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April 29, 2011

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

Subject: Duke Energy Carolinas, LLC
Oconee Nuclear Station, Unit 1, 2, and 3
Docket No: 50-269, -270, -287
Fourth Ten Year Interval -- Inservice Inspection Plan
Request for Relief No. 10-ON-002

Pursuant to 10 CFR 50.55a(g)(5)(iii), attached is a Request for Relief from the requirement to examine 100% of the volume specified by the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components, 1998 Edition with 2000 Addenda (as modified by Code Case N-460).

The attached Request for Relief 10-ON-002 is to allow Duke Energy to take credit for the enclosed Table 1 list of limited ultrasonic examinations on welds associated with various systems and components during Unit 1 end of cycle 24, Unit 2 end of cycle 22, and Unit 3 end of cycle 23 refueling outages. The ultrasonic examination coverage of the subject Unit 1, 2, and 3 welds did not meet the 90% examination requirements of Code Case N-460. The obtainable volume coverage for weld examination is indicated on the enclosed requests. Achievement of greater examination coverage for these welds is impractical due to piping/valve geometry and interferences.

Therefore, Duke Energy requests that the NRC grant relief as authorized under 10 CFR 50.55a(g)(6)(i).

If there are any questions or further information is needed you may contact Corey Gray at (864) 873-6325,

Sincerely,

T. Preston Gillespie Jr.,
Site Vice President

Enclosure

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MRK

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1.0 Scope of Relief Request

Relief is requested pursuant to 10 CFR 50.55a(g)(5)(iii) for welds listed in Table 1. These welds were required to be examined in accordance with Inservice Inspection Plans for the following Units.

Oconee Nuclear Station - Unit 1
Fourth 10-Year Inservice Inspection Interval
Interval Start Date: 01/01/2004

Oconee Nuclear Station - Unit 2
Fourth 10-Year Inservice Inspection Interval
Interval Start Date: 09/09/2004

Oconee Nuclear Station - Unit 3
Fourth 10-Year Inservice Inspection Interval
Interval Start Date: 1/2/2005

Table 1					
<u>Relief Request Section Number</u>	<u>Oconee Unit Number</u>	<u>Examination Performed (Refueling Outage)</u>	<u>Weld ID Number</u>	<u>Item/Summary Number</u>	<u>Examination Data</u>
2.0	1	1EOC24	1LP-124-21	O1.C5.11.0027	See Attachment A Pages 1-2
3.0	1	1EOC24	1HP-282-76A	O1.C5.21.0023	See Attachment A Pages 3-4
4.0	1	1EOC24	1HP-193-13	O1.C5.21.0039	See Attachment A Pages 5-6
5.0	1	1EOC24	1HP-367-21	O1.C5.21.0043	See Attachment A Pages 7-8
6.0	1	1EOC24	1LP-208-4	O1.C5.11.0076	See Attachment A Pages 9-10
7.0	1	1EOC24	1LP-208-3	O1.C5.11.0075	See Attachment A Pages 11-12
8.0	1	1EOC24	1LP-208-20	O1.C5.11.0074	See Attachment A Pages 13-14
9.0	1	1EOC24	1LP-208-19	O1.C5.11.0072	See Attachment A Pages 15-16
10.0	1	1EOC24	1-PDB2-1	O1.B9.11.0075	See Attachment A Pages 17-21

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Table 1					
<u>Relief Request Section Number</u>	<u>Oconee Unit Number</u>	<u>Examination Performed (Refueling Outage)</u>	<u>Weld ID Number</u>	<u>Item/Summary Number</u>	<u>Examination Data</u>
11.0	1	1EOC24	1-PIB2-9	O1.B9.11.0053	See Attachment A Pages 22-26
12.0	2	2EOC22	2-PZR-WP15	O2.B3.110.0001	See Attachment B Pages 1-9
13.0	2	2EOC22	2-PZR-WP26-4	O2.B3.110.0006	See Attachment B Pages 10-17
14.0	2	2EOC22	2-PZR-WP26-5	O2.B3.110.0007	See Attachment B Pages 18-25
15.0	2	2EOC22	2-PZR-WP26-6	O2.B3.110.0008	See Attachment B Pages 26-33
16.0	2	2EOC22	2-PDB1-1	O2.B9.11.0059	See Attachment B Pages 34-38
17.0	2	2EOC22	2-LST-HD-SH-2	O2.C1.20.0006	See Attachment B Pages 39-41
18.0	2	2EOC22	2LP-148-90	O2.C5.11.0004	See Attachment B Pages 42-43
19.0	2	2EOC22	2-51A-17-147	O2.C5.21.0021	See Attachment B Pages 44-45
20.0	2	2EOC22	2HP-220-9	O2.C5.21.0024	See Attachment B Pages 46-47
21.0	2	2EOC22	2HP-220-14	O2.C5.21.0025	See Attachment B Pages 48-50
22.0	3	3EOC23	3-PZR-WP15	O3.B3.110.0001	See Attachment C Pages 1-8
23.0	3	3EOC23	3-PZR-WP34	O3.B3.110.0002	See Attachment C Pages 9-15
24.0	3	3EOC23	3-PZR-WP33-3	O3.B3.110.0003	See Attachment C Pages 16-22
25.0	3	3EOC23	3-PZR-WP33-2	O3.B3.110.0004	See Attachment C Pages 23-29

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Table 1					
<u>Relief Request Section Number</u>	<u>Oconee Unit Number</u>	<u>Examination Performed (Refueling Outage)</u>	<u>Weld ID Number</u>	<u>Item/Summary Number</u>	<u>Examination Data</u>
26.0	3	3EOC23	3-PZR-WP33-1	O3.B3.110.0005	See Attachment C Pages 30-36
27.0	3	3EOC23	3-PIA1-8	O3.B9.11.0007	See Attachment C Pages 37-41
28.0	3	3EOC23	3HP-241-3	O3.B9.11.0035	See Attachment C Pages 42-43
29.0	3	3EOC23	3-LST-HD-SH-2	O3.C1.20.0006	See Attachment C Pages 44-47
30.0	3	3EOC23	3LP-132-23	O3.C5.11.0015	See Attachment C Pages 48-50
31.0	3	3EOC23	3LP-221-27	O3.C5.11.0032	See Attachment C Pages 51-52
32.0	3	3EOC23	3LP-221-18	O3.C5.11.0033	See Attachment C Pages 53-54
33.0	3	3EOC23	3LP-221-17	O3.C5.11.0034	See Attachment C Pages 55-56
34.0	3	3EOC23	3LP-222-15	O3.C5.11.0049	See Attachment C Pages 57-58
35.0	3	3EOC23	3LP-222-16	O3.C5.11.0050	See Attachment C Pages 59-62
36.0	3	3EOC23	3-51A-52-29	O3.C5.21.0019	See Attachment C Pages 63-64
37.0	3	3EOC23	3-51A-59-87	O3.C5.21.0032	See Attachment C Pages 65-67
38.0	3	3EOC23	3HP-501-23	O3.C5.21.0058	See Attachment C Pages 68-69

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2.0 Weld #1LP-124-21

2.1. ASME Code Component(s) Affected

Unit 1 Reducer to Valve Weld, Weld #1LP-124-21, Summary Number O1.C5.11.0027

2.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

2.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.11, Figure IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

2.4. Impracticality of Compliance

Component configuration:

- Surface 1: Stainless steel reducer
- Surface 2: Cast stainless steel valve
- NPS: 12.0 in.
- Thickness: 1.168 in.

Scanning requirements are described in 10CFR.50.55a (b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 50% coverage in one axial direction (S1 - reducer)
- 60° shear waves obtained 0% coverage in one axial direction (S2 - valve)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(50\% + 0\% + 50\% + 50\%)/4 = 37.5\%$.

The limitation was caused by the cast stainless steel valve material and configuration. In order to scan all of the required volume for this weld, the valve would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

2.5. Proposed Alternative and Basis for Use

This weld was examined using procedure, equipment, and personnel qualified in accordance with ASME Section XI, Appendix VIII. No alternative examinations

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are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

2.6. Duration of Proposed Alternative

This request is for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

2.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O1.C5.11.0027 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.11 item and achieved 100% coverage. The result from the surface examination was acceptable. The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), visual observations performed during operator rounds provide additional assurance that in the event leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

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3.0 Weld #1HP-282-76A

3.1. ASME Code Component(s) Affected

Unit 1 Valve to Tee Weld #1HP-282-76A, Summary Number O1.C5.21.0023

3.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

3.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.21, Figure IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

3.4. Impracticality of Compliance

Component configuration:

- Surface 1: Forged stainless steel valve
- Surface 2: Stainless steel tee
- NPS: 4.0 in.
- Thickness: 0.531 in.

Scanning requirements are described in 10CFR.50.55a (b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 100% coverage in one axial direction (S1 - valve)
- 60° shear waves obtained 100% coverage in one axial direction (S2 - tee)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(100\% + 100\% + 50\% + 50\%)/4 = 75\%$.

The limitation was caused by the valve taper configuration. In order to scan all of the required volume for this weld, the valve would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

3.5. Proposed Alternative and Basis for Use

This weld was examined using procedure, equipment, and personnel qualified in accordance with ASME Section XI, Appendix VIII. No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service

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induced flaws. Additionally, radiography has not been qualified through performance demonstration.

3.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

3.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O1.C5.21.0023 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.21 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), visual observations performed during operator rounds provide additional assurance that in the event leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

4.0 Weld #1HP-193-13

4.1. ASME Code Component(s) Affected

Unit 1 Tee to Valve Weld #1HP-193-13, Summary Number O1.C5.21.0039

4.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

4.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.21, Figure IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

4.4. Impracticality of Compliance

Component configuration:

- Surface 1: Stainless steel tee
- Surface 2: Cast stainless steel valve
- NPS: 4.0 in.
- Thickness: 0.674 in.

Scanning requirements are described in 10CFR.50.55a (b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 50% coverage in one axial direction (S1 - tee)
- 60° shear waves obtained 0% coverage in one axial direction (S2 - valve)
- 38° shear waves obtained 50% coverage in one circ. direction (CW).
- 38° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(50\% + 0\% + 50\% + 50\%)/4 = 37.5\%$.

The limitation was caused by the cast stainless steel valve material and taper configuration. In order to scan all of the required volume for this weld, the valve would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

4.5. Proposed Alternative and Basis for Use

This weld was examined using procedure, equipment, and personnel qualified in accordance with ASME Section XI, Appendix VIII. No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service

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induced flaws. Additionally, radiography has not been qualified through performance demonstration.

4.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

4.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O1.C5.21.0039 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.21 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), visual observations performed during operator rounds provide additional assurance that in the event leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

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5.0 Weld #1HP-367-21

5.1. ASME Code Component(s) Affected

Unit 1 Elbow to Flange Weld #1HP-367-21, Summary Number O1.C5.21.0043

5.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

5.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.21, Figure IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

5.4. Impracticality of Compliance

Component configuration:

- Surface 1: Stainless steel elbow
- Surface 2: Stainless steel flange
- NPS: 3.0 in.
- Thickness: 0.216 in.

Scanning requirements are described in 10CFR.50.55a (b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 50% coverage in one axial direction (S1 - elbow)
- 60° shear waves obtained 19.2% coverage in one axial direction (S2 - flange)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(50\% + 19.2\% + 50\% + 50\%)/4 = 42.3\%$.

The limitation was caused by the flange configuration. In order to scan all of the required volume for this weld, the flange would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

5.5. Proposed Alternative and Basis for Use

This weld was examined using procedure, equipment, and personnel qualified in accordance with ASME Section XI, Appendix VIII. No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT)

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is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

5.6. Duration of Proposed Alternative

This request is for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

5.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O1.C5.21.0043 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.21 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), visual observations performed during operator rounds provide additional assurance that in the event leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

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6.0 Weld #1LP-208-4

6.1. ASME Code Component(s) Affected

Unit 1 Pipe to Valve Weld #1LP-208-4, Summary Number O1.C5.11.0076

6.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

6.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.11, Figure IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

6.4. Impracticality of Compliance

Component configuration:

- Surface 1: Forged stainless steel valve
- Surface 2: Stainless steel pipe
- NPS: 10.0 in.
- Thickness: 1.0 in.

Scanning requirements are described in 10CFR.50.55a (b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 100% coverage in one axial direction (S1 - valve)
- 60° shear waves obtained 100% coverage in one axial direction (S2 - pipe)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(100\% + 100\% + 50\% + 50\%)/4 = 75\%$.

The limitation was caused by the valve taper configuration. In order to scan all of the required volume for this weld, the valve would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

6.5. Proposed Alternative and Basis for Use

This weld was examined using procedure, equipment, and personnel qualified in accordance with ASME Section XI, Appendix VIII. No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service

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induced flaws. Additionally, radiography has not been qualified through performance demonstration.

6.6. Duration of Proposed Alternative

This request is for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

6.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O1.C5.11.0076 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.11 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

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7.0 Weld #1LP-208-3

7.1. ASME Code Component(s) Affected

Unit 1 Pipe to Valve Weld #1LP-208-3, Summary Number O1.C5.11.0075

7.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

7.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.11, Figure IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

7.4. Impracticality of Compliance

Component configuration:

- Surface 1: Stainless steel pipe
- Surface 2: Forged stainless steel valve
- NPS: 10.0 in.
- Thickness: 1.0 in.

Scanning requirements are described in 10CFR.50.55a (b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 100% coverage in one axial direction (S1 - pipe)
- 60° shear waves obtained 100% coverage in one axial direction (S2 - valve)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(100\% + 100\% + 50\% + 50\%) / 4 = 75\%$.

The limitation was caused by the valve taper configuration. In order to scan all of the required volume for this weld, the valve would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

7.5. Proposed Alternative and Basis for Use

This weld was examined using procedure, equipment, and personnel qualified in accordance with ASME Section XI, Appendix VIII. No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT)

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is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

7.6. Duration of Proposed Alternative

This request is for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

7.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O1.C5.11.0075 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.11 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

8.0 Weld #1LP-208-20

8.1. ASME Code Component(s) Affected

Unit 1 Pipe to Valve Weld #1LP-208-20, Summary Number O1.C5.11.0074

8.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

8.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.11, Figure IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

8.4. Impracticality of Compliance

Component configuration:

- Surface 1: Forged stainless steel valve
- Surface 2: Stainless steel pipe
- NPS: 10.0 in.
- Thickness: 1.0 in.

Scanning requirements are described in 10CFR.50.55a (b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 100% coverage in one axial direction (S1 - valve)
- 60° shear waves obtained 100% coverage in one axial direction (S2 - pipe)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(100\% + 100\% + 50\% + 50\%)/4 = 75\%$.

The limitation was caused by the valve taper configuration. In order to scan all of the required volume for this weld, the valve would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

8.5. Proposed Alternative and Basis for Use

This weld was examined using procedure, equipment, and personnel qualified in accordance with ASME Section XI, Appendix VIII. No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT)

RELIEF REQUEST #10 ON 002

is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

8.6. Duration of Proposed Alternative

This request is for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

8.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O1.C5.11.0074 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.11 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

9.0 Weld #1LP-208-19

9.1. ASME Code Component(s) Affected

Unit 1 Pipe to Valve Weld #1LP-208-19, Summary Number O1.C5.11.0072

9.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

9.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.11, Figure IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

9.4. Impracticality of Compliance

Component configuration:

- Surface 1: Stainless steel pipe
- Surface 2: Forged stainless steel valve
- NPS: 10.0 in.
- Thickness: 1.0 in.

Scanning requirements are described in 10CFR.50.55a (b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 100% coverage in one axial direction (S1 - pipe)
- 60° shear waves obtained 100% coverage in one axial direction (S2 - valve)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(100\% + 100\% + 50\% + 50\%) / 4 = 75\%$.

The limitation was caused by the valve taper configuration. In order to scan all of the required volume for this weld, the valve would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

9.5. Proposed Alternative and Basis for Use

This weld was examined using procedure, equipment, and personnel qualified in accordance with ASME Section XI, Appendix VIII. No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT)

RELIEF REQUEST #10 ON 002

is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

9.6. Duration of Proposed Alternative

This request is for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

9.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O1.C5.11.0072 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.11 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

10.0 Weld #1-PDB2-1

10.1. ASME Code Component(s) Affected

Unit 1 RCP 1B2 Pump Casing Nozzle to Safe-End Weld #1-PDB2-1, Summary Number O1.B9.11.0075

10.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

10.3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-J, Item Number B9.11, Figure IWB-2500-8 (c), 100% Volume Coverage of Examination Volume C-D-E-F

10.4. Impracticality of Compliance

Component configuration:

- Surface 1: Stainless steel safe end
- Surface 2: Cast stainless steel pump casing
- NPS: 33.50 in.
- Thickness: 2.330 in.

Scanning requirements are described in 10CFR.50.55a (b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 50.0% coverage in one axial direction (S1 - safe end)
- 60° shear waves obtained 0.0% coverage in one axial direction (S2 - pump casing)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(50\% + 0\% + 50\% + 50\%)/4 = 37.5\%$.
- In addition, a best effort examination was performed using 60° and 70° longitudinal waves to the extent possible in the upper 2/3 area.

The limitation was caused by the pump casing material. In order to scan all of the required volume for this weld, the pump casing would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

RELIEF REQUEST #10 ON 002

10.5. Proposed Alternative and Basis for Use

This weld was examined using procedure, equipment, and personnel qualified in accordance with ASME Section XI, Appendix VIII. No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

10.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

10.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O1.B9.11.0075 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this B9.11 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each refueling outage in accordance with Table IWB-2500-1; Examination Category B-P requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

11.0 Weld #1-PIB2-9

11.1. ASME Code Component(s) Affected

Oconee Unit 1 RCP 1B2 Pump Casing Nozzle to Safe-End Weld #1-PIB2-9, Summary Number O1.B9.11.0053

11.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

11.3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-J, Item Number B9.11, Figure IWB-2500-8 (c), 100% Volume Coverage of Examination Volume C-D-E-F

11.4. Impracticality of Compliance

Component configuration:

- Surface 1: Stainless steel safe end
- Surface 2: Cast stainless steel pump casing
- NPS: 36.50 in.
- Thickness: 2.330 in.

Scanning requirements are described in 10CFR.50.55a (b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 50% coverage in one axial direction (S1 - safe end)
- 60° shear waves obtained 0.0% coverage in one axial direction (S2 - pump casing)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(50\% + 0\% + 50\% + 50\%)/4 = 37.5\%$.
- In addition, a best effort examination was performed using 60° and 70° longitudinal waves to the extent possible in the upper 2/3 area.

The limitation was caused by the pump casing material. In order to scan all of the required volume for this weld, the pump casing would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

RELIEF REQUEST #10 ON 002

11.5. Proposed Alternative and Basis for Use

This weld was examined using procedure, equipment, and personnel qualified in accordance with ASME Section XI, Appendix VIII. No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

11.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

11.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O1.B9.11.0053 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this B9.11 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each refueling outage in accordance with Table IWB-2500-1; Examination Category B-P requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

12.0 Weld #2-PZR-WP15

12.1. ASME Code Component(s) Affected

Unit 2, Pressurizer Lower Head to Surge Nozzle Weld #2-PZR-WP15, Summary Number O2.B3.110.0001

12.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

12.3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-D, Item Number B3.110 Figure IWB-2500-7 (a), 100% Volume Coverage of Examination Volume A-B-C-D-E-F-G-H-I

12.4. Impracticality of Compliance

Component configuration:

- Surface 1: Carbon Steel Lower Head
- Surface 2: Carbon Steel Surge Nozzle
- NPS: 15.250 in.
- Thickness: 4.750 in.

Scan requirements are described in ASME Section V, Article 4, T-441.1.2(a), T-441.1.3, T-441.1.4, T-441.1.5 and T-441.1.6. The aggregate coverage was calculated from the following base and weld metal scan results:

- Weld coverage provided an aggregate coverage of 37.3%
- Base Material coverage provided an aggregate coverage of 51.2%
- 0° Scan coverage provided a coverage of 36.5%
- The total obtained aggregate coverage was $(37.3 + 51.2 + 36.5 = 125)/3 = 41.7\%$

The limitation was caused by the design of the surge nozzle not allowing for scanning from the nozzle side of the weld. In order to scan all of the required volume for this weld, the surge nozzle would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

RELIEF REQUEST #10 ON 002

12.5. Proposed Alternative and Basis for Use

Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. No substitution alternative for this weld is available which would provide better coverage.

12.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

12.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O2.B3.110.0001 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

The system leakage test performed each refueling outage in accordance with Table IWB-2500-1; Examination Category B-P requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

13.0 Weld #2-PZR-WP26-4

13.1. ASME Code Component(s) Affected

Unit 2 Pressurizer Upper Shell to Sampling Nozzle Weld #2-PZR-WP26-4, Summary Number O2.B3.110.0006

13.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

13.3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-D, Item Number B3.110 Figure IWB-2500-7 (a), 100% Volume Coverage of Examination Volume A-B-C-D-E-F-G-H-I

13.4. Impracticality of Compliance

Component configuration:

- Surface 1: Carbon Steel Upper Shell
- Surface 2: Carbon Steel Sampling Nozzle
- NPS: 5.750 in.
- Thickness: 6.187 in.

Scan requirements are described in ASME Section V, Article 4, T-441.1.2(a), T-441.1.3, T-441.1.4, T-441.1.5 and T-441.1.6. The aggregate coverage was calculated from the following base and weld metal scan results:

- Weld coverage provided an aggregate coverage of 18.7%
- Base Material coverage provided an aggregate coverage of 57.6%
- 0° Scan coverage provided a coverage of 33.9%
- The total obtained aggregate coverage was $(18.7 + 57.6 + 33.9 = 110.2)/3 = 36.7\%$

The limitation was caused by the design of the sampling nozzle not allowing for scanning from the nozzle side of the weld. In order to scan all of the required volume for this weld, the sampling nozzle would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

13.5. Proposed Alternative and Basis for Use

Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. No substitution alternative for this weld is available which would provide better coverage.

RELIEF REQUEST #10 ON 002

13.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

13.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O2.B3.110.0006 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

The system leakage test performed each refueling outage in accordance with Table IWB-2500-1; Examination Category B-P requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

14.0 Weld #2-PZR-WP26-5

14.1. ASME Code Component(s) Affected

Unit 2 Pressurizer Upper Shell to Sampling Nozzle Weld #2-PZR-WP26-5, Summary Number O2.B3.110.0007

14.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

14.3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-D, Item Number B3.110 Figure IWB-2500-7 (a), 100% Volume Coverage of Examination Volume A-B-C-D-E-F-G-H-I

14.4. Impracticality of Compliance

Component configuration:

- Surface 1: Carbon Steel Upper Shell
- Surface 2: Carbon Steel Sampling Nozzle
- NPS: 5.750 in.
- Thickness: 6.187 in.

Scan requirements are described in ASME Section V, Article 4, T-441.1.2(a), T-441.1.3, T-441.1.4, T-441.1.5 and T-441.1.6. The aggregate coverage was calculated from the following base and weld metal scan results:

- Weld coverage provided an aggregate coverage of 18.7%
- Base Material coverage provided an aggregate coverage of 57.6%
- 0° Scan coverage provided a coverage of 33.9%
- The total obtained aggregate coverage was $(18.7 + 57.6 + 33.9 = 110.2)/3 = 36.7\%$

The limitation was caused by the design of the sampling nozzle not allowing for scanning from the nozzle side of the weld. In order to scan all of the required volume for this weld, the sampling nozzle would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

14.5. Proposed Alternative and Basis for Use

Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. No substitution alternative for this weld is available which would provide better coverage.

RELIEF REQUEST #10 ON 002

14.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

14.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O2.B3.110.0007 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

The system leakage test performed each refueling outage in accordance with Table IWB-2500-1; Examination Category B-P requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

15.0 Weld #2-PZR-WP26-6

15.1. ASME Code Component(s) Affected

Unit 2 Pressurizer Upper Shell to Sampling Nozzle Weld #2-PZR-WP26-6, Summary Number O2.B3.110.0008

15.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

15.3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-D, Item Number B3.110 Figure IWB-2500-7 (a), 100% Volume Coverage of Examination Volume A-B-C-D-E-F-G-H-I

15.4. Impracticality of Compliance

Component configuration:

- Surface 1: Carbon Steel Upper Shell
- Surface 2: Carbon Steel Sampling Nozzle
- NPS: 5.750 in.
- Thickness: 6.187 in.

Scan requirements are described in ASME Section V, Article 4, T-441.1.2(a), T-441.1.3, T-441.1.4, T-441.1.5 and T-441.1.6. The aggregate coverage was calculated from the following base and weld metal scan results:

- Weld coverage provided an aggregate coverage of 18.7%
- Base Material coverage provided an aggregate coverage of 57.6%
- 0° Scan coverage provided a coverage of 33.9%
- The total obtained aggregate coverage was $(18.7 + 57.6 + 33.9 = 110.2)/3 = 36.7\%$

The limitation was caused by the design of the sampling nozzle not allowing for scanning from the nozzle side of the weld. In order to scan all of the required volume for this weld, the sampling nozzle would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

15.5. Proposed Alternative and Basis for Use

Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. No substitution alternative for this weld is available which would provide better coverage.

RELIEF REQUEST #10 ON 002

15.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

15.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O2.B3.110.0008 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

The system leakage test performed each refueling outage in accordance with Table IWB-2500-1; Examination Category B-P requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

16.0 Weld #2-PDB1-1

16.1. ASME Code Component(s) Affected

Unit 2 Reactor Coolant Pump 2B1 Casing Nozzle to Safe-End Weld #2-PDB1-1, Summary Number O2.B9.11.0059

16.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

16.3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-J, Item Number B9.11 Figure IWB-2500-8 (c), 100% Volume Coverage of Examination Volume C-D-E-F

16.4. Impracticality of Compliance

Component configuration:

- Surface 1: Stainless Steel Safe End
- Surface 2: Cast Stainless Pump Casing
- NPS: 33.50 in.
- Thickness: 2.330 in.

Scanning requirements are described in 10CFR.50.55a (b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 50% coverage in one axial direction (S1 - safe end)
- 60° shear waves obtained 0.0% coverage in one axial direction (S2 - pump casing)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(50\% + 0\% + 50\% + 50\%)/4 = 37.5\%$.
- In addition, a best effort examination was performed using 60° and 70° longitudinal waves to the extent possible in the upper 2/3 area.

The limitation was caused by the pump casing material. In order to scan all of the required volume for this weld, the pump casing would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

RELIEF REQUEST #10 ON 002

16.5. Proposed Alternative and Basis for Use

This weld was examined using procedure, equipment, and personnel qualified in accordance with ASME Section XI, Appendix VIII. No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

16.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

16.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O2.B9.11.0059 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this B9.11 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each refueling outage in accordance with Table IWB-2500-1; Examination Category B-P requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

17.0 Weld #2-LST-HD-SH-2

17.1. ASME Code Component(s) Affected

Unit 2 Letdown Storage Tank Lower Head to Shell weld #2-LST-HD-SH-2, Summary Number O2.C1.20.0006

17.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

17.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-A, Item Number C1.20, Fig. IWC-2500-1(a), 100% Volume Coverage of Examination Volume A-B-C-D

17.4. Impracticality of Compliance

Component configuration:

- Surface 1: Stainless Steel Shell
- Surface 2: Stainless Steel Lower Head
- Dia.: 96.00in.
- Thickness: 0.375 in.

ASME Section XI, Appendix III, III-4420 requires coverage of the examination volume in two beam path directions and Appendix III, III-4430 requires scanning on the weld crown in two directions. The total aggregate percent of coverage was calculated as follows.

- 60° shear waves obtained 80.26% coverage in one axial direction (S1 – shell)
- 60° shear waves obtained 80.26% coverage in one axial direction (S2 – head)
- 60° shear waves obtained 80.26% coverage in one circ. direction (S3 – CW)
- 60° shear waves obtained 80.26% coverage in one circ. direction (S4 – CCW)
- This aggregate coverage was calculated to be $(80.26\% + 80.26\% + 80.26\% + 80.26\%) / 4 = 80.3\%$

The limitations were caused by the four physical scanning limitations. In order to scan all of the required volume for this weld, the support pads would have to be relocated to allow scanning from each of the four directions required, which is impractical.

RELIEF REQUEST #10 ON 002

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage of examination volume A-B-C-D. The achieved coverage did not meet the acceptance criteria of this Code Case.

17.5. Proposed Alternative and Basis for Use

No substitution alternative for this weld is available which would provide better coverage.

17.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

17.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O2.C1.20.0006 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

The system leakage test performed each period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric and pressure test), visual observations performed during operator rounds provide additional assurance that in the event leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

18.0 Weld #2LP-148-90

18.1. ASME Code Component(s) Affected

Unit 2 Reducer to Valve Weld #2LP-148-90, Summary Number O2.C5.11.0004

18.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

18.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.11, Figure IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

18.4. Impracticality of Compliance

Component configuration:

- Surface 1: Stainless Steel Reducer
- Surface 2: Cast Stainless Steel Valve
- NPS: 12.0 in.
- Thickness: 1.168 in.

Scanning requirements are described in 10CFR.50.55a (b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 50% coverage in one axial direction (S1 - reducer)
- 60° shear waves obtained 0% coverage in one axial direction (S2 - valve)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(50\% + 0\% + 50\% + 50\%) / 4 = 37.5\%$.

The limitation was caused by the valve taper configuration and cast stainless steel material. In order to scan all of the required volume for this weld, the valve would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

18.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

RELIEF REQUEST #10 ON 002

18.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

18.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O2.C5.11.0004 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.11 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), visual observations performed during operator rounds provide additional assurance that in the event leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

19.0 Weld #2-51A-17-147

19.1. ASME Code Component(s) Affected

Unit 2 Elbow to Valve Weld #2-51A-17-147, Summary Number O2.C5.21.0021

19.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

19.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.21, Figure IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

19.4. Impracticality of Compliance

Component configuration:

- Surface 1: Stainless Steel Elbow
- Surface 2: Forged Stainless Steel Valve
- NPS: 4.0 in.
- Thickness: 0.531 in.

Scanning requirements are described in 10CFR.50.55a(b)(2)(xv) (A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 100% coverage in one axial direction (S1 - elbow)
- 60° shear waves obtained 100% coverage in one axial direction (S2 - valve)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(100\% + 100\% + 50\% + 50\% = 300)/4 = 75.0\%$.

The limitation was caused by the valve taper configuration. In order to scan all of the required volume for this weld, the valve would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

19.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is

RELIEF REQUEST #10 ON 002

limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

19.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

19.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O2.C5.21.0021 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.21 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), visual observations performed during operator rounds provide additional assurance that in the event leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

20.0 Weld #2HP-220-9

20.1. ASME Code Component(s) Affected

Unit 2 Pipe to Valve Weld #2HP-220-9, Summary Number O2.C5.21.0024

20.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

20.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.21, Figure IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

20.4. Impracticality of Compliance

Component configuration:

- Surface 1: Stainless Steel Pipe
- Surface 2: Cast Stainless Steel Valve
- NPS: 4.0 in.
- Thickness: 0.674 in.

Scanning requirements are described in 10CFR.50.55a(b)(2)(xv) (A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 50% coverage in one axial direction (S1 - pipe)
- 60° shear waves obtained 0% coverage in one axial direction (S2 - valve)
- 38° shear waves obtained 50% coverage in one circ. direction (CW).
- 38° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(50\% + 0\% + 50\% + 50\% = 150)/4 = 37.5\%$.

The limitation was caused by the cast stainless steel valve material and taper configuration. In order to scan all of the required volume for this weld, the valve would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

20.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

RELIEF REQUEST #10 ON 002

20.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

20.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O2.C5.21.0024 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.21 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), visual observations performed during operator rounds provide additional assurance that in the event leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

21.0 Weld #2HP-220-14

21.1. ASME Code Component(s) Affected

Unit 2 Pipe to Tee Weld #2HP-220-14, Summary Number O2.C5.21.0025

21.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

21.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.21, Figure IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

21.4. Impracticality of Compliance

Component configuration:

- Surface 1: Stainless Steel Tee
- Surface 2: Stainless Steel Pipe
- NPS: 4.0 in.
- Thickness: 0.674 in.

Scanning requirements are described in 10CFR.50.55a(b)(2)(xv) (A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 43.3% coverage in one axial direction (S1 - tee)
- 60° shear waves obtained 71.6% coverage in one axial direction (S2 - pipe)
- 38° shear waves obtained 100% coverage in one circ. direction (CW).
- 38° shear waves obtained 100% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(43.3\% + 71.6\% + 100\% + 100\% = 314.9)/4 = 78.7\%$.

The limitation was caused by the configuration of the tee. In order to scan all of the required volume for this weld, the tee would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

21.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is

RELIEF REQUEST #10 ON 002

limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

21.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

21.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O2.C5.21.0025 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.21 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), visual observations performed during operator rounds provide additional assurance that in the event leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

22.0 Weld #3-PZR-WP15

22.1. ASME Code Component(s) Affected

Unit 3 Pressurizer Lower Head to Surge Nozzle Weld #3-PZR-WP-15, Summary Number O3.B3.110.0001

22.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

22.3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-D, Item Number B3.110, Fig. IWB-2500-7 (a), 100% Volume Coverage of Examination Volume A-B-C-D-E-F-G-H-I

22.4. Impracticality of Compliance

The pressurizer lower head and nozzle material are carbon steel. This weld has a diameter of 15.250 inches and a wall thickness of 4.750 inches.

Scanning requirements are described in ASME Section V, Article 4, T-441.1.2(a), T-441.1.3, T-441.1.4, T-441.1.5 and T-441.1.6 could not be met. The aggregate coverage was calculated from the following:

- Weld coverage using 45°, 60° & 70° shear waves for axial scans (S1, S2), and 60° & 45° shear waves for circ. scans (CW, CCW) obtained 37.3% coverage.
- Base material coverage using 45°, 60° & 70° shear wave for axial scans (S1) and 60° & 45° shear waves for circ. scans (CW, CCW) obtained 51.2% coverage.
- 0° scan coverage obtained 36.5% coverage.
- The aggregate coverage was calculated to be $(51.2\% + 37.3\% + 36.5\%) / 3 = 41.7\%$.

The limitation was caused by interference due to the location of the nozzle blend radius and the design of the nozzle which prevented placement of the search units on the nozzle side of the weld so that the weld could not be examined from that side. In order to scan all of the required volume for this weld, the surge nozzle would have to be redesigned to allow scanning from both sides of the weld, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

22.5. Proposed Alternative and Basis for Use

Radiography as an alternative is not feasible because access is not available for film placement. No alternative examinations are planned for the weld during the current inspection interval.

RELIEF REQUEST #10 ON 002

22.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

22.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.B3.110.0001 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

The system leakage test performed each refueling outage in accordance with Table IWB-2500-1; Examination Category B-P requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

23.0 Weld #3-PZR-WP34

23.1. ASME Code Component(s) Affected

Unit 3 Pressurizer Spray Nozzle to Upper Head Weld #3-PZR-WP-34, Summary Number O3.B3.110.0002

23.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

23.3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-D, Item Number B3.110, Fig. IWB-2500-7 (a), 100% Volume Coverage of Examination Volume A-B-C-D-E-F-G-H-I

23.4. Impracticality of Compliance

The material is carbon steel. This weld has a diameter of 7.75 inches and a wall thickness of 4.75 inches.

Scanning requirements are described in ASME Section V, Article 4, T-441.1.2(a), T-441.1.3, T-441.1.4, T-441.1.5 and T-441.1.6. The aggregate coverage was calculated from the following:

- Weld coverage using 45°, 60° & 70° shear waves for axial scans (S1, S2), and 60° & 45° shear waves for circ. scans (CW, CCW) obtained 34.2% coverage.
- Base material coverage using 45°, 60° & 70° shear wave for axial scans (S1) and 60° & 45° shear waves for circ. scans (CW, CCW) obtained 61.4% coverage.
- 0° scan coverage obtained 42.6% coverage.
- The aggregate coverage was calculated to be $(34.2\% + 61.4\% + 42.6\%) / 3 = 46.1\%$.

Interference caused by the location of the nozzle blend radius and the design of the nozzle prevented placement of the search units on the nozzle side of the weld, and the weld could not be examined from that side. In order to achieve the required coverage, the nozzle would have to be re-designed to allow access from both sides of the weld, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

23.5. Proposed Alternative and Basis for Use

Radiography as an alternative is not feasible because access is not available for film placement. No alternative examinations are planned for the weld during the current inspection interval.

RELIEF REQUEST #10 ON 002

23.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

23.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.B3.110.0002 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

The system leakage test performed each refueling outage in accordance with Table IWB-2500-1; Examination Category B-P requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

24.0 Weld #3-PZR-WP33-3

24.1. ASME Code Component(s) Affected

Unit 3 Pressurizer Relief Nozzle to Head Weld #3-PZR-WP33-3, Summary Number O3.B3.110.0003

24.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

24.3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-D, Item Number B3.110, Fig. IWB-2500-7 (a), 100% Volume Coverage of Examination Volume A-B-C-D-E-F-G-H-I

24.4. Impracticality of Compliance

This is a carbon steel nozzle welded into a carbon steel pressure vessel. This weld has a diameter of 6.875 inches and a wall thickness of 4.75 inches.

The scanning requirements are described in ASME Section V, Article 4, T-441.1.2(a), T-441.1.3, T-441.1.4, T-441.1.5 and T-441.1.6. The aggregate coverage was calculated from the following:

- Weld coverage using 45°, 60° & 70° shear waves for axial scans (S1, S2), and 60° & 45° shear waves for circ. scans (CW, CCW) obtained 17.6%.
- Base material coverage using 45°, 60° & 70° shear wave for axial scans (S1) and 60° & 45° shear waves for circ. scans (CW, CCW) obtained 47.4% coverage.
- 0° scan coverage obtained 24.9% coverage.
- The aggregate coverage was calculated to be $(17.6\% + 47.4\% + 24.9\%)/3 = 30.0\%$.

Interference caused by the location of the nozzle blend radius and the design of the nozzle prevented placement of the search units on the nozzle side of the weld, and the weld could not be examined from that side. In order to achieve the required coverage, the nozzle would have to be re-designed to allow access from both sides of the weld, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

24.5. Proposed Alternative and Basis for Use

Radiography as an alternative is not feasible because access is not available for film placement. No alternative examinations are planned for the weld during the current inspection interval.

RELIEF REQUEST #10 ON 002

24.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

24.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.B3.110.0003 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

The system leakage test performed each refueling outage in accordance with Table IWB-2500-1; Examination Category B-P requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

25.0 Weld #3-PZR-WP33-2

25.1. ASME Code Component(s) Affected

Unit 3 Pressurizer Relief Nozzle to Head Weld #3-PZR-WP33-2, Summary Number O3.B3.110.0004

25.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

25.3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-D, Item Number B3.110, Fig. IWB-2500-7 (a), 100% Volume Coverage of Examination Volume A-B-C-D-E-F-G-H-I

25.4. Impracticality of Compliance

This is a carbon steel nozzle welded into a carbon steel pressure vessel. This weld has a diameter of 6.875 inches and a wall thickness of 4.75 inches.

The scanning requirements are described in ASME Section V, Article 4, T-441.1.2(a), T-441.1.3, T-441.1.4, T-441.1.5 and T-441.1.6. The aggregate coverage was calculated from the following:

- Weld coverage using 45°, 60° & 70° shear waves for axial scans (S1, S2), and 60° & 45° shear waves for circ. Scans (CW, CCW) obtained 17.6%.
- Base material coverage using 45°, 60° & 70° shear wave for axial scans (S1) and 60° & 45° shear waves for circ. scans (CW, CCW) obtained 47.4% coverage.
- 0° scan coverage obtained 24.9% coverage.
- The aggregate coverage was calculated to be $(17.6\% + 47.4\% + 24.9\%)/3 = 30.0\%$.

Interference caused by the location of the nozzle blend radius and the design of the nozzle prevented placement of the search units on the nozzle side of the weld, and the weld could not be examined from that side. In order to achieve the required coverage, the nozzle would have to be re-designed to allow access from both sides of the weld, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

25.5. Proposed Alternative and Basis for Use

Radiography as an alternative is not feasible because access is not available for film placement. No alternative examinations are planned for the weld during the current inspection interval.

RELIEF REQUEST #10 ON 002

25.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

25.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.B3.110.0004 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

The system leakage test performed each refueling outage in accordance with Table IWB-2500-1; Examination Category B-P requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

26.0 Weld #3-PZR-WP33-1

26.1. ASME Code Component(s) Affected

Unit 3 Pressurizer Relief Nozzle to Head Weld #3-PZR-WP33-1, Summary Number O3.B3.110.0005

26.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

26.3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-D, Item Number B3.110, Fig. IWB-2500-7 (a), 100% Volume Coverage of Examination Volume A-B-C-D-E-F-G-H-I

26.4. Impracticality of Compliance

This is a carbon steel nozzle welded into a carbon steel pressure vessel. This weld has a diameter of 6.875 inches and a wall thickness of 4.75 inches.

The scanning requirements are described in ASME Section V, Article 4, T-441.1.2(a), T-441.1.3, T-441.1.4, T-441.1.5 and T-441.1.6. The aggregate coverage was calculated from the following:

- Weld coverage using 45°, 60° & 70° shear waves for axial scans (S1, S2), and 60° & 45° shear waves for circ. scans (CW, CCW) obtained 17.6%.
- Base material coverage using 45°, 60° & 70° shear wave for axial scans (S1) and 60° & 45° shear waves for circ. scans (CW, CCW) obtained 47.4% coverage.
- 0° scan coverage obtained 24.9% coverage.
- The aggregate coverage was calculated to be $(17.6\% + 47.4\% + 24.9\%)/3 = 30.0\%$.

Interference caused by the location of the nozzle blend radius and the design of the nozzle prevented placement of the search units on the nozzle side of the weld, and the weld could not be examined from that side. In order to achieve the required coverage, the nozzle would have to be re-designed to allow access from both sides of the weld, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

26.5. Proposed Alternative and Basis for Use

Radiography as an alternative is not feasible because access is not available for film placement. No alternative examinations are planned for the weld during the current inspection interval.

RELIEF REQUEST #10 ON 002

26.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

26.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.B3.110.0005 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

The system leakage test performed each refueling outage in accordance with Table IWB-2500-1; Examination Category B-P requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

27.0 Weld #3-PIA1-8

27.1. ASME Code Component(s) Affected

Unit 3 Reactor Coolant Pump 3A1 Casing Nozzle to Safe-End Weld #3-PIA1-8, Summary Number O3.B9.11.0007

27.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

27.3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-J, Item Number B9.11, Fig. IWB-2500-8 (c), 100% Volume Coverage of Examination Volume C-D-E-F

27.4. Impracticality of Compliance

This is a stainless steel safe end welded to a cast stainless steel pump. This weld has a diameter of 33.50 inches and a wall thickness of 2.33 inches.

The scanning requirements are described in 10CFR.50.55a(b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 50.0% coverage in one axial direction (S1 - safe end)
- 60° shear waves obtained 0.0% coverage in one axial direction (S2 - pump casing)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(50\% + 0.0\% + 50\% + 50\%)/4 = 37.5\%$.
- In addition, a best effort examination was performed using 60° and 70° longitudinal waves to the extent possible in the upper 2/3 area.

The limitation was caused by the pump casing material. In order to scan all of the required volume for this weld, the pump casing would have to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

27.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

RELIEF REQUEST #10 ON 002

27.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

27.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.B9.11.0007 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this B9.11 item and achieved 100% coverage during outage 3EOC22. The result from the surface examination was acceptable.

The system leakage test performed each refueling outage in accordance with Table IWB-2500-1; Examination Category B-P requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during outage 3EOC22, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

28.0 Weld #3HP-241-3

28.1. ASME Code Component(s) Affected

Unit 3 Pipe to Valve Weld #3HP-241-3, Summary Number O3.B9.11.0035

28.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

28.3. Applicable Code Requirement

IWB-2500, Table IWB-2500-1, Examination Category B-J, Item Number B9.11, Fig. IWB-2500-8 (c), 100% Volume Coverage of Examination Volume C-D-E-F

28.4. Impracticality of Compliance

This is a forged stainless steel valve welded to stainless steel pipe. This weld has a diameter of 4.0 inches and a wall thickness of 0.531 inch.

Scanning requirements are described in 10CFR.50.55a(b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 100.0% coverage in one axial direction (S1 - pipe side)
- 45° and 60° shear waves obtained 100.0% coverage in one axial direction (S2 - valve side)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(100\% + 100.0\% + 50\% + 50\%)/4 = 75\%$.

The limitation was caused by the taper on the valve side which prevents scanning the entire volume in the circumferential direction from the valve side. In order to achieve the required coverage the valve would need to be redesigned to eliminate the taper or the weld would have to be re-designed to allow more access from the valve side. This is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

28.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

RELIEF REQUEST #10 ON 002

28.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

28.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.B9.11.0035 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this B9.11 item and achieved 100% coverage during outage 3EOC22. The result from the surface examination was acceptable.

The system leakage test performed each refueling outage in accordance with Table IWB-2500-1; Examination Category B-P requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during outage 3EOC22, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

29.0 Weld #3-LST-HD-SH-2

29.1. ASME Code Component(s) Affected

Unit 3 Letdown Storage Tank Lower Head to Shell weld #3-LST-HD-SH-2, Summary Number O3.C1.20.0006

29.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

29.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-A, Item Number C1.20, Fig. IWC-2500-1 (a), 100% Volume Coverage of Examination Volume A-B-C-D

29.4. Impracticality of Compliance

This is a stainless steel pressure vessel weld. This weld has a diameter of 96.0 inches (ID) and a wall thickness of .375 inches.

The ultrasonic examination of the Pressure Vessel lower head to shell weld obtained 80.3% coverage of the required volume. ASME Section XI, Appendix III, III-4420 requires scanning in two beam path directions to detect reflectors parallel to the weld and Appendix III, III-4430 requires scanning on the weld crown in two directions to detect reflectors transverse to the weld. The aggregate coverage was calculated as follows:

- 60° shear waves obtained 80.26% coverage in one axial direction (S1 - shell)
- 60° shear waves obtained 80.26% coverage in one axial direction (S2 - lower head)
- 60° shear waves obtained 80.26% coverage in one circ. direction (CW).
- 60° shear waves obtained 80.26% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(80.26\% + 80.26\% + 80.26\% + 80.26\%)/4 = 80.3\%$.

The limitations were caused by the four physical scanning limitations. In order to scan all of the required volume for this weld, the support pads would have to be relocated to allow scanning from each of the four directions required, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

29.5. Proposed Alternative and Basis for Use

No substitution alternative for this weld is available which would provide better coverage.

RELIEF REQUEST #10 ON 002

29.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

29.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.C1.20.0006 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

The system leakage test performed each period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric and pressure test), visual observations performed during operator rounds provide additional assurance that in the event leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

30.0 Weld #3LP-132-23

30.1. ASME Code Component(s) Affected

Unit 3 Reducer to Valve Weld #3LP-132-23, Summary Number O3.C5.11.0015

30.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

30.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.11, Fig. IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

30.4. Impracticality of Compliance

This is a stainless steel reducer welded to a cast stainless steel valve. This weld has a diameter of 12.0 inches and a wall thickness of 1.168 inches.

This Scanning requirements are described in 10CFR.50.55a(b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 50% coverage in one axial direction (S1 - reducer)
- 60° shear waves obtained 0% coverage in one axial direction (S2 - valve)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(50\% + 0\% + 50\% + 50\%)/4 = 37.5\%$.

The limitation was caused by the taper on the valve side and the cast stainless steel material. This prevented scanning the entire volume from the valve side.

In order to scan all of the required volume for this weld, the valve would have to be replaced with forged stainless steel and would have to be redesigned to allow scanning from both sides of the weld, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

30.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

RELIEF REQUEST #10 ON 002

30.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

30.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.C5.11.0015 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.11 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), visual observations performed during operator rounds provide additional assurance that in the event leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

31.0 Weld #3LP-221-27

31.1. ASME Code Component(s) Affected

Unit 3 Pipe to Valve Weld #3LP-221-27, Summary Number O3.C5.11.0032

31.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

31.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.11, Fig. IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

31.4. Impracticality of Compliance

This is a forged stainless steel valve welded to stainless steel pipe. This weld has a diameter of 10.0 inches and a wall thickness of 1.0 inches.

Scanning requirements are described in 10CFR.50.55a(b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 100% coverage in one axial direction (S1 - valve)
- 60° shear waves obtained 100% coverage in one axial direction (S2 - pipe)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(100\% + 100\% + 50\% + 50\%)/4 = 75\%$.

The limitation was caused by the taper on the valve side which prevents scanning the entire volume from the valve side. In order to obtain more coverage, the valve taper would have to be re-designed to allow scanning in the circumferential direction from the valve side. This is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

31.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

31.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

31.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.C5.11.0032 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.11 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

32.0 Weld #3LP-221-18

32.1. ASME Code Component(s) Affected

Unit 3 Pipe to Flow Restrictor Weld #3LP-221-18, Summary Number O3.C5.11.0033

32.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

32.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.11, Fig. IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

32.4. Impracticality of Compliance

This is a cast stainless steel flow restrictor welded to stainless steel pipe. This weld has a diameter of 10.0 inches and a wall thickness of 1.0 inches.

Scanning requirements are described in 10CFR.50.55a(b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 50% coverage in one axial direction (S1 - pipe)
- 60° shear waves obtained 0% coverage in one axial direction (S2 - restrictor)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(50\% + 0\% + 50\% + 50\%)/4 = 37.5\%$.

The ultrasonic examination was performed using Appendix VIII qualified personnel, procedures, and equipment. A 60° refracted shear wave was used to examine the far side of the examination volume but is not included in the percent of coverage.

The limitation was caused by the cast stainless steel flow restrictor side which prevents scanning the entire volume from four orthogonal directions. In order to obtain more coverage the weld would have to be re-designed to allow scanning from the restrictor side. This is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

32.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

RELIEF REQUEST #10 ON 002

32.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

32.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.C5.11.0033 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.11 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

33.0 Weld #3LP-221-17

33.1. ASME Code Component(s) Affected

Unit 3 Pipe to Flow Restrictor Weld #3LP-221-17, Summary Number O3.C5.11.0034

33.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

33.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.11, Fig. IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

33.4. Impracticality of Compliance

This is a cast stainless steel flow restrictor welded to stainless steel pipe. This weld has a diameter of 10.0 inches and a wall thickness of 1.0 inches.

Scanning requirements are described in 10CFR.50.55a(b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 0% coverage in one axial direction (S1 - restrictor)
- 60° shear waves obtained 50% coverage in one axial direction (S2 - pipe)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(50\% + 0\% + 50\% + 50\%)/4 = 37.5\%$.

The ultrasonic examination was performed using Appendix VIII qualified personnel, procedures, and equipment. A 60° refracted longitudinal wave was used to examine the far side of the examination volume but is not included in the percent of coverage.

The limitation was caused by the cast stainless steel flow restrictor side which prevents scanning the entire volume from four orthogonal directions. In order to obtain more coverage the weld would have to be re-designed to allow scanning from the restrictor side. This is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

33.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

RELIEF REQUEST #10 ON 002

33.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

33.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.C5.11.0034 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.11 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

34.0 Weld #3LP-222-15

34.1. ASME Code Component(s) Affected

Unit 3 Pipe to Valve Weld #3LP-222-15, Summary Number O3.C5.11.0049

34.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

34.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.11, Fig. IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

34.4. Impracticality of Compliance

This is a forged stainless steel valve welded to stainless steel pipe. This weld has a diameter of 10.0 inches and a wall thickness of 1.0 inches.

Scanning requirements are described in 10CFR.50.55a(b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 45° and 60° shear waves obtained 100% coverage in one axial direction (S1 - valve)
- 60° shear waves obtained 100% coverage in one axial direction (S2 - pipe)
- 45° shear waves obtained 50% coverage in the (CW) circ. direction
- 45° shear waves obtained 50% coverage in the (CCW) circ. direction
- The aggregate coverage was calculated to be $(100\% + 100\% + 50\% + 50\%)/4 = 75\%$.

The ultrasonic examination was performed using Appendix VIII qualified personnel, procedures, and equipment. A 60° refracted longitudinal wave was used to examine the far side of the examination volume but is not included in the percent of coverage.

The limitation was caused by the taper on the valve side which prevents scanning the entire volume from the valve side. In order to obtain more coverage, the weld would have to be re-designed to allow scanning from the valve side. This is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

34.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

RELIEF REQUEST #10 ON 002

34.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

34.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.C5.11.0049 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.11 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, and the pressure testing (VT-2) examinations required by Section XI, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

35.0 Weld #3LP-222-16

35.1. ASME Code Component(s) Affected

Unit 3 Pipe to Valve 3LP-179 Weld #3LP-222-16, Summary Number O3.C5.11.0050

35.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

35.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.11, Fig. IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

35.4. Impracticality of Compliance

This is a forged stainless steel valve welded to stainless steel pipe. This weld has a diameter of 10.0 inches and a wall thickness of 1.0 inches.

Scanning requirements are described in 10CFR.50.55a(b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 100% coverage in one axial direction (S1 - pipe)
- 45° and 60° shear waves obtained 100% coverage in one axial direction (S2 - valve)
- 45° shear waves obtained 50% coverage in one circ. direction (CW).
- 45° shear waves obtained 50% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(100\% + 100\% + 50\% + 50\%) / 4 = 75\%$.

The limitation was caused by the taper on the valve side which prevents scanning the entire volume from the valve side. In order to obtain more coverage the weld would have to be re-designed to allow scanning from the valve side. This is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

35.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

RELIEF REQUEST #10 ON 002

35.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

35.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.C5.11.0050 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.11 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

36.0 Weld #3-51A-52-29

36.1. ASME Code Component(s) Affected

Unit 3 Pipe to Valve Weld #3-51A-52-29, Summary Number O3.C5.21.0019

36.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

36.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.21, Fig. IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

36.4. Impracticality of Compliance

This is a forged stainless steel valve welded to stainless steel pipe. This weld has a diameter of 4.0 inches and a wall thickness of 0.531 inches.

Scanning requirements are described in 10CFR.50.55a(b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 100% coverage in one axial direction (S1 - pipe)
- 60° shear waves obtained 100% coverage in one axial direction (S2 - valve)
- 45° shear waves obtained 67.8% coverage in one circ. direction (CW).
- 45° shear waves obtained 67.8% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(100\% + 100\% + 67.8\% + 67.8\%)/4 = 83.9\%$.

The limitation was caused by the taper on the valve side which prevents scanning the entire volume from the valve side. In order to achieve the required coverage, the valve would need to be redesigned to eliminate the taper. This is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

36.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

RELIEF REQUEST #10 ON 002

36.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

36.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.C5.21.0019 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.21 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), visual observations performed during operator rounds provide additional assurance that in the event leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

37.0 Weld #3-51A-59-87

37.1. ASME Code Component(s) Affected

Unit 3 Pipe Tee to Elbow Weld #3-51A-59-87, Summary Number O3.C5.21.0032

37.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

37.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.21, Fig. IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

37.4. Impracticality of Compliance

This is a stainless steel pipe elbow welded to a stainless steel tee. This weld has a diameter of 4.0 inches and a wall thickness of .674 inches.

Scanning requirements are described in 10CFR.50.55a(b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 67.5% coverage in one axial direction (S1 - elbow)
- 60° shear waves obtained 57.7.% coverage in one axial direction (S2 - tee)
- 38° shear waves obtained 100% coverage in one circ. direction (CW).
- 38° shear waves obtained 100% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(67.5\% + 57.7\% + 100\% + 100\%)/4 = 81.3\%$.

The limitation was caused by the radius on the tee, and the intrados of the elbow, which prevented scanning the entire volume. In order to achieve the required coverage, the tee and elbow would need to be redesigned, which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

37.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

37.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

RELIEF REQUEST #10 ON 002

37.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.C5.21.0032 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.21 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), visual observations performed during operator rounds provide additional assurance that in the event leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.

RELIEF REQUEST #10 ON 002

38.0 Weld #3HP-501-23

38.1. ASME Code Component(s) Affected

Unit 3 Pipe to Reducer Weld #3HP-501-23, Summary Number O3.C5.21.0058

38.2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI, 1998 Edition through the 2000 Addenda

38.3. Applicable Code Requirement

IWC-2500, Table IWC-2500-1, Examination Category C-F-1, Item Number C5.21, Fig. IWC-2500-7(a), 100% Volume Coverage of Examination Volume C-D-E-F

38.4. Impracticality of Compliance

This is a stainless steel reducer welded to a stainless steel pipe. This weld has a diameter of 2.0 inches and a wall thickness of 0.344 inches.

Scanning requirements are described in 10CFR.50.55a(b)(2)(xv)(A)(1). The aggregate coverage was calculated from the following:

- 60° shear waves obtained 50% coverage in one axial direction (S1 - reducer)
- 45° shear waves obtained 16.7% coverage in one axial direction (S2 - pipe)
- 45° shear waves obtained 100% coverage in one circ. direction (CW).
- 45° shear waves obtained 100% coverage in one circ. direction (CCW).
- The aggregate coverage was calculated to be $(50\% + 16.7\% + 100\% + 100\%)/4 = 66.7\%$.

The limitation was caused by valve 3-HP-3 taper in the proximity of the pipe to reducer weld which limited scanning from the pipe side. In order to achieve the required coverage, the pipe would have to be replaced with a longer piece to allow scanning from both sides of the weld which is impractical.

The Oconee Inservice Inspection Plan allows the use of Code Case N-460, which requires greater than 90% volumetric coverage. Therefore, the available coverage will not meet the acceptance criteria of this Code Case.

38.5. Proposed Alternative and Basis for Use

No alternative examinations are planned for the weld during the current inspection interval. Radiography (RT) is not a desired option because RT is limited in the ability to detect service induced flaws. Additionally, radiography has not been qualified through performance demonstration.

RELIEF REQUEST #10 ON 002

38.6. Duration of Proposed Alternative

This request is proposed for the duration of the fourth inservice inspection interval, currently scheduled to end on July 15, 2014.

38.7. Justification for Granting Relief

Ultrasonic examination of the weld for the item number O3.C5.21.0058 was conducted using personnel, equipment, and procedures qualified in accordance with ASME Section XI, 1998 Edition with the 2000 Addenda.

In addition to the volumetric examination with limited coverage, Duke performed a surface examination (code required) on this C5.21 item and achieved 100% coverage. The result from the surface examination was acceptable.

The system leakage test performed each inspection period in accordance with Table IWC-2500-1; Examination Category C-H requires a VT-2 visual examination to detect evidence of leakage. This test and VT-2 examination provides additional assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric, surface, and pressure test), Reactor Building Normal Sump monitoring provides additional assurance that, in the event that leakage did occur through this weld, it would be detected and proper action taken.

Duke has examined the weld/component to the maximum extent possible utilizing approved examination techniques and equipment. Based on the acceptable results for the coverage completed by the volumetric examination, the acceptable results of the surface examinations performed during this outage, the pressure testing (VT-2) examinations required by Section XI, and the leakage monitoring, it is Duke's position that the combination of examinations provides a reasonable assurance of quality and safety.



UT Pipe Weld Examination

Site/Unit: Oconee / 1
Summary No.: O1.C5.11.0027
Workscope: ISI

Procedure: NDE-800
Procedure Rev.: 17
Work Order No.: 01760769

Outage No.: O1-24
Report No.: UT-08-001
Page: 1 of 2

Code: 1998/2000A Cat./Item: C-F-1/C5.11 Location: _____
Drawing No.: 1LP-124 Description: Reducer to Valve 1LP-17
System ID: 53A
Component ID: 1LP-124-21 Size/Length: N/A Thickness/Diameter: 1.168 / 12.000
Limitations: Yes - See Attached Limitation Report Start Time: 0900 Finish Time: 0849

Examination Surface: Inside Outside Surface Condition: FLUSH
Lo Location: 9.1.1.1 Wo Location: WELD CENTERLINE Couplant: ULTRAGEL II Batch No.: 07125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32821 Surface Temp.: 85 °F

Cal. Report No.: CAL-08-001, CAL-08-002, CAL-08-003, CAL-08-004

Angle Used	0	45	45T	60	60L	70
Scanning dB			51	55 *	58	65.1

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

Comments:
* 64 dB used for 60 degree from valve side

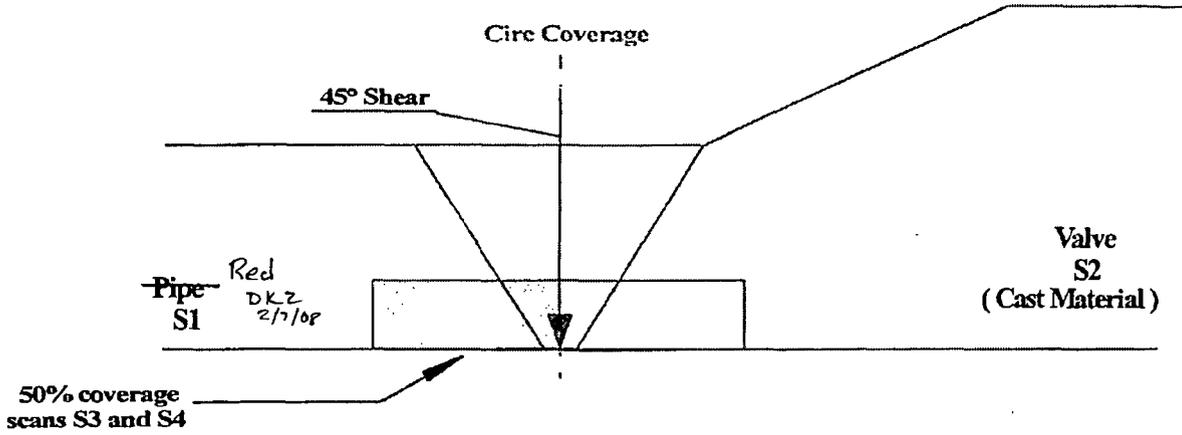
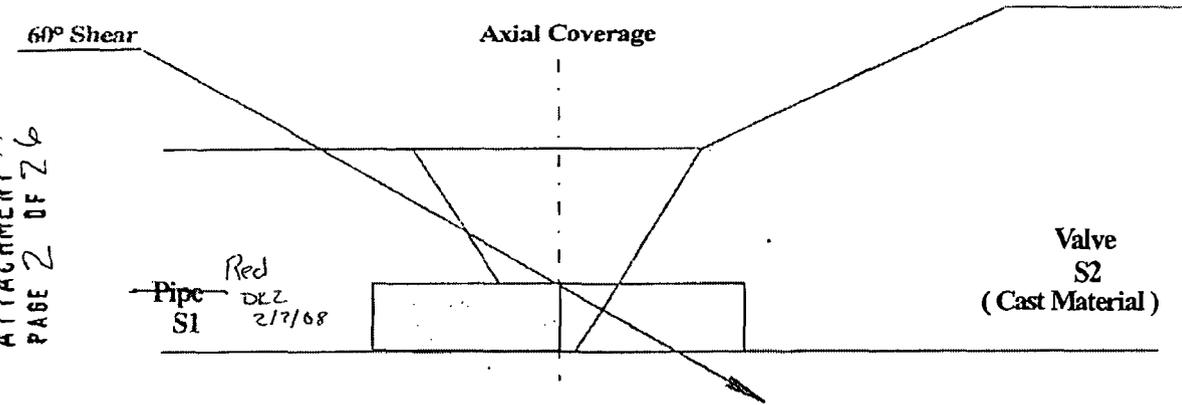
Results: Accept Reject Info ^{DK2}
Percent Of Coverage Obtained > 90%: 31.5% 2/7/08 Reviewed Previous Data: Yes

Examiner	Level	II-N	Signature	Date	Reviewer	Signature	Date
Houser, Gayle E.			<i>Gayle Houser</i>	2/6/2008	<i>Gayle Houser</i>		2/15/08
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A				2/6/2008	N/A		
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A				2/6/2008	<i>Nancy Critchfield</i>		4/7/08

Summary No.: OLC5.11.0027

Weld No. : 1LP-124-21

ATTACHMENT A
PAGE 2 OF 26



% Coverage Calculations

S1 = Pipe	=	50%	(100% of the length x 50% of the volume)
S2 = Valve	=	0%	(100% of the length x 0% of the volume)
S3 = CW	=	50%	(100% of the length x 50% of the volume)
S4 = CCW	=	50%	(100% of the length x 50% of the volume)
Total	=	150 / 4 = 37.5 %	Aggregate Coverage

Inspector / Date : David K. [Signature] III 2/2/08 Page 2 of 2



UT Pipe Weld Examination

Site/Unit: Oconee / 1
Summary No.: 01.C5.21.0023
Workscope: ISI

Procedure: NDE-600
Procedure Rev.: 17
Work Order No.: 01760806

Outage No.: 01-24
Report No.: UT-08-007
Page: 1 of 2

Code: 1998/2000A Cat./Item: C-F-1/C5.21 Location: _____
Drawing No.: 1HP-282 Description: Tee to Valve 1HP-117
System ID: 51A
Component ID: 1HP-282-76A Size/Length: N/A Thickness/Diameter: 0.531 / 4.000
Limitations: Yes - See Attached Limitation Report Start Time: 1004 Finish Time: 1016

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 9.1.1.2 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07126
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32821 Surface Temp.: 82 °F

Cal. Report No.: CAL-08-012, CAL-08-013, CAL-08-014

Angle Used	0	45	45T	60	60L	
Scanning dB			53	55	62	

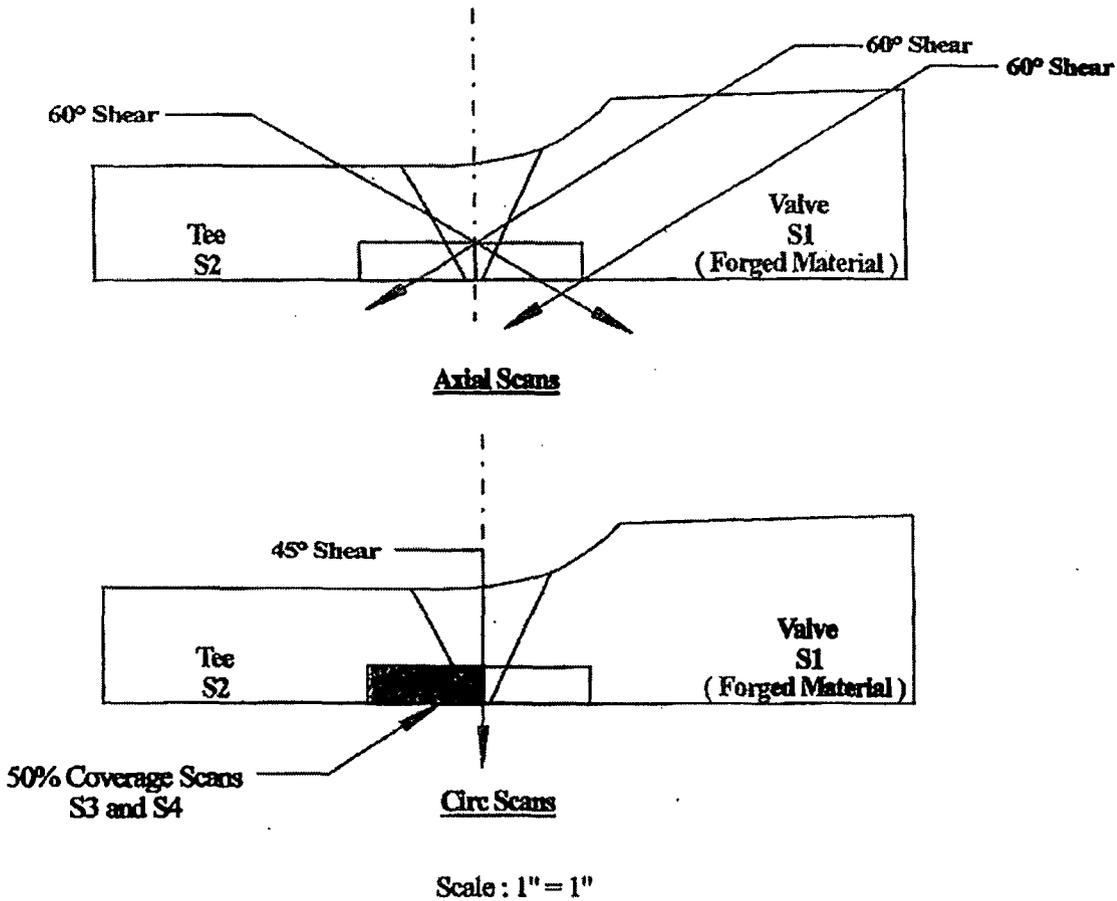
Indication(s): Yes No Scan Coverage: Upstream Downstream CW CCW

Comments:

Results: Accept Reject Info
Percent Of Coverage Obtained > 90%: No - 75%

Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Leeper, Winfred C.	II-N	<i>Winfred C. Leeper</i>	2/12/2008	<i>Danny Moss</i>		2-25-08
Examiner	Level	Signature	Date	Site Review	Signature	Date
Tucker, David K.	II-N	<i>David K. Tucker</i>	2/12/2008	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		2/12/2008	<i>Wesley C. Ricketts</i>	<i>Wesley C. Ricketts</i>	4/6/08



% Coverage Calculations

S1 = Valve = 100% (100% of the length x 100% of the volume)

S2 = Tee = 100% (100% of the length x 100% of the volume)

S3 = CW = 50% (100% of the length x 50% of the volume)

S4 = CCW = 50% (100% of the length x 50% of the volume)

Total = 300 / 4 = 75.0 % Aggregate Coverage

Inspector / Date: JTE 2/21/08 Page 2 of 2



UT Pipe Weld Examination

Site/Unit: Oconee / 1 Procedure: NDE-600 Outage No.: 01-24
 Summary No.: 01.CS.21.0039 Procedure Rev.: 17 Report No.: UT-08-011
 Workscope: ISI Work Order No.: 01760774 Page: 1 of 2

Code: 1898/2800A Cat/Item: C-F-1/CS.21 Location: _____
 Drawing No.: 1HP-193 Description: Valve 1HP-26 to Tee
 System ID: 51A
 Component ID: 1HP-193-13 Strt Length: N/A Thickness/Diameter: 0.674 / 4.800
 Limitations: Yes - See Attached Limitation Report Start Time: 1110 Finish Time: 1123

Examination Surface: Inside Outside Surface Condition: FLUSH
 Lo Location: 9.1.1.1 Wo Location: _____ Weld Centerline _____ Couplant: ULTRAGEL II Batch No.: 07125
 Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32821 Surface Temp.: 75 °F
 Cal. Report No.: CAL-08-020, CAL-08-021, CAL-08-022

Angle Used	0	45	45T	60	60L	30°
Scanning dB			86	88	88	48

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

Results: Accept Reject Info Used 82 dB for 60 shear on valve side
 Percent Of Coverage Obtained > 90%: No 37.5% Reviewed Previous Data: Yes

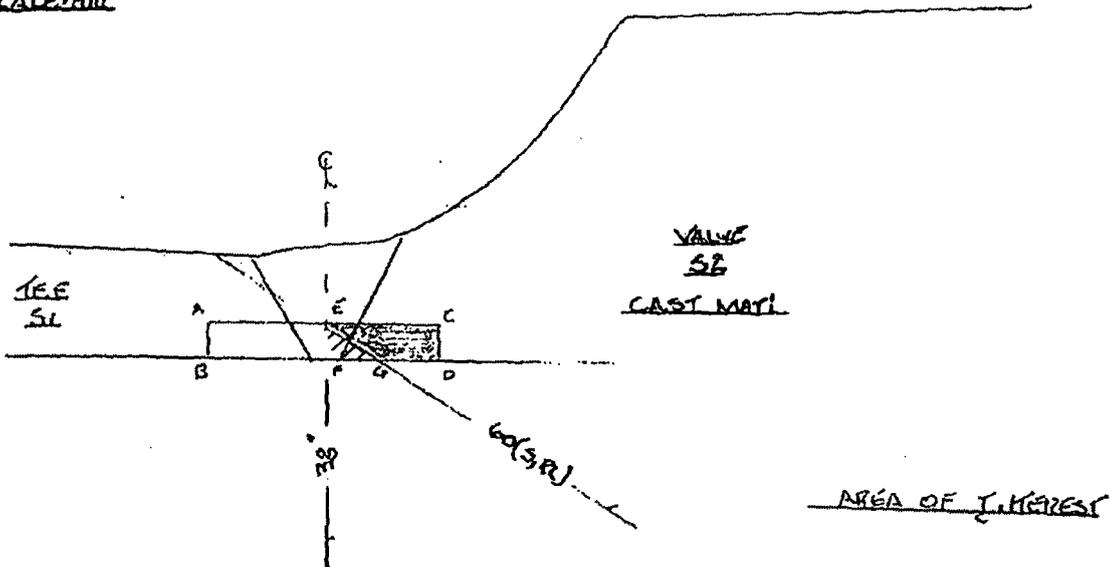
Examiner	Level	Signature	Date	Reviewer	Signature	Date
Houser, Gayla E.	II-N	<i>[Signature]</i>	2/7/2008	Jay A Eaton Level II	<i>[Signature]</i>	2/27/2008
Moss, Gary J.	IA-N	<i>[Signature]</i>	2/7/2008	Site Review	<i>[Signature]</i>	2/27/2008
Other	N/A		2/7/2008	ANII Review	<i>[Signature]</i>	2/2/09

% Coverage Calculation

ITEM NO. QLC5210031

WELD NO. IHP-193-13

SCALE: 5/16



VALUE
S1
CAST MATL

AREA OF INTEREST

$ABCD = 27.5in \times .80in = 0.18in^2$

PERCENT OF COVERAGE

S1, cast, cast...

$ABCE = 27.5in \times .42in = 0.09in^2$

$0.09in^2 / 0.18in^2 (100) = 50\%$

SUPPLEMENTAL COVERAGE (60%)

$EFG = \frac{38in \times 27.5in}{2} = .039in^2$

$0.039in^2 / 0.18in^2 (100) = 21.7\%$

$S1 = 50\%$
 $S2 = 0\%$
 $cast = 50\%$
 $cast = 50\%$
 $150\% / 4 = 37.5\%$

David K. [Signature]



UT Pipe Weld Examination

ATTACHMENT A
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Site/Unit: Oconee / 1
Summary No.: 01.C5.21.0043
Workscope: ISI

Procedure: NDE-600
Procedure Rev.: 17
Work Order No.: 01760810

Outage No.: 01-24
Report No.: UT-08-006
Page: 1 of 2

Code: 1998/2000A Cat./Item: C-F-1/C5.21 Location: _____
Drawing No.: 1HP-367 Description: Elbow to Flange
System ID: 51B
Component ID: 1HP-367-21 Size/Length: N/A Thickness/Diameter: 0.218 / 3.000
Limitations: Yes - See Attached Limitation Report Start Time: 1100 Finish Time: 1110

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 9.1.1.2 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125

Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32788 Surface Temp.: 105 °F

Cal. Report No.: CAL-08-008, CAL-08-009, CAL-08-010

Angle Used	0	45	45T	60	70	
Scanning dB			47	50	55	

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

Comments:

Results: Accept Reject Info

Initial Section XI Exam

Percent Of Coverage Obtained > 90%: No - 42.3%

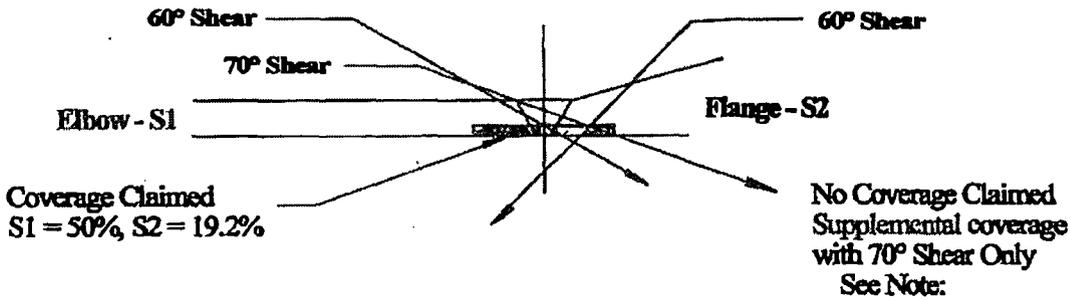
Reviewed Previous Data: No

Examiner	Level	Signature	Date	Reviewed	Signature	Date
Eaton, Jay A.	III-N		2/11/2008			
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A		2/11/2008	N/A		
Other	Level	Signature	Date	ANJ Review	Signature	Date
N/A	N/A		2/11/2008			4/8/08

Item No. OLC5.21.0043

Weld No. 1HP-367-21

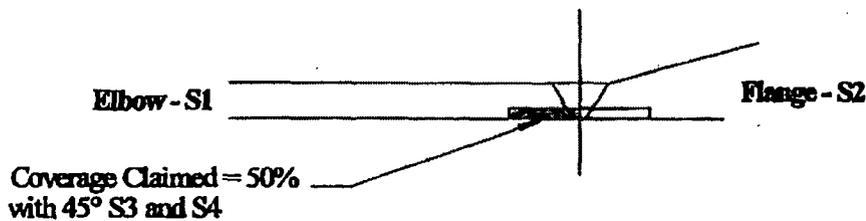
Scale : 1" = 1"



Note: 70° shear scan from Surface 1 not included in percentage coverage due to requirements of 10CFR50.55a(b)(2)(xv)(A)(1). Best effort scan with 70 shear obtained 30.8% coverage.

Axial Scans

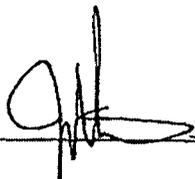
Scale : 1" = 1"



Circ. Scans

% Coverage Calculations

S1 = Elbow =	50%	(100% of the length x 50% of the volume)
S2 = Flange =	19.2%	(100% of the length x 19.2% of the volume)
S3 = CW =	50%	(100% of the length x 50% of the volume)
S4 = CCW =	50%	(100% of the length x 50% of the volume)
Total =	169.2 / 4 =	<u>42.3 %</u> Aggregate Coverage

Inspector / Date:  III 2/14/08



UT Pipe Weld Examination

ATTACHMENT A
PAGE 9 OF 26

Site/Unit: Oconee / 1
Summary No.: O1.C5.11.0076
Workscope: ISI

Procedure: PDI-UT-2
Procedure Rev.: C
Work Order No.: 01759029

Outage No.: O1-24
Report No.: UT-08-069
Page: 1 of 4

Code: 1998/2000A Cat./Item: C-F-1/C5.11 Location: _____
Drawing No.: 1LP-208 Description: Pipe to Valve 1LP-178
System ID: 53A
Component ID: 1LP-208-4 Size/Length: N/A Thickness/Diameter: 1,000 / 10,000
Limitations: Yes - See Attached Limitation Report Start Time: 1051 Finish Time: 1127

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32823 Surface Temp.: 70 °F
Cal. Report No.: CAL-08-066, CAL-08-067, CAL-08-068

Angle Used	0	45	45T	60	60L	
Scanning dB		35.9	35.9	47.9	69.9	

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

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 75% Reviewed Previous Data: Yes

Examiner	Level	III-N	Signature	Date	Reviewer	Signature	Date
Stauffer, Lester, E.				4/27/2008			4-20-08
Examiner	Level	II-N	Signature	Date	Site Review	Signature	Date
Tucker, David K.				4/27/2008	N/A		
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A				4/27/2008			5/2/08



UT Pipe Weld Examination

ATTACHMENT A
PAGE #1 OF 26

Site/Unit: Oconee / 1 Procedure: PDI-UT-2 Outage No.: 01-24
 Summary No.: 01.C5.11.0075 Procedure Rev.: C Report No.: UT-08-068
 Workscope: ISI Work Order No.: 01759029 Page: 1 of 2

Code: 1998/2000A Cat./Item: C-F-1/C5.11 Location: _____
 Drawing No.: 1LP-208 Description: Pipe to Valve 1LP-178
 System ID: 53A
 Component ID: 1LP-208-3 Size/Length: N/A Thickness/Diameter: 1.000 / 10.000
 Limitations: Yes - See Attached Limitation Report Start Time: 1042 Finish Time: 1120

Examination Surface: Inside Outside Surface Condition: AS GROUND
 Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
 Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32823 Surface Temp.: 70 °F
 Cal. Report No.: CAL-08-068, CAL-08-067, CAL-08-068

Angle Used	0	45	45T	60	60L	
Scanning dB		35.9	35.9	47.9	69.9	

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

Results: Accept Reject Info
 Percent Of Coverage Obtained > 90%: No - 75% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Stauffer, Lester, E.	III-N		4/27/2008			4-30-08
Examiner	Level	Signature	Date	Site Review	Signature	Date
Tucker, David K.	II-N		4/27/2008	N/A		
Other	Level	Signature	Date	ANK Review	Signature	Date
N/A	N/A		4/27/2008			5/21/08



UT Pipe Weld Examination

ATTACHMENT A
PAGE 13 OF 26

Site/Unit: Oconee / 1
Summary No.: 01.C5.11.0074
Workscope: ISI

Procedure: PDH-UT-2
Procedure Rev.: C
Work Order No.: 01759029

Outage No.: 01-24
Report No.: UT-08-067
Page: 1 of 2

Code: 1998/2000A Cat./Item: C-F-1/C5.11 Location: _____
Drawing No.: 1LP-208 Description: Pipe to Valve 1LP-179
System ID: 53A
Component ID: 1LP-208-20 Size/Length: N/A Thickness/Diameter: 1.000 / 10.000
Limitations: Yes - See Attached Limitation Report Start Time: 1142 Finish Time: 1210

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 8.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32823 Surface Temp.: 70 °F
Cal. Report No.: CAL-08-066, CAL-08-067, CAL-08-068

Angle Used	0	45	45T	60	60L	
Scanning dB		36.9	35.9	47.9	69.9	

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

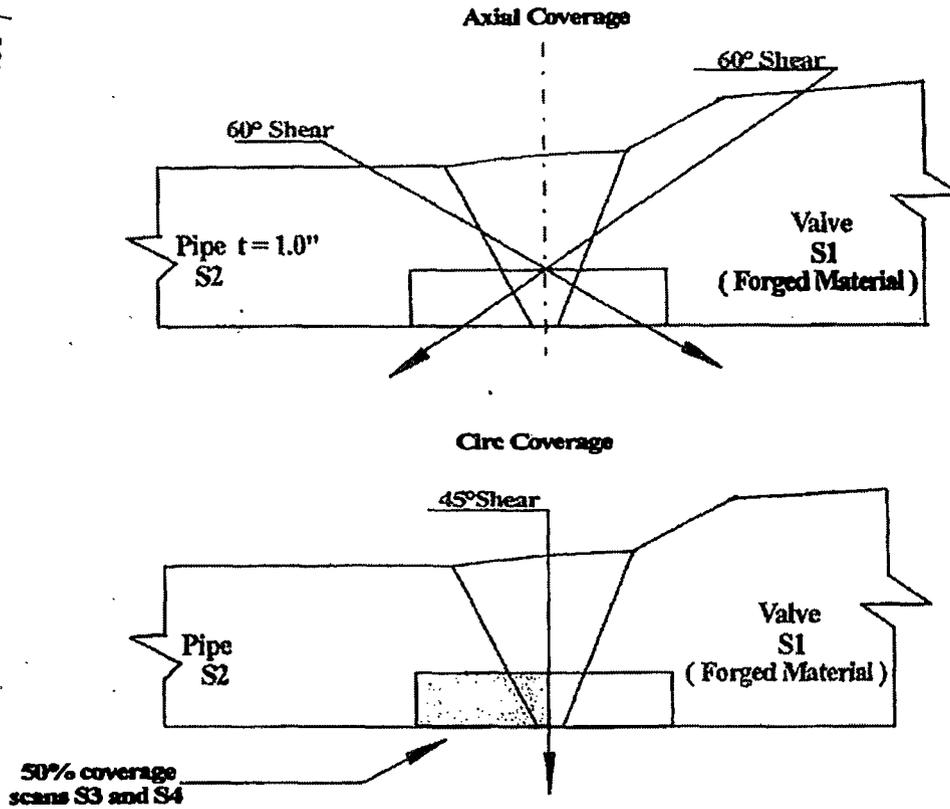
Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 75% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Stauffer, Lester, E.	III-N	<i>[Signature]</i>	4/27/2008	<i>[Signature]</i>		4-30-08
Examiner	Level	Signature	Date	Site Review	Signature	Date
Tucker, David K.	II-N	<i>[Signature]</i>	4/27/2008	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		4/27/2008	<i>[Signature]</i>		5/2/08

Summary No.: 01.C5.11.0074

Weld No. : 1LP-208-20



% Coverage Calculations

- S1 = Valve = 100% (100% of the length x 100% of the volume)
- S2 = Pipe = 100% (100% of the length x 100% of the volume)
- S3 = CW = 50% (100% of the length x 50% of the volume)
- S4 = CCW = 50% (100% of the length x 50% of the volume)
- Total = 300 / 4 = 75.0 % Aggregate Coverage**

Inspector / Date :  4/21/03 Page 2 of 2



UT Pipe Weld Examination

ATTACHMENT A
PAGE 15 OF 26

Site/Unit: Oconee / 1
Summary No.: 01.C5.11.0072
Workscope: ISI

Procedure: PDI-UT-2
Procedure Rev.: C
Work Order No.: 01759029

Outage No.: 01-24
Report No.: UT-08-066
Page: 1 of 2

Code: 1998/2000A Cat./Item: C-F-1/C5.11 Location: _____
Drawing No.: 1LP-208 Description: Pipe to Valve 1LP-179
System ID: 53A
Component ID: 1LP-208-19 Size/Length: N/A Thickness/Diameter: 1.000 / 10.000
Limitations: Yes - See Attached Limitation Report Start Time: 1135 Finish Time: 1204

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07126
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32823 Surface Temp.: 70 °F

Cal. Report No.: CAL-08-066, CAL-08-067, CAL-08-068

Angle Used	0	45	45T	60	60L	
Scanning dB		35.9	35.9	47.9	69.9	

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

Comments:

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 75% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewed	Signature	Date
Stauffer, Lester, E.	III-N		4/27/2008			4-30-08
Examiner	Level	Signature	Date	Site Review	Signature	Date
Tucker, David K.	II-N		4/27/2008	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		4/27/2008			5/2/08



UT Pipe Weld Examination

Site/Unit: Oconee / 1 Procedure: PDI-UT-2 Outage No.: 01-24
 Summary No.: 01.B9.11.0075 Procedure Rev.: C Report No.: UT-08-082
 Workscope: ISI Work Order No.: 01758888 Page: 1 of 3

Code: 1998/2000A Cal./Item: B-J /B9.11 Location: _____
 Drawing No.: ISI-OCN1-014 Description: RC Pump 1B2 to Safe End
 System ID: 50
 Component ID: 1-PDB2-1 Size/Length: N/A Thickness/Diameter: 2.333 / 33.500
 Limitations: Yes - See Attached Limitation Report Start Time: 1240 Finish Time: 1317

Examination Surface: Inside Outside Surface Condition: GROUND
 Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
 Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32823 Surface Temp.: 67 °F

Cal. Report No.: CAL-08-077, CAL-08-078, CAL-08-079

Angle Used	0	45	45T	60	60L	
Scanning dB		59.2	59.2	50.7	53.2	

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

Comments:

Results: Accept Reject Info Initial Section XI Exam
 Percent Of Coverage Obtained > 90%: No - 37.5% Reviewed Previous Data: No

Examiner	Level	II-N	Signature	Date	Reviewer	Signature	Date
Tucker, David K.			<i>[Signature]</i>	4/29/2008	<i>[Signature]</i>	III	5/1/08
Examiner	Level	II-N	Signature	Date	Site Review	Signature	Date
Griebel, David M.			<i>[Signature]</i>	4/29/2008	N/A		
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A				4/29/2008	<i>[Signature]</i>		5/2/08

Aggregate Coverage Sheet

Summary Number: 01.89.11.0075

Weld No: 1-PDB2-1

S1 = Safe End = 50%	(100% of the length x 50% of the volume)
S2 = RCP = 0%	(100% of the length x 0% of the volume)
S3 = CW = 50%	(100% of the length x 50% of the volume)
S4 = CCW = 50%	(100% of the length x 50% of the volume)
Total = $150/4 = 37.5\%$ Aggregate Coverage	

Inspector/Date:

J.H. III 4/30/08

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UT Pipe Weld Examination

Site/Unit: Oconee / 1
 Summary No.: 01.B9.11.0075
 Workscope: ISI

Procedure: NDE-830
 Procedure Rev.: 1
 Work Order No.: 01758898

Outage No.: 01-24
 Report No.: UT-08-081
 Page: 1 of 2

Code: 1998/2000A Cat./Item: B-J /B9.11 Location: _____
 Drawing No.: ISI-OCN1-014 Description: RC Pump 1B2 to Safe End
 System ID: 50
 Component ID: 1-PDB2-1 Size/Length: N/A Thickness/Diameter: 2.333 / 33.500
 Limitations: None Start Time: 1127 Finish Time: 1239

Examination Surface: Inside Outside Surface Condition: GROUND
 Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
 Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32823 Surface Temp.: 67 °F

Cal. Report No.: CAL-08-075, CAL-08-076

Angle Used	0	45	45T	60L	60LT	70L/70LT
Scanning dB				81.7	85.7	94.5

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

Comments:

Results: Accept Reject Info Initial Section XI Exam
 Percent Of Coverage Obtained > 80%: N/A Reviewed Previous Data: No

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Tucker, David K.	II-N	<i>[Signature]</i>	4/29/2008	<i>[Signature]</i>	<i>[Signature]</i>	5/1/07
Griebel, David M.	II-N	<i>[Signature]</i>	4/29/2008	Site Review	Signature	
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A			4/29/2008	<i>Nancy C. Ritchel</i>	<i>[Signature]</i>	5/2/08



UT Pipe Weld Examination

Site/Unit: Oconee / 1
Summary No.: 01.B9.11.0053
Workscope: ISI

Procedure: NDE-600
Procedure Rev.: 17
Work Order No.: 01758567

Outage No.: 01-24
Report No.: UT-08-049
Page: 1 of 3

Code: 1998/2000A Cat./Item: B-J /B9.11 Location: _____
Drawing No.: ISI-OCN1-010 Description: Pipe Safe End to RC Pump 1B2
System ID: 50
Component ID: 1-PIB2-9 Size/Length: N/A Thickness/Diameter: 2.330 / 36.500
Limitations: Yes - See Attached Sketch Start Time: 1117 Finish Time: 1143

Examination Surface: Inside Outside Surface Condition: GROUND
Lo Location: 8.1.1.5 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32823 Surface Temp.: 87 °F

Cal. Report No.: CAL-08-047, CAL-08-048, CAL-08-049

Angle Used	0	45	45T	60	60L	
Scanning dB			60	60	62	

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

Comments:

Results: Accept Reject Info

Initial Section XI Exam

Percent Of Coverage Obtained > 90%: No - 37.5%

Reviewed Previous Data: No

Examiner	Level	II-N	Signature	Date	Reviewer	Signature	Date
Mauldin, Larry E.			<i>Larry E. Mauldin</i>	4/20/2008	<i>D. E. Jensen</i>		4/24/08
Examiner	Level	II-N	Signature	Date	Site Review	Signature	Date
Griebel, David M.			<i>David M. Griebel</i>	4/20/2008	N/A		
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A				4/20/2008	<i>Dorey C. Ritchel Slaughter</i>		4/28/08

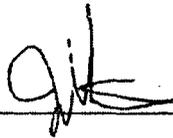
Aggregate Coverage Sheet

Summary Number: 01.89.11.0053

Weld No: 1-PIB2-9

S1 = Safe End = 50%	(100% of the length x 50% of the volume)
S2 = RCP = 0%	(100% of the length x 0% of the volume)
S3 = CW = 50%	(100% of the length x 50% of the volume)
S4 = CCW = 50%	(100% of the length x 50% of the volume)
Total = $150/4 = 37.5\%$ Aggregate Coverage	

Inspector/Date:

 III 4/23/08

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ATTACHMENT A
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UT Pipe Weld Examination

Site/Unit: Oconee / 1 Procedure: NDE-830 Outage No.: 01-24
 Summary No.: 01.B9.11.0053 Procedure Rev.: 1 Report No.: UT-08-050
 Workscope: ISI Work Order No.: 01758567 Page: 1 of 2

Code: 1998/2000A Cat./Item: B-J /B9.11 Location: _____
 Drawing No.: ISI-OCN1-010 Description: Pipe Safe End to RC Pump 1B2
 System ID: 50
 Component ID: 1-PIB2-8 Size/Length: N/A Thickness/Diameter: 2.330 / 36.500
 Limitations: Yes - See Attached Coverage Calculation Report Start Time: 1144 Finish Time: 1220

Examination Surface: Inside Outside Surface Condition: GROUND
 Lo Location: 9.1.1.5 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
 Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32823 Surface Temp.: 67 °F

Cal. Report No.: CAL-08-050, CAL-08-051

Angle Used	0	45	45T	60	60L	70L
Scanning dB					72*	78**

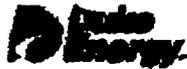
Indication(s): Yes No Scan Coverage: Upstream Downstream CW CCW

Comments:

- * Scanned at 72.0 dB to set noise level @ 30% FSH.
- **Scanned at 78.0 dB to set noise level @ 30% FSH
- ***Best effort exam of upper 2/3 of weld to supplement coverage

Results: Accept Reject Info Initial Section XI Exam _____
 Percent Of Coverage Obtained > 90%: *** Reviewed Previous Data: No

Examiner	Level	II-N	Signature	Date	Reviewer	Signature	Date
Mauldin, Larry E.			<i>Larry E. Mauldin</i>	4/20/2008	DE Kowen		4/24/08
Examiner	Level	II-N	Signature	Date	Site Review	Signature	Date
Griebel, David M.			<i>David M. Griebel</i>	4/20/2008	N/A		
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A				4/20/2008	Nancy Chetani		4/28/08



UT Vessel Examination

Site/Unit: Oconee / 2 Procedure: NDE-640 Outage No.: 02-22
 Summary No.: 02.B3.110.0001 Procedure Rev.: 3 Report No.: UT-07-089
 Workscope: ISI Work Order No.: 01678781 Page: 1 of 1

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
 Drawing No.: ISI-OCN2-002 Description: Nozzle to Head
 System ID: 50
 Component ID: 2-PZR-WP15 Size/Length: N/A Thickness/Diameter: 4.750 / 15.250
 Limitations: None Start Time: 0939 Finish Time: 0952

Examination Surface: Inside Outside Surface Condition: As Manufactured

Lo Location: 9.2.3 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125

Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27221 Surface Temp.: 72 °F

Cal. Report No.: CAL-07-085

Angle Used	0	45	45T	80	60T	
Scanning dB	37.8					

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

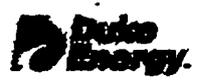
Comments:

FC 06-04
 Additional Inspector: L. Cochran *L Cochran*

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No Yes 100% 36.5% 41.7% Reviewed Previous Data: Yes
80m 10-16-07

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Houser, Gayle E.	II-N	<i>G E Houser</i>	5/15/2007	<i>Gayle Houser</i>		5-18-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Tucker, David K.	II-N	<i>David K Tucker</i>	5/15/2007			
Other	Level	Signature	Date	ANII Review	Signature	Date
Jones, Russel E.	III-N	<i>R E Jones</i>	5/15/2007	<i>Russel Jones</i>		5/24/07



UT Vessel Examination

Site/Unit: Oconee / 2 Procedure: NDE-820 Outage No.: O2-22
 Summary No.: O2.B3.110.0001 Procedure Rev.: 2 Report No.: UT-07-090
 Workscope: ISI Work Order No.: 01678781 Page: 1 of 8

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
 Drawing No.: ISI-OCN2-002 Description: Nozzle to Head
 System ID: 50
 Component ID: 2-PZR-WP15 Size/Length: N/A Thickness/Diameter: 4.750 / 15.250
 Limitations: Yes - See Limitation Report Start Time: 0952 Finish Time: 1019

Examination Surface: Inside Outside Surface Condition: As Manufactured

Lo Location: 9.2.3 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125

Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27221 Surface Temp.: 72 °F

Cal. Report No.: CAL-07-086, CAL-07-087, CAL-07-088

Angle Used	0	45	45T	60	60T	70
Scanning dB		63	63	70	70	74

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

Comments:
 FC 06-06
 Additional Inspector: L. Cochran *L. Cochran*

Results: Accept Reject Info
 Percent Of Coverage Obtained > 90%: No - 41.7% *5/17/07* Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewed	Signature	Date
Houser, Gayle E.	II-N	<i>Gayle E. Houser</i>	5/15/2007	<i>Gayle E. Houser</i>		5-18-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Tucker, David K.	II-N	<i>David K. Tucker</i>	5/15/2007			
Other	Level	Signature	Date	ANII Review	Signature	Date
Jones, Russel E.	III-N	<i>Russel E. Jones</i>	5/15/2007	<i>Russel E. Jones</i>		5/24/07

DUKE ENERGY COMPANY ISI LIMITATION REPORT

Summary #: <u>02.B3.110.0001</u> Component ID <u>2-PZR-WP15</u>		remarks: <i>S</i> Surge Line Nozzle 10-16-07
<input checked="" type="checkbox"/> NO SCAN SURFACE BEAM DIRECTION <input type="checkbox"/> LIMITED SCAN <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> cw <input checked="" type="checkbox"/> ccw		
FROM L <u>N/A</u> to L <u>N/A</u> INCHES FROM W0 <u>CL</u> to <u>Beyond</u>		
ANGLE: <input checked="" type="checkbox"/> 0 <input checked="" type="checkbox"/> 45 <input checked="" type="checkbox"/> 60 other <u>70</u> FROM <u>0</u> DEG to <u>360</u> DEG		
<input type="checkbox"/> NO SCAN SURFACE BEAM DIRECTION <input type="checkbox"/> LIMITED SCAN <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> cw <input type="checkbox"/> ccw		
FROM L _____ to L _____ INCHES FROM W0 _____ to _____		
ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input type="checkbox"/> 60 other _____ FROM _____ DEG to _____ DEG		
<input type="checkbox"/> NO SCAN SURFACE BEAM DIRECTION <input type="checkbox"/> LIMITED SCAN <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> cw <input type="checkbox"/> ccw		
FROM L _____ to L _____ INCHES FROM W0 _____ to _____		
ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input type="checkbox"/> 60 other _____ FROM _____ DEG to _____ DEG		
<input type="checkbox"/> NO SCAN SURFACE BEAM DIRECTION <input type="checkbox"/> LIMITED SCAN <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> cw <input type="checkbox"/> ccw		
FROM L _____ to L _____ INCHES FROM W0 _____ to _____		
ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input type="checkbox"/> 60 other _____ FROM _____ DEG to _____ DEG		
Sketch(s) attached <input checked="" type="checkbox"/> yes <input type="checkbox"/> No		
Prepared By: <u>Gayle Houser</u> Level: <u>II</u> Date: <u>05/15/2007</u>	Sheet <u>2</u> of <u>8</u>	
Reviewed By: <u>Gayle Houser</u> Date: <u>5/18/07</u>	Authorized Inspector: <u>[Signature]</u> Date: <u>5/24/07</u>	

PZR Surge Nozzle to Shell % of Coverage

Item No. : 02.B3.110.0001

Weld No. : 2-PZR-WP15

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>
S1	45°,60° & 70°	82.7
S2	45°,60° & 70°	0
CW	60° & 45°	33.3
CCW	60° & 45°	<u>33.3</u>
	Total	149.3

$149.3 \div 4 =$ 37.3 % Coverage

Base Material Coverage

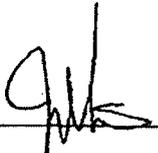
S1	45°,60° & 70°	65.1
CW & CCW	45° & 60°	<u>37.3</u>
	Total	102.4

$102.4 \div 2 =$ 51.2 % Coverage

0° Scan Coverage = 36.5 % Coverage

Aggregate Coverage = Weld + Base Material + 0° ÷ 3

= 41.7 % Coverage

Inspector / Date :  III 5/17/07

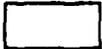
Page 3 of 8

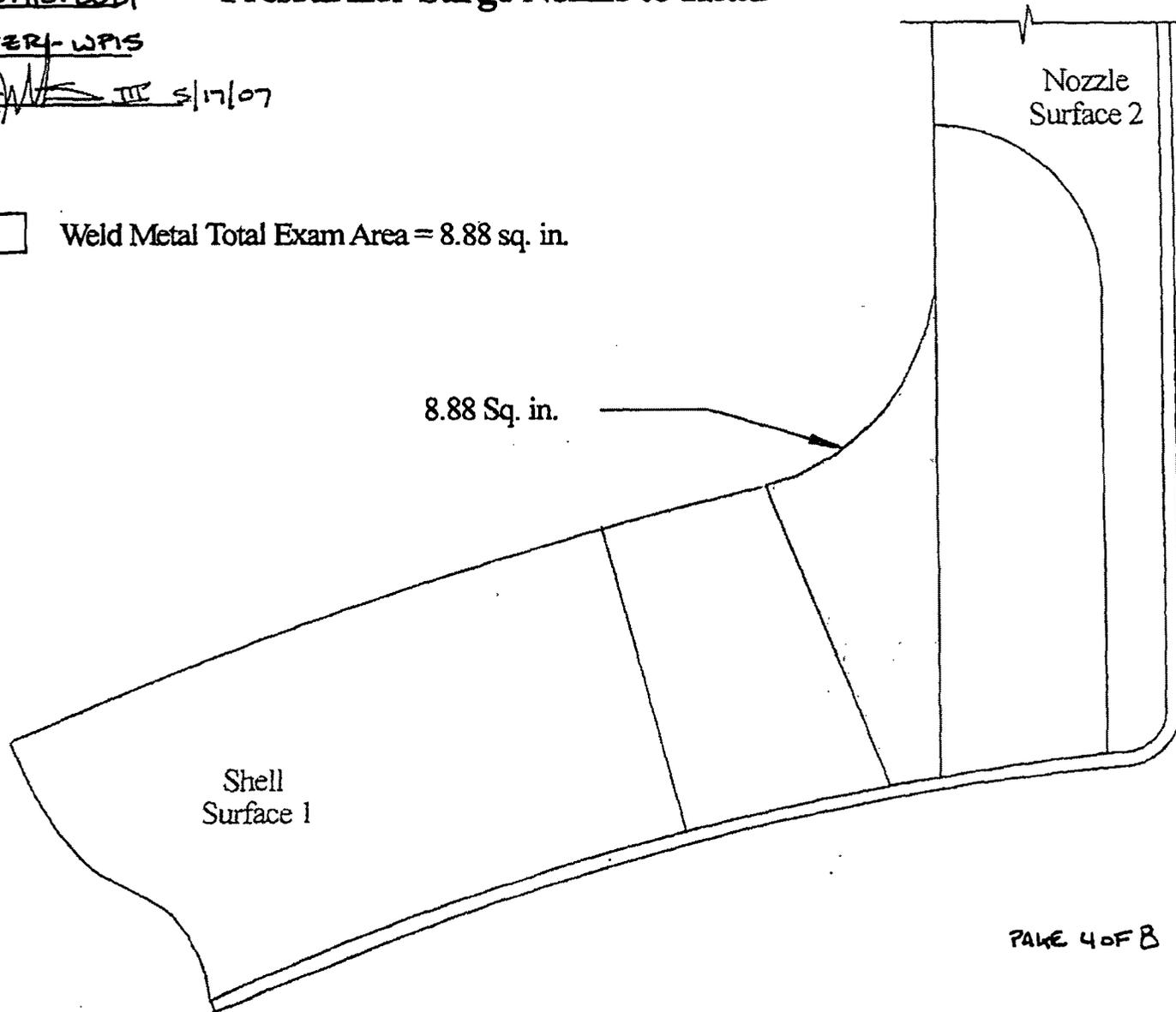
Item No. : 02.83.110.0001

Pressurizer Surge Nozzle to Head

Weld No. : Z-PER-WP15

Inspector/Date : [Signature] III 5/17/07

 Weld Metal Total Exam Area = 8.88 sq. in.

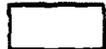


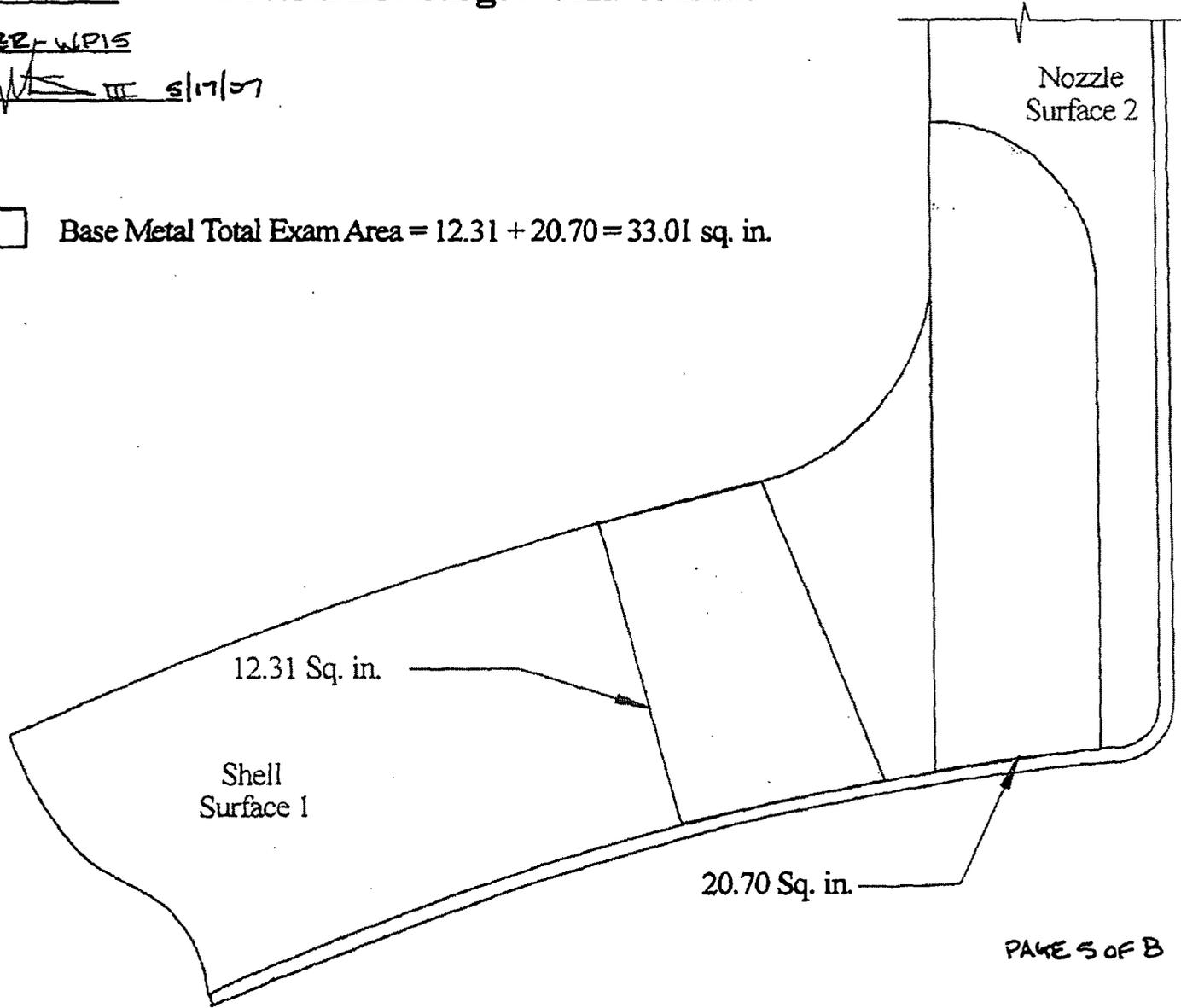
Item No. : 02.B3.110.0001

Pressurizer Surge Nozzle to Head

Weld No. : Z-PRE-WP15

Inspector/Date : AMS III 5/17/07

 Base Metal Total Exam Area = $12.31 + 20.70 = 33.01$ sq. in.



Item No.: 02.83.110.0001

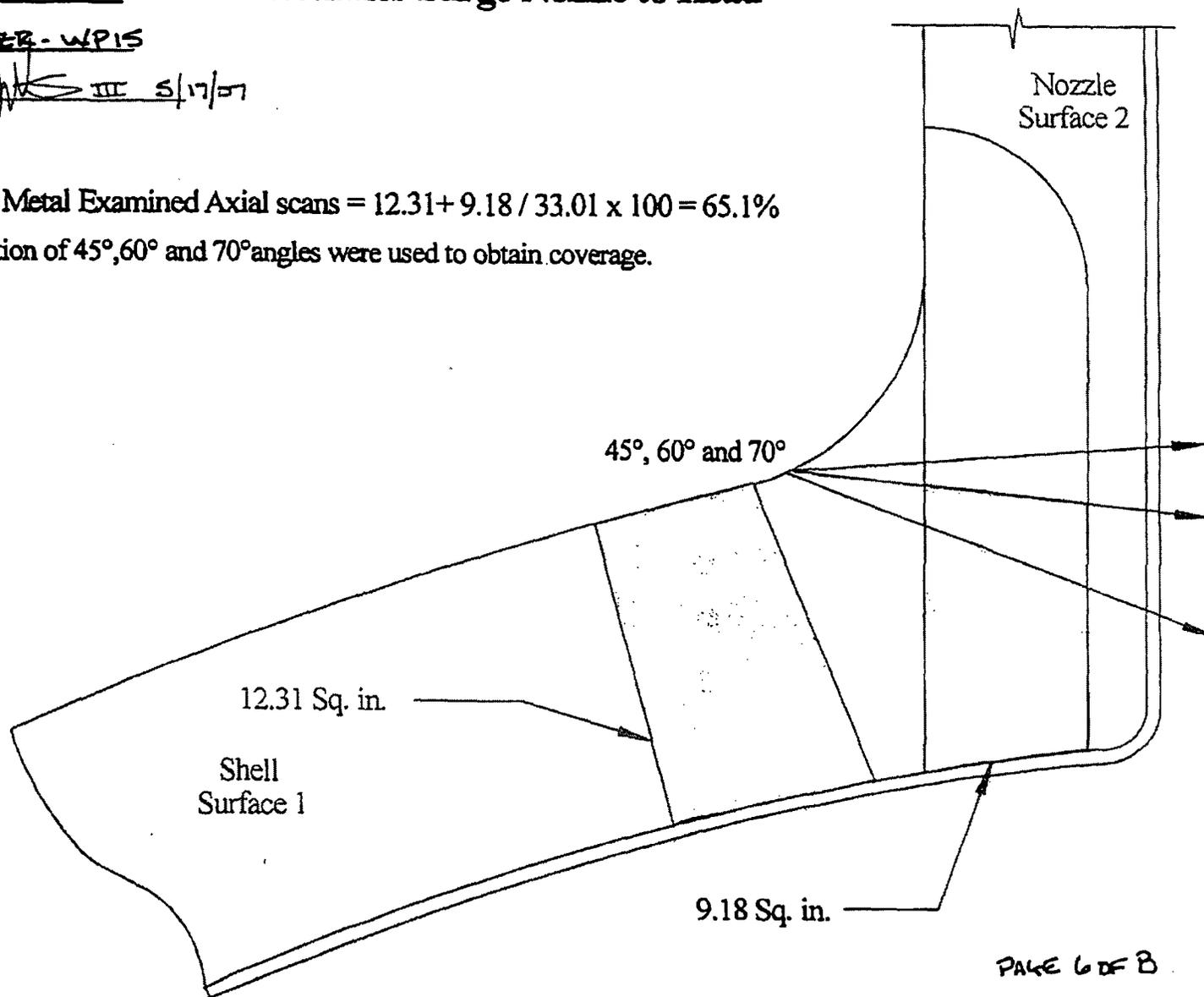
Pressurizer Surge Nozzle to Head

ATTACHMENT B
PAGE 7 OF 50

Weld No.: Z-PER-WP15

Inspector/Date: JKS III 5/17/07

Total Base Metal Examined Axial scans = $12.31 + 9.18 / 33.01 \times 100 = 65.1\%$
A combination of 45°, 60° and 70° angles were used to obtain coverage.



Item No. : 02.83.110.0001

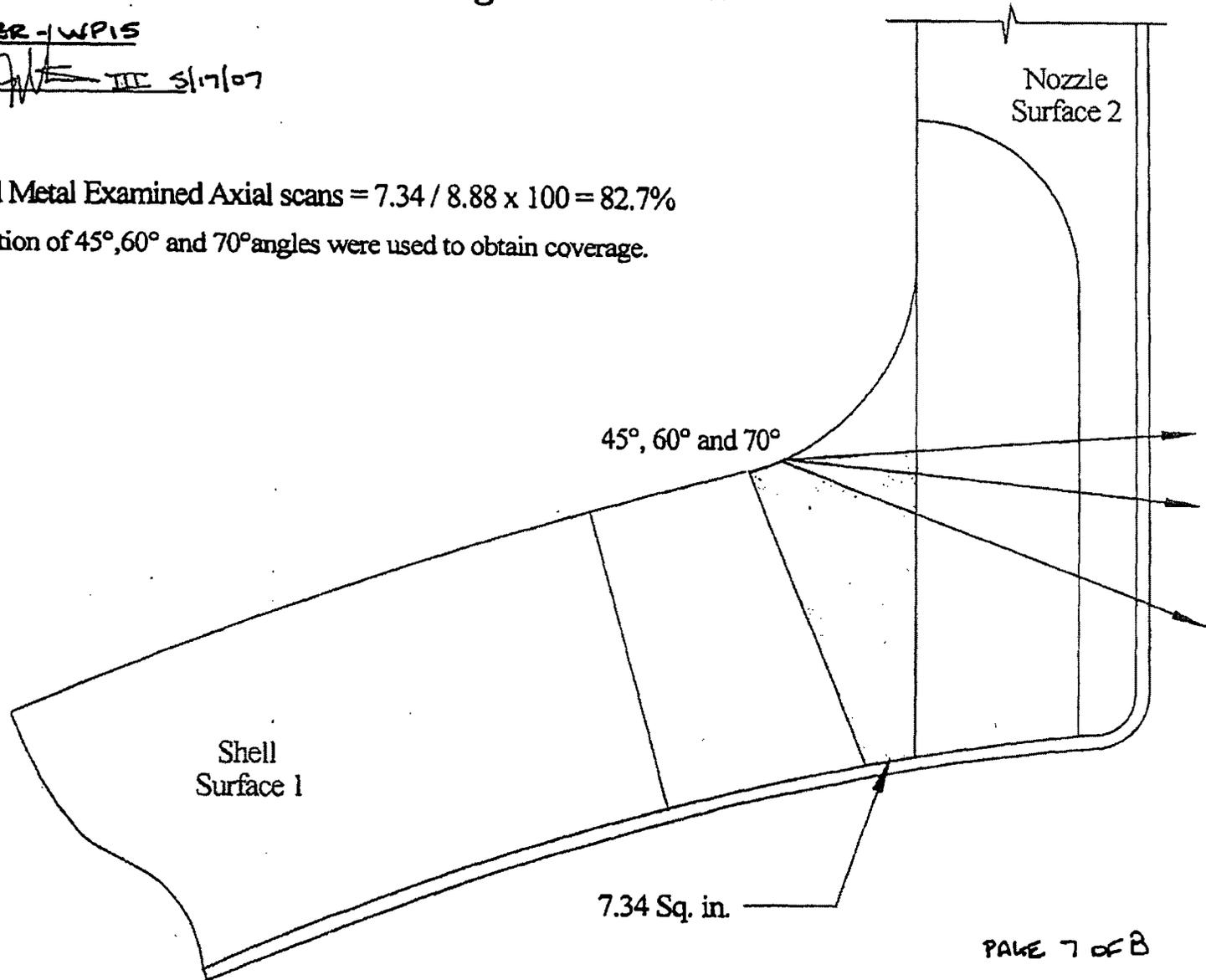
Pressurizer Surge Nozzle to Head

Weld No. : 2-PZR-WP15

Inspector/Date : [Signature] III 5/17/07

Total Weld Metal Examined Axial scans = $7.34 / 8.88 \times 100 = 82.7\%$

A combination of 45°, 60° and 70° angles were used to obtain coverage.



Item No. : 02.83.110.0001

Pressurizer Surge Nozzle to Head

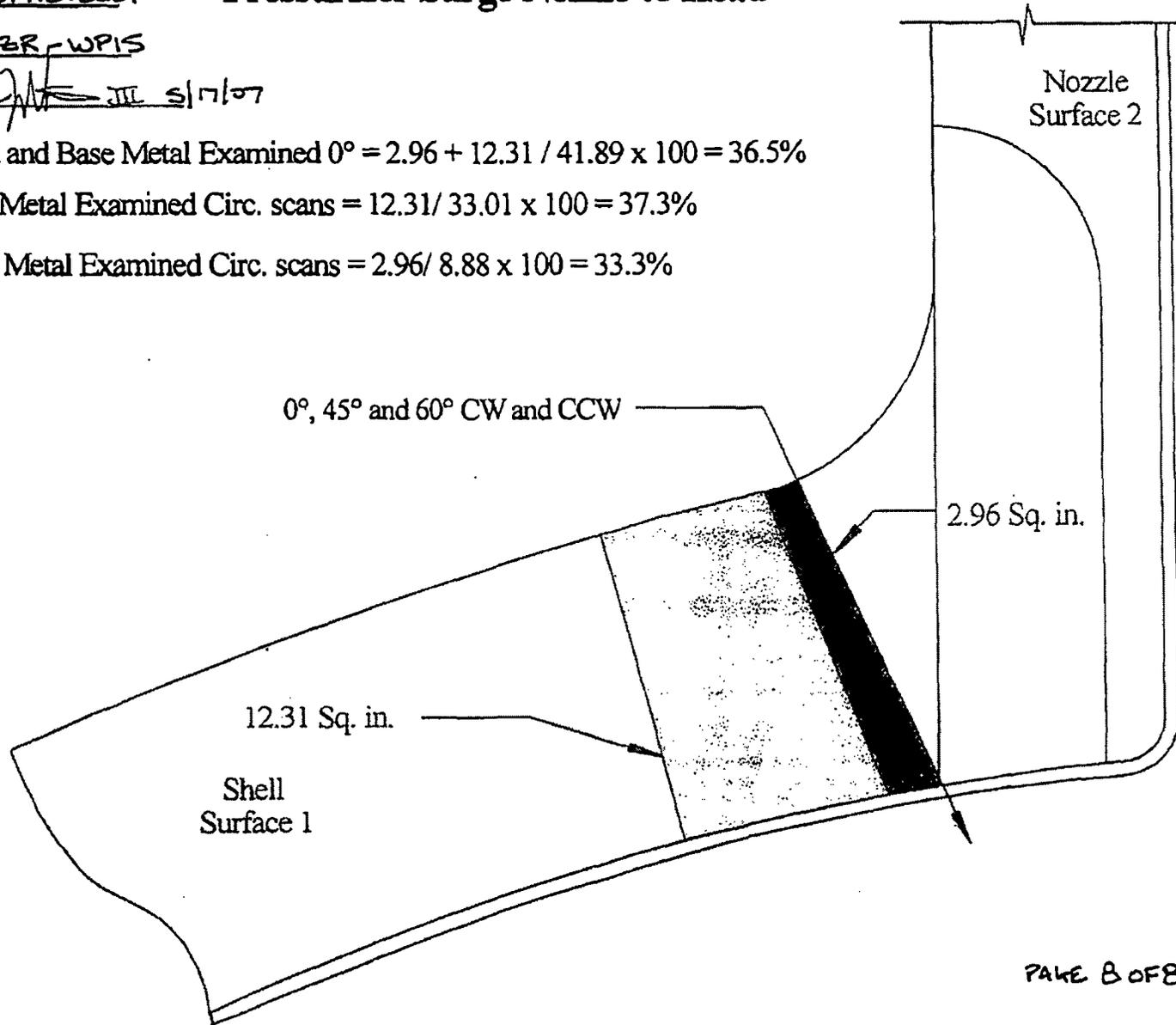
Weld No. : Z-PZR-WP15

Inspector/Date : [Signature] 5/17/07

Total Weld and Base Metal Examined $0^\circ = 2.96 + 12.31 / 41.89 \times 100 = 36.5\%$

Total Base Metal Examined Circ. scans = $12.31 / 33.01 \times 100 = 37.3\%$

Total Weld Metal Examined Circ. scans = $2.96 / 8.88 \times 100 = 33.3\%$



PAKE B OF B



UT Vessel Examination

ATTACHMENT B
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Site/Unit: Oconee / 2
Summary No.: O2.B3.110.0006
Workscope: ISI

Procedure: NDE-640
Procedure Rev.: 3
Work Order No.: 01678781

Outage No.: O2-22
Report No.: UT-07-051
Page: 1 of 1

Code: 1998 Cat./Item: B-D /B3.110 Location: _____

Drawing No.: ISI-OCN2-002 Description: Nozzle to Shell

System ID: 50

Component ID: 2-PZR-WP26-4 ⁰⁴⁸ Size/Length: N/A Thickness/Diameter: 6.187 / 5.750

Limitations: Yes - See Report # UT-07-049 for Coverage Calculations Start Time: 1018 Finish Time: 1024

Examination Surface: inside Outside Surface Condition: AS GROUND

Lo Location: 9.2.3 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125

Temp. Tool Mfg.: FISHER Serial No.: MCNDE32770 Surface Temp.: 63 °F

Cal. Report No.: CAL-07-049

Angle Used	0	45	45T	60	60T
Scanning dB	37.4				

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

Comments:
FC 06-04

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 36.7% ^{36.7%} _{36.7%} Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Cochran, Lonnie D.	III-N	<i>L D Cochran</i>	5/9/2007	<i>Ray Moss</i>		5-18-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Waddel, Joey	II-N	<i>Joey Waddel</i>	5/9/2007			
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		5/9/2007	<i>[Signature]</i>		5/24/07



UT Vessel Examination

ATTACHMENT B
PAGE 11 OF 50

Site/Unit: Oconee / 2
Summary No.: O2.B3.110.0006
Workscope: ISI

Procedure: NDE-820
Procedure Rev.: 2
Work Order No.: 01678781

Outage No.: O2-22
Report No.: UT-07-048
Page: 1 of 3

Code: 1988 Cat./Item: B-D /B3.110 Location: _____
Drawing No.: ISI-OCN2-002 Description: Nozzle to Shell
System ID: 50
Component ID: 2-PZR-WP26-4 Size/Length: N/A Thickness/Diameter: 6.187 / 5.750
Limitations: Yes - See Report # UT-07-048 for Coverage Calculations Start Time: 0953 Finish Time: 1020

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 9.2.3 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: FISHER Serial No.: MCNDE32770 Surface Temp.: 63 °F
Cal. Report No.: CAL-07-047, CAL-07-048, CAL-07-050, CAL-07-051

Angle Used	0	45	45T	60	60T	35/35T
Scanning dB		67.5	67.5	88.8	79.2	64

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

Comments:
FC 06-04
See Report NO. UT-07-067 For Indication sizing information
60° & 70° Scan - Additional inspector - Joey Waddel

Results: Accept Reject Info
Percent Of Coverage Obtained > 90%: No - 36.7% of 5/9/07 Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Mauldin, Larry E.	II-N	<i>Larry E. Mauldin</i>	5/9/2007	<i>Sam M...</i>		5-18-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Ellis, Ken	II-N	<i>Ken Ellis</i>	5/9/2007			
Other	Level	Signature	Date	ANII Review	Signature	Date
Cochran, Lonnie D.	III-N	<i>L D Cochran</i>	5/9/2007	<i>[Signature]</i>		5/16/07

PZR Sampling Nozzle to Shell % of Coverage

Item No. : 02.83.110.0006

Weld No. : Z-PZR-WPZ6-4

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>	
S1	35°,45°,60° & 70°	74.8	
S2	35°,45°,60° & 70°	0	
CW	35° & 45°	0	
CCW	35° & 45°	0	
	Total	74.8	
	$74.8 \div 4 =$	<u>18.7</u>	% Coverage

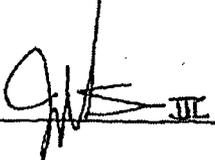
Base Material Coverage

S1	35°,45°,60° & 70°	72.8	
CW & CCW	45° & 35°	<u>42.4</u>	
	Total	115.2	
	$115.2 \div 2 =$	<u>57.6</u>	% Coverage

0° Scan Coverage = 33.9 **% Coverage**

Aggregate Coverage = Weld + Base Material + 0° ÷ 3

= 36.7 **% Coverage**

Inspector / Date :  JIL 5/22/07

Page 1 of 6

ATTACHMENT TO REPORT NO. US-07-04

Item No. . 02.33.10.0004

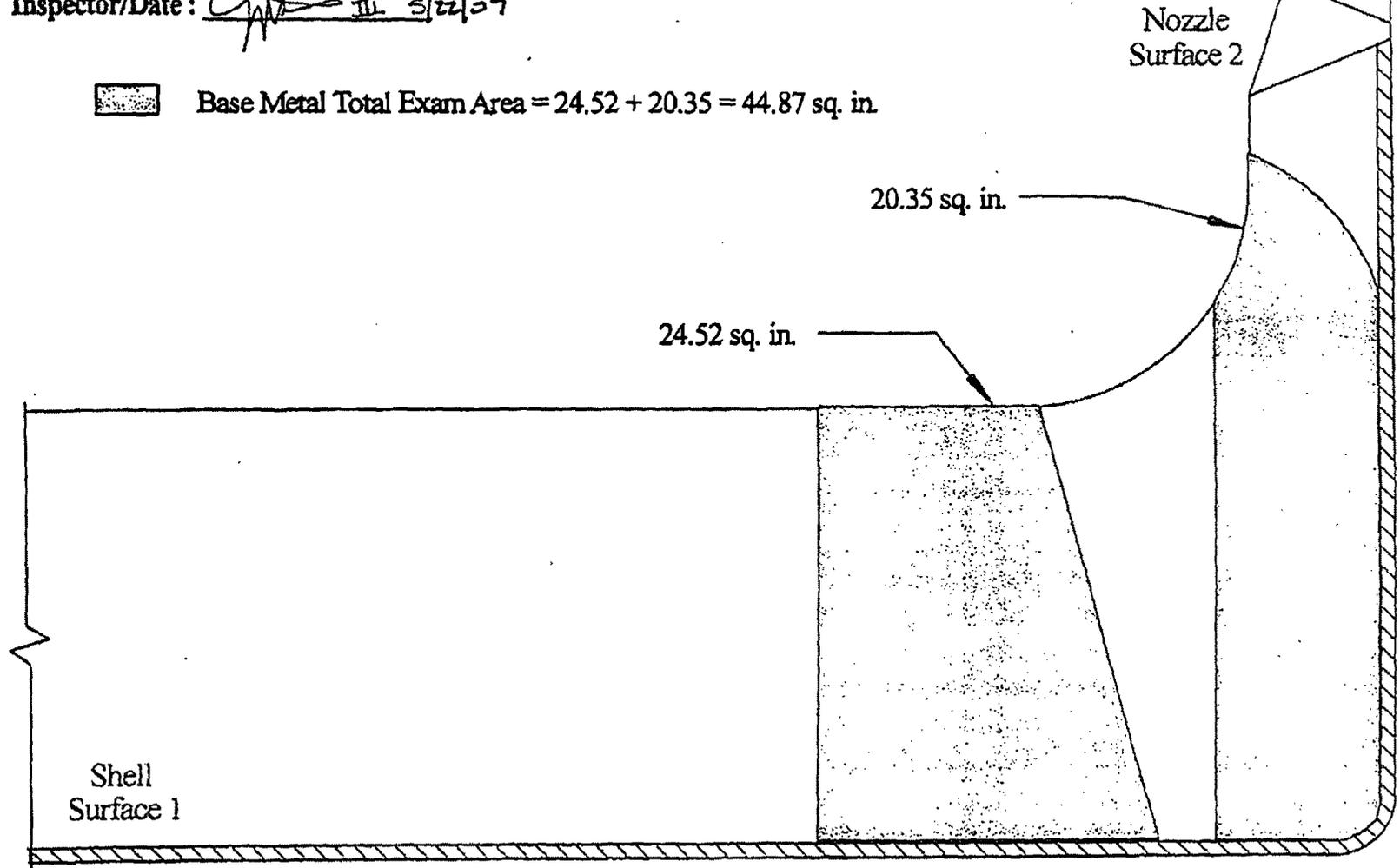
Pressurizer Sampling Nozzle to Shell

ATTACHMENT B
PAGE 13 OF 50

Weld No. : Z-PZR-WP26-4

Inspector/Date : AK III 5/22/07

 Base Metal Total Exam Area = 24.52 + 20.35 = 44.87 sq. in.



PAGE 2 OF 6

ATTACHMENT TO REPORT NO. UT-07-041

Item No. : DZ.B3.110.0006

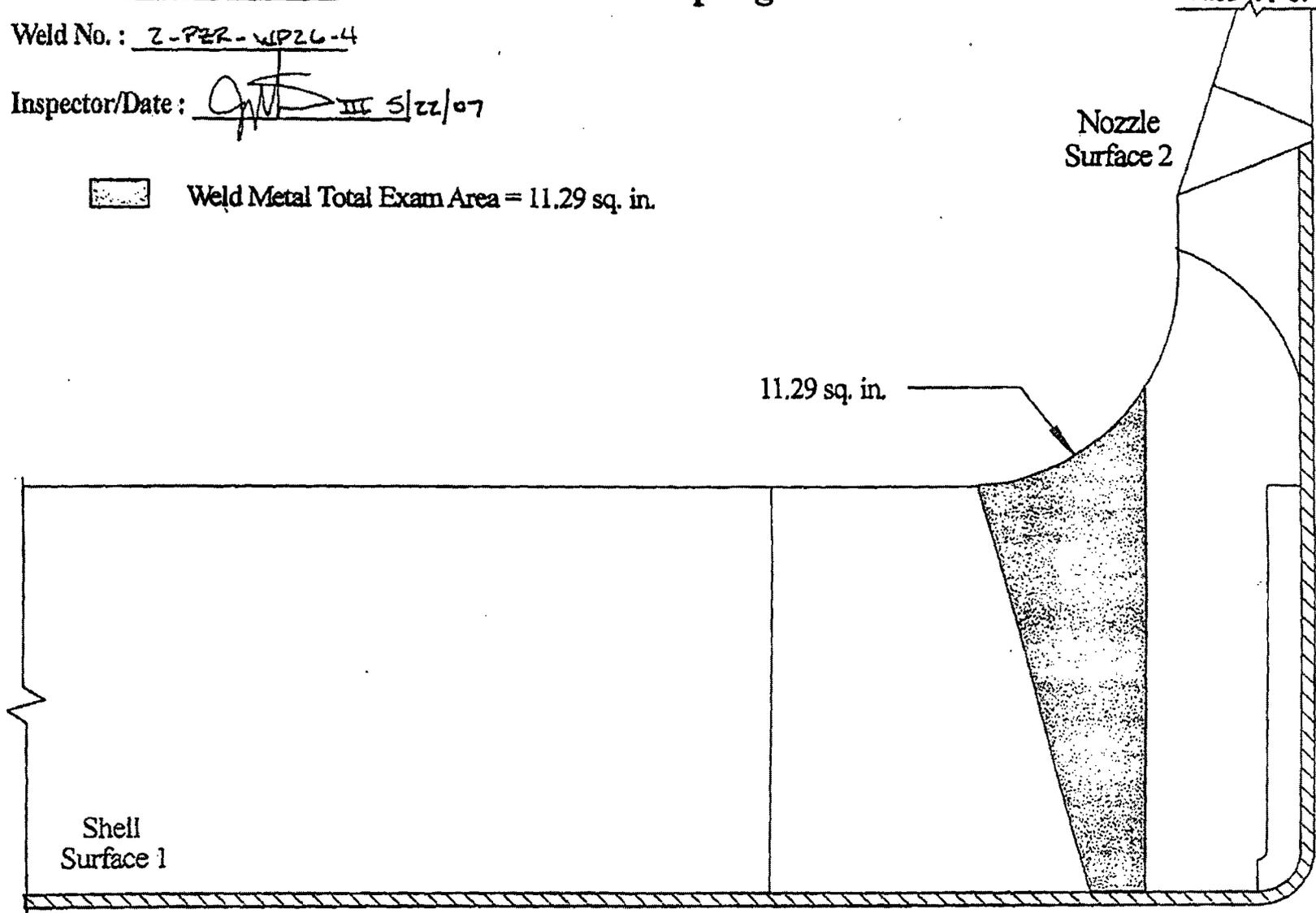
Pressurizer Sampling Nozzle to Shell

ATTACHMENT B
PAGE 14 OF 50

Weld No. : Z-PZR-WP26-4

Inspector/Date : [Signature] 5/22/07

 Weld Metal Total Exam Area = 11.29 sq. in.



PAGE 3 OF 6

ATTACHMENT TO REPORT NO. UT-07-04

Item No. : 02.B3.110.0006

Pressurizer Sampling Nozzle to Shell

ATTACHMENT B
PAGE 15 OF 50

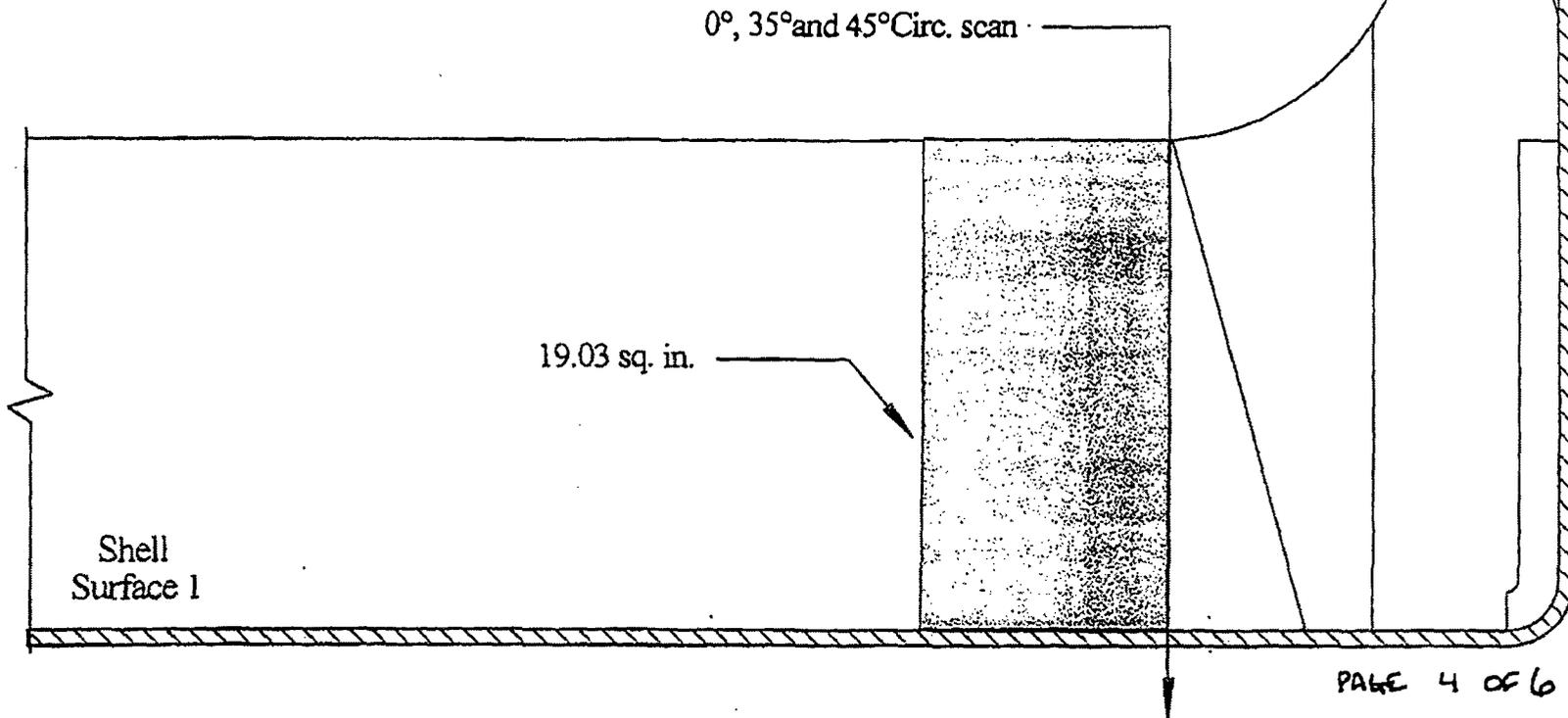
Weld No. : 2-PER-WPZ6-4

Inspector/Date : JFK III 5/22/07

 Base Metal Examined with 35° and 45° angles.

% Examined 35° and 45° = $19.03 / 44.87 \times 100 = 42.4\%$.

% Examined 0° = $19.03 / 56.16 \times 100 = 33.9\%$.



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ATTACHMENT TO REPORT NO. UT-07-048

Item No. : 02.83.112.0006

Pressurizer Sampling Nozzle to Shell

Weld No. : 2-PER-WP26-4

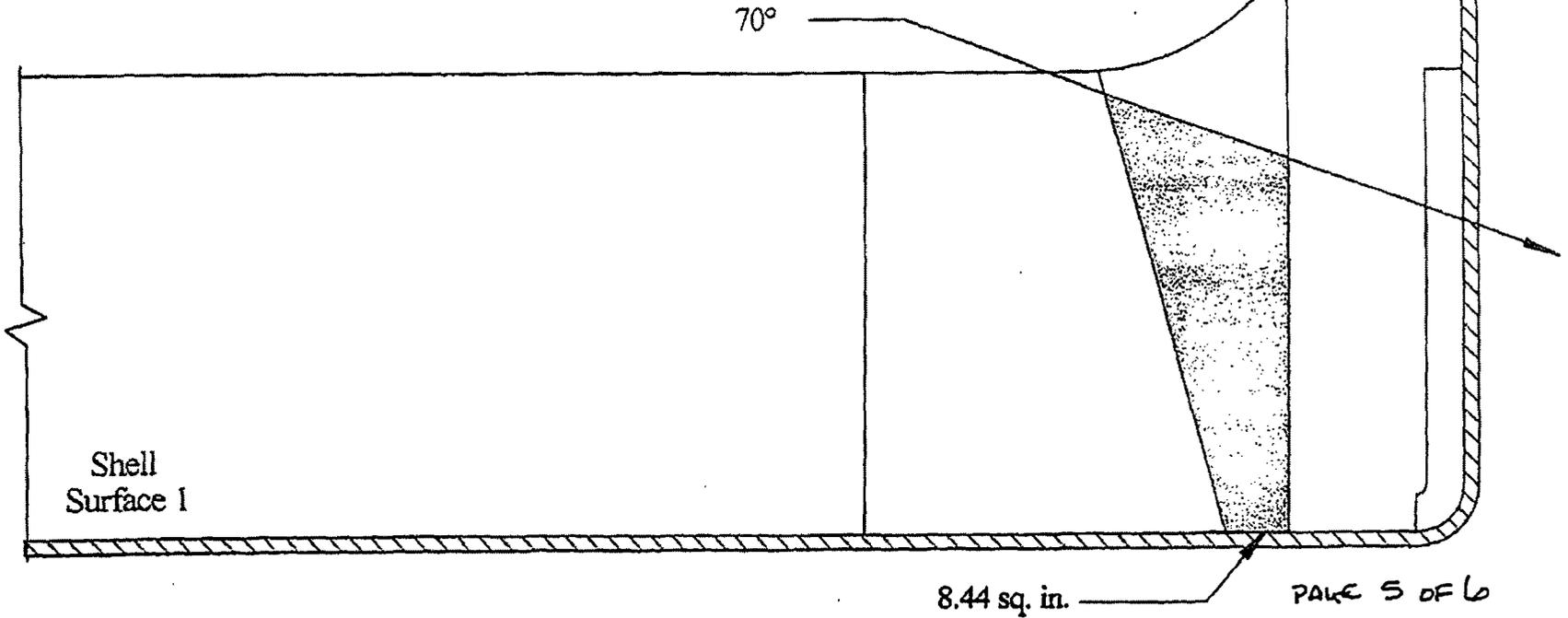
Inspector/Date : [Signature] III 3/22/07

 Total Weld Metal Examined.

A combination of 35°, 45°, 60° and 70° angles were used to obtain coverage.

% Examined from Surface 1 = $8.44 / 11.29 \times 100 = 74.8\%$

% Examined from Surface 2, CW and CCW = 0%



Item No. : DZ B3.11D.0006

Pressurizer Sampling Nozzle to Shell

Weld No. : Z-PER-WP26-4

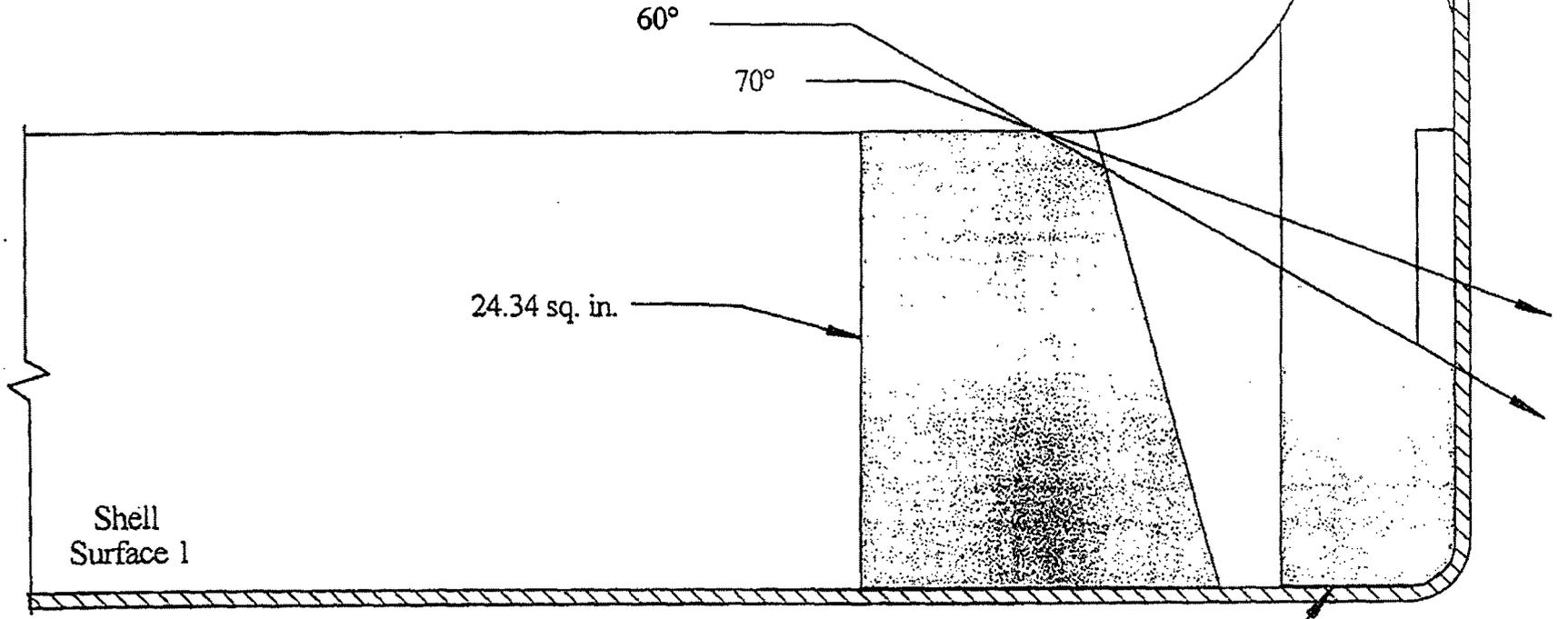
Inspector/Date : [Signature] III 5/22/07



Total Base Metal Examined with at least 2 angles from one direction.

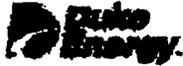
A combination of 35°, 45°, 60° and 70° angles were used to obtain coverage.

$$\% \text{ Examined} = (24.34 + 8.34) / 44.87 \times 100 = 72.8\%$$



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ATTACHMENT TO REPORT NO. UT-07-04



UT Vessel Examination

ATTACHMENT B
PAGE 18 OF 50

Site/Unit: Oconee / 2
Summary No.: 02.B3.110.0007
Workscope: ISI

Procedure: NDE-640
Procedure Rev.: 3
Work Order No.: 01878781

Outage No.: 02-22
Report No.: UT-07-052
Page: 1 of 1

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
Drawing No.: ISI-OCN2-002 Description: Nozzle to Shell
System ID: 50
Component ID: 2-PZR-WP25-5 Size/Length: N/A Thickness/Diameter: 6.187 / 5.750
Limitations: Yes - See Report # UT-07-049 for Coverage Calculations Start Time: 1052 Finish Time: 1058

Examination Surface: Inside Outside Surface Condition: AS GROUND
La Location: 9.23 Wa Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: FISHER Serial No.: MCNDE32770 Surface Temp.: 63 °F
Cal. Report No.: CAL-07-049

Angle Used	0	45	45T	80	80T	
Scanning dB	37.4					

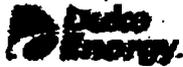
Indication(s): Yes No Scan Coverage: Upstream Downstream CW CCW

Comments:
FC 06-04

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 36.7% of 5/21/07 Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Cochran, Lonnie D.	III-N	<i>Lonnie D. Cochran</i>	5/9/2007	<i>David A. Moss</i>		5-18-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Waddel, Joey	II-N	<i>Joey Waddel</i>	6/9/2007			
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		5/9/2007	<i>[Signature]</i>		5/24/07



UT Vessel Examination

ATTACHMENT B
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Site/Unit: Oconee / 2
Summary No.: 02.B3.110.0007
Workscope: ISI

Procedure: NDE-820
Procedure Rev.: 2
Work Order No.: 01678781

Outage No.: 02-22
Report No.: UT-07-049
Page: 1 of 10

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
Drawing No.: ISI-OCN2-002 Description: Nozzle to Shell
System ID: 50
Component ID: 2-PZR-WP26-5 Size/Length: N/A Thickness/Diameter: 6.187 / 5.750
Limitations: Yes - See Limitation Report Start Time: 1021 Finish Time: 1047

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 8.2.3 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: FISHER Serial No.: MCNDE32770 Surface Temp.: 63 °F
Cal. Report No.: CAL-07-047, CAL-07-048, CAL-07-050, CAL-07-051

Angle Used	0	45	45T	60	60T	35/35T
Scanning dB		67.5	67.5	85.8	79.2	64

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

Comments:
FC 06-06
60° & 70° Scan - Additional inspector - Joey Waddel *Joey Waddel*

Results: Accept Reject Info
Percent Of Coverage Obtained > 90%: No - 36.7% of 5/9/07 Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Mauldin, Larry E.	II-N	<i>Larry E. Mauldin</i>	5/9/2007	<i>Larry Moss</i>		5-18-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Ellis, Ken	II-N	<i>Ken Ellis</i>	5/9/2007			
Other	Level	Signature	Date	ANII Review	Signature	Date
Cochran, Lonnie D.	III-N	<i>Lonnie D. Cochran</i>	5/9/2007	<i>[Signature]</i>		5/24/07

PZR Sampling Nozzle to Shell % of Coverage

Item No. : 02.33.110.0007

Weld No. : 2-PZR-WPZL6-5

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>
S1	35°,45°,60° & 70°	74.8
S2	35°,45°,60° & 70°	0
CW	35° & 45°	0
CCW	35° & 45°	0
	Total	74.8

$74.8 \div 4 = \underline{18.7}$ % Coverage

Base Material Coverage

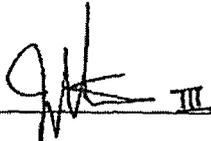
S1	35°,45°,60° & 70°	72.8
CW & CCW	45° & 35°	<u>42.4</u>
	Total	115.2

$115.2 \div 2 = \underline{57.6}$ % Coverage

0° Scan Coverage = 33.9 % Coverage

Aggregate Coverage = Weld + Base Material + 0° ÷ 3

= 36.7 % Coverage

Inspector / Date :  III 5/9/07

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Item No. : 02.B3.110.0007

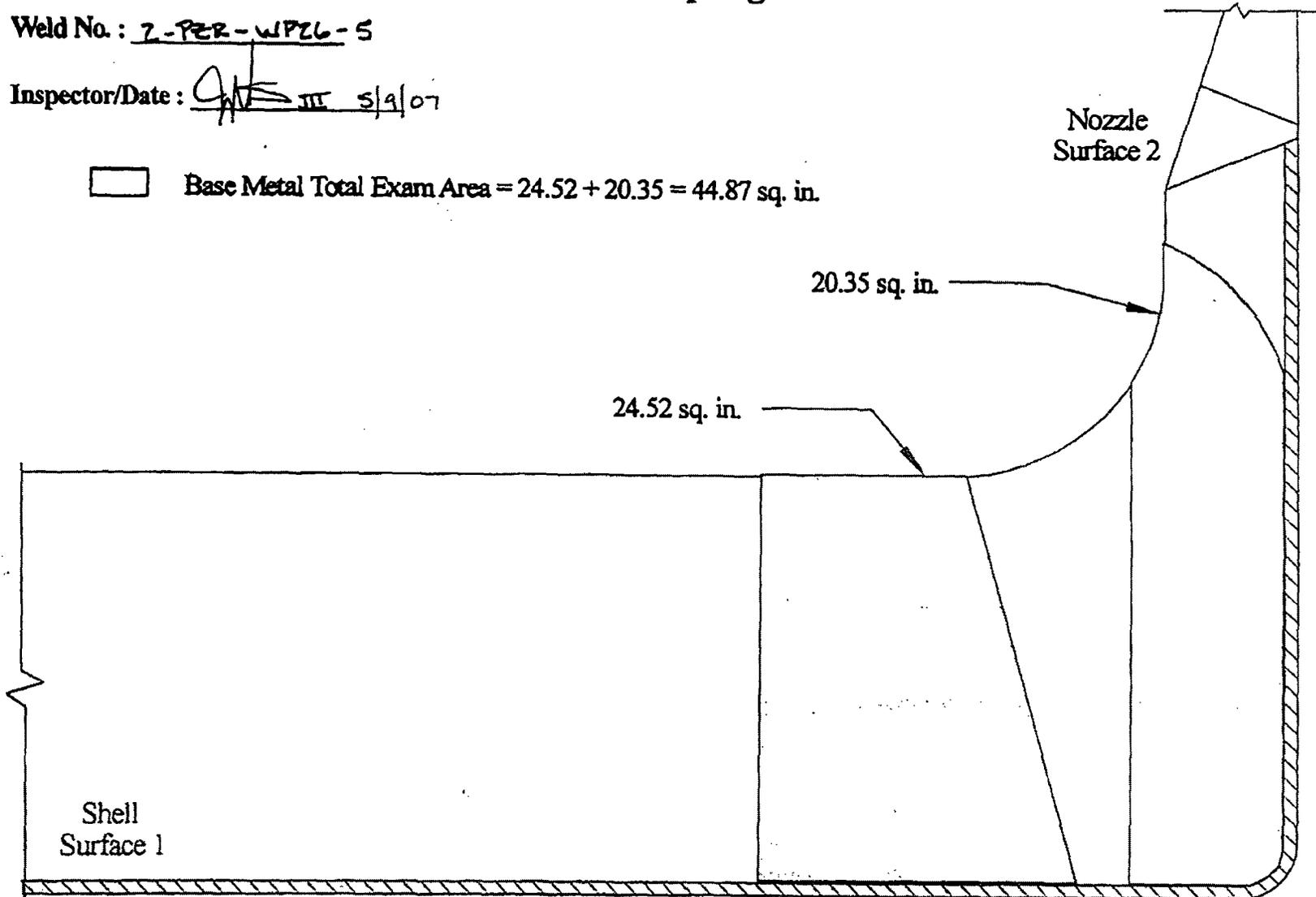
Pressurizer Sampling Nozzle to Shell

ATTACHMENT B
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Weld No. : 2-PER-WPZ6-5

Inspector/Date : JK III 5/9/07

Base Metal Total Exam Area = $24.52 + 20.35 = 44.87$ sq. in.



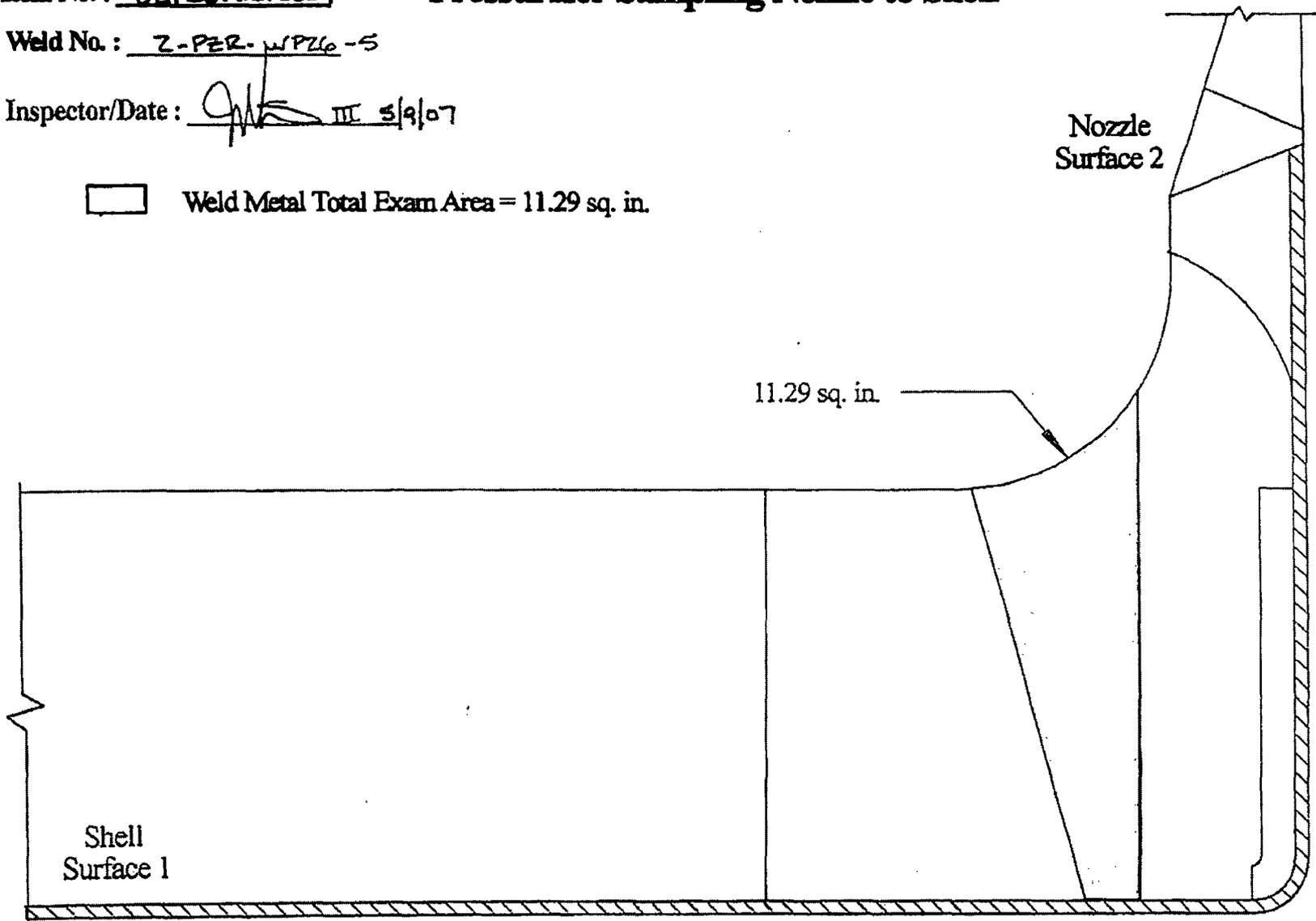
Item No. : DZ.B3.110.0007

Pressurizer Sampling Nozzle to Shell

Weld No. : Z-PER-WP26-S

Inspector/Date : [Signature] III 3/9/07

Weld Metal Total Exam Area = 11.29 sq. in.



Item No. : 02.B3.11D.0007

Pressurizer Sampling Nozzle to Shell

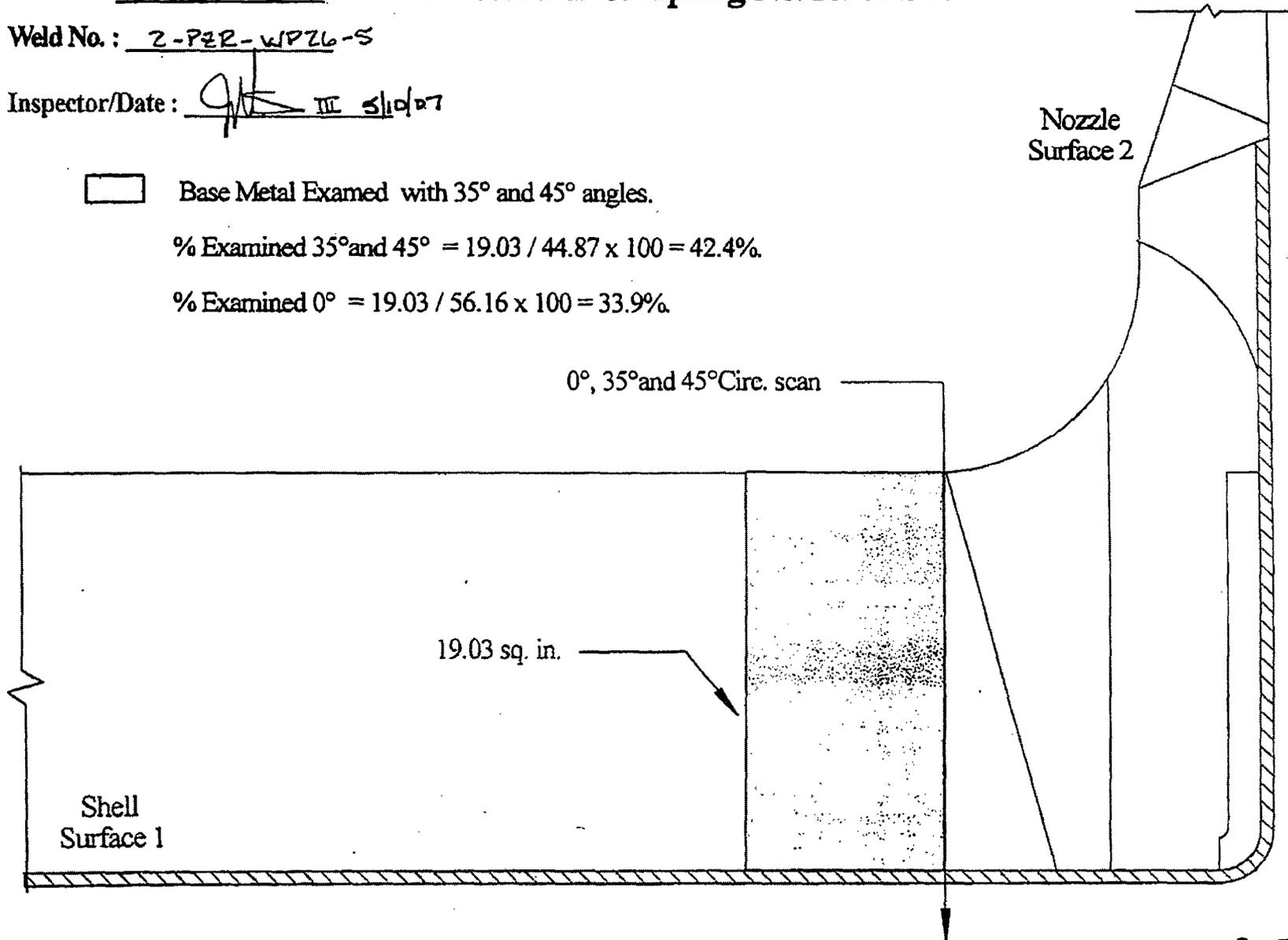
Weld No. : 2-PER-WP26-S

Inspector/Date : JK III 5/10/07

Base Metal Examined with 35° and 45° angles.

% Examined 35° and 45° = $19.03 / 44.87 \times 100 = 42.4\%$.

% Examined 0° = $19.03 / 56.16 \times 100 = 33.9\%$.



Item No. : 02.83.110.0007

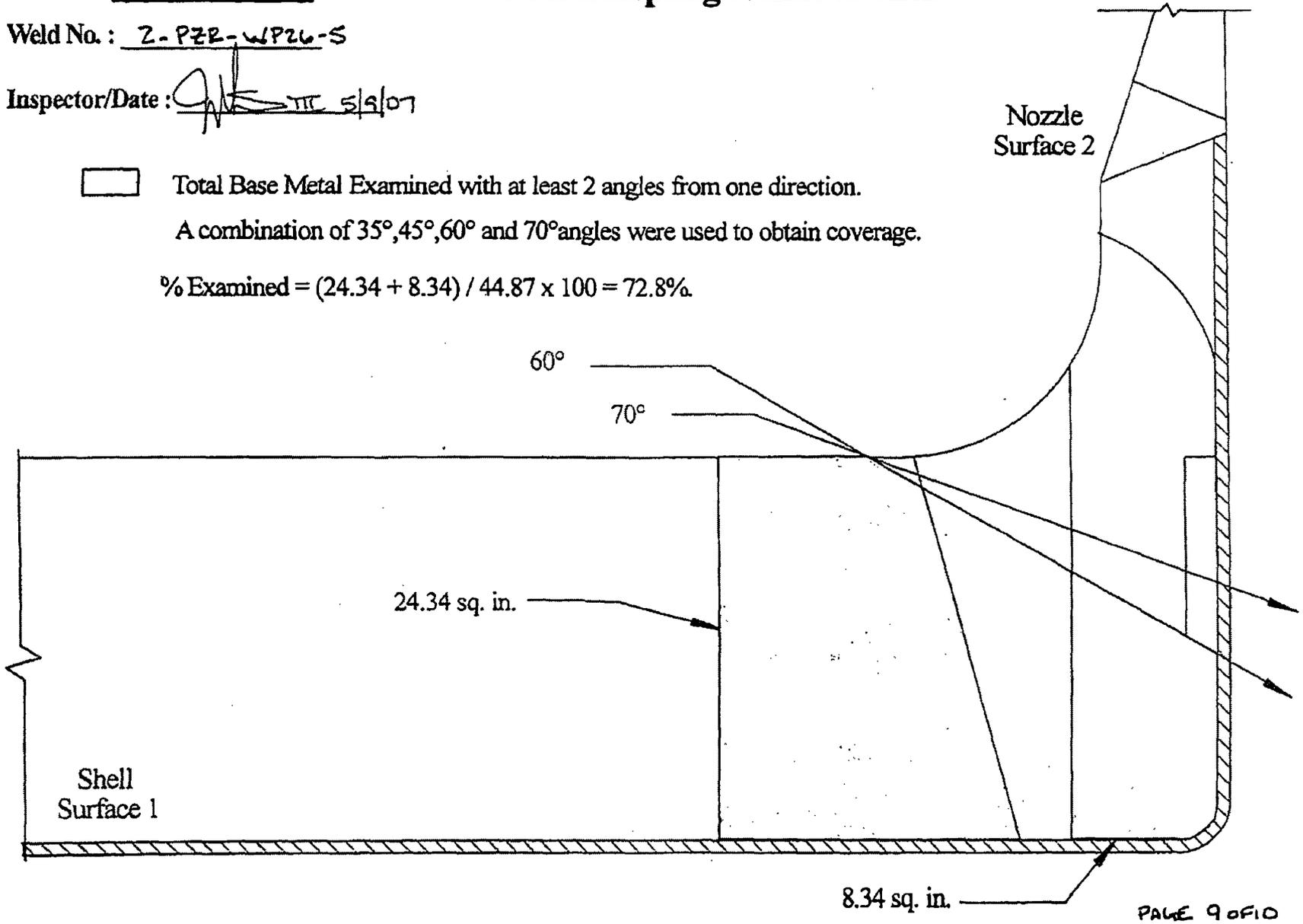
Pressurizer Sampling Nozzle to Shell

Weld No. : Z-PZR-WPZU-S

Inspector/Date : J. K. III 5/9/07

Total Base Metal Examined with at least 2 angles from one direction.
A combination of 35°, 45°, 60° and 70° angles were used to obtain coverage.

$$\% \text{ Examined} = (24.34 + 8.34) / 44.87 \times 100 = 72.8\%$$



Item No. : 02.33.110.0007

Pressurizer Sampling Nozzle to Shell

Weld No. : Z-PER-WPL6-5

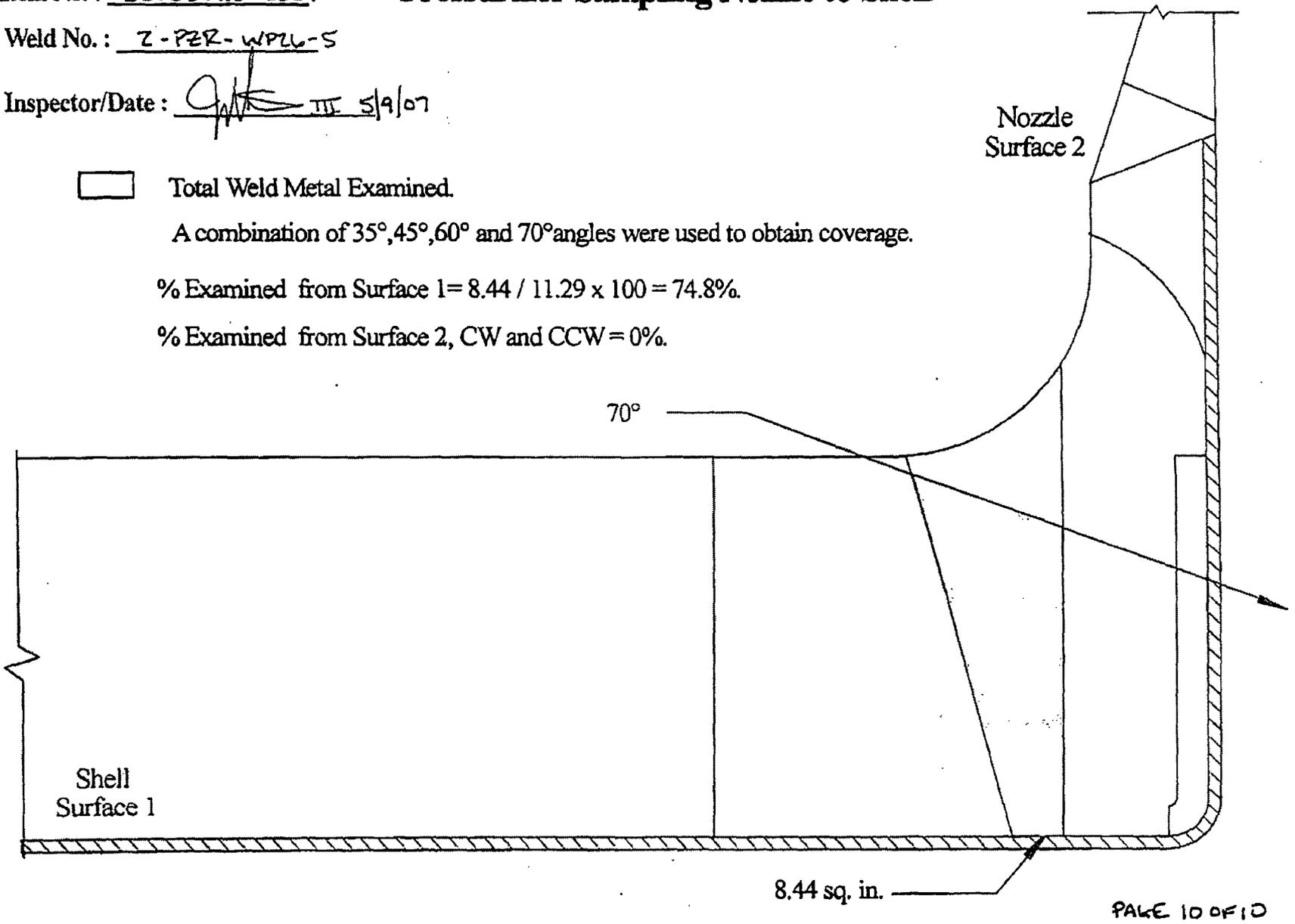
Inspector/Date : [Signature] III 5/9/07

Total Weld Metal Examined.

A combination of 35°, 45°, 60° and 70° angles were used to obtain coverage.

% Examined from Surface 1 = $8.44 / 11.29 \times 100 = 74.8\%$.

% Examined from Surface 2, CW and CCW = 0%.





UT Vessel Examination

ATTACHMENT B
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Site/Unit: Oconee / 2
Summary No.: 02.B3.110.0008
Workscope: ISI

Procedure: NDE-640
Procedure Rev.: 3
Work Order No.: 01678781

Outage No.: 02-22
Report No.: UT-07-053
Page: 1 of 1

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
Drawing No.: ISI-OCN2-002 Description: Nozzle to Shell
System ID: 50
Component ID: 2-PZR-WP26-6 *OSD of 5/20/07* Size/Length: N/A Thickness/Diameter: 6.187 / 5.750
Limitations: Yes - See Report # UT-07-049 for Coverage Calculations Start Time: 1102 Finish Time: 1106

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 9.2.3 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: FISHER Serial No.: MCNDE32770 Surface Temp.: 63 °F
Cal. Report No.: CAL-07-049

Angle Used	0	45	45T	60	60T	
Scanning dB	37.4					

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

Comments:
FC 06-04

Results: Accept Reject Info
Percent Of Coverage Obtained > 90%: No 36.7% of 5/24/07 Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Cochran, Lonnie D.	III-N	<i>Lonnie D. Cochran</i>	5/9/2007	<i>Sam A. Moss</i>		5-18-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Waddel, Joey	II-N	<i>Joey Waddel</i>	5/9/2007			
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		5/9/2007	<i>[Signature]</i>		5/14/07



UT Vessel Examination

ATTACHMENT B
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Site/Unit: Oconee / 2
Summary No.: O2.B3.110.0008
Workscope: ISI

Procedure: NDE-820
Procedure Rev.: 2
Work Order No.: 01678761

Outage No.: O2-22
Report No.: UT-07-050
Page: 1 of 3

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
Drawing No.: ISI-OCN2-002 Description: Nozzle to Shell
System ID: 50
Component ID: 2-PZR-WP26-6 Size/Length: N/A Thickness/Diameter: 6.187 / 5.750
Limitations: Yes - See Report # UT-07-046 for Coverage Calculations Start Time: 1048 Finish Time: 1107
ATTACHED
of 5/18/07

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 9.2.3 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: FISHER Serial No.: MCNDE32770 Surface Temp.: 63 °F
Cal. Report No.: CAL-07-047, CAL-07-048, CAL-07-050, CAL-07-051

Angle Used	0	45	45T	60	60T	36/35T
Scanning dB		67.5	67.5	85.8	79.2	64

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

Comments:
FC 06-06
60° & 70° Scan - Additional Inspector - Joey Waddel

Results: Accept Reject Info
Percent Of Coverage Obtained > 90%: No - 36.7% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Mauldin, Larry E.	II-N	<i>Larry E. Mauldin</i>	5/9/2007	<i>Gary A. Moss</i>		5-18-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Ellis, Ken	II-N	<i>Ken Ellis</i>	5/9/2007			
Other	Level	Signature	Date	ANII Review	Signature	Date
Cochran, Lonnie D.	III-N	<i>Lonnie D. Cochran</i>	5/9/2007	<i>[Signature]</i>		5/24/07

PZR Sampling Nozzle to Shell % of Coverage

Item No. : 02.83.110.0008

Weld No. : 2-PZR-WP26-6

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>
S1	35°,45°,60° & 70°	74.8
S2	35°,45°,60° & 70°	0
CW	35° & 45°	0
CCW	35° & 45°	0
	Total	74.8

$74.8 \div 4 = \underline{18.7}$ % Coverage

Base Material Coverage

S1	35°,45°,60° & 70°	72.8
CW & CCW	45° & 35°	<u>42.4</u>
	Total	115.2

$115.2 \div 2 = \underline{57.6}$ % Coverage

0° Scan Coverage = 33.9 % Coverage

Aggregate Coverage = Weld + Base Material + 0° ÷ 3

= 36.7 % Coverage

Inspector / Date : JMS III 5/22/06

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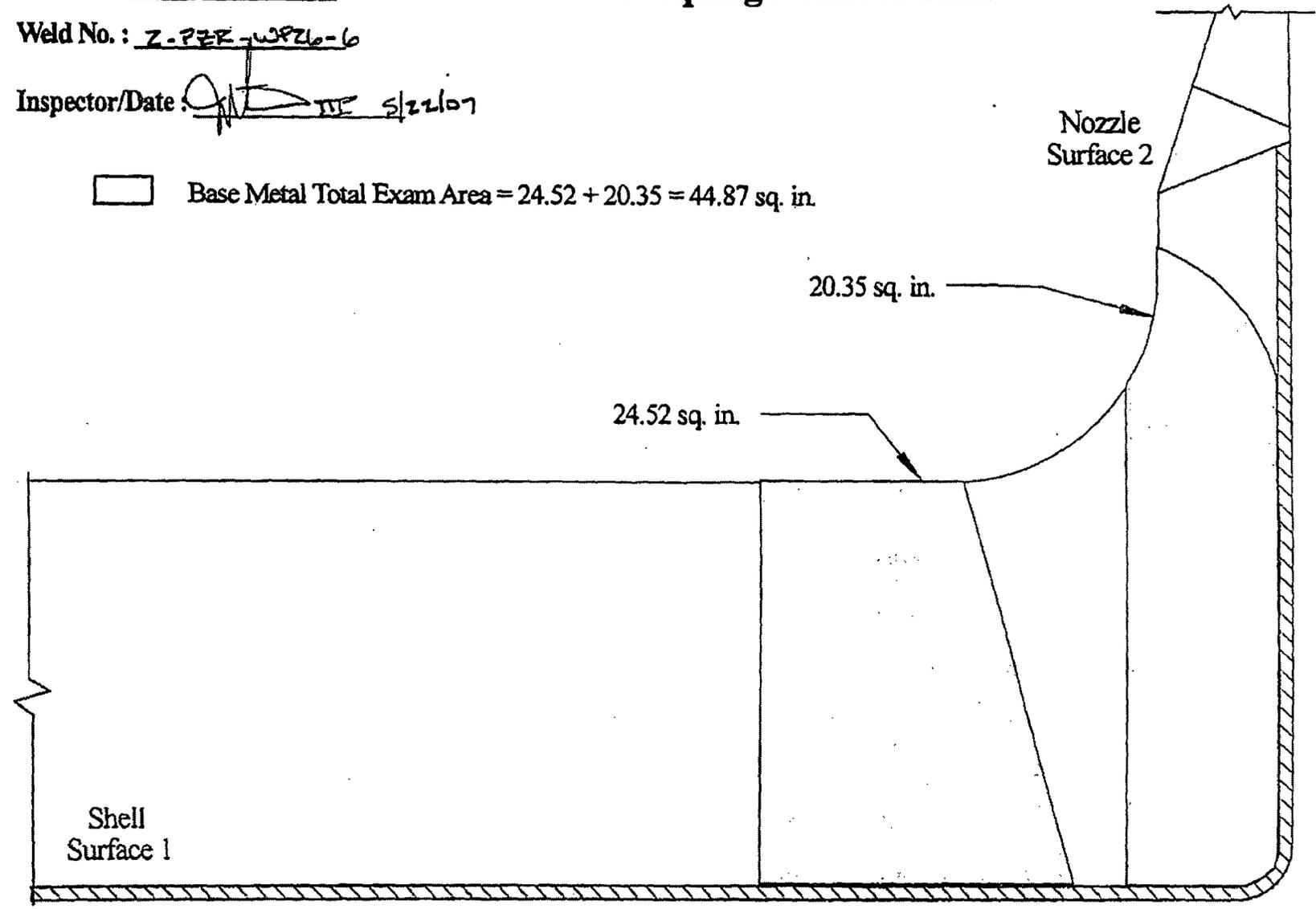
Item No. : OZ.B3.110.0008

Pressurizer Sampling Nozzle to Shell

Weld No. : Z-PZE-WPZ6-6

Inspector/Date : [Signature] 5/22/07

Base Metal Total Exam Area = $24.52 + 20.35 = 44.87$ sq. in.



PAGE 2 OF 6

ATTACHMENT TO REPORT NO. UT-07-051

Item No. : 02.83.110.0008

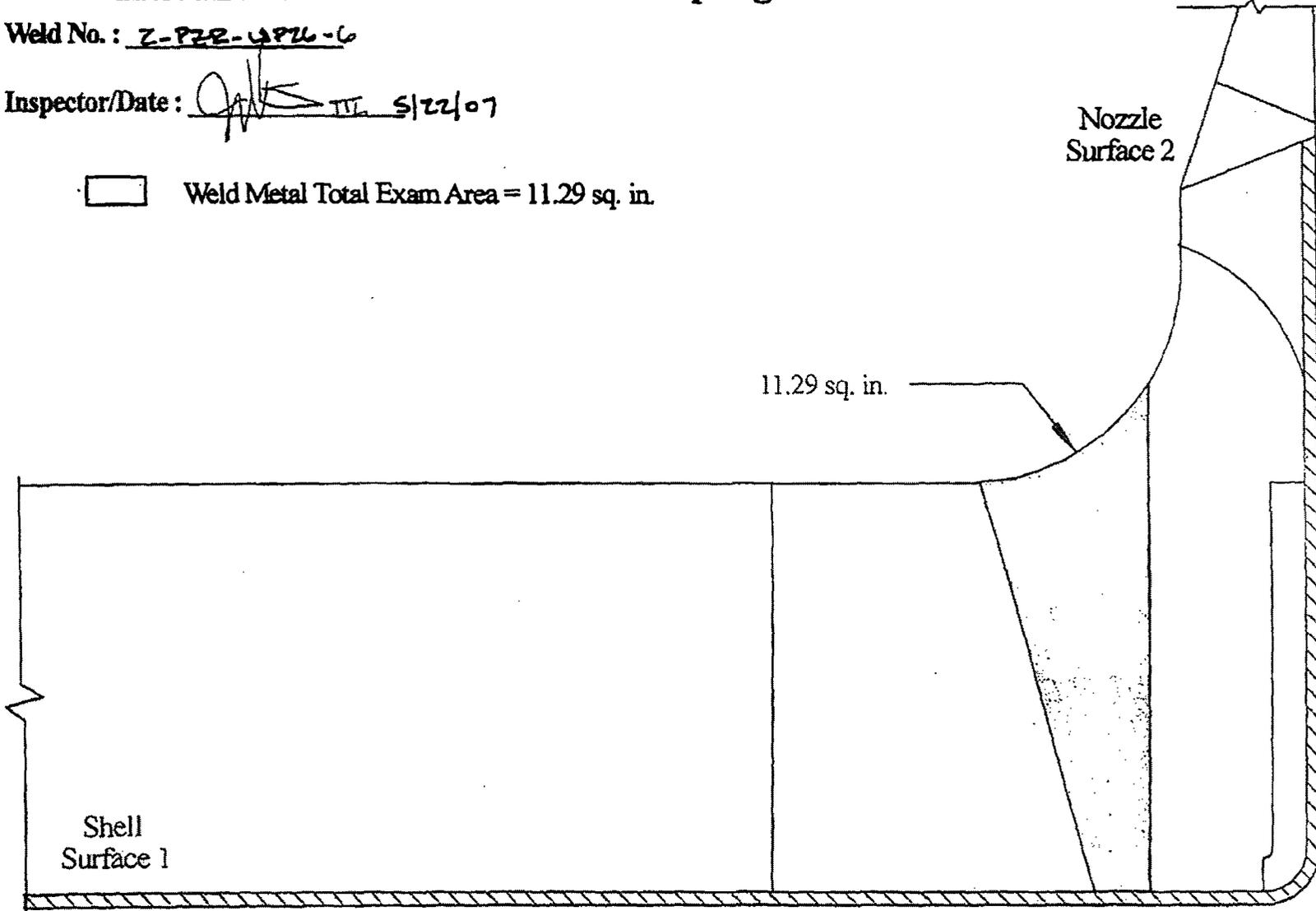
Pressurizer Sampling Nozzle to Shell

Weld No. : Z-PZE-4826-6

Inspector/Date : [Signature] 5/22/07

ATTACHMENT B
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 Weld Metal Total Exam Area = 11.29 sq. in.



PAGE 3 OF 4

ATTACHMENT TO REPORT NO. UT-07-050

Item No. : 02.83.110.000B

Pressurizer Sampling Nozzle to Shell

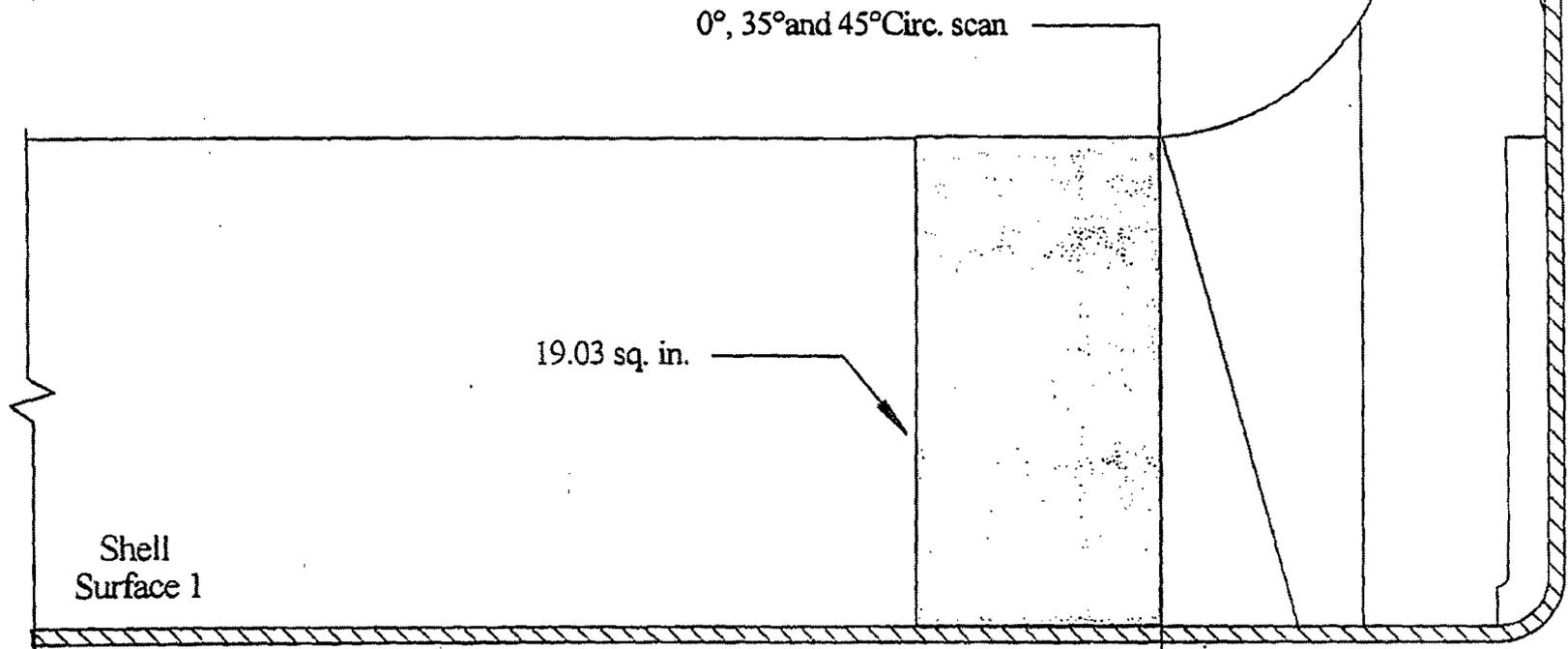
Weld No. : 2-PZR-WPZ6-C

Inspector/Date : [Signature] 5/22/07

Base Metal Examined with 35° and 45° angles.

% Examined 35° and 45° = $19.03 / 44.87 \times 100 = 42.4\%$.

% Examined 0° = $19.03 / 56.16 \times 100 = 33.9\%$.



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ATTACHMENT TO REPORT NO. UT-07-05

Item No.: 02.83.110.0008

Pressurizer Sampling Nozzle to Shell

ATTACHMENT B
PAGE 32 OF 50

Weld No.: Z-PZE-4PZL-4

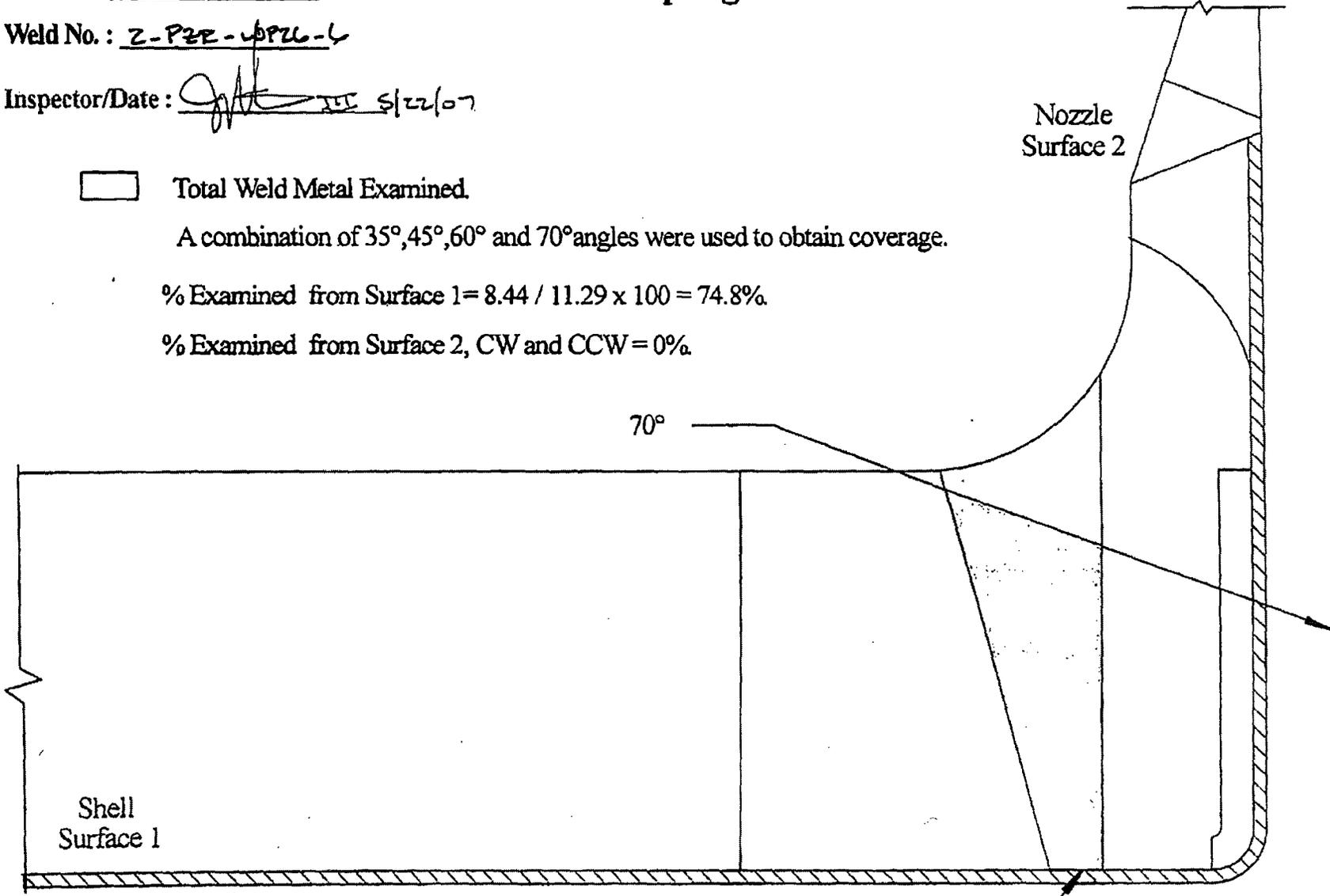
Inspector/Date: [Signature] 5/22/07

Total Weld Metal Examined.

A combination of 35°, 45°, 60° and 70° angles were used to obtain coverage.

% Examined from Surface 1 = $8.44 / 11.29 \times 100 = 74.8\%$

% Examined from Surface 2, CW and CCW = 0%



8.44 sq. in.

PAGE 5 OF 6

ATTACHMENT TO REPORT NO. UT-07-050

Item No. : 02.83.110.0008

Pressurizer Sampling Nozzle to Shell

Weld No. : Z-P2R-WP26-6

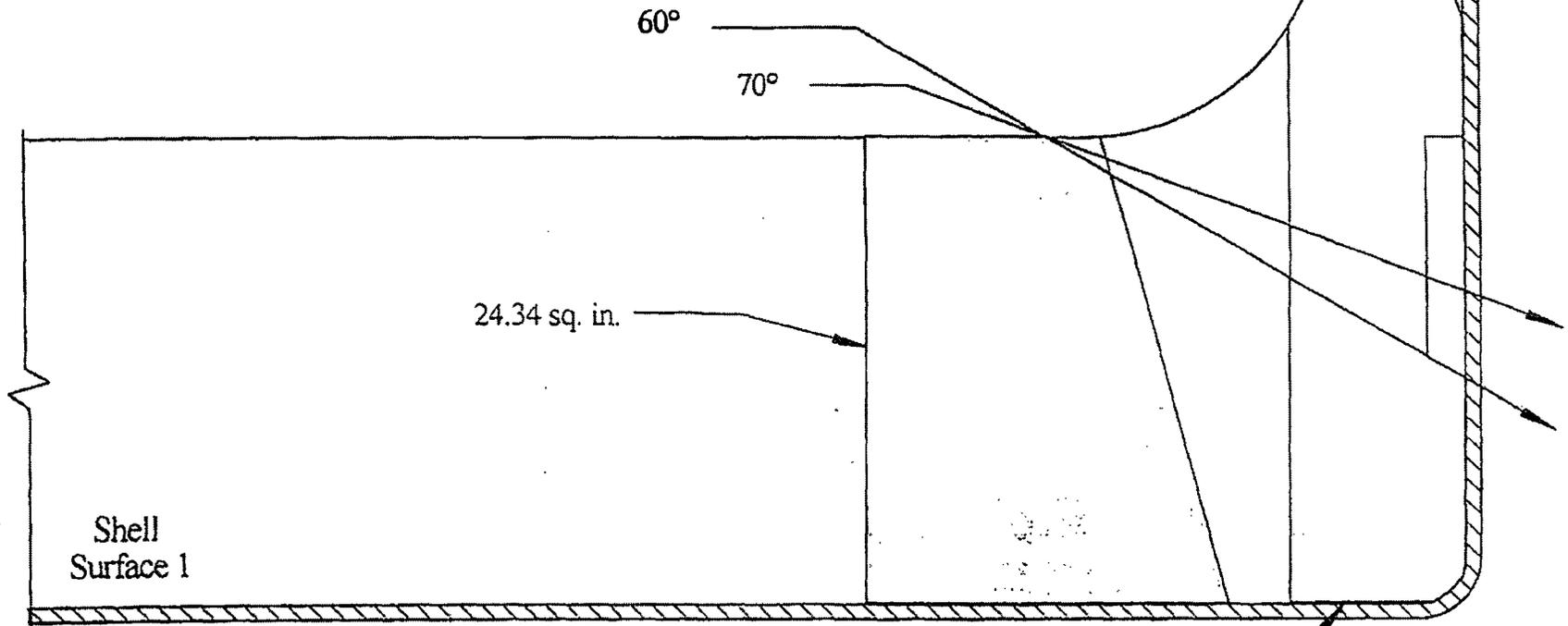
Inspector/Date : [Signature] III 5/22/07



Total Base Metal Examined with at least 2 angles from one direction.

A combination of 35°, 45°, 60° and 70° angles were used to obtain coverage.

$$\% \text{ Examined} = (24.34 + 8.34) / 44.87 \times 100 = 72.8\%$$



8.34 sq. in. PAGE 6 OF 6
ATTACHMENT TO REPORT NO. UT-01-05



UT Pipe Weld Examination

ATTACHMENT B
PAGE 34 OF 50

Site/Unit: Oconee / 2
Summary No.: 02.88.11.0059
Workscope: ISI

Procedure: NDE-600
Procedure Rev.: 17
Work Order No.: 01678880

Outage No.: 02-22
Report No.: UT-07-046
Page: 1 of 3

Code: 1898 Cat./Item: B-J /B9.11 Location: _____
Drawing No.: ISI-OCN2-013 Description: Casing to Safe End
System ID: 50
Component ID: 2-PDB1-1 Size/Length: N/A Thickness/Diameter: 2.330 / 33.500
Limitations: Yes - See Attached Limitation Report Start Time: 1512 Finish Time: 1545

Examination Surface: Inside Outside Surface Condition: GROUND
Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27221 Surface Temp.: 80 °F
Cal. Report No.: CAL-07-041, CAL-07-042, CAL-07-043

Angle Used	0	45	45T	60	60L	
Scanning dB			45	66	73.3	

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

Comments:

Results: Accept Reject Info Initial Section XI Exam
Percent Of Coverage Obtained > 90%: No - 37.5% Reviewed Previous Data: No

Examiner	Level	II-N	Signature	Date	Reviewer	Signature	Date
Houser, Gayle E.			<i>Gayle E. Houser</i>	5/8/2007	<i>Ray A. Moss</i>		5-17-07
Examiner	Level	II-N	Signature	Date	Site Review	Signature	Date
Ellis, Ken			<i>Ken Ellis</i>	5/8/2007			
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A				5/8/2007	<i>[Signature]</i>		5/24/07



UT Pipe Weld Examination

ATTACHMENT B
PAGE 35 OF 50

Site/Unit: Oconee / 2
Summary No.: O2.B9.11.0059
Workscope: ISI

Procedure: NDE-830
Procedure Rev.: 1
Work Order No.: 01878980

Outage No.: 02-22
Report No.: UT-07-047
Page: 1 of 1

Code: 1998 Cat./Item: B-J /B9.11 Location: _____
Drawing No.: ISI-OCN2-013 Description: Casing to Safe End
System ID: 50
Component ID: 2-PDB1-1 Size/Length: N/A Thickness/Diameter: 2.330 / 33.500
Limitations: Yes - See Coverage Calculations attached to Report # UT-07-047 Start Time: 1546 Finish Time: 1515

Examination Surface: Inside Outside Surface Condition: GROUND
Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27221 Surface Temp.: 80 °F
Cal. Report No.: CAL-07-045, CAL-07-046

Angle Used	0	45	45T	60	60L	70L
Scanning dB					79	91

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

Comments:

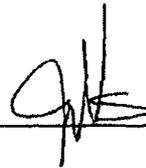
Results: Accept Reject Info Initial Section XI Exam _____
Percent Of Coverage Obtained > 90%: No - 37.5% Reviewed Previous Data: No

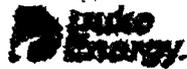
Examiner	Level	Signature	Date	Reviewer	Signature	Date
Cochran, Lonnie D.	III-N		5/8/2007			5-12-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A		5/8/2007			
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		5/8/2007			5/27/07

Summary No.: O2.B9.11.0059

Weld No.: 2PDB1-1

S1 = Safe End = 50% (100% of the length x 50% of the volume)
S2 = RCP = 0% (0% of the length x 0% of the volume)
S3 = CW = 50% (100% of the length x 50% of the volume)
S4 = CCW = 50% (100% of the length x 50% of the volume)
Total = 150 / 4 = 37.5 % Aggregate Coverage

Inspector / Date:  5/14/07



UT Vessel Examination

Site/Unit: Oconee 1 2
Summary No.: O2.C1.20.0005
Workscope: ISI

Procedure: NDE-3630
Procedure Rev.: 1
Work Order No.: 01682285

Outage No.: O2-22
Report No.: UT-07-069
Page: 1 of 3

Code: _____ Cat./Item: C-A /C1.20 Location: _____
Drawing No.: OM 201-53 Description: Head to Shell
System ID: 51A
Component ID: 2-LST-HD-SH-2 Size/Length: N/A Thickness/Diameter: 0.376 / 96.000
Limitations: Yes - See Limitation Report Start Time: 2103 Finish Time: 2218

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 9.2.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32798 Surface Temp.: 80 °F
Cal. Report No.: _____ CAL-07-062, CAL-07-063

Angle Used	0	45	45T	60	60T	
Scanning dB				49	49	

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

Comments:
Additional Inspector - K. Ellis *[Signature]*

Results: Accept Reject Info Initial Section XI Inspection
Percent Of Coverage Obtained > 90%: No - 80.28% Reviewed Previous Data: No

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Mauldin, Larry E.	II-N	<i>[Signature]</i>	5/10/2007	<i>[Signature]</i>		5-14-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Leeper, Winfred C.	II-N	<i>[Signature]</i>	5/10/2007			
Other	Level	Signature	Date	ANII Review	Signature	Date
Jones, Russel E.	III-N	<i>[Signature]</i>	5/10/2007	<i>[Signature]</i>		5/24/07

DUKE ENERGY COMPANY

ISI LIMITATION REPORT

Summary #:		Date:		Level:		Date:		Sheet		of	
<input checked="" type="checkbox"/> NO SCAN <input type="checkbox"/> LIMITED SCAN		SURFACE <input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2		BEAM DIRECTION <input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> cw <input checked="" type="checkbox"/> ccw		FROM L _____ to L _____ INCHES FROM W0 _____ to _____		ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input checked="" type="checkbox"/> 60 other _____ FROM _____ DEG to _____ DEG		* 4 equally spaced pads for legs 15 in. @ Dia. 8" (ID) (303.95" - 60") / 303.95 x 100 = 80.26% <i>9/15/07 III 5/10/07</i>	
<input type="checkbox"/> NO SCAN <input type="checkbox"/> LIMITED SCAN		SURFACE <input type="checkbox"/> 1 <input type="checkbox"/> 2		BEAM DIRECTION <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> cw <input type="checkbox"/> ccw		FROM L _____ to L _____ INCHES FROM W0 _____ to _____		ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input type="checkbox"/> 60 other _____ FROM _____ DEG to _____ DEG			
<input type="checkbox"/> NO SCAN <input type="checkbox"/> LIMITED SCAN		SURFACE <input type="checkbox"/> 1 <input type="checkbox"/> 2		BEAM DIRECTION <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> cw <input type="checkbox"/> ccw		FROM L _____ to L _____ INCHES FROM W0 _____ to _____		ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input type="checkbox"/> 60 other _____ FROM _____ DEG to _____ DEG			
<input type="checkbox"/> NO SCAN <input type="checkbox"/> LIMITED SCAN		SURFACE <input type="checkbox"/> 1 <input type="checkbox"/> 2		BEAM DIRECTION <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> cw <input type="checkbox"/> ccw		FROM L _____ to L _____ INCHES FROM W0 _____ to _____		ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input type="checkbox"/> 60 other _____ FROM _____ DEG to _____ DEG		Sketch(s) attached <input type="checkbox"/> yes <input checked="" type="checkbox"/> No	
Prepared By: Larry Maudin <i>Larry Maudin</i>		Level: II		Date: 05/10/2007		Sheet 2		of 3			
Reviewed By: <i>Gary Mess</i>		Date: 5-14-03		Authorized Inspector: <i>[Signature]</i>		Date: 5/23/07					



Determination of Percent Coverage for UT Examinations - Vessels

Site/Unit: <u>Oconee / 2</u>	Procedure: <u>NDE-3630</u>	Outage No.: <u>O2-22</u>
Summary No.: <u>O2.C1.20.0006</u>	Procedure Rev.: <u>1</u>	Report No.: <u>UT-07-069</u>
Workscope: <u>ISI</u>	Work Order No.: <u>01682285</u>	Page: <u>3</u> of <u>3</u>

ATTACHMENT B
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0 deg Planar

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

45 deg

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

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

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

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

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

Other deg 60

Scan 1 80.260 % Length X 100.000 % volume of length / 100 = 80.260 % total for Scan 1

Scan 2 80.260 % Length X 100.000 % volume of length / 100 = 80.260 % total for Scan 2

Scan 3 80.260 % Length X 100.000 % volume of length / 100 = 80.260 % total for Scan 3

Scan 4 80.260 % Length X 100.000 % volume of length / 100 = 80.260 % total for Scan 4

Add totals and divide by # scans = 80.260 % total for 60 deg

Percent complete coverage

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

80.260 % Total for complete exam

Note:

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

Site Field Supervisor: _____

Date: 3/18/07



UT Pipe Weld Examination

ATTACHMENT B
PAGE 42 OF 50

Site/Unit: Oconee / 2
Summary No.: 02.C5.11.0004
Workscope: ISI

Procedure: NDE-600
Procedure Rev.: 17
Work Order No.: 1679572

Outage No.: 02-22
Report No.: UT-07-005
Page: 1 of 2

Cods: 1968 Cat./Item: C-F-1/C5.11 Location: _____
Drawing No.: 2LP-148 Description: Reducer to Valve 2LP-18
System ID: 53A
Component ID: 2LP-148-90 Size/Length: N/A Thickness/Diameter: 6.000 / 12.000
Limitations: Yes - See Attached Limitation Calculations Start Time: 1455 Finish Time: 1500

1.168 Dec 12/2/10

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32823 Surface Temp.: 74 °F
Cal. Report No.: CAL-07-004, CAL-07-005, CAL-07-006

Angle Used	0	45	45T	60	60L
Scanning dB			50	50	55

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

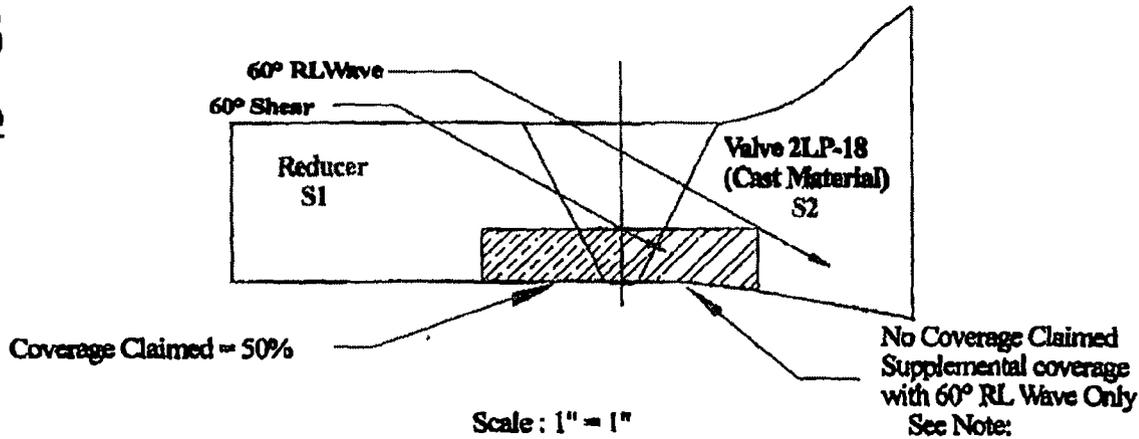
Results: Accept Reject Info
Percent Of Coverage Obtained > 90%: No - 37.5% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Eaton, Jay A.	III-N		2/12/2007	Gary J Moss Level II		3-8-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
N/A	N/A			N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A					4/26/07

Item No. 02.C5.11.0004

Weld No. 2LP-148-90

ATTACHMENT B
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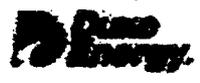
Note: 60° RL scan not included in percentage coverage due to requirements of 10CFR50.55a(b)(2)(xv)(A)(1). Best effort scan with 60° RL obtained 50% coverage in one axial direction.

- S1 = Reducer = 50% (100% of the length x 50% of the volume)
- S2 = Valve = 0% (0% of the length x 0% of the volume)
- S3 = CW = 50% (100% of the length x 50% of the volume)
- S4 = CCW = 50% (100% of the length x 50% of the volume)
- Total = 150 / 4 = 37.5 % Aggregate Coverage**

Inspector / Date:

[Signature] III 2/13/07
[Signature] 4/20/07

Page 2 of 2



UT Pipe Weld Examination

Site/Unit: Oconee / 2
 Summary No.: 02.C5.21.0021
 Workscope: ISI

Procedure: NDE-600
 Procedure Rev.: 17
 Work Order No.: 1679718

Outage No.: 02-22
 Report No.: UT-07-010
 Page: 1 of 2

Code: 1898 Cat./Item: C-F-1/C5.21 Location: _____
 Drawing No.: 2-51A-17 (7) Description: Valve 2HP-148 to Elbow
 System ID: 51A
 Component ID: 2-51A-17-147 Size/Length: N/A Thickness/Diameter: 0.531 / 4.000
 Limitations: Yes - See Attached Limitation Report Start Time: 1100 Finish Time: 1119

Examination Surface: Inside Outside Surface Condition: GROUND
 Lo Location: 9.1.1.2 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
 Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32823 Surface Temp.: 91 °F

Cal. Report No.: CAL-07-014, CAL-07-015, CAL-07-016

Angle Used	0	45	45T	60	60L	60
Scanning dB			42	45	55	52

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

Comments:
52dB scanned on valve side

Results: Accept Reject Info
 Percent Of Coverage Obtained > 90%: NO - 75%

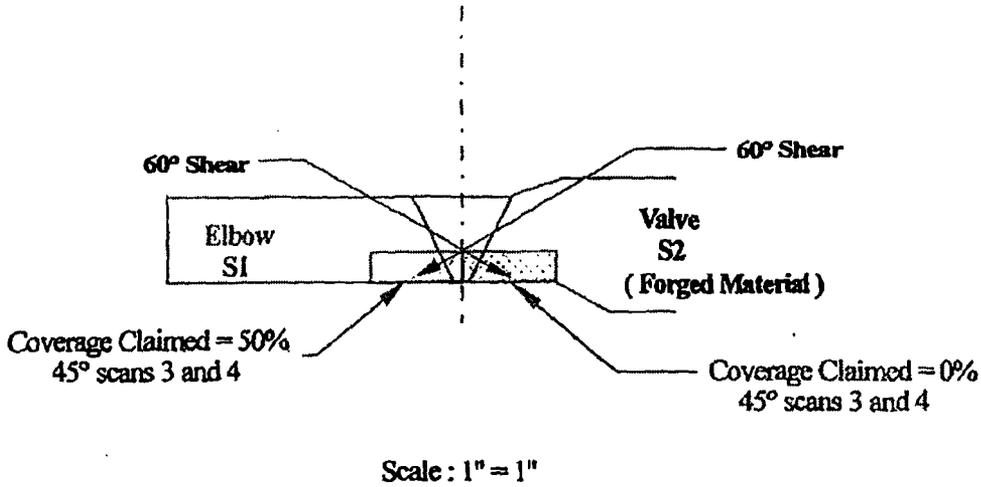
Reviewed Previous Data: Yes

Examiner	Level	II-N	Signature	Date	Reviewer	Signature	Date
Houser, Gayle E.			<i>[Signature]</i>	2/21/2007	Gary J Moss Level II	<i>[Signature]</i>	3-12-07
Examiner	Level	II-N	Signature	Date	Site Review	Signature	Date
Jolly, B. Dale			<i>[Signature]</i>	2/21/2007	N/A		
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					<i>[Signature]</i>		4/24/07

Item No. 02.C5.21.0021

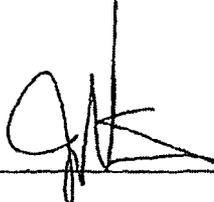
Weld No. 2-51A-17-147

ATTACHMENT B
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% Coverage Calculations

S1 = Elbow =	100%	(100% of the length x 100% of the volume)
S2 = Valve =	100%	(100% of the length x 100% of the volume)
S3 = CW =	50%	(100% of the length x 50% of the volume)
S4 = CCW =	<u>50%</u>	(100% of the length x 50% of the volume)
Total =	300 / 4 =	<u>75.0 %</u> Aggregate Coverage

Inspector / Date :  III 2/21/07 Page 2 of 2
mb mb



UT Pipe Weld Examination

ATTACHMENT B
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Site/Unit: Oconee / 2
Summary No.: 02.C5.21.0024
Workscope: ISI

Procedure: NDE-600
Procedure Rev.: 17
Work Order No.: 1679737

Outage No.: 02-22
Report No.: UT-07-006
Page: 1 of 2

Code: 1998 Cat./Item: C-F-1/C5.21 Location: _____
Drawing No.: 2HP-220 Description: Valve 2HP-27 to Pipe
System ID: 51A
Component ID: 2HP-220-9 Size/Length: N/A Thickness/Diameter: 0.674 / 4.000
Limitations: Yes - See Attached Limitation Report Start Time: 1430 Finish Time: 1440

Examination Surface: Inside Outside Surface Condition: GROUND
Lo Location: 9.1.1.2 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32823 Surface Temp.: 71 °F

Cal. Report No.: CAL-07-007, CAL-07-008, CAL-07-009

Angle Used	0	45	45T	60	60L	38
Scanning dB				55	70	55

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

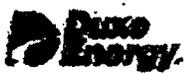
Comments:

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 37.5%

Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Eaton, Jay A.	III-N		2/13/2007			3-8-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Houser, Gayle E.	II-N		2/13/2007			
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A					4/06/07



UT Pipe Weld Examination

Site/Unit: Oconee / 2 Procedure: NDE-600 Outage No.: 02-22
 Summary No.: 02.C5.21.0025 Procedure Rev.: 17 Report No.: UT-07-007
 Workscope: ISI Work Order No.: 1679737 Page: 1 of 3

Code: 1998 Cat./Item: C-F-1/C5.21 Location: _____
 Drawing No.: 2HP-220 Description: Tee to Pipe
 System ID: 51A
 Component ID: 2HP-220-14 Size/Length: N/A Thickness/Diameter: 0.674 / 4.000
 Limitations: Yes - See Attached Limitation Report Start Time: 1414 Finish Time: 1420

Examination Surface: Inside Outside Surface Condition: GROUND
 Lo Location: 9.1.1.2 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
 Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32823 Surface Temp.: 71 °F

Cal. Report No.: CAL-07-007, CAL-07-008, CAL-07-009

Angle Used	0	45	45T	60	60L	38
Scanning dB				55	70	55

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

Comments:
 Previously recorded indications detected. No changes observed. Indication is not located within the bottom 1/3rd exam area.

Results: Accept Reject Info
 Percent Of Coverage Obtained > 90%: No - 78.7% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Eaton, Jay A.	III-N		2/13/2007			3.8.07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Houser, Gayle E.	II-N		2/13/2007			
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A					4/6/07

02.C5.21.0025 DKZ
12/2/10

Item No. : 02.C5.11.0025

Weld No. : 2HP-220-14

% Coverage Calculations

Pipe Ø = 4.5

"t" = 0.674

Total Weld Volume 100%

1/3 "t" = 0.23

= (Weld + 1/4" ea. Side) x 1/3 "t" x Weld Length

Weld Length = 14.1

= 4.22 in³

Weld + 1/4" ea. Side = 1.30

% of Length not Examined 100%

Length of Obstructed Area = 8.00

= (Length of Obstructed Area) ÷ (Weld Length) x 100

= 56.7 %

% of Length Examined 100%

= 100% - % not Examined

= 43.3 %

Axial Coverage from S2 - Pipe

= % of Volume Examined 100% + 50% of Obstructed Volume

= 43.3 + 28.4

= 71.6 %

Axial Coverage from S1 - Tee

= 100% of the Volume - % of the Volume not Examined

= 100 - 56.7

= 43.3 %

Circumferential Coverage from S3 & S4 both CW & CCW

= 100% of the Volume

= 100.0 %

Aggregate % of Coverage

= (S1 + S2 + S3 + S4) ÷ 4 = **78.7 % Coverage**

Inspector / Date:

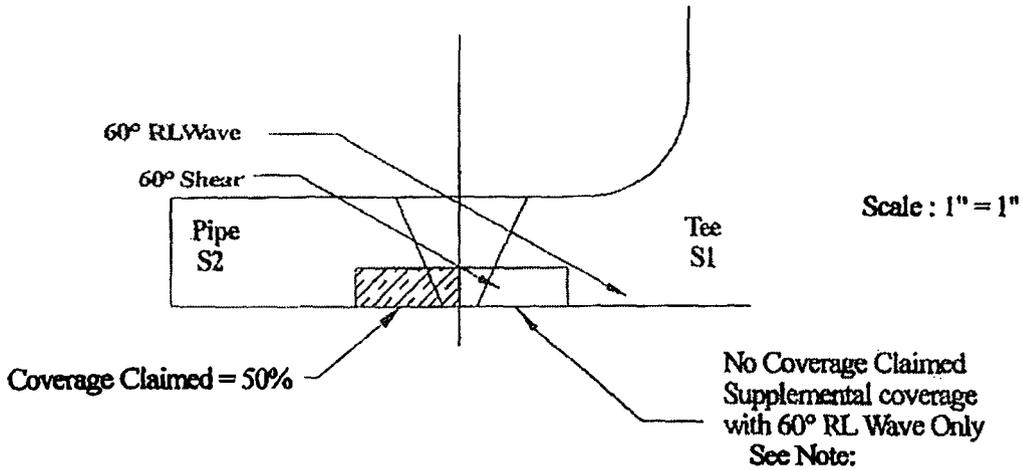
JIE 2/14/07

Page 2 of 3

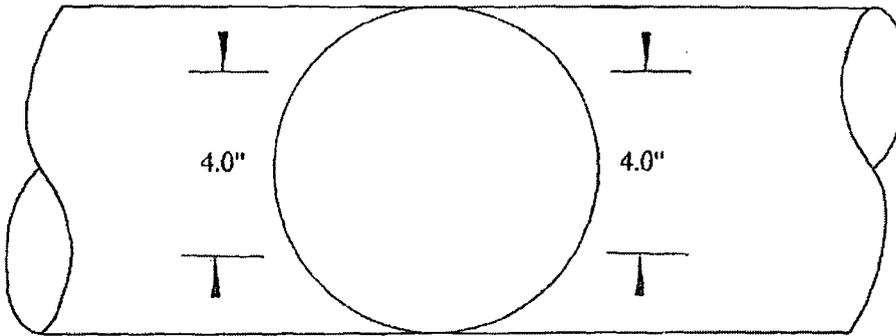
MS 4/26/07

Item No. O2.C5.21.0025

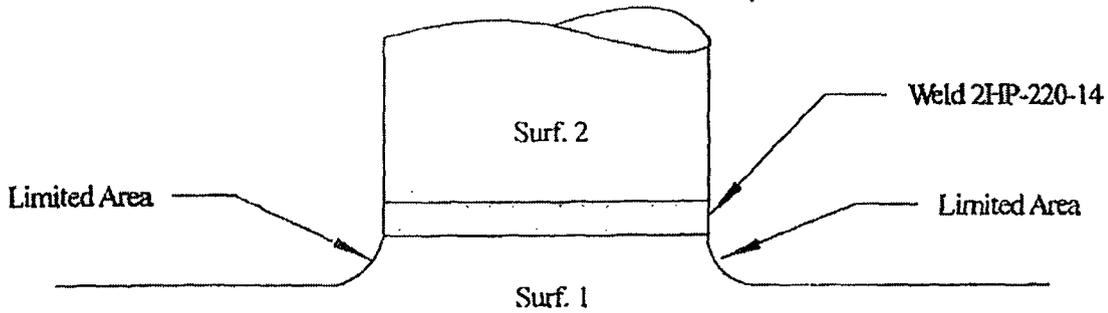
Weld No. 2HP-220-14



Note: 60° RL scan not included in percentage coverage due to requirements of 10CFR50.55a(b)(2)(xv)(A)(1). Best effort scan with 60° RL obtained 50% coverage in one axial direction.



Plan View - Not to Scale



Side View - Not to Scale

Limited 4" on ea. side of Tee in throat area for a total of 8". From Lo + 1.5" to 5.5" and from Lo + 8.5" to 12.5" on Surface 1.

Inspector / Date :

2/14/07 Page 3 of 3

2/14/07



UT Vessel Examination

ATTACHMENT C
PAGE 1 OF 69

Site/Unit: Oconee / 3
Summary No.: 03.B3.110.0001
Workscope: ISI

Procedure: NDE-640
Procedure Rev.: 4
Work Order No.: 01733140

Outage No.: 03-23
Report No.: UT-07-132
Page: 1 of 1

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
Drawing No.: ISI-OCN3-002 Description: Nozzle to Head
System ID: 50
Component ID: 3-PZR-WP15 Size/Length: N/A Thickness/Diameter: 4.750 / 15.250
Limitations: Yes - See Limitation Report Attached to Report No. UT-07-137 Start Time: 0900 Finish Time: 1100

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH
Lo Location: 0° Line of Vessel Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32811 Surface Temp.: 90 °F
Cal. Report No.: CAL-07-151

Angle Used	0	45	45T	60	60T	
Scanning dB	41.8					

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

Comments:

See Attached Coverage Sheets
Additional Inspector: Troy Huhe Level II=N

Troy Huhe

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 41.7% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Howard, Dean M.	II-N	<i>Dean Howard</i>	11/1/2007	<i>DE Jansen</i>		11/6/07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Griebel, David M.	II-N	<i>David M. Griebel</i>	11/1/2007	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
Kelly, Alan J.	II-N	<i>Alan J. Kelly</i>	11/1/2007	<i>Alan J. Kelly</i>		11-8-07



UT Vessel Examination

Site/Unit: Oconee / 3 Procedure: NDE-820 Outage No.: 03-23
 Summary No.: 03.B3.110.0001 Procedure Rev.: 2 Report No.: UT-07-137
 Workscope: ISI Work Order No.: 01733140 Page: 1 of 87

Code: 1998 Cat./Item: B-D /B3.110 Location: 9E 11/107
 Drawing No.: ISI-OCN3-002 Description: Nozzle to Head
 System ID: 50
 Component ID: 3-PZR-WP15 Size/Length: N/A Thickness/Diameter: 4.750 / 15.250
 Limitations: Yes - See Attached Limitation Report Start Time: 0900 Finish Time: 1100

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH
 Lo Location: 0° Line of Vessel Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
 Temp Tool Mfg.: D.A.S Serial No.: MCNDE32811 Surface Temp.: 90 °F
 Cal. Report No. CAL-07-152, CAL-07-153, CAL-07-154

Angle Used	0	45	45T	60	60T	*70
Scanning dB		65.0	65.0	67.7	67.7	74.0

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

Comments:
See Attached Coverage Sheets
 Additional Inspector: Troy Huhe Level II-N

Results: Accept Reject Info

Percent Of Coverage Obtained > 90% No - 41.7% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Howard, Dean M.	II-N	<i>Dean Howard</i>	11/1/2007	DE Goupen		11/4/07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Griebel, David M.	II-N	<i>David Griebel</i>	11/1/2007	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
Kelly, Alan J.	II-N	<i>Alan Kelly</i>	11/1/2007	<i>Alan Kelly</i>		11-8-07

PZR Surge Nozzle to Shell % of Coverage

Item No. : O3.B3.110.0001

Weld No. : 3-PZR-WP15

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>
S1	45°,60° & 70°	82.7
S2	45°,60° & 70°	0
CW	60° & 45°	33.3
CCW	60° & 45°	<u>33.3</u>
Total		149.3

149.3 ÷ 4 = 37.3 % Coverage

Base Material Coverage

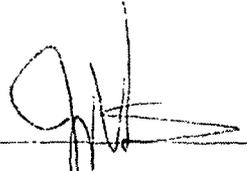
S1	45°,60° & 70°	65.1
CW & CCW	45° & 60°	<u>37.3</u>
Total		102.4

102.4 ÷ 2 = 51.2 % Coverage

0° Scan Coverage = 36.5 % Coverage

Aggregate Coverage = Weld + Base Material + 0° ÷ 3

= 41.7 % Coverage

Inspector / Date :  11/6/07

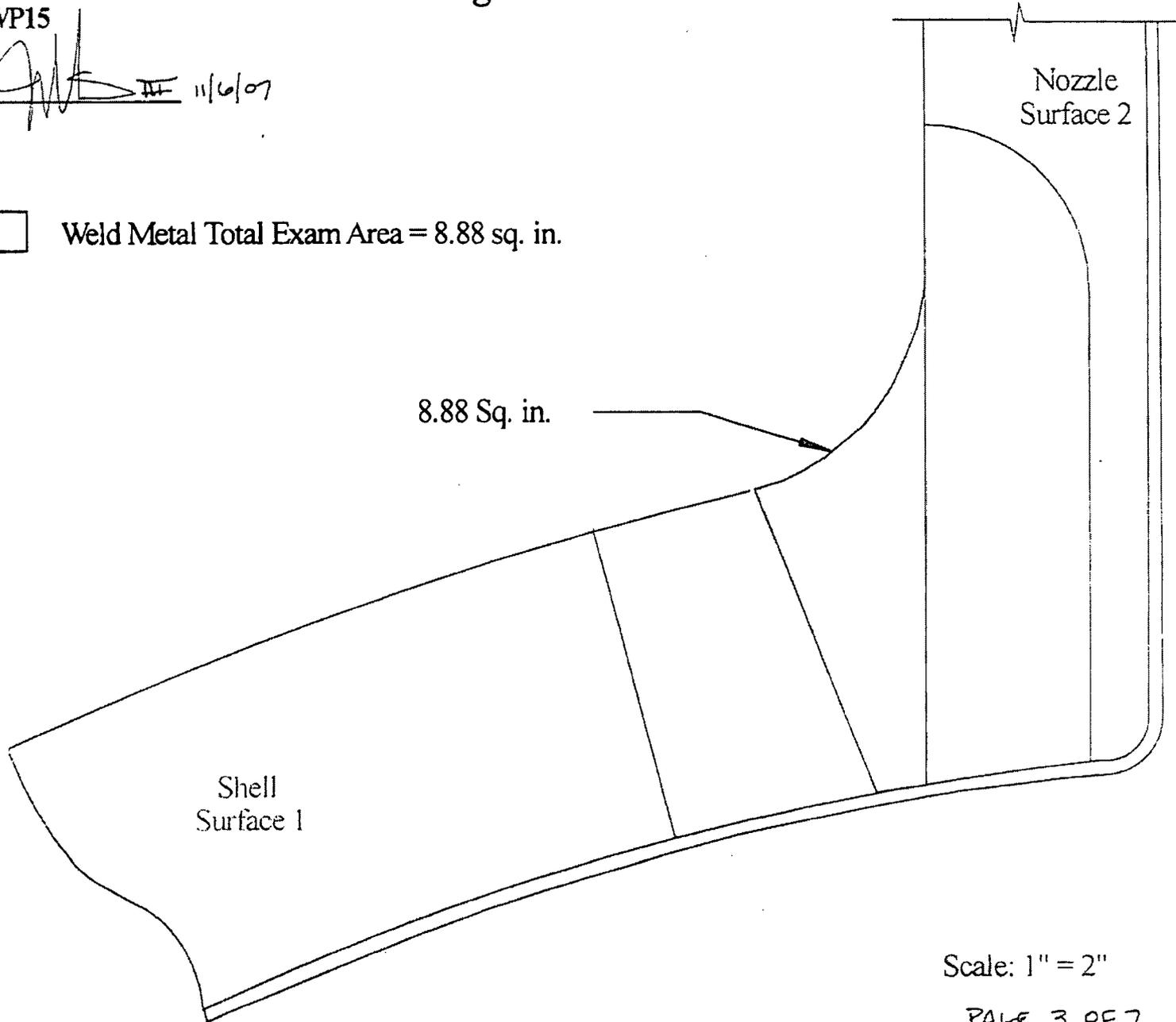
Item No. . 3.B3.110.0001

Weld No. : 3-PZR-WP15

Inspector/Date : [Signature] 11/6/07

Pressurizer Surge Nozzle to Head

 Weld Metal Total Exam Area = 8.88 sq. in.



Scale: 1" = 2"

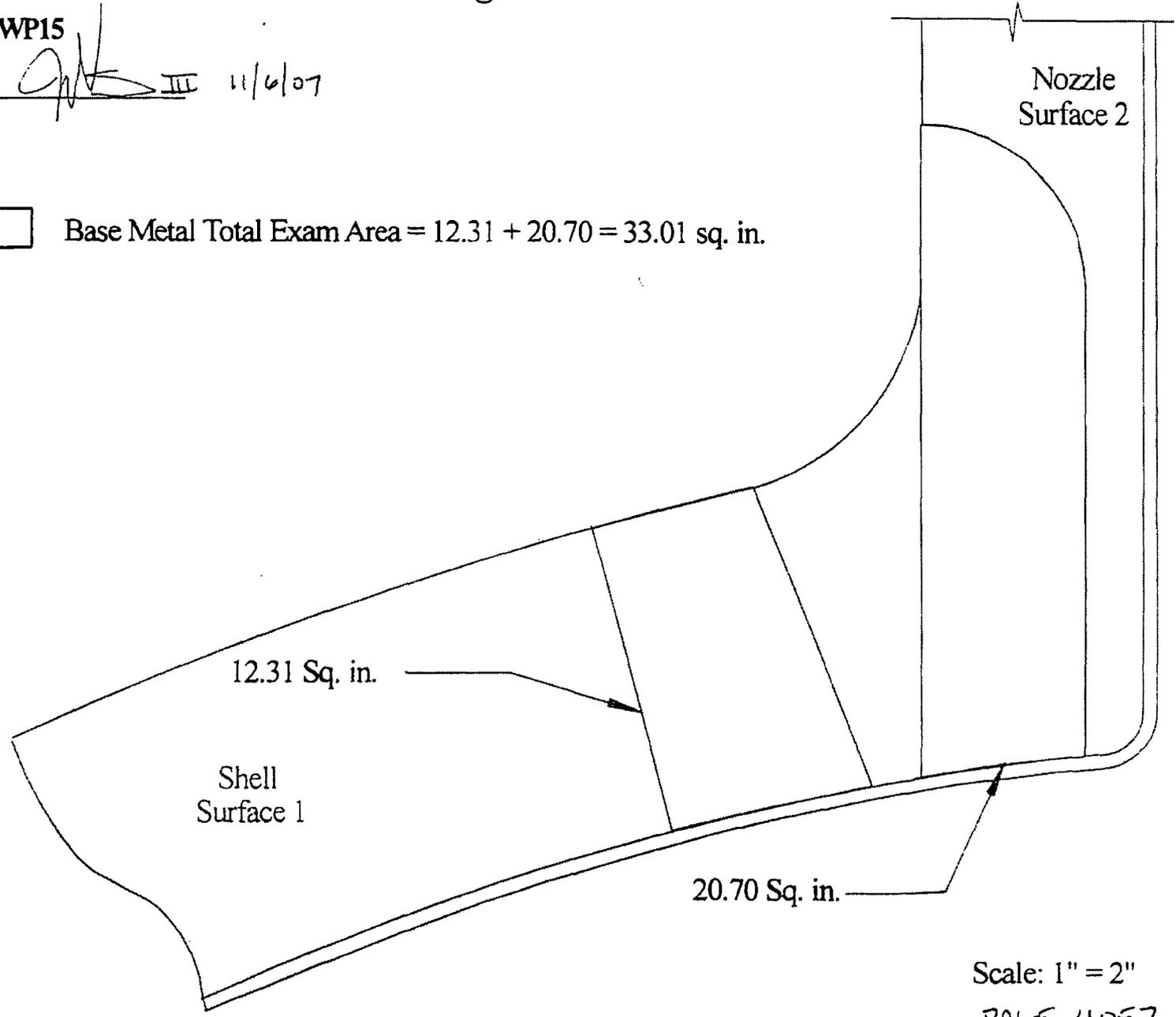
Item No. : U3.B3.110.0001

Pressurizer Surge Nozzle to Head

Weld No. : 3-PZR-WP15

Inspector/Date : [Signature] III 11/6/07

Base Metal Total Exam Area = 12.31 + 20.70 = 33.01 sq. in.



Scale: 1" = 2"
PAGE 4 OF 7

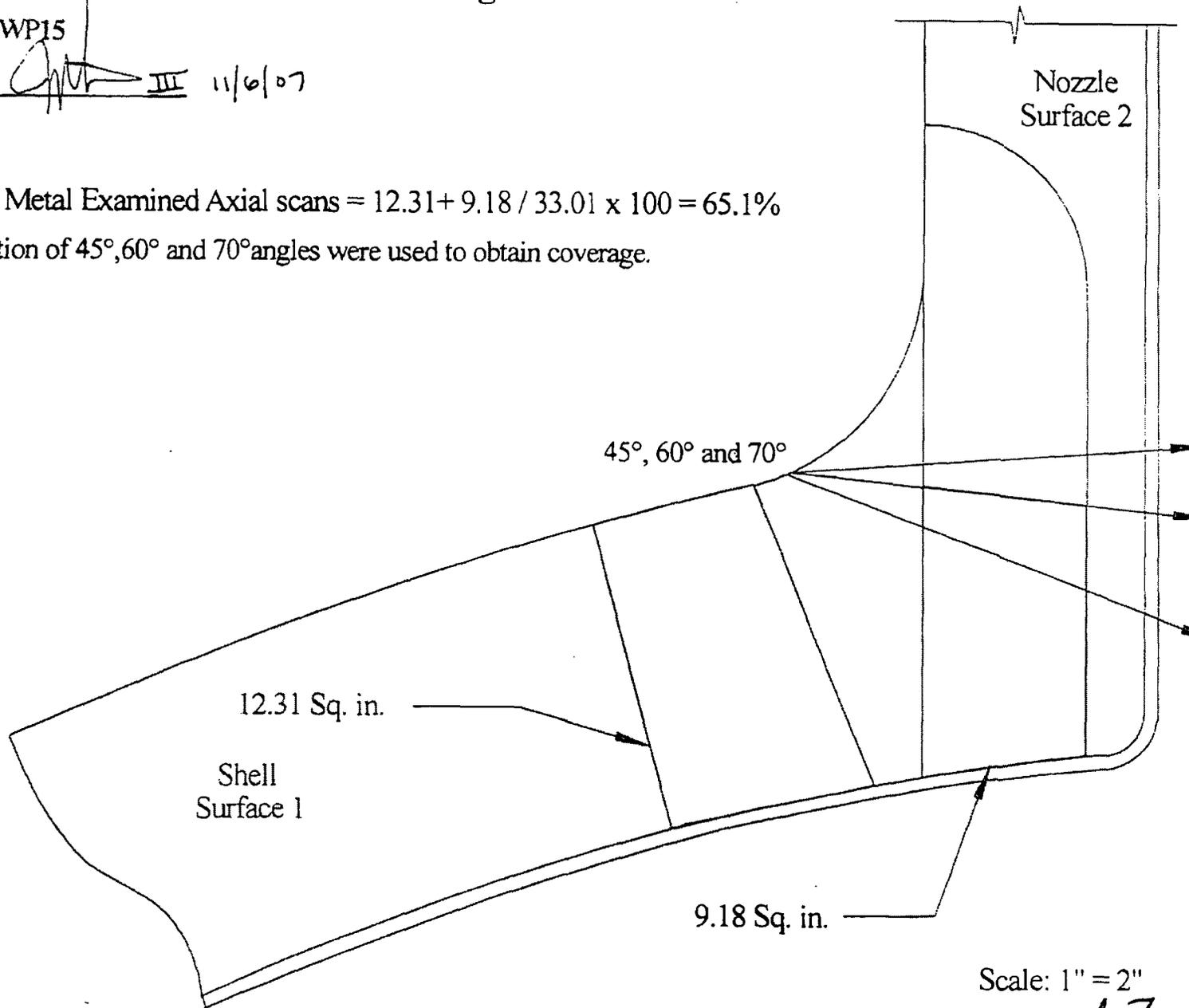
Item No. : 03.B3.110.0001

Pressurizer Surge Nozzle to Head

Weld No. : 3-PZR-WP15

Inspector/Date : [Signature] III 11/6/07

Total Base Metal Examined Axial scans = $12.31 + 9.18 / 33.01 \times 100 = 65.1\%$
A combination of 45°, 60° and 70° angles were used to obtain coverage.



Scale: 1" = 2"
11/6/07

Item No. . J3.B3.110.0001

Pressurizer Surge Nozzle to Head

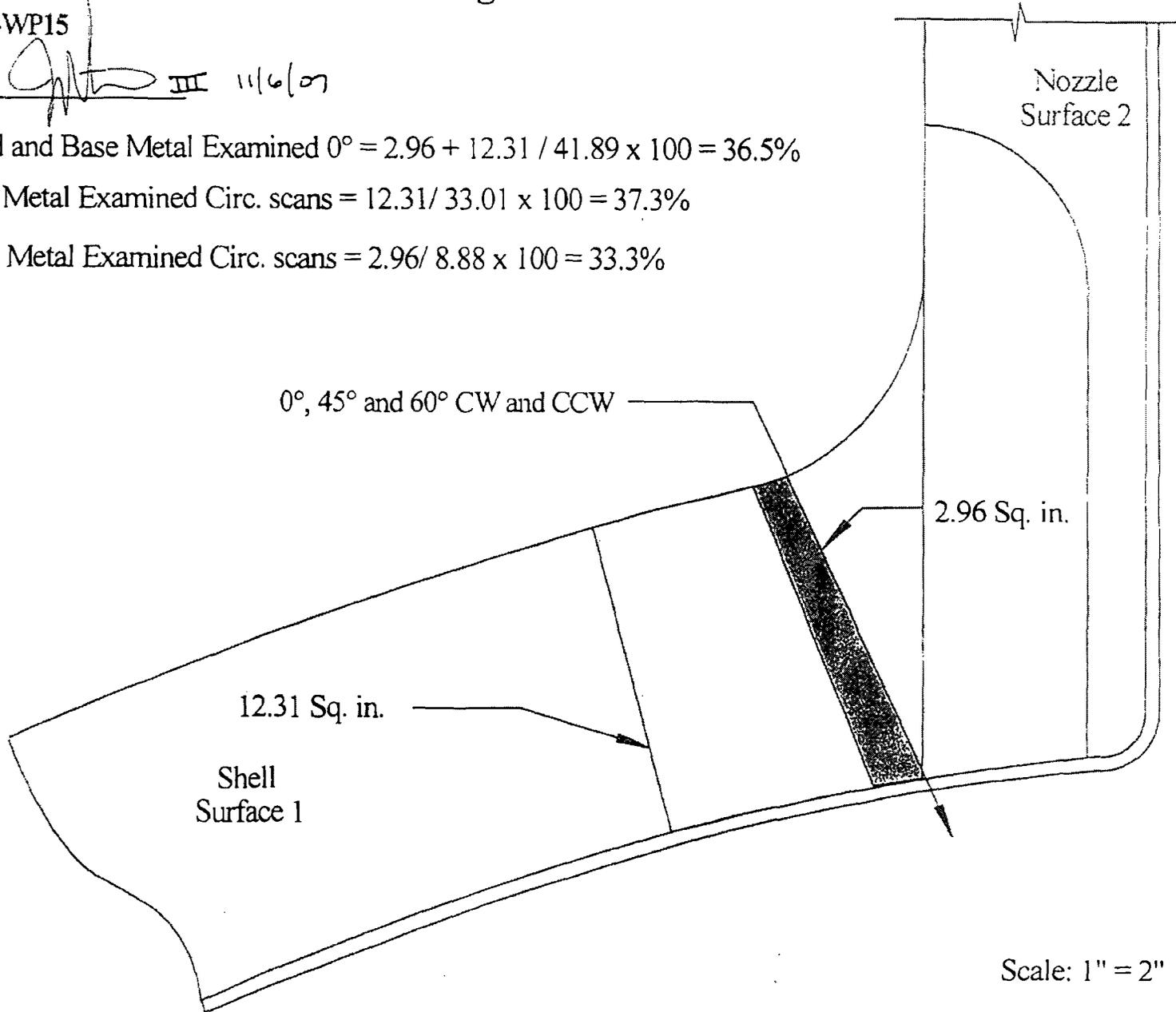
Weld No. : 3-PZR-WP15

Inspector/Date : [Signature] III 11/6/07

Total Weld and Base Metal Examined 0° = $2.96 + 12.31 / 41.89 \times 100 = 36.5\%$

 Total Base Metal Examined Circ. scans = $12.31 / 33.01 \times 100 = 37.3\%$

 Total Weld Metal Examined Circ. scans = $2.96 / 8.88 \times 100 = 33.3\%$



Scale: 1" = 2"



UT Vessel Examination

ATTACHMENT C
PAGE 9 OF 69

Site/Unit: Oconee / 3
Summary No.: O3.B3.110.0002
Workscope: ISI

Procedure: NDE-640
Procedure Rev.: 4
Work Order No.: 01733140

Outage No.: O3-23
Report No.: UT-07-133
Page: 1 of 1

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
Drawing No.: ISI-OCN3-002 Description: Nozzle to Head
System ID: 50
Component ID: 3-PZR-WP34 Size/Length: N/A Thickness/Diameter: 4.750 / 7.750
Limitations: Yes - See Limitation Report Attached to Report No. UT-07-138 Start Time: 0900 Finish Time: 1100

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH
Lo Location: 0° Line of Vessel Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32811 Surface Temp.: 90 °F
Cal. Report No.: CAL-07-151

Angle Used	0	45	45T	60	60T	
Scanning dB	41.8					

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

Comments:
See Attached Coverage Sheets
Additional Inspector: Troy Huhe Level II-N
Troy Huhe

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 46.1% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Howard, Dean M.	II-N	<i>Dean Howard</i>	11/1/2007	<i>DE Lousen</i>		11/6/07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Griebel, David M.	II-N	<i>David Griebel</i>	11/1/2007	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
Kelly, Alan J.	II-N	<i>Alan Kelly</i>	11/1/2007	<i>[Signature]</i>		11-8-07



UT Vessel Examination

Site/Unit: Oconee / 3 Procedure: NDE-820 Outage No.: 03-23
 Summary No.: 03.B3.110.0002 Procedure Rev.: 2 Report No.: UT-07-138
 Workscope: ISI Work Order No.: 01733140 Page: 1 of 6

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
 Drawing No.: ISI-OCN3-002 Description: Nozzle to Head
 System ID: 50
 Component ID: 3-PZR-WP34 Size/Length: N/A Thickness/Diameter 4.750 / 7.750
 Limitations: Yes - See Attached Limitation Report Start Time: 0900 Finish Time: 1100

Examination Surface Inside Outside Surface Condition: GROUND FLUSH

Lo Location: 0° Line of Vessel Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125

Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32811 Surface Temp.: 90 °F

Cal. Report No.: CAL-07-152, CAL-07-153, CAL-07-154

Angle Used	0	45	45T	60	60T	70
Scanning dB		65.0	65.0	67.7	67.7	74.0

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

Comments:

See Attached Coverage Sheets
 Additional Inspector: Troy Huhe Level II-N

Troy Huhe

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 46.1% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Howard, Dean M.	II-N	<i>Dean Howard</i>	11/1/2007	<i>DE Hansen</i>		11/6/07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Griebel, David M.	II-N	<i>D M Griebel</i>	11/1/2007	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
Kelly, Alan J.	II-N		11/1/2007	<i>Alan Kelly</i>		11-8-07

PZR Spray Nozzle to Shell % of Coverage

Item No. : O3.B3.110.0002

Weld No. : 3-PZR-WP34

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>
S1	45°,60° & 70°	88.3
S2	45°,60° & 70°	0
CW	60° & 45°	24.3
CCW	60° & 45°	<u>24.3</u>
Total		136.9

$136.9 \div 4 = \underline{34.2} \quad \% \text{ Coverage}$

Base Material Coverage

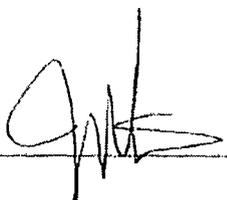
S1	45°,60° & 70°	75.2
CW & CCW	45° & 60°	<u>47.5</u>
Total		122.7

$122.7 \div 2 = \underline{61.4} \quad \% \text{ Coverage}$

0° Scan Coverage = 42.6 % Coverage

Aggregate Coverage = Weld + Base Material + 0° ÷ 3

= 46.1 % Coverage

Inspector / Date :  III 11/6/07

Page 2 of 6

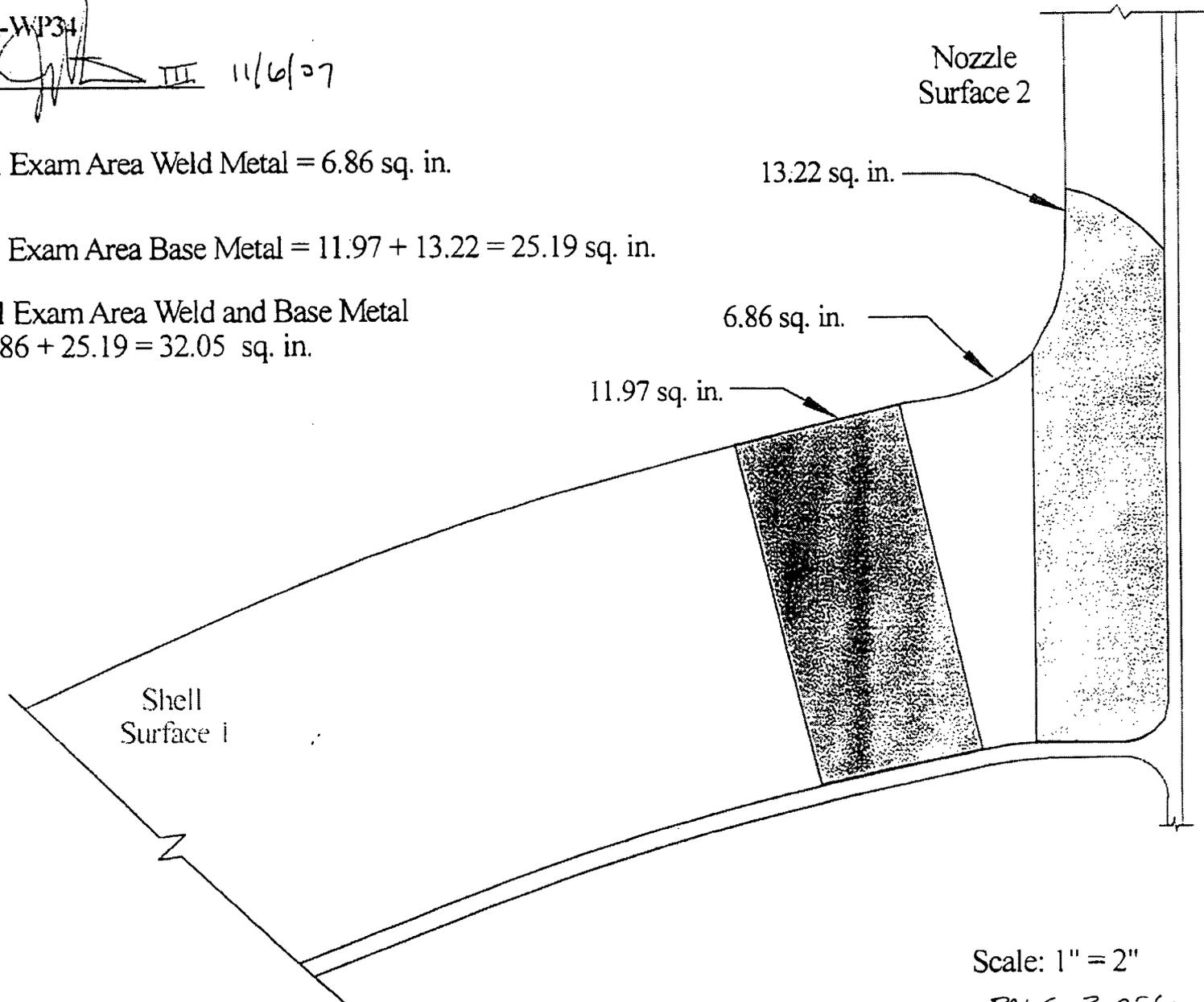
Item No. : 03.B3.110.0002

Pressurizer Spray Nozzle to Shell

Weld No. : 3-PZR-WP34

Inspector/Date : [Signature] III 11/6/07

-  Total Exam Area Weld Metal = 6.86 sq. in.
 -  Total Exam Area Base Metal = 11.97 + 13.22 = 25.19 sq. in.
- Total Exam Area Weld and Base Metal
= 6.86 + 25.19 = 32.05 sq. in.



Item No. : O3.B3.110.0002

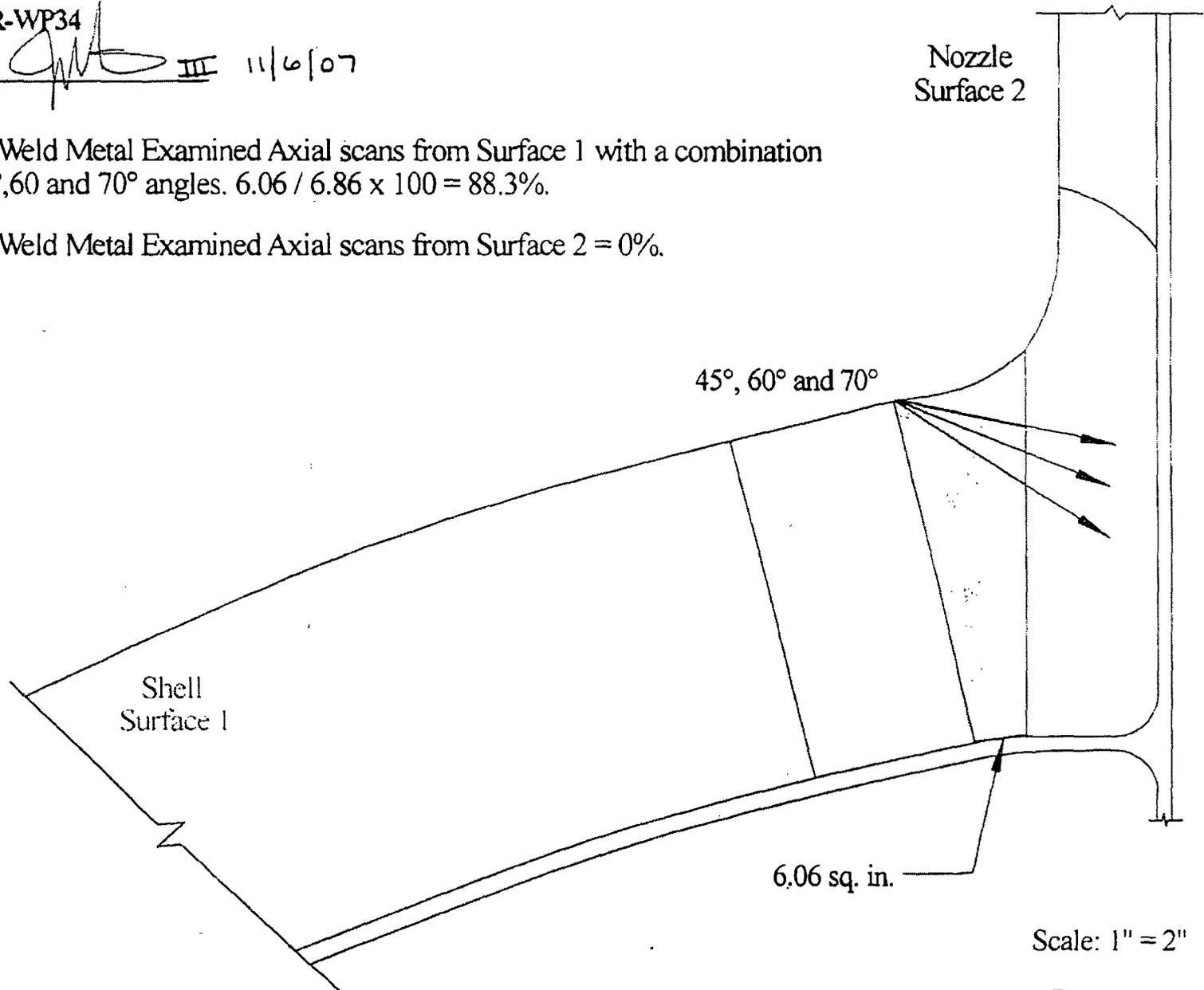
Pressurizer Spray Nozzle to Shell

Weld No. : 3-PZR-WP34

Inspector/Date : [Signature] III 11/6/07

Total Weld Metal Examined Axial scans from Surface 1 with a combination of 45°, 60° and 70° angles. $6.06 / 6.86 \times 100 = 88.3\%$.

Total Weld Metal Examined Axial scans from Surface 2 = 0%.



Scale: 1" = 2"

Item No. : 03.B3.110.0002

Pressurizer Spray Nozzle to Shell

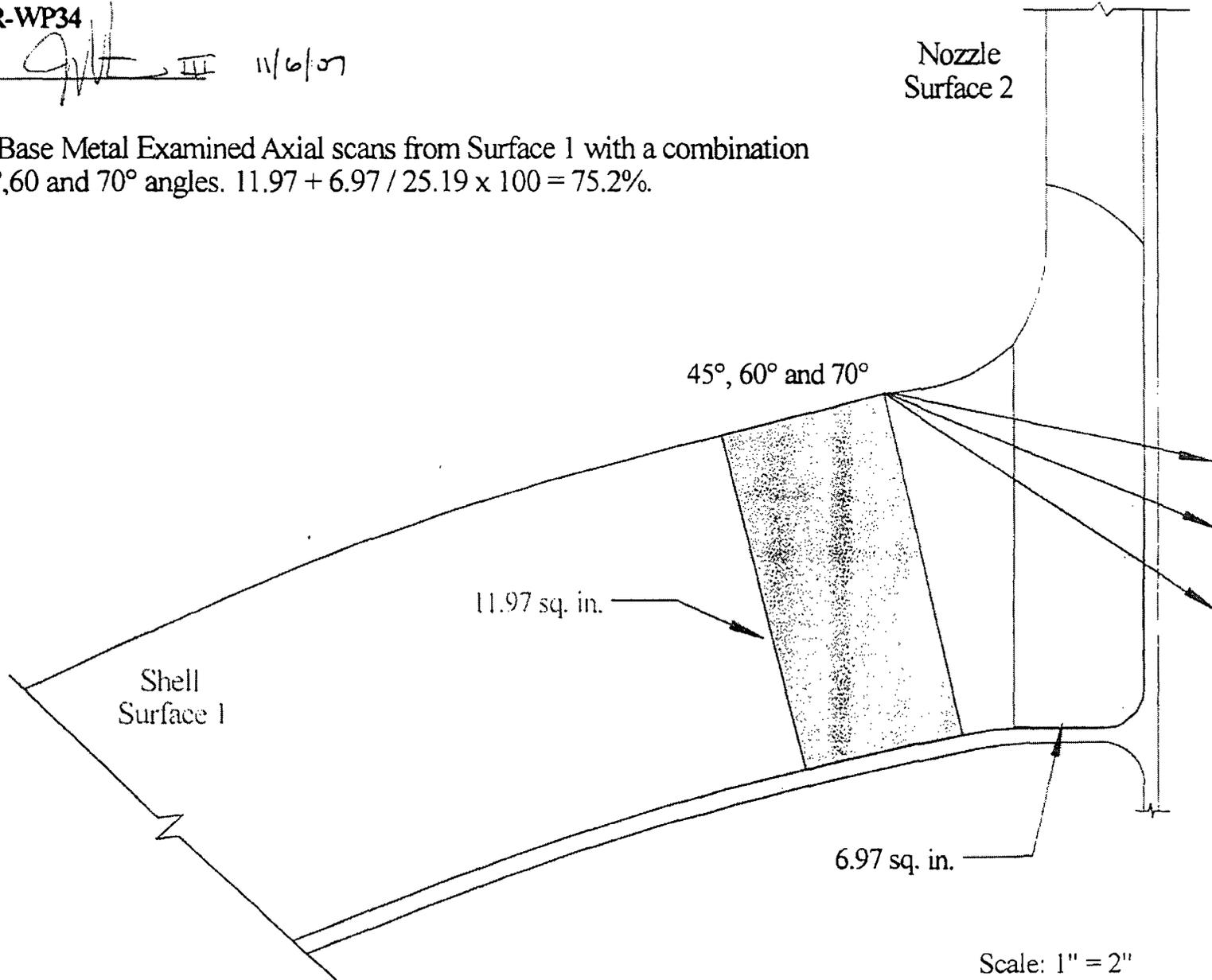
Weld No. : 3-PZR-WP34

Inspector/Date : [Signature] III 11/6/07

Nozzle
Surface 2



Total Base Metal Examined Axial scans from Surface 1 with a combination of 45°, 60 and 70° angles. $11.97 + 6.97 / 25.19 \times 100 = 75.2\%$.



Scale: 1" = 2"

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Item No. : U3.B3.110.0002

Pressurizer Spray Nozzle to Shell

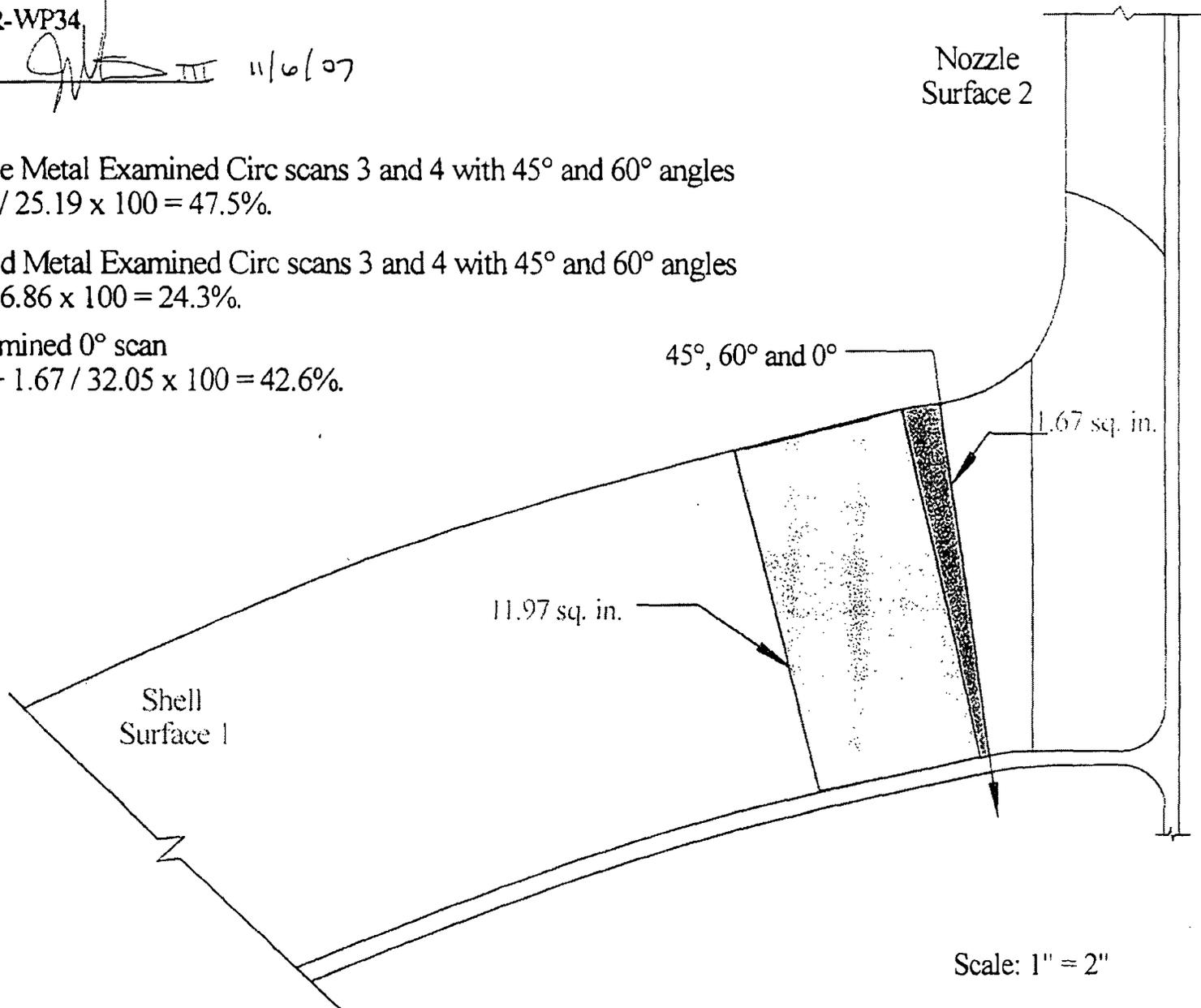
Weld No. : 3-PZR-WP34

Inspector/Date : [Signature] 11/6/07

 Total Base Metal Examined Circ scans 3 and 4 with 45° and 60° angles
= $11.97 / 25.19 \times 100 = 47.5\%$.

 Total Weld Metal Examined Circ scans 3 and 4 with 45° and 60° angles
= $1.67 / 6.86 \times 100 = 24.3\%$.

Total Examined 0° scan
= $11.97 + 1.67 / 32.05 \times 100 = 42.6\%$.



Scale: 1" = 2"



UT Vessel Examination

ATTACHMENT C
PAGE 16 OF 69

Site/Unit: Oconee / 3
Summary No.: O3.B3.110.0003
Workscope: ISI

Procedure: NDE-640
Procedure Rev.: 4
Work Order No.: 01733140

Outage No.: O3-23
Report No.: UT-07-134
Page: 1 of 1

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
Drawing No.: ISI-OCN3-002 Description: Nozzle to Head
System ID: 50
Component ID: 3-PZR-WP33-3 Size/Length: N/A Thickness/Diameter: 4.750 / 6.875
Limitations: Yes - See Limitation Report Attached to Report No. UT-07-139 Start Time: 0900 Finish Time: 1100

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH
Lo Location: 0° Line of Vessel Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32811 Surface Temp.: 90 °F
Cal. Report No.: CAL-07-151

Angle Used	0	45	45T	60	60T	
Scanning dB	41.8					

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

Comments:
See Attached Coverage Sheets
Additional Inspector: Troy Huhe Level II-N
Troy Huhe

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 30.0% Reviewed Previous Data: Yes

Examiner	Level	II-N	Signature	Date	Reviewer	Signature	Date
Howard, Dean M.			<i>Dean Howard</i>	11/1/2007	<i>DE Lawen</i>		11/6/07
Examiner	Level	II-N	Signature	Date	Site Review	Signature	Date
Griebel, David M.			<i>David Griebel</i>	11/1/2007	N/A		
Other	Level	II-N	Signature	Date	ANII Review	Signature	Date
Kelly, Alan J.			<i>Alan Kelly</i>	11/1/2007	<i>Alan Kelly</i>		11/8/07



UT Vessel Examination

Site/Unit: Oconee / 3
 Summary No.: O3.B3.110.0003
 Workscope: ISI

Procedure: NDE-820
 Procedure Rev.: 2
 Work Order No.: 01733140

Outage No.: O3-23
 Report No.: UT-07-139
 Page: 1 of 6

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
 Drawing No.: ISI-OCN3-002 Description: Nozzle to Head
 System ID: 50
 Component ID: 3-PZR-WP33-3 Size/Length: N/A Thickness/Diameter: 4.750 / 6.875
 Limitations Yes - See Attached Limitation Report Start Time: 0900 Finish Time: 1100

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH
 Lo Location: 0° Line of Vessel Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No 05125
 Temp Tool Mig D.A.S Serial No.: MCNDE32811 Surface Temp.: 90 °F
 Cal. Report No CAL-07-152, CAL-07-153, CAL-07-154

Angle Used	0	45	45T	60	60T	* 70
Scanning dB		65.0	65.0	67.7	67.7	74.0

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

Comments:
See Attached Coverage Sheets
 Additional Inspector: Troy Huhe Level II-N
Troy Huhe

Results Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 30.0% Reviewed Previous Data Yes

Examiner	Level	Signature	Date	Reviewer:	Signature	Date
Howard, Dean M.	II-N	<i>Dean Howard</i>	11/1/2007	<i>DE Lousen</i>		11/6/07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Griebel, David M.	II-N	<i>David M. Griebel</i>	11/1/2007	N/A		
Other	Level	Signature	Date	ANII Review:	Signature	Date
Kelly, Alan J.	II-N	<i>Alan J. Kelly</i>	11/1/2007	<i>Alan J. Kelly</i>		11/8/07

PZR Relief Nozzle to Shell % of Coverage

Item No. : O3.B3.110.0003

Weld No. : 3-PZR-WP33-3

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>
S1	45°,60° & 70°	70.2
S2	45°,60° & 70°	0
CW	60° & 45°	0
CCW	60° & 45°	0
Total		70.2

$70.2 \div 4 = \underline{17.6} \quad \% \text{ Coverage}$

Base Material Coverage

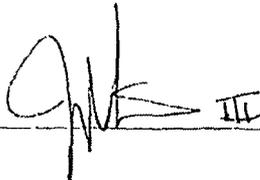
S1	45°,60° & 70°	63.3
CW & CCW	45° & 60°	31.5
Total		94.8

$94.8 \div 2 = \underline{47.4} \quad \% \text{ Coverage}$

0° Scan Coverage = 24.9 % Coverage

Aggregate Coverage = Weld + Base Material + 0° ÷ 3

= 30.0 % Coverage

Inspector / Date :  III 11/6/07

Page 2 of 6



UT Vessel Examination

ATTACHMENT C
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Site/Unit: Oconee / 3
Summary No.: 03.B3.110.0004
Workscope: ISI

Procedure: NDE-640
Procedure Rev.: 4
Work Order No.: 01733140

Outage No.: 03-23
Report No.: UT-07-135
Page: 1 of 1

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
Drawing No.: ISI-OCN3-002 Description: Nozzle to Head
System ID: 50
Component ID: 3-PZR-WP33-2 Size/Length: N/A Thickness/Diameter: 4.750 / 6.875
Limitations: Yes - See Limitation Report Attached to Report No. UT-07-140 Start Time: 0900 Finish Time: 1100

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH
Lo Location: 0° Line of Vessel Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32811 Surface Temp.: 90 °F
Cal. Report No.: CAL-07-151

Angle Used	0	45	45T	60	60T	
Scanning dB	41.8					

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

Comments:

See Attached Coverage Sheets
Additional Inspector: Troy Huhe Level II-N

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 30.0% Reviewed Previous Data: Yes

Examiner	Level II-N	Signature	Date	Reviewer	Signature	Date
Howard, Dean M.		<i>Dean Howard</i>	11/1/2007	<i>DE Howard</i>		11/6/07
Examiner	Level II-N	Signature	Date	Site Review	Signature	Date
Griebel, David M.		<i>D. Griebel</i>	11/1/2007	N/A		
Other	Level II-N	Signature	Date	ANII Review	Signature	Date
Kelly, Alan J.		<i>Alan Kelly</i>	11/1/2007	<i>Alan Kelly</i>		11-8-07



UT Vessel Examination

Site/Unit: Oconee / 3 Procedure: NDE-820 Outage No.: O3-23
 Summary No: O3.B3.110.0004 Procedure Rev.: 2 Report No.: UT-07-140
 Workscope: ISI Work Order No.: 01733140 Page: 1 of 6

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
 Drawing No.: ISI-OCN3-002 Description: Nozzle to Head
 System ID: 50
 Component ID: 3-PZR-WP33-2 Size/Length: N/A Thickness/Diameter: 4.750 / 6.875
 Limitations: Yes - See Attached Limitation Report Start Time: 0900 Finish Time: 1100

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH
 Lo Location: 0° Line of Vessel Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
 Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32811 Surface Temp.: 90 °F
 Cal. Report No.: CAL-07-152, CAL-07-153, CAL-07-154

Angle Used	0	45	45T	60	60T	* 70
Scanning dB		65.0	65.0	67.7	67.7	74.0

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

Comments:
See Attached Coverage Sheets
 Additional Inspector: Troy Huhe Level II-N

Results Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 30.0% Reviewed Previous Data: Yes

Examiner	Level	II-N	Signature	Date	Reviewer	Signature	Date
Howard, Dean M.				11/1/2007			11/6/07
Examiner	Level	II-N	Signature	Date	Site Review	Signature	Date
Griebel, David M.				11/1/2007	N/A		
Other	Level	II-N	Signature	Date	ANN Review	Signature	Date
Kelly, Alan J.				11/1/2007			11/8/07

PZR Relief Nozzle to Shell % of Coverage

Item No. : O3.B3.110.0004

Weld No. : 3-PZR-WP33-2

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>
S1	45°,60° & 70°	70.2
S2	45°,60° & 70°	0
CW	60° & 45°	0
CCW	60° & 45°	<u>0</u>
Total		70.2

$70.2 \div 4 = \underline{17.6} \quad \% \text{ Coverage}$

Base Material Coverage

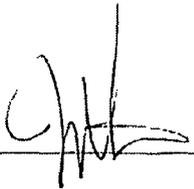
S1	45°,60° & 70°	63.3
CW & CCW	45° & 60°	<u>31.5</u>
Total		94.8

$94.8 \div 2 = \underline{47.4} \quad \% \text{ Coverage}$

0° Scan Coverage = 24.9 % Coverage

Aggregate Coverage = Weld + Base Material + 0° ÷ 3

= 30.0 % Coverage

Inspector / Date :  III 11/6/07

Page 2 of 6



UT Vessel Examination

ATTACHMENT C
PAGE 30 OF 69

Site/Unit: Oconee / 3
Summary No.: O3.B3.110.0005
Workscope: ISI

Procedure: NDE-640
Procedure Rev.: 4
Work Order No.: 01733140

Outage No.: O3-23
Report No.: UT-07-136
Page: 1 of 1

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
Drawing No.: ISI-OCN3-002 Description: Nozzle to Head
System ID: 50
Component ID: 3-PZR-WP33-1 Size/Length: N/A Thickness/Diameter: 4.750 / 6.875
Limitations: Yes-See Limitation Report Attached to Report No. UT-07-141 Start Time: 0900 Finish Time: 1100

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH
Lo Location: 0° Line of Vessel Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32811 Surface Temp.: 90 °F
Cal. Report No.: CAL-07-151

Angle Used	0	45	45T	60	60T	
Scanning dB	41.8					

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

Comments:
See Attached Coverage Sheets
Additional Inspector: Troy Huhe Level II-N

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No-30.0% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Howard, Dean M.	II-N	<i>Dean Howard</i>	11/1/2007	<i>DE Lousen</i>		11/6/07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Griebel, David M.	II-N	<i>David Griebel</i>	11/1/2007	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
Kelly, Alan J.	II-N	<i>Alan Kelly</i>	11/1/2007	<i>Alan Kelly</i>		11-8-07



UT Vessel Examination

Site/Unit: Oconee / 3
 Summary No.: O3.B3.110.0005
 Workscope: ISI

Procedure: NDE-820
 Procedure Rev.: 2
 Work Order No.: 01733140

Outage No.: O3-23
 Report No.: UT-07-141
 Page: 1 of 6

Code: 1998 Cat./Item: B-D /B3.110 Location: _____
 Drawing No.: ISI-OCN3-002 Description: Nozzle to Head
 System ID: 50
 Component ID: 3-PZR-WP33-1 Size/Length: N/A Thickness/Diameter 4.750 / 6.875
 Limitations: Yes - See Attached Limitation Report Start Time: 0900 Finish Time: 1100

Examination Surface Inside Outside Surface Condition: GROUND FLUSH

Lo Location: 0° Line of Vessel Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125

Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32811 Surface Temp.: 90 °F

Cal. Report No.: CAL-07-152, CAL-07-153, CAL-07-154.

Angle Used	0	45	45T	60	60T	* 70
Scanning dB		65.0	65.0	67.7	67.7	74.0

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

Comments:

See Attached Coverage Sheets
 Additional Inspector: Troy Huhe Level II-N

T Huhe

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 30.0% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Howard, Dean M.	II-N	<i>Dean Howard</i>	11/1/2007	<i>DE Lawson</i>		11/6/07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Griebel, David M.	II-N	<i>David Griebel</i>	11/1/2007	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
Kelly, Alan J.	II-N	<i>Alan Kelly</i>	11/1/2007	<i>Alan Kelly</i>		11-8-07

PZR Relief Nozzle to Shell % of Coverage

Item No. : O3.B3.110.0005

Weld No. : 3-PZR-WP33-1

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>
S1	45°, 60° & 70°	70.2
S2	45°, 60° & 70°	0
CW	60° & 45°	0
CCW	60° & 45°	0
Total		70.2

$70.2 \div 4 = \underline{17.6} \quad \% \text{ Coverage}$

Base Material Coverage

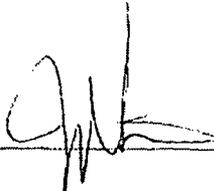
S1	45°, 60° & 70°	63.3
CW & CCW	45° & 60°	<u>31.5</u>
Total		94.8

$94.8 \div 2 = \underline{47.4} \quad \% \text{ Coverage}$

0° Scan Coverage = 24.9 % Coverage

Aggregate Coverage = Weld + Base Material + 0° ÷ 3

= 30.0 % Coverage

Inspector / Date :  III 11/6/07

Page 2 of 6

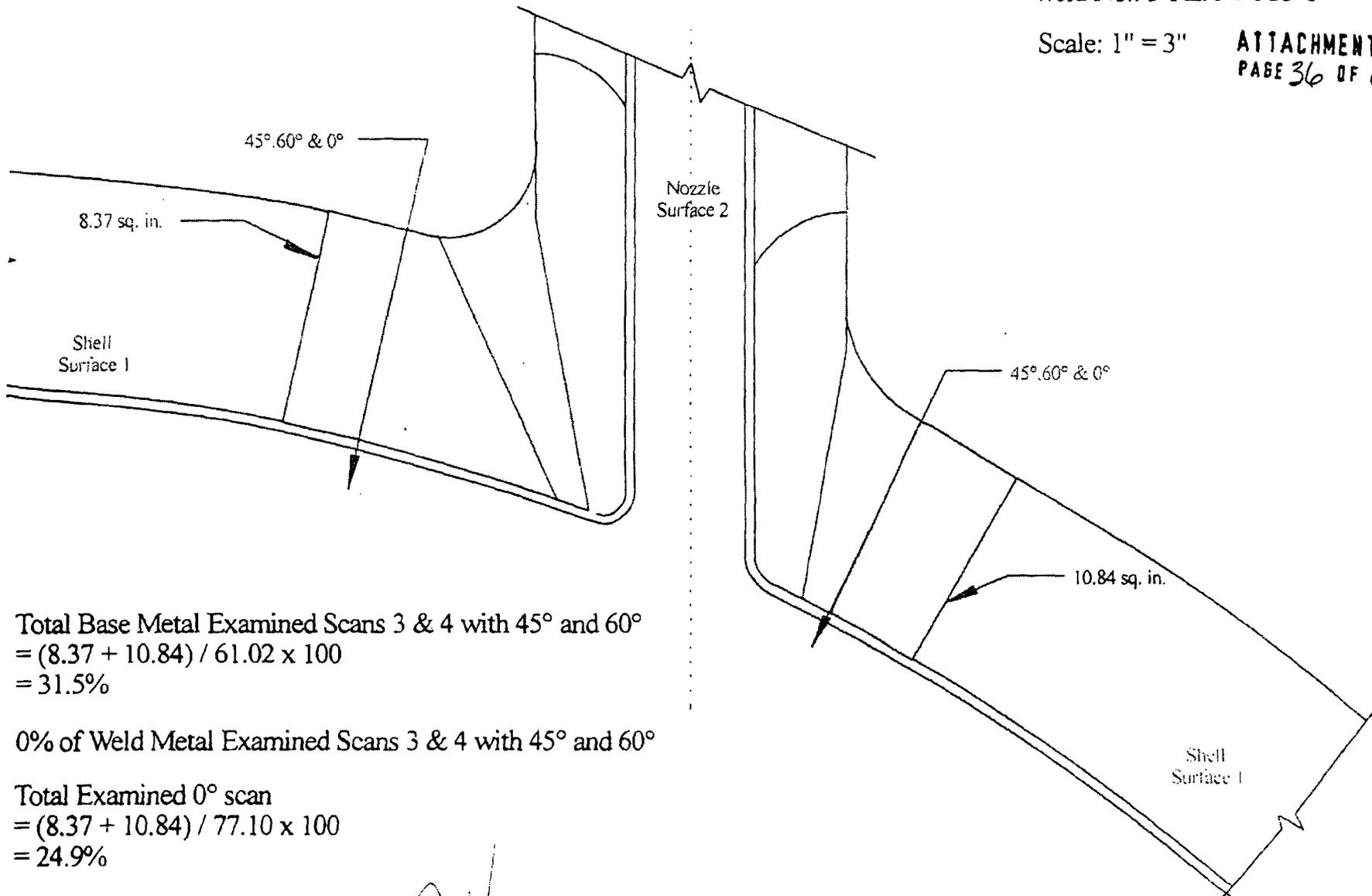
Pressurizer Re f Nozzle to Shell

Summary No.: O3. 110.0005

Weld No.: 3-PZR-WP33-1

Scale: 1" = 3"

ATTACHMENT C
PAGE 36 OF 69



Total Base Metal Examined Scans 3 & 4 with 45° and 60°
= $(8.37 + 10.84) / 61.02 \times 100$
= 31.5%

0% of Weld Metal Examined Scans 3 & 4 with 45° and 60°

Total Examined 0° scan
= $(8.37 + 10.84) / 77.10 \times 100$
= 24.9%

Inspector / Date: III 11/6/07

Page 6 of 6.



UT Pipe Weld Examination

ATTACHMENT C
PAGE 37 OF 69

Site/Unit: Oconee / 3
Summary No.: O3.B9.11.0007
Workscope: ISI

Procedure: NDE-830
Procedure Rev.: 1
Work Order No.: 01733566

Outage No.: O3-23
Report No.: UT-07-203
Page: 1 of 2

Code: 1998 Cat./Item: B-J /B9.11 Location: _____
Drawing No.: ISI-OCN3-007 Description: Safe End to Nozzle
System ID: 50
Component ID: 3-PIA1-8 Size/Length: N/A Thickness/Diameter: 2.330 / 33.500
Limitations: Yes - See Attached Coverage Calculation Report Start Time: 1037 Finish Time: 1107

Examination Surface: Inside Outside Surface Condition: GROUND
Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
Temp. Tool Mfg: D.A.S Serial No.: MCNDE32806 Surface Temp.: 72 °F

Cal. Report No.: CAL-07-207, CAL-07-208

Angle Used	0	45	45T	60	60L	70L
Scanning dB					79.5 *	77.5 **

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

Comments:

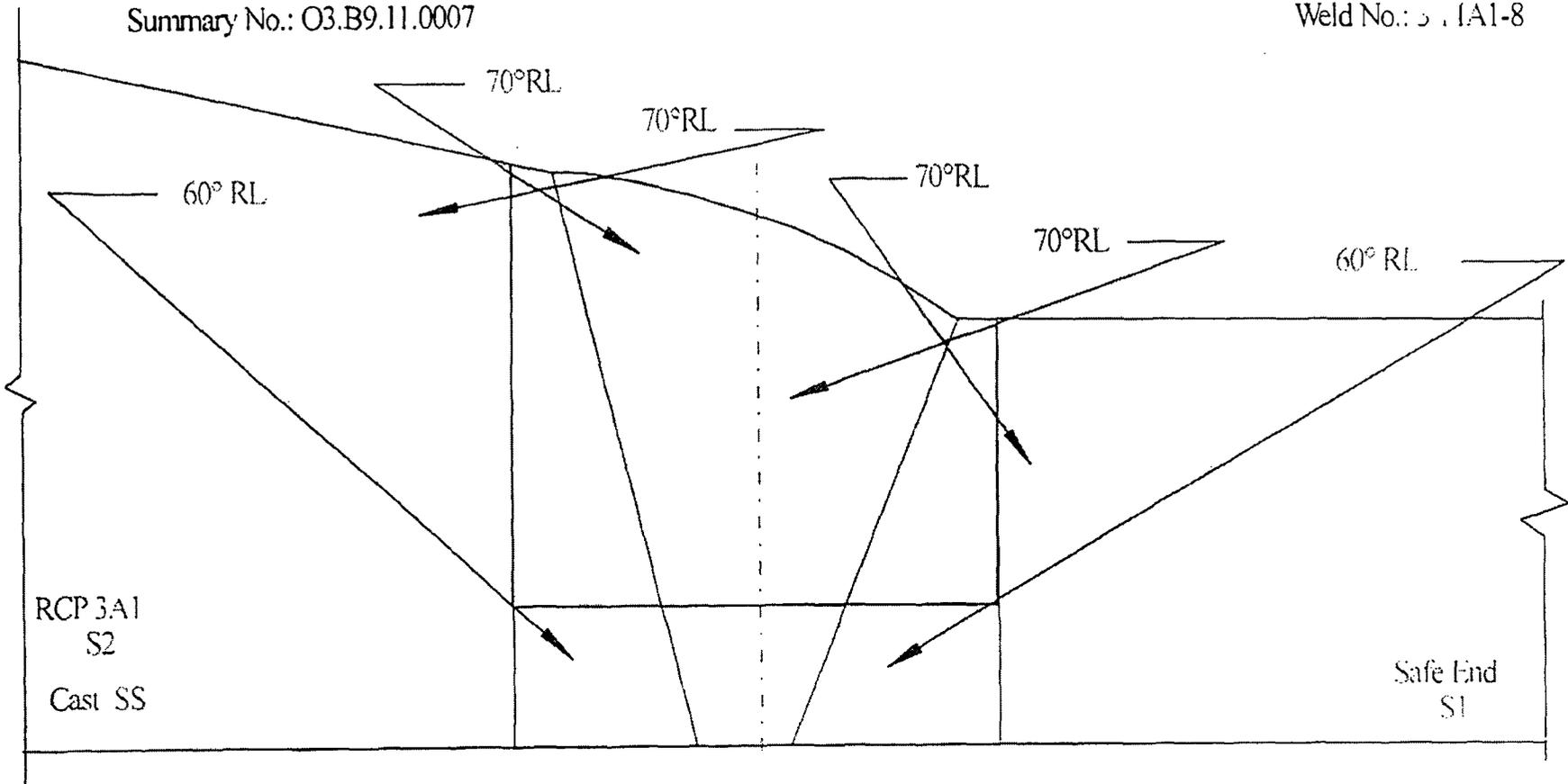
- * Scanned at 79.5 dB to set noise level @ 30% FSH.
- ** Scanned at 77.5 dB to set noise level @ 30% FSH
- *** Best effort exam of upper 2/3 of weld to supplement coverage from Outage 1. The exam in Outage 2 does not count in the percentages.

Results: Accept Reject Info

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Cochran, Lonnie D.	III-N	<i>[Signature]</i>	11/15/2007	<i>[Signature]</i>		
Examiner	Level	Signature	Date	Site Review	Signature	Date
Ellis, Ken	II-N	<i>[Signature]</i>	11/15/2007	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		11/15/2007	<i>[Signature]</i>		11-22-07

Summary No.: O3.B9.11.0007



Scale: 1" = 1"

Best effort Exam with 70°RL and
60°RL per procedure NDE-830
for the upper 2/3 of the area off
interest.

Inspector / Date: *L O C* 11-15-2007



UT Pipe Weld Examination

Site/Unit: Oconee / 3
 Summary No.: O3.B9.11.0007
 Workscope: ISI

Procedure: NDE-600
 Procedure Rev.: 17
 Work Order No.: 01733566

Outage No.: O3-23
 Report No.: UT-07-199
 Page: 1 of 3

Code: 1998 Cat./Item: B-J /B9.11 Location: _____
 Drawing No.: ISI-OCN3-007 Description: Safe End to Nozzle
 System ID: 50
 Component ID: 3-PIA1-8 Size/Length: N/A Thickness/Diameter: 2.330 / 33.500
 Limitations: Yes - See Attached Sketch Start Time: 1030 Finish Time: 1354

Examination Surface: Inside Outside Surface Condition: GROUND

Lo Location: 9.1.1.2 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125

Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32800 Surface Temp.: 72 °F

Cal. Report No.: CAL-07-199, CAL-07-200, CAL-07-201

Angle Used	0	45	45T	60	60L	
Scanning dB			60	70	70	

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

Comments:

* Per note in ISI Plan this examination does not count in the percentages in Outage 2. This exam is to help justify limited coverage from Outage 1.

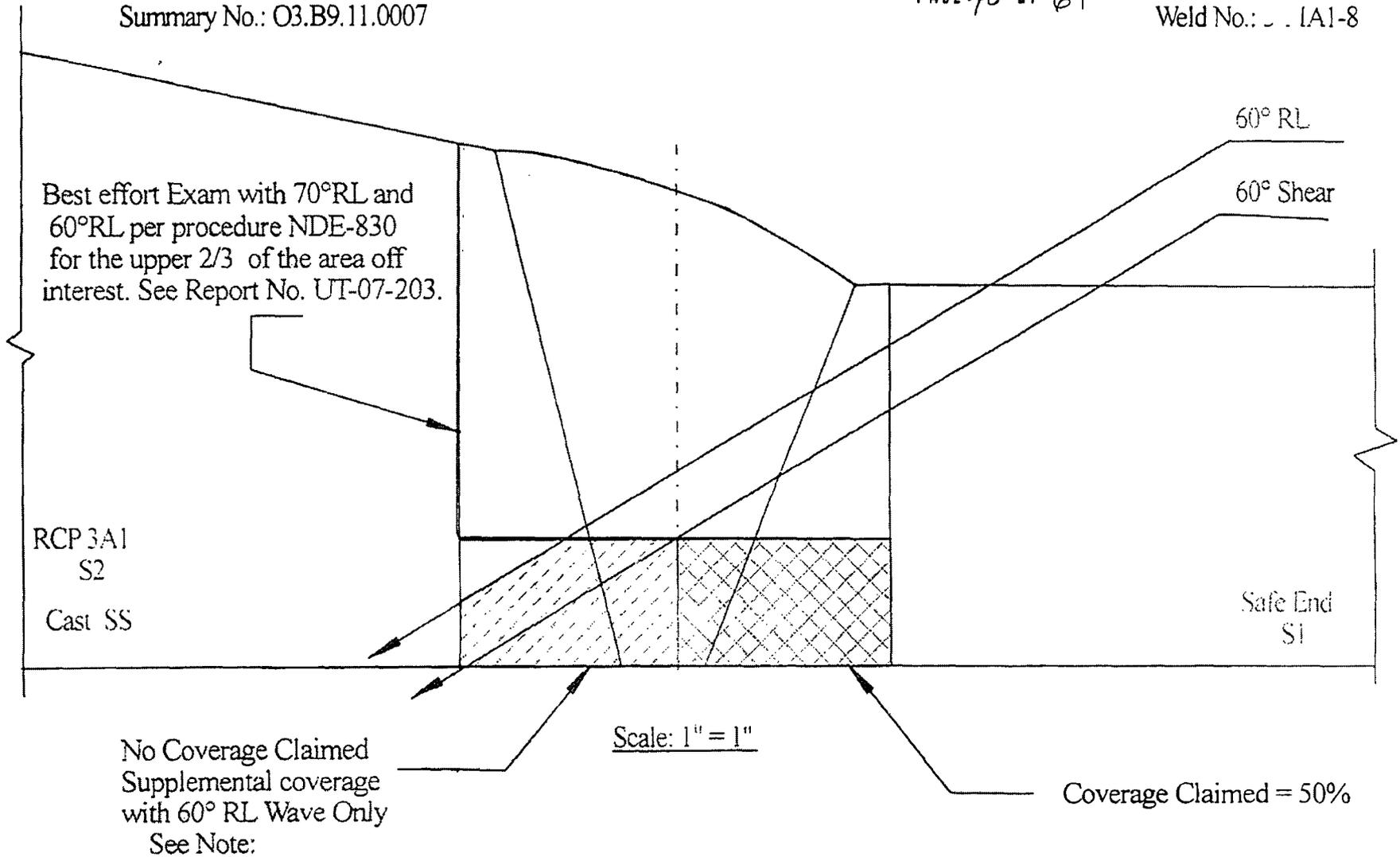
Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 37.5 % Reviewed Previous Data: Yes

Examiner	Level	II-N	Signature	Date	Reviewer	Signature	Date
Leeper, Winfred C.			<i>Winfred C. Leeper</i>	11/15/2007	<i>Sam Mass</i>		11-22-07
Examiner	Level	III-N	Signature	Date	Site Review	Signature	Date
Eaton, Jay A.			<i>Jay A. Eaton</i>	11/15/2007	N/A		
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A				11/15/2007	<i>M.A. Platt</i>		11-22-07

Summary No.: 03.B9.11.0007

Weld No.: . . IA1-8



Note: 60° RL scan not included in percentage coverage due to requirements of 10CFR50.55a(b)(2)(xv)(A)(1). Best effort scan with 60° RL obtained 44.3% coverage in one axial direction.

Inspector / Date:

[Handwritten Signature] 11/15/07

Summary No.: O3.B9.11.0007

Weld No.: 3-PIA1-8

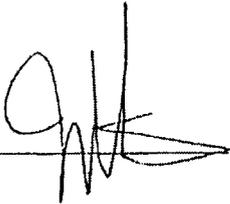
S1 = Safe End = 50% (100% of the length x 50% of the volume)

S2 = RCP = 0% (0% of the length x 0% of the volume)

S3 = CW = 50% (100% of the length x 50% of the volume)

S4 = CCW = 50% (100% of the length x 50% of the volume)

Total = 150 / 4 = 37.5 % Aggregate Coverage

Inspector / Date:  11/15/07 Page 3 of 3



UT Pipe Weld Examination

ATTACHMENT C
PAGE 42 OF 69

Site/Unit: Oconee / 3 Procedure: PDI-UT-2 Outage No.: 03-23
 Summary No.: 03.B9.11.0035 Procedure Rev.: C Report No.: UT-07-126
 Workscope: ISI Work Order No.: 01733655 Page: 1 of XZ

Code: 1998 Cat./Item: B-J /B9.11 Location: 11/1/07
 Drawing No.: 3HP-241 Description: Valve 3HP-194 (forged SS) to Pipe
 System ID: 51A
 Component ID: 3HP-241-3 Size/Length: N/A Thickness/Diameter: 0.531 / 4.000
 Limitations: None Start Time: 0850 Finish Time: 0910

Examination Surface: Inside Outside Surface Condition: Buffed
 Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
 Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32800 Surface Temp.: 77 °F
 Cal. Report No.: CAL-07-149, CAL-07-150

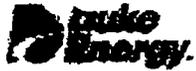
Angle Used	0	45	45T	60		
Scanning dB		41.0		47.5		

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

Comments:
Procedure PDI-UT-2 to be used to perform exam during outage 2. The exam for outage 2 is to be performed from the valve side. Jim McArdle requested this exam to help justify the limited coverage that was achieved during the outage 1 exam. The exam during outage 2 will not be counted in the percentages. The valve body is forged not cast.

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

Examiner	Level	II-N	Signature	Date	Reviewed	Signature	Date
Howard, Dean M.			<i>Dean Howard</i>	11/5/2007	<i>Dean Mero</i>		11-15-07
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A				11/5/2007	N/A		
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A				11/5/2007	<i>M. J. Platt</i>		11-15-07



UT Vessel Examination

ATTACHMENT C
PAGE 44 OF 69

Site/Unit: Oconee / 3
Summary No.: 03.C1.20.0006
Workscope: ISI

Procedure: NDE-3630
Procedure Rev.: 1
Work Order No.: 01732211

Outage No.: 03-23
Report No.: UT-07-237
Page: 1 of 4

Code: _____ Cat./Item: C-A /C1.20 Location: _____
Drawing No.: OM 2201-14 Description: Head to Shell
System ID: 51A
Component ID: 3-LST-HD-SH-2 Size/Length: N/A Thickness/Diameter: 0.375 / 96.000
Limitations: Yes - See Attached Limitation Report Start Time: 1015 Finish Time: 1105

Examination Surface: Inside Outside Surface Condition: GROUND
Lo Location: 9.2.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32796 Surface Temp.: 76 °F
Cal. Report No.: CAL-07-239

Angle Used	0	45	45T	60	60T	
Scanning dB				55.9	55.9	

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

Comments:
Scanned at reference dB to maintain 2:1 ratio

Results: Accept Reject Info Initial Section XI Exam
Percent Of Coverage Obtained > 90%: No - 80.26% Reviewed Previous Data: No

Examiner	Level	II-N	Signature	Date	11/29/2007	Reviewer	Signature	Date	11.30.07
Leeper, Winfred C.			<i>Winfred C. Leeper</i>			Gary A. Moss			
Examiner	Level	II-N	Signature	Date	11/29/2007	Site Review	Signature	Date	
Muirhead, Ryan			<i>Ryan Muirhead</i>			N/A			
Other	Level	N/A	Signature	Date	11/29/2007	ANII Review	Signature	Date	11-30-07
N/A						<i>Muirhead</i>			



Determination of Percent Coverage for UT Examinations - Vessels

ATTACHMENT
PAGE 45 OF 69

Site/Unit: Oconee / 3 Procedure: NDE-3630 Outage No.: 03-23
 Summary No.: 03.C1.20.0006 Procedure Rev.: 1 Report No.: UT-07-237
 Workscope: ISI Work Order No.: 01732211 Page: 2 of 4

0 deg Planar

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

45 deg

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

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

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

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

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

Other deg 60

Scan 1 80.260 % Length X 100.000 % volume of length / 100 = 80.260 % total for Scan 1

Scan 2 80.260 % Length X 100.000 % volume of length / 100 = 80.260 % total for Scan 2

Scan 3 80.260 % Length X 100.000 % volume of length / 100 = 80.260 % total for Scan 3

Scan 4 80.260 % Length X 100.000 % volume of length / 100 = 80.260 % total for Scan 4

Add totals and divide by # scans = 80.260 % total for 60 deg

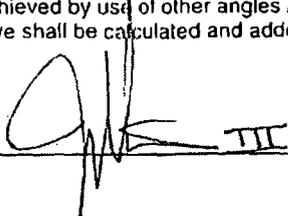
Percent complete coverage

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

80.260 % Total for complete exam

Note:

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

Site Field Supervisor: 

Date: 11/29/07

DUKE ENERGY COMPANY

ISI LIMITATION REPORT

Summary #: <u>03.C1.20.0006</u>	Component ID <u>3-LST-HD-SH-2</u>	remarks:
<input checked="" type="checkbox"/> NO SCAN	SURFACE	BEAM DIRECTION
<input type="checkbox"/> LIMITED SCAN	<input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2	<input checked="" type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> cw <input checked="" type="checkbox"/> ccw
FROM L * _____ to L _____	INCHES FROM W0	CL to Beyond
ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input checked="" type="checkbox"/> 60 other _____	FROM	N/A DEG to N/A DEG
<input type="checkbox"/> NO SCAN	SURFACE	BEAM DIRECTION
<input type="checkbox"/> LIMITED SCAN	<input type="checkbox"/> 1 <input type="checkbox"/> 2	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> cw <input type="checkbox"/> ccw
FROM L _____ to L _____	INCHES FROM W0	to _____
ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input type="checkbox"/> 60 other _____	FROM	_____ DEG to _____ DEG
<input type="checkbox"/> NO SCAN	SURFACE	BEAM DIRECTION
<input type="checkbox"/> LIMITED SCAN	<input type="checkbox"/> 1 <input type="checkbox"/> 2	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> cw <input type="checkbox"/> ccw
FROM L _____ to L _____	INCHES FROM W0	to _____
ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input type="checkbox"/> 60 other _____	FROM	_____ DEG to _____ DEG
<input type="checkbox"/> NO SCAN	SURFACE	BEAM DIRECTION
<input type="checkbox"/> LIMITED SCAN	<input type="checkbox"/> 1 <input type="checkbox"/> 2	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> cw <input type="checkbox"/> ccw
FROM L _____ to L _____	INCHES FROM W0	to _____
ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input type="checkbox"/> 60 other _____	FROM	_____ DEG to _____ DEG
		Sketch(s) attached
		<input type="checkbox"/> yes <input checked="" type="checkbox"/> No
Prepared By: <u>Winfred Leeper</u>	Level: <u>II</u>	Date: <u>11/29/2007</u>
		Sheet <u>3</u> of <u>4</u>
Reviewed By: <u>Gay A. Moss</u>	Date: <u>11-30-07</u>	Authorized Inspector: <u>[Signature]</u> Date: <u>11-30-07</u>

4 equally spaced pads for legs
15 Inc. each
(Dia. 8' 3/4")
% of length examined
= (303.949-60) / 303.949 x 100
= 80.26%



Supplemental Report

ATTACHMENT C
PAGE 47 OF 69

Report No.: UT-07-237

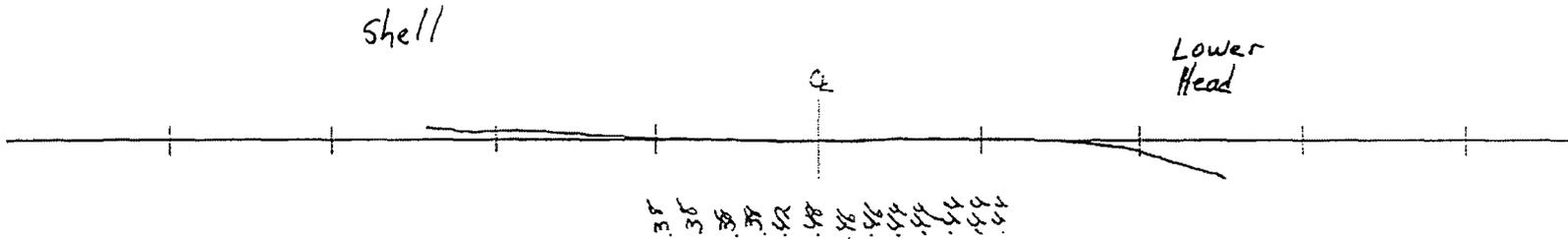
Page: 4 of 4

Summary No.: O3.C1.20.0006

Examiner: <u>Leeper, Winfred C. <i>Winfred C. Leeper</i></u>	Level: <u>II-N</u>	Reviewer: <u><i>Darryl Moss</i></u>	Date: <u>11-30-07</u>
Examiner: <u>Muirhead, Ryan <i>Ryan Muirhead</i></u>	Level: <u>II-N</u>	Site Review: <u>N/A</u>	Date: _____
Other: <u>N/A</u>	Level: <u>N/A</u>	ANII Review: <u><i>M. J. Platt</i></u>	Date: <u>11-30-07</u>

Comments:

Sketch or Photo: Z:\UT\IDEAL\ProfileLine2.jpg





UT Pipe Weld Examination

Site/Unit: Oconee / 3
Summary No.: 03.C5.11.0015
Workscope: ISI

Procedure: NDE-600
Procedure Rev.: 17
Work Order No.: 01733937

Outage No.: 03-23
Report No.: UT-07-183
Page: 1 of 3

Code: 1988 Cat./Item: C-F-1/C5.11 Location: _____
Drawing No.: 3LP-132 Description: Reducer to Valve 3LP-17 (cast ss)
System ID: 53A
Component ID: 3LP-132-23 Size/Length: N/A Thickness/Diameter: +1.125/-10.000
Limitations: Yes - See Attached Limitation Report Start Time: 0930 Finish Time: 1107

1.168"
12.00"
DCLZ 11/13/07

Examination Surface: Inside Outside Surface Condition: GROUND
Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32800 Surface Temp.: 77 °F
Cal. Report No.: CAL-07-176, CAL-07-177, CAL-07-178

Angle Used	0	45	45T	60	60L	
Scanning dB			45	42	47.5	

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

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 37.5%

Reviewed Previous Data: Yes

Examiner	Level	II-N	Signature	Date	Reviewer	Signature	Date
Leeper, Winfred C.			<i>Winfred C. Leeper</i>	11/10/2007	<i>DE Lawson</i>		11-13-07
Examiner	Level	II-N	Signature	Date	Site Review	Signature	Date
Howard, Dean M.			<i>Dean Howard</i>	11/10/2007	N/A		
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A				11/10/2007	<i>M.A. Platt</i>		11-13-07

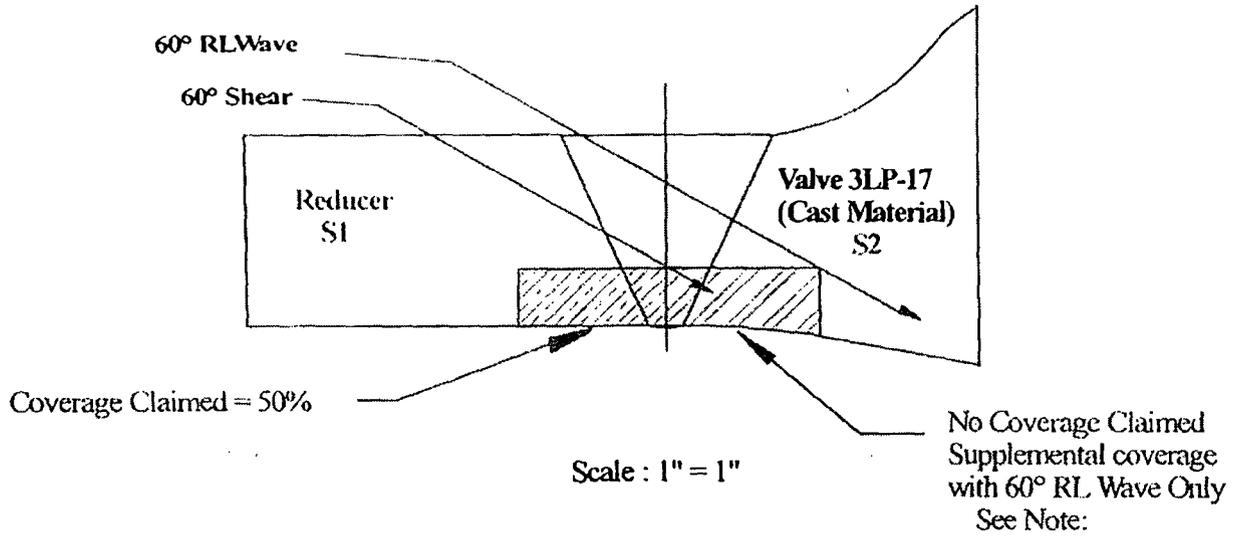
DUKE ENERGY COMPANY ISI LIMITATION REPORT

Summary #: <u>O3.C5.11.0015</u> Component ID <u>3LP-132-23</u>	remarks:
<input checked="" type="checkbox"/> NO SCAN SURFACE BEAM DIRECTION <input type="checkbox"/> LIMITED SCAN <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/> cw <input checked="" type="checkbox"/> ccw FROM L <u>N/A</u> to L <u>N/A</u> INCHES FROM W0 <u>.2</u> to <u>Beyond</u> ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input checked="" type="checkbox"/> 60 other _____ FROM <u>N/A</u> DEG to <u>N/A</u> DEG	Due to valve configuration
<input type="checkbox"/> NO SCAN SURFACE BEAM DIRECTION <input type="checkbox"/> LIMITED SCAN <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> cw <input type="checkbox"/> ccw FROM L _____ to L _____ INCHES FROM W0 _____ to _____ ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input type="checkbox"/> 60 other _____ FROM _____ DEG to _____ DEG	
<input type="checkbox"/> NO SCAN SURFACE BEAM DIRECTION <input type="checkbox"/> LIMITED SCAN <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> cw <input type="checkbox"/> ccw FROM L _____ to L _____ INCHES FROM W0 _____ to _____ ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input type="checkbox"/> 60 other _____ FROM _____ DEG to _____ DEG	
<input type="checkbox"/> NO SCAN SURFACE BEAM DIRECTION <input type="checkbox"/> LIMITED SCAN <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> cw <input type="checkbox"/> ccw FROM L _____ to L _____ INCHES FROM W0 _____ to _____ ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input type="checkbox"/> 60 other _____ FROM _____ DEG to _____ DEG	
<input type="checkbox"/> NO SCAN SURFACE BEAM DIRECTION <input type="checkbox"/> LIMITED SCAN <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> cw <input type="checkbox"/> ccw FROM L _____ to L _____ INCHES FROM W0 _____ to _____ ANGLE: <input type="checkbox"/> 0 <input type="checkbox"/> 45 <input type="checkbox"/> 60 other _____ FROM _____ DEG to _____ DEG	Sketch(s) attached <input type="checkbox"/> yes <input type="checkbox"/> No
Prepared By: <u>Winfred Leeper</u> Level: <u>II</u> Date: <u>11-10-2007</u> Sheet <u>2</u> of <u>3</u>	
Reviewed By: <u>DE Rowser</u> Date: <u>11.13.07</u> Authorized Inspector: <u>[Signature]</u> Date: <u>11-17-07</u>	

ATTACHMENT C
PAGE 50 OF 69

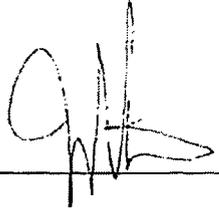
Summary No. O3.C5.11.0015

Weld No. 3LP-132-23



Note: 60° RL scan not included in percentage coverage due to requirements of 10CFR50.55a(b)(2)(xv)(A)(1). Best effort scan with 60° RL obtained 50% coverage in one axial direction.

S1 = Reducer =	50%	(100% of the length x 50% of the volume)
S2 = Valve =	0%	(0% of the length x 0% of the volume)
S3 = CW =	50%	(100% of the length x 50% of the volume)
S4 = CCW =	<u>50%</u>	(100% of the length x 50% of the volume)
Total	= 150 / 4 =	<u>37.5 %</u> Aggregate Coverage

Inspector / Date:  III 11/10/07

3 of 3



UT Pipe Weld Examination

ATTACHMENT C
PAGE 51 OF 69

Site/Unit: Oconee / 3
Summary No.: O3.C5.11.0032
Workscope: ISI

Procedure: NDE-600
Procedure Rev.: 17
Work Order No.: 01733812

Outage No.: 03-23
Report No.: UT-07-233
Page: 1 of 2

Code: 1998 Cat./Item: C-F-1/C5.11 Location: _____
Drawing No.: 3LP-221 Description: Valve 3LP-177 (forged ss) to Pipe
System ID: 53A
Component ID: 3LP-221-27 Size/Length: N/A Thickness/Diameter: 1.000 / 10.000
Limitations: Yes - See Attached Limitation Report Start Time: 1230 Finish Time: 1300

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32806 Surface Temp.: 68 °F

Cal. Report No.: CAL-07-229, CAL-07-230, CAL-07-231

Angle Used	0	45	45T	60	60L	
Scanning dB			45	50.9	60	

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

Comments:

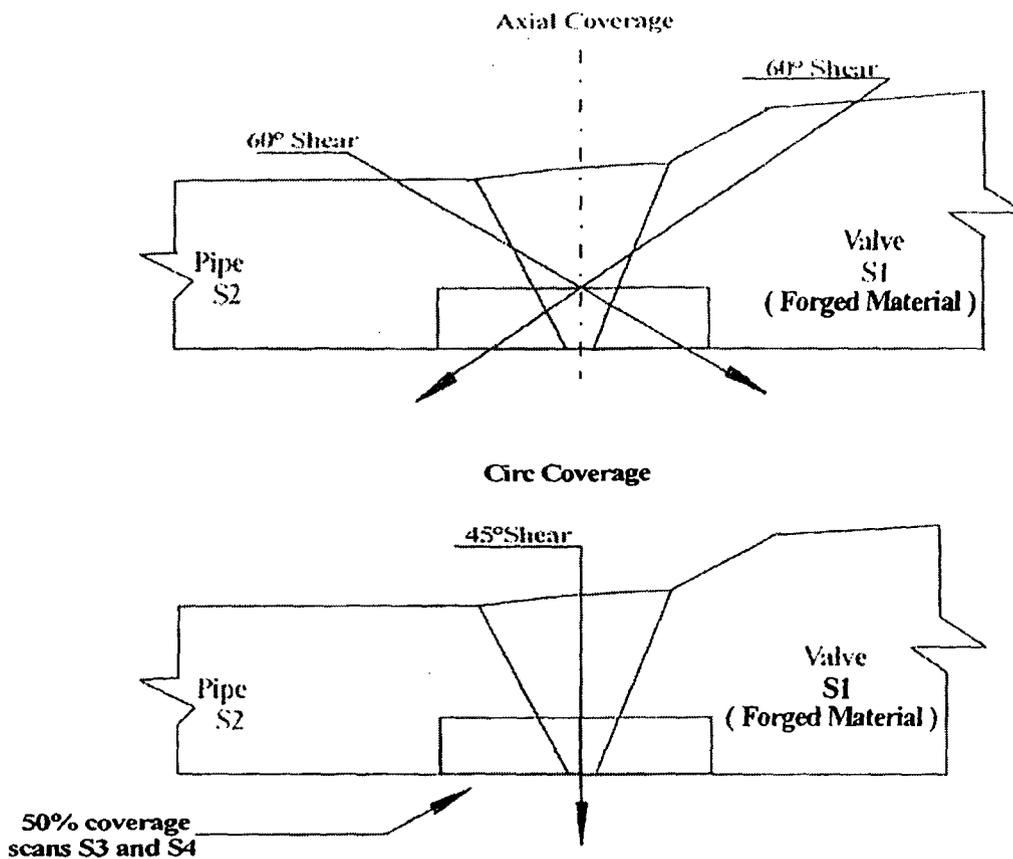
Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 75% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Eaton, Jay A.	III-N		11/26/2007			
Examiner	Level	Signature	Date	Site Review	Signature	Date
Tucker, David K.	II-N		11/26/2007	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		11/26/2007			11-28-07

Summary No.: O3.C5.11.0032

Weld No. : 3-LP-221-27



% Coverage Calculations

S1 = Valve = 100% (100% of the length x 100% of the volume)

S2 = Pipe = 100% (100% of the length x 100% of the volume)

S3 = CW = 50% (100% of the length x 50% of the volume)

S4 = CCW = 50% (100% of the length x 50% of the volume)

Total = 300 / 4 = 75.0 % Aggregate Coverage

Inspector / Date : [Signature] III 11/26/01 Page 2 of 2



UT Pipe Weld Examination

ATTACHMENT C
PAGE 53 OF 69

Site/Unit: Oconee / 3
Summary No.: 03.C5.11.0033
Workscope: ISI

Procedure: NDE-600
Procedure Rev.: 17
Work Order No.: 01733812

Outage No.: 03-23
Report No.: UT-07-234
Page: 1 of 2

Code: 1998 Cat./Item: C-F-1/C5.11 Location: _____
Drawing No.: 3LP-221 Description: Pipe to Pipe Flow Restrictor
System ID: 53A
Component ID: 3LP-221-18 Size/Length: N/A Thickness/Diameter: 1.000 / 10.000
Limitations: Yes - See Attached Limitation Report Start Time: 1230 Finish Time: 1300

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32806 Surface Temp.: 68 °F
Cal. Report No.: CAL-07-229, CAL-07-230, CAL-07-231

Angle Used	0	45	45T	60	60L	
Scanning dB			45	50.9	60	

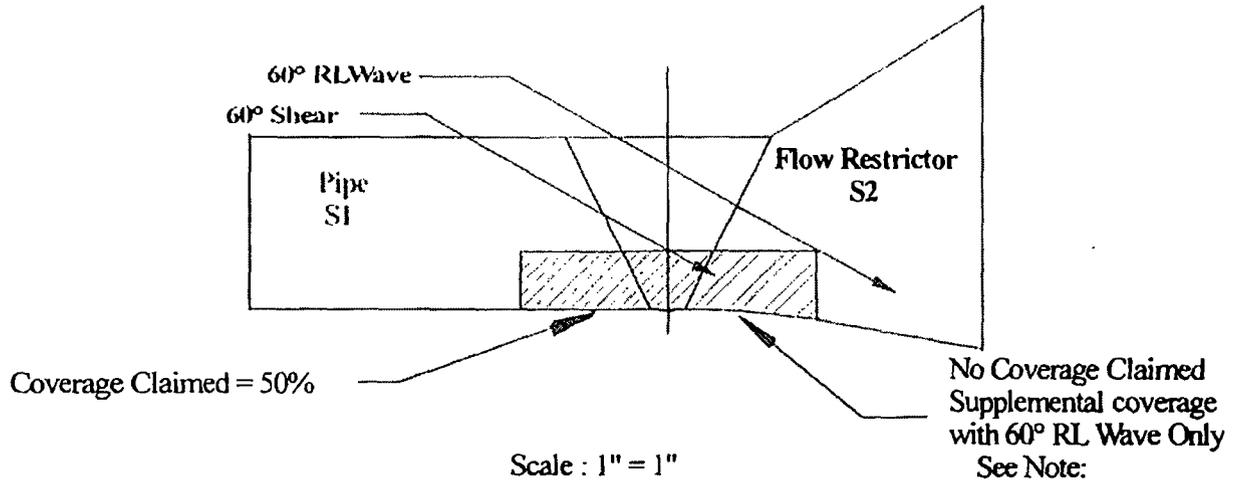
Indication(s): Yes No Scan Coverage: Upstream Downstream CW CCW

Comments:

Results: Accept Reject Info
Percent Of Coverage Obtained > 90%: No - 37.5% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Eaton, Jay A.	III-N		11/26/2007			11-29-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Tucker, David K.	II-N		11/26/2007	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		11/26/2007			11-28-07

ATTACHMENT C
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Note: 60° RL scan not included in percentage coverage due to requirements of 10CFR50.55a(b)(2)(xv)(A)(1). Best effort scan with 60° RL obtained 50% coverage in one axial direction.

Aggregate Coverage Calculation

S1 = Pipe	50 %	(100% of the Length x 50% of the Volume)
S2 = Restrictor	0 %	(0% of the Length x 0% of the Volume)
S3 = CW	50 %	(100% of the Length x 50% of the Volume)
S4 = CCW	50 %	(100% of the Length x 50% of the Volume)

Total = 150 ÷ 4 = 37.5% Aggregate Coverage

Inspector / Date:

[Handwritten Signature] III 11/24/07



UT Pipe Weld Examination

Site/Unit: Oconee / 3
Summary No.: 03.C5.11.0034
Workscope: ISI

Procedure: NDE-600
Procedure Rev.: 17
Work Order No.: 01733812

Outage No.: 03-23
Report No.: UT-07-235
Page: 1 of 2

Code: 1998 Cat./Item: C-F-1/C5.11 Location: _____
Drawing No.: 3LP-221 Description: Pipe to Pipe Flow Restrictor
System ID: 53A
Component ID: 3LP-221-17 Size/Length: N/A Thickness/Diameter: 1.000 / 10.000
Limitations: Yes - See Attached Limitation Report Start Time: 1230 Finish Time: 1300

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32806 Surface Temp.: 68 °F

Cal. Report No.: CAL-07-229, CAL-07-230, CAL-07-231

Angle Used	0	45	45T	60	60L	
Scanning dB			45	50.9	60	

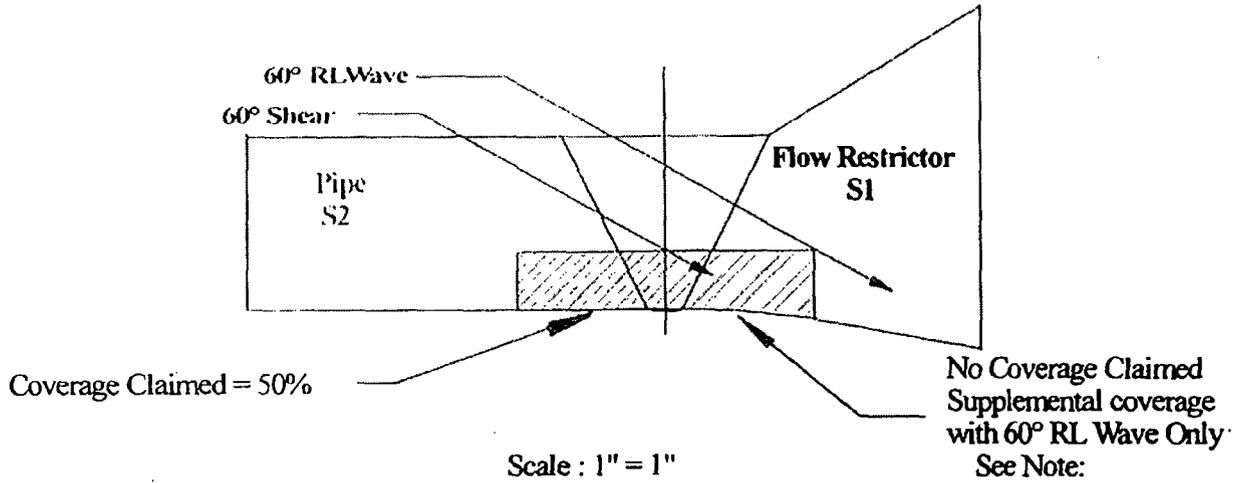
Indication(s): Yes No Scan Coverage: Upstream Downstream CW CCW

Comments:

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 37.5 % Reviewed Previous Data: Yes

Examiner	Level	III-N	Signature	Date	Reviewer	Signature	Date
Eaton, Jay A.				11/26/2007			11-28-07
Examiner	Level	II-N	Signature	Date	Site Review	Signature	Date
Tucker, David K.				11/26/2007	N/A		
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A				11/26/2007			11-28-07

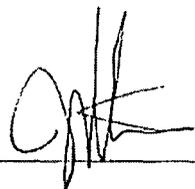


Note: 60° RL scan not included in percentage coverage due to requirements of 10CFR50.55a(b)(2)(xv)(A)(1). Best effort scan with 60° RL obtained 50% coverage in one axial direction.

Aggregate Coverage Calculation

S1 = Restrictor	0 %	(0% of the Length x 0% of the Volume)
S2 = Pipe	50 %	(100% of the Length x 50% of the Volume)
S3 = CW	50 %	(100% of the Length x 50% of the Volume)
S4 = CCW	50 %	(100% of the Length x 50% of the Volume)

Total = 150 ÷ 4 = 37.5% Aggregate Coverage

Inspector / Date:  III 11/26/07



UT Pipe Weld Examination

Site/Unit: Oconee / 3
Summary No.: O3.C5.11.0049
Workscope: ISI

Procedure: PDI-UT-2
Procedure Rev.: C
Work Order No.: 01733813

Outage No.: O3-23
Report No.: UT-07-206
Page: 1 of 2

Code: 1998 Cat./Item: C-F-1/C5.11 Location: _____
Drawing No.: 3LP-222 Description: Pipe to Valve 3LP-179 (forged ss)
System ID: 53A
Component ID: 3LP-222-15 Size/Length: N/A Thickness/Diameter: 1.000 / 10.000
Limitations: Yes - See Attached Coverage Sheet Start Time: 1316 Finish Time: 1337

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH
Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32796 Surface Temp.: 70.4 °F

Cal. Report No.: CAL-07-211, CAL-07-212, CAL-07-213

Angle Used	0	45	45T	60	60RL	
Scanning dB		43.9	43.9	49.4	66.4	

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

Comments:

Results: Accept Reject Info

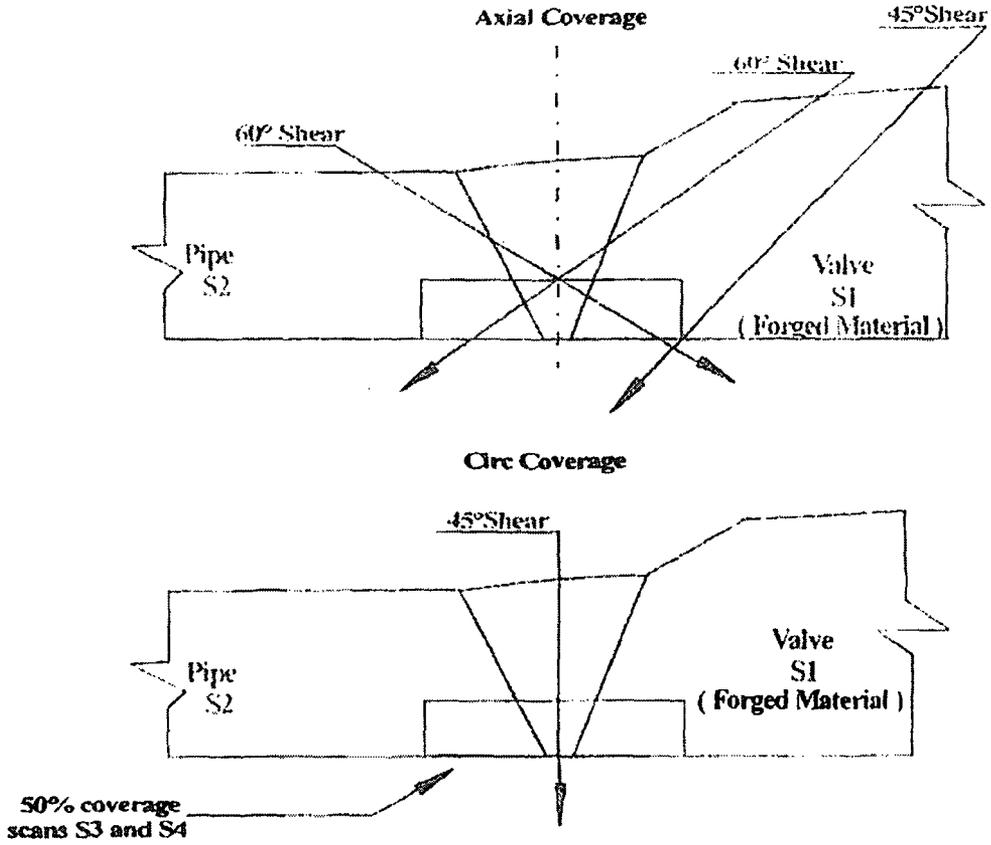
Percent Of Coverage Obtained > 90%: No - 75% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Cochran, Lonnie D.	III-N		11/19/2007			11-25-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Heffron, Jason	II-N		11/19/2007	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		11/19/2007			11-29-07

ATTACHMENT C
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Summary No.: O3.C5.11.0049

Weld No. : 3-LP-0222-1



% Coverage Calculations

Dx2
11/07/10

S2	-S1 = Pipe	=	100%	(100% of the length x 100% of the volume)
S1	-S2 = Valve	=	100%	(100% of the length x 100% of the volume)
	S3 = CW	=	50%	(100% of the length x 50% of the volume)
	S4 = CCW	=	<u>50%</u>	(100% of the length x 50% of the volume)
	Total	=	300 / 4 = <u>75.0 %</u>	Aggregate Coverage

Inspector / Date : LACK 11.19.2007 Page 2 of 2



UT Pipe Weld Examination

ATTACHMENT C
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Site/Unit: Oconee / 3
Summary No.: 03.C5.11.0050
Workscope: ISI

Procedure: PDI-UT-2
Procedure Rev.: C
Work Order No.: 01733813

Outage No.: 03-23
Report No.: UT-07-207
Page: 1 of 4

Code: 1998 Cat./Item: C-F-1/C5.11 Location: _____
Drawing No.: 3LP-222 Description: Valve 3LP-179 (forged ss) to Pipe
System ID: 53A
Component ID: 3LP-222-16 Size/Length: N/A Thickness/Diameter: 1.000 / 10.000
Limitations: Yes - See Attached Coverage Sheet Start Time: 1305 Finish Time: 1329

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH
Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125
Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32796 Surface Temp.: 70.4 °F

Cal. Report No.: CAL-07-211, CAL-07-212, CAL-07-213

Angle Used	0	45	45T	60	60RL	
Scanning dB		43.9	43.9	49.4	66.4	

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

Comments:

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 75% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Cochran, Lonnie D.	III-N	<i>[Signature]</i>	11/19/2007	<i>[Signature]</i>		11-25-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Heffron, Jason	II-N	<i>[Signature]</i>	11/19/2007	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		11/19/2007	<i>[Signature]</i>		11-27-07



Ultrasonic Indication Report

Site/Unit: Oconee / 3
 Summary No.: 03.C5.11.0050
 Workscope: ISI

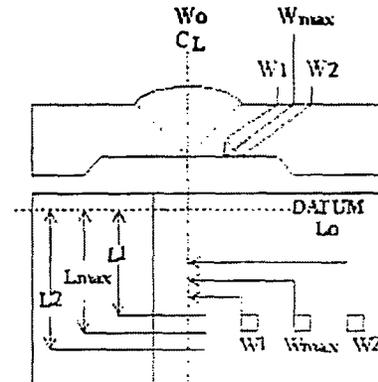
Procedure: PDI-UT-2
 Procedure Rev.: C
 Work Order No.: 01733813

Outage No.: 03-23
 Report No.: UT-07-207
 Page: 2 of 4

Search Unit Angle: 60
 Wo Location: Centerline of Weld
 Lo Location: 9.1.1.1

- Piping Welds
- Ferritic Vessels $\geq 2''T$
- Other _____

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



Comments:

Scan #	Indication No.	% Of DAC	W Max		Forward Of Max		Backward Of Max		L1 Of Max	L Max	L2 Of Max	RBR Amp.	Remarks
			W	MP	W1	MP	W2	MP					
2	1	80%	2.3	2.7	N/A	N/A	N/A	N/A	360°	0	INT.		Geometry

Examiner	Level	III-N	Signature	Date	11/19/2007	Reviewer	Signature	Date	11-25-07
Cochran, Lonnie D.			<i>[Signature]</i>			<i>[Signature]</i>			
Examiner	Level	II-N	Signature	Date	11/19/2007	Site Review	Signature	Date	
Heffron, Jason			<i>[Signature]</i>			N/A			
Other	Level	N/A	Signature	Date	11/19/2007	ANII Review	Signature	Date	11-27-07
N/A						<i>[Signature]</i>			



Supplemental Report

Report No.: UT-07-207

Page: 3 of 4

Summary No.: 03.C5.11.0050

Examiner: Cochran, Lonnie D. *LC*

Level: III-N

Reviewer: *DE Hansen*

Date: 11-25-07

Examiner: Heffron, Jason *JH*

Level: II-N

Site Review: N/A

Date: _____

Other: N/A

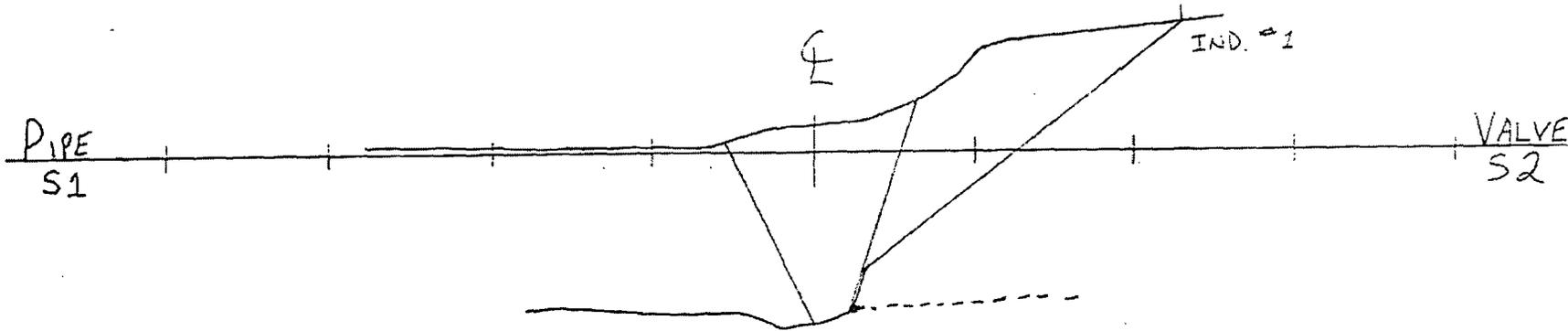
Level: N/A

ANII Review: *M. J. Pitt*

Date: 11-27-07

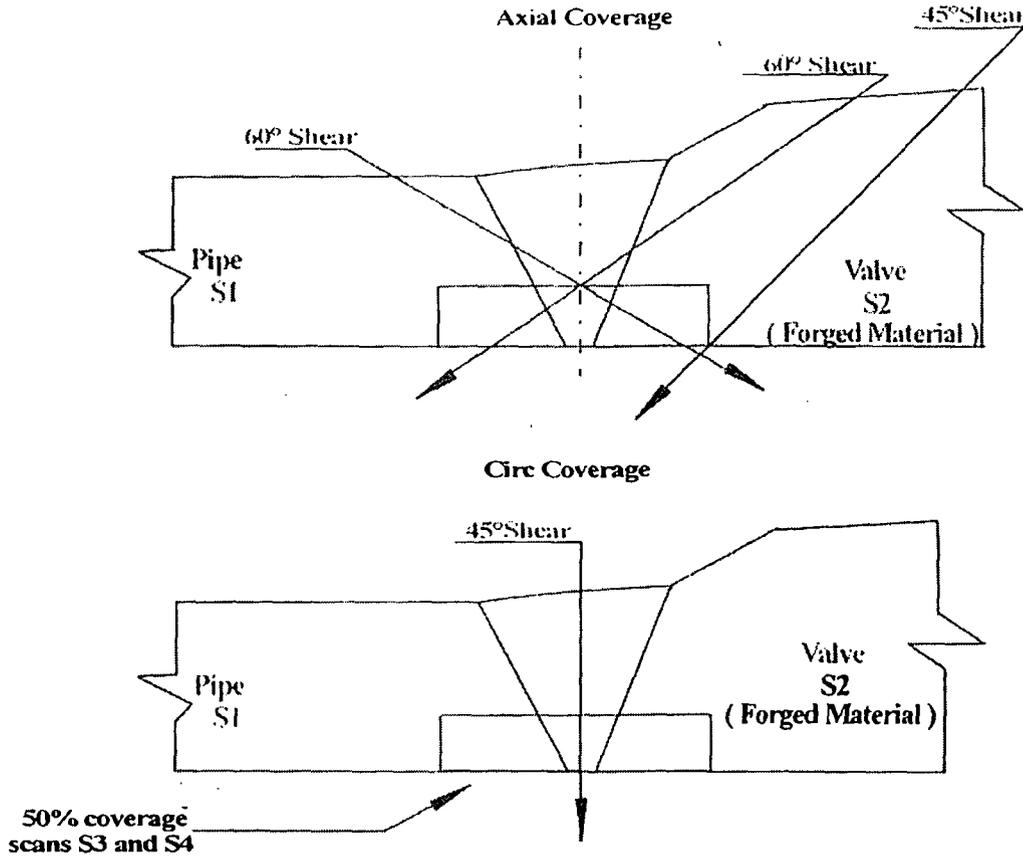
Comments: Ind. #1 - 60° - Geometrical reflector caused by beam redirection at weld interface/valve configuration. Signal does not hold up to skew. 70° produces less amplitude. Indication seen 360°. Plot of indication supports this determination.

Sketch or Photo: Z:\UT\IDEAL\ProfileLine2.jpg



Summary No.: O3.C5.11.0050

Weld No. : 3-LP-0222-16



% Coverage Calculations

S1 = Pipe	=	100%	(100% of the length x 100% of the volume)
S2 = Valve	=	100%	(100% of the length x 100% of the volume)
S3 = CW	=	50%	(100% of the length x 50% of the volume)
S4 = CCW	=	<u>50%</u>	(100% of the length x 50% of the volume)
Total	=	300 / 4 = <u>75.0 %</u>	Aggregate Coverage

Inspector / Date : L O Ch 11.19.2007 Page 4 of 4



UT Pipe Weld Examination

ATTACHMENT C
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Site/Unit: Oconee / 3
Summary No.: 03.C5.21.0019
Workscope: ISI

Procedure: NDE-600
Procedure Rev.: 17
Work Order No.: 01736153

Outage No.: 03-23
Report No.: UT-07-111
Page: 1 of 2

Code: 1998 Cat./Item: C-F-1/C5.21 Location: _____
Drawing No.: 3-51A-52 Description: Pipe to Valve 3HP-148 (forged ss)
System ID: 51A
Component ID: 3-51A-52-29 Size/Length: N/A Thickness/Diameter: 0.531 / 4.000
Limitations: Yes - See Attached Limitation Calculation Start Time: 0954 Finish Time: 1011

Examination Surface: Inside Outside Surface Condition: AS GROUND
Lo Location: 9.1.1.1 Wo Location: Weld Centerline Couplant: ULTRAGEL II Batch No.: 05125
Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27217 Surface Temp.: 106 °F

Cal. Report No.: CAL-07-129, CAL-07-130, CAL-07-131

Angle Used	0	45	45T	60	60L	
Scanning dB			50	50	60	

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

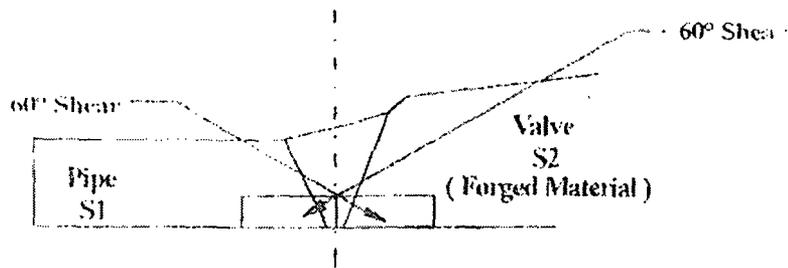
Comments:

Results: Accept Reject Info
Percent Of Coverage Obtained > 90%: No - 83.9% Reviewed Previous Data: Yes

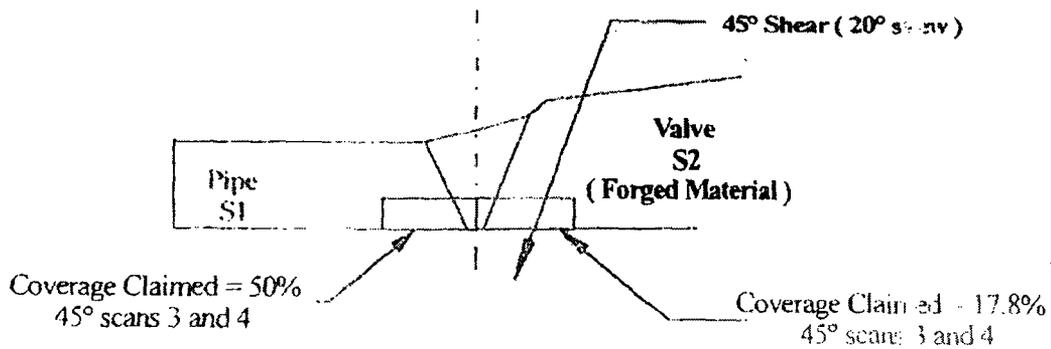
Examiner	Level	III-N	Signature	Date	Reviewer	Signature	Date
Eaton, Jay A.				8/7/2007			8/8/07
Examiner	Level	III-N	Signature	Date	Site Review	Signature	Date
Cochran, Lonnie D.				8/7/2007	N/A		
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A				8/7/2007			10/25/07

Item No. O3.CS.21.0019

Weld No. 3-51A-52-29



Axial Scans



Circ. Scans

Scale : 1" = 1"

% Coverage Calculations

PIPE	DK2		
	11/02/10		
S1 = Elbow	=	100%	(100% of the length x 100% of the volume)
S2 = Valve	=	100%	(100% of the length x 100% of the volume)
S3 = CW	=	67.8%	(100% of the length x 67.8% of the volume)
S4 = CCW	=	67.8%	(100% of the length x 67.8% of the volume)
Total	=	335.6 / 4 = 83.9 %	Aggregate Coverage

Inspector / Date : [Signature] III 3/7/07 Page 2 of 2

Handwritten note: 10/25/07



UT Pipe Weld Examination

ATTACHMENT C
PAGE 65 OF 69

Site/Unit: Oconee / 3 Procedure: NDE-600 Outage No.: 03-23
 Summary No.: 03.C5.21.0032 Procedure Rev.: 17 Report No.: UT-07-107
 Workscope: ISI Work Order No.: 01736158 Page: 1 of 3

Code: 1998 Cat./Item: C-F-1/C5.21 Location: _____
 Drawing No.: 3-51A-59 Description: Tee to Elbow
 System ID: 51A
 Component ID: 3-51A-59-87 Size/Length: N/A Thickness/Diameter: 0.674 / 4.000
 Limitations: Yes - See Attached Limitation Report Start Time: 1440 Finish Time: 1450

Examination Surface: Inside Outside Surface Condition: AS GROUND
 Lo Location: 9.1.1.1 Wo Location: Weld Centerline Couplant: ULTRAGEL II Batch No.: 05125
 Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27217 Surface Temp.: 101 °F
 Cal. Report No.: CAL-07-119, CAL-07-120, CAL-07-121

Angle Used	0	45	45T	60	38	60L
Scanning dB				50	50	70

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

Comments:

Results: Accept Reject Info
 Percent Of Coverage Obtained > 90%: No - 81.3%

Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Eaton, Jay A.	III-N		7/31/2007	Gary A. Moss		8/9/07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Jones, Russel E.	III-N		7/31/2007	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		7/31/2007			10/25/07

% Coverage Calculations

Item No. : O3.C5.21.0032

Weld No. : 3-51A-59-87

Pipe $\varnothing = 4.5"$

"t" = **0.674"**

Weld Length = **14.2"**

Limited scan on Surface 2 due to the throat of the tee for 6" of the weld length .

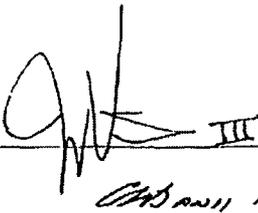
% of Length at throat of Tee = $6 / 14.2 \times 100 = 42.3\%$.

% of Length examined 100% = $100 - 42.3 = 57.7\%$.

Aggregate Coverage Calculation

S1 = Elbow	57.7 %	(57.7% of the Length x 100% of the Volume)
S1 = Elbow	<u>9.8</u> %	(42.3% of the Length x 23.1% of the Volume)
Total S1	67.5 %	
S2 = Tee	57.7 %	(57.7% of the Length x 100% of the Volume)
S2 = Tee	<u>0</u> %	(42.3% of the Length x 0% of the Volume)
Total S2	57.7 %	
S3 = CW	100 %	(100% of the Length x 100% of the Volume)
S4 = CCW	<u>100</u> %	(100% of the Length x 100% of the Volume)
Total =	$325.2 \div 4 =$	<u>81.3%</u> Aggregate Coverage

Inspector / Date:

 III 8/1/07
CWS 10/24/07

Page 2 of 3



UT Pipe Weld Examination

ATTACHMENT 2
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Site/Unit: Oconee / 3
Summary No.: 03.C5.21.0058
Workscope: ISI

Procedure: PDI-UT-2
Procedure Rev.: C
Work Order No.: 01733902

Outage No.: 03-23
Report No.: UT-07-232
Page: 1 of 2

Code: 1998 Cat./Item: C-F-1/C5.21 Location: _____
Drawing No.: 3HP-501 Description: Pipe to Reducer
System ID: 51A
Component ID: 3HP-501-23 Size/Length: N/A Thickness/Diameter: 0.344 / 2.000
Limitations: Yes - See Attached Limitation Report Start Time: 0830 Finish Time: 0845

Examination Surface: Inside Outside Surface Condition: GROUND
Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 07125

Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32800 Surface Temp.: 66 °F

Cal. Report No.: CAL-07-227, CAL-07-228

Angle Used	0	45	45T	60		
Scanning dB		45	45	50		

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

Comments:

Results: Accept Reject

Percent Of Coverage Obtained > 90%:

Info
66.7
No - 84.2%
DEC 9/15/10

Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Howard, Dean M.	II-N	<i>Dean Howard</i>	11/26/2007	<i>Dean Mors</i>		11-27-07
Examiner	Level	Signature	Date	Site Review	Signature	Date
Stauffer, Lester, E.	III-N	<i>[Signature]</i>	11/26/2007	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		11/26/2007	<i>[Signature]</i>		11-28-07

% COVERAGE CALCULATION

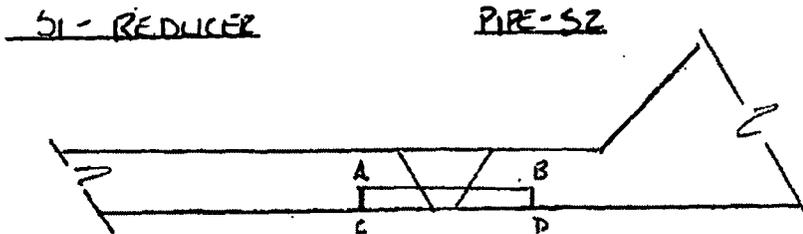
TOTAL AREA

SUMMARY No: 03.C5.21.0058

ABCD: 1.0in x 0.12in = 0.12in²

WELD No: 3HP-501-23

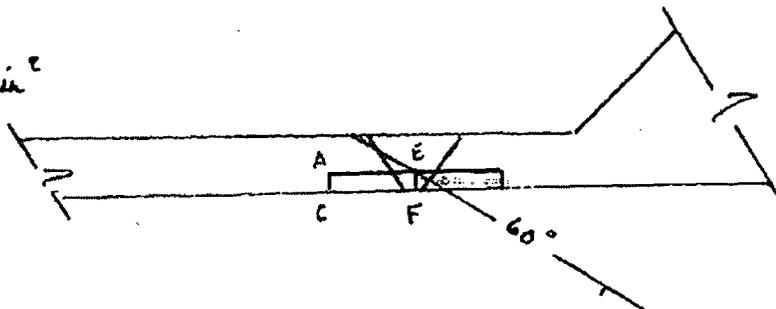
ATTACHMENT
PAGE 69 OF 69



60° AXIAL - S1

ACEF: 0.5in x 0.12in = 0.06in²

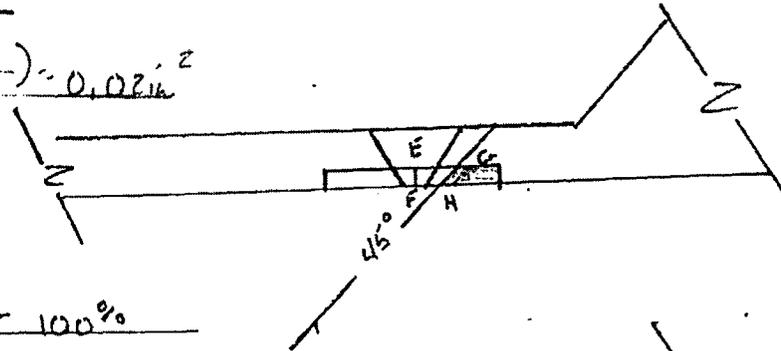
0.06in² / 0.12in² (100) = 50%



45° AXIAL - S2

EFGH: 0.12in ((-.15in + .25in) / 2) = 0.07in²

0.07in² / 0.12in² (100) = 16.7%

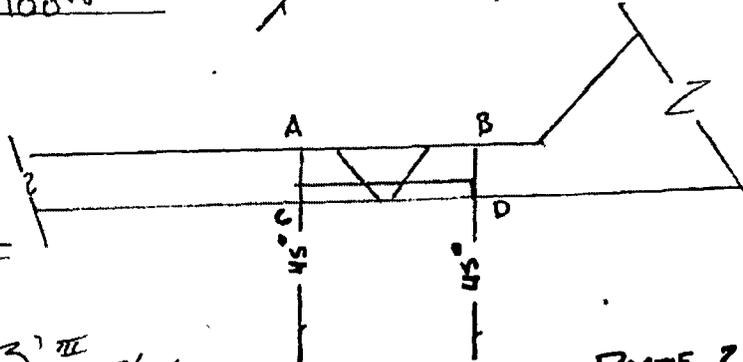


45° CIRC - CWL, CCW - 100%

TOTAL % COVERAGE

50 + 16.7 + 100 + 100 = 266.7

266.7 / 4 = 66.7%



INSPECTOR / DATE: David K. III 9/15/10

SCALE: FULL

PAGE 2 of 2