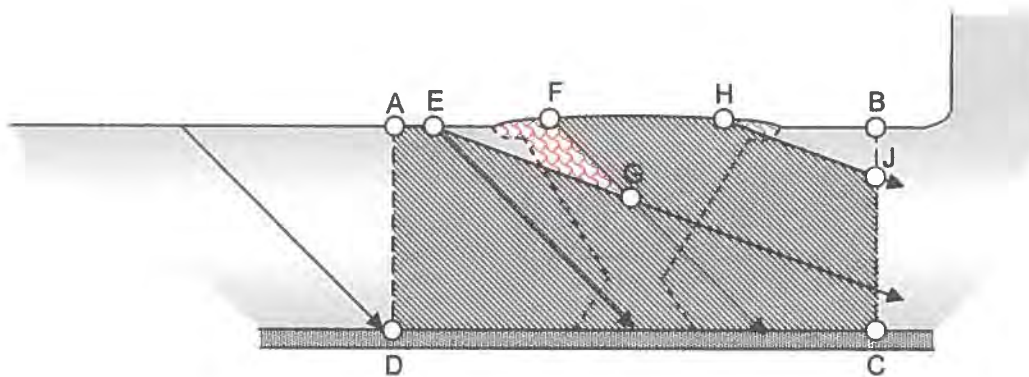
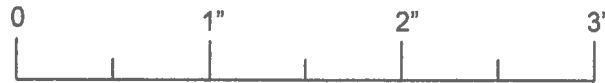
Sketch or Photo:

Summary: **201700**

Weld: **SCHE-22-2**

Sketch 2: **45° / 70° Axial US**

Scale: **100%**



Exam Area: 2.63 in²

Examined: ABCD - EFG - HBJ

Examined: $2.63 - (1.1 \times 0.25)/2 - (0.8 \times 0.25)/2 = 2.39 \text{ in}^2$

Coverage: $(2.39 / 2.63) = 90.9\%$

Supplemental Report

Report No.: **CC15-IU-001**

Page: **4** of **4**

Primary No.: **201700**

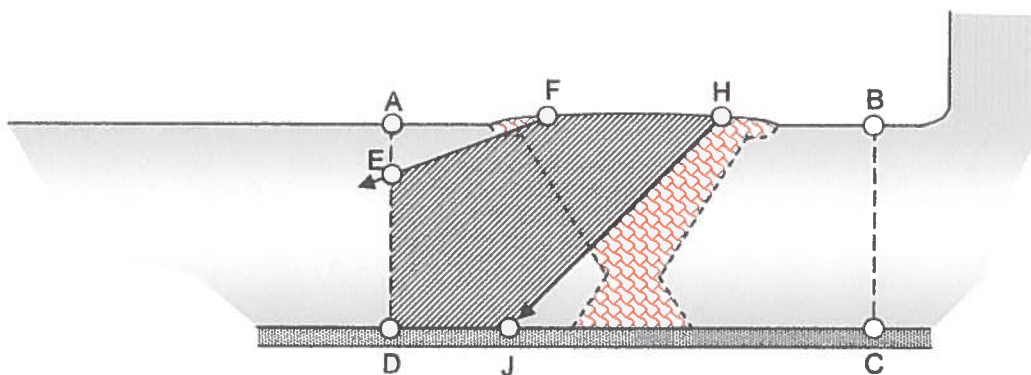
Sketch or Photo:

Summary: **201700**

Weld: **SCHE-22-2**

Sketch 3: **45° / 70° Axial DS**

Scale: **100%**



Exam Area: 2.63 in²

Examined: ABCD - AFE - HBCJ

Examined: $2.63 - (0.8 \times 0.25)/2 - 1.05(0.8 + 1.9)/2 = 1.11 \text{ in}^2$

Coverage: $(1.11 / 2.63) = 42.2\%$

Coverage Calc	
Exam	Coverage
Ax Upst	90.9%
Ax Dnst	42.2%
Circ CW	100%
Circ CCW	100%
Total:	333.1%
Total / 4:	83.3%

UT Vessel Examination

Site/Unit: **CCNP / 2**
Summary No.: **103110**
Workscope: **ISI**

Procedure: **ER-AA-335-049**
Procedure Rev.: **0**
Work Order No.: **C93163306-630**

Outage No.: **2-RFO-2017 (21)**
Report No.: **CC17-IU-013**
Page: **1** of **6**

Code: **ASME Section XI 2004 Ed** Cat./Item: **B-D/B3.110** Location: **C69-PZR**
Drawing No.: **12019-0015** Description: **SAFETY AND RELIEF NOZZLE TO UPPER HEAD**
System ID: **064-A**
Component ID: **16-405B** Size/Length: **1.7" / 22"** Thickness/Diameter: **5" / 111"**
Limitations: **Nozzle** Start Time: **1035** Finish Time: **1120**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **Ground**
Lo Location: **TDC** Wo Location: **Weld CL** Couplant: **ULTRAGEL II** Batch No.: **10325**
Temp. Tool Mfg.: **FLUKE** Serial No.: **17960598** Surface Temp.: **87** °F

Cal. Report No.: **CC17-ICA-024, 025 and 026**

Angle Used	0	45	45T	60	60T	35
Scanning dB	N/A	51	51	50	50	38

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

Comments:

N/A

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: **No - 60.5%**

Reviewed Previous Data: **Yes**

Examiner	Level	III PDI	Signature	Date	Reviewer	Signature	Date
Crothers, Simon P			<i>Simon Crothers</i>	2/18/2017	Gary L. Richmond Jr	<i>Gary L. Richmond Jr</i>	2-24-17
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
ZOLLNER, BRIAN			<i>Brian Zollner</i>	2/18/2017	CILENTO, J.J. UT-III	<i>J.J. Cilent</i>	2-24-17
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					COLEMAN, ADA	<i>ADA Coleman</i>	2-24-17



Supplemental Report

Report No.: **CC17-IU-013**

Page: **2** of **6**

Summary No.: **103110**

Sketch or Photo:

Summary: 103110

Sketch 1: Dimensions & weld fit-up

Scale: 50%



AE = 4.2"

AJ = 5.9"

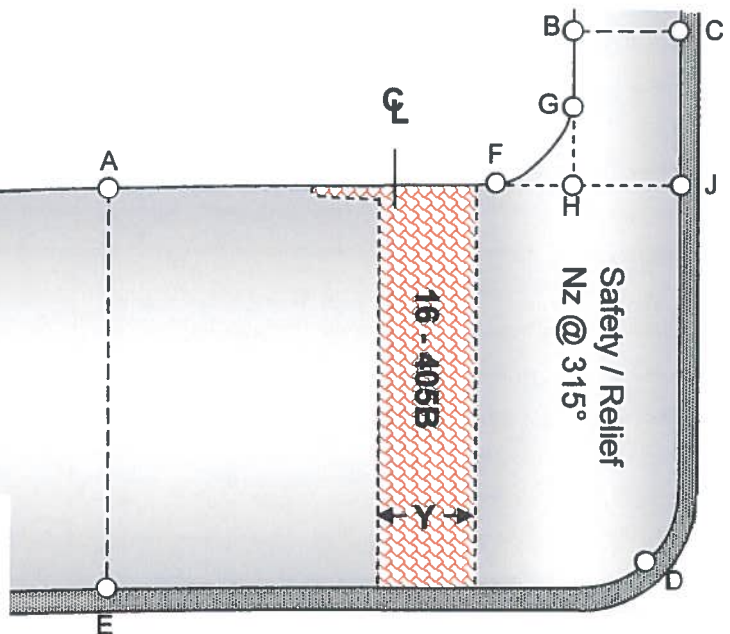
BC = 1.1"

CJ = 1.6"

HG = 0.8"

HF = 0.8"

PZR Head



Weld Width:	1.7" on OD
Weld Width:	1.0" (Y)
Thickness (Excluding Clad):	4.2"
Weld Length:	22" @ CL
Exam Area:	26.86 in ²
Profile constructed from OD contour and thickness readings, and as-built drawing No. 12019 - 0021	

Exam Area (ABCDE)

= AJDE + BCJH + GHF

= (5.9 x 4.2) + (1.1 x 1.6) + (0.8 x 0.8)/2

= 26.86 in²

Note: The procedure requires the use of 2 angle beams, 45° + 60°, 4 directions each. These 8 exams were performed.

The 2004 ASME Code requires the use of 1 angle beam, 45°, 4 directions. The following sketches and calculations are to determine Code coverage, so only the 45° is displayed. The 60° & 35° are included when they obtained additional coverage.



Supplemental Report

Report No.: CC17-IU-013

Page: 3 of 6

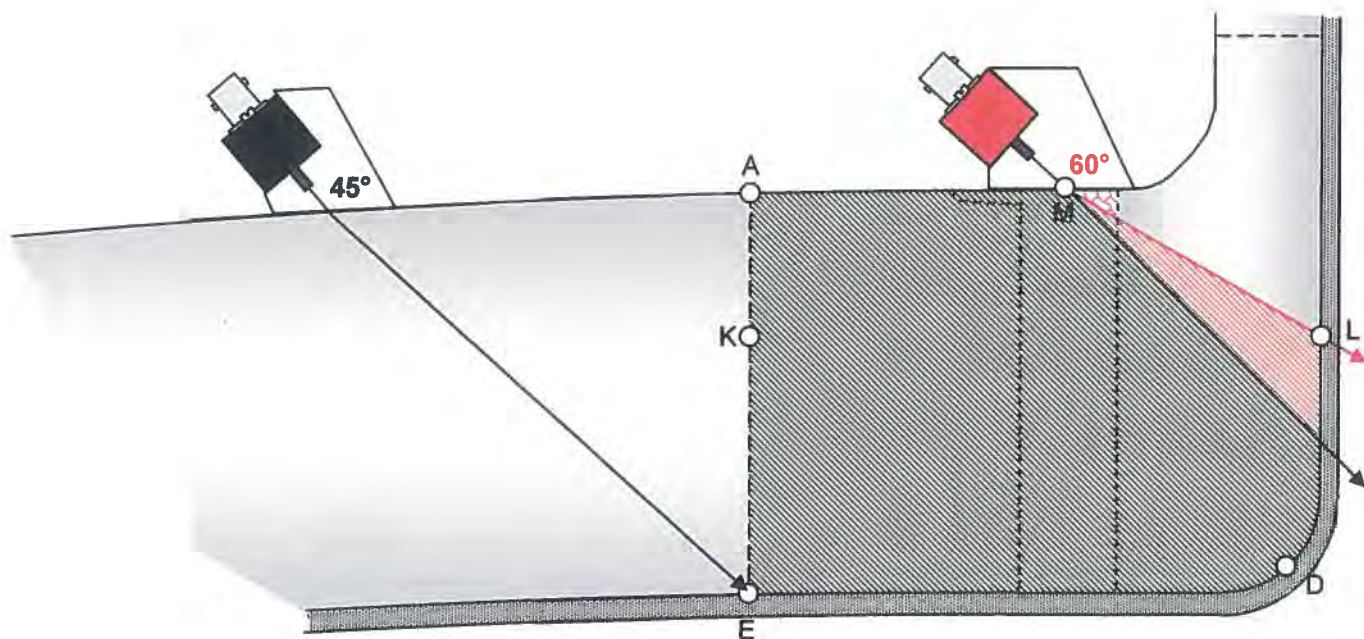
Summary No.: 103110

Sketch or Photo:

Summary: 103110

Sketch 2: Radial Exam ↑

Scale: 50%



- Exam Area = 26.86 in²
- Examined: AMLK + KLDE
- $1.5(3.3 + 5.9)/2 + (5.9 \times 2.7) = 22.83 \text{ in}^2$





Supplemental Report

Report No.: CC17-IU-013

Page: 4 of 6

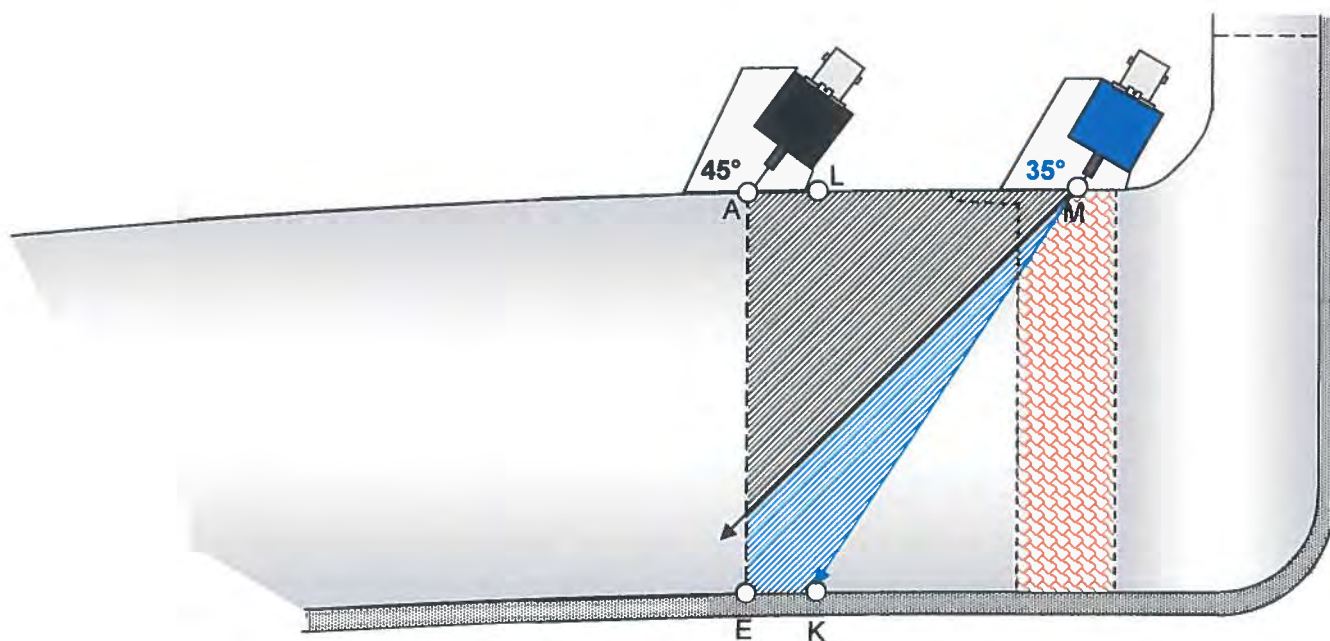
Summary No.: 103110

Sketch or Photo:

Summary: 103110

Sketch 3: Radial Exam ↓

Scale: 50%



- Exam Area = 26.86 in²
- Examined: ALKE + LMK
- $(0.7 \times 4.2) + (2.7 \times 4.2)/2 = 8.61 \text{ in}^2$





Supplemental Report

Report No.: CC17-IU-013

Summary No.: 103110

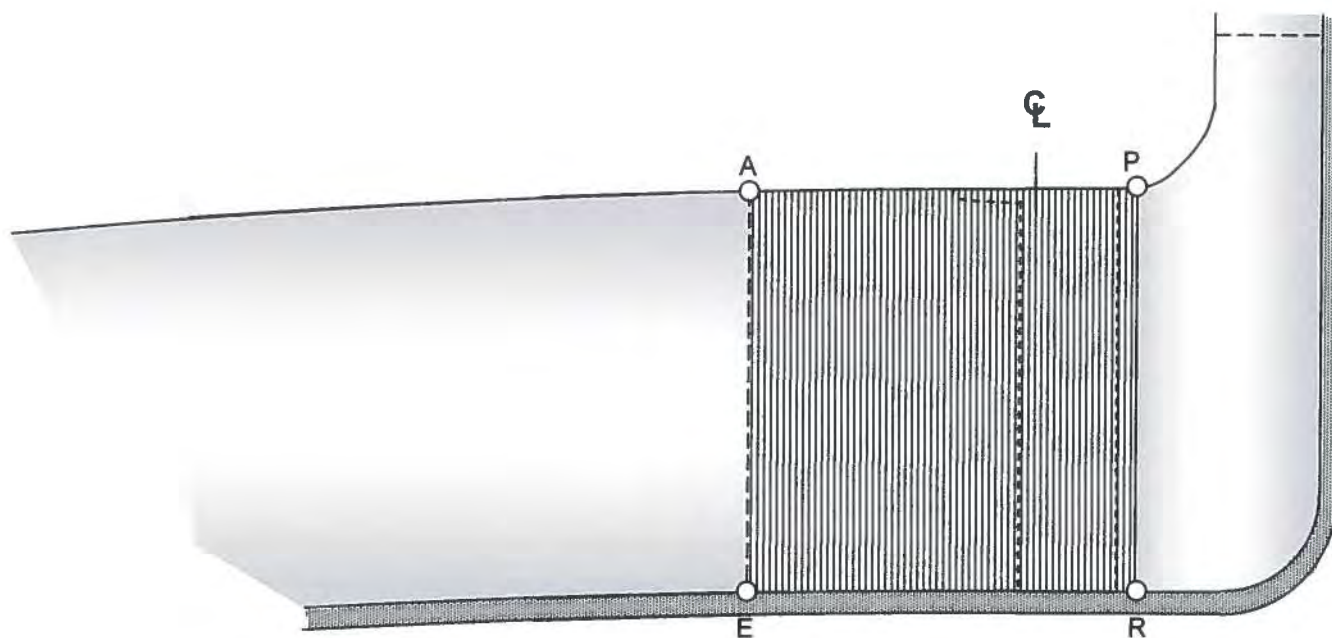
Page: 5 of 6

Sketch or Photo:

Summary: 103110

Sketch 4: CW & CCW exams

Scale: 50%



- Exam Area = 26.86 in²
- Examined: APRE
- (4.0 x 4.2) = 16.80 in²



Additional - Supplemental Reports



Supplemental Report

Report No.: CC17-IU-013

Summary No.: 103110

Page: 6 of 6

Sketch or Photo:

ASME Code Coverage Calculation

Component Information	Beam Directions
Summary: 103110 Component: 16-405B Exam Area: 26.86 in ² Exam Length: 22"	↑ = Radial Towards Nz. ↓ = Radial Away from Nz. ← = CW → = CCW

Cov. Sketch	Beam Angle & Direction	Area Examined	Exam Area	Length Examined	Exam Length	Percent Coverage
2	45/60 ↑	(22.83 /	26.86) x	(22.00 /	22) x 100 =	85.00%
3	35/45 ↓	(8.61 /	26.86) x	(22.00 /	22) x 100 =	32.06%
4	45←	(16.80 /	26.86) x	(22.00 /	22) x 100 =	62.55%
4	45→	(16.80 /	26.86) x	(22.00 /	22) x 100 =	62.55%
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
		(/	~) x	(/	~) x 100 =	~
Total Percent:						242.16%
Code Examination Coverage (Total Percent / 4 Sound Beams):						60.5%

Personnel	Name	Signature	Level	Date
Prepared By:	Simon Crothers	<i>Simon Crothers</i>	III	2/18/17
Reviewed By:	CILENTY, J.J. UT-III	<i>J.J. CILENTY</i>	III	2-24-17

Additional - Supplemental Reports



UT Pipe Weld Examination

Site/Unit: **CCNP / 2**
Summary No.: **201300**
Workscope: **ISI**

Procedure: **ER-AA-335-048**
Procedure Rev.: **0**
Work Order No.: **C93163211-510**

Outage No.: **2-RFO-2017 (21)**
Report No.: **CC17-IU-015**
Page: **1** of **7**

Code: **ASME Section XI 2004 Ed** Cat./Item: **C-A/C1.10** Location: **A15-ECCS21**
Drawing No.: **12015-0025** Description: **CHANNEL FLANGE TO CHANNEL COVER**
System ID: **052**
Component ID: **SCHE-21-1** Size/Length: **1.4"/141.4"** Thickness/Diameter: **1.05" / 45"**
Limitations: **Single sided access** Start Time: **1100** Finish Time: **1350**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **As welded**
Lo Location: **TDC** Wo Location: **WELD CL** Couplant: **ULTRAGEL II** Batch No.: **10325**
Temp. Tool Mfg.: **FLUKE** Serial No.: **17960592** Surface Temp.: **90** °F

Cal. Report No.: **CC17-1CA-001 and CC17-1CA-002**

Angle Used	0	45	45T	60	70	N/A
Scanning dB	45	35	41	N/A	40	N/A

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

Comments:

Performed 0° interfering conditions Examination. None noted.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: **NO- 62.5%**

Reviewed Previous Data: **NO**

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
MOORE, LEE			<i>Lee Moore</i>	2/3/2017	SIMON CROTHERS L-III	<i>Simon Crothers</i>	2/9/17
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					CILENTO, J.J. UT-III	<i>J.J. Cilento</i>	2-9-17
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					COLEMAN, AJA	<i>AJA Coleman</i>	2-9-17

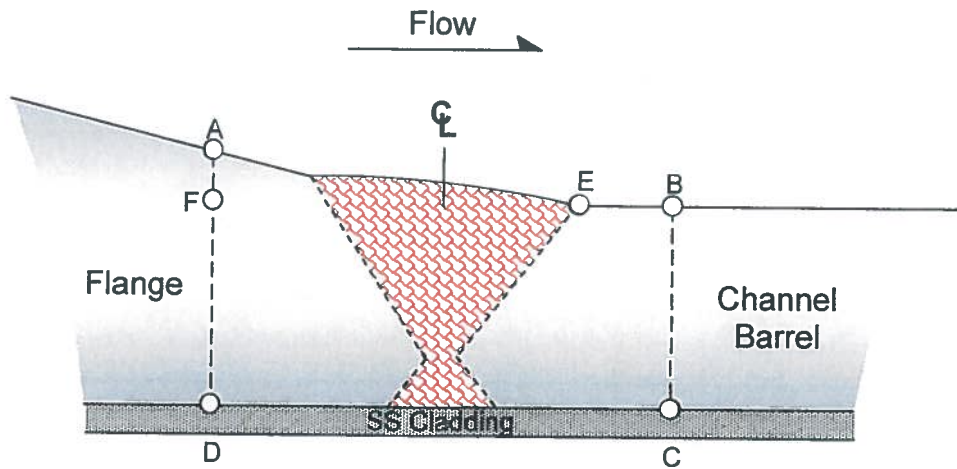
UT Pipe Weld Examination



Supplemental Report

Report No.: **CC17-IU-015**Page: **2** of **7**Summary No.: **201300**

Sketch or Photo:

201300**Sketch 1: Dimensions & Fit Up**

Weld Crown Width:	1.4"
Thickness (excluding clad):	1.05"
Weld Length:	141.4"
Exam Area:	2.76 in ²

Exam Area

- ABCD
- FBCD + AEF
- $(2.4 \times 1.05) + (1.9 \times 0.25)/2 = \underline{2.76 \text{ in}^2}$





Supplemental Report

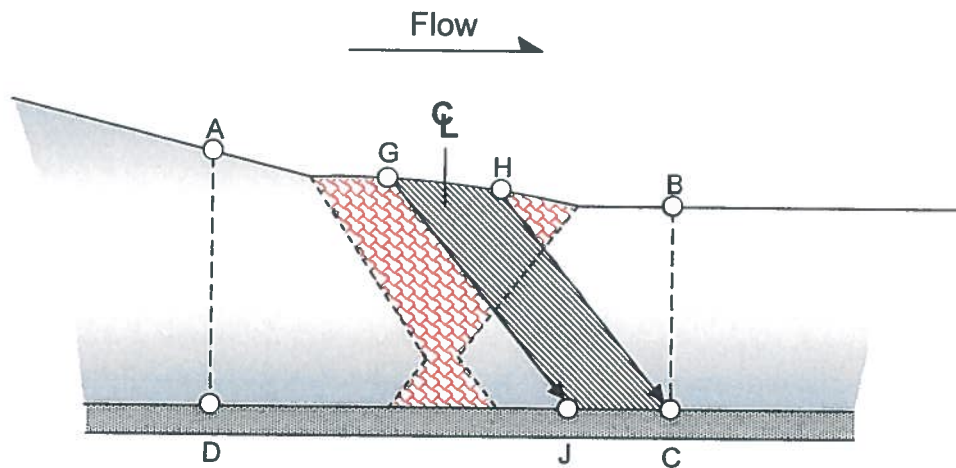
Report No.: **CC17-IU-015**Summary No.: **201300**Page: **3** of **7**

Sketch or Photo:

201300

Sketch 2: Coverage

Exam: 45° US

Exam Area: 2.76 in²

Examined: GHCJ

Examined: (1.5 x 0.4) = 0.60 in²Coverage Calc: 0.60 / 2.76 = 21.74%



Page: 4 of 7

Exam: 45° / 70° DS





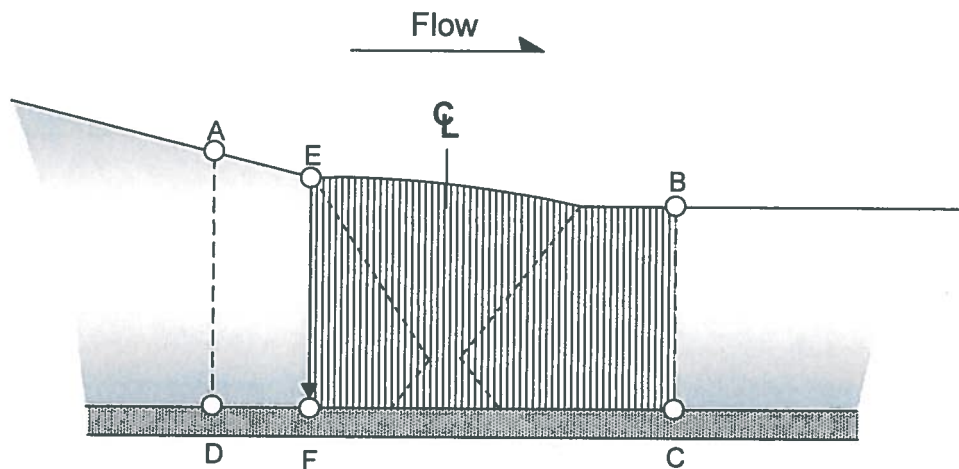
Page: 5 of 7

Sketch or Photo:

201300

Sketch 4: Coverage

Exam: 45° CW / CCW



Exam Area: 2.76 in²

Examined: ABCD - AEFD

Examined: $2.76 - 0.5(1.3 + 1.2)/2 = 2.13 \text{ in}^2$

Coverage Calc: $2.13 / 2.76 = 77.17\%$

Coverage Calc	
<i>Exam</i>	<i>Coverage</i>
Ax Upst	21.74%
Ax Dnst	73.91%
CW	77.17%
CCW	77.17%
Total:	250%
Total / 4:	62.5%

Additional - Supplemental Reports

UT Pipe Weld Examination

Site/Unit: **CCNP / 2**
Summary No.: **113120-RI**
Workscope: **ISI**

Procedure: **ER-AA-335-048**
Procedure Rev.: **0**
Work Order No.: **C93163307-540**

Outage No.: **2-RFO-2017 (21)**
Report No.: **CC17-IU-016**
Page: **1** of **7**

Code: **ASME Section XI 2004 Ed** Cat./Item: **R-A-U2/R1.11** Location: **CPB-21**
Drawing No.: **13010A-1015SH0001** Description: **ELBOW TO SAFE END**
System ID: **064-A**
Component ID: **12-PSL - 12** Size/Length: **1.0" / 40"** Thickness/Diameter: **1.312" / 12"**
Limitations: **Weld Crown** Start Time: **0404** Finish Time: **0428**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **Ground**
Lo Location: **Extrados** Wo Location: **CL of weld** Couplant: **ULTRAGEL II** Batch No.: **11525**
Temp. Tool Mfg.: **FLUKE** Serial No.: **17960598** Surface Temp.: **94** °F

Cal. Report No.: **CC17-ICA-045 and CC17-ICA-046**

Angle Used	0	45	45T	60	N/A	N/A
Scanning dB	N/A	55.8	48.6	N/A	N/A	N/A

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

Comments:

Best effort exam due to SSCS grain structure.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: **No - 53.1%**

Reviewed Previous Data: **YES**

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
TUCKER, DAVID K			<i>David K. Tucker</i>	2/19/2017	Crothers, Simon L-111	<i>Simon Crothers</i>	2/25/17
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
BULL, W. KEITH			<i>W. Keith Bull</i>	2/19/2017	CILEX TO, J.J. UT-III	<i>J.J. Cilex To</i>	2-25-17
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					GARY GUSTOFSON	<i>Gary Gustofson</i>	2/25/17

Supplemental Report

Report No.: **CC17-IU-016**

Summary No.: 113120-RI

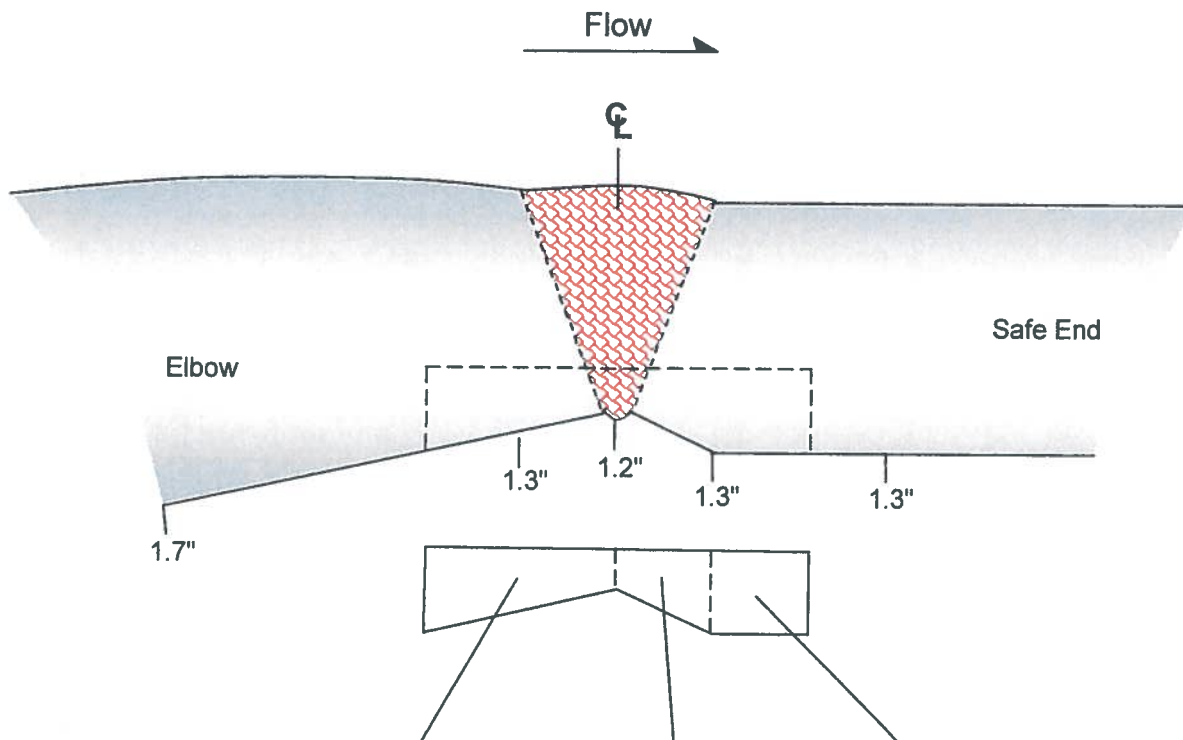
Page: 2 of 7

Sketch or Photo:

Summary: 113120-RI

Weld: 12-PSL-12

Sketch 1: Overview



Exam Area: $1.0(0.43 + 0.2)/2 + 0.5(0.2 + 0.43)/2 + (0.5 \times 0.43) = 0.688 \text{ in}^2$

Exam Area: 0.688 in²

Weld Crown Width: 1.0"

Counterbore US: None detected

Counterbore DS: Located @ toe



Supplemental Report

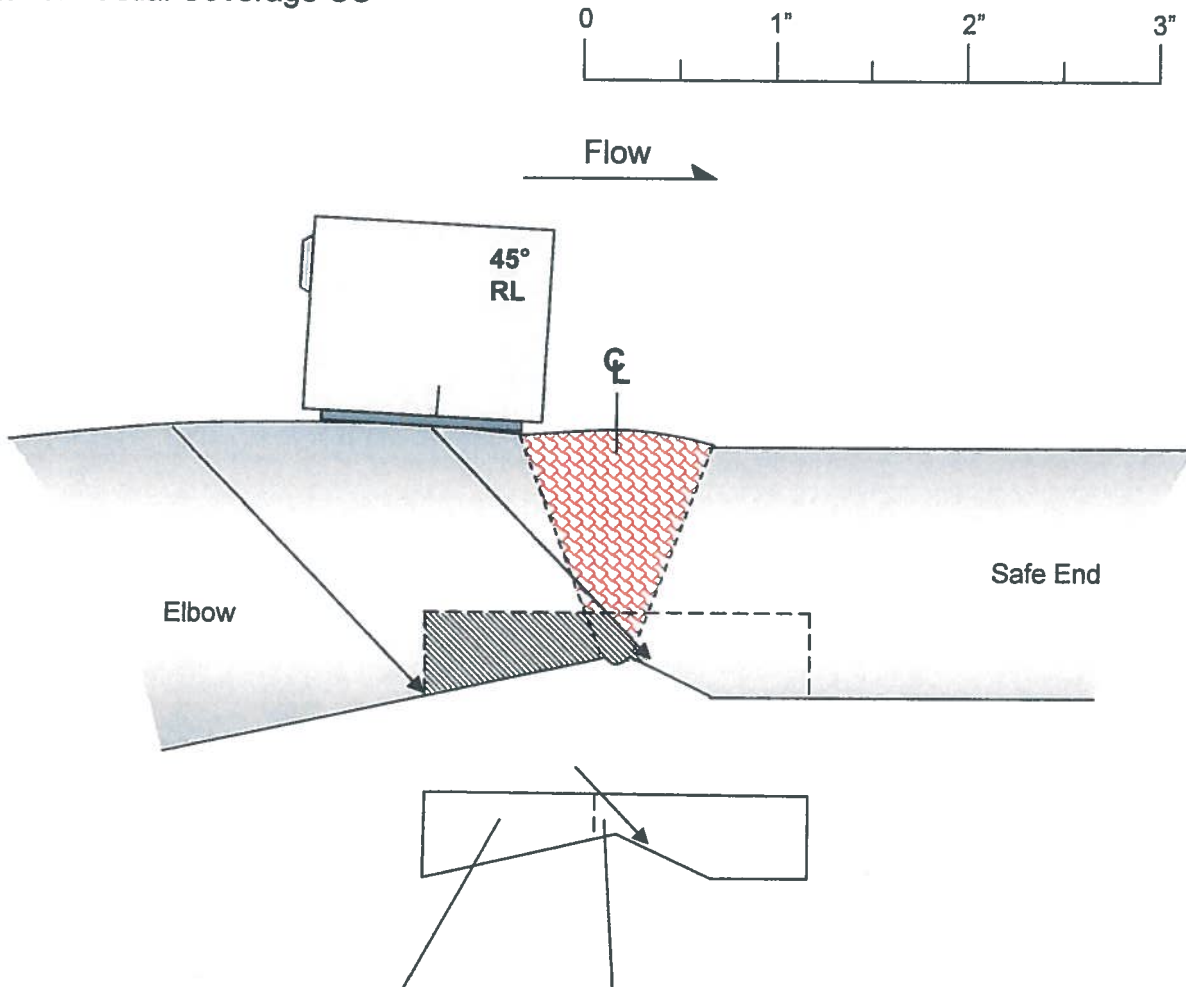
Report No.: **CC17-IU-016**Summary No.: **113120-RI**Page: **3** of **7**

Sketch or Photo:

Summary: 113120-RI

Weld: 12-PSL-12

Sketch 2: Axial Coverage US



$$\text{Examined: } 0.9(0.43 + 0.2)/2 + (0.2 \times 0.2)/2 = 0.304 \text{ in}^2$$

$$\text{Examined: } 0.304 / 0.688 = \underline{44.2\%}$$

Best effort exam performed on weld crown, no coverage credit taken.



Supplemental Report

Report No.: CC17-IU-016

Summary No.: 113120-RI

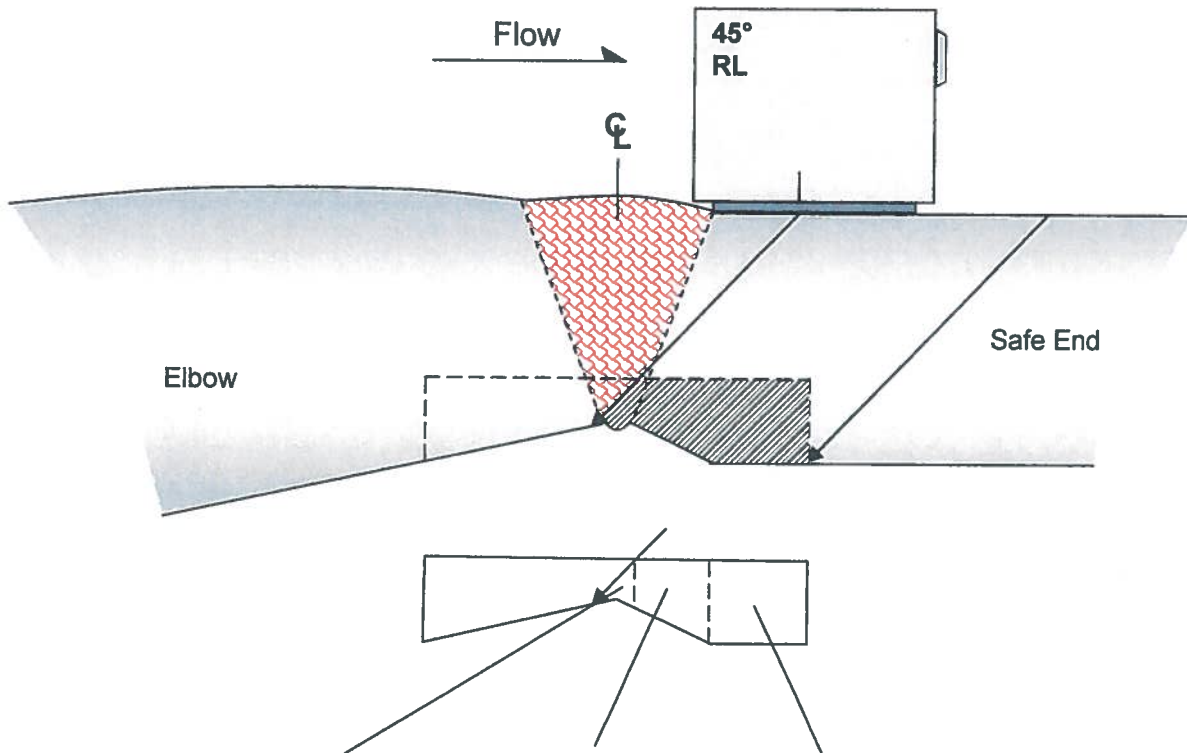
Page: 4 of 7

Sketch or Photo:

Summary: 113120-RI

Weld: 12-PSL-12

Sketch 3: Axial Coverage DS



$$\text{Examined: } (0.2 \times 0.2)/2 + 0.4(0.2 + 0.43)/2 + (0.5 \times 0.43) = 0.361 \text{ in}^2$$

$$\text{Examined: } 0.361 / 0.688 = \underline{52.5\%}$$

Best effort exam performed on weld crown, no coverage credit taken.



Supplemental Report

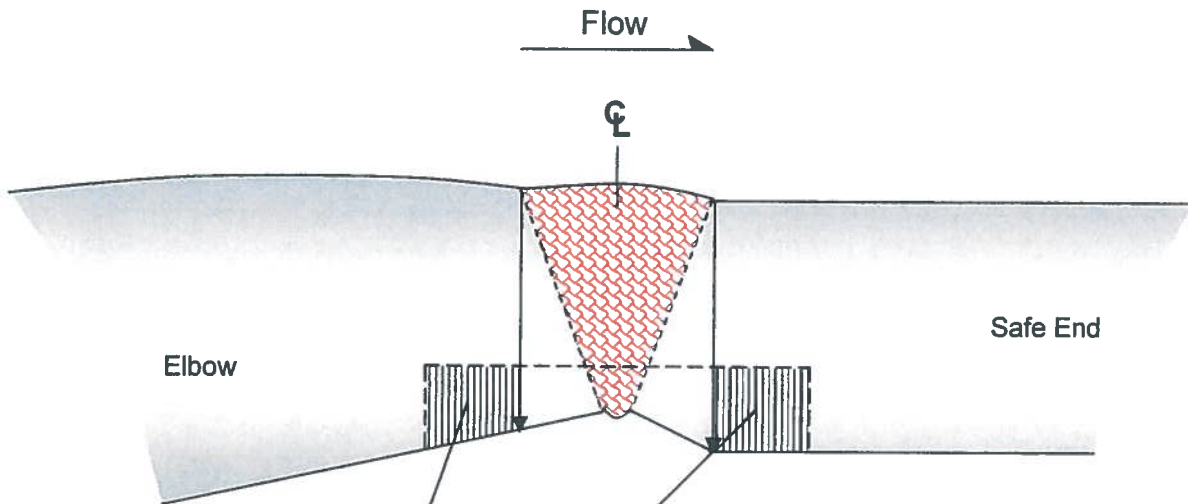
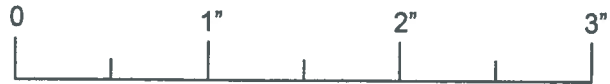
Report No.: **CC17-IU-016**Page: **5** of **7**Summary No.: **113120-RI**

Sketch or Photo:

Summary: 113120-RI

Weld: 12-PSL-12

Sketch 4: Circ Coverage



$$\text{Examined: } 0.5(0.43 + 0.3)/2 + (0.5 \times 0.43) = 0.398 \text{ in}^2$$

$$\text{Examined: } 0.398 / 0.688 = \underline{57.8\%}$$

Best effort exam performed on weld crown, no coverage credit taken.

Coverage Calc	
Exam	Coverage
Ax Upst	44.2%
Ax Dnst	52.5%
Circ CW	57.8%
Circ CCW	57.8%
Total:	212.3%
Total / 4:	53.1%

UT Pipe Weld Examination

Site/Unit: **CCNP / 2**
Summary No.: **136040-RI**
Workscope: **ISI**

Procedure: **ER-AA-335-031**
Procedure Rev.: **8**
Work Order No.: **C93163306-655**

Outage No.: **2-RFO-2017 (21)**
Report No.: **CC17-IU-010**
Page: **1** of **2**

Code: **ASME Section XI 2004 Ed** Cat./Item: **R-A-U2/R1.11** Location: **C69-PRZTOP**
Drawing No.: **91305SH0001** Description: **TEE TO PIPE**
System ID: **064-A**
Component ID: **4-PS-2003 - 4** Size/Length: **0.7" / 14.10"** Thickness/Diameter: **0.438" / 4.0"**
Limitations: **Single sided access** Start Time: **1547** Finish Time: **1512**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **Blended**
Lo Location: **TDC** Wo Location: **CL of weld** Couplant: **ULTRAGEL II** Batch No.: **11525**
Temp. Tool Mfg.: **FLUKE** Serial No.: **17960598** Surface Temp.: **73** °F

Cal. Report No.: **CC17-ICA-051, 052, 053, 054**

Angle Used	0	45	45T	60	60T	70
Scanning dB	N/A	28.0	34.0	41.4	47.4	45.0

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

Comments:

2.25 MHz 70° Probe @ 47.6dB. Performed 60° Circ exam from base metal skewed into weld root area.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: **No - 50%**

Reviewed Previous Data: **YES**

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Knott, Brian D.	II	<i>Brian D. Knott</i>	2/17/2017	Crothers, Simon L-III	<i>Simon Crothers</i>	2/25/17
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			<i>Jon C. Lawrence</i>	<i>2/11</i>	2-25-2017
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			<i>Aja Coleman</i>	<i>cb</i>	2-26-17



Supplemental Report

Report No.: **CC17-IU-010**Page: **2** of **2**Summary No.: **136040-RI**

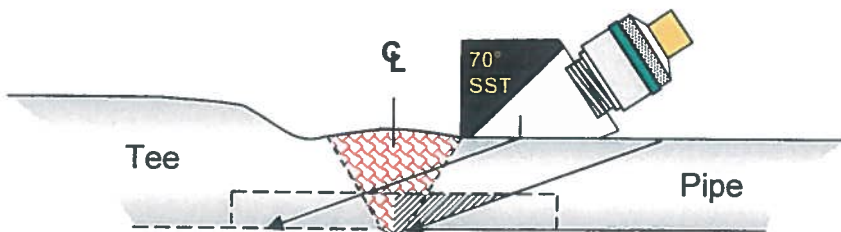
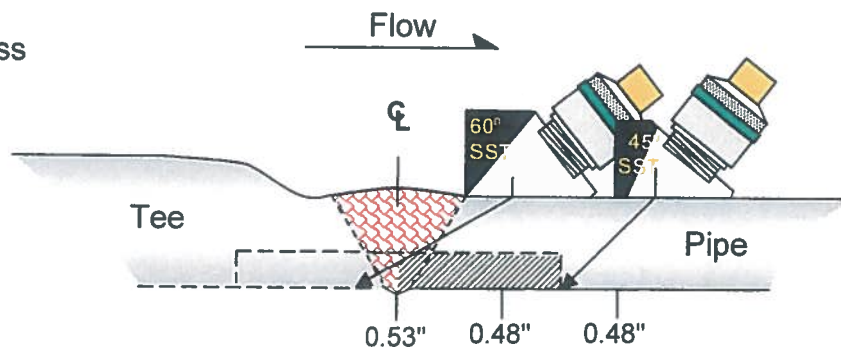
Sketch or Photo:

Summary: 136040-RI

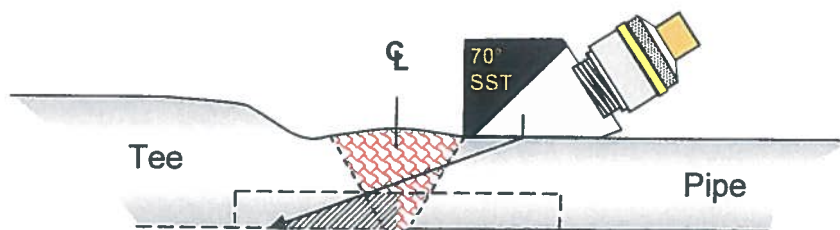
Weld: 4-PS-2003-4

Sketch 1: UT Coverage

Single Sided Access



Note: 70° used to obtain remaining coverage, scan limited to area shown.



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

Code Coverage: 50%

Weld Crown Width: 0.7"

Counterbore US: None Detected

Counterbore DS: None Detected



Additional - Supplemental Reports



UT Pipe Weld Examination

Site/Unit: **CCNP / 2**
Summary No.: **152160-RI**
Workscope: **ISI**

Procedure: **ER-AA-335-031**
Procedure Rev.: **8**
Work Order No.: **C93163277-685**

Outage No.: **2-RFO-2017 (21)**
Report No.: **CC17-IU-024**
Page: **1** of **2**

Code: **ASME Section XI 2004 Ed** Cat./Item: **R-A-U2/R1.20** Location: **CMT 45', NW QUAD**
Drawing No.: **FSK-MP-3108-H** Description: **PIPE TO REDUCER**
System ID: **041**
Component ID: **2-CV-2005 - 13** Size/Length: **0.4" / 7.5"** Thickness/Diameter: **0.344" / 2"**
Limitations: **Single Sided Access** Start Time: **0124** Finish Time: **0152**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **Ground**
Lo Location: **TDC** Wo Location: **WELD CL** Couplant: **ULTRAGEL II** Batch No.: **11525**
Temp. Tool Mfg.: **FLUKE** Serial No.: **17960598** Surface Temp.: **67** °F

Cal. Report No.: **CC17-ICA-010, CC17-ICA-011, CC17-ICA-012 and CC17-ICA-013**

Angle Used	0	45	45T	60	70	35T
Scanning dB	N/A	23	29	35	49	32

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

Comments:

Performed supplemental 35° Circ exam to assure ID impingement.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: **No - 50%**

Reviewed Previous Data: **YES**

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
BULL, W. KEITH				2/18/2017	Crothers, Simon Lev III		2/20/17
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
TUCKER, DAVID K				2/18/2017	CILENTO, J. J. UT-III		2-23-17
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					COLEMAN, AJA		2-24-17



Supplemental Report

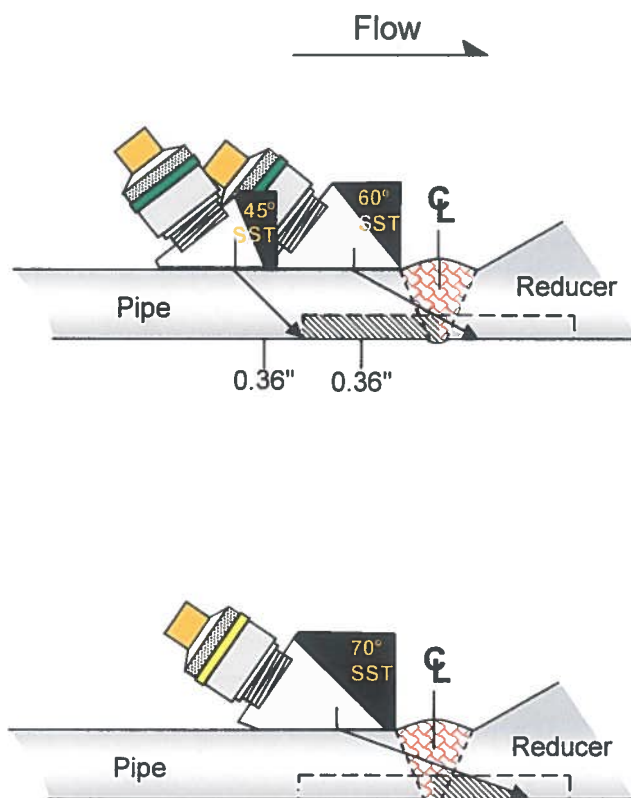
Report No.: CC17-IU-024Page: 2 of 2Summary No.: 152160-RI

Sketch or Photo:

Summary: 152160-RI

Weld: 2-CV-2005-13

Sketch 1: UT Coverage



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

Code Coverage: 50%

Weld Crown Width: 0.40"

Counterbore US: None detected

Counterbore DS: None detected



Additional - Supplemental Reports



UT Pipe Weld Examination

Site/Unit: **CCNP / 2**
Summary No.: **152190-RI**
Workscope: **ISI**

Procedure: **ER-AA-335-031**
Procedure Rev.: **8**
Work Order No.: **C93163277-690**

Outage No.: **2-RFO-2017 (21)**
Report No.: **CC17-IU-025**
Page: **1** of **2**

Code: **ASME Section XI 2004 Ed** Cat./Item: **R-A-U2/R1.20** Location: **CMT 45' NW Quad**
Drawing No.: **FSK-MP-3108-H** Description: **REDUCER TO PIPE**
System ID: **041**
Component ID: **2-CV-2005 - 16** Size/Length: **0.4" / 7.5"** Thickness/Diameter: **0.344" / 2"**
Limitations: **Single Sided Access / Welded Support** Start Time: **0221** Finish Time: **0247**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **As Welded**
Lo Location: **TDC** Wo Location: **WELD CL** Couplant: **ULTRAGEL II** Batch No.: **11525**
Temp. Tool Mfg.: **FLUKE** Serial No.: **17960598** Surface Temp.: **71** °F

Cal. Report No.: **CC17-ICA-033, 034, 035 and 037**

Angle Used	0	45	45T	60	70	35T
Scanning dB	N/A	24	30	44	49	31

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

Comments:

Performed 35° Circ scan to assure ID impingement.

Results: Accept ☒ Reject ☐ EngDisp ☐

Percent Of Coverage Obtained > 90%: **No - 25%**

Reviewed Previous Data: **YES**

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
BULL, W. KEITH				2/19/2017	Crothers, Simon Lev III		2/24/17
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
TUCKER, DAVID K				2/19/2017	CILENTO, J.J. UT-III		2-24-17
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					COLEMAN, AJA		2-24-17



Supplemental Report

Report No.: **CC17-IU-025**

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

Summary No.: **152190-RI**

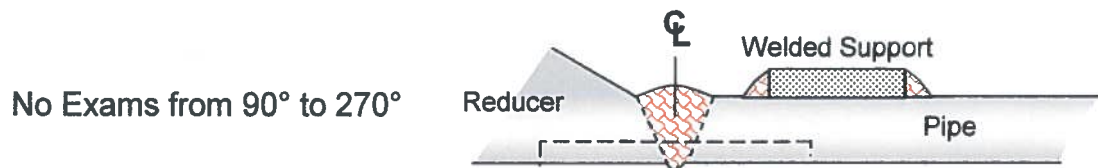
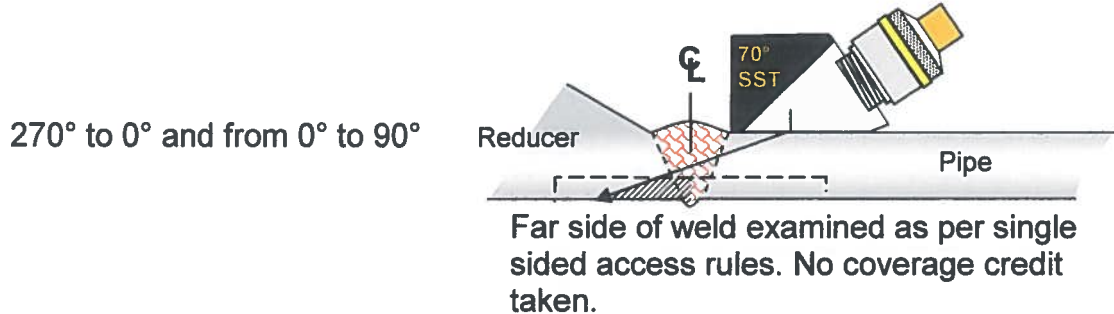
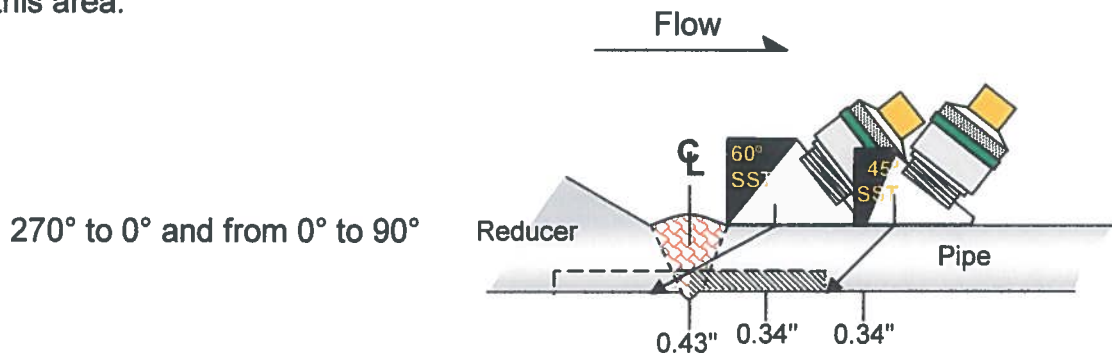
Sketch or Photo:

Summary: 152190-RI

Weld: 2-CV-2005-16

Sketch 1: UT Coverage

Obstruction: Welded pipe support on DS side from 90° to 270°.
No Exams in this area.



Coverage Calc		
Exam	Length	Result
Ax Upst	0" of 7.5"	0%
Ax Dnst	3.75" of 7.5"	50%
Circ Upst	0" of 7.5"	0%
Circ Dnst	3.75" of 7.5"	50%
Total:		100%
Total / 4:		25%

Weld Crown Width: 0.40"

Counterbore US: None detected

Counterbore DS: None detected



UT Pipe Weld Examination

Site/Unit: **CCNP / 2**
Summary No.: **155310-RI**
Workscope: **ISI**

Procedure: **ER-AA-335-031**
Procedure Rev.: **8**
Work Order No.: **C93163277-695**

Outage No.: **2-RFO-2017 (21)**
Report No.: **CC17-IU-026**
Page: **1** of **3**

Code: **ASME Section XI 2004 Ed** Cat./Item: **R-A-U2/R1.20** Location: **CMT 45' SW Quad**
Drawing No.: **FSK-MP-3106** Description: **PIPE TO PIPE**
System ID: **041**
Component ID: **2-CV-2018 - 23** Size/Length: **0.6" / 7.5"** Thickness/Diameter: **0.344" / 2"**
Limitations: **Welded Support** Start Time: **0252** Finish Time: **0315**

Examination Surface: Inside ☐ Outside ☒ Surface Condition: **As Welded**
Lo Location: **TDC** Wo Location: **WELD CL** Couplant: **ULTRAGEL II** Batch No.: **11525**
Temp. Tool Mfg.: **FLUKE** Serial No.: **17960598** Surface Temp.: **73** °F

Cal. Report No.: **CC17-ICA-033, 034, 035, 036 and 037**

Angle Used	0	45	45T	60	70	35T
Scanning dB	N/A	24	30	44	46	31






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

Comments:

Performed 35° Circ Scan to assure ID impingement. Performed 0° interfering conditions exam. None noted.

Results: Accept ☒ Reject ☐ EngDisp ☐ **2.25 MHz 70°; Scan dB = 49.**

Percent Of Coverage Obtained > 90%: **No - 75%** Reviewed Previous Data: **No**

Examiner	Level	II PDI	Signature	Date	Reviewer	Signature	Date
BULL, W. KEITH				2/19/2017	Crothers, Simon		2/24/17
Examiner	Level	II PDI	Signature	Date	Site Review	Signature	Date
TUCKER, DAVID K				2/19/2017	CILENTO, J. J. UT-III		2-24-17
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					COLEMAN, AJA		2-24-17



Supplemental Report

Report No.: CC17-IU-026

Page: 2 of 3

Summary No.: 155310-RI

Sketch or Photo:

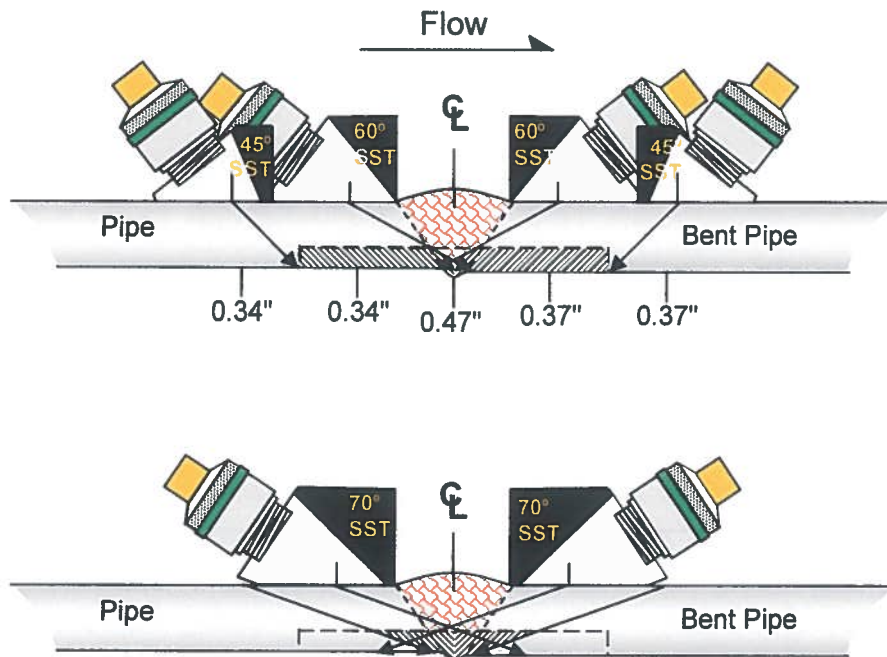
Summary: 155310-RI

Weld: 2-CV2018-23

Sketch 1: UT Coverage

Obstruction: Welded pipe support on US side from 90° to 270°.

This sketch shows coverage in the unobstructed area (270° to 0° and from 0° to 90°)



Note: 70° used to obtain remaining coverage, scan limited to area shown.

Weld Crown Width: 0.6"

Counterbore US: None Detected

Counterbore DS: None Detected



Additional - Supplemental Reports



Supplemental Report

Report No.: **CC17-IU-026**

Page: **3** of **3**

Summary No.: **155310-RI**

Sketch or Photo:

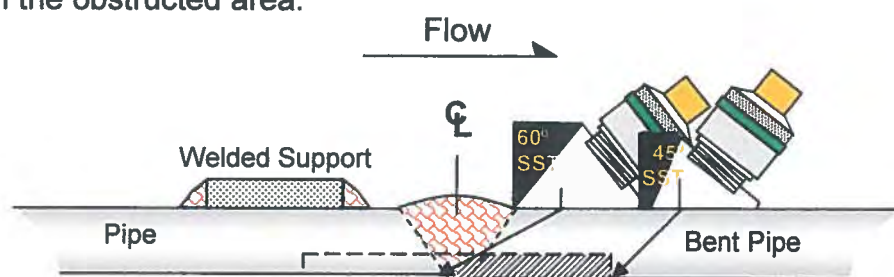
Summary: 155310-RI

Weld: 2-CV2018-23

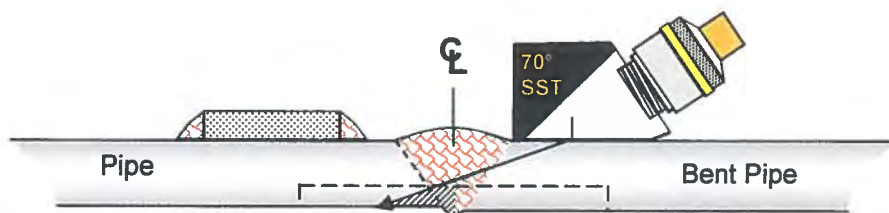
Sketch 2: UT Coverage at Limitation

Obstruction: Welded pipe support on US side from 90° to 270°.

This sketch shows coverage in the obstructed area.



Note: 70° used to obtain remaining coverage, scan limited to area shown.



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



Coverage Calc		
Exam	Length	Result
Ax Upst	3.75" of 7.5"	50%
Ax Dnst	7.5" of 7.5"	100%
Circ Upst	3.75" of 7.5"	50%
Circ Dnst	7.5" of 7.5"	100%
Total:		300%
Total / 4:		75%

Additional - Supplemental Reports



UT Vessel Examination

Site/Unit: CCNP / 2Procedure: ER-AA-335-048Outage No.: 2RFO23 (2RFO22)Summary No.: CCNP-2-201500Procedure Rev.: 1Report No.: CC19-IU-001Workscope: ISIWork Order No.: C93666928-520Page: 1 of 6Code: ASME Sect XI, 2004EdCat./Item: C-B/C2.21Location: A15-ECCS21Drawing No.: B-3Description: OUTLET NOZZLESystem ID: 052Component ID: SCHE-21-N2Size/Length: 1.3" / 34" Thickness/Diameter: 1.125" / 10"Limitations: Single Sided AccessStart Time: 1155 Finish Time: 1214Examination Surface: Inside ☐ Outside ☒Surface Condition: GroundLo Location: TDCWo Location: US ToeCouplant: ULTRAGEL IIBatch No.: 16K001Temp. Tool Mfg.: FLUKESerial No.: 106895Surface Temp.: 92 °FCal. Report No.: CC19-ICA-005, 006

Angle Used

0	45	45T	60	60T	70
N/A	37	37	N/A	N/A	55

Scanning dB

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

Comments:

None

Results: Accept ☒ Reject ☐ EngDisp ☐Percent Of Coverage Obtained > 90%: No (46.6%)Reviewed Previous Data: Yes

Examiner	Level	III-PDI	Signature	Date	Reviewer	Signature	Date
Crothers, Simon			<i>Simon Crothers</i>	2/13/2019	LV III BLECHA PAUL S	<i>Paul S Blech</i>	2/14/2019
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					GARY GUSTAFSON	<i>Gary Gustafson</i>	2/21/19
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Aja Coleman	<i>Aja Coleman</i>	2/21/19

UT Vessel Examination

Summary No.: **CCNP-2-201500**

Sketch or Photo:

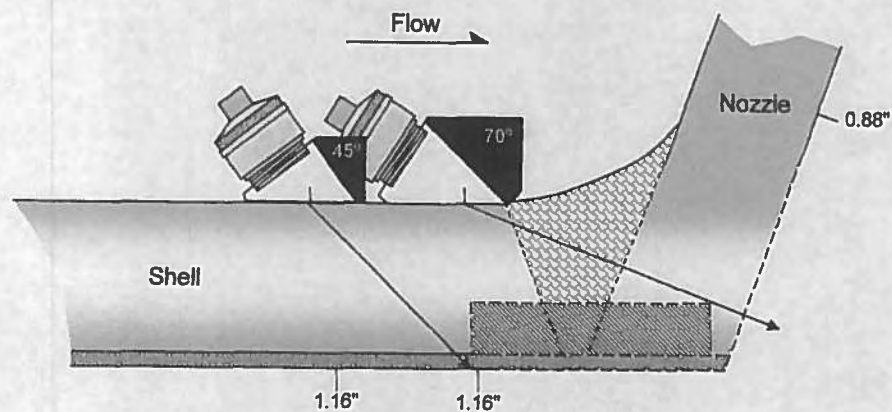
Summary: 201500

Weld: SCHE-21-N2

Sketch 1: Axial Exam Coverage

Length: 34" of 34"

Profile taken from previous report CC09-IU-005, dated 01/29/09



Weld Crown Width:	1.3"
Thickness (excluding clad):	1.06"
Weld Length:	34"
Exam Area (1.7 x 0.35"):	0.60 in ²



Summary No.: **CCNP-2-201500**

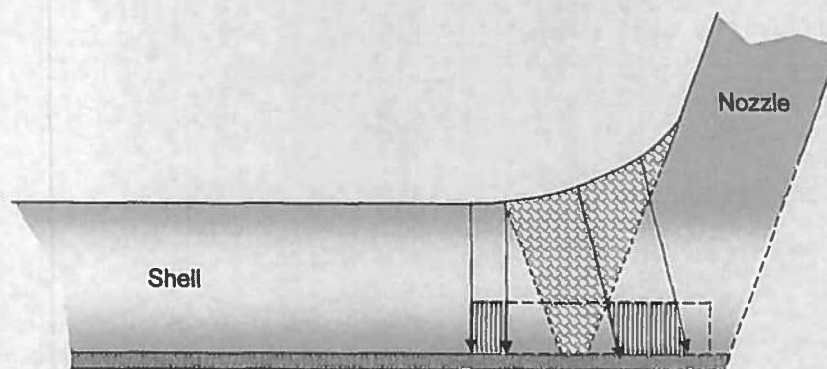
Sketch or Photo:

Summary: 201500

Weld: SCHE-21-N2

Sketch 2: Circ Exam Coverage

Length: 34" of 34"



Exam area = 0.6 in²

Axial Coverage:

- From shell side = 100%
- From nozzle side = 0%

Circ Coverage

- $(0.25 \times 0.35) + (0.5 \times 0.35) = 0.26 \text{ in}^2$
- $0.26 / 0.6 = 43.3\%$

Calc:

- $(100\% + 0\% + 43.3\% + 43.3\%)/4 = 46.6\%$



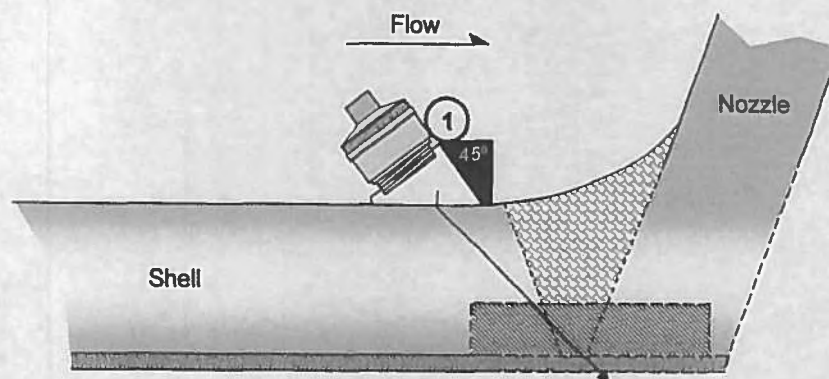
Summary No.: CCNP-2-201500

Sketch or Photo:

Summary: 201500

Weld: SCHE-21-N2

Sketch 3: Indication Plot



① ID Geometry from cladding, seen intermittently 360°



WesDyne International
Reactor Vessel Weld Results Summary
CALVERT CLIFFS UNIT 2

WELD NO.	10-205A	DESCRIPTION	Outlet Nozzle to Shell Weld @ 0°
-----------------	----------------	--------------------	---

WesDyne # WN0 EPP SKETCH: SHEET 3 OF 17

LIMITATIONS	NO	<input type="checkbox"/>	YES	<input checked="" type="checkbox"/>	COMBINED COVERAGE 72.70%
-------------	----	--------------------------	-----	-------------------------------------	---

UT RESULTS	NI	RI	NO. OF UT INDICATIONS	2
		X	STATUS	Code Allowable

EXAM DOCUMENTATION

INDICATION DOCUMENTATION

X ANALYSIS LOG

X ASSESSMENT SHEET

X ACQUISITION LOG

X PARAGON HARD COPY

X SCAN PRINTOUT

☐ OTHER (specify)

X COVERAGE BREAKDOWN

WESDYNE ANALYST: Conrad S. Wyffels  Level: III Date: 3/4/19

LEVEL III REVIEW: 2020 2/20/2020 Date: 3-5-19

STATION REVIEW: Michael S. Alley gmk Date: 3-6-19

Calvert Cliffs Unit 2

RPV COVERAGE ESTIMATE BREAKDOWNS

DIRECTION / ORIENTATION

PARALLEL SCANS

CCW / CW

PERP. SCANS

IN / OUT

WELD DESCRIPTION Outlet Nozzle to Shell Weld @ 0°


WELD NO. 10-205A (WN0)

BEAM ANGLES

BEAM DIRECTION	<u>Bore Scan</u> 50°, 35°, 5°, 40°, 25°	<u>Star Scan</u> 45° L Dual 45° L Single 45° Shear	<u>Tan Scan</u> 45° L Dual 45° L Single 45° Shear		
	EXAM VOLUME	EXAM VOLUME	EXAM VOLUME	EXAM VOLUME	EXAM VOLUME
CCW			45.40		
CW			45.40		
OUT (away from bore)	100	100*			
IN (toward bore)		94.62			
UT COVERAGE = 72.70% See exam volume EPP sketch sheet 3, 4, and 5 of 17		* Combination of Bore and Star scans			

Limitation: Due the nozzle to vessel configuration.

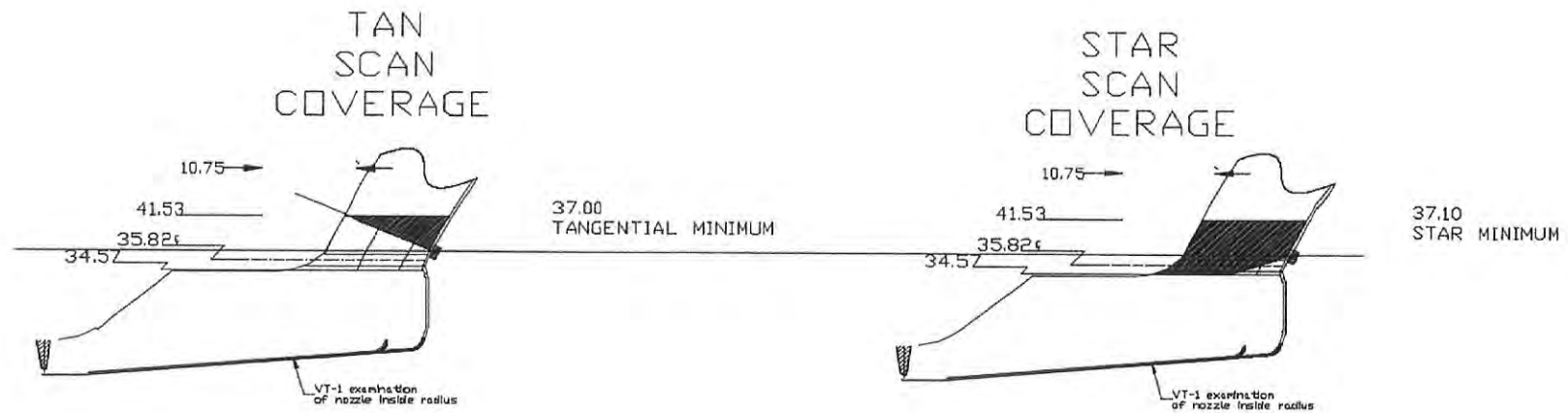
ANALYST: Conrad S. Wyffels



Level: III

Date: 3/4/19

DN



TAN

Exam Volume for Nozzle to Shell Weld

	@0 &180	@90 &270
Dual	15.2404	16.9854
Single L	29.6942	32.7313
Shear	38.1917	35.3946
Total	83.1263	85.1113

Weighted % of total Exam Volume

	@0 &180	@90 &270
Dual	0.1833	0.1996
Single L	0.3572	0.3846
Shear	0.4594	0.4159
Total	100.00%	100.00%

TANZero Degree coverage

	@0 &180	@90 &270
Dual	9.9121	9.6627
Single L	19.3145	12.2678
Shear	21.2039	9.7107
Total	50.4305	25.6412

Percentage of Zone Covered

	@0 &180	@90 &270
Dual	0.6504	0.5689
Single L	0.6504	0.3748
Shear	0.5552	0.1048

Weighted Percent Covered

	@0 &180	@90 &270
Dual	11.92%	11.35%
Single L	23.24%	14.41%
Shear	25.51%	4.36%
Total	60.67%	30.13%

Total CW/CCW Coverage

45.40%

STAR

Exam Volume for Nozzle to Shell Weld

	@0 &180	@90 &270
Dual	15.2404	16.9854
Single L	29.6942	32.7313
Shear	38.1917	35.3946
Total	83.1263	85.1113

Weighted % of total Exam Volume

	@0 &180	@90 &270
Dual	0.1833	0.1996
Single L	0.3572	0.3846
Shear	0.4594	0.4159
Total	100.00%	100.00%

STARZero Degree coverage

	@0 &180	@90 &270
Dual	12.7753	12.4889
Single L	29.6938	30.6746
Shear	38.1917	35.3202
Total	80.6608	78.4837

Percentage of Zone Covered

	@0 &180	@90 &270
Dual	0.8383	0.7353
Single L	1.0000	0.9372
Shear	1.0000	0.9979

Weighted Percent Covered

	@0 &180	@90 &270
Dual	15.37%	14.67%
Single L	35.72%	36.04%
Shear	45.94%	41.50%
Total	97.03%	92.21%

Total IN/OUT Coverage

94.62%

BORE SCAN

Total Exam Volume

@0 &180	@90 &270
83.1263	85.1113

Percentage of Exam Volume Covered

@0 &180	@90 &270
100.00%	100.00%

Total Exam Volume Covered with at least one transducer

@0 &180	@90 &270
83.1263	85.1113

Total Coverage from Bore

100.00%

Combined Coverage with all scans

Coverage CW/CCW (Tan)

45.40%

Coverage IN/OUT (STAR & Bore)

100.00%

Total Coverage for Weld

72.70%

dw

WesDyne International
Reactor Vessel Weld Results Summary
CALVERT CLIFFS UNIT 2

WELD NO.	10-205B	DESCRIPTION	Outlet Nozzle Shell weld @ 180°
-----------------	----------------	--------------------	--

WesDyne # WN180 EPP SKETCH: SHEET 3 OF 17

LIMITATIONS	NO	<input type="checkbox"/>	YES	<input checked="" type="checkbox"/>	COMBINED COVERAGE
					72.70%

UT RESULTS	NI	RI	NO. OF UT INDICATIONS	<u>1</u>
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	STATUS	<u>Code Allowable</u>

EXAM DOCUMENTATION

INDICATION DOCUMENTATION

X ANALYSIS LOG

X ASSESSMENT SHEET

X ACQUISITION LOG

X PARAGON HARD COPY

X SCAN PRINTOUT

☐ OTHER (specify)

X COVERAGE BREAKDOWN

WESDYNE ANALYST: Conrad S. Wyffels  Level: III Date: 3/4/19

LEVEL III REVIEW: Dr. Nasarowski Date: 8-5-19

STATION REVIEW: Michael Sallet Date: 3/6/2019

Calvert Cliffs Unit 2

RPV COVERAGE ESTIMATE BREAKDOWNS

DIRECTION / ORIENTATION

PARALLEL SCANS
PERP. SCANS

CCW / CW
IN / OUT

WELD DESCRIPTION Outlet Nozzle to Shell @ 180°

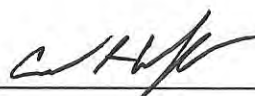
WELD NO. 10-205B (WN180)

BEAM ANGLES

BEAM DIRECTION	<u>Bore Scan</u> 50°, 35°, 5°, 40°, 25°	<u>Star Scan</u> 45° L Dual 45° L Single 45° Shear	<u>Tan Scan</u> 45° L Dual 45° L Single 45° Shear		
	EXAM VOLUME	EXAM VOLUME	EXAM VOLUME	EXAM VOLUME	EXAM VOLUME
CCW			45.40		
CW			45.40		
OUT (away from bore)	100	100*			
IN (toward bore)		94.62			
UT COVERAGE = 72.70% See exam volume EPP sketch sheet 3, 4, and 5 of 17		* Combination of Bore and Star scans			

Limitation: Due the nozzle to vessel configuration.

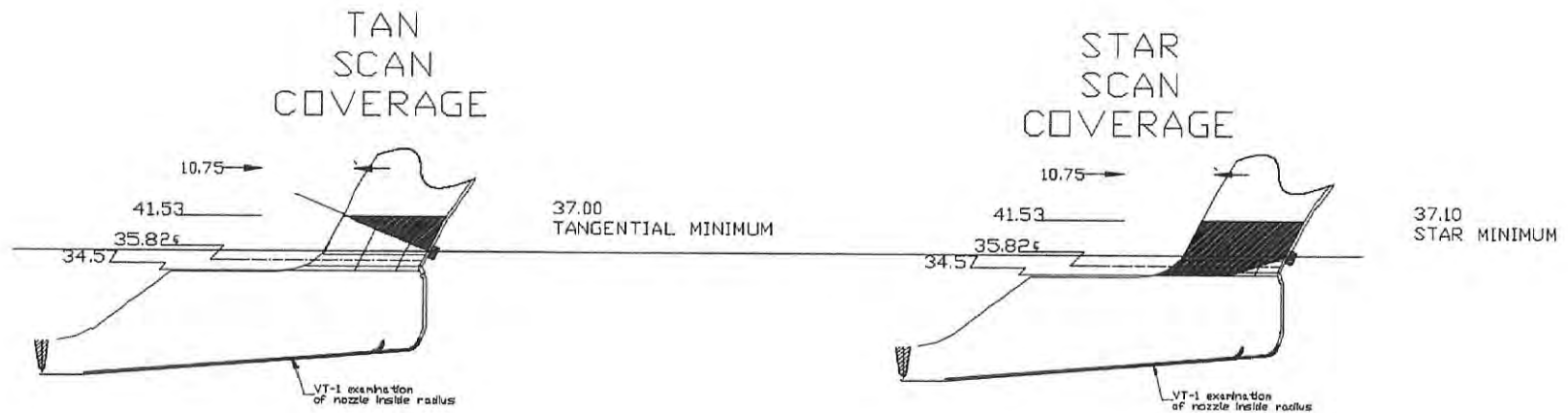
ANALYST: Conrad S. Wyffels



Level: III

Date: 3/4/19





TAN

Exam Volume for Nozzle to Shell Weld

	@0 &180	@90 &270
Dual	15.2404	16.9854
Single L	29.6942	32.7313
Shear	38.1917	35.3946
Total	83.1263	85.1113

Weighted % of total Exam Volume

	@0 &180	@90 &270
Dual	0.1833	0.1996
Single L	0.3572	0.3846
Shear	0.4594	0.4159
Total	100.00%	100.00%

TAN Zero Degree coverage

	@0 &180	@90 &270
Dual	9.9121	9.6627
Single L	19.3145	12.2678
Shear	21.2039	3.7107
Total	50.4305	25.6412

Percentage of Zone Covered

	@0 &180	@90 &270
Dual	0.6504	0.5689
Single L	0.6504	0.3748
Shear	0.5552	0.1048

Weighted Percent Covered

	@0 &180	@90 &270
Dual	11.92%	11.35%
Single L	23.24%	14.41%
Shear	25.51%	4.36%
Total	60.67%	30.13%

Total CW/CCW Coverage

45.40%

STAR

Exam Volume for Nozzle to Shell Weld

	@0 &180	@90 &270
Dual	15.2404	16.9854
Single L	29.6942	32.7313
Shear	38.1917	35.3946
Total	83.1263	85.1113

Weighted % of total Exam Volume

	@0 &180	@90 &270
Dual	0.1833	0.1996
Single L	0.3572	0.3846
Shear	0.4594	0.4159
Total	100.00%	100.00%

STAR Zero Degree coverage

	@0 &180	@90 &270
Dual	12.7753	12.4889
Single L	29.6938	30.6746
Shear	38.1917	35.3202
Total	80.6608	78.4837

Percentage of Zone Covered

	@0 &180	@90 &270
Dual	0.8383	0.7353
Single L	1.0000	0.9372
Shear	1.0000	0.9979

Weighted Percent Covered

	@0 &180	@90 &270
Dual	15.37%	14.67%
Single L	35.72%	36.04%
Shear	45.94%	41.50%
Total	97.03%	92.21%

Total IN/OUT Coverage

94.62%

BORE SCAN

Total Exam Volume

@0 &180	@90 &270
83.1263	85.1113

Percentage of Exam Volume Covered

@0 &180	@90 &270
100.00%	100.00%

Total Exam Volume Covered with at least one transducer

@0 &180	@90 &270
83.1263	85.1113

Total Coverage from Bore

100.00%

Combined Coverage with all scans

Coverage CW/CCW (Tan)

45.40%

Coverage IN/OUT (STAR & Bore)

100.00%

Total Coverage for Weld

72.70%

24

framatome

NDE EXAMINATION SUMMARY

Customer: Exelon	Site: Calvert Cliffs Unit 2	Outage: 2R23
System: CVCS	Component: Inlet Charge	Weld Number: 2-CV-2005-29 & 2-CV-2005-30 Summary Number: CNPP-2-152440-RI
Examination Method: Ultrasonic	Procedure: 54-ISI-600-006 SDCN: NA 54-ISI-864-007 SDCN: NA	
Examination Report No: 2-CV-2005-30-WOL	Exam Data Sheet: DS01	
T&C Data Sheet: TC-01 thru TC-08	Calibration Sheets: CS01 and CS02, LIN-001 and LIN-002 170-00-UT-001, 370-00-UT-001, CC-02/26-02-IN, CC-03/11-02-OUT	
Indication Data Sheet: IDS01	Indication Plot Sheet: IPS01 & IPS02	

Summary:

A structural weld overlay of the Calvert Cliffs Unit 2 Inlet Charge Line was performed during the 2R23 outage. This weld overlay was applied over the existing similar metal weld 2-CV-2005-29 and dissimilar metal weld 2-CV-2005-30.

The weld assessment and PSI/ISI ultrasonic examinations were performed as required by the weld process traveler, document number 50-9295438-000, Sequence 440-00 and 450-00.


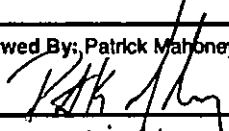
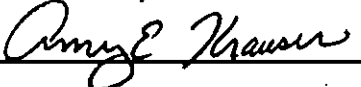

Ultrasonic thickness and OD contour information of both the original configuration (pre-overlay) and final configuration (post overlay) are documented on the Thickness and Contour Data Sheets of this report and in Sequence 170 and Sequence 370 of document 50-9295438-000 weld process traveler.

Ultrasonic examinations of the applied overlay and underlying base material were performed using ASME Code, Section XI, Appendix VIII, Supplement 11 qualified procedures, personnel and equipment. This exam was performed per the requirements of N-740-2.

Ultrasonic volumetric examinations resulted in 2 recordable lack of bond indications at the WOL to original pipe interface. These indications are acceptable as per Code Case N-740-2. See indication data sheets for details. Previous indication was no longer detectable after the WOL application.

See table below for examination coverage obtained (see examination coverage data sheets in this report for details).

Examination Coverage	
WOL Weld Assessment Coverage = 98.1%	
Axial	100.0%
Circ	96.2%
PSI/ISI – Similar Metal Weld 2-CV-2005-29 = 88.1%	
Axial	80.0%
Circ	96.2%
PSI/ISI – DM Metal Weld 2-CV-2005-30 = 100.0%	
Axial	100.0%
Circ.	100.0%

Prepared By: Jason D. Breza Sign:  Level III	Date: 03/11/19	Reviewed By: Patrick Mahoney Sign:  Level II	Date: 03/11/19
Utility Review: Amy Krauser Sign:  Level III	Date: 03/11/19	ANII Review: Aja Coleman Sign: 	Date: 03/11/19

framatomé	WELD OVERLAY REPAIR INSPECTION REGIONS / COVERAGE			
	Report Number: 2-CV-2005-30-WOL	Summary Number: CCNP-2-152440-RI	Weld ID: 2-CV-2005-29 & 2-CV-2005-30	Data Sheet Number: COV-01
	Utility: Exelon	Site: Calvert Cliffs	Unit: 2	Description: Inlet Charge Elbow to Safe End and Safe End to Nozzle WOL

Coverage Calculation Summary

0° - Axial = 100%
0° - Circumferential = 100%

90° - Axial = 100%
90° - Circumferential = 93.5%

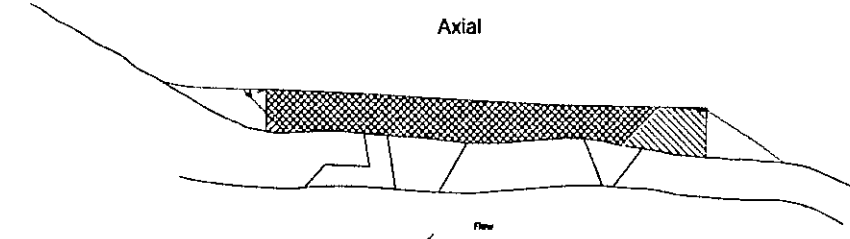
180° - Axial = 100%
180° - Circumferential = 91.6%

270° - Axial = 100%
270° - Circumferential = 100%

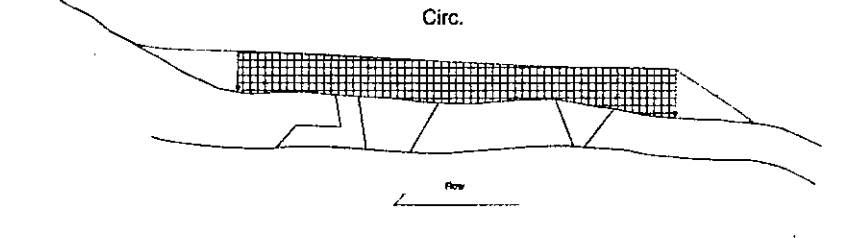
Total Coverage
Axial = 100%
Circumferential = 98.2%
Combined = 98.1%





Weld Assessment Coverage @ 0 Degrees

Axial



Circ.



 Dual axial coverage
 LKUP coverage
 LKDN coverage
 Dual circ. coverage

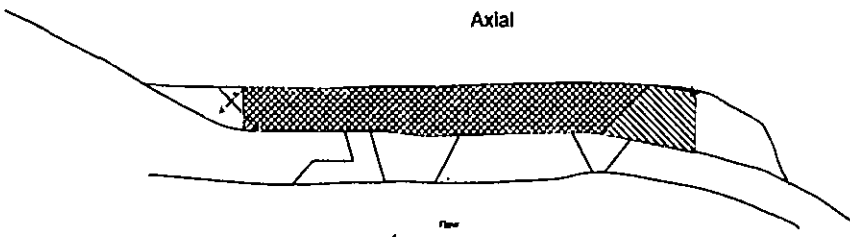
This cross sectional view represents a "best effort" rendering of the actual configuration (pre and post overlay) using pre and post contours.

Prepared by: Jason Broza <i>[Signature]</i>	Level: III	Date: 03/11/19	Reviewed by: Patrick Mahoney <i>[Signature]</i>	Level: II	Date: 03/11/19
Customer Review: Amy Krauser <i>[Signature]</i>	Level: III	Date: 03/11/19	ANII Review: AJR OAKMAN <i>[Signature]</i>		Date: 03/11/19

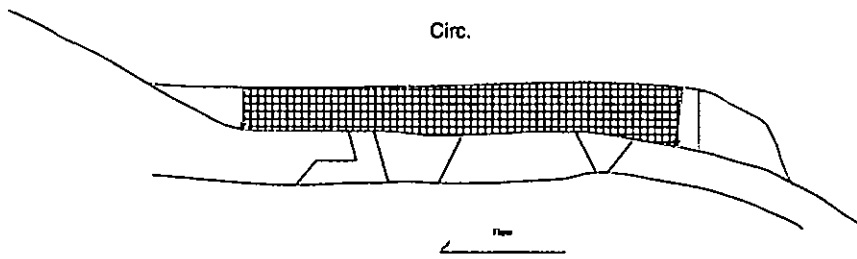
framatome	WELD OVERLAY REPAIR INSPECTION REGIONS / COVERAGE			
	Report Number: 2-CV-2005-30-WOL	Summary Number: CCNP-2-152440-FI	Weld ID: 2-CV-2005-29 & 2-CV-2005-30	Data Sheet Number: COV-02
Utility: Exelon	Site: Calvert Cliffs	Unit: 2	Description: Inlet Charge Elbow to Safe End and Safe End to Nozzle WOL	

Weld Assessment Coverage @ 90 Degrees




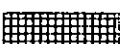
Axial



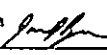



Circ.



Legend:

-  Dual axial coverage
-  LKUP coverage
-  LKDN coverage
-  Dual circ. coverage

This cross sectional view represents a "best effort" rendering of the actual configuration (pre and post overlay) using pre and post contours.

Prepared by: Jason Broza 	Level: III	Date: 03/11/19	Reviewed by: Patrick Mahoney 	Level: II	Date: 03/11/19
Customer Review: Amy Krauser 	Level: III	Date: 03/11/19	ANII Review: AJA 		Date: 03/11/19

framatomer	WELD OVERLAY REPAIR INSPECTION REGIONS / COVERAGE			
	Report Number: 2-CV-2005-30-WOL	Summary Number: CCNP-2-152440-RI	Weld ID: 2-CV-2005-29 & 2-CV-2005-30	Data Sheet Number: COV-03
	Utility: Exelon	Site: Calvert Cliffs	Unit: 2	Description: Inlet Charge Elbow to Safe End and Safe End to Nozzle WOL

Weld Assessment Coverage @ 180 Degrees

Axial

Circ.

	Dual axial coverage
	LKUP coverage
	LKDN coverage
	Dual circ. coverage

This cross sectional view represents a "best effort" rendering of the actual configuration (pre and post overlay) using pre and post contours.

Prepared by: Jason Breza	Level: III	Date: 03/11/19	Reviewed by: Patrick Mahoney	Level: II	Date: 03/11/19
Customer Review: Amy Krauser	Level: III	Date: 03/11/19	ANII Review: AJA		Date: 03/11/19

framatomer	WELD OVERLAY REPAIR INSPECTION REGIONS / COVERAGE			
	Report Number: 2-CV-2005-30-WOL	Summary Number: CCNP-2-152440-RI	Weld ID: 2-CV-2005-29 & 2-CV-2005-30	Data Sheet Number: COV-04
	Utility: Exelon	Site: Calvert Cliffs	Unit: 2	Description: Inlet Charge Elbow to Safe End and Safe End to Nozzle WOL

Weld Assessment Coverage @ 270 Degrees

Axial

Circ.

Legend:

- Dual axial coverage
- LKUP coverage
- LKDN coverage
- Dual circ. coverage

This cross sectional view represents a "best effort" rendering of the actual configuration (pre and post overlay) using pre and post contours.

Prepared by: Jason Broza <i>[Signature]</i> Level: III	Date: 03/11/19	Reviewed by: Patrick Mahoney <i>[Signature]</i> Level: II	Date: 03/11/19
Customer Review: Amy Kruser <i>[Signature]</i> Level: III	Date: 03/11/19	ANII Review: <i>[Signature]</i>	Date: 03/11/19

WELD OVERLAY REPAIR INSPECTION REGIONS / COVERAGE				
framatome	Report Number: 2-CV-2005-30-WOL	Summary Number: CCNP-2-152440-RI	Weld ID: 2-CV-2005-29, 2-CV-2005-30	Data Sheet Number: COV-05
	Utility: Exelon	Site: Calvert Cliffs	Unit: 2	Description: Inlet Charge Elbow to Safe End and Safe End to Nozzle WOL

DM Weld Coverage Calculation Summary

0° - Axial = 100% (note 1)
0° - Circumferential = 100% (note 1)

90° - Axial = 100%
90° - Circumferential = 100%

180° - Axial = 100%
180° - Circumferential = 100%

270° - Axial = 100%
270° - Circumferential = 100%

Total Coverage
Axial = 100%
Circumferential = 100%
Combined = 100%

PS/ISI Weld Coverages @ 0 Deg.

Similar Metal Weld Coverage Calculation Summary

0° - Axial = 78.5%
0° - Circumferential = 100%

90° - Axial = 76.6%
90° - Circumferential = 85.1%

180° - Axial = 84.97% (note 2)
180° - Circumferential = 100% (note 2)

270° - Axial = 80.1%
270° - Circumferential = 100%

Total Coverage
Axial = 80.0%
Circumferential = 96.2%
Combined = 88.1%

Dual axial coverage

LKUP coverage

LKDN coverage

Dual circ. coverage

This cross sectional view represents a "best effort" rendering of the actual configuration (pre and post overlay) using pre and post contours.

Note 1: Examination coverage for Ind. 1 & 2 are less than 0.1% each due to shadow effect due to laminations at the WOL base material interface.

Prepared by: Jason Brezo	Level: III	Date: 03/11/19	Reviewed by: Patrick Mahoney	Level: II	Date: 03/11/19
Customer Review: Amy Krauser	Level: III	Date: 03/11/19	ANII Review: AJA		Date: 03/11/19

framatomé	WELD OVERLAY REPAIR INSPECTION REGIONS / COVERAGE			
	Report Number: 2-CV-2005-30-WOL	Summary Number: CCNP-2-152440-R1	Weld ID: 2-CV-2005-29, 2-CV-2005-30	Data Sheet Number: COV-06
	Utility: Exelon	Site: Calvert Cliffs	Unit: 2	Description: Inlet Charge Elbow to Safe End and Safe End to Nozzle WOL

PS/ISI Weld Coverages @ 90 Deg.

Axial

Circ.

	Dual axial coverage
	LKUP coverage
	LKDN coverage
	Dual circ. coverage

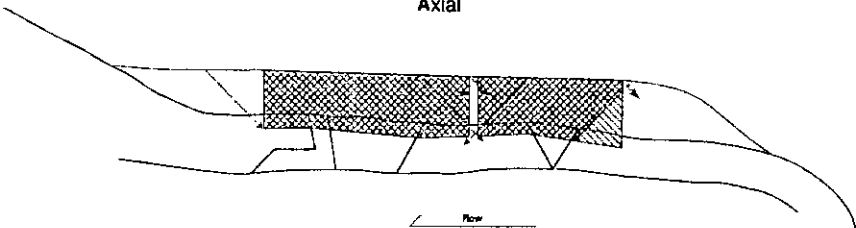
This cross sectional view represents a "best effort" rendering of the actual configuration (pre and post overlay) using pre and post contours.

Prepared by: Jason Breza <i>[Signature]</i>	Level: III	Date: 03/11/19	Reviewed by: Patrick Mahoney <i>[Signature]</i>	Level: II	Date: 03/11/19
Customer Review: Amy Krauser <i>[Signature]</i>	Level: III	Date: 03/11/19	ANII Review: <i>[Signature]</i>		Date: 03/11/19

framatomer	WELD OVERLAY REPAIR INSPECTION REGIONS / COVERAGE			
	Report Number: 2-CV-2005-30-WOL	Summary Number: CCNP-2-152440-RI	Weld ID: 2-CV-2005-29, 2-CV-2005-30	Data Sheet Number: COV-07
	Utility: Exelon	Site: Calvert Cliffs	Unit: 2	Description: Inlet Charge Elbow to Safe End and Safe End to Nozzle WOL

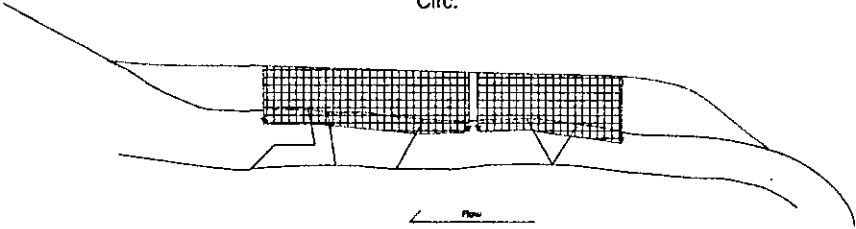
PS/ISI Weld Coverages @ 180 Deg.

Axial


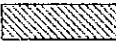




Flow





Circ.



Flow

	Dual axial coverage
	LKUP coverage
	LKDN coverage
	Dual circ. coverage

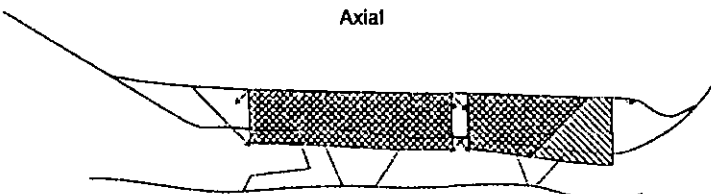
This cross sectional view represents a "best effort" rendering of the actual configuration (pre and post overlay) using pre and post contours.

Prepared by: Jason Breza  Level: III	Date: 03/11/19	Reviewed by: Patrick Mahoney  Level: II	Date: 03/11/19
Customer Review: Amy Krauser  Level: III	Date: 03/11/19	ANII Review: AJA CONRAD  Level: II	Date: 03/11/19

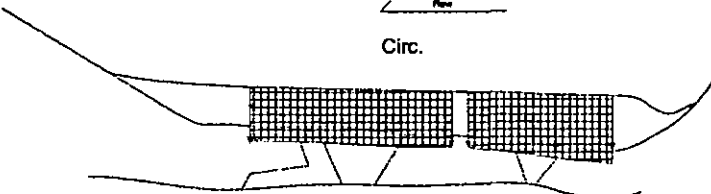
framatome	WELD OVERLAY REPAIR INSPECTION REGIONS / COVERAGE			
	Report Number: 2-CV-2005-30-WOL	Summary Number: CCNP-2-152440-RI	Weld ID: 2-CV-2005-29, 2-CV-2005-30	Data Sheet Number: COV-08
	Utility: Exelon	Site: Calvert Cliffs	Unit: 2	Description: Inlet Charge Elbow to Safe End and Safe End to Nozzle WOL

PS/ISI Weld Coverages @ 270 Deg.

Axial




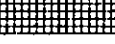


Circ.



Flow

Flow

Dual axial coverage

LKUP coverage

LKDN coverage

Dual circ. coverage

This cross sectional view represents a "best effort" rendering of the actual configuration (pre and post overlay) using pre and post contours.

Prepared by: Jason Breza <i>[Signature]</i> Level: III	Date: 03/11/19	Reviewed by: Patrick Mahoney <i>[Signature]</i> Level: II	Date: 03/11/19
Customer Review: Amy Krauser <i>[Signature]</i> Level: III	Date: 03/11/19	ANN Review: AJA <i>[Signature]</i>	Date: 03/11/19