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May 16, 2008

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

Subject: Duke Energy Carolinas, LLC (Duke)
McGuire Nuclear Station, Units 1 and 2
Docket Nos. 50-369 and 50-370
Relief Request 08-MN-001

Pursuant to 10 CFR 50.55a(g)(5)(iii), Duke requests relief from some requirements of the ASME Boiler and Pressure Vessel Code, Section XI, as described in the attached Relief Request 08-MN-001.

Please direct any questions pertaining to this submittal to P. T. Vu of Regulatory Compliance at (704) 875-4302.

Sincerely,

B. H. Hamilton

Attachments

A047
NRR

U. S. Nuclear Regulatory Commission
May 16, 2008
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xc w/attachments:

L. A. Reyes, Regional Administrator
U. S. Nuclear Regulatory Commission, Region II
Sam Nunn Atlanta Federal Center
61 Forsyth St., SW, Suite 23T85
Atlanta, GA 30303

J. F. Stang, Jr., Senior Project Manager
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Mail Stop O-8 G9A
Rockville, MD 20852-2738

J. B. Brady, Senior Resident Inspector
U. S. Nuclear Regulatory Commission
McGuire Nuclear Station

**Duke Energy Corporation
McGuire Nuclear Station
Units 1 and 2
Relief Request Serial #08-MN-001**

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.

McGuire Nuclear Station - Unit 1
Third 10-Year Inservice Inspection Interval
Interval Start Date: 12-01-2001

McGuire Nuclear Station - Unit 2
Third 10-Year Inservice Inspection Interval
Interval Start Date: 3-01-2004

<u>Relief Request Section Number</u>	<u>McGuire 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	1EOC18	1PZR-10	M1.B3.110.0001	See Attachment A
3.0	2	2EOC17	2RPV-W08	M2.B1.40.0001	See Attachment B
4.0	2	2EOC17	2PZR-10	M2.B3.110.0001	See Attachment C
5.0	2	2EOC17	2PZR-12	M2.B3.110.0002	See Attachment D
6.0	2	2EOC17	2PZR-16	M2.B3.110.0006	See Attachment E

2.0 Weld #1PZR-10

2.1. ASME Code Component(s) Affected

Unit 1 Pressurizer nozzle to vessel weld, Weld #1PZR-10, Summary Number M1.B3.110.0001

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

IWB-2500, Table IWB-2500-1, Examination Category B-D, Item B3.110 requires a volumetric examination of this weld in accordance with Figure IWB-2500-7. Footnote 4 of this table requires that the examination volumes shown in Figures IWB-2500-7(a) through (d), as applicable, shall be examined.

For this weld, Figure IWB-2500-7(b) applies, and 100% of the examination volume A-B-C-D-E-F-G-H is required to be examined.

Relief is requested from the requirement that 100% of the volume identified in Figure IWB-2500-7(b) shall be examined.

2.4. Impracticality of Compliance

This is a ferritic nozzle welded into a ferritic pressure vessel. This weld is required to be examined in accordance with the requirements of ASME Section V, Article 4, 1998 Edition through the 2000 Addenda as amended by ASME Section XI, Appendix I. This requires that two ultrasonic angle beams pass through the weld in four orthogonal directions. Ultrasonic examination of the pressurizer surge nozzle to head weld was limited to 81.3% coverage because of the inability to examine the weld from four orthogonal directions. The percentage shown was calculated based on the requirement for four directional coverage (i.e., four directional coverage = 100%). Interference caused by the nozzle geometry and the location of the nozzle blend radius prevented placement of the search units on the nozzle side of the weld, preventing examination from that side. In order to achieve the required coverage, the nozzle would have to be redesigned to allow access from both sides of the weld, which is impractical. Radiography as an alternative to ultrasonic examination is also impractical because there is no access for placement of radiographic film on the I.D. of the vessel. Placing the film on the outside and exposing the source from the inside would also be impractical because of the lack of accessibility.

See Attachment A for examination data and volume examined.

2.5. Proposed Alternative and Basis for Use

None. No additional examinations are planned for this weld during the current interval because increased coverage cannot be obtained using available examination techniques.

2.6. Duration of Proposed Alternative

This request is proposed for the duration of the third inservice inspection interval, currently scheduled to end on November 30, 2011.

2.7. Justification for Granting Relief

Ultrasonic examination was performed in accordance with ASME Section V, Article 4, 1998 Edition through the 2000 Addenda as amended by ASME Section XI, Appendix I to the extent practical. Examination personnel were qualified in accordance with ASME Section XI, IWA-2300 including Appendix VII. The weld volume was scanned with 35° and 45° shear waves.

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.

2.8. Precedents

Duke Energy Corporation Relief Request Serial #98-004 was approved by NRC Safety Evaluation Report, dated August 24, 1999 for use during the Second 10-Year Interval Inservice Inspection Plan. During the second interval, volumetric examination coverage of 74.78% was obtained for this weld.

3.0 Weld #2RPV-W08

3.1. ASME Code Component(s) Affected

Unit 2 Reactor Vessel Head to Flange Weld #2RPV-W08, Summary Number M2.B1.40:0001

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

IWB-2500, Table IWB-2500-1, Examination Category B-A, Item B1.40 requires a volumetric and surface examination of the weld in accordance with Figure IWB-2500-5. Footnote 2 of this table requires that the weld examination "includes essentially 100% of the weld length". The required examination surface and volume are shown in Figure IWB-2500-5.

Relief is requested from the requirement to perform volumetric examination on the volume identified in Figure IWB-2500-5 on essentially 100% of the weld length.

Note: Relief from the requirement to perform a surface examination is not necessary for this weld because the surface examination requirement specified above was met.

3.4. Impracticality of Compliance

This is a ferritic flange welded onto a ferritic pressure vessel head. This weld is required to be examined in accordance with the requirements of ASME Section V, Article 4, 1998 Edition through the 2000 Addenda as amended by ASME Section XI, Appendix I. This requires that two ultrasonic angle beams pass through the weld in four orthogonal directions. Ultrasonic examination of the flange to head weld was limited to 82.2% coverage because of the inability to examine the weld from four orthogonal directions. The percentage shown was calculated based on the requirement for four directional coverage (i.e., four directional coverage = 100%). Interference caused by the location of the flange blend radius and the proximity of lifting lugs prevented scanning from four directions. In order to achieve the required coverage, the nozzle would have to be redesigned to allow access from both sides of the weld, which is impractical. Radiography as an alternative to ultrasonic examination is also impractical because radiography will not provide meaningful results on a component of this thickness, and because the lifting lug and the flange blend radius would have prevented imaging all of the examination volume on the film.

See Attachment B for examination data and volume examined.

3.5. Proposed Alternative and Basis for Use

None. No additional examinations are planned for this weld during the current interval because increased coverage cannot be obtained using available examination techniques.

3.6. Duration of Proposed Alternative

This request is proposed for the duration of the third inservice inspection interval, currently scheduled to end on February 28, 2014.

3.7. Justification for Granting Relief

Ultrasonic examination was performed in accordance with ASME Section V, Article 4, 1998 Edition through the 2000 Addenda as amended by ASME Section XI, Appendix I to the extent practical. Examination personnel were qualified in accordance with ASME Section XI, IWA-2300 including Appendix VII. The weld volume was scanned with 35° and 45° shear waves.

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.

3.8. Precedents

Duke Energy Corporation Relief Request Serial #98-005 was approved by NRC Safety Evaluation Report, dated November 9, 2000 for use during the Second 10-Year Interval Inservice Inspection Plan. During the second interval, volumetric examination coverage of 87.78% was obtained.

4.0 Weld #2PZR-10

4.1. ASME Code Component(s) Affected

Unit 2 Pressurizer Nozzle to Head Weld #2PZR-10, Summary Number M2.B3.110.0001

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

IWB-2500, Table IWB-2500-1, Examination Category B-D, Item B3.110 requires a volumetric examination of the weld in accordance with Figure IWB-2500-7. Footnote 4 of this table requires that the examination volumes shown in Figures IWB-2500-7(a) through (d), as applicable, shall be examined.

For this weld, Figure IWB-2500-7(b) applies, and 100% of the examination volume A-B-C-D-E-F-G-H is required to be examined.

Relief is requested from the above requirement that 100% of the volume identified in Figure IWB-2500-7(b) shall be examined.

4.4. Impracticality of Compliance

This is a ferritic nozzle welded into a ferritic pressure vessel. This weld is required to be examined in accordance with the requirements of ASME Section V, Article 4, 1998 Edition through the 2000 Addenda as amended by ASME Section XI, Appendix I. This requires that two ultrasonic angle beams pass through the weld in four orthogonal directions. Ultrasonic examination of the pressurizer surge nozzle to head weld was limited to 81.2% coverage because of the inability to examine the weld from four orthogonal directions. The percentage shown was calculated based on the requirement for four directional coverage (i.e., four directional coverage = 100%). Interference caused by the nozzle geometry and the location of the nozzle blend radius prevented placement of the search units on the nozzle side of the weld, preventing examination from that side. In order to achieve the required coverage, the nozzle would have to be redesigned to allow access from both sides of the weld, which is impractical. Radiography as an alternative to ultrasonic examination is also impractical because there is no access for placement of radiographic film on the I.D. of the vessel. Placing the film on the outside and exposing the source from the inside would also be impractical because of the lack of accessibility.

See Attachment C for examination data and volume examined.

4.5. Proposed Alternative and Basis for Use

None. No additional examinations are planned for this weld during the current interval because increased coverage cannot be obtained using available examination techniques.

4.6. Duration of Proposed Alternative

This request is proposed for the duration of the third inservice inspection interval, currently scheduled to end on February 28, 2014.

4.7. Justification for Granting Relief

Ultrasonic examination was performed in accordance with ASME Section V, Article 4, 1998 Edition through the 2000 Addenda as amended by ASME Section XI, Appendix I to the extent practical. Examination personnel were qualified in accordance with ASME Section XI, IWA-2300 including Appendix VII. The weld volume was scanned with 35° and 45° shear waves.

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.

4.8. Precedents

Duke Energy Corporation Relief Request Serial #98-005 was approved by NRC Safety Evaluation Report, dated November 9, 2000 for use during the Second 10-Year Interval Inservice Inspection Plan. During the second interval, volumetric examination coverage of 74.78% was obtained.

5.0 Weld #2PZR-12

5.1. ASME Code Component(s) Affected

Unit 2 Pressurizer Nozzle to Head Weld #2PZR-12, Summary Number M2.B3.110.0002

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

IWB-2500, Table IWB-2500-1, Examination Category B-D, Item B3.110 requires a volumetric examination of the weld in accordance with Figure IWB-2500-7. Footnote 4 of this table requires that the examination volumes shown in Figures IWB-2500-7(a) through (d), as applicable, shall be examined.

For this weld, Figure IWB-2500-7(b) applies, and 100% of the examination volume A-B-C-D-E-F-G-H is required to be examined.

Relief is requested from the above requirement that 100% of the volume identified in Figure IWB-2500-7(b) shall be examined.

5.4. Impracticality of Compliance

This is a ferritic nozzle welded into a ferritic pressure vessel. This weld is required to be examined in accordance with the requirements of ASME Section V, Article 4, 1998 Edition through the 2000 Addenda as amended by ASME Section XI, Appendix I. This requires that two ultrasonic angle beams pass through the weld in four orthogonal directions. Ultrasonic examination of the pressurizer spray nozzle to head weld was limited to 81.7% coverage because of the inability to examine the weld from four orthogonal directions. The percentage shown was calculated based on the requirement for four directional coverage (i.e., four directional coverage = 100%). Interference caused by the nozzle geometry and the location of the nozzle blend radius prevented placement of the search units on the nozzle side of the weld, preventing examination from that side. In order to achieve the required coverage, the nozzle would have to be redesigned to allow access from both sides of the weld, which is impractical. Radiography as an alternative to ultrasonic examination is also impractical because placement of radiographic film on the I.D. of the vessel would result in significant personnel exposure as well as fogging of the film. Placing the film on the outside and exposing the source from the inside would also be impractical because the attachment to the spray nozzle would interfere with the alignment of the source and the film.

See Attachment D for examination data and volume examined.

5.5. Proposed Alternative and Basis for Use

None. No additional examinations are planned for this weld during the current interval because increased coverage cannot be obtained using available examination techniques.

5.6. Duration of Proposed Alternative

This request is proposed for the duration of the third inservice inspection interval, currently scheduled to end on February 28, 2014.

5.7. Justification for Granting Relief

Ultrasonic examination was performed in accordance with ASME Section V, Article 4, 1998 Edition through the 2000 Addenda as amended by ASME Section XI, Appendix I to the extent practical. Examination personnel were qualified in accordance with ASME Section XI, IWA-2300 including Appendix VII. The weld volume was scanned with 35° and 45° shear waves.

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.

5.8. Precedents

Duke Energy Corporation Relief Request Serial #98-005 was approved by NRC Safety Evaluation Report, dated November 9, 2000 for use during the Second 10-Year Interval Inservice Inspection Plan. During the second interval, volumetric examination coverage of 71.50% was obtained.

6.0 Weld #2PZR-16

6.1. ASME Code Component(s) Affected

Unit 2 Pressurizer Nozzle to Head Weld #2PZR-16, Summary Number M2.B3.110.0006

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

IWB-2500, Table IWB-2500-1, Examination Category B-D, Item B3.110 requires a volumetric examination of the weld in accordance with Figure IWB-2500-7. Footnote 4 of this table requires that the examination volumes shown in Figures IWB-2500-7(a) through (d), as applicable, shall be examined.

For this weld, Figure IWB-2500-7(b) applies, and 100% of the examination volume A-B-C-D-E-F-G-H is required to be examined.

Relief is requested from the above requirement that 100% of the volume identified in Figure IWB-2500-7(b) shall be examined.

6.4. Impracticality of Compliance

This is a ferritic nozzle welded into a ferritic pressure vessel. This weld is required to be examined in accordance with the requirements of ASME Section V, Article 4, 1998 Edition through the 2000 Addenda as amended by ASME Section XI, Appendix I. This requires that two ultrasonic angle beams pass through the weld in four orthogonal directions. Ultrasonic examination of the pressurizer spray nozzle to head weld was limited to 81.2% coverage because of the inability to examine the weld from four orthogonal directions. The percentage shown was calculated based on the requirement for four directional coverage (i.e., four directional coverage = 100%). Interference caused by the nozzle geometry and the location of the nozzle blend radius prevented placement of the search units on the nozzle side of the weld, preventing examination from that side. In order to achieve the required coverage, the nozzle would have to be redesigned to allow access from both sides of the weld, which is impractical. Radiography as an alternative to ultrasonic examination is also impractical because placement of radiographic film on the I.D. of the vessel would result in significant personnel exposure as well as fogging of the film. Placing the film on the outside and exposing the source from the inside would also be impractical because the attachment to the spray nozzle and the distance from the manway would interfere with the alignment of the source and the film.

See Attachment E for examination data and volume examined.

6.5. Proposed Alternative and Basis for Use

None. No additional examinations are planned for this weld during the current interval because increased coverage cannot be obtained using available examination techniques.

6.6. Duration of Proposed Alternative

This request is proposed for the duration of the third inservice inspection interval, currently scheduled to end on February 28, 2014.

6.7. Justification for Granting Relief

Ultrasonic examination was performed in accordance with ASME Section V, Article 4, 1998 Edition through the 2000 Addenda as amended by ASME Section XI, Appendix I to the extent practical. Examination personnel were qualified in accordance with ASME Section XI, IWA-2300 including Appendix VII. The weld volume was scanned with 35° and 45° shear waves.

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.

6.8. Precedents

Duke Energy Corporation Relief Request Serial #99-001 was approved by NRC Safety Evaluation Report, dated November 9, 2000 for use during the Second 10-Year Interval Inservice Inspection Plan. During the second interval, volumetric examination coverage of 62.70% was obtained.

Relief Request Serial #08-MN-001

ATTACHMENT A

McGuire Unit 1

**Examination Data for Weld #1PZR-10,
Summary #M1.B3.110.0001**



UT Vessel Examination

Site/Unit: McGuire / 1 Procedure: NDE-640 Outage No.: M1-18
 Summary No.: M1.B3.110.0001 Procedure Rev.: 3 Report No.: UT-07-007
 Workscope: ISI Work Order No.: 1698799 Page: 1 of 1

Code: 1998/2000 Addenda Cat./Item: B-D/B3.110 Location: _____
 Drawing No.: MCM 1201.01-170 Description: Nozzle to Head
 System ID: NC
 Component ID: 1PZR-10 Size/Length: N/A Thickness/Diameter: 2.550 / 24.500
 Limitations: Yes - See Attached Limitation Report (To Report # UT-07-006) Start Time: 1158 Finish Time: 1210

Examination Surface: Inside Outside Surface Condition: FLUSH
 Lo Location: 9.2.3 Wo Location: Centerline of Flywheel ^{WELD of 3/22/07} Couplant: ULTRAGEL II Batch No.: 06125
 Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27220 Surface Temp.: 74 °F

Cal. Report No.: CAL-07-017

Angle Used	0	45	45T	60	60T	
Scanning dB	39.5					

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

Comments:
FC 06-04

Results: Accept Reject Info _____
 Percent Of Coverage Obtained > 90%: No - 81.2% 81.3% of m 5-15-08 Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Jones, Russel E.	III-N		3/15/2007	Jay A Eaton Level III		3/22/2007
Examiner	Level	Signature	Date	Site Review	Signature	Date
Houser, Gayle E.	II-N		3/15/2007	N/A		3/15/2007
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A		3/15/2007	Jerome Swan		4/7/07

R
 6-18-07



UT Vessel Examination

Site/Unit: McGuire / 1
 Summary No.: M1.B3.110.0001
 Workscope: ISI

Procedure: NDE-820
 Procedure Rev.: 2
 Work Order No.: 1698799

Outage No.: M1-18
 Report No.: UT-07-006
 Page: 1 of 10

Code: 1998/2000 Addenda Cat./Item: B-D/B3.110 Location: _____
 Drawing No.: MCM 1201.01-170 Description: Nozzle to Head
 System ID: NC
 Component ID: 1PZR-10 Size/Length: N/A Thickness/Diameter: 2.550 / 24.500
 Limitations: Yes - See Attached Limitation Report Start Time: 1210 Finish Time: 1321

Examination Surface: Inside Outside Surface Condition: FLUSH
 Lo Location: 9.2.3 Wo Location: Centerline of Flywheel ^{Weld of 3/22/07} Couplant: ULTRAGEL II Batch No.: 06125
 Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27220 Surface Temp.: 74 °F

Cal. Report No.: CAL-07-018, CAL-07-019, CAL-07-020

Angle Used	0	45	45T	60	60T	35
Scanning dB		68.2	68.2	71.2		63.7

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

Comments:

Additional Inspector working on 35° inspection was Ken Ellis *Ken E. Ellis*
 Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 81.2% 81.3% / 0 ⁵⁻¹⁵⁻⁰⁸ Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Jones, Russel E.	III-N	<i>[Signature]</i>	3/15/2007	Jay A Eaton Level III	<i>[Signature]</i>	3/22/2007
Examiner	Level	Signature	Date	Site Review	Signature	Date
Hatchett, Jay M.	II-N	<i>[Signature]</i>	3/15/2007	N/A		3/15/2007
Other	Level	Signature	Date	ANII Review	Signature	Date
Houser, Gayle E.	II-N	<i>[Signature]</i>	3/15/2007	Jerome Swan	<i>[Signature]</i>	4/7/07

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Pressurizer Surge Nozzle to Head % of Coverage

Item No. : M1. B3. 110.0001

Weld No. : 1PZR-10

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>
S1	35°	100
S2	35°	72.9
S1	45°	95.5
S2	45°	55.3
CW	35°	100
CW	45°	100
CCW	35°	100
CCW	45°	<u>100</u>
	Total	723.7

$$723.7 \div 8 =$$

90.5

% Coverage

Base Material Coverage

S1 & S2	35°,45°&60°	87.9
CW & CCW	45°&35°	<u>65.9</u>
	Total	153.8

$$153.8 \div 2 =$$

76.9

% Coverage

0° Scan Coverage

=

76.6

% Coverage

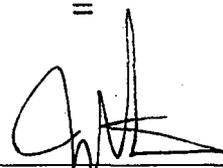
Aggregate Coverage = Weld + Base Material + 0° ÷ 3

=

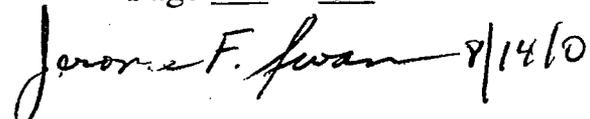
81.3

% Coverage

Inspector / Date :

 III 3/23/07
James J. McQuillen 8-6-07
David K. Z 8/6/07

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Pressurizer Surge Nozzle to Head Limitations

Item No.: MI. B3. 110. 0001

Weld No.: 1 PZR-10

The 35° and 45° scans are limited at 20 Heater Wells on the Surface 1 side. The limitation is 2" at each well for a total of 40". The total weld length is 76". See attached drawings.

% of Weld limited at Heater Wells = $40 / 76 \times 100 = 52.6\%$.

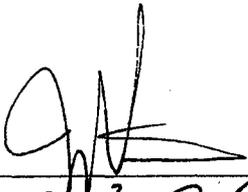
Base Metal coverage from Surface 1

At Heater Wells = 85.3% coverage for 52.6% of the weld length = 44.9%
Remainder of weld = 90.8% coverage for 47.4% of the weld length = 43.0%
Total Coverage = 87.9%

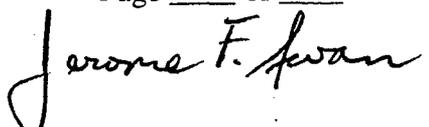
Weld coverage from Surface 1

At Heater Wells = 91.4% coverage for 52.6% of the weld length = 48.1%
Remainder of weld = 100% coverage for 47.4% of the weld length = 47.4%
Total Coverage = 95.5%

Inspector / Date:

 III 3/23/07
James J. McQuillen 8-6-07
David K. Z. 8/6/07

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 8/14/07

Pressurizer Surge Nozzle to Head

Total Area Weld & Base Material

Total Weld Area = 5.35 sq. in.

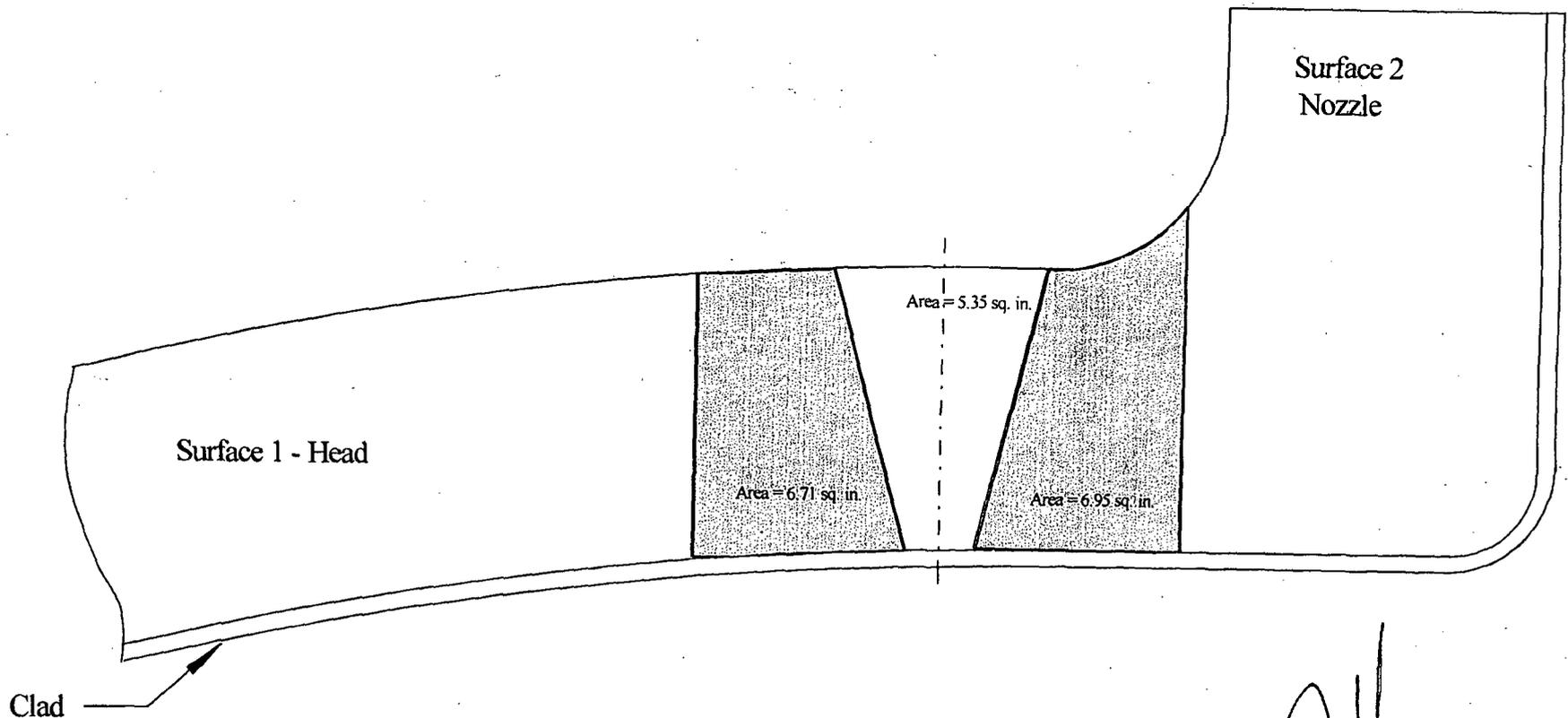
Total Area of Base Material = $6.71 + 6.95 = 13.66$ sq. in.

Total Exam Area = $6.71 + 5.35 + 6.95 = 19.01$ sq. in.

Item No. : M1.B3.110.0001

Weld No. : 1 PZR-10

Scale 1" = 2"



Inspector / Date : [Signature] III 3/23/07

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R/GW
6-18-07

Pressurizer Surge Nozzle to Head

0° Scan Coverage

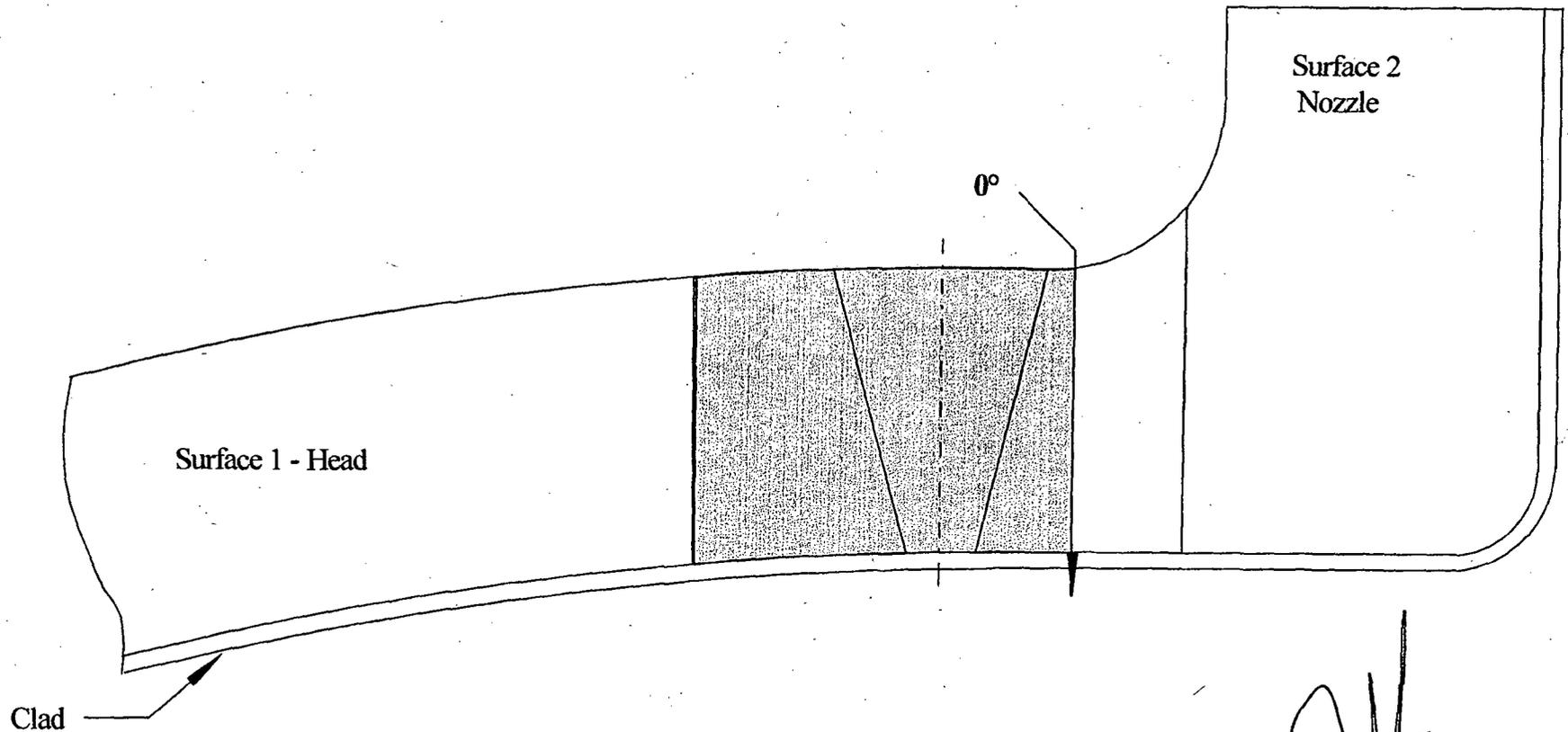
0° Scan Total Area = 14.57 sq. in.

Total 0° Scan Coverage = $14.57 / 19.01 \times 100 = 76.6\%$

Item No. : M1.B3.110.0001

Weld No. : 1PZR-10

Scale 1" = 2"



Inspector / Date : [Signature] III 3/23/07

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R/gu
6-18-07

Pressurizer Surge Nozzle to Head

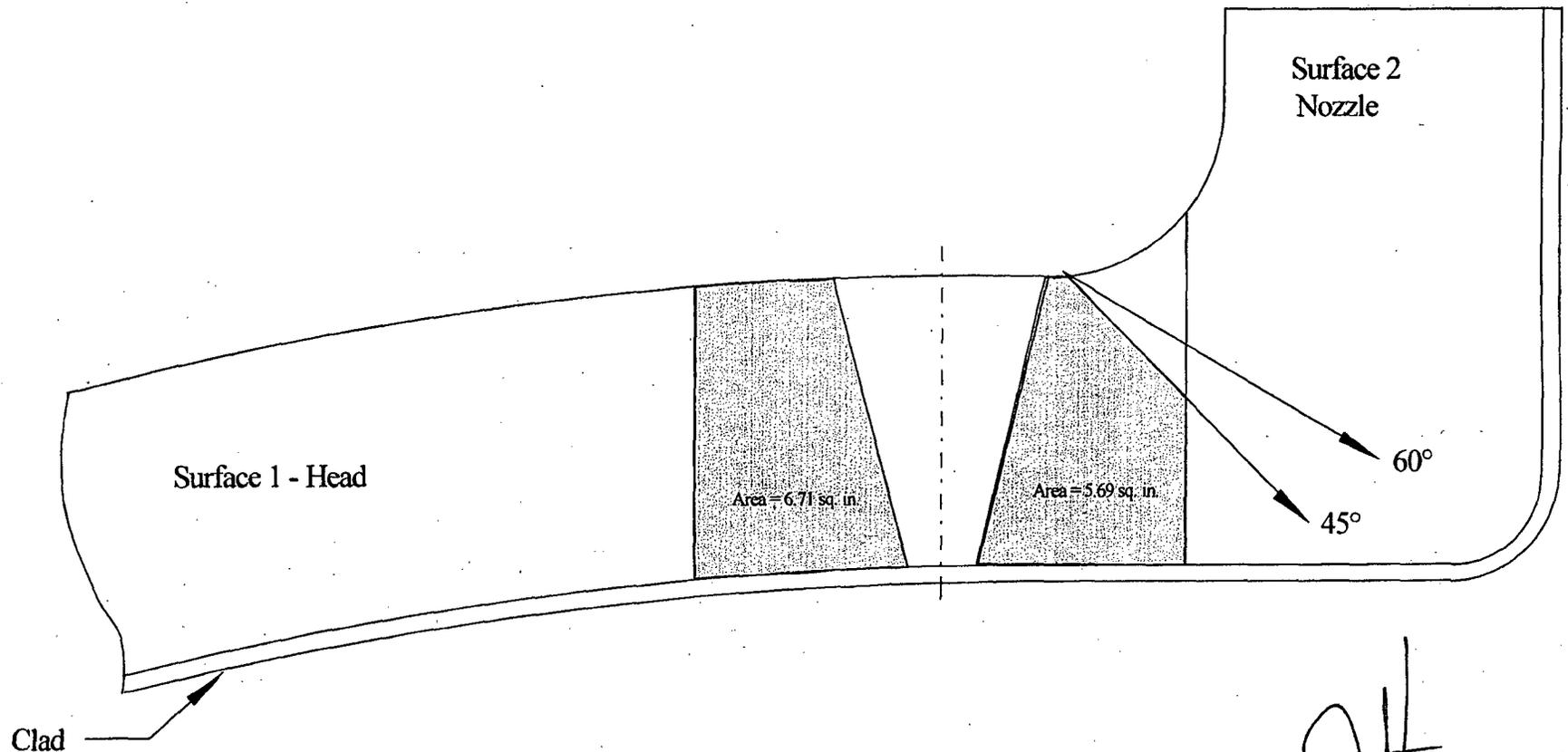
Base Metal Coverage - Axial (Areas not at Heater Wells)

Item No. : M1.B3.110.0001

Weld No. : 1PZR-10

Total Coverage with 2 angles from the same direction
= $(6.71 + 5.69) / 13.66 \times 100 = 90.8\%$

Scale 1" = 2"



Inspector / Date : glt III 3/23/07

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R/bu
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Pressurizer Surge Nozzle to Head

Base Metal Coverage - Circumferential

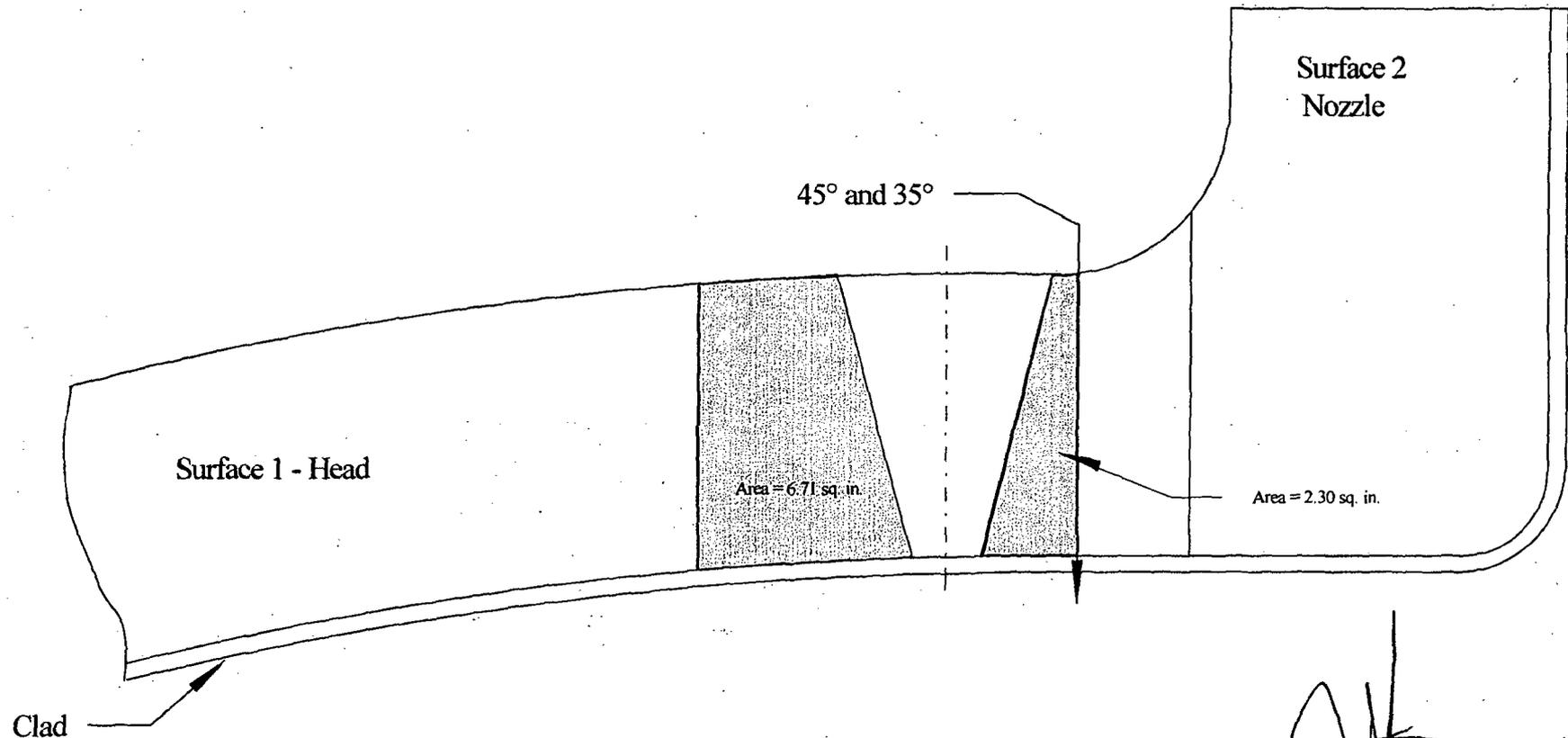
Item No. : M1.B3.110.0001

Total Coverage with 35° and 45° CW and CCW

$$= (6.71 + 2.30) / 13.66 \times 100 = 65.9\%$$

Weld No. : 1 PZR-10

Scale 1" = 2"



Inspector / Date : [Signature] III 3/23/07

Page 7 of 10

R/ku
6/18/07

Pressurizer Surge Nozzle to Head

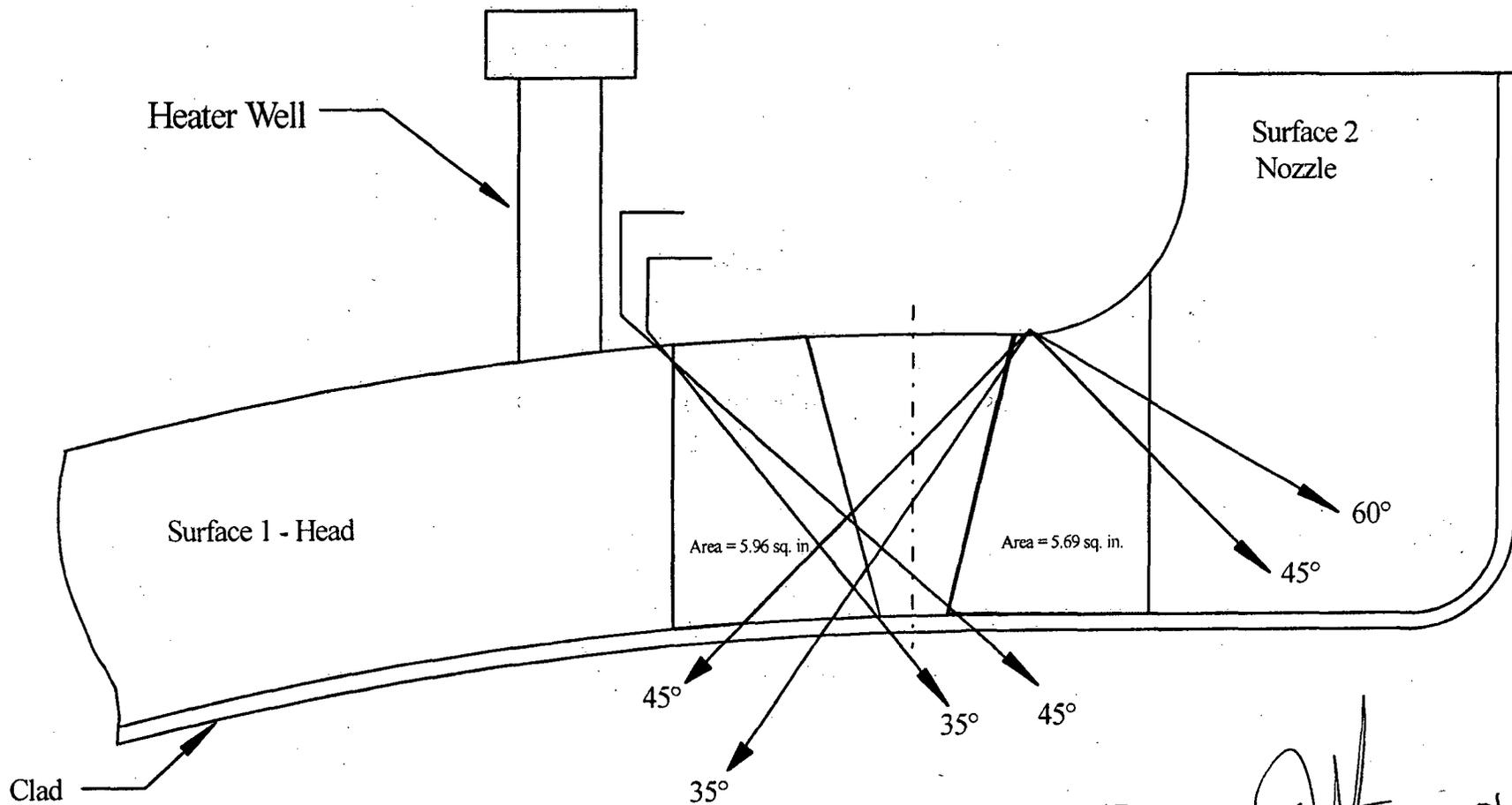
Base Metal Coverage - Axial @ Heater Wells

Total Coverage with 2 angles from the same direction or 1 angle from opposite directions = $(5.96 + 5.69) / 13.66 \times 100 = 85.3\%$

Item No. : MI. B3. 110. 0001

Weld No. : 1PER-10

Scale 1" = 2"



Inspector / Date : [Signature] III 3/23/07
7/14/07

Page 8 of 10
James F. [Signature]
8-6-07

Pressurizer Surge Nozzle to Head

Weld Coverage from Surface 1 - Axial

100% Coverage 35° Axial scan from Surface 1

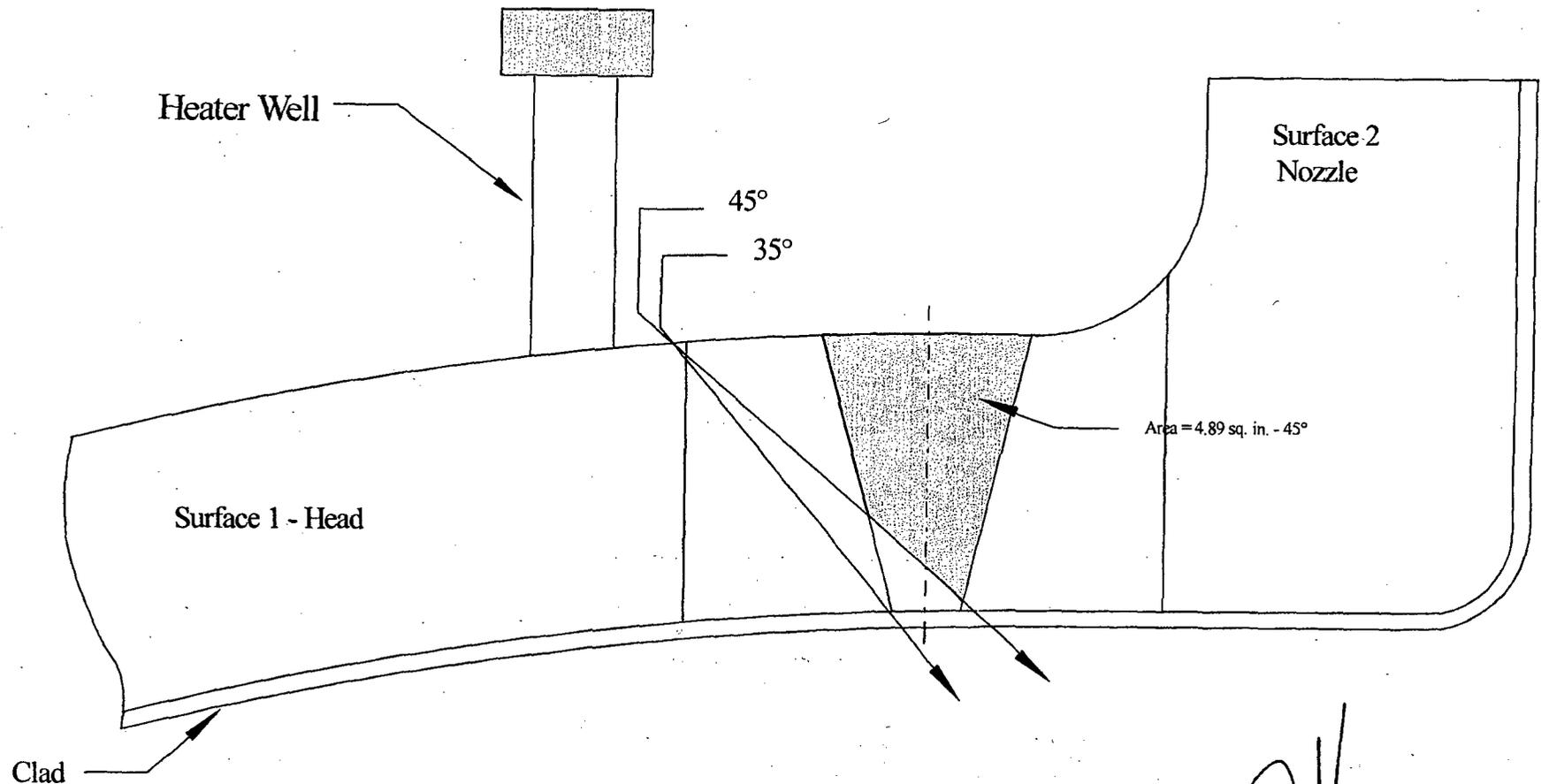
100% Coverage 45° Axial scan from Surface 1
except at Heater Well Limitation

Weld Coverage 45° Axial scan from Surface 1
@ Heater Well = $4.89 / 5.35 \times 100 = 91.4\%$

Item No. : M1. B3. 110.0001

Weld No. : 1 PZR-10

Scale 1" = 2"



Inspector / Date : gjk III 3/23/07

Page 9 of 10

R/gm
6-18-07

Pressurizer Surge Nozzle to Head

Weld Coverage from Surface 2 - Axial & Circ. Scans

100% Coverage 35° & 45° Scans CW, CCW

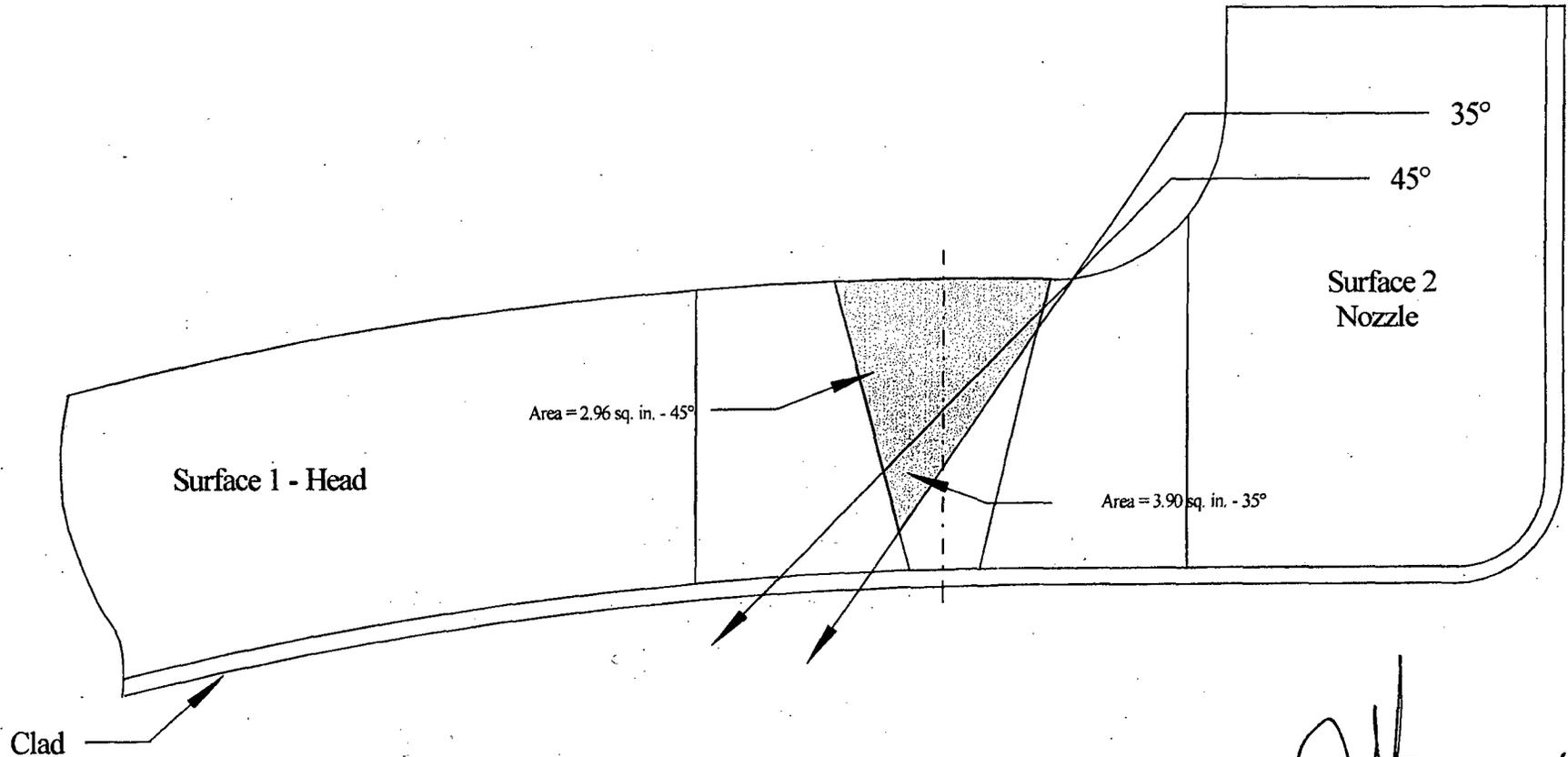
Total Weld Coverage 35° from Surface 2 = $3.90 / 5.35 \times 100 = 72.9\%$

Total Weld Coverage 45° from Surface 2 = $2.96 / 5.35 \times 100 = 55.3\%$

Item No. : MI. B3. 110. 0001

Weld No. : 1PZR-10

Scale 1" = 2"



Inspector / Date : [Signature] III 3/23/07

Page 10 of 10

R/gu
6-18-07

Relief Request Serial #08-MN-001

ATTACHMENT B

McGuire Unit 2

**Examination Data for Weld #2RPV-W08,
Summary #M2.B1.40.0001**



UT Vessel Examination

Site/Unit: McGuire / 2

Procedure: NDE-640

Outage No.: M2-17

Summary No.: M2.B1.40.0001

Procedure Rev.: 3

Report No.: UT-06-362

Workscope: ISI

Work Order No.: 580233

Page: 1 of 1

Code: 1998/2000 A Cat./Item: B-A/B1.40 Location: _____

Drawing No.: MCM 2201.01-01 Description: Head to Flange

System ID: NC

Component ID: 2RPV-W08 Size/Length: N/A Thickness/Diameter: 6.900 / 0.000

Limitations: See Limitation Calculations attached to Report No. UT-06-363 Start Time: 0012 Finish Time: 0050

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH

Lo Location: 9.2.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 06125

Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32819 Surface Temp.: 72 °F

Cal. Report No.: CAL-06-376

Angle Used	0	45	45T	60	60T	
Scanning dB	36.2					

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

Comments:

FC 06-04

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: 82.2% Reviewed Previous Data: Yes

Examiner	Level	II-N	Signature	Date	Reviewer	Signature	Date
Day, John, C.				10/5/2006	Jay A Eaton Level III		10/5/2006
Examiner	Level	N/A	Signature	Date	Site Review	Signature	Date
N/A					N/A		
Other	Level	N/A	Signature	Date	ANII Review	Signature	Date
N/A					Jerome Swan		10/16/06

R/S



UT Vessel Examination

Site/Unit: McGuire / 2

Procedure: NDE-820

Outage No.: M2-17

Summary No.: M2.B1.40.0001

Procedure Rev.: 2

Report No.: UT-06-363

Workscope: ISI

Work Order No.: 580233

Page: 1 of 5

Code: 1998/2000 A Cat./Item: B-A/B1.40 Location: _____

Drawing No.: MCM 2201.01-01 Description: Head to Flange

System ID: NC

Component ID: 2RPV-W08 Size/Length: N/A Thickness/Diameter: 6.900 / 0.000

Limitations: See Attached Limitation Calculations Start Time: 2250 Finish Time: 0010

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH

Lo Location: 9.2.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 06125

Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32819 Surface Temp.: 72 °F

Cal. Report No.: CAL-06-377, CAL-06-378

Angle Used	0	45	45T	60	60T	35/35T
Scanning dB		65.0	65.0			57.1

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

Comments:

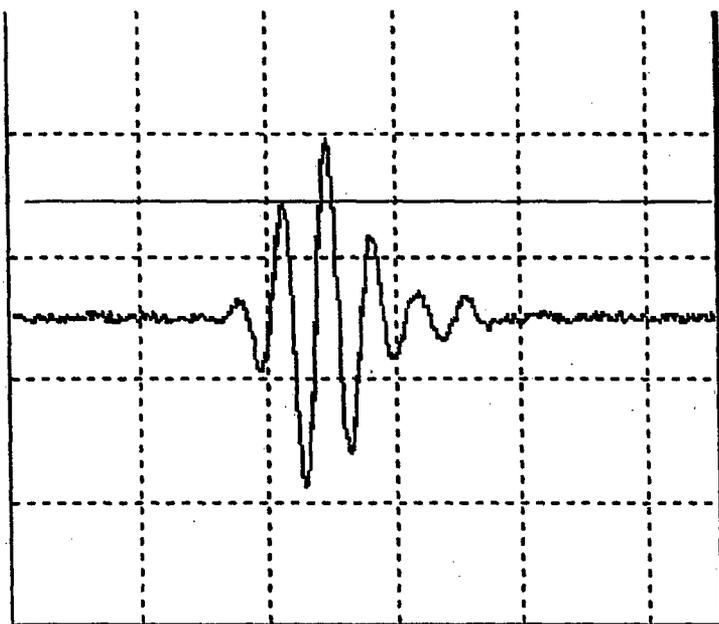
Results: Accept Reject : Info

Percent Of Coverage Obtained > 90%: 87.2% Reviewed Previous Data: Yes

Examiner Level III-N Stauffer, Lester, E.	Signature 	Date 10/4/2006	Reviewer Jay A Eaton Level III	Signature 	Date 10/5/2006
Examiner Level II-N Griebel, David M.	Signature 	Date 10/4/2006	Site Review N/A	Signature	Date
Other Level II-N Tucker, David K.	Signature	Date 10/4/2006	ANII Review Jerome Swan	Signature 	Date 10/16/06

Krautkramer

ULTRASONIC SYSTEMS



Gain	42.0 dB
Range	1.971 INCH
Mtl. Velocity	0.6271 INCH/us
Frequency	2.25 MHZ
Disp Delay	0.0000 us
Probe Delay	73.9441 us
Pulser Energy	High
Damping	1k OHM
Reject	0 %
Rectification	RF
PRF Value	940 Hz
Ascan Mode	Hollow
Dual Mode	OFF
DAC / TCG	OFF
Frz Mode	All

Range 1.971 INCH

Probe Angle	35.0
Trig X-Value	0.000 INCH
Trig Outer Diameter	Flat
Trig Thick	25.000 INCH

Reading 1	SB/	0.950 INCH
Reading 2	DA/	0.111 INCH
Reading 3	A%A	2 %
Reading 4	A%A	2 %

PC File Name	HEAD2FLG-35B
Creation Date	09/25/2006 15:12:30
Modification Date	09/25/2006 15:12:30
Instrument ID	USN60
Instr. Serial Num	00011MBT

Gate A Start	50.000 INCH
Gate A Width	5.000 INCH
Gate A Thresh	13 %

Gate B Start	0.050 INCH
Gate B Width	10.000 INCH
Gate B Thresh	39 %

Gate IF Start	N/A
Gate IF Width	N/A
Gate IF Thresh	N/A

Operator: WINFRED LEEPER

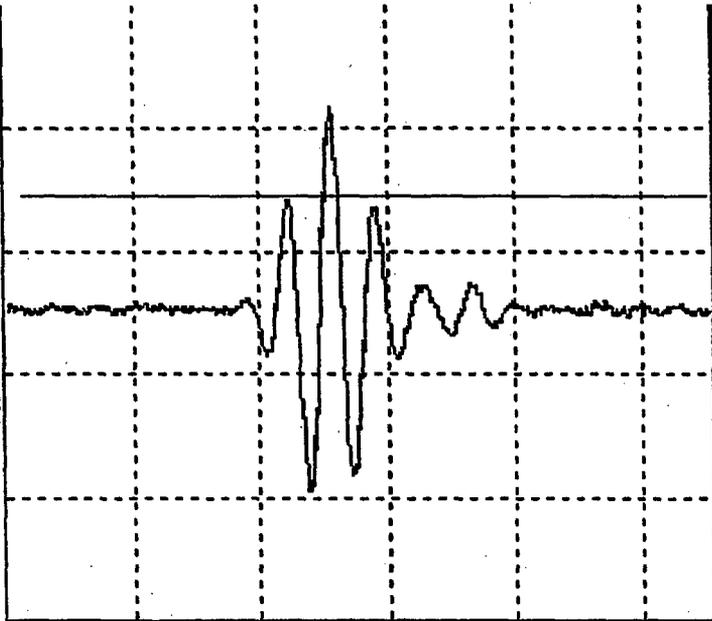
Code: M2.B1.4D.0001

Probe S/N: 007428

Cal. Block S/N: 50376

Test Comments: BEFORE EXAM

Signature: Winfred Leeper



Gain 41.5 dB
 Range 1.971 INCH
 Mtl. Velocity 0.6271 INCH/us
 Frequency 2.25 MHZ
 Disp Delay 0.0000 us
 Probe Delay 72.5359 us
 Pulser Energy High
 Damping 1k OHM
 Reject 0 %
 Rectification RF
 PRF Value 945 Hz
 Ascan Mode Hollow
 Dual Mode OFF
 DAC / TCG OFF
 Frz Mode All

Range 1.971 INCH

Probe Angle 35.0
 Trig X-Value 0.000 INCH
 Trig Outer Diameter Flat
 Trig Thick 25.000 INCH

Reading 1 SB/ | 0.987 INCH
 Reading 2 DA/ | 0.000 INCH
 Reading 3 A%A | 2 %
 Reading 4 A%A | 2 %

PC File Name HEAD2FLG35A
 Creation Date 10/05/2006 00:32:33
 Modification Date 10/05/2006 00:32:33
 Instrument ID USN60
 Instr. Serial Num 00011MBT

Gate A Start 50.000 INCH
 Gate A Width 5.000 INCH
 Gate A Thresh 13 %

Gate B Start 0.050 INCH
 Gate B Width 10.000 INCH
 Gate B Thresh 39 %

Gate IF Start N/A
 Gate IF Width N/A
 Gate IF Thresh N/A

Operator: WILFRED LEEPER

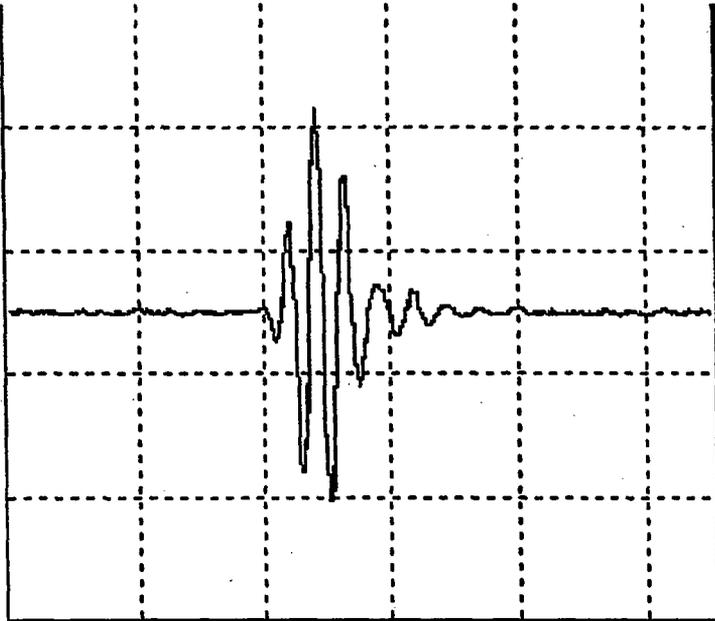
Test Comments: AFTER EXAM

Code: MZ.BI.40.0001

Probe S/N: 007428

Cal. Block S/N: 50376

Signature: Wilfred C. Leeper



Gain	50.2 dB
Range	3.000 INCH
Mtl. Velocity	0.6296 INCH/us
Frequency	2.25 MHZ
Disp Delay	0.0000 us
Probe Delay	88.8734 us
Pulser Energy	High
Damping	1k OHM
Reject	0 %
Rectification	RF
PRF Value	925 Hz
Ascan Mode	Hollow
Dual Mode	OFF
DAC / TCG	OFF
Frz Mode	All

Range 3.000 INCH

Probe Angle	35.0
Trig X-Value	0.000 INCH
Trig Outer Diameter	Flat
Trig Thick	10.000 INCH

Reading 1	SB/	4.144 INCH
Reading 2	PB/	2.377 INCH
Reading 3	A%B	1 %
Reading 4	DB/	3.394 INCH

PC File Name	HEAD2FLG-45B
Creation Date	09/25/2006 16:39:58
Modification Date	09/25/2006 16:39:58
Instrument ID	USN60
Instr. Serial Num	0000TJXY

Gate A Start	50.000 INCH
Gate A Width	5.000 INCH
Gate A Thresh	13 %

Gate B Start	3.938 INCH
Gate B Width	0.500 INCH
Gate B Thresh	23 %

Gate IF Start	N/A
Gate IF Width	N/A
Gate IF Thresh	N/A

Operator: WILFRED KEEPER

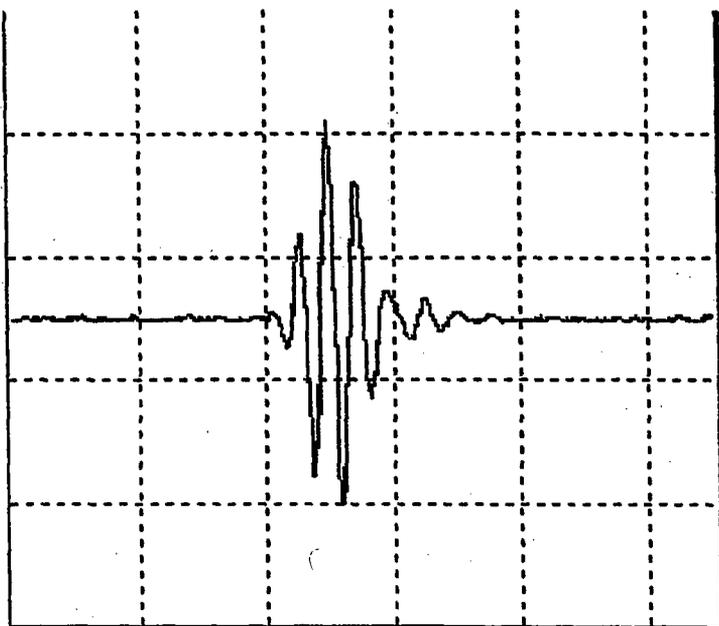
Code: M2.B1.40.0001

Probe S/N: F21874

Cal. Block S/N: 50376

Test Comments: BEFORE EXAM

Signature: Wilfred Keeper



Gain	49.5 dB
Range	3.000 INCH
Mtl. Velocity	0.6296 INCH/us
Frequency	2.25 MHZ
Disp Delay	0.0000 us
Probe Delay	89.9428 us
Pulser Energy	High
Damping	1k OHM
Reject	0 %
Rectification	RF
PRF Value	925 Hz
Ascan Mode	Hollow
Dual Mode	OFF
DAC / TCG	OFF
Frz Mode	All

Range 3.000 INCH

Probe Angle	35.0
Trig X-Value	0.000 INCH
Trig Outer Diameter	Flat
Trig Thick	10.000 INCH

Reading 1	SB/	0.000 INCH
Reading 2	PB/	0.000 INCH
Reading 3	A%B	1 %
Reading 4	DB/	0.000 INCH

PC File Name	HEAD2FLG45A
Creation Date	10/05/2006 01:43:13
Modification Date	10/05/2006 01:43:13
Instrument ID	USN60
Instr. Serial Num	0000TJXY

Gate A Start	50.000 INCH
Gate A Width	5.000 INCH
Gate A Thresh	13 %

Gate B Start	3.938 INCH
Gate B Width	0.500 INCH
Gate B Thresh	23 %

Gate IF Start	N/A
Gate IF Width	N/A
Gate IF Thresh	N/A

Operator: WILFRED LEEPER

Test Comments: AFTER EXAM

Code: MZ. B1.40.0001

Probe S/N: F21874

Cal. Block S/N: _____

Signature: Wilfred R. Leeper

DUKE POWER COMPANY

ISI LIMITATION REPORT

Component/Weld ID: <u>2RPV-W08</u>		Item No: <u>M2.B1.40.0001</u>		remarks:
<input checked="" type="checkbox"/> NO SCAN SURFACE BEAM DIRECTION <input type="checkbox"/> LIMITED SCAN <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> cw <input checked="" type="checkbox"/> ccw				Lifting Lug @ 0°
FROM L <u>539"</u> to L <u>3.0"</u>		INCHES FROM W0 <u>+1.5"</u> to <u>Beyond</u>		
ANGLE: <input checked="" type="checkbox"/> 0 <input checked="" type="checkbox"/> 45 <input type="checkbox"/> 60 other <u>35</u>		FROM _____ DEG to _____ DEG		
<input checked="" type="checkbox"/> NO SCAN SURFACE BEAM DIRECTION <input type="checkbox"/> LIMITED SCAN <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> cw <input checked="" type="checkbox"/> ccw				Lifting Lug @ 120°
FROM L <u>177"</u> to L <u>183.6"</u>		INCHES FROM W0 <u>+1.5"</u> to <u>Beyond</u>		
ANGLE: <input checked="" type="checkbox"/> 0 <input checked="" type="checkbox"/> 45 <input type="checkbox"/> 60 other <u>35</u>		FROM _____ DEG to _____ DEG		
<input checked="" type="checkbox"/> NO SCAN SURFACE BEAM DIRECTION <input type="checkbox"/> LIMITED SCAN <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input checked="" type="checkbox"/> 2 <input checked="" type="checkbox"/> cw <input checked="" type="checkbox"/> ccw				Lifting Lug @ 240°
FROM L <u>358.3"</u> to L <u>364.3"</u>		INCHES FROM W0 <u>+1.5"</u> to <u>Beyond</u>		
ANGLE: <input checked="" type="checkbox"/> 0 <input checked="" type="checkbox"/> 45 <input type="checkbox"/> 60 other <u>35</u>		FROM _____ DEG to _____ DEG		
<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				RPV Flange
FROM L _____ to L _____		INCHES FROM W0 <u>+3.0"</u> to <u>Beyond</u>		Sketch(s) attached
ANGLE: <input checked="" type="checkbox"/> 0 <input checked="" type="checkbox"/> 45 <input type="checkbox"/> 60 other <u>35</u>		FROM <u>0</u> DEG to <u>360</u> DEG		<input checked="" type="checkbox"/> yes <input type="checkbox"/> No
Prepared By: <u>Jay Eaton</u>	Level: <u>III</u>	Date: <u>10/12/2006</u>	Sheet <u>1</u> of <u>14</u>	
Reviewed By: <u>DeHouwer</u>	Date: <u>10-12-06</u>	Authorized Inspector: <u>J.F. Swan</u>	Date: <u>10/16/06</u>	

ATTACHMENT TO DT-06-363

Handwritten initials

RPV Flange to Head Aggregate % Coverage

Item No.: M2.B1.40.0001

Weld No.: 2RPV-W08

Total Weld Length = 542"

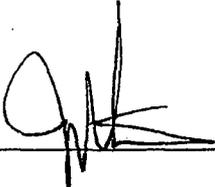
Limitation due to Lifting Lug = 6" x 3 Lugs = 18" total limitation.

% of weld length limited due to Lugs = $18 / 542 \times 100 = 3.3\%$.

Weld Coverage at Lugs = 47.1% coverage x 3.3% of the weld length = 1.6%.

Remainder of Coverage = 83.4% coverage x 96.7% of the weld length = 80.6%

Total Aggregate Coverage = 82.2%

Inspector / Date:  III 12/12/06

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ATTACHMENT TO JT-06-363

RPV Flange to Head % of Coverage

Item No. : M2.B1.40.0001

Weld No. : 2RPV-W08

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>
S1	35°	100
S2	35°	64.5
S1	45°	100
S2	45°	40.5
CW	35°	100
CW	45°	100
CCW	35°	100
CCW	45°	<u>100</u>
	Total	705

$$705 \div 8 =$$

88.1

% Coverage

Base Material Coverage

S1 & S2	35°,45°&60°	96.9
CW & CCW	45°&35°	<u>73.3</u>
	Total	170.2

$$170.2 \div 2 =$$

85.1

% Coverage

0° Scan Coverage

=

76.9

% Coverage

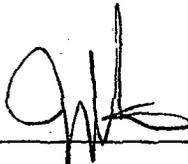
Aggregate Coverage = Weld + Base Material + 0° ÷ 3

=

83.4

% Coverage

Inspector / Date :

 III 12/12/06

Page 3 of 14

ATTACHMENT TO UT-06-363

RPV Flange to Head % of Coverage @ Lifting Lugs

Item No. : M2.B1.40.0001

Weld No. : 2RPV-W08

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>
S1	35°	24.4
S2	35°	64.5
S1	45°	15.23
S2	45°	40.4
CW	35°	100
CW	45°	100
CCW	35°	100
CCW	45°	<u>100</u>
	Total	544.53

$$544.53 \div 8 =$$

68.1

% Coverage

Base Material Coverage

S1 & S2	35°,45°&60°	38.5
CW & CCW	45°&35°	<u>29.6</u>
	Total	68.1

$$68.1 \div 2 =$$

34.05

% Coverage

0° Scan Coverage

=

39.3

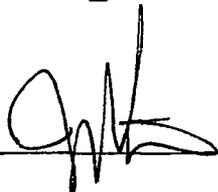
% Coverage

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

=

47.1

% Coverage

Inspector / Date :  III 12/12/06

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ATTACHMENT TO UT-06-363

Item No. : M2.B1.40.0001

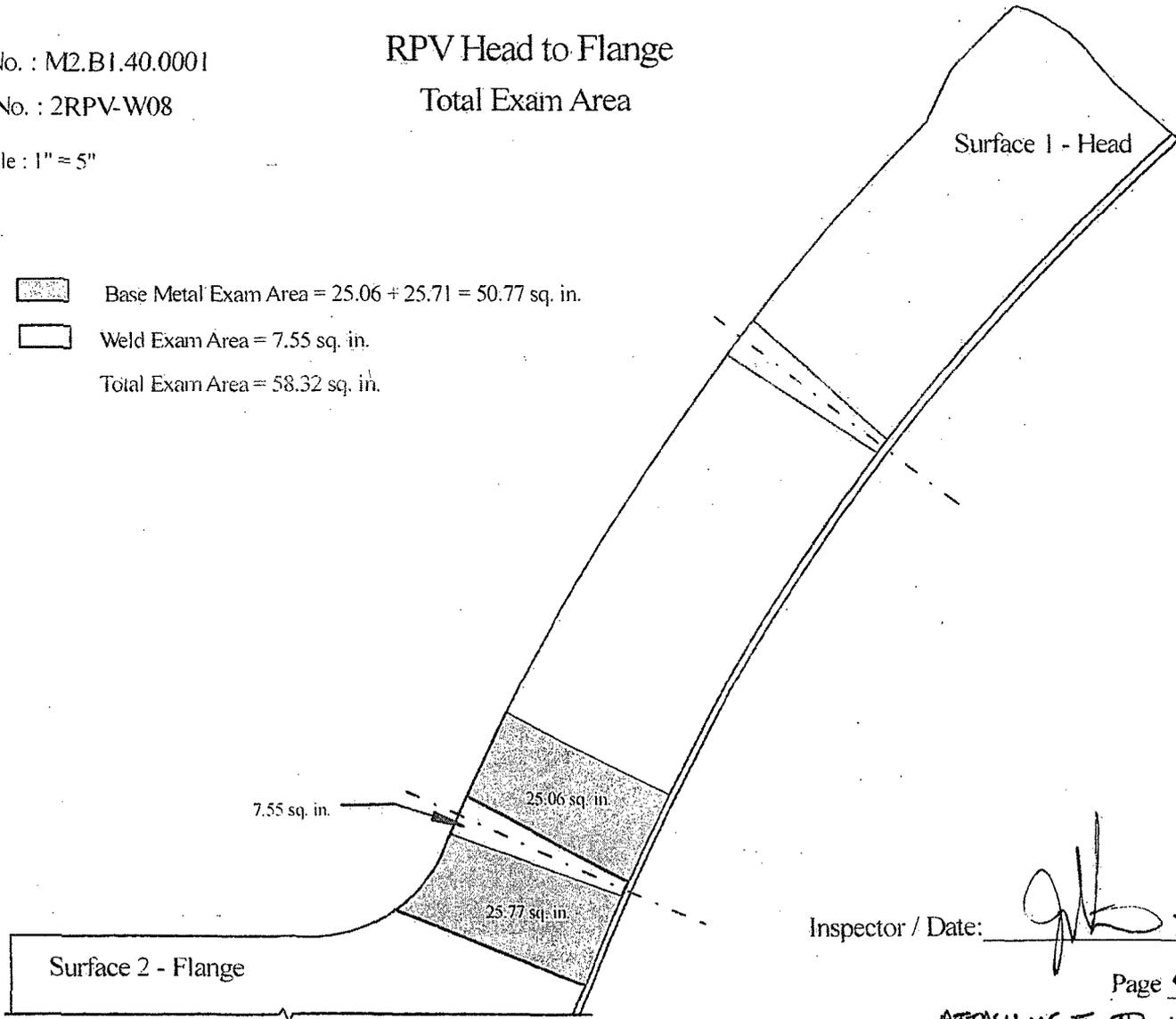
Weld No. : 2RPV-W08

RPV Head to Flange

Total Exam Area

Scale : 1" = 5"

-  Base Metal Exam Area = $25.06 + 25.71 = 50.77$ sq. in.
-  Weld Exam Area = 7.55 sq. in.
- Total Exam Area = 58.32 sq. in.



Inspector / Date:

[Signature] III 12/12/06

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ATTACHMENT TO UT-06-363

Item No. : M2.B1.40.0001

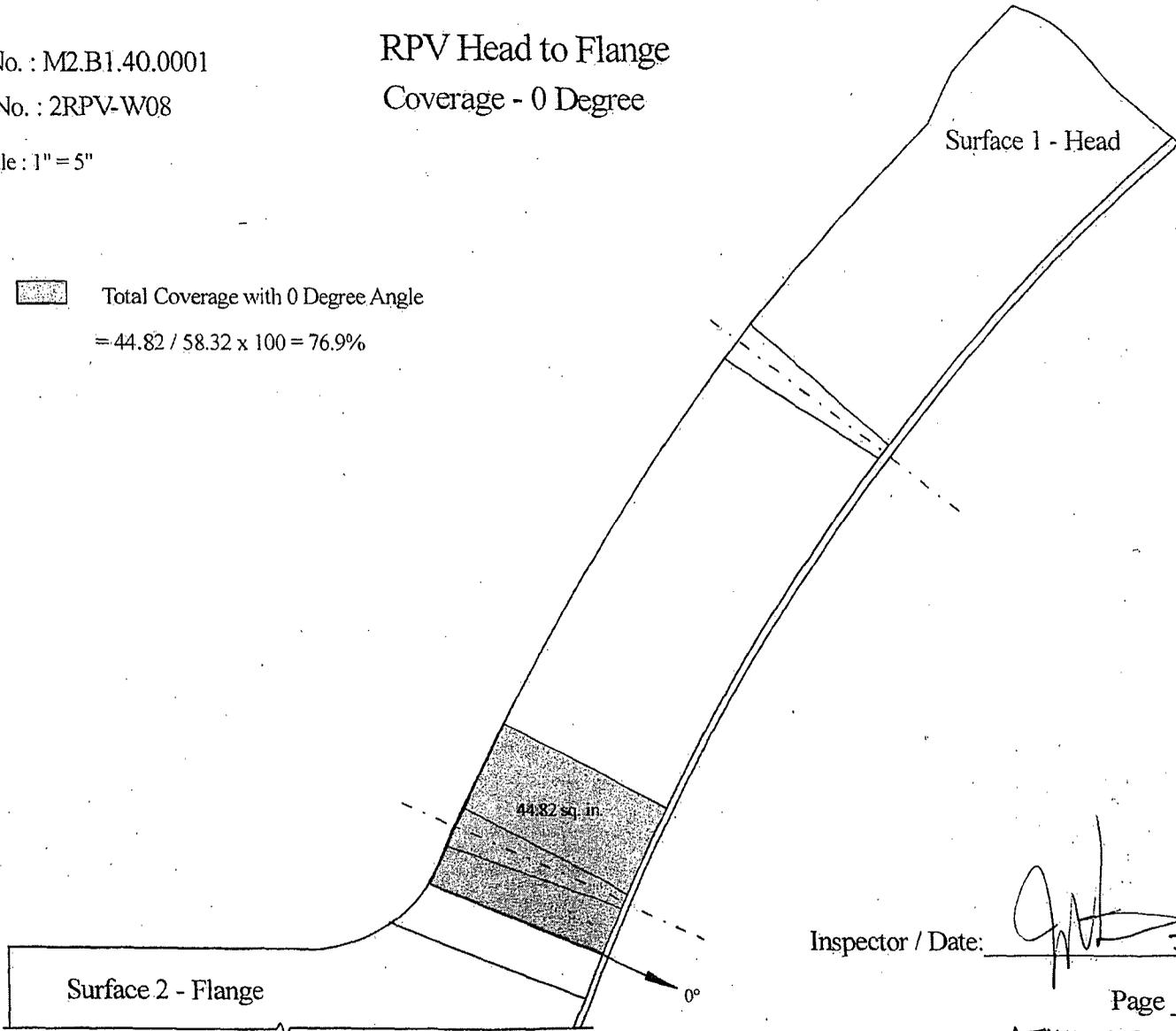
Weld No. : 2RPV-W08

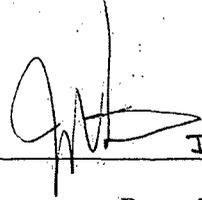
Scale : 1" = 5"

RPV Head to Flange

Coverage - 0 Degree

 Total Coverage with 0 Degree Angle
= $44.82 / 58.32 \times 100 = 76.9\%$



Inspector / Date:  III 12/12/06

Page 6 of 14

ATTACHMENT TO UT-06-363

Item No. : M2.B1.40.0001

RPV Head to Flange

Weld No. : 2RPV-W08

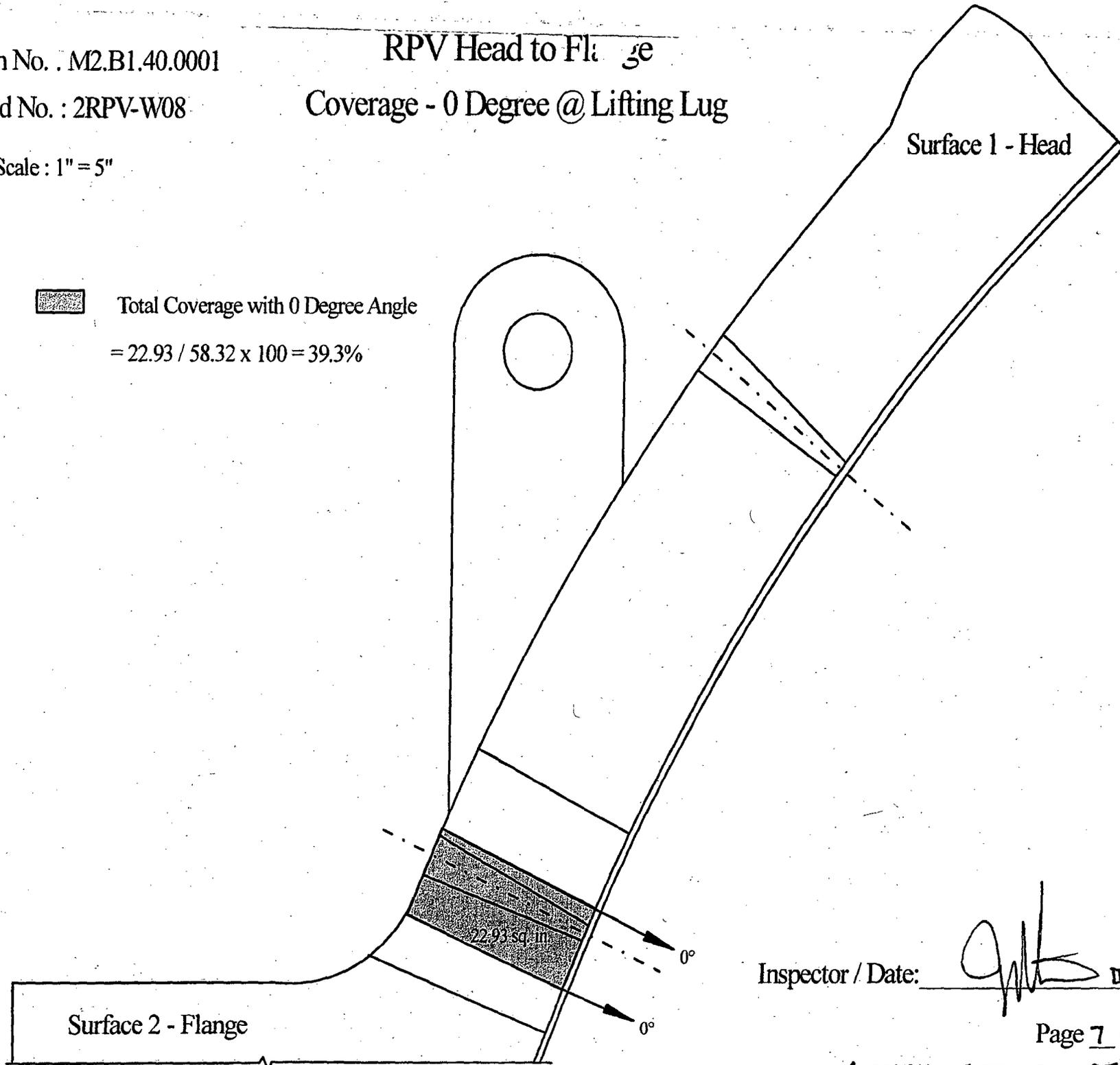
Coverage - 0 Degree @ Lifting Lug

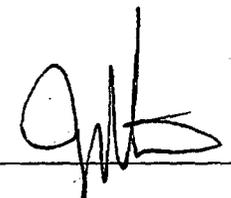
Scale : 1" = 5"



Total Coverage with 0 Degree Angle

$$= 22.93 / 58.32 \times 100 = 39.3\%$$



Inspector / Date:  12/12/06

Page 7 of 14

ATTACHMENT TO JT-OL-363

Item No. : M2.B1.40.0001

Weld No. : 2RPV-W08

RPV Head to Flange Weld Coverage - Axial Scans

Scale : 1" = 5"

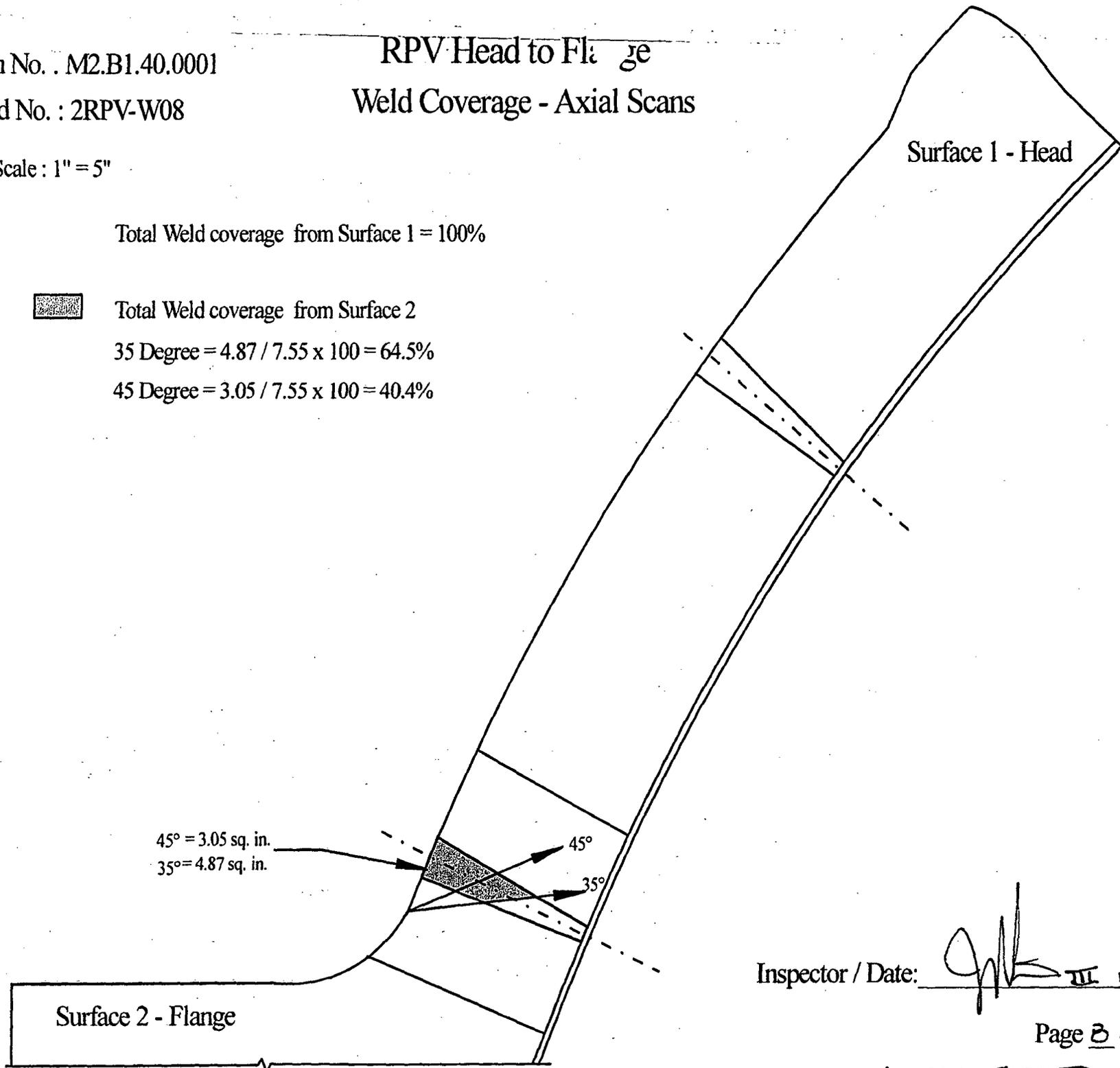
Total Weld coverage from Surface 1 = 100%

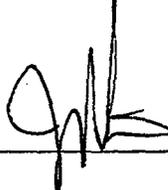


Total Weld coverage from Surface 2

35 Degree = $4.87 / 7.55 \times 100 = 64.5\%$

45 Degree = $3.05 / 7.55 \times 100 = 40.4\%$



Inspector / Date:  III 12/12/06

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ATTACHMENT TO UT-06-363

Item No. : M2.B1.40.0001

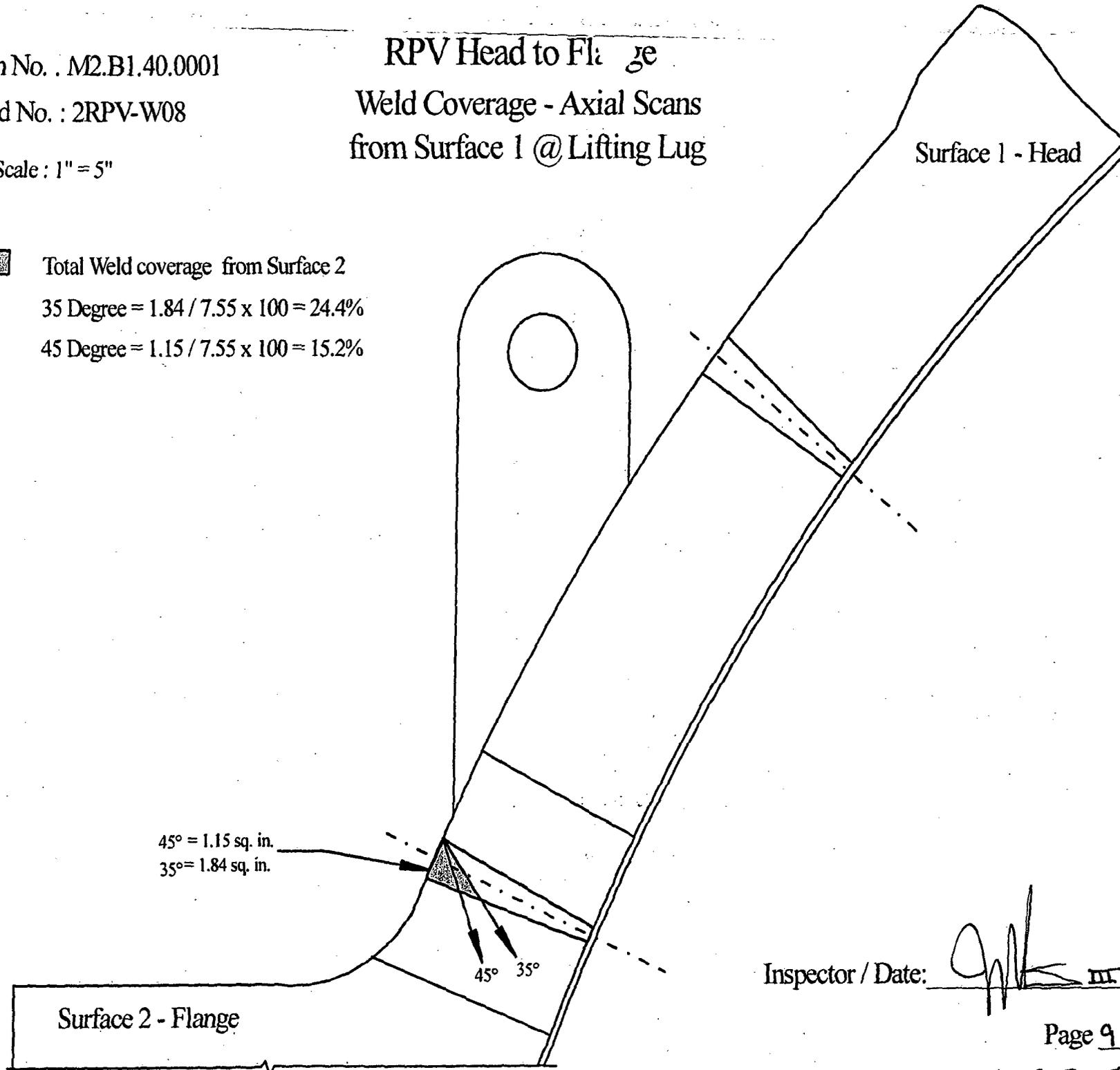
Weld No. : 2RPV-W08

Scale : 1" = 5"

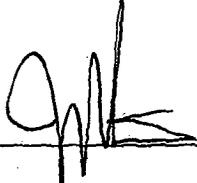
RPV Head to Flange

Weld Coverage - Axial Scans from Surface 1 @ Lifting Lug

 Total Weld coverage from Surface 2
35 Degree = $1.84 / 7.55 \times 100 = 24.4\%$
45 Degree = $1.15 / 7.55 \times 100 = 15.2\%$



Inspector / Date:

 III 12/12/06

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ATTACHMENT TO UT-06-363

Item No. : M2.B1.40.0001

Weld No. : 2RPV-W08

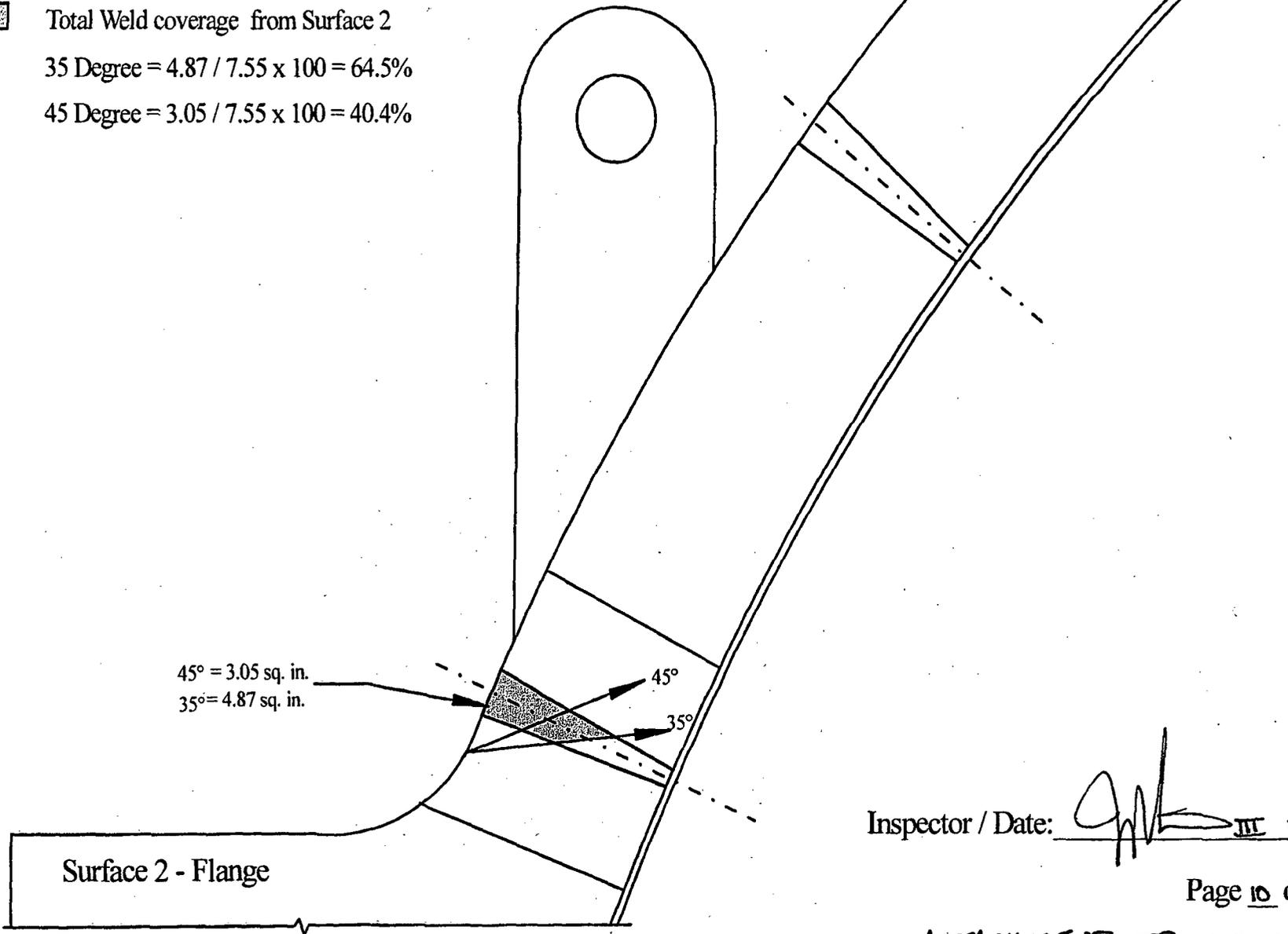
Scale : 1" = 5"

RPV Head to Flange

Weld Coverage - Axial Scans from Surface 2 @ Lifting Lug

Surface 1 - Head

 Total Weld coverage from Surface 2
 35 Degree = $4.87 / 7.55 \times 100 = 64.5\%$
 45 Degree = $3.05 / 7.55 \times 100 = 40.4\%$



Inspector / Date:  III 12/12/06

Item No. : M2.B1.40.0001

Weld No. : 2RPV-W08

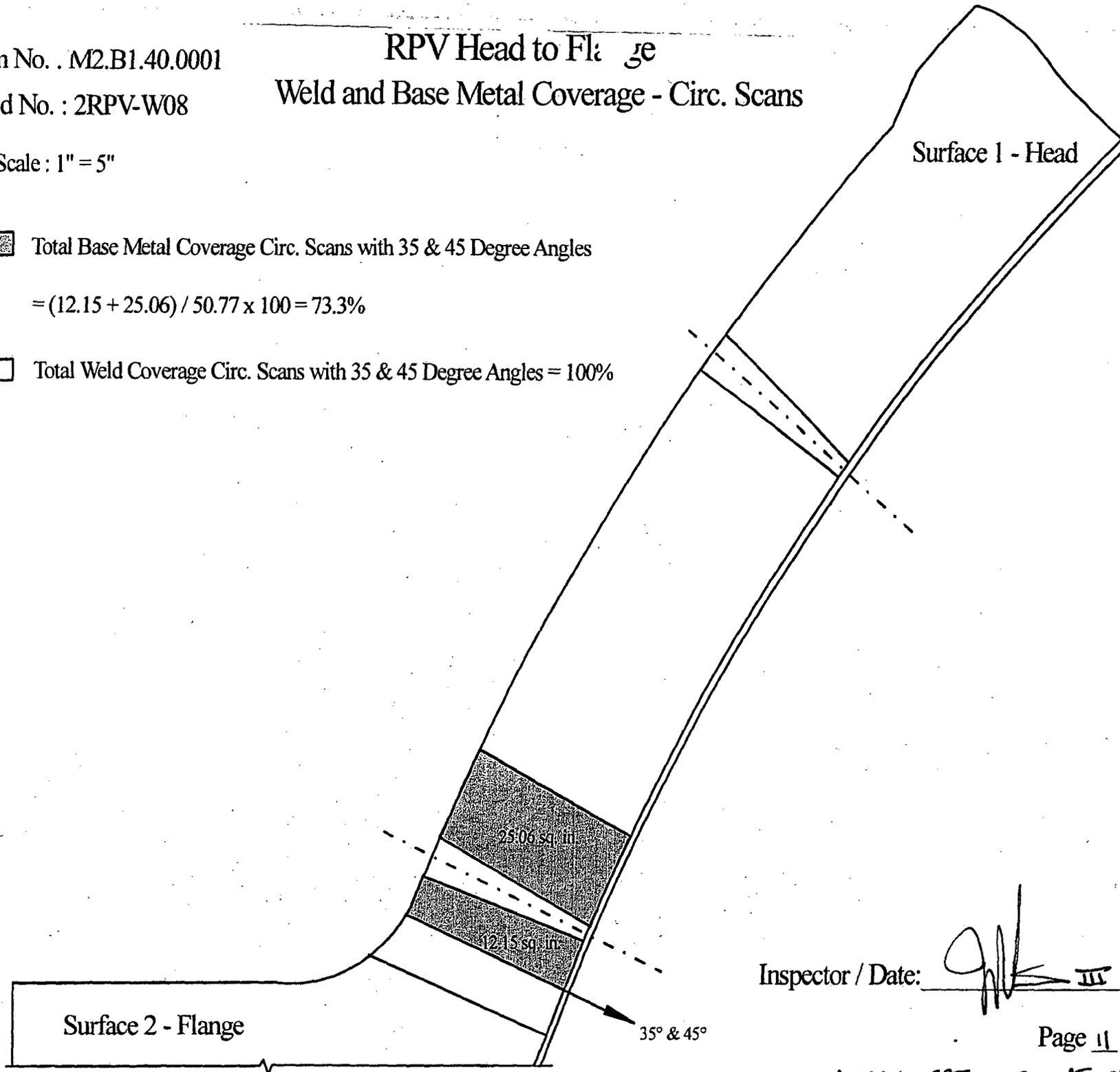
RPV Head to Flange Weld and Base Metal Coverage - Circ. Scans

Scale : 1" = 5"

 Total Base Metal Coverage Circ. Scans with 35 & 45 Degree Angles

$$= (12.15 + 25.06) / 50.77 \times 100 = 73.3\%$$

 Total Weld Coverage Circ. Scans with 35 & 45 Degree Angles = 100%



Inspector / Date:  III 12/12/06

Item No. : M2.B1.40.0001

RPV Head to Flange

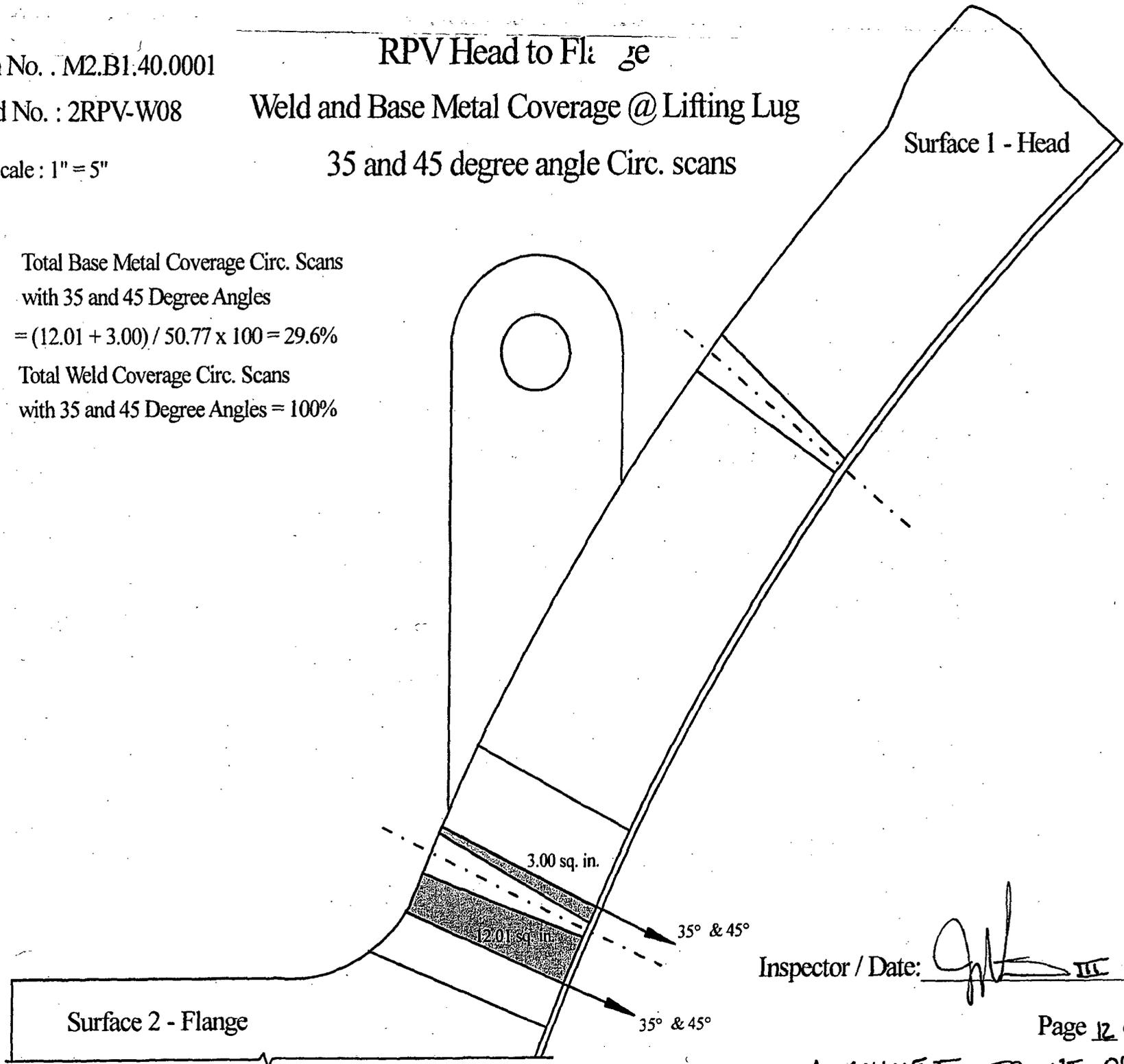
Weld No. : 2RPV-W08

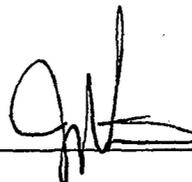
Weld and Base Metal Coverage @ Lifting Lug

Scale : 1" = 5"

35 and 45 degree angle Circ. scans

-  Total Base Metal Coverage Circ. Scans with 35 and 45 Degree Angles
= $(12.01 + 3.00) / 50.77 \times 100 = 29.6\%$
-  Total Weld Coverage Circ. Scans with 35 and 45 Degree Angles = 100%



Inspector / Date:  III 12/12/06

Item No. . M2.B1.40.0001

Weld No. : 1RPV-W08

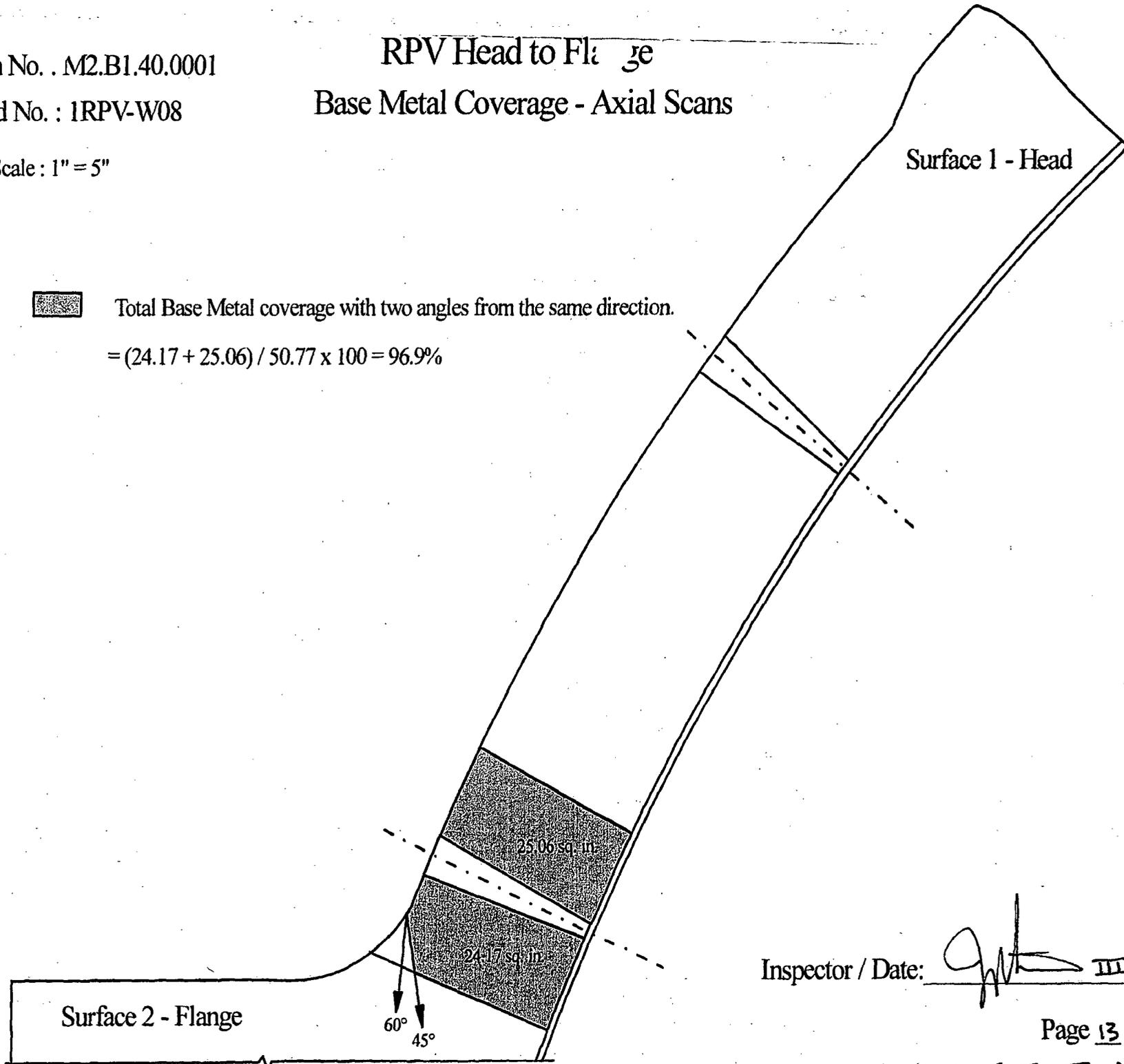
Scale : 1" = 5"

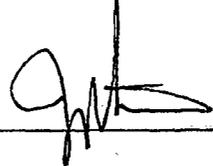
RPV Head to Flange

Base Metal Coverage - Axial Scans

 Total Base Metal coverage with two angles from the same direction.

$$= (24.17 + 25.06) / 50.77 \times 100 = 96.9\%$$



Inspector / Date:  III 12/12/06

Item No. : M2.B1.40.0001

Weld No. : 2RPV-W08

Scale : 1" = 5"

RPV Head to Flange

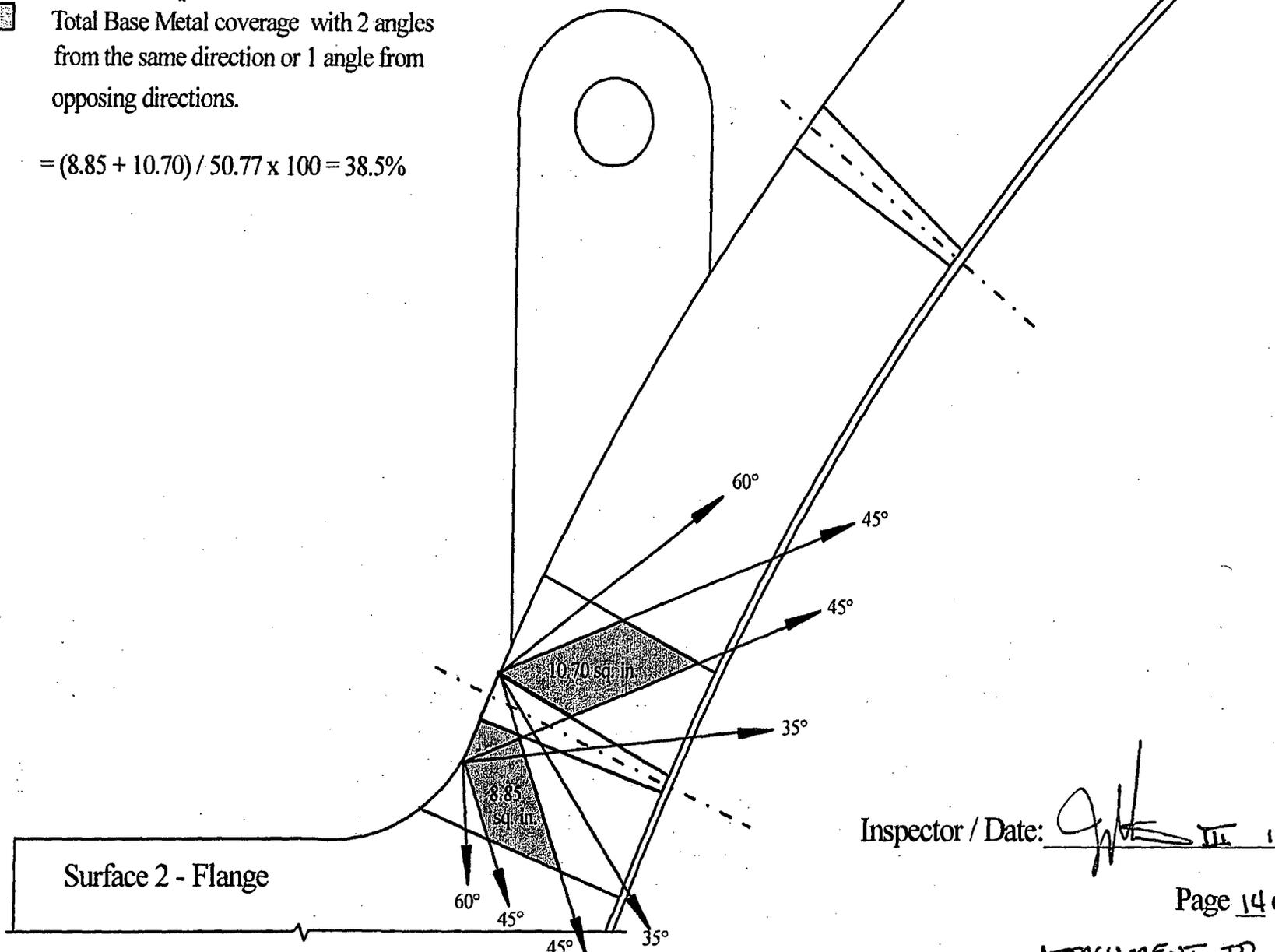
Base Metal Coverage - Axial Scans

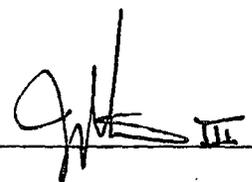
@ Lifting Lug

Surface 1 - Head

 Total Base Metal coverage with 2 angles from the same direction or 1 angle from opposing directions.

$$= (8.85 + 10.70) / 50.77 \times 100 = 38.5\%$$



Inspector / Date:  III 12/12/06

Relief Request Serial #08-MN-001

ATTACHMENT C

McGuire Unit 2

**Examination Data for Weld #2PZR-10,
Summary #M2.B3.110.0001**



UT Vessel Examination

Site/Unit: McGuire / 2

Procedure: NDE-640

Outage No.: M2-17

Summary No.: M2.B3.110.0001

Procedure Rev.: 3

Report No.: UT-06-288

Workscope: ISI

Work Order No.: 580234

Page: 1 of 1

Code: 1998/2000 A Cat./Item: B-D/B3.110 Location: _____

Drawing No.: MCM 2201.01-015 Description: Nozzle To Head

System ID: NC

Component ID: 2PZR-10 Size/Length: N/A Thickness/Diameter: 2.550 / 24.500

Limitations: Yes - See attached Limitation Report (TO REPORT # UT-06-290) Start Time: 1050 Finish Time: 1058

Examination Surface: Inside Outside Surface Condition: FLUSH

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

Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32819 Surface Temp.: 82 °F

Cal. Report No.: CAL-06-336

Angle Used	0	45	45T	60	60T	
Scanning dB	39.5					

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

Comments:
FC 06-04

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No 81.2% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Resor, James H.	II	<i>[Signature]</i>	9/23/2006	Jay A Eaton Level III	<i>[Signature]</i>	9/26/2006
Examiner	Level	Signature	Date	Site Review	Signature	Date
Matteson, Mary F.	II-N	<i>[Signature]</i>	9/23/2006	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Jerome Swan	<i>[Signature]</i>	9/29/06

Rev 11-11 etc



UT Vessel Examination

Site/Unit: McGuire / 2

Procedure: NDE-820

Outage No.: M2-17

Summary No.: M2.B3.110.0001

Procedure Rev.: 2

Report No.: UT-06-289

Workscope: ISI

Work Order No.: 580234

Page: 1 of 1

Code: 1998/2000 A Cat./Item: B-D/B3.110 Location: _____

Drawing No.: MCM 2201.01-015 Description: Nozzle To Head

System ID: NC

Component ID: 2PZR-10 Size/Length: N/A Thickness/Diameter: 2.550 / 24.500

Limitations: Yes - See attached Limitation Report (TO REPORT # UT-06-290) Start Time: 1115 Finish Time: 1118

Examination Surface: Inside Outside Surface Condition: FLUSH

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

Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32819 Surface Temp.: 82 °F

Cal. Report No.: CAL-06-337

Angle Used	0	45	45T	60	60T	35
Scanning dB						57.1

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

Comments:

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 81.2% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Jones, Russel E.	II		9/23/2006	Jay A Eaton Level III		9/26/2006
Examiner	Level	Signature	Date	Site Review	Signature	Date
Brown, Thomas	II-N		9/23/2006	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Jerome Swan		9/29/06

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11-11-06



UT Vessel Examination

Site/Unit: McGuire / 2

Procedure: NDE-820

Outage No.: M2-17

Summary No.: M2.B3.110.0001

Procedure Rev.: 2

Report No.: UT-06-290

Workscope: ISI

Work Order No.: 580324

Page: 1 of 10

Code: 1998/2000 A Cat./Item: B-D/B3.110 Location: _____

Drawing No.: MCM 2201.01-015 Description: Nozzle To Head

System ID: NC

Component ID: 2PZR-10 Size/Length: N/A Thickness/Diameter: 2.550 / 24.500

Limitations: Yes - See attached Limitation Report Start Time: 1119 Finish Time: 1124

Examination Surface: Inside Outside Surface Condition: FLUSH

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

Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32819 Surface Temp.: 82 °F

Cal. Report No.: CAL-06-338

Angle Used	0	45	45T	60	60T	
Scanning dB		62.5	62.5			

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

Comments:

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 81.2% Reviewed Previous Data: Yes

Examiner	Level II	Signature	Date	Reviewer	Signature	Date
Jones, Russel E.			9/23/2006	Jay A Eaton Level III		9/26/2006
Examiner	Level II-N	Signature	Date	Site Review	Signature	Date
Brown, Thomas			9/23/2006	N/A		
Other	Level N/A	Signature	Date	ANII Review	Signature	Date
N/A				Jerome Swan		9/29/06

11/1/06

Pressurizer Surge Nozzle to Head % of Coverage

Item No. : MZ.B3.110.0001

Weld No. : ZPZR-10

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>
S1	35°	100
S2	35°	72.9
S1	45°	95.5
S2	45°	55.3
CW	35°	100
CW	45°	100
CCW	35°	100
CCW	45°	<u>100</u>
	Total	723.7

$723.7 \div 8 =$ 90.5 % Coverage

Base Material Coverage

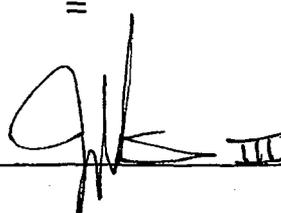
S1 & S2	35°,45°&60°	86.9
CW & CCW	45°&35°	<u>65.9</u>
	Total	152.8

$152.8 \div 2 =$ 76.4 % Coverage

0° Scan Coverage = 76.6 % Coverage

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

= 81.2 % Coverage

Inspector / Date :  III 9/26/06

Page 2 of 10

Pressurizer Surge Nozzle to Head Limitations

Item No.: MZ.B3.110.0001

Weld No.: ZPZR-10

The 35° and 45° scans are limited at 20 Heater Wells on the Surface 1 side. The limitation is 2" at each well for a total of 40". The total weld length is 76". See attached drawings.

% of Weld limited at Heater Wells = $40 / 76 \times 100 = 52.6\%$.

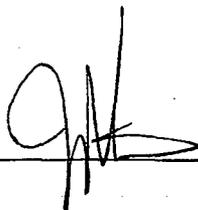
Base Metal coverage from Surface 1

At Heater Wells = 83.4% coverage for 52.6% of the weld length = 43.9%
Remainder of weld = 90.8% coverage for 47.4% of the weld length = 43.0%
Total Coverage = 86.9%

Weld coverage from Surface 1

At Heater Wells = 91.4% coverage for 52.6% of the weld length = 48.1%
Remainder of weld = 100% coverage for 47.4% of the weld length = 47.4%
Total Coverage = 95.5%

Inspector / Date:

 III 9/26/06

Page 3 of 10

Pressurizer Surge Nozzle to Head

Total Area Weld & Base Material

Total Weld Area = 5.35 sq. in.

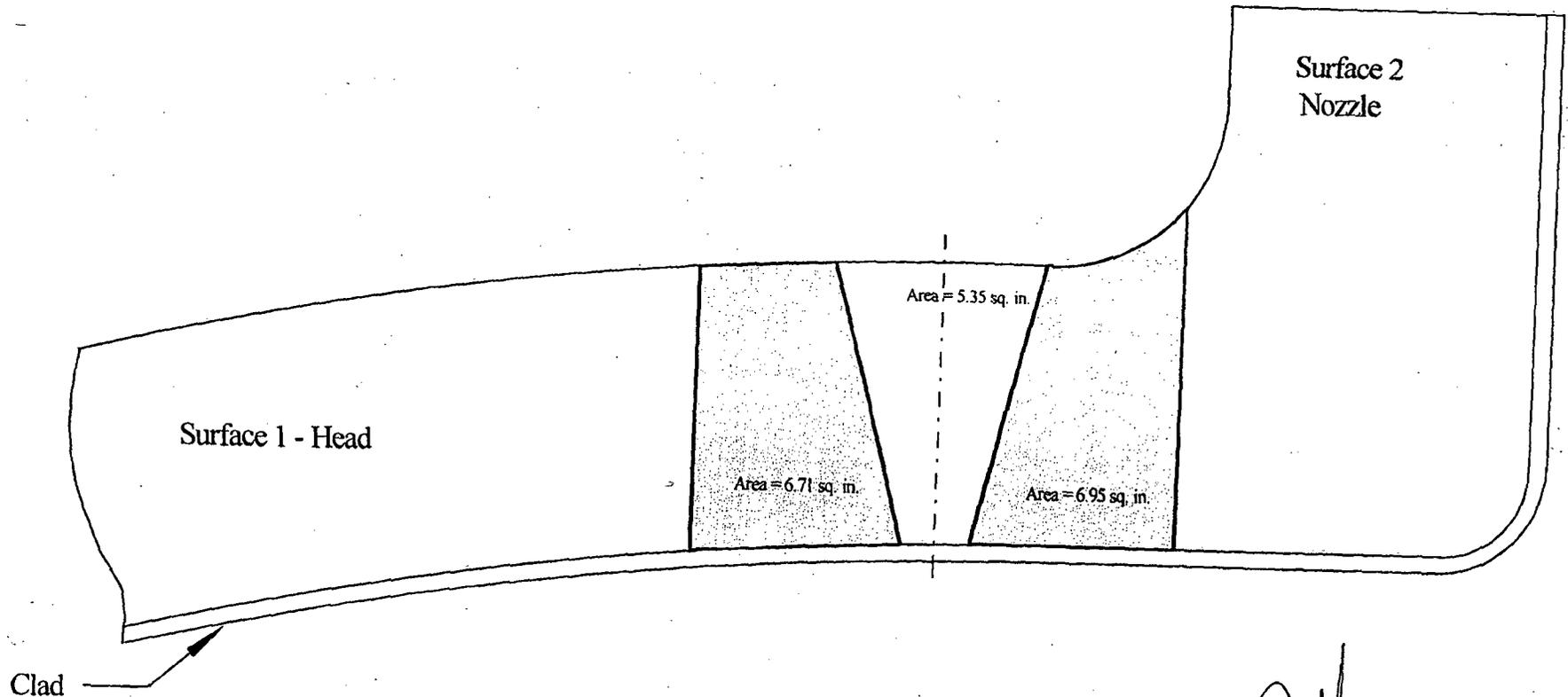
Total Area of Base Material = $6.71 + 6.95 = 13.66$ sq. in.

Total Exam Area = $6.71 + 5.35 + 6.95 = 19.01$ sq. in.

Item No. : MZ.B3.110.0001

Weld No. : ZPER-10

Scale 1" = 2"



Inspector / Date : [Signature] III 9/26/06

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Pressurizer Surge Nozzle to Head

0° Scan Coverage

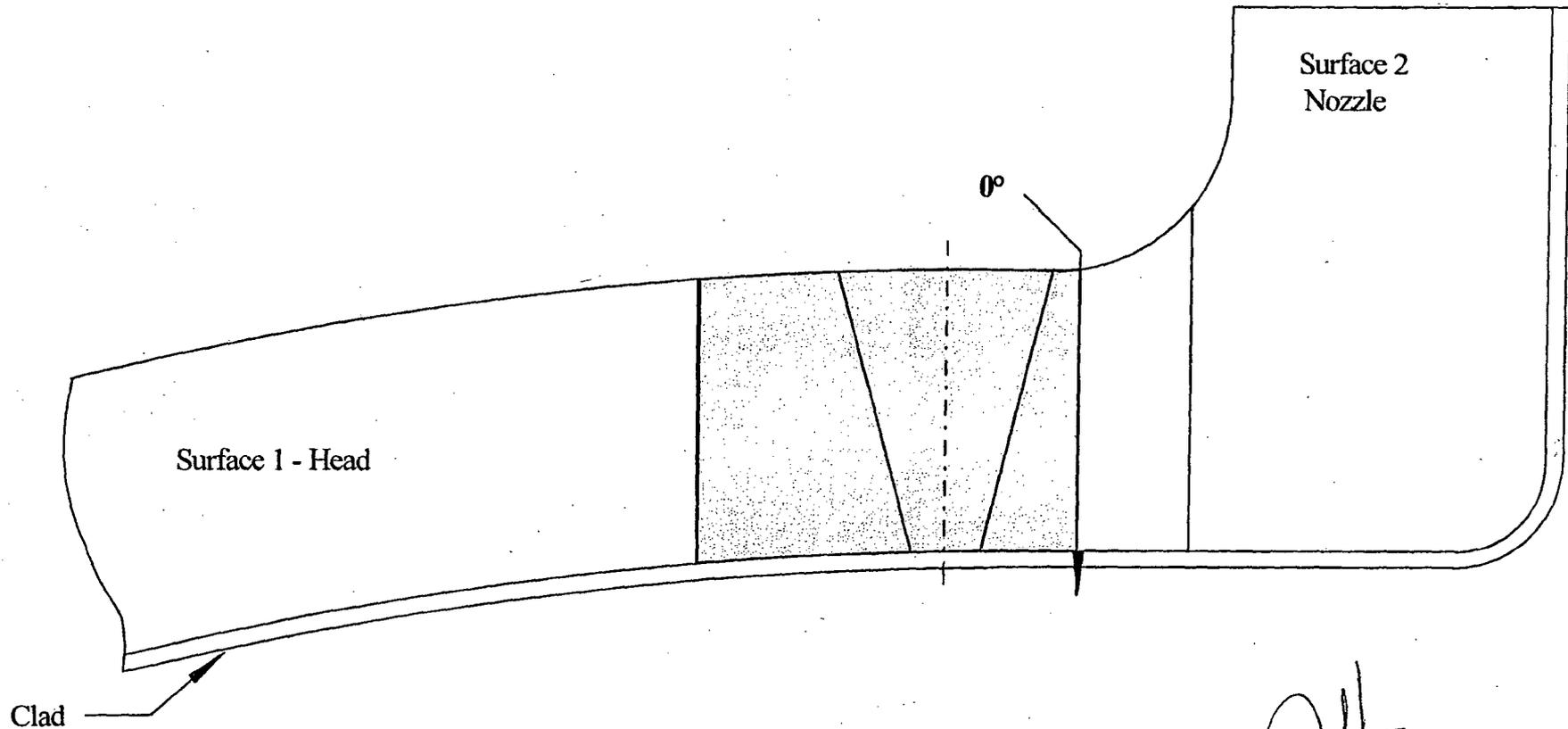
0° Scan Total Area = 14.57 sq. in.

Total 0° Scan Coverage = $14.57 / 19.01 \times 100 = 76.6\%$

Item No. : MZ.B3.110.0001

Weld No. : ZPZR-10

Scale 1" = 2"



Inspector / Date : [Signature] III 9/26/06

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Pressurizer Surge Nozzle to Head

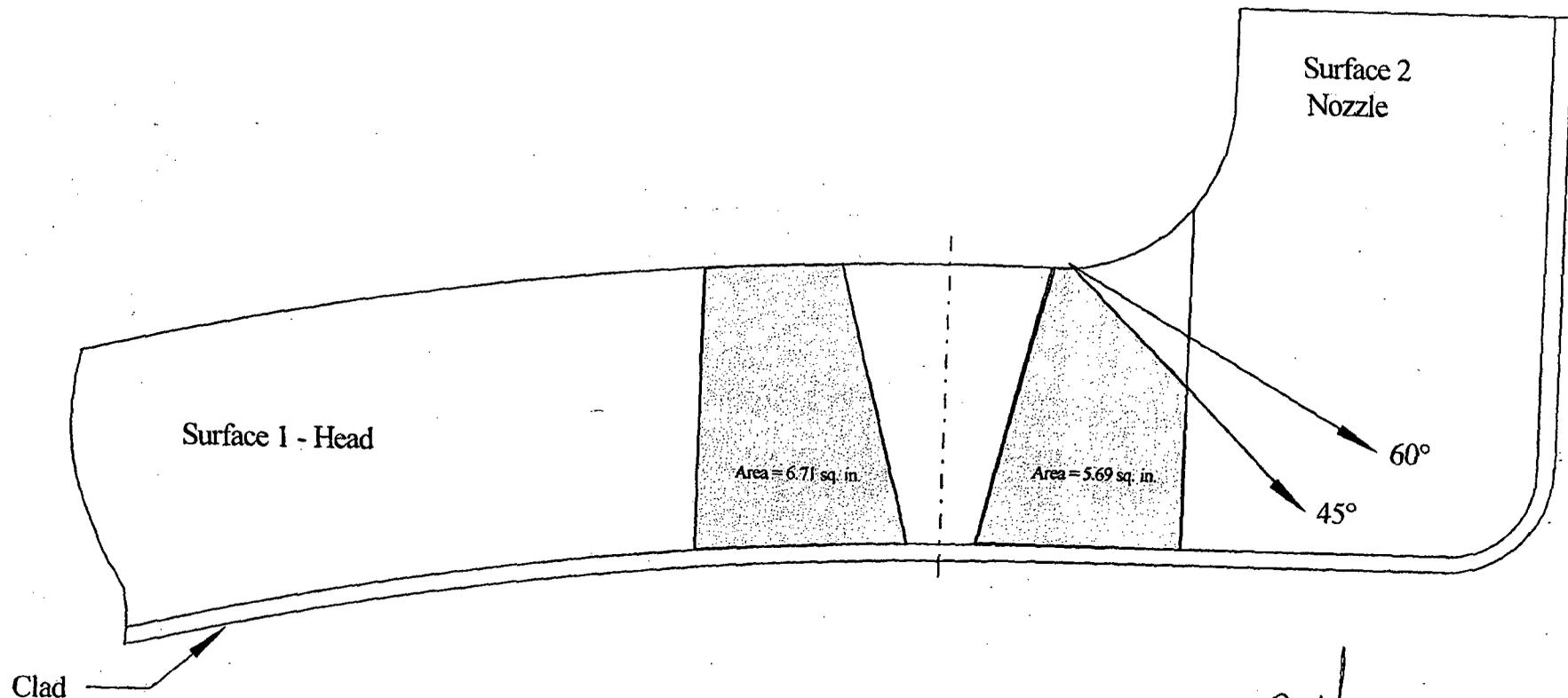
Base Metal Coverage - Axial (Areas not at Heater Wells)

Item No. : MZ.B3.110.0001

Weld No. : ZPR-10

Total Coverage with 2 angles from the same direction
 $= (6.71 + 5.69) / 13.66 \times 100 = 90.8\%$

Scale 1" = 2"



Inspector / Date : [Signature] III 9/26/06

Pressurizer Surge Nozzle to Head

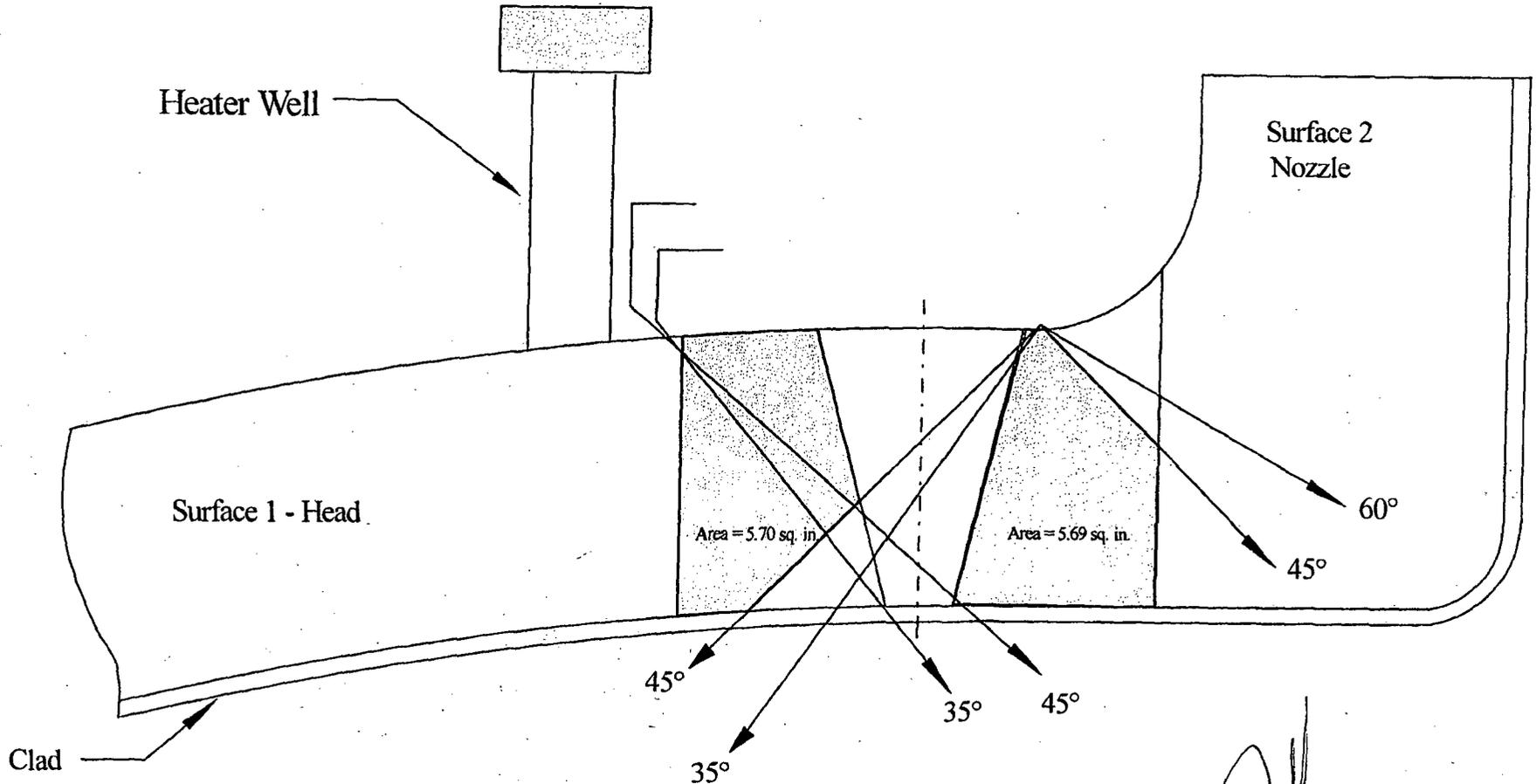
Base Metal Coverage - Axial @ Heater Wells

Total Coverage with 2 angles from the same direction or 2 angles from opposite directions = $(5.70 + 5.69) / 13.66 \times 100 = 83.4\%$

Item No. : MZ.B3.110.0001

Weld No. : ZPZZ-10

Scale 1" = 2"



Inspector / Date : [Signature] III 9/26/06

Pressurizer Surge Nozzle to Head

Base Metal Coverage - Circumferential

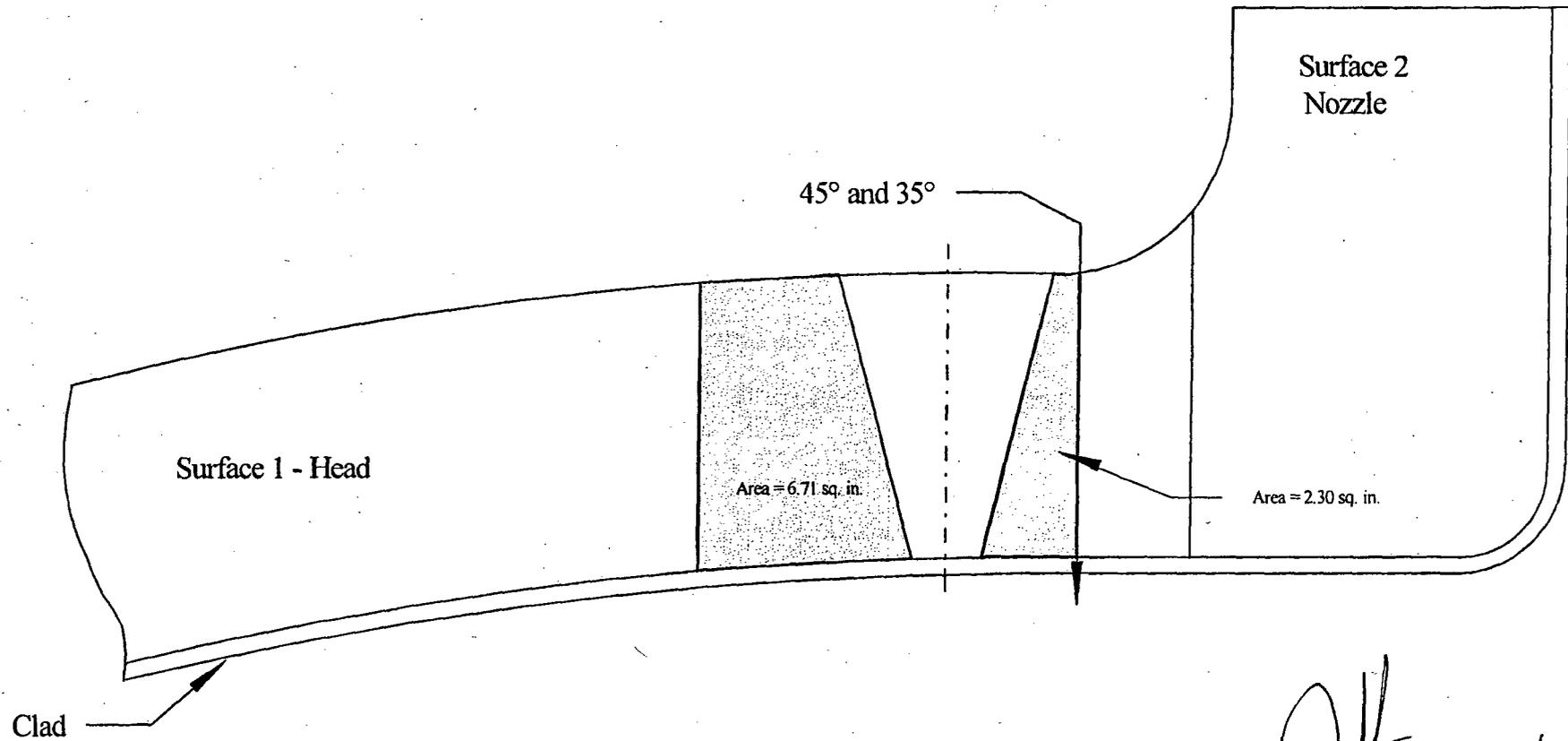
Total Coverage with 35° and 45° CW and CCW

$$= (6.71 + 2.30) / 13.66 \times 100 = 65.9\%$$

Item No. : MZ.B3.110.0001

Weld No. : ZPER-10

Scale 1" = 2"



Inspector / Date : [Signature] III 9/26/06

Pressurizer Surge Nozzle to Head

Weld Coverage from Surface 2 - Axial & Circ. Scans

100% Coverage 35° & 45° Scans CW, CCW

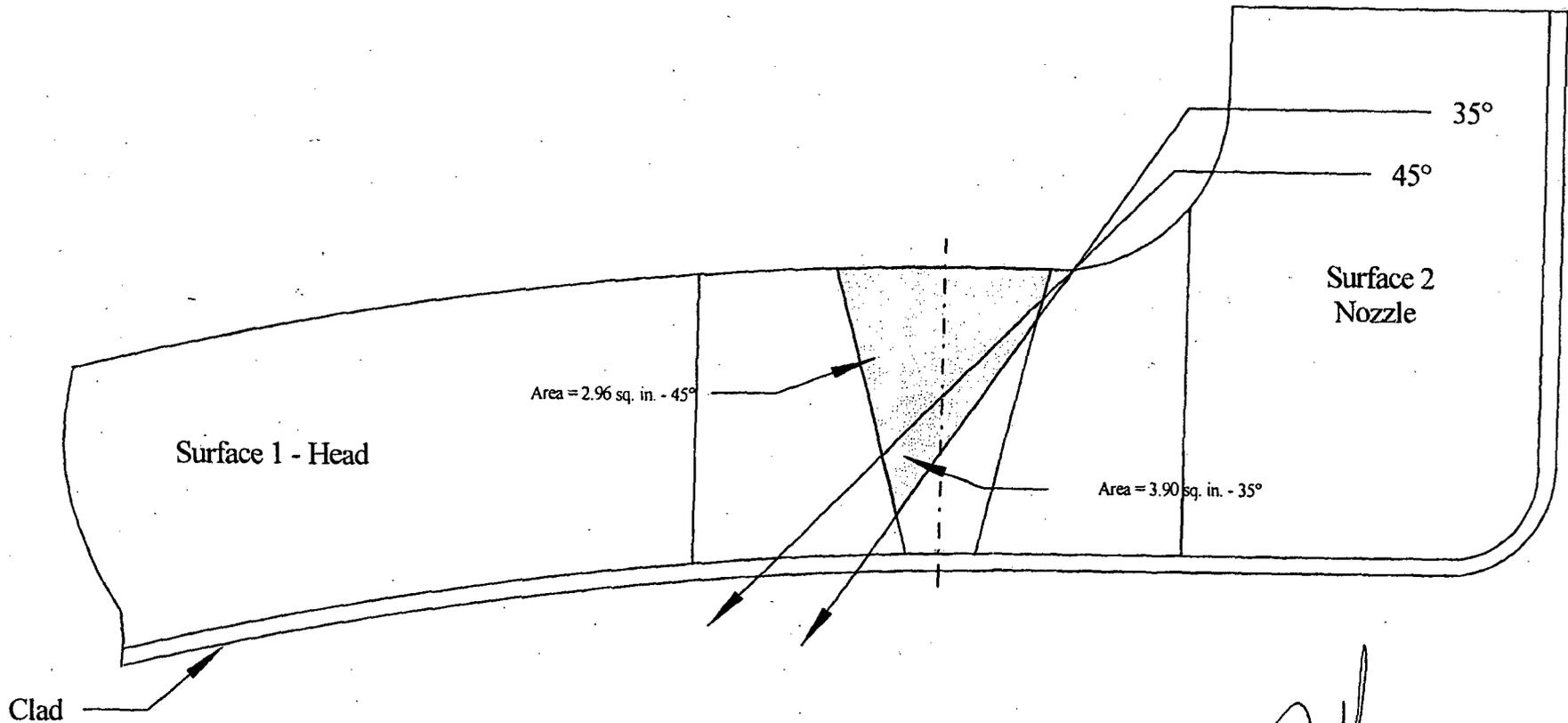
Total Weld Coverage 35° from Surface 2 = $3.90 / 5.35 \times 100 = 72.9\%$

Total Weld Coverage 45° from Surface 2 = $2.96 / 5.35 \times 100 = 55.3\%$

Item No. : MZ.73.110.0001

Weld No. : ZPZR-10

Scale 1" = 2"



Inspector / Date : [Signature] III 9/26/06

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Pressurizer Surge Nozzle to Head

Weld Coverage from Surface 1 - Axial

100% Coverage 35° Axial scan from Surface 1

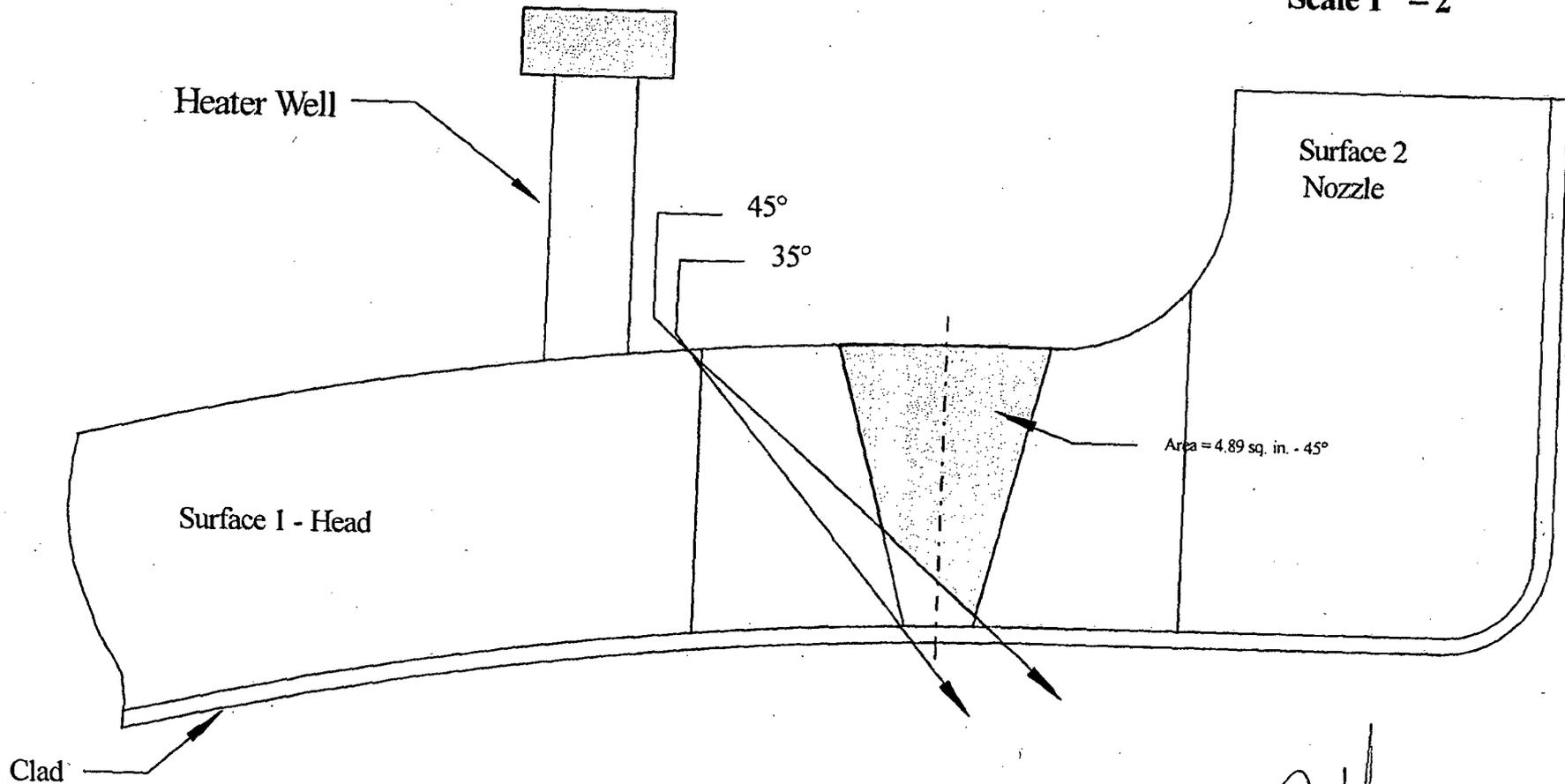
100% Coverage 45° Axial scan from Surface 1
except at Heater Well Limitation

Weld Coverage 45° Axial scan from Surface 1
@ Heater Well = $4.89 / 5.35 \times 100 = 91.4\%$

Item No. : MZ.B3.110.0001

Weld No. : Z PZR-10

Scale 1" = 2"



Inspector / Date : [Signature] III 9/26/06



UT Vessel Examination

Site/Unit: McGuire / 2

Procedure: NDE-820

Outage No.: M2-17

Summary No.: M2.B3.110.0001

Procedure Rev.: 2

Report No.: UT-06-291

Workscope: ISI

Work Order No.: 580234

Page: 1 of 1

Code: 1998/2000 A Cat./Item: B-D/B3.110 Location: _____

Drawing No.: MCM 2201.01-015 Description: Nozzle To Head

System ID: NC

Component ID: 2PZR-10 Size/Length: N/A Thickness/Diameter: 2.550 / 24.500

Limitations: Yes - See attached Limitation Report (TO REPORT # UT-06-290) Start Time: 1042 Finish Time: 1048

Examination Surface: Inside Outside Surface Condition: FLUSH

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

Temp. Tool Mfg.: D.A.S Serial No.: MCNDE32819 Surface Temp.: 82 °F

Cal. Report No.: CAL-06-339

Angle Used	0	45	45T	60	60T	
Scanning dB				68.9		

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

Comments:

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 31.2% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Resor, James H.	II	<i>James H. Resor</i>	9/23/2006	Jay A Eaton Level III	<i>Jay A Eaton</i>	9/26/2006
Examiner	Level	Signature	Date	Site Review	Signature	Date
Matteson, Mary F.	II-N	<i>Mary F. Matteson</i>	9/23/2006	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Jerome Swan	<i>Jerome Swan</i>	9/29/06

11-11-06

Relief Request Serial #08-MN-001

ATTACHMENT D

McGuire Unit 2

**Examination Data for Weld #2PZR-12,
Summary #M2.B3.110.0002**



UT Vessel Examination

Site/Unit: McGuire / 2

Procedure: NDE-640

Outage No.: M2-17

Summary No.: M2.B3.110.0002

Procedure Rev.: 3

Report No.: UT-06-283

Workscope: ISI

Work Order No.: _____

Page: 1 of 1

Code: 1998/2000 A Cat./Item: B-D/B3.110 Location: _____

Drawing No.: MCM 2201.01-015 Description: NOZZLE to HEAD

System ID: NC

Component ID: 2PZR-12 Size/Length: N/A Thickness/Diameter: 1.900 / 12.750

Limitations: Yes - See Limitation Calculations Attached on Report UT-06-281 Start Time: 1503 Finish Time: 1509

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH

Lo Location: Stamp #1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125

Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27218 Surface Temp.: 91 °F

Cal. Report No.: CAL-06-333

Angle Used	0	45	45T	60	60T	
Scanning dB	38.5					

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

Comments:

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 81.7% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Tucker, David K.	II-N	<i>David K. Tucker</i>	9/18/2006	Jay A Eaton Level III	<i>Jay A Eaton</i>	9/30/2006
Examiner	Level	Signature	Date	Site Review	Signature	Date
Moss, Gary J.	II	<i>Gary J. Moss</i>	9/18/2006	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Jerome Swan	<i>Jerome Swan</i>	10/3/06

10/3/06



UT Vessel Examination

Site/Unit: McGuire / 2

Procedure: NDE-820

Outage No.: M2-17

Summary No.: M2.B3.110.0002

Procedure Rev.: 2

Report No.: UT-06-281

Workscope: ISI

Work Order No.: 580233

Page: 1 of 7

Code: 1998/2000 A Cat./Item: B-D/B3.110 Location: _____

Drawing No.: MCM 2201.01-015 Description: NOZZLE to HEAD

System ID: NC

Component ID: 2PZR-12 Size/Length: N/A Thickness/Diameter: 1.900 / 12.750

Limitations: Yes - See attached Limitation Calculations Start Time: 1540 Finish Time: 1610

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH

Lo Location: Stamp #1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125

Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27218 Surface Temp.: 91 °F

Cal. Report No.: CAL-06-331, CAL-06-332

Angle Used	0	45	45T	60	60T	35&35T
Scanning dB				70		64

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

Comments:

60° used to obtain additional coverage - scanning towards nozzle.

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 81.7% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Cochran, Lonnie D.	II-N	<i>[Signature]</i>	9/18/2006	Jay A Eaton Level III	<i>[Signature]</i>	9/30/2006
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			Jerome Swan	<i>[Signature]</i>	10/3/06

[Handwritten mark]

Pressurizer Spray Nozzle to Head % of Coverage

Item No. : MZ.B3.110.0002

Weld No. : ZPER-12

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>
S1	35°	100
S2	35°	76.1
S1	45°	100
S2	45°	58.9
CW	35°	100
CW	45°	100
CCW	35°	100
CCW	45°	<u>100</u>
	Total	735

$$735 \div 8 = \underline{91.9} \quad \% \text{ Coverage}$$

Base Material Coverage

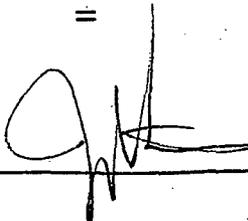
S1	35°, 45° & 60°	90.5
CW & CCW	45° & 35°	<u>64.5</u>
	Total	155

$$155 \div 2 = \underline{77.5} \quad \% \text{ Coverage}$$

$$\underline{0^\circ \text{ Scan Coverage}} = \underline{75.6} \quad \% \text{ Coverage}$$

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

$$= \underline{81.7} \quad \% \text{ Coverage}$$

Inspector / Date :  III 9/30/06

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11-11-06

Pressurizer Spray Nozzle to Head

Total Area Weld & Base Material

Item No. : MZ.B3.110.0002

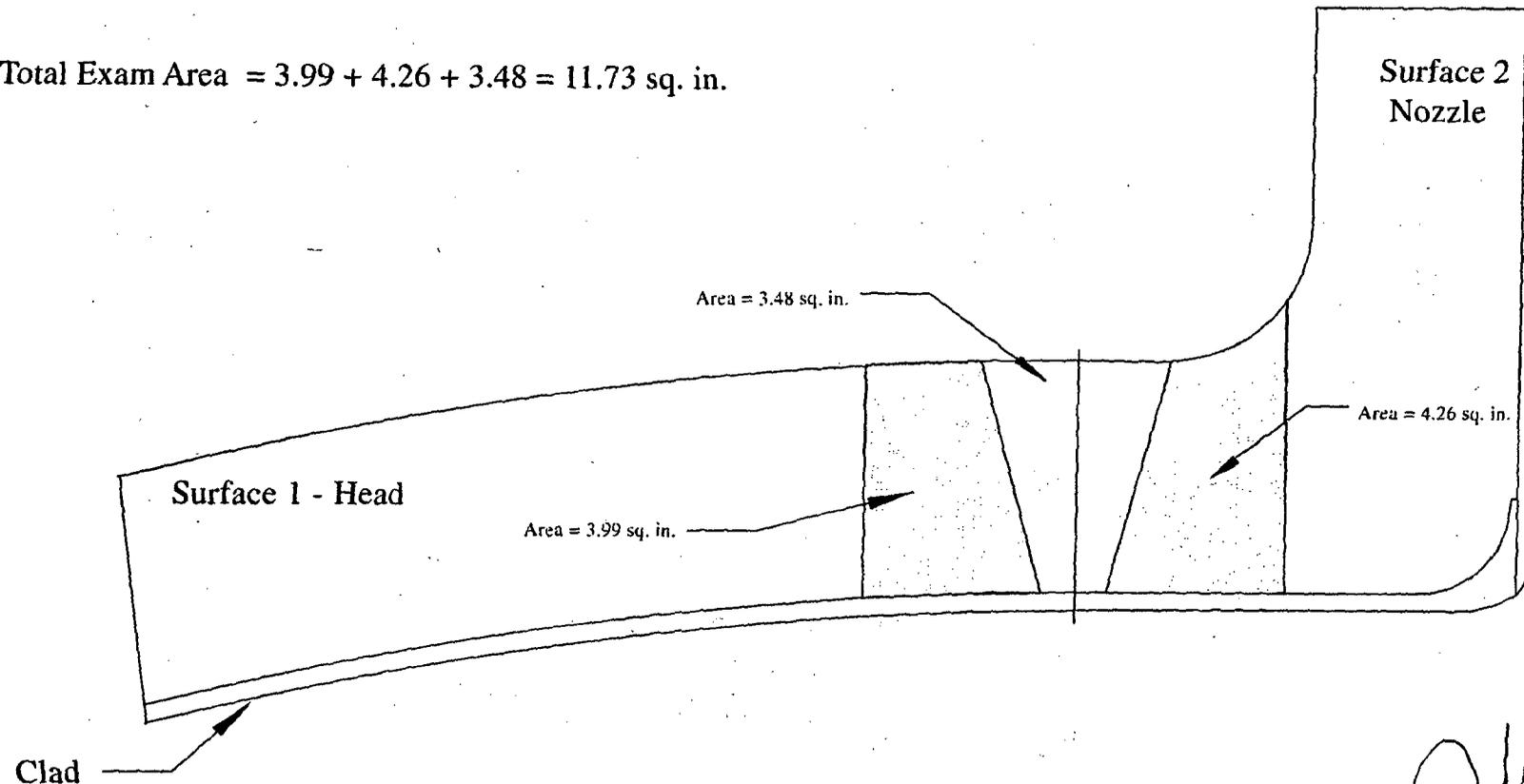
Weld No. : ZPR-12

Total Weld Area = 3.48 sq. in.

Scale 1" = 2"

Total Area of Base Material = $3.99 + 4.26 = 8.25$ sq. in.

Total Exam Area = $3.99 + 4.26 + 3.48 = 11.73$ sq. in.



Inspector / Date : gjk III 9/30/01

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Pressurizer Spray Nozzle to Head

0° Scan Coverage

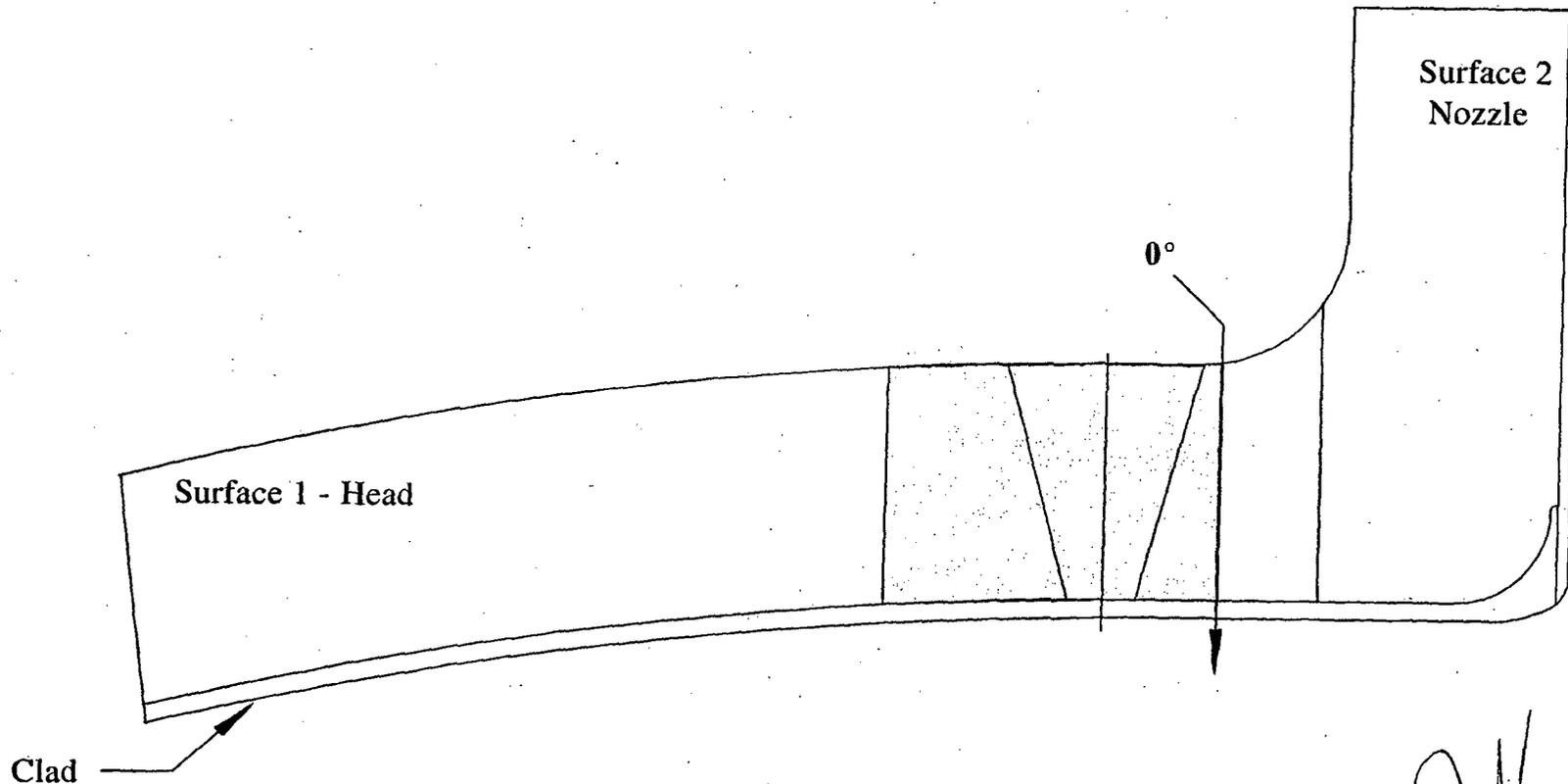
Item No. : MZ.B3.110.0002

Weld No. : ZPZR-12

0° Scan Total Area = 8.87 sq. in.

Total 0° Scan Coverage = $8.87 / 11.73 \times 100 = 75.6 \%$

Scale 1" = 2"



Inspector / Date : JWK III 9/30/06

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11-11-06

Pressurizer Spray Nozzle to Head

Weld Coverage - Axial & Circumferential Scans

Item No. : MZ.B3.110.000Z

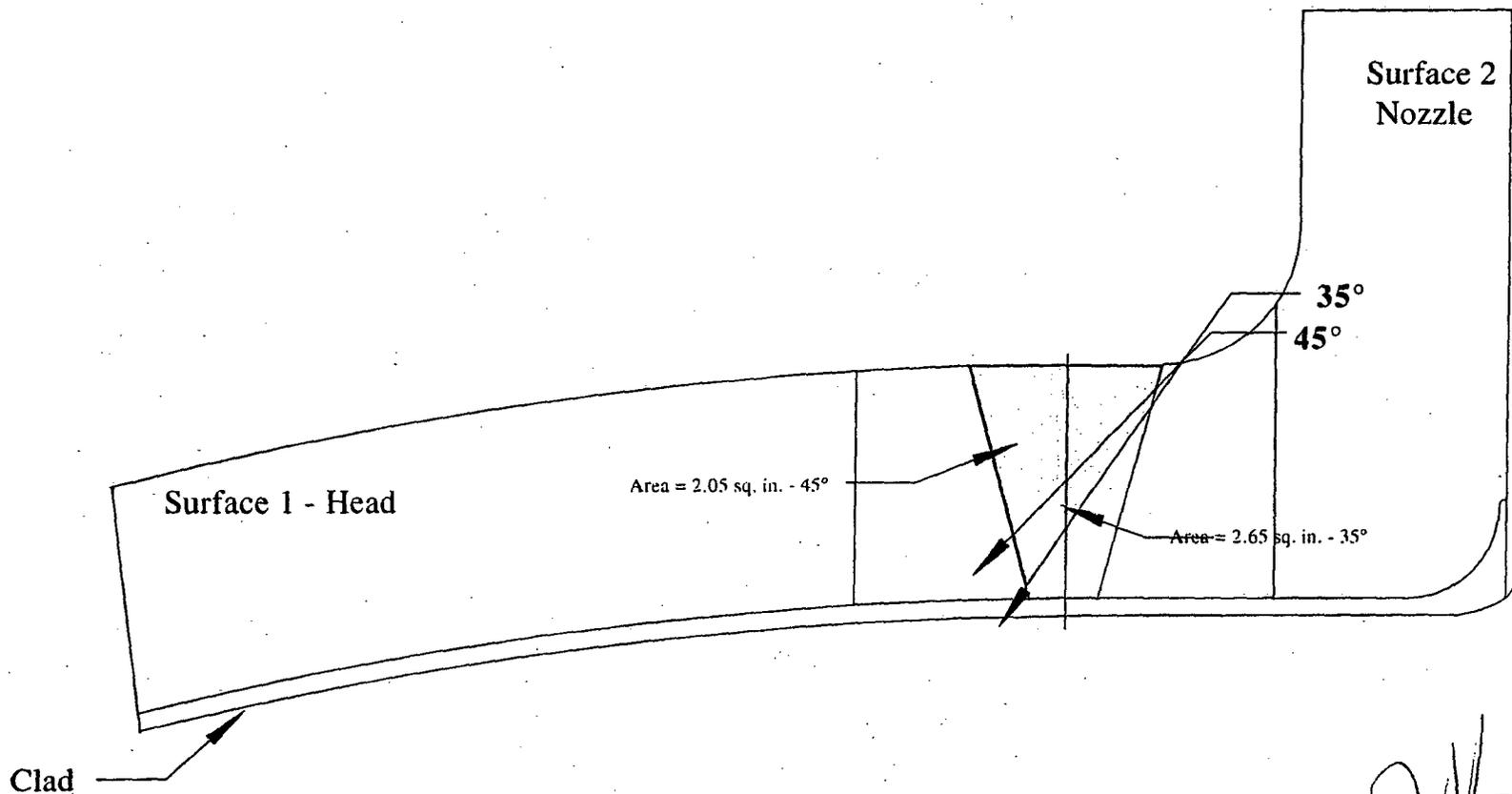
100% Coverage 35° & 45° Scans CW, CCW and Axial from Surface 1

Weld No. : Z PER-1Z

Total Weld Coverage 35° from Surface 2 = $2.65 / 3.48 \times 100 = 76.1 \%$

Scale 1" = 2"

Total Weld Coverage 45° from Surface 2 = $2.05 / 3.48 \times 100 = 58.9 \%$



Inspector / Date : [Signature] III 9/30/06

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[Signature]
11-10-06

Pressurizer Spray Nozzle to Head

Base Material Coverage - Circumferential Scans

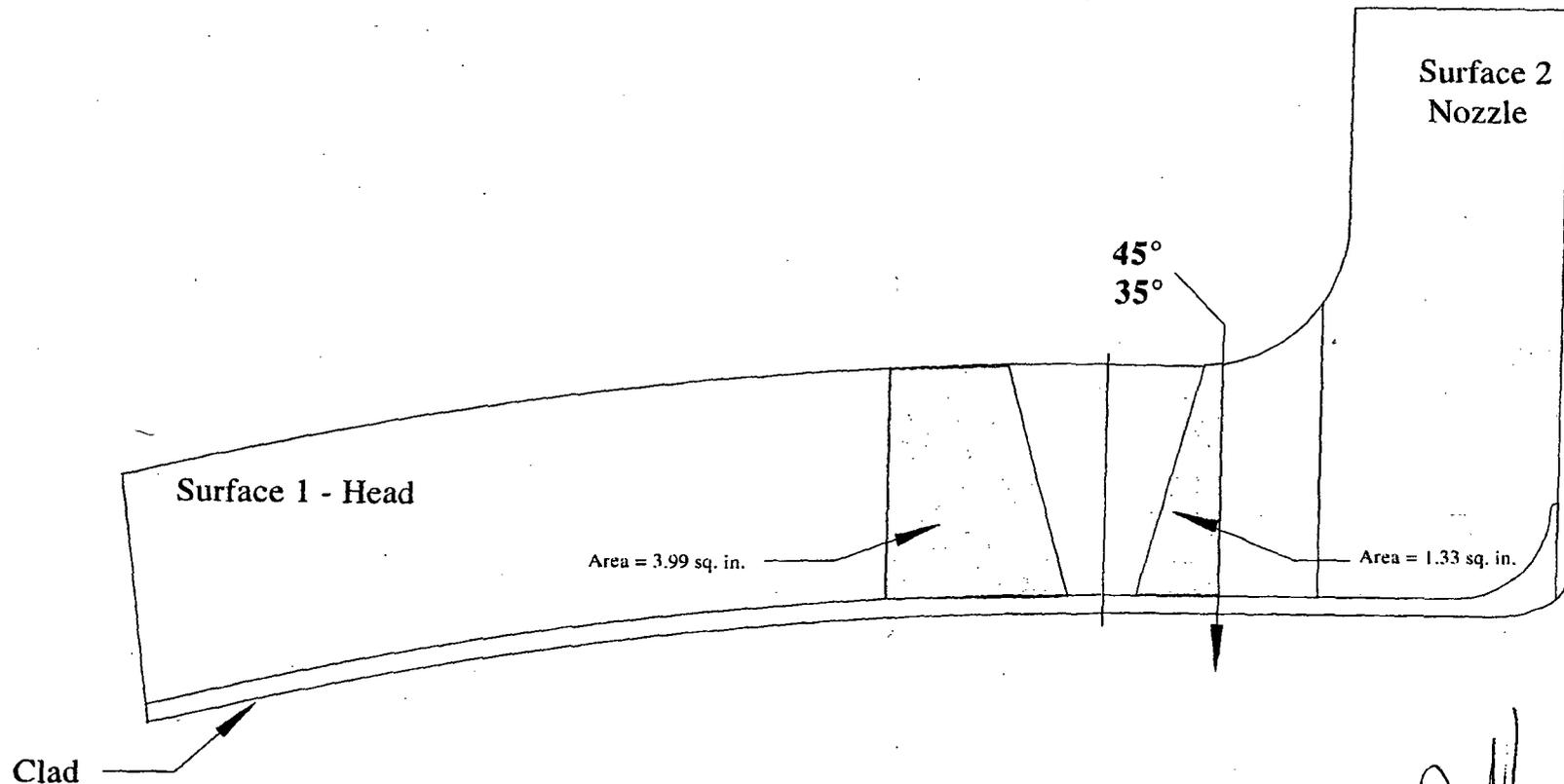
Item No. : MZ.B3.110.000Z

Weld No. : Z PZR-1Z

Total Area of Base Material = $3.99 + 1.33 = 5.32$ sq. in.

Total Base Material Coverage = $5.32 / 8.25 \times 100 = 64.5 \%$

Scale 1" = 2"



Inspector / Date : [Signature] III 9/30/06

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R
02
11



UT Vessel Examination

Site/Unit: McGuire / 2

Procedure: NDE-820

Outage No.: M2-17

Summary No.: M2.B3.110.0002

Procedure Rev.: 2

Report No.: UT-06-285

Workscope: ISI

Work Order No.: 580233

Page: 1 of 4

Code: 1998/2000 A Cat./Item: B-D/B3.110 Location: _____

Drawing No.: MCM 2201.01-015 Description: NOZZLE to HEAD

System ID: NC

Component ID: 2PZR-12 Size/Length: N/A Thickness/Diameter: 1.900 / 12.750

Limitations: Yes - See Limitation Calculations Attached on Report UT-06-281 Start Time: 1518 Finish Time: 1535

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH

Lo Location: Stamp #1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125

Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27218 Surface Temp.: 91 °F

Cal. Report No.: CAL-06-334

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

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

Comments:
See Report No. UT-06-350 for through wall and length sizing information.

Results: Accept Reject Info Reference PIP No. M-06-03968

Percent Of Coverage Obtained > 90%: No - 81.7% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Tucker, David K.	II-N	<i>[Signature]</i>	9/18/2006	Jay A Eaton Level III	<i>[Signature]</i>	9/30/2006
Examiner	Level	Signature	Date	Site Review	Signature	Date
Moss, Gary J.	II	<i>[Signature]</i>	9/18/2006	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Jerome Swan	<i>[Signature]</i>	10/3/06

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Ultrasonic Indication Report

Site/Unit: McGuire / 2
 Summary No.: M2.B3.110.0002
 Workscope: ISI

Procedure: NDE-820
 Procedure Rev.: 2
 Work Order No.: 580233

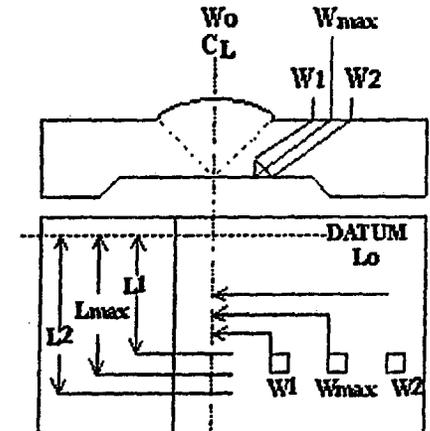
Outage No.: M2-17
 Report No.: UT-06-285
 Page: 2 of 4

Search Unit Angle: 45 °
 Wo Location: Weld Centerline
 Lo Location: See Remarks

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: See Report No. UT-06-350 for through wall and length sizing information.



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					
	1	133	2.75	4.30	N/A	N/A	N/A	N/A	-1.25	-0.9	0.0	N/A	L Dim's from Stamp #1. Eval from ref sensitivity of 57 dB.
	2	28	-0.38	3.20	N/A	N/A	N/A	N/A	-1.8	-1.4	0.8	N/A	L Dim's from Stamp #3

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Tucker, David K.	II-N	<i>[Signature]</i>	9/18/2006	Jay A Eaton Level III	<i>[Signature]</i>	9/30/2006
Examiner	Level	Signature	Date	Site Review	Signature	Date
Moss, Gary J.	II	<i>[Signature]</i>	9/18/2006	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Jerome Swan	<i>[Signature]</i>	10/3/06



Supplemental Report

Report No.: UT-u6-285

Page: 3 of 4

Summary No.: M2.B3.110.0002

Examiner: Tucker, David K. *[Signature]*

Level: II-N

Reviewer: Jay A Eaton Level III *[Signature]*

Date: 9/30/2006

Examiner: Moss, Gary J. *[Signature]*

Level: II

Site Review: N/A

Date: 10/3/06

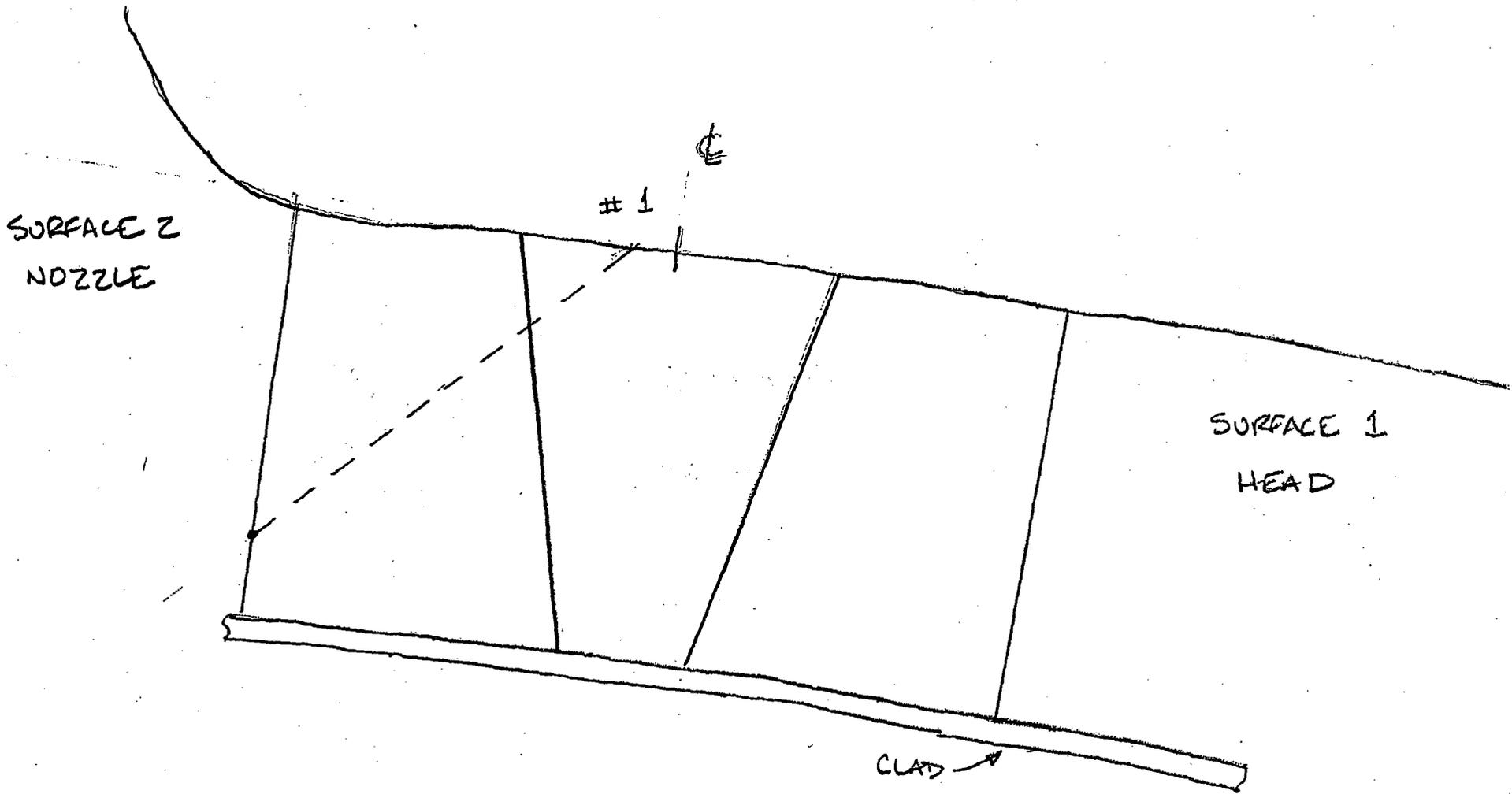
Other: N/A

Level: N/A

ANII Review: Jerome Swan *[Signature]*

Date: 10/3/06

Comments: **Reflector #1 is an indication in the nozzle forging. It is located at the edge of the inspection area and has no recordable through wall dimension.**





Supplemental Report

Report No.: UT-06-285

Page: 4 of 4

Summary No.: M2.B3.110.0002

Examiner: Tucker, David K. *[Signature]*

Level: II-N

Reviewer: Jay A Eaton Level III *[Signature]*

Date: 9/30/2006

Examiner: Moss, Gary J. *[Signature]*

Level: II

Site Review: N/A

Date:

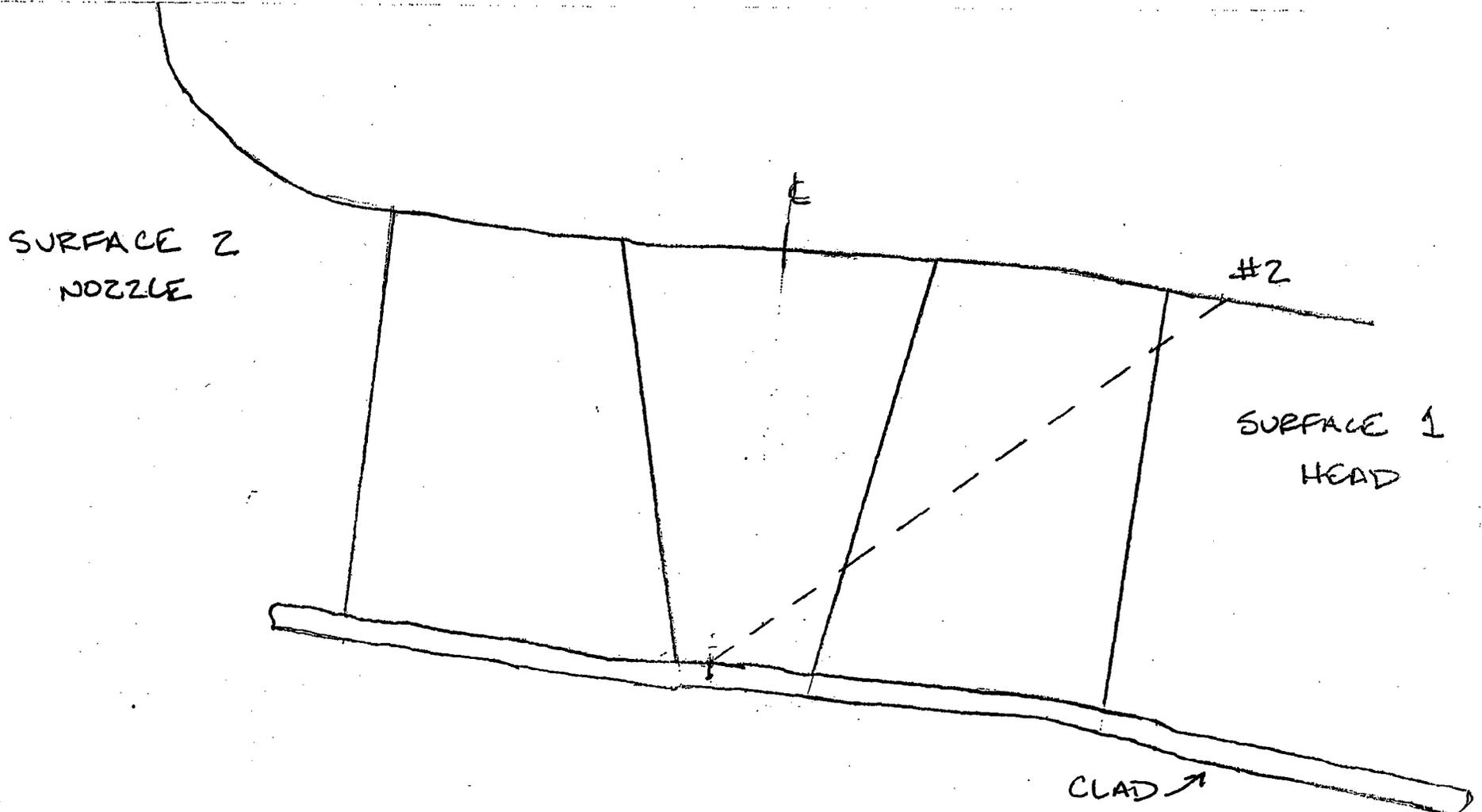
Other: N/A

Level: N/A

ANII Review: Jerome Swan *[Signature]*

Date: 10/3/06

Comments: **Reflector #2 is an indication contained entirely in the ID cladding. Only indications extending from the cladding into the carbon steel weld or base metal are considered to be relevant.**



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UT Vessel Examination

Site/Unit: McGuire / 2

Procedure: PDI-UT-7

Outage No.: M2-17

Summary No.: M2.B3.110.0002

Procedure Rev.: F

Report No.: UT-06-350

Workscope: ISI

Work Order No.: 580233

Page: 1 of 2

Code: 1998/2000 A Cat./Item: B-D/B3.110 Location: _____

Drawing No.: MCM 2201.01-015 Description: NOZZLE to HEAD

System ID: NC

Component ID: 2PZR-12 Size/Length: N/A Thickness/Diameter: 1.900 / 12.750

Limitations: None Start Time: 2110 Finish Time: 2300

Examination Surface: Inside Outside Surface Condition: AS GROUND

Lo Location: ** See Comments ** Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 05125

Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27218 Surface Temp.: 91 °F

Cal. Report No.: CAL-06-366

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

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

Comments:

* Adjusted dB as necessary to size indications. Sizing data for reflectors documented on report UT-06-285 page 2 of 4.

** Lo location taken from stamps: Ind. #1 used Stamp #1, Ind. #2 used Stamp #3

Results: Accept Reject Info

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

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Brown, Thomas	II-N		9/18/2006	Jay A Eaton Level III		9/30/2006
Examiner	Level	Signature	Date	Site Review	Signature	Date
Cochran, Lonnie D.	II-N		9/18/2006	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Jerome Swan		10/3/06

11-11-06



Ultrasonic Indication Sizing Report

Site/Unit: McGuire / 2
 Summary No.: M2.B3.110.0002
 Workscope: ISI

Procedure: PDI-UT-7
 Procedure Rev.: F
 Work Order No.: 580233

Outage No.: M2-17
 Report No.: UT-06-350
 Page: 2 of 2

Item Identification: <u>Reflectors # 1 & 2</u>	Lo Location: <u>** See Remarks**</u>	Start Time: <u>21:10</u>
Weld Crown Width: <u>2.0"</u>	Wo Location: <u>Weld Centerline</u>	Finish Time: <u>23:00</u>
Measured Component Thickness: <u>2.8"</u>		

Ind No.	Angle Used	dB	OD Technique Used	Length			Remaining Ligament	Thru Wall	Intermittent or Continuous	Recommendations or Remarks	Used or Useful
				L1	L2	Total					
1	45	*	A.A.T.	0.0	-1.8	1.8"	2.8"	.10	Continuous	Tip depth = 2.8" Base Depth 2.9"	
2	45	*	A.A.T.	-0.9	-1.5	0.6"	2.2"	0	Continuous	Actual tip depth = 2.15" Actual base depth 2.21	
										Above depths both round to 2.2 which = 0 T.W.	

Additional Remarks:

* Adjusted dB as needed to size indications. Lo location taken from stamps: Indication #1 used stamp #1, Indication #2 used stamp #3.

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Brown, Thomas	II-N		9/18/2006	Jay A Eaton Level III		9/30/2006
Examiner	Level	Signature	Date	Site Review	Signature	Date
Cochran, Lonnie D.	II-N		9/18/2006	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Jerome Swan		10/3/06

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Relief Request Serial #08-MN-001

ATTACHMENT E

McGuire Unit 2

**Examination Data for Weld #2PZR-16,
Summary #M2.B3.110.0006**



UT Vessel Examination

Site/Unit: McGuire / 2

Procedure: NDE-640

Outage No.: M2-17

Summary No.: M2.B3.110.0006

Procedure Rev.: 3

Report No.: UT-06-284

Workscope: ISI

Work Order No.: _____

Page: 1 of 1

Code: 1998/2000 A Cat./Item: B-D/B3.110 Location: _____

Drawing No.: MCM 2201.01-015 Description: NOZZLE to HEAD

System ID: NC

Component ID: 2PZR-16 Size/Length: N/A Thickness/Diameter: 1.900 / 15.000

Limitations: Yes - See Limitation Calculations on Report No. UT-06-282 Start Time: 1455 Finish Time: 1503

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH

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

Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27218 Surface Temp.: 91 °F

Cal. Report No.: CAL-06-333

Angle Used	0	45	45T	60	60T	
Scanning dB	38.5					

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

Comments:

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 81.2% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Tucker, David K.	II-N	<i>[Signature]</i>	9/18/2006	Jay A Eaton Level III	<i>[Signature]</i>	9/30/2006
Examiner	Level	Signature	Date	Site Review	Signature	Date
Moss, Gary J.	II	<i>[Signature]</i>	9/18/2006	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Jerome Swan	<i>[Signature]</i>	10/3/06

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UT Vessel Examination

Site/Unit: McGuire / 2

Procedure: NDE-820

Outage No.: M2-17

Summary No.: M2.B3.110.0006

Procedure Rev.: 2

Report No.: UT-06-282

Workscope: ISI

Work Order No.: 580233

Page: 1 of 7

Code: 1998/2000 A

Cat./Item: B-D/B3.110

Location: _____

Drawing No.: MCM 2201.01-015

Description: NOZZLE to HEAD

System ID: NC

Component ID: 2PZR-16

Size/Length: N/A

Thickness/Diameter: 1.900 / 15.000

Limitations: Yes - See attached Limitation Calculations

Start Time: 1540

Finish Time: 1610

Examination Surface: Inside Outside

Surface Condition: GROUND FLUSH

Lo Location: 9.2.3

Wo Location: Centerline of Weld

Couplant: ULTRAGEL II

Batch No.: 05125

Temp. Tool Mfg.: FISHER

Serial No.: MCNDE 27218

Surface Temp.: 91 °F

Cal. Report No.: CAL-06-331, CAL-06-332

Angle Used	0	45	45T	60	60T	35&35T
Scanning dB				70		64

Indication(s): Yes No

Scan Coverage: Upstream Downstream CW CCW

Comments:

60° used to obtain additional coverage - scanning towards nozzle

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 81.2%

Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Cochran, Lonnie D.	II-N	<i>[Signature]</i>	9/18/2006	Jay A Eaton Level III	<i>[Signature]</i>	9/30/2006
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			Jerome Swan	<i>[Signature]</i>	10/3/06

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Pressurizer Safety/Relief Nozzle to Head % of Coverage

Item No. : MZ.B3.110.0006

Weld No. : Z PZR-16

Weld Coverage

<u>Scan</u>	<u>Angle</u>	<u>% Coverage Obtained</u>
S1	35°	100
S2	35°	82.4
S1	45°	100
S2	45°	61.4
CW	35°	100
CW	45°	100
CCW	35°	100
CCW	45°	<u>100</u>
Total		743.8

$743.8 \div 8 = \underline{93.0}$ % Coverage

Base Material Coverage

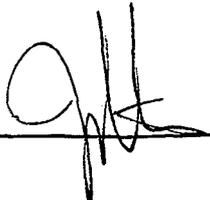
S1	35°,45°&60°	89.3
CW & CCW	45°&35°	<u>63.1</u>
Total		152.4

$152.4 \div 2 = \underline{76.2}$ % Coverage

0° Scan Coverage = 74.3 % Coverage

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

= 81.2 % Coverage

Inspector / Date :  III 9/30/06

Page 2 of 7

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11-11-06

Pressurizer Safety / Relief Nozzle to Head

Total Area Weld & Base Material

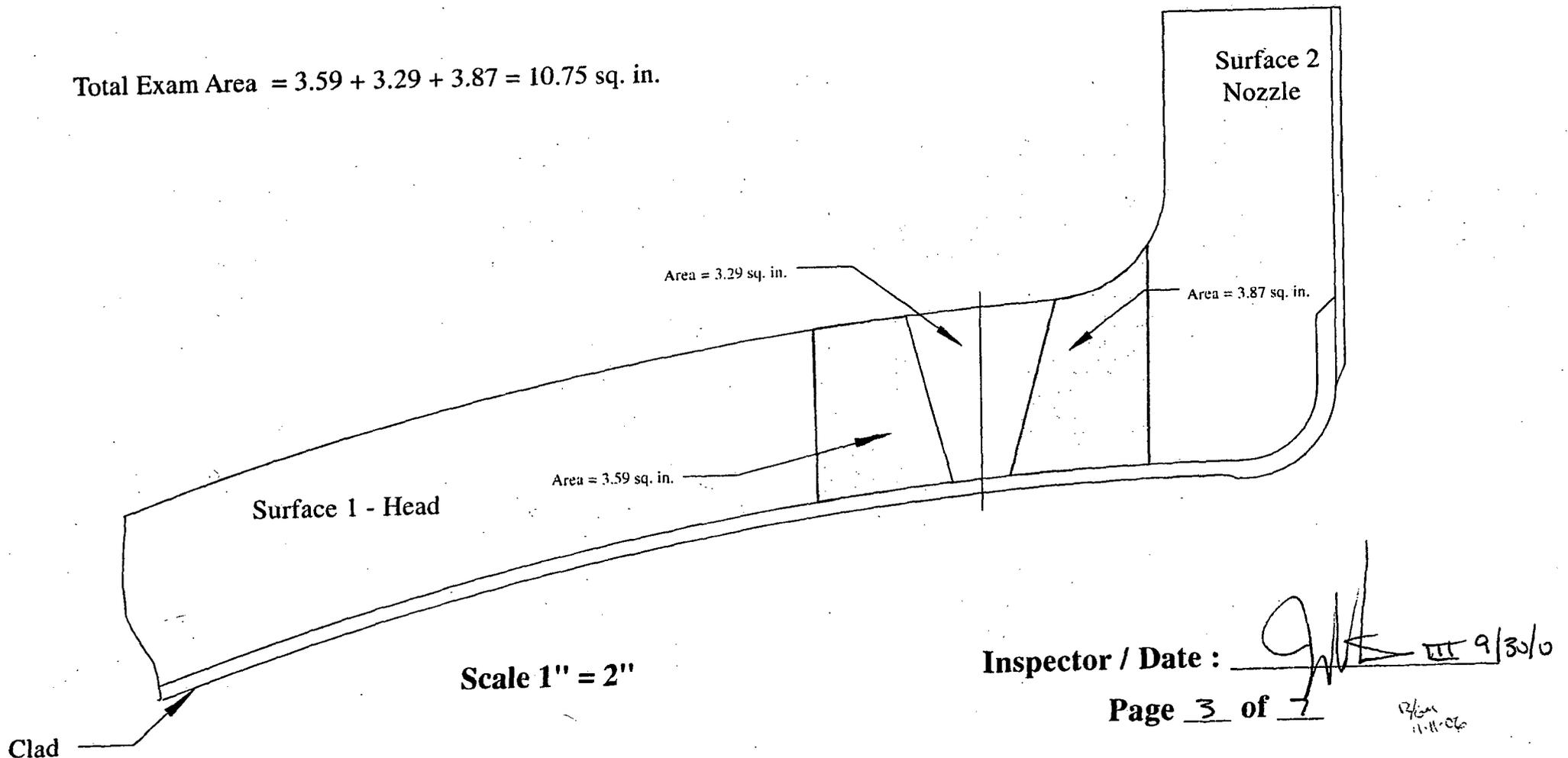
Item No. : MZ.B3.110.0006

Weld No. : ZPER-16

Total Weld Area = 3.29 sq. in.

Total Area of Base Material = $3.59 + 3.87 = 7.46$ sq. in.

Total Exam Area = $3.59 + 3.29 + 3.87 = 10.75$ sq. in.



Inspector / Date : [Signature] III 9/30/0

Page 3 of 7

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11-11-06

Pressurizer Safety / Relief Nozzle to Head

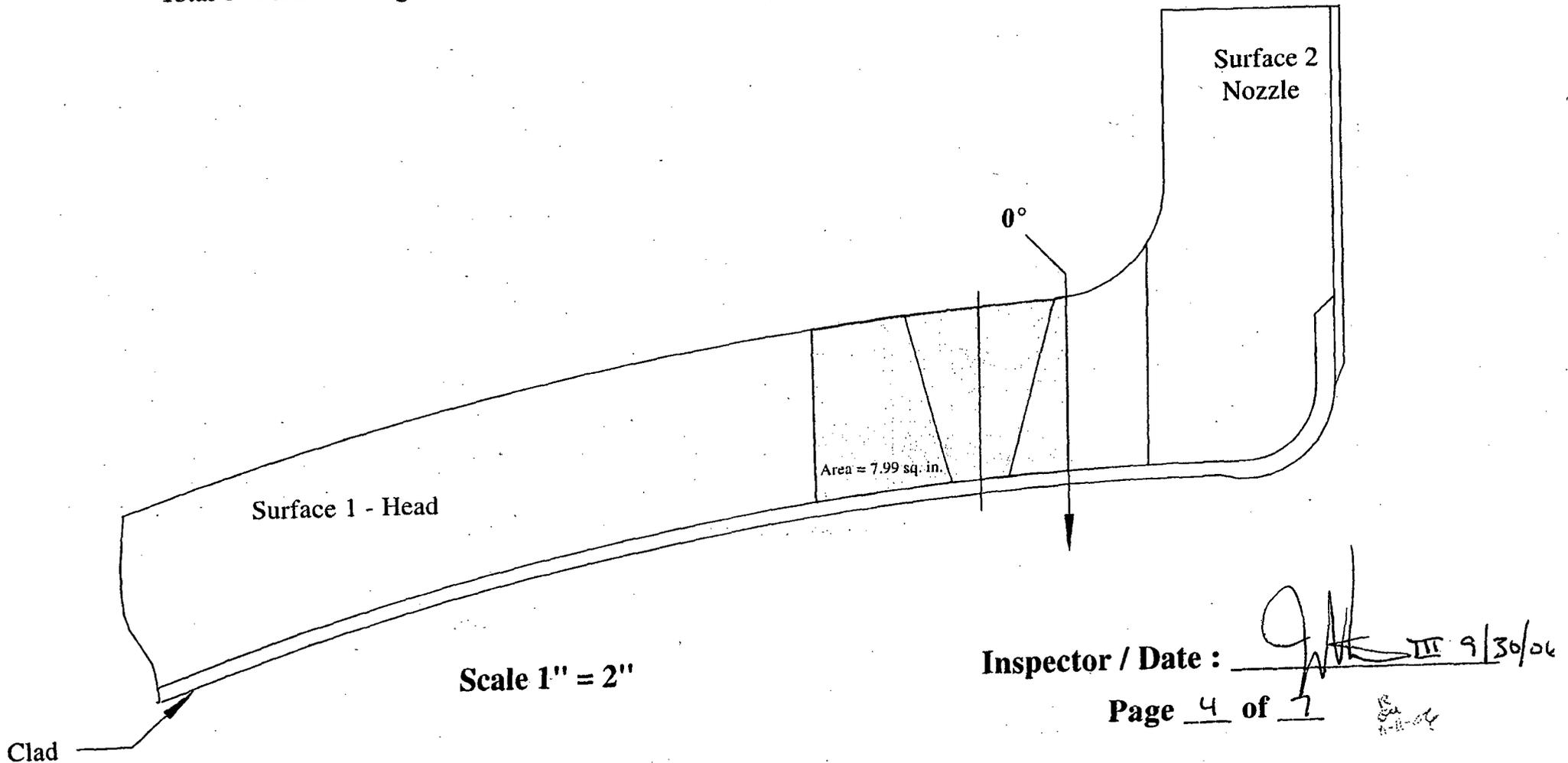
0° Scan Coverage

Item No. : MZ.B3.110.0006

Weld No. : Z PER-170
16
9/29/06

0° Scan Total Area = 7.99 sq. in.

Total 0° Scan Coverage = $7.99 / 10.75 \times 100 = 74.3 \%$



Pressurizer Safety / Relief Nozzle to Head

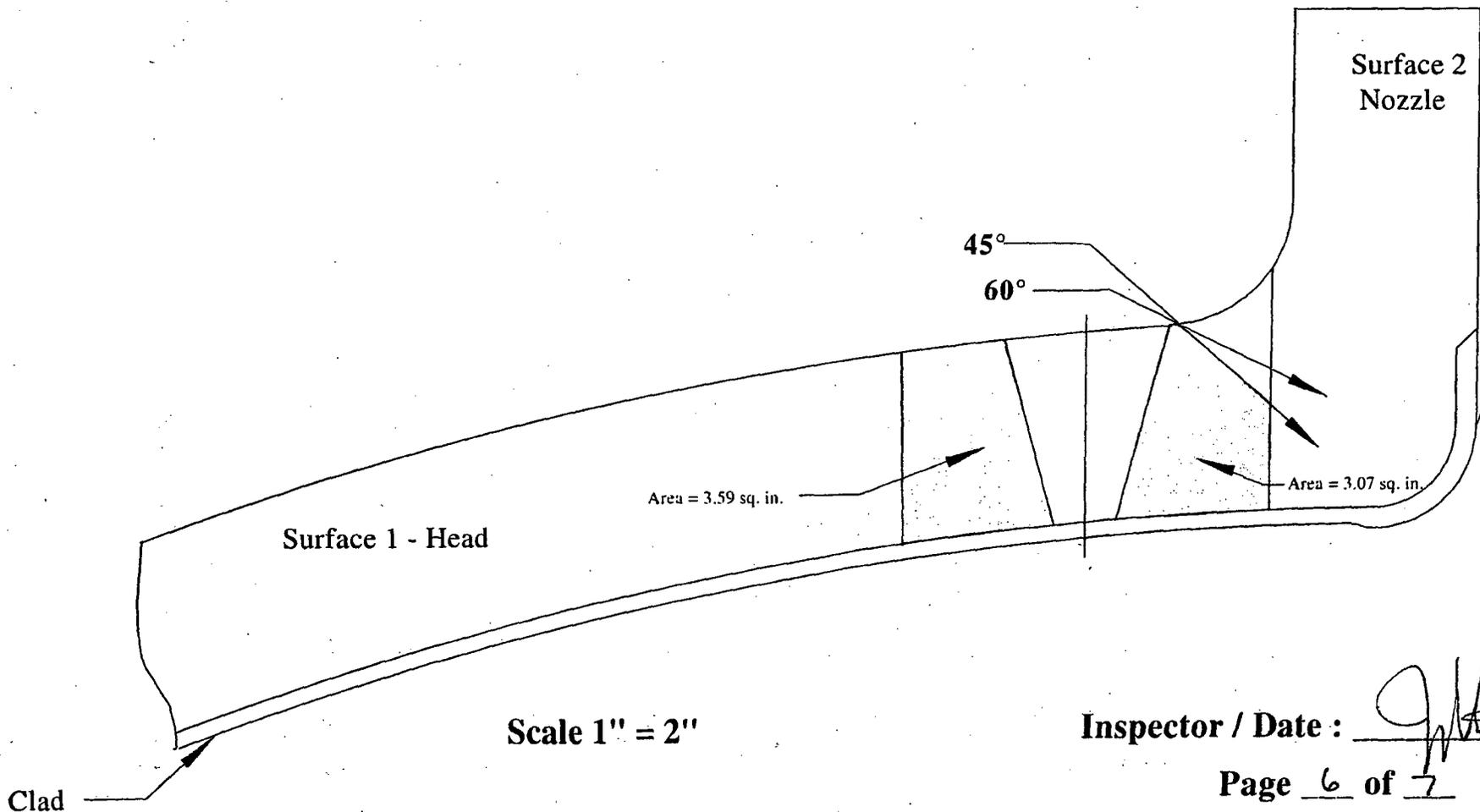
Base Material Coverage - Axial Scans

Item No. : MZ.B3.110.0006

Weld No. : ZPZR-16

Total Area of Base Material = $3.59 + 3.07 = 6.66$ sq. in.

Total Base Material Scan Coverage = $6.66 / 7.46 \times 100 = 89.3 \%$



Pressurizer Safety / Relief Nozzle to Head

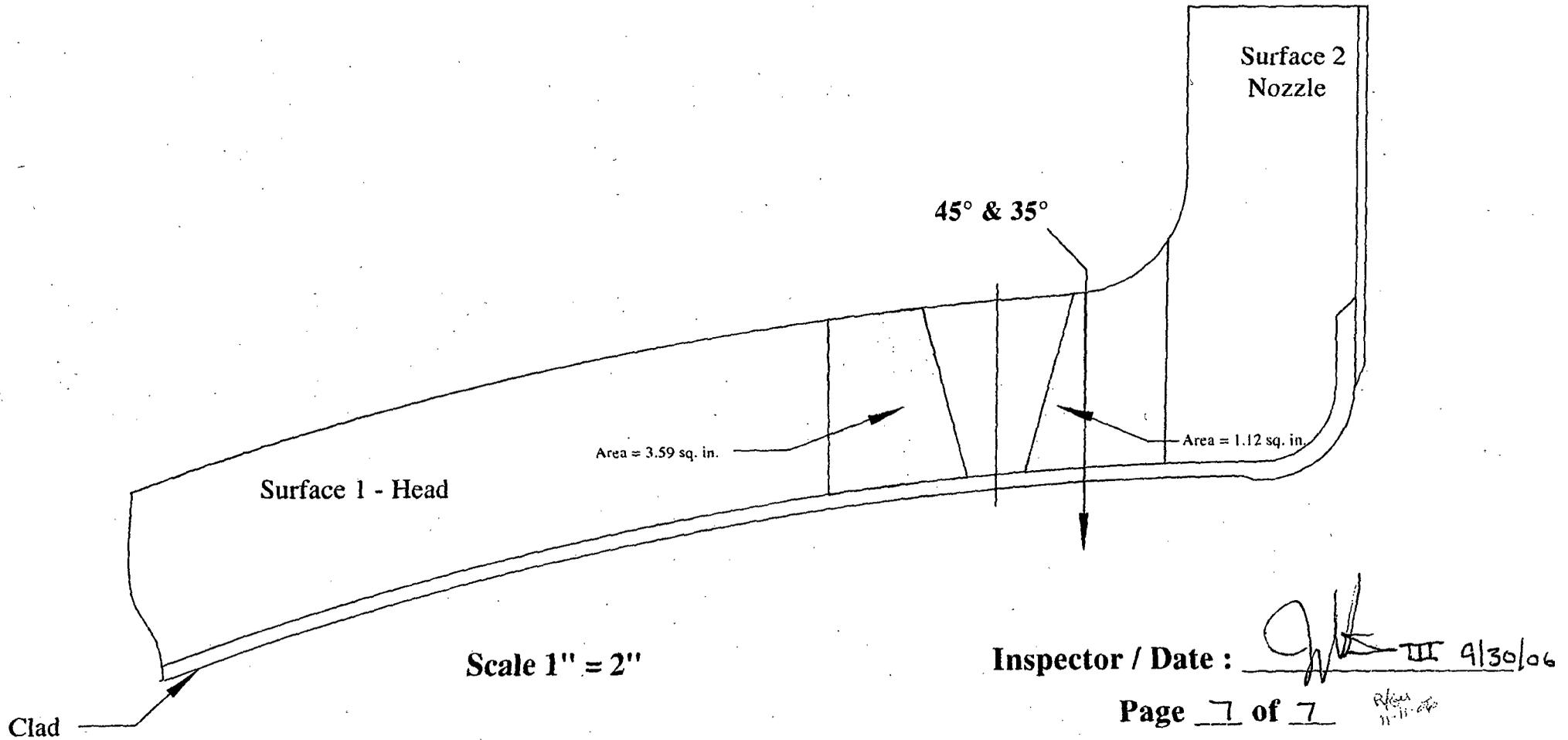
Base Material Coverage - Circumferential Scans

Item No. : MZ.B3.110.0006

Weld No. : ZPZR-16

Total Area of Base Material = $3.59 + 1.12 = 4.71$ sq. in.

Total Base Material Scan Coverage = $4.71 / 7.46 \times 100 = 63.1 \%$





UT Vessel Examination

Site/Unit: McGuire / 2 Procedure: NDE-820 Outage No.: M2-17
 Summary No.: M2.B3.110.0006 Procedure Rev.: 2 Report No.: UT-06-286
 Workscope: ISI Work Order No.: 580233 Page: 1 of 1

Code: 1998/2000 A Cat./Item: B-D/B3.110 Location: _____
 Drawing No.: MCM 2201.01-015 Description: NOZZLE to HEAD
 System ID: NC
 Component ID: 2PZR-16 Size/Length: N/A Thickness/Diameter: 1.900 / 15.000
 Limitations: Yes - See Limitation Calculations on Report No. UT-06-282 Start Time: 1510 Finish Time: 1518

Examination Surface: Inside Outside Surface Condition: GROUND FLUSH

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

Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27218 Surface Temp.: 91 °F

Cal. Report No.: CAL-06-334

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

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

Comments:

Results: Accept Reject Info

Percent Of Coverage Obtained > 90%: No - 81.2% Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Tucker, David K.	II-N	<i>David K. Tucker</i>	9/18/2006	Jay A Eaton Level III	<i>Jay A Eaton</i>	9/30/2006
Examiner	Level	Signature	Date	Site Review	Signature	Date
Moss, Gary J.	II	<i>Gary J. Moss</i>	9/18/2006	N/A		
Other	Level	Signature	Date	ANII Review	Signature	Date
N/A	N/A			Jerome Swan	<i>Jerome Swan</i>	10/3/06

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