Duke Power®
A Duke Energy Company

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September 20, 2004

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

Subject: Duke Energy
Oconee Nuclear Station, Unit 1
Docket Nos. 50-269
Third Ten Year Inservice Inspection Interval
Requests for Relief No. 04-ON-005

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 ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition with no Addenda (as modified by Code Case N-460).

Request for Relief 04-ON-005 is to allow Duke Energy to take credit for nine (9) limited ultrasonic examinations on welds associated with various systems and components described in the attached request.

During examination of the subject Unit 1 welds, the ultrasonic examination coverage did not meet the 90% examination requirements of Code Case N-460. The obtainable volume coverage for each weld examination is indicated on the attached request. Achievement of greater examination coverage for these welds is impractical due to piping/valve geometry, interferences, and existing examination technology. Therefore, Duke Energy requests that the NRC grant relief as authorized under 10 CFR 50.55a(g)(6)(i).

A047

If there are any questions or further information is needed you may contact R. P. Todd at (864) 885-3418.

Very truly yours,

R. A. Jones
Site Vice President

Attachment

xc w/att: Mr. William D. Travers
Administrator, Region II
U.S. Nuclear Regulatory Commission
Atlanta Federal Center
61 Forsyth St., SWW, Suite 23T85
Atlanta, GA 30303

L. N. Olshan, Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
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xc(w/o attch):

M. C. Shannon
Senior NRC Resident Inspector
Oconee Nuclear Station

Mr. Henry Porter
Division of Radioactive Waste Management
Bureau of Land and Waste Management
SC Dept. of Health & Environmental Control
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Columbia, SC 29201

Request for Relief

04-ON-005

Limited Examinations Associated With Various Systems and Components

1EOC 21

Proposed Relief in Accordance with 10 CFR 50.55a(g)(5)(iii)
Inservice Inspection Impracticality
Duke Energy Corporation
Oconee Nuclear Station – Unit 1 (EOC-21)
Third 10-Year Interval – Inservice Inspection Plan
Interval Start Date= 7-15-1993 Interval End Date=1-1-2004
ASME Section XI Code – 1989 Edition with No Addenda

	I.	II. & III.	IV.	V.	VI.	VII.
Limited Area/Weld I.D. Number	**System / Component for Which Relief is Requested:** Area or Weld to be Examined	**Code Requirement from Which Relief is Requested:** 100% Exam Volume Coverage Exam Category Item No. Fig. No. Limitation Percentage	**Basis for Relief**	**Alternate Examinations or Testing**	**Justification for Granting Relief**	**Implementation Schedule**
1-PZR-WP26-3	Reactor Coolant System Pressurizer Sensing Sample Nozzle to Shell Weld (circumferential weld)	Exam Category B-B Item No. B03.110.011 Fig. IWB-2500-7 32.08% Volume coverage Limited Scan of Examination Volume A-B-C-D-E-F-G-H	See Paragraph "A"	See Paragraph "I"	See Paragraph "J"	See Paragraph "O"
1-PZR-WP26-7	Reactor Coolant System Pressurizer Sensing Sample Nozzle to Shell Weld (circumferential weld)	Exam Category B-B Item No. B03.110.012 Fig. IWB-2500-7 32.08% Volume coverage Limited Scan of Examination Volume A-B-C-D-E-F-G-H	See Paragraph "A"	See Paragraph "I"	See Paragraph "J"	See Paragraph "O"
1LP-140-8A	Low Pressure Injection System Elbow to Valve 1LP-1 Weld	Exam Category B-J Item No. B09.011.111 Fig. IWB-2500-8 (c) 85.07% Volume Coverage Limited Scan of Examination Volume C-D-E-F (100% examination coverage from one side and partial coverage from opposite side)	See Paragraph "B"	See Paragraph "I"	See Paragraph "K"	See Paragraph "O"

	I.	II. & III.	IV.	V.	VI.	VII.
Limited Area/Weld I.D. Number	**System / Component for Which Relief is Requested:** Area or Weld to be Examined	**Code Requirement from Which Relief is Requested:** 100% Exam Volume Coverage Exam Category Item No. Fig. No. Limitation Percentage	**Basis for Relief**	**Alternate Examinations or Testing**	**Justification for Granting Relief**	**Implementation Schedule**
1-51A-01-114AC	High Pressure Injection System Pipe to Valve 1HP-63 Weld	Exam Category C-F-1 Item No. C05.021.029 Fig. IWC-2500-7 (a) 55.55% Volume Coverage Limited Scan of Examination Volume C-D-E-F (examination from one side)	See Paragraph "C"	See Paragraph "I"	See Paragraph "M"	See Paragraph "O"
1HP-187-114	High Pressure Injection System Elbow to Valve 1HP-138 Weld	Exam Category C-F-1 Item No. C05.021.034 Fig. IWC-2500-7 (a) 62.5% Volume Coverage Limited Scan of Examination Volume C-D-E-F (examination from one side)	See Paragraph "D"	See Paragraph "I"	See Paragraph "M"	See Paragraph "O"
1-51A-02-49BA	High Pressure Injection System Pipe to Valve 1HP-132 Weld	Exam Category C-F-1 Item No. C05.021.050 Fig. IWC-2500-7 (a) 62.5% Volume Coverage Limited Scan of Examination Volume C-D-E-F (examination from one side)	See Paragraph "E"	See Paragraph "I"	See Paragraph "M"	See Paragraph "O"
1-51A-02-23BB	High Pressure Injection System Flange to Pipe Weld	Exam Category C-F-1 Item No. C05.021.056 Fig. IWC-2500-7 (a) 62.5% Volume Coverage Limited Scan of Examination Volume C-D-E-F (examination from one side)	See Paragraph "F"	See Paragraph "I"	See Paragraph "M"	See Paragraph "O"

	I.	II. & III.	IV.	V.	VI.	VII.
Limited Area/Weld I.D. Number	**System / Component for Which Relief is Requested:** Area or Weld to be Examined	**Code Requirement from Which Relief is Requested:** 100% Exam Volume Coverage Exam Category Item No. Fig. No. Limitation Percentage	**Basis for Relief**	**Alternate Examinations or Testing**	**Justification for Granting Relief**	**Implementation Schedule**
1HP-187-116	High Pressure Injection System Tee to Elbow Weld	Exam Category C-F-1 Item No. C05.021.073 Fig. IWC-2500-7 (a) 62.5% Volume Coverage Limited Scan of Examination Volume C-D-E-F (examination from one side)	See Paragraph "G"	See Paragraph "I"	See Paragraph "M"	See Paragraph "O"
1HP-194-4	High Pressure Injection System Pipe to Valve 1HP-27 Weld	Exam Category C-F-1 Item No. C05.021.111 Fig. IWC-2500-7 (a) 65.18% Volume Coverage Limited Scan of Examination Volume C-D-E-F (examination from one side)	See Paragraph "H"	See Paragraph "I"	See Paragraph "M"	See Paragraph "O"

See Attachment A for B03.110.011 and B03.110.012 area/weld locations.
See Attachment B for inspection data on all items listed in the above table for this Relief Request.

Note: Items in this relief request were inspected during one of the following months: August, September, October or November of 2003.

IV. Basis for Relief

Paragraph A: (The Pressurizer sensing sample nozzle material is SA508 GR. B and the heater belt shell material is SA 212 GR. B. Welds 1-PZR-WP26-3 and 1-PZR-WP26-7 have a diameter of 5.75 inches and a wall thickness of 6.188 inches.)
During the ultrasonic examination of welds 1-PZR-WP26-3 and 1-PZR-WP26-7, 32.08% coverage of the required examination volume was obtained for each of the welds. The percentage of coverage reported represents the aggregate coverage from all scans performed on the weld and adjacent base material. The coverage from each scan was as follows: straight beam, 37.42%; 45° scan, 39.06%; 60° scan, 19.77%. Limitations caused by the nozzle configuration prevented scanning from both sides of the weld. In order to scan all of the required surfaces for the inspection of these welds, the sampling nozzles would have to be redesigned to allow scanning from both sides of the weld, which is impractical. There were no recordable indications found during the inspection of these welds.

Paragraph B: (The valve and elbow material is stainless steel. Weld 1LP-140-8A has a diameter of 12 inches and a wall thickness of 1.125 inches.)
During the ultrasonic examination of weld 1LP-140-8A, 85.07% coverage of the required examination volume was obtained. The percentage of coverage reported represents the aggregate coverage from all scans performed on the weld and adjacent base material. The 45° circumferential scans, both clockwise and counter-clockwise covered 100% of the examination volume, the 60° axial scan from the elbow side covered 100% of the examination volume and the 60° axial scan from the valve side covered 40.3% of the examination volume. Scanning limitations caused by the valve configuration prevented full scanning from both sides of the weld. In order to scan all of the required surfaces for the inspection of this weld, the valve would have to be redesigned to allow scanning from both sides of the weld, which is impractical. There were no recordable indications found during the inspection of this weld.

Paragraph C: (The valve and pipe material is stainless steel. Weld 1-51A-01-114AC has a diameter of 2.5 inches and a wall thickness of .375 inches.)
During the ultrasonic examination of weld 1-51A-01-114AC, 55.55% coverage of the required examination volume was obtained. The percentage of coverage represents the aggregate coverage from all scans performed on the weld and adjacent base material. The 45° circumferential scans, both clockwise and counter-clockwise covered 61.1% of the examination volume and the 60° axial scan from the pipe side covered 100% of the examination volume. In addition, a 70° shear wave angle beam was used to interrogate the weld and base material on the valve side of the weld. Scanning limitations caused by the valve configuration prevented scanning from both sides of the weld. In order to scan all of the required surfaces for the inspection of this weld, the valve would have to be redesigned to allow scanning from both sides of the weld, which is impractical. There were no recordable indications found during the inspection of this weld.

Paragraph D: (The valve and elbow material is stainless steel. Weld 1HP-187-114 has a diameter of 4 inches and a wall thickness of .531 inches.)
During the ultrasonic examination of weld 1HP-187-114, 62.5% coverage of the required examination volume was obtained. The percentage of coverage represents the aggregate coverage from all scans performed on the weld and adjacent base material. The 45° circumferential scans, both clockwise and counter-clockwise covered 75% of the examination volume and the 60° axial scan from the elbow side covered 100% of the examination volume.
Scanning limitations caused by the valve configuration prevented scanning from both sides of the weld. In order to scan all of the required surfaces for the inspection of this weld, the valve would have to be redesigned to allow scanning from both sides of the weld, which is impractical. There were no recordable indications found during the inspection of this weld.

Paragraph E: (The valve and pipe material is stainless steel. Weld 1-51A-02-49BA has a diameter of 4 inches and a wall thickness of .531 inches.)
During the ultrasonic examination of weld 1-51A-02-49BA, 62.5% coverage of the required examination volume was obtained. The percentage of coverage represents the aggregate coverage from all scans performed on the weld and adjacent base material. The 45° circumferential scans, both clockwise and counter-clockwise covered 100% of the examination volume and the 60° axial scan from the pipe side covered 100% of the examination volume. Scanning limitations caused by the valve configuration prevented scanning from both sides of the weld. In order to scan all of the required surfaces for the inspection of this weld, the valve would have to be redesigned to allow scanning from both sides of the weld, which is impractical. There were no recordable indications found during the inspection of this weld.

Paragraph F: (The flange and pipe material is stainless steel. Weld 1-51A-02-23BB has a diameter of 4 inches and a wall thickness of .531 inches.)
During the ultrasonic examination of weld 1-51A-02-23BB, 62.5% coverage of the required examination volume was obtained. The percentage of coverage represents the aggregate coverage from all scans performed on the weld and adjacent base material. The 45° circumferential scans, both clockwise and counter-clockwise covered 100% of the examination volume and the 60° axial scan from the pipe side covered 100% of the examination volume. Scanning limitations caused by the flange configuration prevented scanning from both sides of the weld. In order to scan all of the required surfaces for the inspection of this weld, the flange would have to be redesigned to allow scanning from both sides of the weld, which is impractical. There were no recordable indications found during the inspection of this weld.

Paragraph G: (The tee and elbow material is stainless steel. Weld 1HP-187-116 has a diameter of 4 inches and a wall thickness of .531 inches.)
During the ultrasonic examination of weld 1HP-187-116, 62.5% coverage of the required examination volume was obtained. The percentage of coverage represents the aggregate coverage from all scans performed on the weld and adjacent base material. The 45° circumferential scans, both clockwise and counter-clockwise covered 100% of the examination volume and the 60° axial scan from the elbow side covered 100% of the examination volume. Scanning limitations caused by the tee configuration prevented scanning from both sides of the weld. In order to scan all of the required surfaces for the inspection of this weld, the tee would have to be redesigned to allow scanning from both sides of the weld, which is impractical. There were no recordable indications found during the inspection of this weld.

Paragraph H: (The valve and pipe material is stainless steel. Weld 1HP-194-4 has a diameter of 4 inches and a wall thickness of .674 inches.)
During the ultrasonic examination of weld 1HP-194-4, 65.18% coverage of the required examination volume was obtained. The percentage of coverage represents the aggregate coverage from all scans performed on the weld and adjacent base material. The 45° circumferential scans, both clockwise and counter-clockwise covered 80.36% of the examination volume due to a sharp transition where the weld joins the valve body. The 60° axial scan from the pipe side covered 100% of the examination volume. Scanning limitations caused by the valve configuration prevented scanning from both sides of the weld. In order to scan all of the required surfaces for the inspection of this weld, the valve would have to be redesigned to allow scanning from both sides of the weld, which is impractical. There were no recordable indications found during the inspection of this weld.

V. Alternate Examinations or Testing

Paragraph I:
The scheduled 10-year code examination was performed on the referenced area/weld and it resulted in the noted limited coverage of the required ultrasonic volume. No additional examinations are planned for the area/weld during the current inspection interval.

VI. Justification for Granting Relief

Paragraph J:
Ultrasonic examination of areas/welds for item number B03.110 were conducted using personnel, qualified in accordance with ASME Section XI, Appendix VII of the 1995 Edition with the 1996 Addenda. The ultrasonic procedures used complied with the requirements of ASME Section V, Article 4, 1989 Edition with no addenda. Although 100% coverage of the examination volume could not be achieved, the amount of coverage obtained for this examination provides an acceptable level of quality and integrity. (See Paragraph L for additional justification.)

Paragraph K:
Ultrasonic examination of area/weld for item number B09.011 was conducted using personnel, equipment and procedures qualified in accordance with ASME Section XI, Appendix VIII Supplement 2 of the 1995 Edition with the 1996 Addenda as administered by the PDI. Although 100% of the required scanning could not be achieved, the amount of coverage of the examination volume obtained for this weld provides an acceptable level of quality and integrity. In addition to the volumetric examination with limited coverage, Duke Energy performed a surface examination (code required) on the B09.011 item and achieved 100% coverage. The result of the surface examination was acceptable. (See Paragraph L for additional justification.)

Duke Energy Corporation does not claim credit for coverage of the far side of austenitic welds. The characteristics of austenitic weld metal attenuate and distort the sound beam when shear waves pass through the weld. Refracted longitudinal waves provide better penetration but cannot be used beyond the first sound path leg. Duke Energy Corporation uses a combination of shear waves and longitudinal wave to examine single sided austenitic welds when the nominal material thickness exceeds 0.5 inch. A 70° shear wave angle beam is used to interrogate the far side of the weld when the nominal material thickness is equal to or less than 0.5 inch.

The procedures, personnel and equipment have been qualified through the Performance Demonstration Initiative (PDI). However, although longitudinal wave search units and 70° shear wave search units were used in the qualification and cracks were detected through the weld metal, PDI does not provide a qualification for single sided examination of similar metal austenitic piping welds.

In addition to the B09.011 weld that relief is being requested for limited scanning, there were 7 additional B09.011 welds that surface and volumetric examinations were performed on. The examinations didn't identify any recordable indications and 100% coverage was obtained on each of the 7 welds. The 7 additional welds were from the same system as the B09.011 weld of this request.

Paragraph L:
Duke Energy will use Class 1, Examination Category B-P, pressure testing and VT-2 visual examination to compliment the limited scan examinations. The Code requires that a pressure test be performed after each refueling outage for Class 1. These tests require a VT-2 visual examination for evidence of leakage. This testing provides adequate assurance of pressure boundary integrity.

In addition to the above Code required examinations (volumetric and pressure test), there are other activities which provide a high level of confidence that, in the unlikely event that leakage did occur through these welds, it would be detected and isolated. Specifically, leakage from these welds would be detected by monitoring of the Reactor Coolant System (RCS), which is performed once each shift under procedure PT/1,2,3/A/0600/10, "RCS Leakage". This RCS leakage monitoring is a requirement of Technical Specification 3.4.13, "Reactor Coolant System Leakage". Any leakage is also evaluated in accordance with this Technical Specification. The leakage could also be detected through several other methods. One is the RCS mass balance calculation. A second is the Reactor Building air particulate monitor. This monitor is sensitive to low leak rates; the iodine monitor, gaseous monitor and area monitor are capable of detecting any fission products in the coolant and will make these monitors sensitive to coolant leakage. A third is the level indicator in the Reactor Building normal sump. A fourth is a loss of level in the Letdown Storage Tank. Based on the results of the required volumetric, surface and VT-2 examinations performed during this outage, it's Duke's belief that this combination of examinations provides a reasonable assurance of component integrity.

Paragraph M:
Ultrasonic examination of areas/welds for the item numbers C05.021 were conducted using personnel, equipment and procedures qualified in accordance with ASME Section XI, Appendix VIII Supplement 2 of the 1995 Edition with the 1996 Addenda as administered by the PDI. Although 100% coverage of the examination volume could not be achieved, the amount of coverage obtained for each of these welds provides an acceptable level of quality and integrity. In addition to the volumetric examinations with limited coverage, Duke Energy performed a surface examination (code required) on the each of the C05.021 items and achieved 100% coverage. The results from the surface examinations were acceptable. (See Paragraph N for additional justification.)

In addition to the C05.021 welds that relief is being requested for limited scanning, there were 12 additional C05.021 welds that surface and volumetric examinations were performed on. The examinations didn't identify any recordable indications and 100% coverage was obtained on each of the 12 welds. The 12 additional welds were from the same system as the C05.021 welds of this request.

Duke Energy Corporation does not claim credit for coverage of the far side of austenitic welds. The characteristics of austenitic weld metal attenuate and distort the sound beam when shear waves pass through the weld. Refracted longitudinal waves provide better penetration but cannot be used beyond the first path leg. Duke Energy Corporation uses a combination of shear waves and longitudinal waves to examine single sided austenitic welds when the nominal material thickness exceeds 0.5 inch. A 70° shear wave angle beam is used to interrogate the far side of the weld when the nominal material thickness is equal to or less than 0.5 inch.

Paragraph N:
Duke Energy will use Class 2, Examination Category C-H, pressure testing and VT-2 visual examination to compliment the limited examination coverage. The Code requires that a pressure test be performed once each period for Class 2 items. These tests require a VT-2 visual examination for evidence of leakage. This testing provides adequate assurance of pressure boundary integrity.

In addition to the above Code required examinations (surface and pressure test), there are other activities which provide a high level of confidence that, in the unlikely case that leakage did occur through these welds, it would be detected and isolated. One is that leakage from these welds would be detected by Operations personnel during their regular rounds (reference OP/1/A/1102/020A). The Nuclear Equipment Operator has been trained to look for any unusual conditions, such as leaks. In addition, the procedure addresses leaks as being an item to consider during rounds. The C05.021 items in this request are located in an area where operations personnel will be walking through as part of their rounds; therefore, any leak would be identified by visual observation.

Duke Energy has examined the welds/components referenced in this request to the maximum extent possible utilizing the latest in examination techniques and equipment. The welds/components identified in Section I of this request were rigorously inspected by volumetric NDE methods during construction and verified to be free from unacceptable fabrication defects. Based on the coverage and results of the required volumetric exams and surface exams this outage and the pressure testing (VT-2) exams, it is Duke's belief that this combination of examinations provides a reasonable assurance of component integrity.

VII. Implementation Schedule

Paragraph O
The scheduled third 10-year interval plan code examination was performed on the referenced areas/welds resulting in limited scan and volumetric coverage. No additional examinations are planned for the areas/welds during the current inspection interval. The same areas/welds may be examined again as part of the next (fourth) 10-year interval plan, depending on the applicable code year edition and addenda requirements adopted in the future.

VIII. Other Information

The following individuals contributed to the development of this relief request:

James J. McArdle (NDE Level III Inspector) provided Sections II through V and part of Section VI.

B. W. Carney, Jr. (Oconee Engineering) provided part of Section VI.

Larry C. Keith (Oconee ISI Plan Manager) compiled the remaining sections.

Sponsored By: Larry C. Keith **Date** 6-28-04

Approved By: L. Kevin Rhyne **Date** 6/28/04

ATTACHMENT "A"

WELD LIST

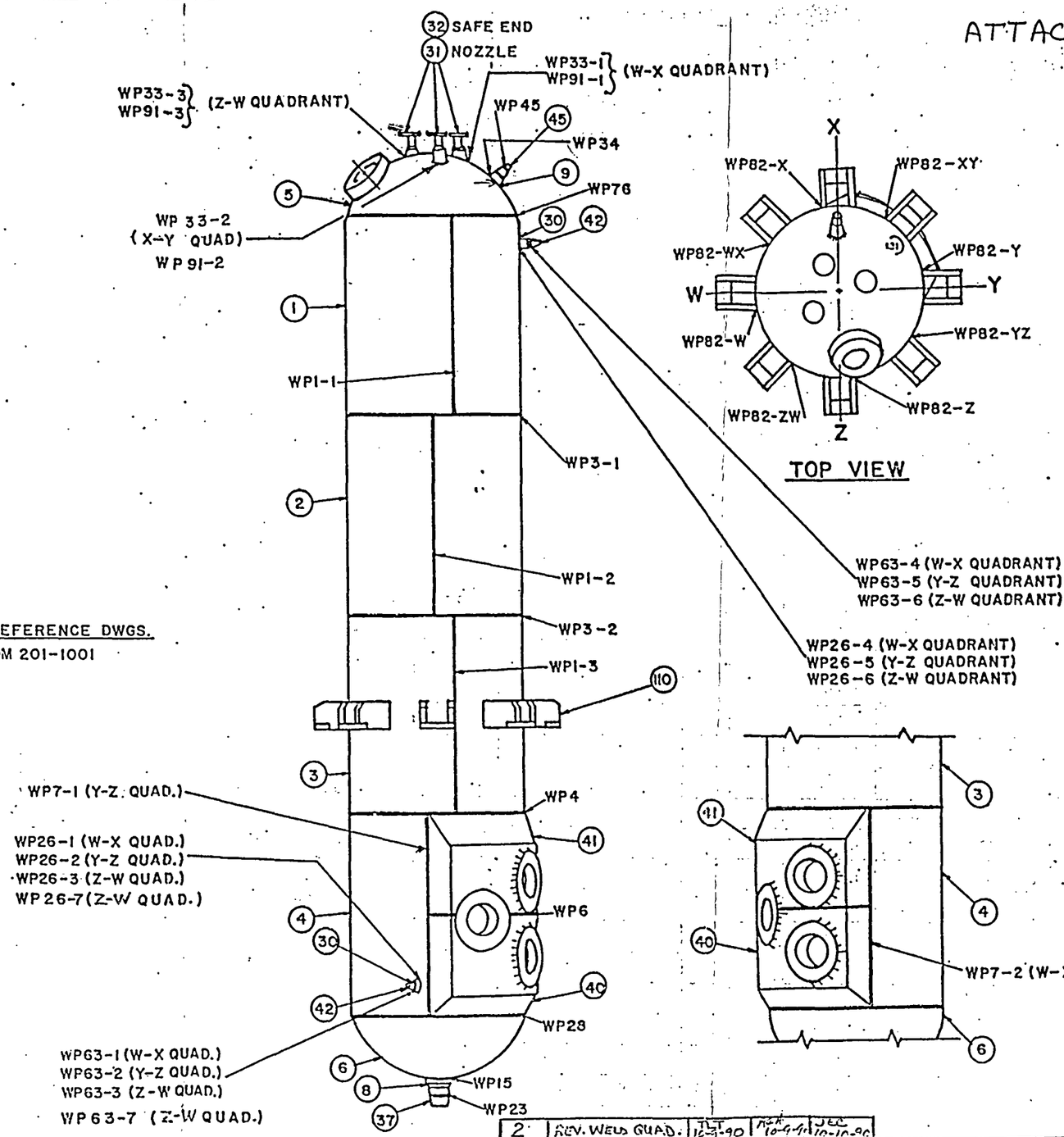
IDENT NO.	PIECE NO.	DIAM.	THICK.
WP1-1	1 TO 1	N/A	6.188
WP1-2	2 TO 2	N/A	6.188
WP1-3	3 TO 3	N/A	6.188
WP3-1	1 TO 2	84" I.D.	6.188
WP3-2	2 TO 3	84" I.D.	6.188
WP4	3 TO 4 & 41	84" I.D.	6.188
WP6	40 TO 41	84" I.D.	13.563
WP7-1	4 TO 40 & 41	N/A	6.188
WP7-2	4 TO 40 & 41	N/A	6.188
WP15	6 TO 8		4.750
WP23	8 TO 37	10" NPS	1.063
WP26-1	30 TO 4		6.188
WP26-2	30 TO 4		6.188
WP26-3	30 TO 4		6.188
WP26-4	30 TO 1		6.188
WP26-5	30 TO 1		6.188
WP26-6	30 TO 1		6.188
WP26-7	30 TO 4		6.188
WP28	6 TO 4 & 40	84" I.D.	4.750
WP33-1	31 TO 5		4.750
WP33-2	31 TO 5		4.750
WP33-3	31 TO 5		4.750
WP34	9 TO 5		4.750
WP45	45 TO 9	4"NPS	0.750
WP63-1	42 TO 30		1.1875
WP63-2	42 TO 30		1.1875
WP63-3	42 TO 30		1.1875
WP63-4	42 TO 30		1.1875
WP63-5	42 TO 30		1.1875
WP63-6	42 TO 30		1.1875
WP76	1 TO 5	84" I.D.	4.750
WP82-X	110 TO 3	N/A	3.500
WP82-XY	110 TO 3	N/A	3.500
WP82-Y	110 TO 3	N/A	3.500
WP82-YZ	110 TO 3	N/A	3.500
WP82-Z	110 TO 3	N/A	3.500
WP82-ZW	110 TO 3	N/A	3.500
WP82-W	110 TO 3	N/A	3.500
WP82-WX	110 TO 3	N/A	3.500

BILL OF MATERIAL

PC. NO.	QTY	DESCRIPTION	MATL.
1	1	UPPER SHELL COURSE	SA 212 GR. B
2	1	MIDDLE SHELL COURSE	SA 212 GR. B
3	1	LOWER SHELL COURSE	SA 212 GR. B
4	1	HEATER BELT SHELL	SA 212 GR. B
5	1	UPPER HEAD	SA 212 GR. B
6	1	LOWER HEAD	SA 212 GR. B
8	1	PRESSURIZER SURGE NOZZLE	SA 508 CL. 1
9	1	PRESSURIZER SPRAY NOZZLE	SA. 508 CL. 1
30	~~6~~ 5	~~SAMPLING~~ NOZZLE	SA. 508 GR. B
31	3	PRESSURIZER RELIEF NOZZLE	SA. 508 CL. 1
32	3	PRESSURIZER RELIEF NOZZLE SAFE END	SA 182 F316
37	1	PRESSURIZER SURGE NOZZLE SAFE END	SA 336 CL. F8M
40	1	LOWER HEATER BELT FORGING	SA 508 CL. 1
41	1	UPPER HEATER BELT FORGING	SA 508 CL. 1
42	~~1~~ 6	~~SAMPLING~~ NOZZLE SAFE END	SB-166
45	1	PRESSURIZER SPRAY NOZZLE SAFE END	SB-166
110	8	PRESSURIZER SUPPORT LUG ASSEMBLY	SA-516 GR. 70

WELD LIST (CONT.)

I.D. NO.	PC. NO.	DIAM.	THICK.
WP91-1	31 TO 32	2 1/2"NPS	1.000
WP91-2	31 TO 32	2 1/2"NPS	1.000
WP91-3	31 TO 32	2 1/2"NPS	1.000
WP63-7	42 TO 30	SAMPLING	1.1875



TOP VIEW

REFERENCE DWGS.
OM 201-1001

NOTES:
1. ALL I.D. NUMBERS SHALL BE PRECEDED BY "IPRZ- "
2. PIECE NUMBERS ARE SHOWN IN CIRCLES.

NO.	REVISION				
2	REV. WELD QUAD.	DRWN DATE	RVWD DATE	APPD DATE	
1	Add. Ref. Dwgs.	AWS 7/23/81	TTH 7-23-81	JOB 7-23-81	
0	ORIG.	AWS 6/27/81	TTH 7/2/81	CAC 7/2/81	

TITLE
PRESSURIZER WELD OUTLINE

DWG NO. ISI-OCNI-002 REV. 2

Duke Energy

UT Vessel Examination

Site/Unit: Oconee / 1 | Procedure: NDE-640 | Outage No.: ONS1EOC21
Summary No.: B03.110.011 | Procedure Rev.: 2 | Report No.: UT-03-206
Workscope: ISI | Work Order No.: 98403077 | Page: 1 of 1

Code: Section XI, 1989 | Cat./Item: B-D- /B3.110.11 | Location: N/A
Drawing No.: ISI OCN1-002 | Description: Pzr Nozzle to Shell
System ID: 50
Component ID: B03.110.011 /1-PZR-WP26-3 | Size/Length: N/A | Thickness/Diameter: 5.75 / 6.187
Limitations: YES | Start Time: 1326 | Finish Time: 1329

Examination Surface: Inside ☐ Outside ☑ | Surface Condition: AS GROUND
Lo Location: 9.2.3 | Wo Location: Centerline of Weld | Couplant: ULTRAGEL II | Batch No.: 01225
Temp. Tool Mfg.: FISHER | Serial No.: MCNDE32769 | Surface Temp.: 80 °F
Cal. Report No.: CAL-03-286

Angle Used	0	45	45T	60	60T	
Scanning dB	29.5					

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

Comments:
FC 03-20

Results: Accept ☑ Reject ☐ Info ☐
Percent Of Coverage Obtained > 90%: No | Reviewed Previous Data: Yes

Examiner Mauldin, Larry E.	Level II	Signature Larry E. Mauldin	Date 9/28/2003	Reviewer Gary Moss		Signature	Date 10-5-03
Examiner Potter, Michael E.	Level II-N	Signature Michael E. Potter	Date 9/28/2003	Site Review		Signature	Date
Other	Level	Signature	Date	ANII Review		Signature Nancy C Retzlaff Slaughter	Date 10/13/03

Duke Energy

UT Vessel Examination

Site/Unit: Oconee / 1 | Procedure: NDE-820 | Outage No.: ONS1EOC21
Summary No.: B03.110.011 | Procedure Rev.: 1 | Report No.: UT-03-200
Workscope: ISI | Work Order No.: 98403077 | Page: 1 of 2

Code: Section XI, 1989 | Cat./Item: B-D- /B3.110.11 | Location: N/A
Drawing No.: ISI OCN1-002 | Description: Pzr Nozzle to Shell
System ID: 50
Component ID: B03.110.011 /1-PZR-WP26-3 | Size/Length: N / A | Thickness/Diameter: 3.75 / 6.187
Limitations: YES | Start Time: 1310 | Finish Time: 1326

Examination Surface: Inside ☐ Outside ☑ | Surface Condition: AS GROUND
Lo Location: 9.2.3 | Wo Location: N / A | Couplant: ULTRAGEL II | Batch No.: 01225
Temp. Tool Mfg.: FISHER | Serial No.: MCNDE32769 | Surface Temp.: 80 °F
Cal. Report No.: CAL-03-269, CAL-03-275

Angle Used	0	45	45T	60	60T	
Scanning dB		60	60	70.5	70.5	

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

Comments:
FC 03-31

Results: Accept ☑ Reject ☐ Info ☐
Percent Of Coverage Obtained > 90%: No / 68.6% | Reviewed Previous Data: Yes

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Mauldin, Larry E.		Larry E. Mauldin	9/28/2003			Gary J. Moss	10-9-03
Examiner	Level II-N	Signature	Date	Site Review		Signature	Date
Potter, Michael E.		Michael E. Potter	9/28/2003				
Other	Level	Signature	Date	ANII Review		Signature	Date
						Nancy C Ritchie Slaughter	10/13/03

Duke Energy

Supplemental Report

Report No.: UT-03-200

ummary No.: B03.110.011

Examiner: Mauldin, Larry E. Level: II Reviewer: [signature] Date: 10/07/03

Examiner: Potter, Michael E. Level: II-N Site Review: Date:

Other: Level: ANII Review: [signature] Date: 10/13/03

Comments: ISI LIMITATION REPORT--SEE ATTACHED SHEET

Sketch or Photo:

DUKE POWER COMPANY
ISI LIMITATION REPORT

ONS1EOC21
UT-03-200

Component/Weld ID: 1-PZR-WP26-3 **Item No:** B03-110.011

remarks: Due to Nozzle Configuration

☒ NO SCAN | SURFACE | BEAM DIRECTION
☐ LIMITED SCAN | ☒ 1 ☒ 2 | ☒ 1 ☒ 2 ☒ cw ☒ ccw
FROM L NA to L NA | INCHES FROM W0 1.0" to Beyond
ANGLE: ☒ 0 ☒ 45 ☒ 60 other ____ | FROM 0 DEG to 360 DEG

☐ NO SCAN | SURFACE | BEAM DIRECTION
☐ LIMITED SCAN | ☐ 1 ☐ 2 | ☐ 1 ☐ 2 ☐ cw ☐ ccw
FROM L ____ to L ____ | INCHES FROM W0 ____ to ____
ANGLE: ☐ 0 ☐ 45 ☐ 60 other ____ | FROM ____ DEG to ____ DEG

☐ NO SCAN | SURFACE | BEAM DIRECTION
☐ LIMITED SCAN | ☐ 1 ☐ 2 | ☐ 1 ☐ 2 ☐ cw ☐ ccw
FROM L ____ to L ____ | INCHES FROM W0 ____ to ____
ANGLE: ☐ 0 ☐ 45 ☐ 60 other ____ | FROM ____ DEG to ____ DEG

☐ NO SCAN | SURFACE | BEAM DIRECTION
☐ LIMITED SCAN | ☐ 1 ☐ 2 | ☐ 1 ☐ 2 ☐ cw ☐ ccw
FROM L ____ to L ____ | INCHES FROM W0 ____ to ____
ANGLE: ☐ 0 ☐ 45 ☐ 60 other ____ | FROM ____ DEG to ____ DEG

Sketch(s) attached ☒ yes ☐ No

Prepared By: Larry Mauldin *Larry Mauldin* Level: II Date: 09/28/2003 Sheet 2 of 2

Reviewed By: *David K. [illegible]* Date: 10/07/03 Authorized Inspector: *Nancy C. Ritchie Slaughter* Date: 10/13/03

Duke Energy

Determination of Percent Coverage for UT Examinations - Vessels

Site/Unit: ONS 1 | Procedure: NDE-640, NDE-820 | Outage No.: ONS1EOC21
Summary No.: B03.110.011 | Procedure Rev.: 2 1 | Report No.: UT-03-204
Workscope: 151 | Work Order No.: 98403077 | 1 of 1

0 deg Planar

Scan 100 % Length X 37.42 % volume of length / 100 = 37.42 % total for 0 deg

45 deg

Scan 1 100 % Length X 61.7 % volume of length / 100 = 61.7 % total for Scan 1
Scan 2 100 % Length X 0 % volume of length / 100 = 0 % total for Scan 2
Scan 3 100 % Length X 47.28 % volume of length / 100 = 47.28 % total for Scan 3
Scan 4 100 % Length X 47.28 % volume of length / 100 = 47.28 % total for Scan 4

Add totals and divide by # scans = 39.06 % total for 45 deg

Other deg 60

Scan 1 100 % Length X 53.10 % volume of length / 100 = 53.10 % total for Scan 1
Scan 2 100 % Length X 0 % volume of length / 100 = 0 % total for Scan 2
Scan 3 100 % Length X 13 % volume of length / 100 = 13 % total for Scan 3
Scan 4 100 % Length X 13 % volume of length / 100 = 13 % total for Scan 4

Add totals and divide by # scans = 19.77 % total for 60 deg

Percent complete coverage

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

32.08 % 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: James J. McGuire Date: 2-18-04

REVIEWED Initial ☐ Final ☑ ANII ☑ Date 3/4/04 HSBCT

OCONEE SENSING / SAMPLING NOZZLE

45° & 60° CIRC. SCAN COVERAGE

ITEM # 303.110.011
I.D. # 1-PZR-WP26-7
BY: Larry Maulden
DATE: 10.5-03

BASE METAL:

ABCD

$\frac{6.188}{2} \times (3.1 + 4.5) = 23.5$ SQ IN.

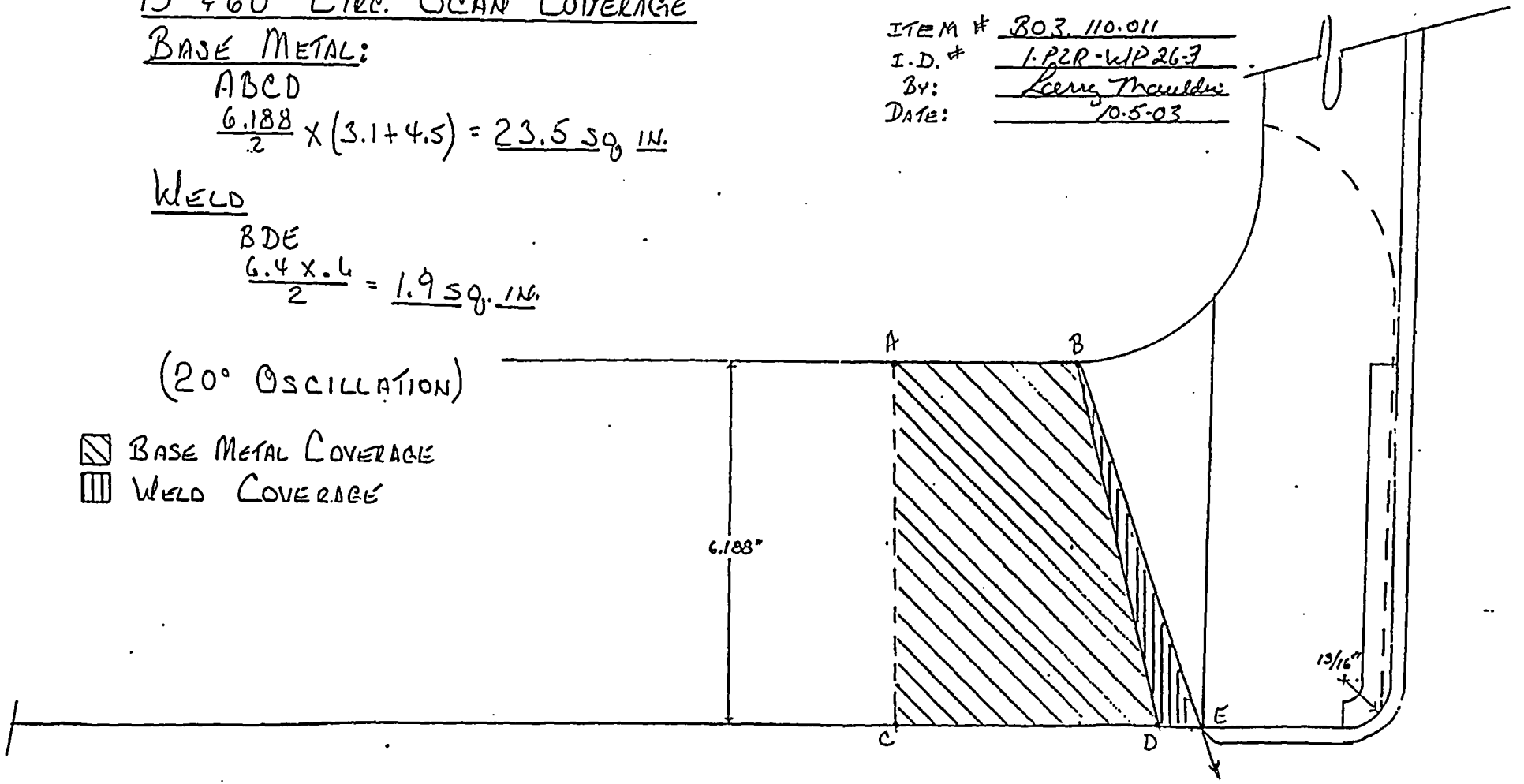
WELD

BDE

$\frac{6.4 \times 6}{2} = 1.9$ SQ. IN.

(20° OSCILLATION)

▨ BASE METAL COVERAGE
▥ WELD COVERAGE



OCONEE SENSING / SAMPLING NOZZLE

ITEM # B03.110.011
I.D. # 1-PZR-WP 26.3
BY: Larry Trimble
DATE: 10.5.03

60° COVERAGE

BASE METAL:

S1 TO S2

ABCD + FGHI

$\frac{6.188}{2} + (3.1 + 4.5) + \frac{3.2}{2}(3.0 + 4.7) = 35.8$ SQ. IN.

N/A - S2 TO S1

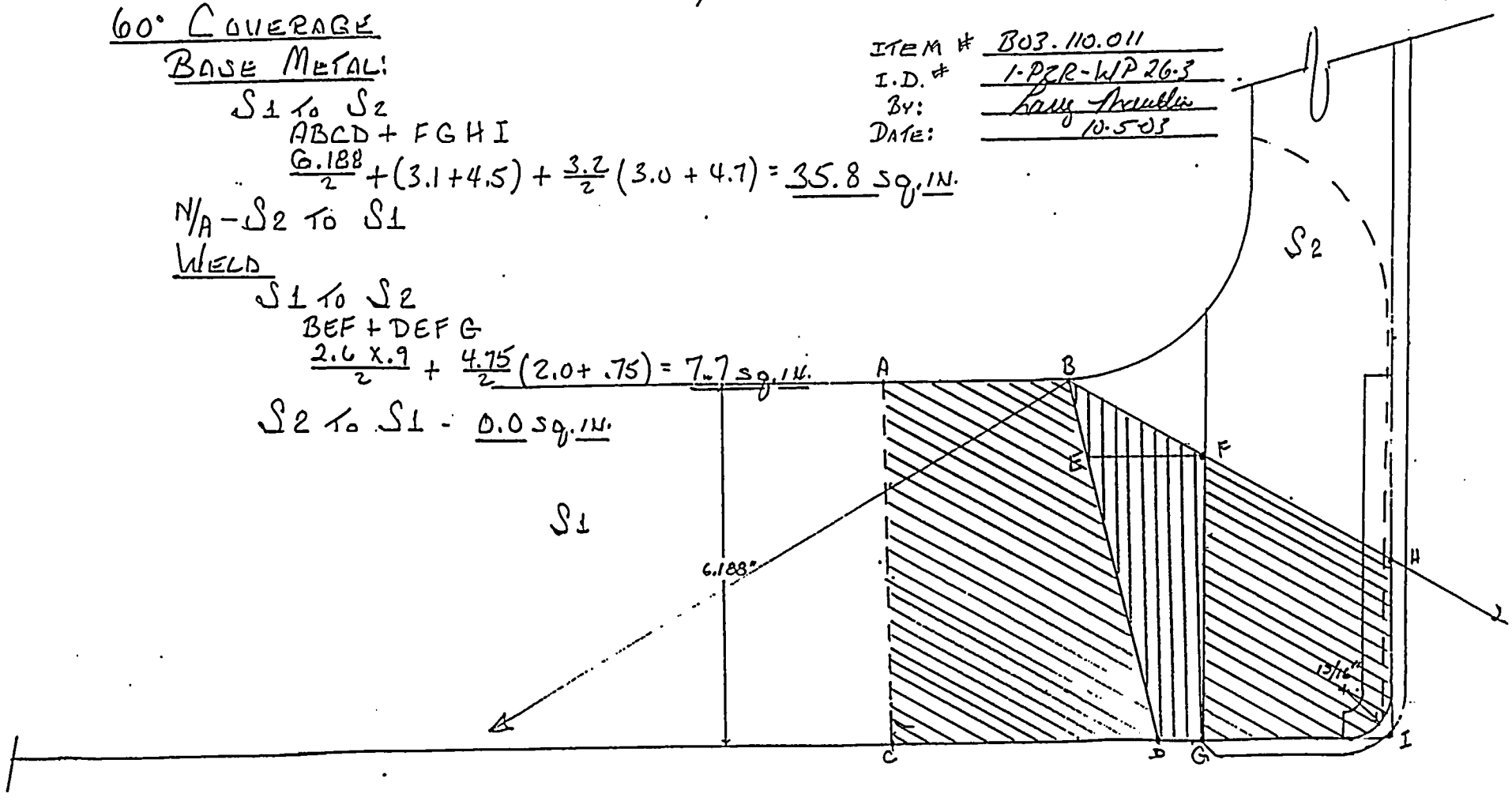
WELD

S1 TO S2

BEF + DEFG

$\frac{2.6 \times .9}{2} + \frac{4.75}{2}(2.0 + .75) = 7.7$ SQ. IN.

S2 TO S1 - 0.0 SQ. IN.



OCONEE SENSING / SAMPLING NOZZLE

ITEM # 303.110.011
I.D. # 1-PZR-WP26.3
BY: Larry Hamilton
DATE: 10-5-03

45° COVERAGE

BASE METAL:

S1 TO S2 ABCD + EFGH (N/A S2 TO S1 SCAN)

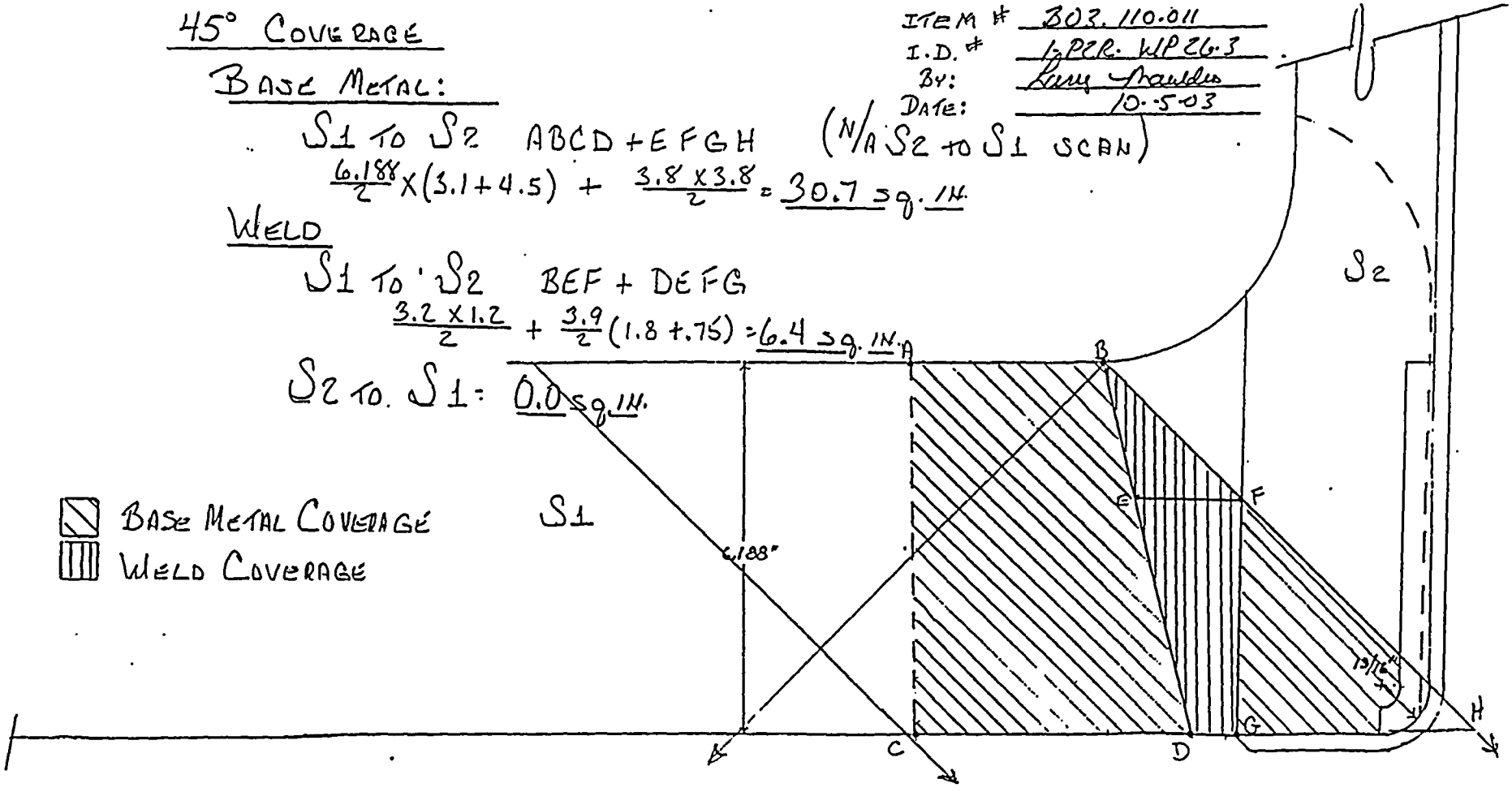
$\frac{6.188}{2} \times (3.1 + 4.5) + \frac{3.8 \times 3.8}{2} = 30.7$ sq. in.

WELD

S1 TO S2 BEF + DEFG

$\frac{3.2 \times 1.2}{2} + \frac{3.9}{2}(1.8 + .75) = 6.4$ sq. in.

S2 TO S1: 0.0 sq. in.



BASE METAL COVERAGE
WELD COVERAGE

OCONEE SENSING / SAMPLING NOZZLE

ITEM # B03.110.011
I.D. # 1-PZR-WP26-3
BY: Larry Mauldin
DATE: 10-5-03

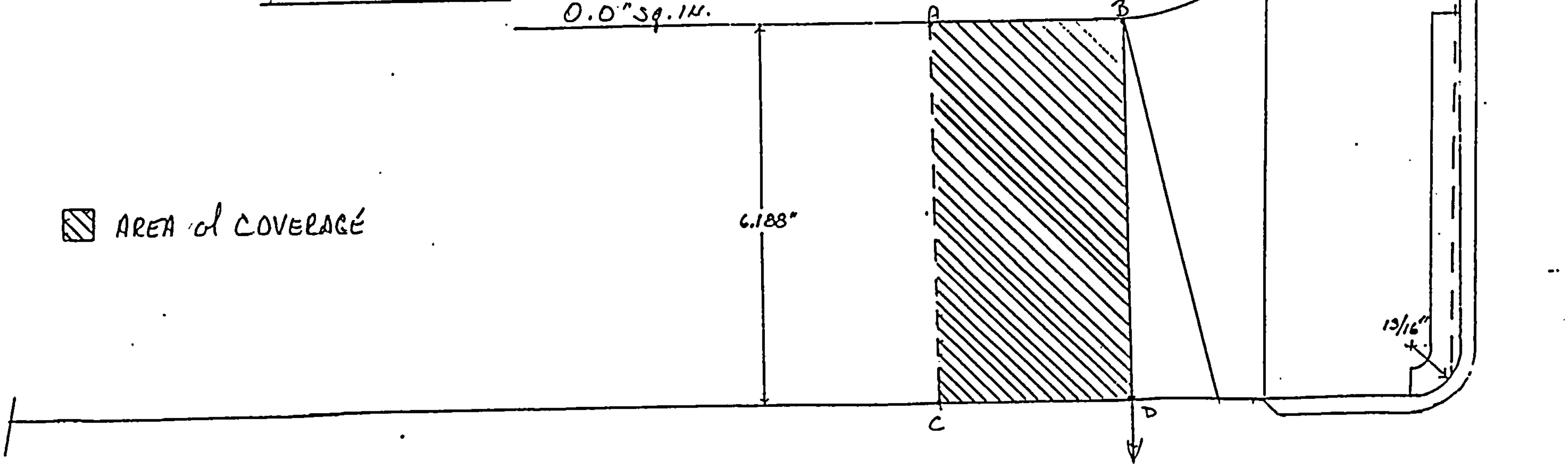
0° COVERAGE:

BASE METAL:

3.0" X 6.188" = 18.564 ~ 18.6 sq. IN.

WELD METAL:

0.0" sq. IN.



OCONEE SENSING / SAMPLING NOZZLE

ITEM # B03.110.011
I.D. # 1-PZR-WP26-3
BY: Gary Mueller
DATE: 10-5-03

INSPECTION AREAS

BASE METAL:

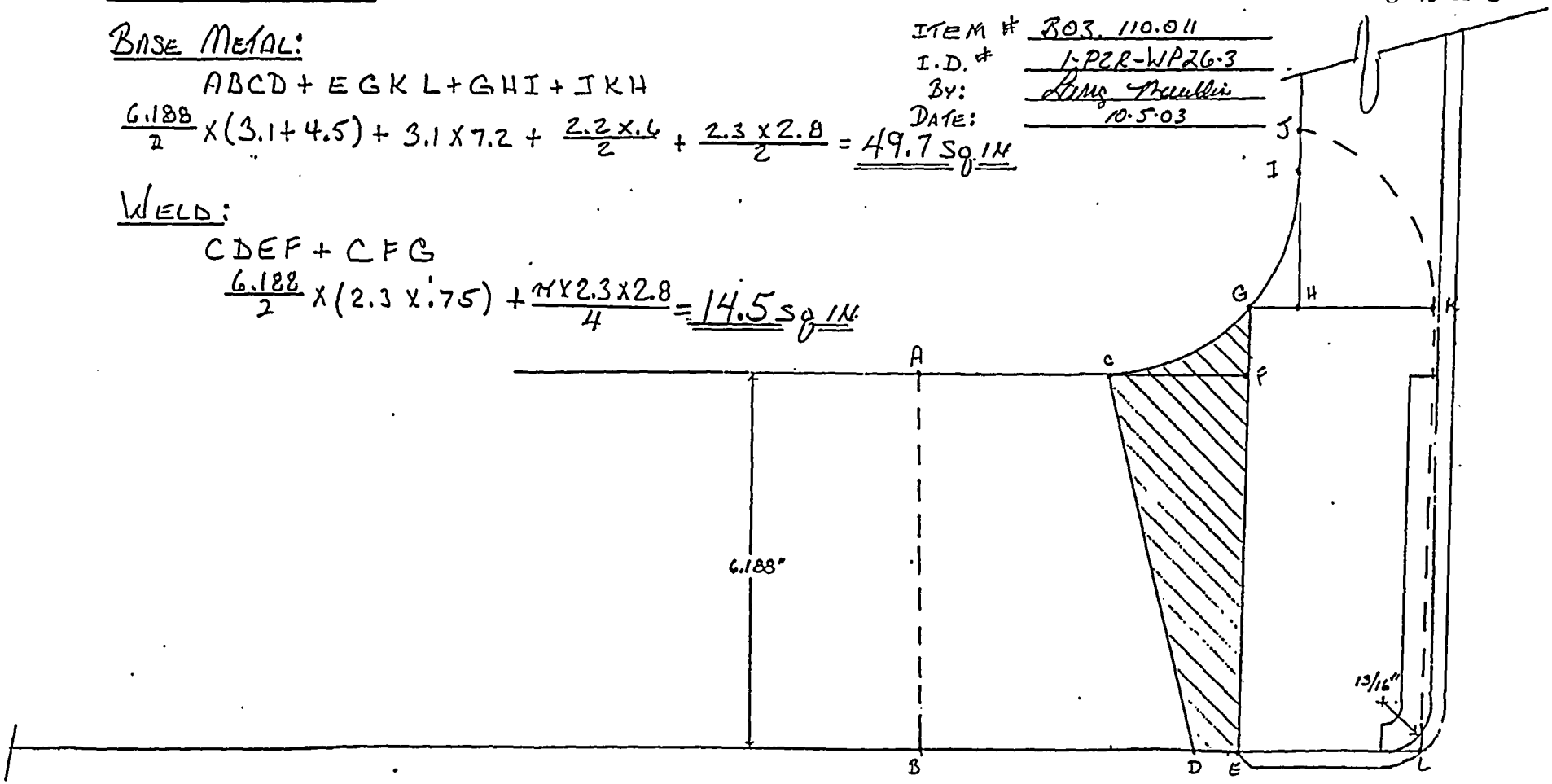
ABCD + EGKL + GHI + JKH

$\frac{6.188}{2} \times (3.1 + 4.5) + 3.1 \times 7.2 + \frac{2.2 \times .6}{2} + \frac{2.3 \times 2.8}{2} = 49.7$ SQ IN

WELD:

CDEF + CFG

$\frac{6.188}{2} \times (2.3 \times .75) + \frac{\pi \times 2.3 \times 2.8}{4} = 14.5$ SQ IN



Duke Energy

UT Vessel Examination

Site/Unit: Oconee / 1 | Procedure: NDE-640 | Outage No.: ONS1EOC21
Summary No.: B03.110.012 | Procedure Rev.: 2 | Report No.: UT-03-207
Workscope: ISI | Work Order No.: 98403077 | Page: 1 of 1

Code: Section XI, 1989 | Cat./Item: B-D- /B3.110.12 | Location: N/A
Drawing No.: ISI OCN1-002 | Description: Pzr Nozzle to Shell
System ID: 50
Component ID: B03.110.012 /1-PZR-WP26-7 | Size/Length: N/A | Thickness/Diameter: 5.75 / 6.187
Limitations: YES | Start Time: 1329 | Finish Time: 1331

Examination Surface: Inside ☐ Outside ☑ | Surface Condition: AS GROUND
Lo Location: 9.2.3 | Wo Location: Centerline of Weld | Couplant: ULTRAGEL II | Batch No.: 01225
Temp. Tool Mfg.: FISHER | Serial No.: MCNDE32769 | Surface Temp.: 80 °F
Cal. Report No.: CAL-03-286

Angle Used	0	45	45T	60	60T	
Scanning dB	29.5					

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

Comments:
FC 03-20

Results: Accept ☑ Reject ☐ Info ☐
Percent Of Coverage Obtained > 90%: No | Reviewed Previous Data: Yes

Examiner Mauldin, Larry E.	Level II	Signature Larry E Mauldin	Date 9/28/2003	Reviewer Gary J Moss		Signature	Date 10-5-03
Examiner Potter, Michael E.	Level II-N	Signature Michael E Potter	Date 9/28/2003	Site Review		Signature	Date
Other	Level	Signature	Date	ANII Review		Signature Nancy C Ritchie Slaughter	Date 10/13/03

Duke Energy

UT Vessel Examination

Site/Unit: Oconee / 1 | Procedure: NDE-820 | Outage No.: ONS1EOC21
Summary No.: B03.110.012 | Procedure Rev.: 1 | Report No.: UT-03-201
Workscope: ISI | Work Order No.: 98403077 | Page: 1 of 2

Code: Section XI, 1989 | Cat./Item: B-D- /B3.110.12 | Location: N/A
Drawing No.: ISI OCN1-002 | Description: Pzr Nozzle to Shell
System ID: 50
Component ID: B03.110.012 /1-PZR-WP26-7 | Size/Length: N / A | Thickness/Diameter: 5.75 / 6.187
Limitations: YES | Start Time: 1316 | Finish Time: 1331.

Examination Surface: Inside ☐ Outside ☑ | Surface Condition: AS GROUND
Lo Location: 9.2.3 | Wo Location: N / A | Couplant: ULTRAGEL II | Batch No.: 01225
Temp. Tool Mfg.: FISHER | Serial No.: MCNDE32769 | Surface Temp.: 80 °F
Cal. Report No.: CAL-03-269, CAL-03-275

Angle Used	0	45	45T	60	60T	
Scanning dB		60	60	70.5	70.5	

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

Comments:
FC 03-31

Results: Accept ☑ Reject ☐ Info ☐
Percent Of Coverage Obtained > 90%: No / 68.6% | Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Mauldin, Larry E.	II	Larry E. Mauldin	9/28/2003		Gary J. Moss	10-9-03
Examiner	Level	Signature	Date	Site Review	Signature	Date
Potter, Michael E.	II-N	Michael E. Potter	9/28/2003			
Other	Level	Signature	Date	ANII Review	Signature	Date
					Nancy C. Ritchie Slaughter	10/13/03

Duke Energy

Supplemental Report

Report No.: UT-03-201

Summary No.: B03.110.012

Examiner: Mauldin, Larry E. Level: II Reviewer: [signature] Date: 10/07/03

Examiner: Potter, Michael E. Level: II-N Site Review: Date:

Other: Level: ANII Review: [signature] Date: 10/13/03

Comments: ISI LIMITATION REPORT– SEE ATTACHED SHEET

Sketch or Photo:

DUKE POWER COMPANY
ISI LIMITATION REPORT

ONS1EOC21

UT-03-200

Component/Weld ID: 1-PZR-WP26-7 **Item No:** B03-110.012

remarks: Due to Nozzle Configuration

☒ NO SCAN	SURFACE	BEAM DIRECTION
☐ LIMITED SCAN	☒ 1 ☒ 2	☒ 1 ☒ 2 ☒ cw ☒ ccw
FROM L NA to L NA	INCHES FROM W0 1.0" to Beyond	
ANGLE: ☒ 0 ☒ 45 ☒ 60 other ____	FROM 0 DEG to 360 DEG	
☐ NO SCAN	SURFACE	BEAM DIRECTION
☐ LIMITED SCAN	☐ 1 ☐ 2	☐ 1 ☐ 2 ☐ cw ☐ ccw
FROM L ____ to L ____	INCHES FROM W0 ____ to ____	
ANGLE: ☐ 0 ☐ 45 ☐ 60 other ____	FROM ____ DEG to ____ DEG	
☐ NO SCAN	SURFACE	BEAM DIRECTION
☐ LIMITED SCAN	☐ 1 ☐ 2	☐ 1 ☐ 2 ☐ cw ☐ ccw
FROM L ____ to L ____	INCHES FROM W0 ____ to ____	
ANGLE: ☐ 0 ☐ 45 ☐ 60 other ____	FROM ____ DEG to ____ DEG	
☐ NO SCAN	SURFACE	BEAM DIRECTION
☐ LIMITED SCAN	☐ 1 ☐ 2	☐ 1 ☐ 2 ☐ cw ☐ ccw
FROM L ____ to L ____	INCHES FROM W0 ____ to ____	
ANGLE: ☐ 0 ☐ 45 ☐ 60 other ____	FROM ____ DEG to ____ DEG	

Sketch(s) attached ☒ yes ☐ No

Prepared By: Larry Mauldin *Larry Mauldin*	Level: II	Date: 09/28/2003	Sheet 2 of 2
Reviewed By: *David K Z*	Date: 10/07/03	Authorized Inspector: *Nancy C Ritchie Slaughter*	Date: 10/13/03

Duke Energy.

Determination of Percent Coverage for UT Examinations - Vessels

Site/Unit: ONS 1 | Procedure: UDE-640, NDE-820 | Outage No.: ONS1EOC21
Summary No.: B03.110.012 | Procedure Rev.: 2, 1 | Report No.: UT-03-206
Workscope: 151 | Work Order No.: 98403077 | 1 of 1

0 deg Planar

Scan 100 % Length X 37.42 % volume of length / 100 = 37.42 % total for 0 deg

45 deg

Scan 1 100 % Length X 61.7 % volume of length / 100 = 61.7 % total for Scan 1
Scan 2 100 % Length X 0 % volume of length / 100 = 0 % total for Scan 2
Scan 3 100 % Length X 47.28 % volume of length / 100 = 47.28 % total for Scan 3
Scan 4 100 % Length X 47.28 % volume of length / 100 = 47.28 % total for Scan 4

Add totals and divide by # scans = 39.06 % total for 45 deg

Other deg 60

Scan 1 100 % Length X 53.10 % volume of length / 100 = 53.10 % total for Scan 1
Scan 2 100 % Length X 0 % volume of length / 100 = 0 % total for Scan 2
Scan 3 100 % Length X 13 % volume of length / 100 = 13 % total for Scan 3
Scan 4 100 % Length X 13 % volume of length / 100 = 13 % total for Scan 4

Add totals and divide by # scans = 19.77 % total for 60 deg

Percent complete coverage

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

32.08 % 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: James J. McArdle Date: 2-18-04

REVIEWED Initial ☐ Final ☑ ANII ☑ Date 2/4/04 HSBCT

OCONEE SENSING / SAMPLING NOZZLE

ITEM # R03.110.012
I.D. # 1-PZR-WP26.7
BY: Larry Pounds
DATE: 10-5-03

45° & 60° CIRC. SCAN COVERAGE

BASE METAL:

ABCD

$\frac{6.188}{2} \times (3.1 + 4.5) = 23.5$ SQ IN.

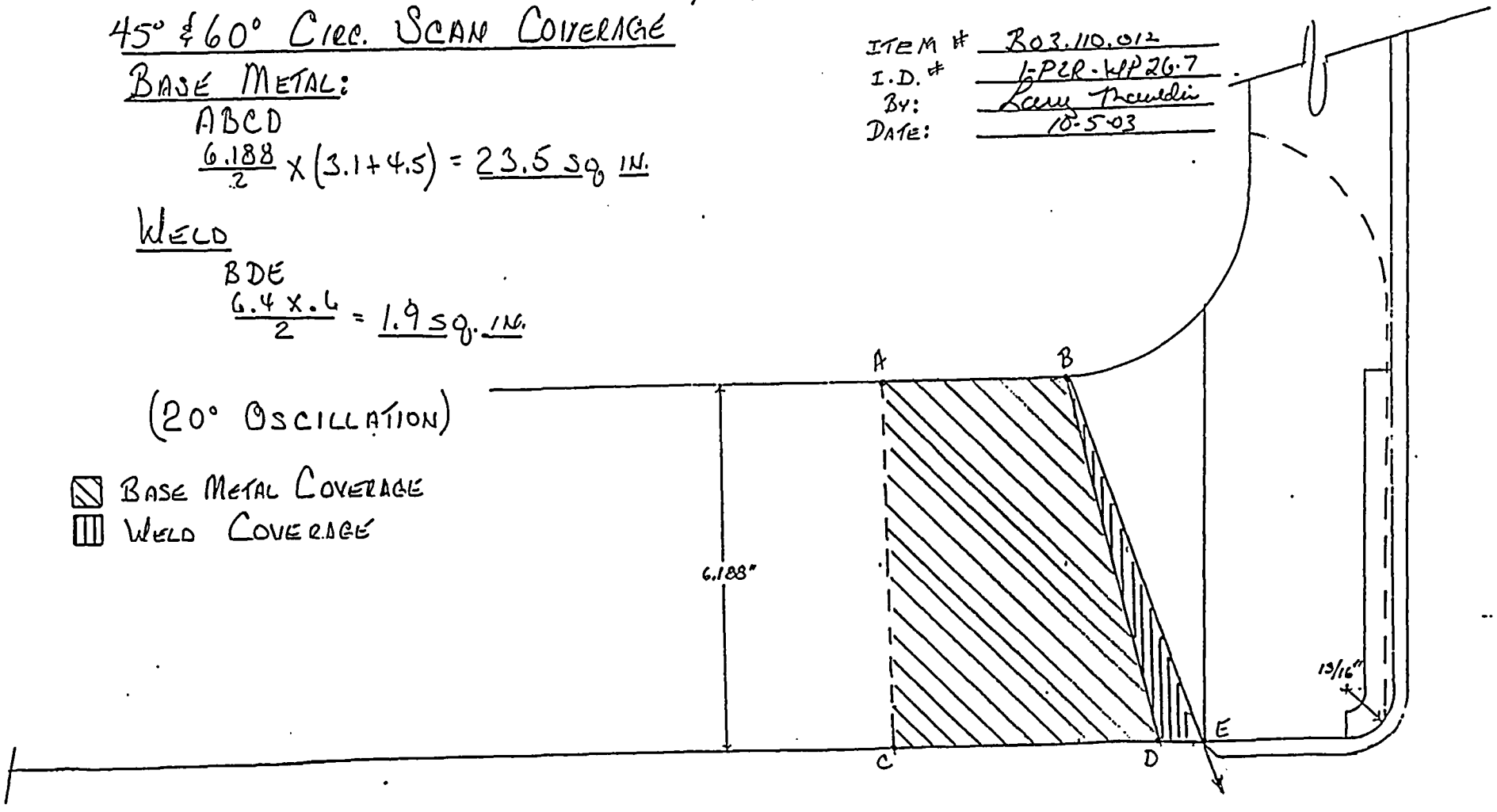
WELD

BDE

$\frac{6.4 \times .6}{2} = 1.9$ SQ. IN.

(20° OSCILLATION)

▨ BASE METAL COVERAGE
▥ WELD COVERAGE



OCONEE SENSING / SAMPLING NOZZLE

ITEM # B03.110.012
I.D. # 1-PZR-WP26-7
BY: Larry Thoreller
DATE: 10-5-03

60° COVERAGE

BASE METAL:

S1 TO S2

ABCD + FGHI

$\frac{6.188}{2}+(3.1+4.5)+\frac{3.2}{2}(3.0+4.7)=$ 35.8 sq. IN.

N/A – S2 TO S1

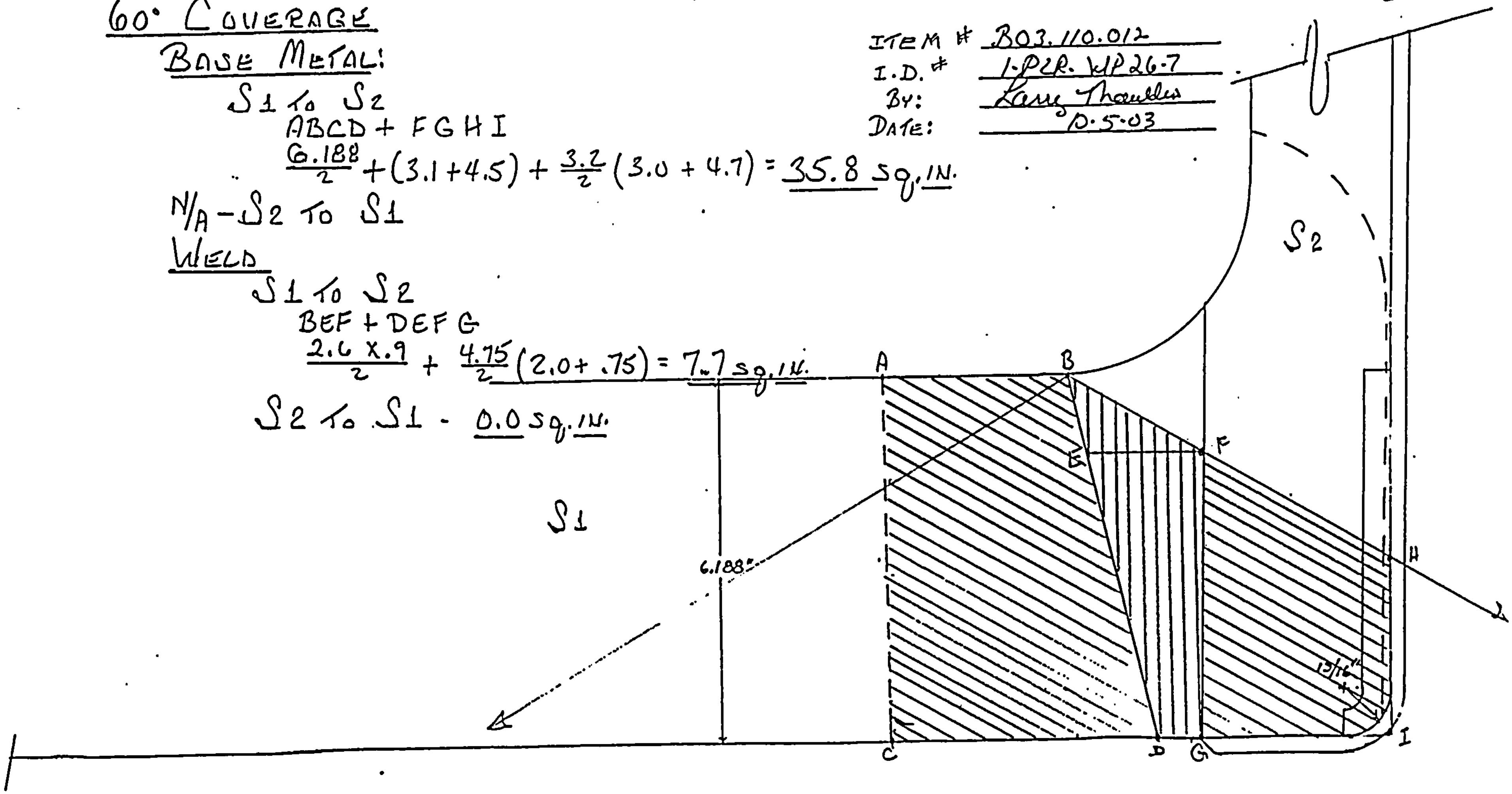
WELD

S1 TO S2

BEF + DEFG

$\frac{2.6 \times .9}{2}+\frac{4.75}{2}(2.0+.75)=$ 7.7 sq. IN.

S2 TO S1 - 0.0 sq. IN.



OCONEE SENSING / SAMPLING NOZZLE

ITEM # B03.110.012
I.D. # 1-PZR-VIP26-7
BY: Larry Thaulow
DATE: 10.5.03

45° COVERAGE

BASE METAL:

S1 TO S2 ABCD + EFGH (N/A S2 TO S1 SCAN)

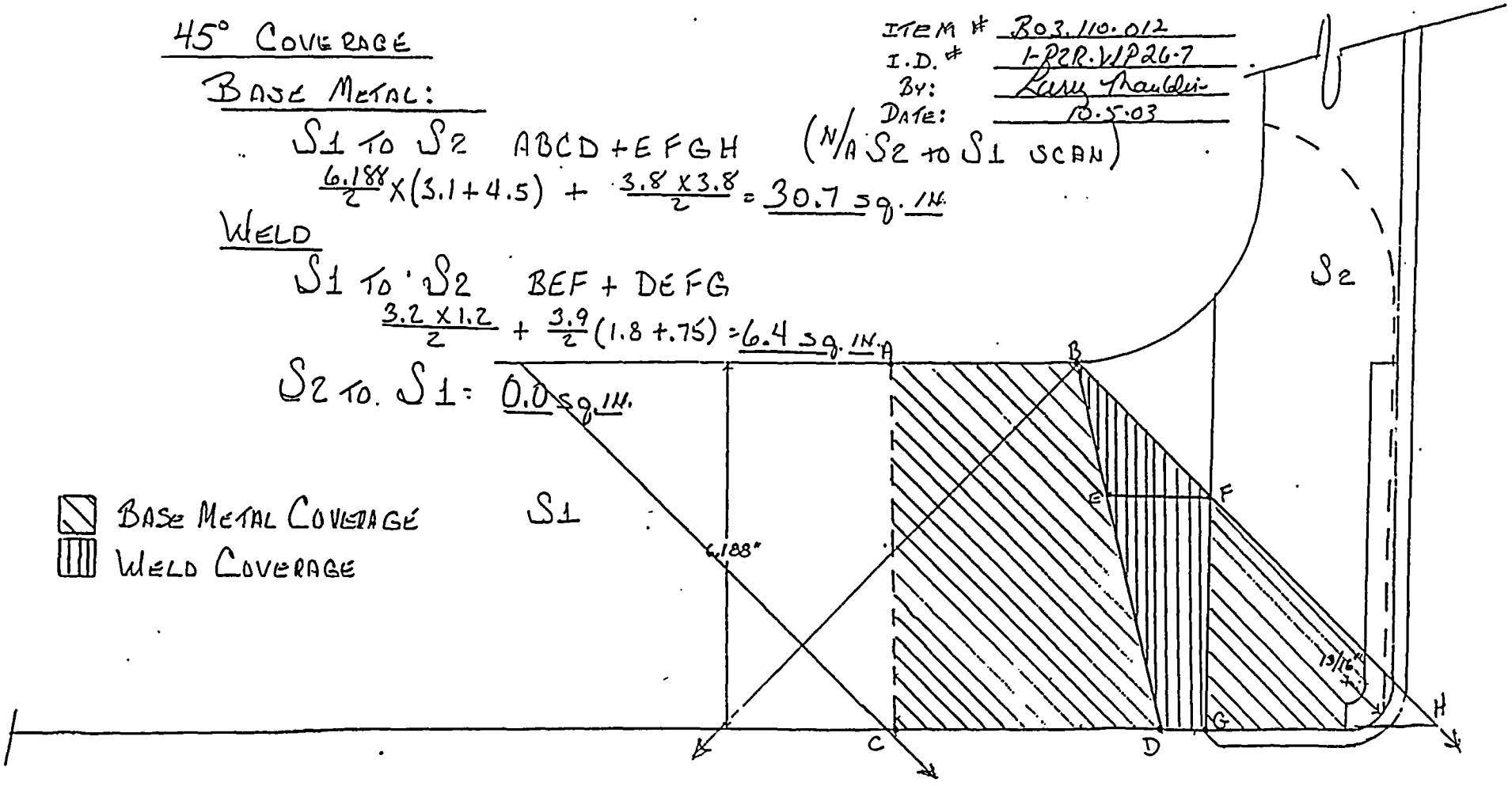
$\frac{6.188}{2} \times (3.1 + 4.5) + \frac{3.8 \times 3.8}{2} = 30.7$ sq. in.

WELD

S1 TO S2 BEF + DEFG

$\frac{3.2 \times 1.2}{2} + \frac{3.9}{2}(1.8 + .75) = 6.4$ sq. in.

S2 TO S1: 0.0 sq. in.



BASE METAL COVERAGE
WELD COVERAGE

OCONEE SENSING / SAMPLING NOZZLE

ITEM # B03.110.012
I.D. # 1-PZR-WP26-7
BY: Laura Mauldin
DATE: 10-5-03

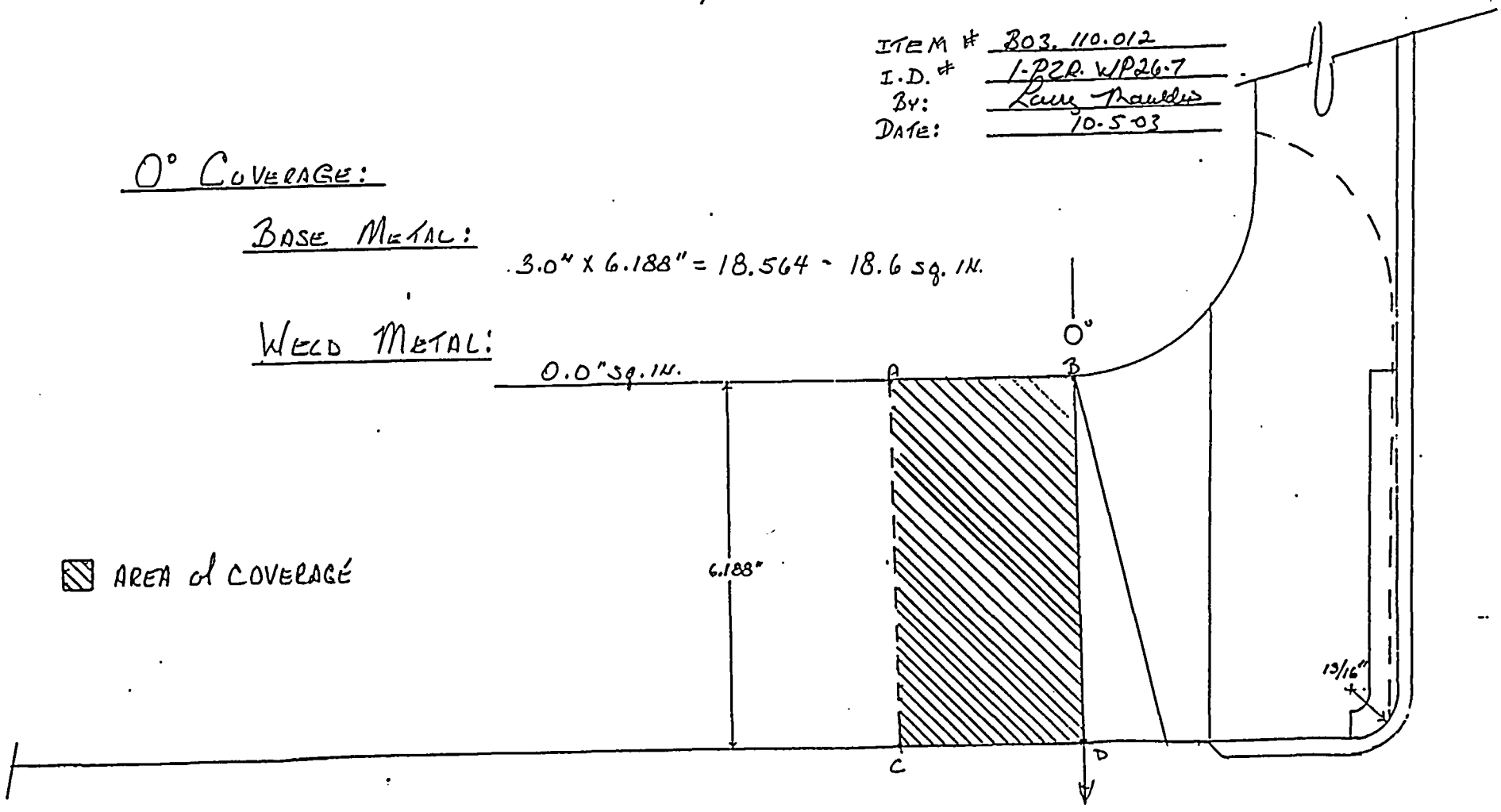
0° COVERAGE:

BASE METAL:

3.0" X 6.188" = 18.564 ~ 18.6 sq. IN.

WELD METAL:

0.0" sq. IN.



▨ AREA of COVERAGE

OCONEE SENSING / SAMPLING NOZZLE

ITEM # B03.110.012
I.D. # LPCR-WP26-7
BY: Lenny Dauble
DATE: 10.5.03

INSPECTION AREAS

BASE METAL:

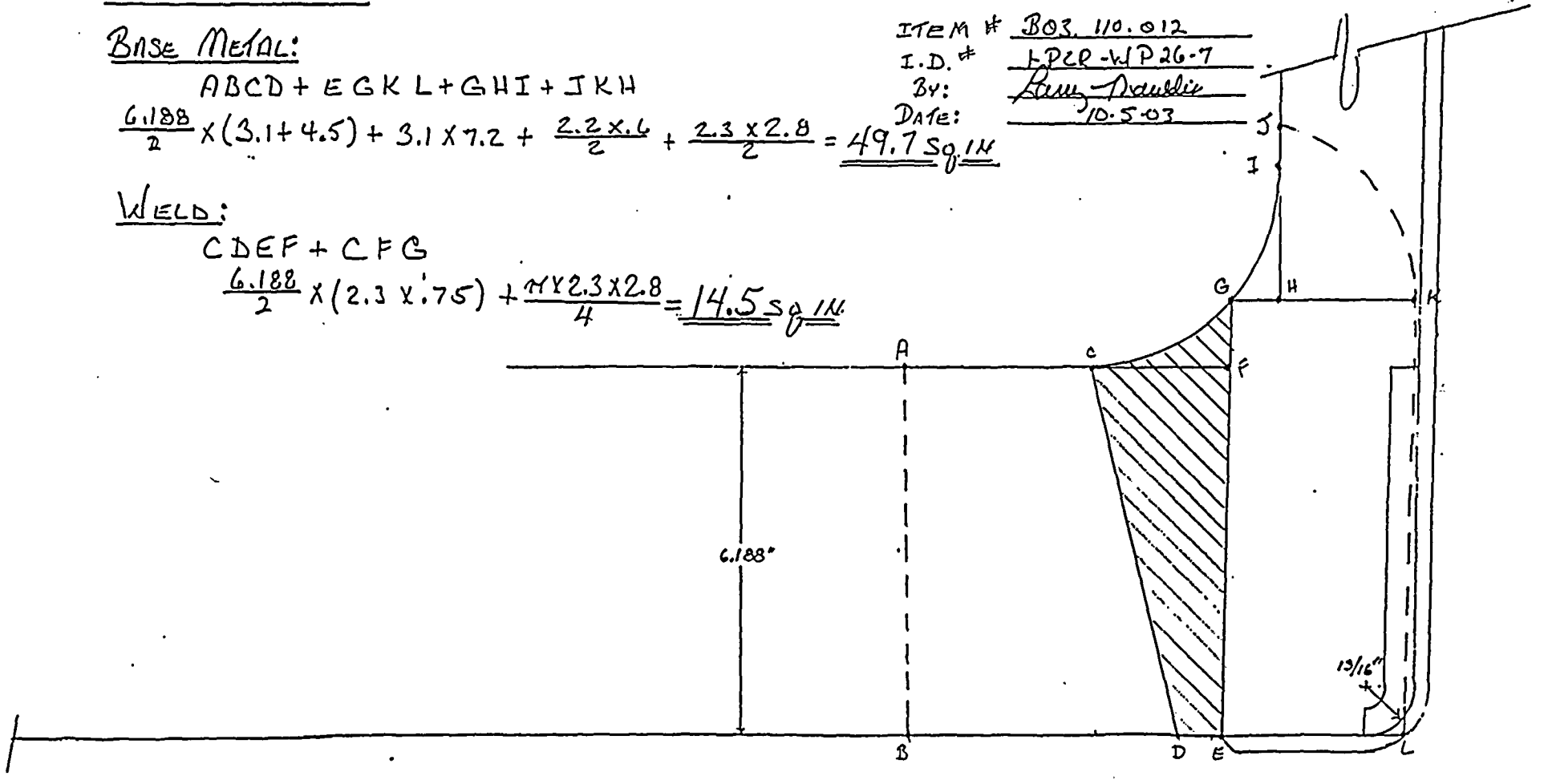
ABCD + EGKL + GHI + JKH

$\frac{6.188}{2} \times (3.1 + 4.5) + 3.1 \times 7.2 + \frac{2.2 \times .6}{2} + \frac{2.3 \times 2.8}{2} = 49.7$ Sq IN

WELD:

CDEF + CFG

$\frac{6.188}{2} \times (2.3 \times .75) + \frac{\pi \times 2.3 \times 2.8}{4} = 14.5$ Sq IN



Duke Energy

UT Pipe Weld Examination

Site/Unit: Oconee / 1 | Procedure: NDE-600 | Outage No.: ONS1EOC21
Summary No.: B09.011.111 | Procedure Rev.: 15 | Report No.: UT-03-265
Workscope: ISI | Work Order No.: 98403309 | Page: 1 of 4

Code: Section XI, 1989 | Cat./Item: B-J- /B9.11.111 | Location: N/A
Drawing No.: 1LP-140 | Description: Elbow to Valve (1LP-1)
System ID: 53A
Component ID: B09.011.111 /1LP-140-8A | Size/Length: 12.0 / SS | Thickness/Diameter: 1.125
Limitations: Yes | Start Time: 0905 | Finish Time: 0932

Examination Surface: Inside ☐ Outside ☑ | Surface Condition: AS GROUND
Lo Location: 9.1.1.1 | Wo Location: Centerline of Weld | Couplant: ULTRAGEL II | Batch No.: 01225
Temp. Tool Mfg.: FISHER | Serial No.: MCNDE32769 | Surface Temp.: 72 °F
Cal. Report No.: CAL-03-363, CAL-03-364, CAL-03-365

Angle Used	0	45	45T	60	60RL	
Scanning dB			43.0	38.5	54	

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

Comments:

REVIEWED Initial ☑ Final ☑ ANII Date 10/19/03 HSBCT

Results: Accept ☑ Reject ☐ Info ☐
Percent Of Coverage Obtained > 90%: ~~Yes~~ / ~~100%~~ NO 85.07% 12-19-03 | Reviewed Previous Data: Yes

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Zimmerman, David K.	III	David K. Zimmerman	10/14/2003		Gary L. Moore	10-15-03
Examiner	Level	Signature	Date	Site Review	Signature	Date
Huhe, Troy	II-N	T. Huhe	10/14/2003			
Other	Level	Signature	Date	ANII Review	Signature	Date
					Nancy C. Ratchford Slaughter	10/19/03

Duke Energy

Supplemental Report

Report No.: UT-03-265

Page: 2 of 4

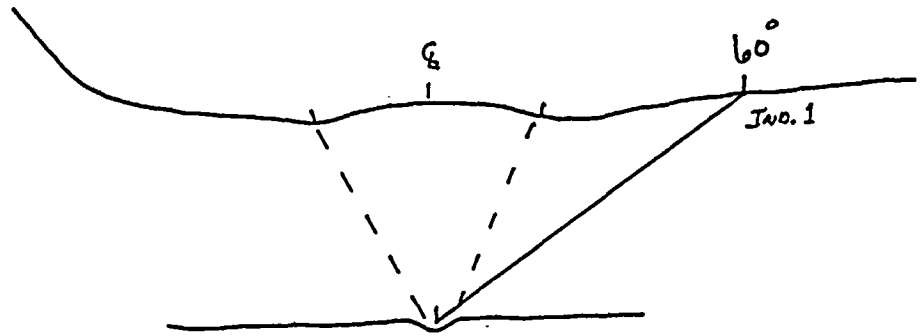
Summary No.: B09.011.111

Examiner:	Zimmerman, David K.		Level:	III	Reviewer:	Gary J Moss	Date: 10-15-03
Examiner:	Huhe, Troy		Level:	II-N	Site Review:		Date:
Other:			Level:		ANII Review:	Nancy C Ritchie Slaughter	Date: 10/18/03

Comments: ISI PLOT / RESOLUTION SHEET

INDICATION 1: GOEMTRICAL REFLECTOR DUE TO WELD ROOT CONFIGURATION. 70° SHEAR WAVE PRODUCED LESS THAN 50% DAC SIGNAL DID NOT HOLD UP TO SKEW. THIS CONFERS WITH PAST UT DATA.

Sketch or Photo:



Duke Energy

Ultrasonic Indication Report

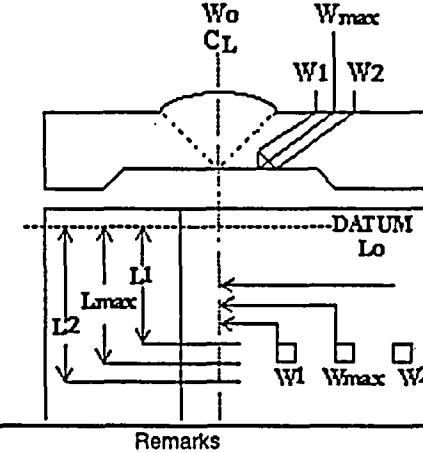
Site/Unit:	Oconee / 1	Procedure:	NDE-600	Outage No.:	ONS1EOC21
Summary No.:	B09.011.111	Procedure Rev.:	15	Report No.:	UT-03-265
Workscope:	ISI	Work Order No.:	98403309	Page:	3 of 4

Search Unit Angle: 60 °

Wo Location: Weld Centerline

Lo Location: 9.1.1.1

- (●) Piping Welds
- ( ) Ferritic Vessels ≥ 2"T
- ( ) Other _____



MP	Metal Path	Wmax	Distance From Wo To S.U. At Maximum Response
RBR	Remaining Back Reflection	W1	Distance From Wo At Of Max (Forward)
L	Distance From Datum	W2	Distance From Wo At Of Max (Forward)

Comments:

Scan #	Indication No.	% Of DAC	W Max W	W Max MP	Forward Of Max W1	Forward Of Max MP	Backward Of Max W2	Backward Of Max MP	L1 Of Max	L Max	L2 Of Max	RBR Amp.	Remarks
2	1	70	1.55	1.96					Int.	360°	Int.		

Examiner	Level III	Signature	Date	Reviewer		Signature	Date
Zimmerman, David K.			10/14/2003		Gary J Moss		10-15-03
Examiner	Level II-N	Signature	Date	Site Review		Signature	Date
Huhe, Troy			10/14/2003				
Other	Level	Signature	Date	ANII Review		Signature	Date
					Nancy C Ritchie Slaughter		10/18/03

Duke Energy

Supplemental Report

Report No.: UT-03-265

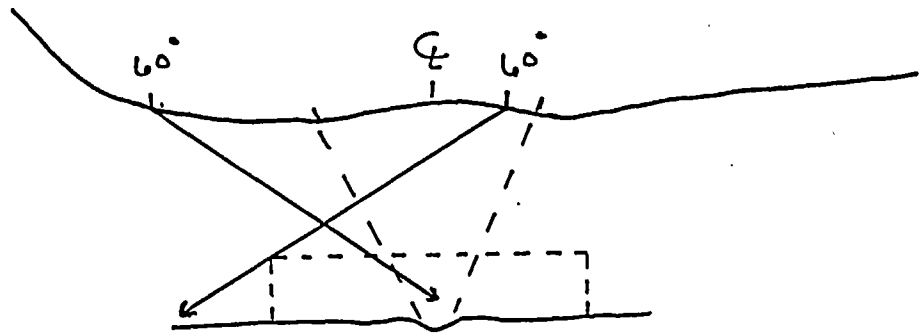
Page: 4 of 4

Summary No.: B09.011.111

Examiner:	Zimmerman, David K.		Level:	III	Reviewer:	Gary A Moss	Date: 10-15-03
Examiner:	Huhe, Troy		Level:	II-N	Site Review:		Date:
Other:			Level:		ANII Review:	Nancy C Ritter Slaughter	Date: 10/18/03

Comments: ISI LIMITATION REPORT--SEE ATTACHED

Sketch or Photo:



DUKE POWER COMPANY

ISI LIMITATION REPORT

Revision 1

Component/Weld ID: 1LP-140-8A **Item No:** B09.011.111

remarks:
Valve configuration: 100% coverage obtained from opposite scan.

Scan	Surface	Beam Direction	From L / to L	Inches from W0	Angle	From / to DEG
☐ NO SCAN ☒ LIMITED SCAN	☒ 1 ☐ 2	☐ 1 ☒ 2 ☐ cw ☐ ccw	FROM L N/A to L N/A	1.5 to Beyond	☐ 0 ☐ 45 ☒ 60 other ____	FROM 0 DEG to 360 DEG
☐ NO SCAN ☐ LIMITED SCAN	☐ 1 ☐ 2	☐ 1 ☐ 2 ☐ cw ☐ ccw	FROM L ____ to L ____	____ to ____	☐ 0 ☐ 45 ☐ 60 other ____	FROM ____ DEG to ____ DEG
☐ NO SCAN ☐ LIMITED SCAN	☐ 1 ☐ 2	☐ 1 ☐ 2 ☐ cw ☐ ccw	FROM L ____ to L ____	____ to ____	☐ 0 ☐ 45 ☐ 60 other ____	FROM ____ DEG to ____ DEG
☐ NO SCAN ☐ LIMITED SCAN	☐ 1 ☐ 2	☐ 1 ☐ 2 ☐ cw ☐ ccw	FROM L ____ to L ____	____ to ____	☐ 0 ☐ 45 ☐ 60 other ____	FROM ____ DEG to ____ DEG

Sketch(s) attached ☒ yes ☐ No

Prepared By: David Zimmerman Level: III Date: 10/14/03 Sheet 1 of 1

Reviewed By: Date: 10-15-03 Authorized Inspector: Date: 10/18/03

Duke Energy.

Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit: ONS 1 / Procedure: NDE-600 Outage No.: ONS1EOC21
Summary No.: B09.011.111 Procedure Rev.: 15 Report No.: UT-03-265
Workscope: 151 Work Order No.: 98403309 Page: 1 of 1

45 deg

Scan 1	100	% Length X	100	% volume of length / 100 =	100	% total for Scan 1
Scan 2	100	% Length X	100	% volume of length / 100 =	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 = 100 **% total for 45 deg**

Other deg - 60 (to be used for supplemental scans)

The data to be listed below is for coverage that was not obtained with the 45 deg scans.

Scan 1	100	% Length X	100	% volume of length / 100 =	100	% total for Scan 1
Scan 2	100	% Length X	40.3	% volume of length / 100 =	40.3	% total for Scan 2
Scan 3		% Length X		% volume of length / 100 =		% total for Scan 3
Scan 4		% Length X		% volume of length / 100 =		% total for Scan 4

Percent complete coverage

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

85.07 **% Total for complete exam**

Site Field Supervisor: James J. McArdle Date: 2-18-04

REVIEWED
Initial ☑ Final ☐
ANI ☑ Date 3/4/04
HSBCT

Duke Energy

UT Base Meta.. Lamination

Site/Unit: Oconee / 1 | Procedure: NDE-640 | Outage No.: ONS1EOC21
Summary No.: C05.021.029 | Procedure Rev.: 2 | Report No.: UT-03-266
Workscope: ISI | Work Order No.: 98573336 | Page: 1 of 2

Code: Section XI, 1989 | Cat./Item: C-F-1/C5.21.29 | Location: N/A
Drawing No.: 1-51A-01(4) | Description: Pipe to Valve (1HP-63)
System ID: 51A
Component ID: C05.021.029 /1-51A-01-114AC | Size/Length: N/A | Thickness/Diameter: .375" / 2.5"
Limitations: None | Start Time: 1035 | Finish Time: 1039

Examination Surface: Inside ☐ Outside ☑ | Surface Condition: AS GROUND
Lo Location: 9.1.1.1 | Wo Location: Centerline of Weld | Couplant: ULTRAGEL II | Batch No.: 01225
Temp. Tool Mfg.: FISHER | Serial No.: MCNDE 27219 | Surface Temp.: 84 °F | Scanning dB: 59
Cal. Report No.: CAL-03-366

Ind. No.	% Loss Back Wall	Amplitude % Full Screen	Position One				Position Max				Position Two				Remarks
			L1	W1	W2	MP	LM	W1	W2	MP	L2	W1	W2	MP	
NRI															

Comments: FC 03-20

REVIEWED Initial ☐ Final ☑ ANII ☐ Date 3/4/04 HSBCT

Results: Accept ☑ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: ~~Yes 100%~~ No 55.55% JJM 02-18-04 Reviewed Previous Data: Yes

Examiner	Level	Signature	Date
Mauldin, Larry E.	II	Larry E Mauldin	10/14/2003
Examiner	Level	Signature	Date
Steinbauer, Troy	II-N		10/14/2003
Other	Level	Signature	Date

Reviewer	Signature	Date
	Gary A Moss	10-15-03
Site Review	Signature	Date
ANII Review	Signature	Date
	Nancy C Ritchie Slaughter	10/18/03

Duke Energy

Supplemental Report

Report No.: UT-03-266

Page: 2 of 2

Summary No.: C05.021.029

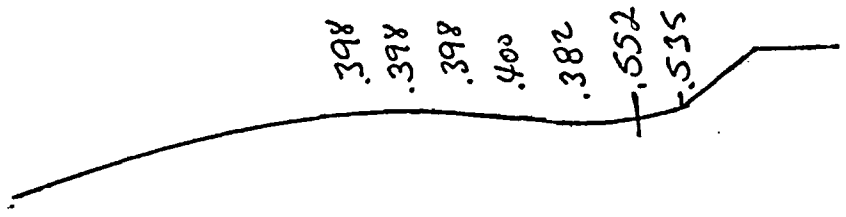
Examiner: Mauldin, Larry E. Larry E Mauldin Level: II Reviewer: Gary J Moss Date: 10-15-03

Examiner: Steinbauer, Troy Level: II-N Site Review: Date:

Other: Level: ANII Review: Nancy C Ritchie Sloughter Date: 10/18/03

Comments:

Sketch or Photo:



Duke Energy

UT Pipe Weld Examination

Site/Unit:	Oconee / 1	Procedure:	NDE-600	Outage No.:	ONS1EOC21
Summary No.:	C05.021.029	Procedure Rev.:	15	Report No.:	UT-03-267
Workscope:	ISI	Work Order No.:	98573336	Page:	1 of 2

Code: Section XI, 1989 Cat./Item: C-F-1/C5.21.29 Location: N/A

Drawing No.: 1-51A-01(4) Description: Pipe to Valve (1HP-63)

System ID: 51A

Component ID: C05.021.029 /1-51A-01-114AC Size/Length: N/A Thickness/Diameter: .375" / 2.5"

Limitations: Yes Start Time: 1041 Finish Time: 1100

Examination Surface: Inside ☐ Outside ☑ Surface Condition: AS GROUND

Lo Location: 9.1.1.1 Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 01225

Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27219 Surface Temp.: 84 °F

Cal. Report No.: CAL-03-367, CAL-03-368, CAL-03-369

Angle Used	0	45	45T	60	38	70
Scanning dB				41	44.8	44

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

Comments:

Results: Accept ☑ Reject ☐ Info ☐

Percent Of Coverage Obtained > 90%: Yes / 100% Reviewed Previous Data: No

Examiner	Level II	Signature	Date	Reviewer		Signature	Date
Mauldin, Larry E.		Larry E Mauldin	10/14/2003		Gary A Moss		10-18-03
Examiner	Level II-N	Signature	Date	Site Review		Signature	Date
Steinbauer, Troy			10/14/2003				
Other	Level	Signature	Date	ANII Review		Signature	Date
					Nancy C Retelle Sloughter		10/18/03

Duke Energy

Supplemental Report

Report No.: UT-03-267

Page: 2 of 2

Summary No.: C05.021.029

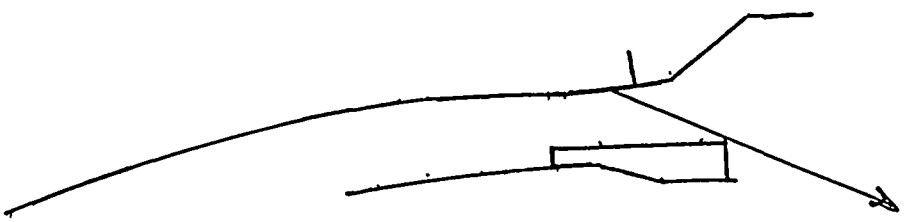
Examiner: Mauldin, Larry E. Level: II Reviewer: [signature] Date: 10-15-03

Examiner: _____ Level: _____ Site Review: _____ Date: _____

Other: _____ Level: _____ ANII Review: [signature] Date: 10/18/03

Comments: ISI Limitation Report -- See attached sheet

Sketch or Photo:



DUKE POWER COMPANY
ISI LIMITATION REPORT

ONS1EOC21
UT-03-267

Component/Weld ID: 1-51A-01-114AC **Item No:** C05.021.029

remarks:

☐ NO SCAN	SURFACE	BEAM DIRECTION	Due to Valve Configuration
☒ LIMITED SCAN	☐ 1 ☒ 2	☒ 1 ☐ 2 ☐ cw ☐ ccw	100% Coverage obtained from opposite side.
FROM L NA to L NA	INCHES FROM W0 .4" to Beyond		
ANGLE: ☐ 0 ☐ 45 ☒ 60 other ____	FROM 0 DEG to 360 DEG		
☐ NO SCAN	SURFACE	BEAM DIRECTION	
☐ LIMITED SCAN	☐ 1 ☐ 2	☐ 1 ☐ 2 ☐ cw ☐ ccw	
FROM L ____ to L ____	INCHES FROM W0 ____ to ____		
ANGLE: ☐ 0 ☐ 45 ☐ 60 other ____	FROM ____ DEG to ____ DEG		
☐ NO SCAN	SURFACE	BEAM DIRECTION	
☐ LIMITED SCAN	☐ 1 ☐ 2	☐ 1 ☐ 2 ☐ cw ☐ ccw	
FROM L ____ to L ____	INCHES FROM W0 ____ to ____		
ANGLE: ☐ 0 ☐ 45 ☐ 60 other ____	FROM ____ DEG to ____ DEG		
☐ NO SCAN	SURFACE	BEAM DIRECTION	
☐ LIMITED SCAN	☐ 1 ☐ 2	☐ 1 ☐ 2 ☐ cw ☐ ccw	Sketch(s) attached
FROM L ____ to L ____	INCHES FROM W0 ____ to ____		
ANGLE: ☐ 0 ☐ 45 ☐ 60 other ____	FROM ____ DEG to ____ DEG		☒ yes ☐ No

Prepared By: Larry Mauldin *Larry Mauldin* Level: II Date: 10/14/2003 Sheet 2 of 2

Reviewed By: *Gary A. Moss* Date: 10-15-03 Authorized Inspector: *Nancy C Ritchie Slaughter* Date: 10/18/03

Duke Energy.

Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	ONS 1	Procedure:	NDE-600	Outage No.:	ONS1EOC21
Summary No.:	C05.021.029	Procedure Rev.:	15	Report No.:	
Workscope:	151	Work Order No.:	98403309	Page:	____ of ____

45 deg

Scan 1	100	% Length X	61.1	% volume of length / 100 =	61.1	% total for Scan 1
Scan 2	100	% Length X	61.1	% volume of length / 100 =	61.1	% 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 = 61.1 **% total for 45 deg**

Other deg - 60 (to be used for supplemental scans)

The data to be listed below is for coverage that was not obtained with the 45 deg scans.

Scan 1	100	% Length X	100	% volume of length / 100 =	100	% total for Scan 1
Scan 2	100	% Length X	0	% volume of length / 100 =	0	% total for Scan 2
Scan 3		% Length X		% volume of length / 100 =		% total for Scan 3
Scan 4		% Length X		% volume of length / 100 =		% total for Scan 4

Percent complete coverage

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

55.55 **% Total for complete exam**

Site Field Supervisor: James J. McGrath III Date: 2-18-04

REVIEWED
Initial ☐ Final ☐
ANII N. Date 2/4/05
HSBCT

Duke Energy

UT Base Metal Lamination

Site/Unit: ONS / 1 | Procedure: NDE-640 | Outage No.: ONS1EOC21
Summary No.: C05.021.034 | Procedure Rev.: 2 | Report No.: UT-03-087
Workscope: ISI | Work Order No.: 98577219 | Page: 1 of 2

Code: Section XI, 1989 | Code Cat.: C-F-1 | Location: N/A
Drawing No.: 1HP-187 | Description: Elbow to Valve (1HP-138)
System ID: 51A
Component ID: C05.021.034 /1HP-187-114 | Size/Length: 4" / SS | Thickness/Diameter: .531
Limitations: NONE | Start Time: 0949 | Finish Time: 0951

Examination Surface: Inside ☐ Outside ☑ | Surface Condition: AS GROUND
Lo Location: Rule 1 | Wo Location: Centerline of Weld | Couplant: ULTRAGEL II | Batch No.: 01225
Temp. Tool Mfg.: FISHER | Serial No.: MCNDE 27218 | Surface Temp.: 101 °F | Scanning dB: 58.5
Cal. Report No.: CAL-03-101

Ind. No.	% Loss Back Wall	Amplitude % Full Screen	Position One				Position Max				Position Two				Remarks
			L1	W1	W2	MP	LM	W1	W2	MP	L2	W1	W2	MP	
NRI															

REVIEWED Initial ☐ Final ☑ ANII Date 8/4/04 HSBCT

Comments: F/C 03-20

Results: Accept ☑ Reject ☐ Info ☐ | INITIAL SECTION XI EXAM
Percent Of Coverage Obtained > 90%: ~~YES~~ NO ~~100%~~ 62.5% | Reviewed Previous Data: No

Examiner	Level III	Signature	Date	Reviewer		Signature	Date
Houser, Gayle E.			8/20/2003	Gary J Moss	Level II		8/25/03
Examiner	Level II	Signature	Date	Site Review		Signature	Date
Leeper, Winfred C.			8/20/2003				
Other	Level	Signature	Date	ANII Review		Signature	Date
							8/28/03

Duke Energy

Supplemental Report

Report No.: UT-03-087

Page: 2 of 2

Summary No.: C05.021.034

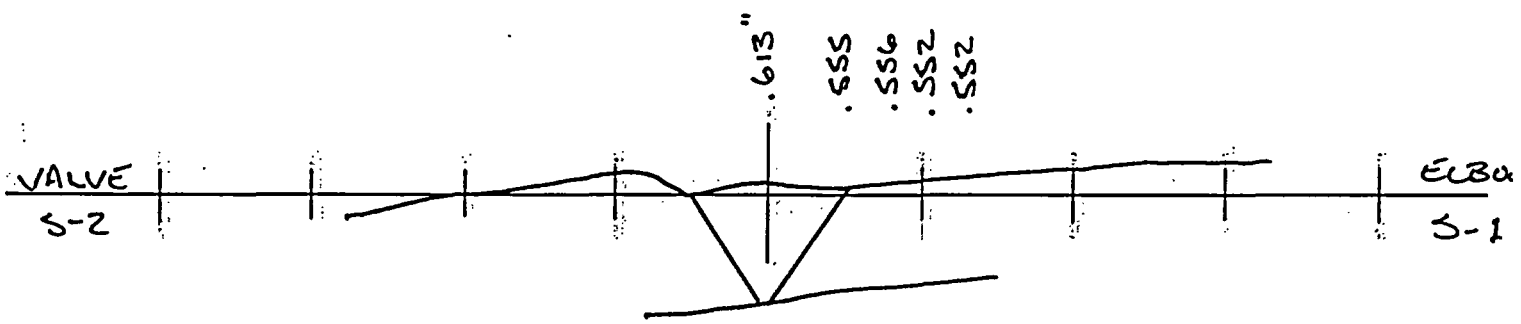
Examiner: Houser, Gayle E. Level: III Reviewer: Gary J Moss Level II Date: 8/25/03

Examiner: Leeper, Winfred C. Level: II Site Review: Date:

Other: Level: ANII Review: Date: 8/26/03

Comments:

Sketch or Photo: Z:\UT\DDEAL\ProfileLine2.jpg



Duke Energy

UT Pipe Weld Examination

Site/Unit: ONS / 1 | Procedure: NDE-600 | Outage No.: ONS1EOC21
Summary No.: C05.021.034 | Procedure Rev.: 14 | Report No.: UT-03-090
Workscope: ISI | Work Order No.: 98577219 | Page: 1 of 3

Code: Section XI, 1989 | Code Cat.: C-F-1 | Location: N/A
Drawing No.: 1HP-187 | Description: Elbow to Valve (1HP-138)
System ID: 51A
Component ID: C05.021.034 /1HP-187-114 | Size/Length: 4" / SS | Thickness/Diameter: .531
Limitations: YES | Start Time: 0953 | Finish Time: 1011

Examination Surface: Inside ☐ Outside ☑ | Surface Condition: AS GROUND
Lo Location: Rule 1 | Wo Location: Centerline of Weld | Couplant: ULTRAGEL II | Batch No.: 01225
Temp. Tool Mfg.: FISHER | Serial No.: MCNDE 27218 | Surface Temp.: 101 °F
Cal. Report No.: CAL-03-102, CAL-03-103, CAL-03-104

Angle Used	0	45	45T	60	60L	
Scanning dB			48.0	49.0	65.0	

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

Comments:
F/C 02-15, 02-16, 03-18, 03-21

Results: Accept ☑ Reject ☐ Info ☐ | INITIAL SECTION XI EXAM
Percent Of Coverage Obtained > 90%: ~~No 75%~~ 100% 8/26/03 | Reviewed Previous Data: No

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Houser, Gayle E.	III	G E Houser	8/20/2003	Gary J Moss	Gary J Moss	8/25/03
Examiner	Level	Signature	Date	Site Review	Signature	Date
Leeper, Winfred C.	II	Winfred C. Leeper	8/20/2003			
Other	Level	Signature	Date	ANII Review	Signature	Date
						8/28/03

Duke Energy

Supplemental Report

Report No.: UT-03-090

Summary No.: C05.021.034

Examiner:	Houser, Gayle E.	Level:	III	Reviewer:	Gary J Moss Level II	Date:	8-25-03
Examiner:	Leeper, Winfred C.	Level:	II	Site Review:		Date:	
Other:		Level:		ANII Review:		Date:	8/26/03

Comments:

SEE ATTACHED PROFILE SHEET

Duke Energy

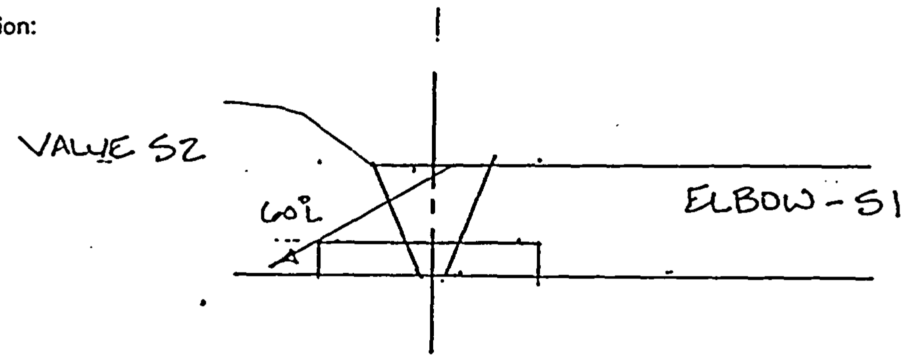
Limitation Record

Site/Unit:	ONS / 1	Procedure:	NDE-600	Outage No.:	ONS1EOC21
Summary No.:	C05.021.034	Procedure Rev.:	14	Report No.:	UT-03-090
Workscope:	ISI	Work Order No.:	98577219	Page:	3 of 3

Description of Limitation:

NO SCAN AXIAL FROM VALVE SIDE

Sketch of Limitation:



Limitations removal requirements:

N/A

Radiation field: N/A

Examiner Level III Houser, Gayle E.	Signature	Date 8/20/2003	Reviewer Gary J Moss Level II	Signature	Date 8/25/03
Examiner Level II Leeper, Winfred C.	Signature	Date 8/20/2003	Site Review	Signature	Date
Other Level JAY EATON III	Signature	Date 8/21/03	ANII Review	Signature	Date 8/28/03

Duke Energy.

Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	ONS 1	Procedure:	NDE-600	Outage No.:	ONS1EOC21
Summary No.:	C05.021.034	Procedure Rev.:	15	Report No.:	UT-03-090
Workscope:	151	Work Order No.:	98577219	Page:	1 of 1

45 deg

Scan 1	100	% Length X	75	% volume of length / 100 =	75	% total for Scan 1
Scan 2	100	% Length X	75	% volume of length / 100 =	75	% 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 = 75 % total for 45 deg

Other deg - 60 (to be used for supplemental scans)

The data to be listed below is for coverage that was not obtained with the 45 deg scans.

Scan 1	100	% Length X	100	% volume of length / 100 =	100	% total for Scan 1
Scan 2	100	% Length X	0	% volume of length / 100 =	0	% total for Scan 2
Scan 3		% Length X		% volume of length / 100 =		% total for Scan 3
Scan 4		% Length X		% volume of length / 100 =		% total for Scan 4

Percent complete coverage

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

62.5 % Total for complete exam

Site Field Supervisor: James J. McGuire Jr. Date: 2-18-04

REVIEWED
Initial ☑ Final ☐
ANI ☑ Date 3/4/04
HSBCT

Duke Energy

UT Base Metal Lamination

Site/Unit: Oconee / 1 | Procedure: NDE-640 | Outage No.: ONS1EOC21
Summary No.: C05.021.050 | Procedure Rev.: 2 | Report No.: UT-03-238
Workscope: ISI | Work Order No.: 98573350 | Page: 1 of 2

Code: Section XI, 1989 | Cat./Item: C-F-1/C5.21.50 | Location: N/A
Drawing No.: 1-51A-02 | Description: Valve (1HP-132) to Pipe
System ID: 51A
Component ID: C05.021.050 /1-51A-02-49BA | Size/Length: 4" SS | Thickness/Diameter: 0.531"
Limitations: Yes - Pipe to Valve | Start Time: 1035 | Finish Time: 1040

Examination Surface: Inside ☐ Outside ☑ | Surface Condition: AS GROUND
Lo Location: Top of Pipe | Wo Location: Centerline of Weld | Couplant: ULTRAGEL II | Batch No.: 01225
Temp. Tool Mfg.: FISHER | Serial No.: MCNDE 27219 | Surface Temp.: 74 °F | Scanning dB: 48
Cal. Report No.: CAL-03-322

Ind. No.	% Loss Back Wall	Amplitude % Full Screen	Position One				Position Max				Position Two				Remarks
			L1	W1	W2	MP	LM	W1	W2	MP	L2	W1	W2	MP	
NRI															

Comments: FC / 03-20

Results: Accept ☑ Reject ☐ Info ☐ | Initial Section XI Exam
Percent Of Coverage Obtained > 90%: Yes - 100% | Reviewed Previous Data: No

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Eaton, Jay A.	III		10/5/2003		Gary J Moss	10-10-03
Examiner	Level	Signature	Date	Site Review	Signature	Date
Other	Level	Signature	Date	ANII Review	Signature	Date
					Wesley C Peteet Sloughter	10/13/03

Duke Energy

Supplemental Report

Report No.: UT-03-238

Page: 2 of 2

Summary No.: C05.021.050

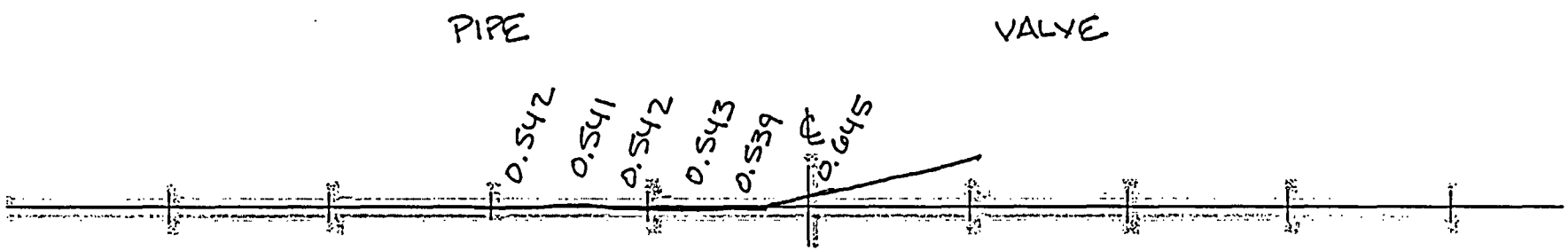
Examiner: Eaton, Jay A. Level: III Reviewer: Gary A Moss Date: 10-8-03

Examiner: Level: Site Review: Date:

Other: Level: ANII Review: Nancy C Ritchie Slaughter Date: 10/13/03

Comments:

Sketch or Photo: \\ngofs1\IDDeal7\Iddeal_Server\Graphics\Common\ProfileLine2.jpg



Duke Energy.

UT Pipe Weld Examination

Site/Unit:	Oconee / 1	Procedure:	NDE-600	Outage No.:	ONS1EOC21
Summary No.:	C05.021.050	Procedure Rev.:	15	Report No.:	UT-03-240
Workscope:	ISI	Work Order No.:	98573350	Page:	1 of 4

Code: Section XI, 1989 Cat./Item: C-F-1/C5.21.50 Location: N/A

Drawing No.: 1-51A-02 Description: Valve (1HP-132) to Pipe

System ID: 51A

Component ID: C05.021.050 /1-51A-02-49BA Size/Length: 4" SS Thickness/Diameter: 0.531"

Limitations: Yes - See attached Limitation Report Start Time: 1040 Finish Time: 1100

Examination Surface: Inside ☐ Outside ☑ Surface Condition: AS GROUND

Lo Location: Top of Pipe Wo Location: Centerline of Weld Couplant: ULTRAGEL II Batch No.: 01225

Temp. Tool Mfg.: FISHER Serial No.: MCNDE 27219 Surface Temp.: 74 °F

Cal. Report No.: CAL-03-323, CAL-03-325, CAL-03-342

Angle Used	0	45	45T	60	60L	
Scanning dB			55	50	60	

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

Comments:

REVIEWED Initial ☐ Final ☑ ANII Date 3/4/04 HSBCT

Results: Accept ☑ Reject ☐ Info ☐ Initial Section XI Exam

Percent Of Coverage Obtained > 90%: ~~No~~ ~~100%~~ ~~75%~~ YES NO 62.5% Reviewed Previous Data: No

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Eaton, Jay A.	III	[signature]	10/5/2003	Gary A Moss	[signature]	10-10-03
Examiner	Level	Signature	Date	Site Review	Signature	Date
Other	Level	Signature	Date	ANII Review	[signature]	10/13/03

Duke Energy

Ultrasonic Indication Report

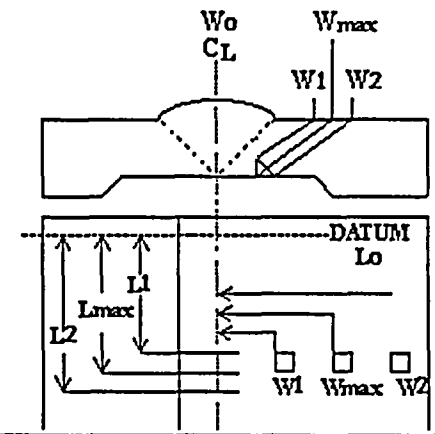
Site/Unit:	Oconee / 1	Procedure:	NDE-600	Outage No.:	ONS1EOC21
Summary No.:	C05.021.050	Procedure Rev.:	15	Report No.:	UT-03-240
Workscope:	ISI	Work Order No.:	98573350	Page:	2 of 4

Search Unit Angle: 60°L °

Wo Location: C/L of Weld

Lo Location: Top of Pipe

- (●) Piping Welds
- ( ) Ferritic Vessels ≥ 2"T
- ( ) Other _____



MP	Metal Path	Wmax	Distance From Wo To S.U. At Maximum Response
RBR	Remaining Back Reflection	W1	Distance From Wo At Of Max (Forward)
L	Distance From Datum	W2	Distance From Wo At Of Max (Forward)

Comments:

Scan #	Indication No.	% Of DAC	W Max W	W Max MP	Forward Of Max W1	Forward Of Max MP	Backward Of Max W2	Backward Of Max MP	L1 Of Max	L Max	L2 Of Max	RBR Amp.	Remarks
60°L	1	80	0.8	.97	N/A	N/A	N/A	N/A	360°	0"	Int.	N/A	

Examiner	Level III	Signature	Date	Reviewer	Signature	Date
Eaton, Jay A.			10/5/2003			10-8-03
Examiner	Level	Signature	Date	Site Review	Signature	Date
Other	Level	Signature	Date	ANII Review	Signature	Date
						10/13/03

Duke Energy

Supplemental Report

Report No.: UT-03-240

Page: 3 of 4

Summary No.: C05.021.050

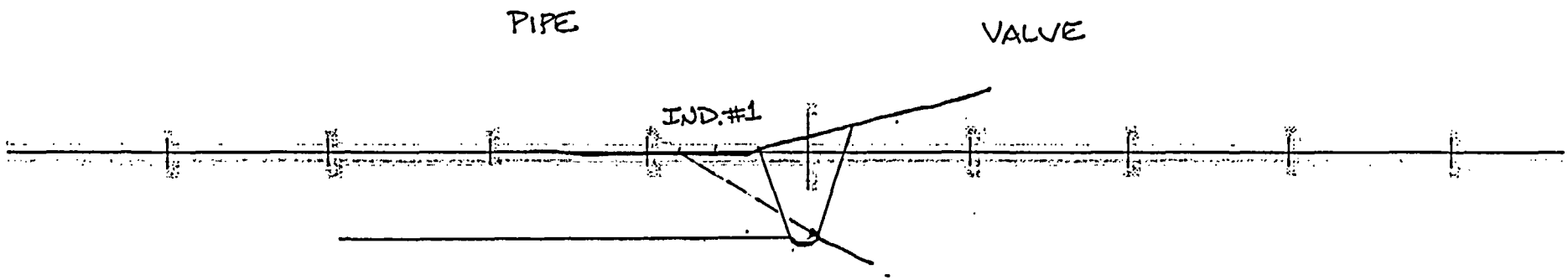
Examiner: Eaton, Jay A. Level: III Reviewer: Gary J Moss Date: 10-8-03

Examiner: _____ Level: _____ Site Review: _____ Date: _____

Other: _____ Level: _____ ANII Review: Nancy C Ritchie Sloughter Date: 10/13/03

Comments: IND. #1 - 60°L IS A GEOMETRIC REFLECTOR FROM THE WELD ROOT / COUNTERBORE CONFIGURATION. THIS WAS VERIFIED FROM PLOTTING AND REVIEW OF THE RT FILM.

Sketch or Photo: \\ngofs1\IDDeal7\Iddeal_Server\Graphics\Common\ProfileLine2.jpg



Duke Energy

Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	ONS 1	Procedure:	NDE-600	Outage No.:	ONS1E0C21
Summary No.:	C05.021.050	Procedure Rev.:	15	Report No.:	UT-03-240
Workscope:	151	Work Order No.:	98573350	Page:	1 of 1

45 deg

Scan 1	100	% Length X	100	% volume of length / 100 =	100	% total for Scan 1
Scan 2	100	% Length X	100	% volume of length / 100 =	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 = 100 % total for 45 deg

Other deg - 60 (to be used for supplemental scans)

The data to be listed below is for coverage that was not obtained with the 45 deg scans.

Scan 1	100	% Length X	100	% volume of length / 100 =	100	% total for Scan 1
Scan 2	100	% Length X	0	% volume of length / 100 =	0	% total for Scan 2
Scan 3	-	% Length X		% volume of length / 100 =		% total for Scan 3
Scan 4		% Length X		% volume of length / 100 =		% total for Scan 4

Percent complete coverage

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

~~75~~ 62.5% gfm 3-2-04 % Total for complete exam

Site Field Supervisor: James J. McArdle III Date: 2-18-04

REVIEWED
Initial ☑ Final ☐
ANI ☑ Date 3/4/04
HSBCT

Duke Energy

UT Base Metal Lamination

Site/Unit: Oconee / 1 | Procedure: NDE-640 | Outage No.: ONS1EOC21
Summary No.: C05.021.056 | Procedure Rev.: 2 | Report No.: UT-03-239
Workscope: ISI | Work Order No.: 98573350 | Page: 1 of 2

Code: Section XI, 1989 | Cat./Item: C-F-1/C5.21.56 | Location: N/A
Drawing No.: 1-51A-02 | Description: Flange to Pipe
System ID: 51A
Component ID: C05.021.056 /1-51A-02-23BB | Size/Length: 4" SS | Thickness/Diameter: 0.531"
Limitations: Yes - Pipe to Flange | Start Time: 1005 | Finish Time: 1010

Examination Surface: Inside ☐ Outside ☑ | Surface Condition: AS GROUND
Lo Location: North Side of Pipe | Wo Location: Centerline of Weld | Couplant: ULTRAGEL II | Batch No.: 01225
Temp. Tool Mfg.: FISHER | Serial No.: MCNDE 27219 | Surface Temp.: 74 °F | Scanning dB: 48
Cal. Report No.: CAL-03-322

Ind. No.	% Loss Back Wall	Amplitude % Full Screen	Position One				Position Max				Position Two				Remarks
			L1	W1	W2	MP	LM	W1	W2	MP	L2	W1	W2	MP	
NRI															

Comments: FC / 03-20

REVIEWED Initial ☐ Final ☑ ANII V Date 3/4/04 HSBCXI

Results: Accept ☑ Reject ☐ Info ☐ 3-5-04 JJM Initial Section XI Exam

Percent Of Coverage Obtained > 90%: JJM 10-10-03 ~~No-75%~~ ~~YES-100%~~ NC 62.5% Reviewed Previous Data: No

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Eaton, Jay A.	III		10/5/2003			
Examiner	Level	Signature	Date	Site Review	Signature	Date
Other	Level	Signature	Date	ANII Review	Signature	Date
					Nancy C Ritchie Slaughter	10/13/03

Duke Energy

Supplemental Report

Report No.: UT-03-239

Page: 2 of 2

Summary No.: C05.021.056

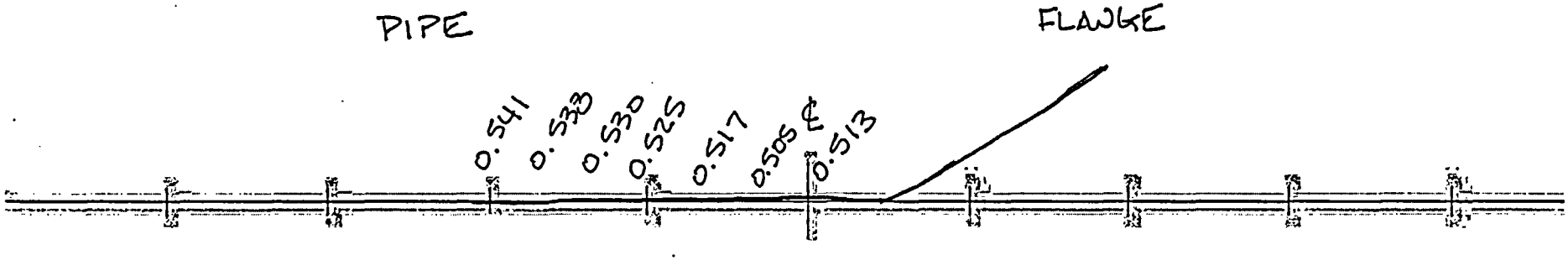
Examiner: Eaton, Jay A. Level: III Reviewer: Gary Moss Date: 10-8-03

Examiner: Level: Site Review: Date:

Other: Level: ANII Review: Nancy C Petitel Sloughton Date: 10/13/03

Comments:

Sketch or Photo: \\ngofs1\IDDeal7\Iddeal_Server\Graphics\Common\ProfileLine2.jpg



Duke Energy

UT Pipe Weld Examination

Site/Unit: Oconee / 1 | Procedure: NDE-600 | Outage No.: ONS1EOC21
Summary No.: C05.021.056 | Procedure Rev.: 15 | Report No.: UT-03-241
Workscope: ISI | Work Order No.: 98573350 | Page: 1 of 2

Code: Section XI, 1989 | Cat./Item: C-F-1/C5.21.56 | Location: N/A
Drawing No.: 1-51A-02 | Description: Flange to Pipe
System ID: 51A
Component ID: C05.021.056 /1-51A-02-23BB | Size/Length: 4" SS | Thickness/Diameter: 0.531"
Limitations: Yes - See attached Limitation Report | Start Time: 1012 | Finish Time: 1028

Examination Surface: Inside ☐ Outside ☑ | Surface Condition: AS GROUND
Lo Location: North Side of Pipe | Wo Location: Centerline of Weld | Couplant: ULTRAGEL II | Batch No.: 01225
Temp. Tool Mfg.: FISHER | Serial No.: MCNDE 27219 | Surface Temp.: 74 °F
Cal. Report No.: CAL-03-323, CAL-03-325, CAL-03-342

Angle Used	0	45	45T	60	60L	
Scanning dB			55	50	60	

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

Comments:

REVIEWED
Initial ☐ Final ☐
ANII 10/6/03 Date
HSBCT

Results: Accept ☑ Reject ☐ Info ☐ Initial Section XI Exam
Percent Of Coverage Obtained > 90%: ~~No 75%~~ 100% 75% jam 10-10-03 62.5 jjm 02-18-04 | Reviewed Previous Data: No

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Eaton, Jay A.	III		10/5/2003		Gary Moss	10-10-03
Examiner	Level	Signature	Date	Site Review	Signature	Date
Other	Level	Signature	Date	ANII Review	Signature	Date
					Nancy C Retelle Stoughton	10/13/03

Duke Energy

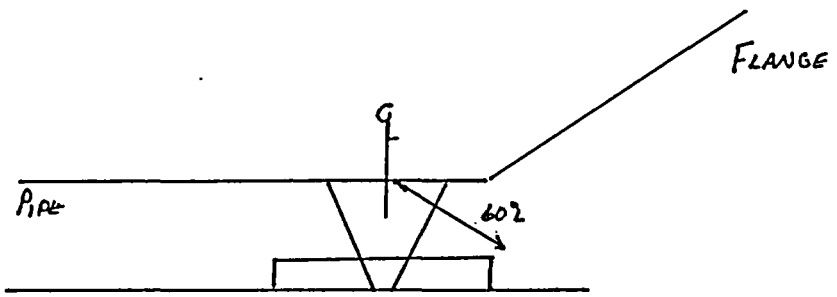
Limitation Record

Site/Unit:	Oconee / 1	Procedure:	NDE-600	Outage No.:	ONS1EOC21
Summary No.:	C05.021.056	Procedure Rev.:	15	Report No.:	UT-03-241
Workscope:	ISI	Work Order No.:	98573350	Page:	2 of 2

Description of Limitation:

Due to Flange configuration. Weld C/L + 0.5" and Beyond - 360°

Sketch of Limitation:



Limitations removal requirements:

N/A

Radiation field: **N/A**

Examiner	Level III	Signature	Date	Reviewer		Signature	Date
~~Eaton, Jay A.~~	JAE 10-12-03	James J. McArdle	10/5/2003		Gary J. Mons		10-12-03
Examiner	Level	Signature	Date	Site Review		Signature	Date
Other	Level	Signature	Date	ANII Review		Signature	Date
					Nancy C. Ritchie Stoughton		10/13/03

Duke Energy

Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	ONS 1	Procedure:	NDE-600	Outage No.:	ONS1EOC21
Summary No.:	C05.021.056	Procedure Rev.:	15	Report No.:	UT-03-241
Workscope:	151	Work Order No.:	98573350	Page:	1 of 1

45 deg

Scan 1	100	% Length X	100	% volume of length / 100 =	100	% total for Scan 1
Scan 2	100	% Length X	100	% volume of length / 100 =	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 = 100 % total for 45 deg

Other deg - 60 (to be used for supplemental scans)

The data to be listed below is for coverage that was not obtained with the 45 deg scans.

Scan 1	100	% Length X	100	% volume of length / 100 =	100	% total for Scan 1
Scan 2	100	% Length X	0	% volume of length / 100 =	0	% total for Scan 2
Scan 3		% Length X		% volume of length / 100 =		% total for Scan 3
Scan 4		% Length X		% volume of length / 100 =		% total for Scan 4

Percent complete coverage

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

75 62.5% JJM 03-2-04 % Total for complete exam

Site Field Supervisor: James J. McGuire III Date: 2-18-04

REVIEWED
Initial ☑ Final ☐
ANI Date 3/4/04
HSBCT

Duke Energy

UT Base Metal Lamination

Site/Unit: ONS / 1 | Procedure: NDE-640 | Outage No.: ONS1EOC21
Summary No.: C05.021.073 | Procedure Rev.: 2 | Report No.: UT-03-088
Workscope: ISI | Work Order No.: 98577219 | Page: 1 of 2

Code: Section XI, 1989 | Code Cat.: C-F-1 | Location: N/A
Drawing No.: 1HP-187 | Description: Tee to Elbow
System ID: 51A
Component ID: C05.021.073 /1HP-187-116 | Size/Length: 4" / SS | Thickness/Diameter: .531
Limitations: NONE | Start Time: 0947 | Finish Time: 0949

Examination Surface: Inside ☐ Outside ☑ | Surface Condition: AS GROUND
Lo Location: Rule 1 | Wo Location: Centerline of Weld | Couplant: ULTRAGEL II | Batch No.: 01225
Temp. Tool Mfg.: FISHER | Serial No.: MCNDE 27218 | Surface Temp.: 101 °F | Scanning dB: 58.5
Cal. Report No.: CAL-03-101

Ind. No.	% Loss Back Wall	Amplitude % Full Screen	Position One				Position Max				Position Two				Remarks
			L1	W1	W2	MP	LM	W1	W2	MP	L2	W1	W2	MP	
NRI															

Comments: F/C 03-20

Results: Accept ☑ Reject ☐ Info ☐ | INITIAL SECTION XI EXAM
Percent Of Coverage Obtained > 90%: YES 100% | Reviewed Previous Data: No

Examiner Houser, Gayle E.	Level III	Signature L E Houser	Date 8/20/2003	Reviewer Gary J Moss	Level II	Signature Gary J Moss	Date 8-25-03
Examiner Leeper, Winfred C.	Level II	Signature Winfred C. Leeper	Date 8/20/2003	Site Review		Signature	Date
Other	Level	Signature	Date	ANII Review		Signature	Date 8/28/03

Duke Energy

Supplemental Report

Report No.: UT-03-088

Page: 2 of 2

Summary No.: C05.021.073

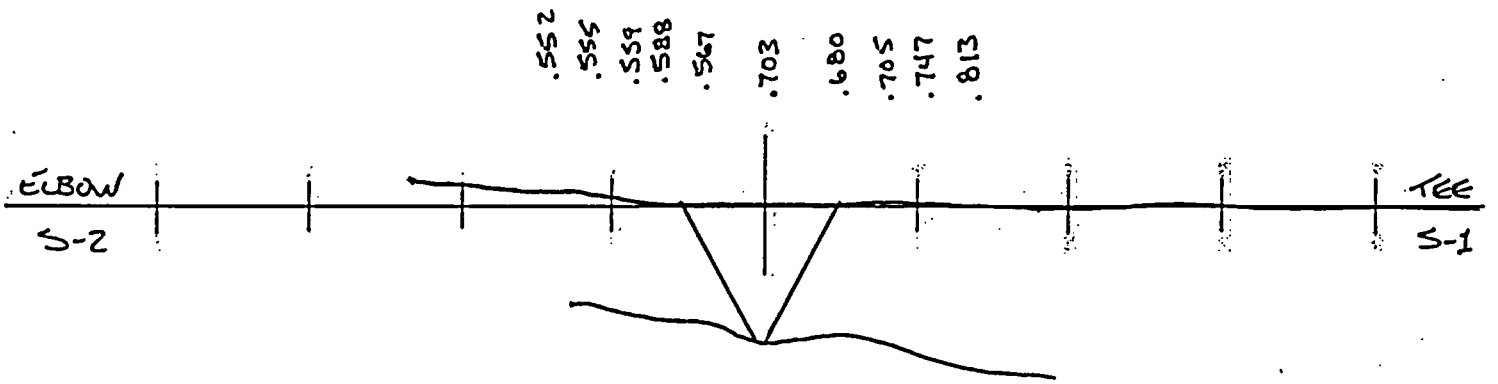
Examiner: Houser, Gayle E. Level: III Reviewer: Gary J Moss Level II Date: 8-25-03

Examiner: Leeper, Winfred C. Level: II Site Review: Date:

Other: Level: ANII Review: Date: 8/28/03

Comments:

Sketch or Photo: Z:\UT\IDDEAL\ProfileLine2.jpg



Duke Energy

UT Pipe Weld Examination

Site/Unit: ONS / 1 | Procedure: NDE-600 | Outage No.: ONS1EOC21
Summary No.: C05.021.073 | Procedure Rev.: 14 | Report No.: UT-03-089
Workscope: ISI | Work Order No.: 98577219 | Page: 1 of 3

Code: Section XI, 1989 | Code Cat.: C-F-1 | Location: N/A
Drawing No.: 1HP-187 | Description: Tee to Elbow
System ID: 51A
Component ID: C05.021.073 /1HP-187-116 | Size/Length: 4" / SS | Thickness/Diameter: 0531
Limitations: YES | Start Time: 0952 | Finish Time: 1007

Examination Surface: Inside ☐ Outside ☑ | Surface Condition: AS GROUND
Lo Location: Rule 1 | Wo Location: Centerline of Weld | Couplant: ULTRAGEL II | Batch No.: 01225
Temp. Tool Mfg.: FISHER | Serial No.: MCNDE 27218 | Surface Temp.: 101 °F
Cal. Report No.: CAL-03-102, CAL-03-103, CAL-03-104

Angle Used	0	45	45T	60	60L	
Scanning dB			48.0	49.0	65.0	

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

Comments:
F/C 02-15, 02-16, 03-18, 03-21

REVIEWED
Initial ☐ Final ☑
ANII Date 3/4/04
HSBCT

Results: Accept ☑ Reject ☐ Info ☐ | INITIAL SECTION XI EXAM
Percent Of Coverage Obtained > 90%: ~~YES 100%~~ No ~~75%~~ 62.5% JJM 12-18-04 | Reviewed Previous Data: No

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Houser, Gayle E.	III	GE Houser	8/20/2003	Gary J Moss Level II	Gary J Moss	8.25.03
Examiner	Level	Signature	Date	Site Review	Signature	Date
Leeper, Winfred C.	II	Winfred C Leeper	8/20/2003			
Other	Level	Signature	Date	ANII Review	Signature	Date
						8/28/03

Duke Energy

Supplemental Report

Report No.: UT-03-089

Page: 2 of 3

Summary No.: C05.021.073

Examiner:	Houser, Gayle E.	Level:	III	Reviewer:	Gary J Moss Level II	Date:	8-25-03
Examiner:	Leeper, Winfred C.	Level:	II	Site Review:		Date:	
Other:		Level:		ANII Review:		Date:	8/28/03

Comments:

SEE ATTACHED PROFILE SHEET

Duke Energy.

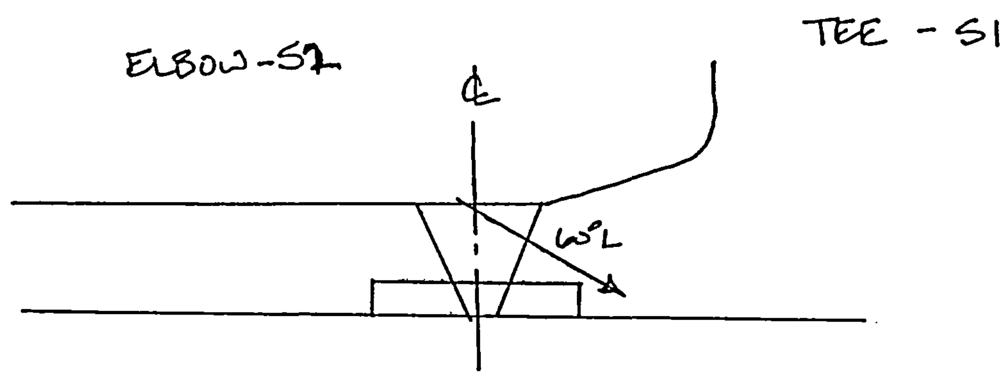
Limitation Record

Site/Unit:	ONS / 1	Procedure:	NDE-600	Outage No.:	ONS1EOC21
Summary No.:	C05.021.073	Procedure Rev.:	14	Report No.:	UT-03-089
Workscope:	ISI	Work Order No.:	98577219	Page:	3 of 3

Description of Limitation:

No scan from surface 1 scan 1 due to the throat of the tee. Limited area is 0 + 12.63" to 0 + 1.5". This area was scanned with a 60 L - Wave from the surface 2 side to gain 100% coverage. See sketch below:

Sketch of Limitation:



Limitations removal requirements:

N/A

Radiation field: N/A

Examiner Level III Houser, Gayle E.	Signature	Date 8/20/2003	Reviewer Gary J Moss Level II	Signature	Date 8-25-03
Examiner Level II Leeper, Winfred C.	Signature	Date 8/20/2003	Site Review	Signature	Date
Other Level JAY EATON	Signature	Date 8/21/03	ANII Review	Signature	Date 8/28/03

Duke Energy

Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	ONS 1	Procedure:	NDE-600	Outage No.:	ONS/E0C21
Summary No.:	C05.021.073	Procedure Rev.:	15	Report No.:	UT-03-089
Workscope:	151	Work Order No.:	98577219	Page:	1 of 1

45 deg

Scan 1	45	% Length X	100	% volume of length / 100 =	100	% total for Scan 1
Scan 2	45	% Length X	100	% volume of length / 100 =	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 = 100 % total for 45 deg

Other deg - 60 (to be used for supplemental scans)

The data to be listed below is for coverage that was not obtained with the 45 deg scans.

Scan 1	100	% Length X	100	% volume of length / 100 =	100	% total for Scan 1
Scan 2	100	% Length X	0	% volume of length / 100 =	0	% total for Scan 2
Scan 3	-	% Length X		% volume of length / 100 =		% total for Scan 3
Scan 4		% Length X		% volume of length / 100 =		% total for Scan 4

Percent complete coverage

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

75 62.5% 03-08-04 % Total for complete exam

Site Field Supervisor: James J. McGuire III Date: 2-18-04

REVIEWED
Initial ☑ Final ☐
ANII ☑ Date 2/4/04
HSBCT

Duke Energy

UT Base Metal Lamination

Site/Unit: ONS / 1 | Procedure: NDE-640 | Outage No.: ONS1EOC21
Summary No.: C05.021.111 | Procedure Rev.: 2 | Report No.: UT-03-085
Workscope: ISI | Work Order No.: 98577854 | Page: 1 of 1

Code: Section XI, 1989 | Code Cat.: C-F-1 | Location: N/A
Drawing No.: 1HP-194 | Description: Pipe to Valve (1HP-27)
System ID: 51A
Component ID: C05.021.111 /1HP-194-4 | Size/Length: 4.0" / SS | Thickness/Diameter: .674
Limitations: NONE | Start Time: 0912 | Finish Time: 0916

Examination Surface: Inside ☐ Outside ☑ | Surface Condition: FLUSH
Lo Location: RT #0 | Wo Location: Centerline of Weld | Couplant: ULTRAGEL II | Batch No.: 01225
Temp. Tool Mfg.: FISHER | Serial No.: MCNDE 27221 | Surface Temp.: 90 °F | Scanning dB: 50
Cal. Report No.: CAL-03-097

Ind. No.	% Loss Back Wall	Amplitude % Full Screen	Position One				Position Max				Position Two				Remarks
			L1	W1	W2	MP	LM	W1	W2	MP	L2	W1	W2	MP	
NRI															

Comments: F/C 03-20

Results: Accept ☑ Reject ☐ Info ☐ | INITIAL SECTION XI EXAM
Percent Of Coverage Obtained > 90%: YES 100% | Reviewed Previous Data: No

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Weaver, Marion T.	II	Marion T. Weaver	8/20/2003	Gary J Moss Level II	Gary J Moss	8-25-03
Examiner	Level	Signature	Date	Site Review	Signature	Date
Other	Level	Signature	Date	ANII Review	Signature	Date
						8/28/03

Duke Energy.

Supplemental Report

Report No.: UT-03-086

Page: 2 of 3

Summary No.: C05.021.111

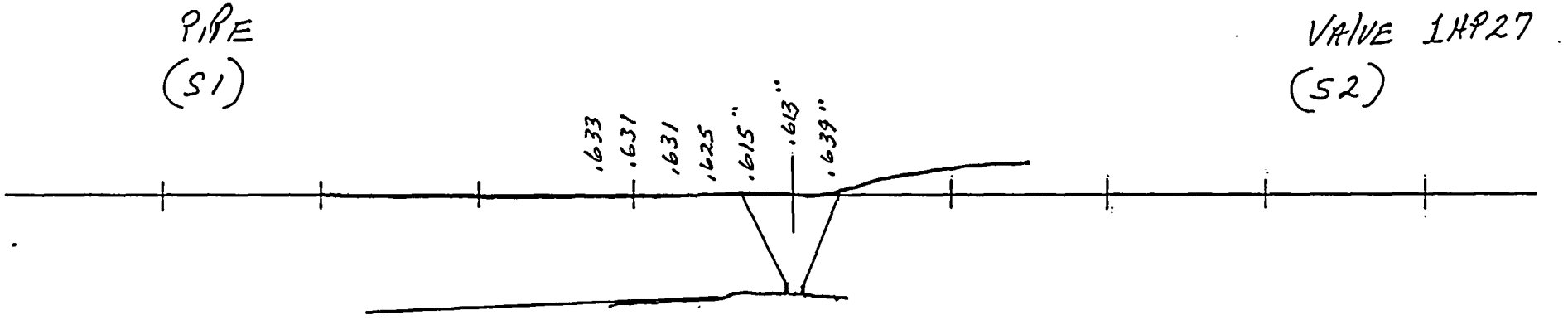
Examiner: Marvin T. Weaver Level: II Reviewer: Gary Moss Date: 8.25.03

Examiner: _____ Level: _____ Site Review: _____ Date: _____

Other: _____ Level: _____ ANII Review: [signature] Date: 8/25/03

Comments:

Sketch or Photo:



Duke Energy.

UT Pipe Weld Examination

Site/Unit: ONS / 1
Procedure: NDE-600
Outage No.: ONS1EOC21
Summary No.: C05.021.111
Procedure Rev.: 14
Report No.: UT-03-086
Workscope: ISI
Work Order No.: 98577854
Page: 1 of 3

Code: Section XI, 1989
Code Cat.: C-F-1
Location: N/A
Drawing No.: 1HP-194
Description: Pipe to Valve (1HP-27)
System ID: 51A
Component ID: C05.021.111 /1HP-194-4
Size/Length: 4.0" / SS
Thickness/Diameter: .674
Limitations: YES - 1 SIDED (VALVE)
Start Time: 0924
Finish Time: 0932

Examination Surface: Inside ☐ Outside ☑
Surface Condition: FLUSH
Lo Location: RT #0
Wo Location: Centerline of Weld
Couplant: ULTRAGEL II
Batch No.: 01225
Temp. Tool Mfg.: FISHER
Serial No.: MCNDE 27221
Surface Temp.: 90 °F
Cal. Report No.: CAL-03-098, CAL-03-099, CAL-03-100

Angle Used	0	45	45T	60	38	60L
Scanning dB				56	51	57

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

Comments:
F/C 02-15, 02-16, 03-18, 03-21

REVIEWED Initial ☐ Final ☐ ANII [signature] Date 3/4/04 HSBCT

Results: Accept ☑ Reject ☐ Info ☐ 65.15% [initials] 02-18-04
INITIAL SECTION XI EXAM
Percent Of Coverage Obtained > 90%: ~~100%~~ ~~No - 75%~~ [initials] 8-23-03
Reviewed Previous Data: No

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Weaver, Marion T.	II	[signature]	8/20/2003	Gary J Moss Level II	[signature]	8/25/03
Examiner	Level	Signature	Date	Site Review	Signature	Date
Other: Eaton, Jay A.	III	[signature]	8/20/2003	ANII Review	[signature]	8/28/03

Duke Energy

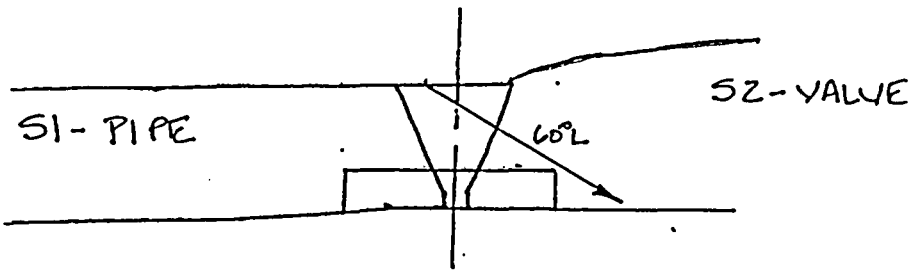
Limitation Record

Site/Unit:	ONS / 1	Procedure:	NDE-600	Outage No.:	ONS1EOC21
Summary No.:	C05.021.111	Procedure Rev.:	14	Report No.:	UT-03-086
Workscope:	ISI	Work Order No.:	98577854	Page:	3A of 3A

Description of Limitation: 8/20/03 8/20/03

The 38 shear scans 3 & 4 and the 60 shear scan 2 on surface 2 were limited due to valve configuration. A 60 L - Wave was scanned from surface 1. See the sketch and coverage calculations below:

Sketch of Limitation:



Limitations removal requirements: N/A

Radiation field: N/A

Examiner	Level	Signature	Date	Reviewer	Signature	Date
Weaver, Marion T.	II	Marion T Weaver	8/20/2003	Gary J Moss	Level II Gary J Moss	8-25-03
Examiner	Level	Signature	Date	Site Review	Signature	Date
Other	Level	Signature	Date	ANII Review	Signature	Date
JAY EATON	LEVEL III		8/20/03	C. T.		8/25/03

Duke Energy

Determination of Percent Coverage for UT Examinations - Pipe

Site/Unit:	ONS1 1	Procedure:	NDE-600	Outage No.:	ONS1EOC 2
Summary No.:	C05.021.111	Procedure Rev.:	14	Report No.:	UT-03-08
Workscope:	151	Work Order No.:	98577857	Page:	1 of 1

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	100	% Length X	80.36	% volume of length / 100 =	80.36	% total for Scan 3
Scan 4	100	% Length X	80.36	% volume of length / 100 =	80.36	% total for Scan 4

Add totals and divide by # scans = 80.36 % total for 45 deg

Other deg - 60 (to be used for supplemental scans)

The data to be listed below is for coverage that was not obtained with the 45 deg scans.

Scan 1	100	% Length X	100	% volume of length / 100 =	100	% total for Scan 1
Scan 2	100	% Length X	0	% volume of length / 100 =	0	% total for Scan 2
Scan 3	-	% Length X		% volume of length / 100 =		% total for Scan 3
Scan 4		% Length X		% volume of length / 100 =		% total for Scan 4

Percent complete coverage

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

65.18 % Total for complete exam

Site Field Supervisor: James J. McAllen Date: 02-18-04

REVIEWED
Initial ☑ Final ☐
ANI N Date 3/4/04
HSBCT