

CATEGORY 1

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50-287 Oconee Nuclear Station, Unit 3, Duke Power Co. 05000287
AUTH. NAME AUTHOR AFFILIATION
MCCOLLUM, W.R. Duke Power Co.
RECIP. NAME RECIPIENT AFFILIATION
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SUBJECT: Forwards response to 970605 RAI re request from relief from ASME Section XI, 1989 Edition to allow DPC to take credit for limited ultrasonic exams on pressurizer spray nozzle to upper head welds & certain SG shell circumferential welds.

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Duke Power Company

A Duke Energy Company

Oconee Nuclear Site
P.O. Box 1439
Seneca, SC 29679

W. R. McCollum, Jr.
Vice President

(864) 885-3107 OFFICE
(864) 885-3564 FAX

July 22, 1997

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

Subject: Duke Power Company
Oconee Nuclear Station, Units 1, 2, and 3
Docket Nos. 50-269, -270, and -287
Third Ten Year Inservice Inspection Interval
Request for Relief No. 97-01
Response to Request for Additional Information

In a letter dated March 13, 1997, Duke submitted a Request for Relief from ASME Section XI, 1989 Edition pursuant to 10 CFR 50.55a, section (g) (5) (iii). In a letter dated June 5, 1997, the staff requested additional information. Please find the response to this request for information attached.

This request for relief was to allow Duke Power to take credit for limited ultrasonic examinations on pressurizer spray nozzle to upper head welds and certain steam generator shell circumferential welds. During the examinations on the subject Unit 3 welds, the ultrasonic examination coverages did not meet the 90% examination coverage requirements of ASME Section XI. Achievement of greater than 90% examination coverage for the subject welds was impractical due to piping/vessel geometry, joint configuration, and interferences. All three Oconee units were addressed by this request for relief per recommendations delineated in NRC Inspection Report 95-05 dated May 5, 1995.

9707290211 970722
PDR ADOCK 05000269
G PDR

290064

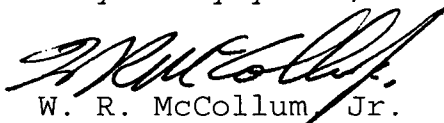


A0471/

U. S. Nuclear Regulatory Commission
July 22, 1997
Page 2

If there are any questions or further information is needed you may contact D. A. Nix at (864) 885-3634.

Very truly yours,


W. R. McCollum, Jr.
Site Vice President

Attachments

U. S. Nuclear Regulatory Commission
July 22, 1997
Page 3

xc (w/attch): Mr. D. E. LaBarge, Project Manager
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. L. A. Reyes
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission

xc(w/o attch): Mr. M. A. Scott
Senior NRC Resident Inspector
Oconee Nuclear Station

Mr. Max Batavia
Bureau of Radiological Health
SC Dept. of Health & Environmental Control
2600 Bull St.
Columbia, SC 29201

ATTACHMENT 1
RESPONSE TO STAFF QUESTIONS

Question #1:

In DPC's supporting documentation for Unit 3 steam generator welds 3-SGA-WG8-1 and 3-SGA-WG8-2, several Code-rejectable Ultrasonic Test (UT) indications were identified. Weld 3-SGA-WG8-1 has four planar flaw indications identified as #1-45°, #2-45°, #2-60°, and #3-60°, and reported as being 4.8%, 6.5%, 4.5% and 4.8% through wall, respectively. Weld 3-SGA-WG8-2 has one planar flaw indication, #2-60°, reported to be 9% through wall.

Planar flaw indication #2-60° in weld 3-SGA-WG8-2 was reported as not having changed dimensions since it was reported in 1992. For weld 3-SGA-WG8-1, DPC reported that indications #1-45° and #2-45° have been monitored since 1982 and that indications #2-60° and #3-60° were first identified in 1992. The submitted information for weld 3-SGA-WG8-1 does not discuss changes, if any, in flaw size from inspections that have been performed. Please provide discussions that clarify changes in flaw size, if any, from inspections of weld 3-SGA-WG8-1 and 3-SGA-WG8-2.

For both welds 3-SGA-WG8-1 and 3-SGA-WG8-2, provide discussions regarding any fracture analyses performed and results for these examinations that may have been performed.

Answer:

The inspection records for welds 3-SGA-WG8-1 and 3-SGA-WG8-2 were reviewed. It was noted that a statement which describes that "the indications had not changed dimensions since they were last reported" should have also been placed on the inspection record for weld 3-SGA-WG8-1. The records for weld 3-SGA-WG8-2 already contain a statement that no changes in flaw sizes have occurred since the previous examination. For weld 3-SGA-WG8-1, the inspector did document that the indications were previously monitored by B&W and that the indications had been compared with

those previously identified. At the time of this documentation, the inspector believed that this was sufficient documentation to indicate that no changes had taken place in the indications for 3-SGA-WG8-1. Duke Energy will add the statement "These indications have not changed dimensions since the last inspection" to the inspection records for weld 3-SGA-WG8-1 in an effort to clarify the inspectors intent. Welds 3-SGA-WG8-1 and 3-SGA-WG8-2 have not exhibited any changes in flaw sizes throughout their monitoring periods.

Both of these welds, 3-SGA-WG8-1 and 3-SGA-WG8-2, have undergone fracture analysis. The analysis was performed by B&W (now Framatome) and the analysis indicates that all flaw indications were found to be acceptable per ASME Section XI, 1980 Edition through Winter 1980 Addenda, paragraph IWB-3612. A copy of this analysis is available in the Oconee Unit 3 Outage 13 Inservice Inspection Report, which was submitted to the staff in a letter dated December 7, 1992.

Question #2:

Based on Drawing No. ISI-OCN3-003 Rev. 1, it appears that circumferential welds WG8-3 and WG8-4 would also require inservice inspection examinations during the third 10-year interval. Have these examinations been performed? If so, please provide the Code-coverage obtained and discuss any indications found in these welds. If these examinations have not been performed, provide and approximate schedule for examination of these welds.

Answer:

Welds 3-SGA-WG8-3 and WG8-4 have already been examined during the first Unit 3 outage of the third interval, which began on June 28, 1995. The coverage obtained for these two welds was greater than 90%. This coverage was obtained by performing a near surface examination using a 70° shear wave transducer calibrated in the top ¼ of material thickness with scanning in all 4 directions. Indications were identified during the examination. However, after further investigation, the indications were determined to be geometric reflectors due to the outside diameter

and inside diameter geometry. A copy of the calibration examination is provided in Attachment 2, and copies of the examination results for welds WG8-3 and WG8-4 are in Attachments 3 and 4, respectively.

Attachment 2

DUKE POWER COMPANY						FORM NDE-UT-1D	
ULTRASONIC CALIBRATION SHEET FOR SONIC-136 INSTRUMENTS						REVISION 2	
Station: <u>OCONEE</u>		Unit: <u>3</u>		Date: <u>6-28-95</u>		Sheet Number: <u>95-0-3-062</u>	
Procedure: <u>NDE 620</u>		Rev: <u>2</u>		FIC: <u>9501</u>		Couplant: <u>ULTRAGEL</u>	
Batch Number: <u>94325</u>		Examiner: <u>Richard B. Childers</u>		Level: <u>II</u>		Calibration Block ID: <u>40339</u>	
Pyrometer S/N: <u>MCNDE 27023</u>		Examiner: <u>Harry Moss</u>		Level: <u>D</u>		Calibration Block Temp: <u>66°</u>	
Cal. due: <u>951101</u>							
REFERENCE BLOCK				SIMULATOR BLOCK			
ID: <u>1076-83</u>				ID: <u>A04396</u>			
Type: <u>ITW-TPI</u>				Reflector Type: <u>BW</u>			
Material: <u>C/S</u>				Gain: <u>32.6</u>			
				Signal Ampl: <u>702</u>			
				Metal Path: <u>2.0"</u>			
INSTRUMENT				TRANSDUCER			
Manufacturer: <u>Slaveley Instruments</u>				Type: Single <input checked="" type="checkbox"/> Dual <input type="checkbox"/> Size: <u>1.0"</u>			
Serial No: <u>1163</u>				Freq: <u>2.25</u> Mhz Wedge <u>SWS</u>			
				Manufacturer: <u>AEROTECH</u> Ser no: <u>M18425</u>			
				Meas. <u>Δ 45°</u>			
INSTRUMENT SETTINGS		CALIBRATION		METHOD		CABLES	
Range	<u>15.0</u>	Reflector Type	Amplitude %FSH	Metal Path inches	<p style="text-align: center;">1 Major Screen Div = <u>1.5</u> inches</p>		
Delay	<u>.536</u>	<u>1/8 node</u>	<u>75</u>	<u>1.8</u>			
Velocity	<u>.126</u>	<u>2/8 node</u>	<u>80</u>	<u>3.6</u>			
Units	<u>IN.</u>	<u>3/8 node</u>	<u>60</u>	<u>5.4</u>			
Gain	<u>50.6</u>	<u>5/8 node</u>	<u>32</u>	<u>10.5</u>			
Display	<u>FULLWAVE</u>	<u>other NOTCH</u>	<u>90</u>	<u>7.35</u>			
Freq	<u>2.25</u>	Cal Direction: axial <input checked="" type="checkbox"/> circ. <input checked="" type="checkbox"/>					
Reject	<u>OFF</u>	Wave Mode: Long <input type="checkbox"/> shear <input checked="" type="checkbox"/>					
Pulse	<u>222</u>	surf. <input type="checkbox"/>					
Damping	<u>500</u>	Remarks:					
Rep Rate	<u>2 KHZ</u>						
Dual <input type="checkbox"/> Pulse Echo <input checked="" type="checkbox"/>		Item No: <u>C01.010.003</u>		Item No: <u>C01.010.004</u>			
Jack: T <input checked="" type="checkbox"/> R <input type="checkbox"/>		Reviewer: <u>Aug S. Bibb</u>		Level: <u>III</u>		Date: <u>6-29-95</u>	
				Authorized Inspector: <u>[Signature]</u>		Date: <u>6-30-95</u>	

DUKE POWER COMPANY

FORM NDE-UT-1E

ULTRASONIC CALIBRATION SHEET FOR USK-7D INSTRUMENTS

REVISION 2

Station: <u>OONEE</u>		Unit: <u>3</u>	Date: <u>6-28-95</u>	Sheet Number: <u>9503065</u>	
Procedure: <u>NDE 620</u>		Rev: <u>2</u>	F/C: <u>95-01</u>	Couplant: <u>ULTRAGEL II</u>	
Examiner: <u>Larry Mauller</u>		Level: <u>III</u>	Calibration Block ID: <u>40339</u>		Pyrometer S/N: <u>NRNDE-27023</u>
Examiner: _____		Level: _____	Calibration Block Temp: <u>66°</u>		Cal. due: <u>951101</u>

REFERENCE BLOCK		SIMULATOR BLOCK	
ID: <u>1076-83</u>	ID: <u>A04396</u>	Reflector Type: <u>Radius</u>	
Type: <u>IIW</u>	Material: <u>9/5</u>	Gain: <u>40</u>	Signal Ampl: <u>70%</u>
		Metal Path: <u>2.0"</u>	

INSTRUMENT		TRANSDUCER	
Manufacturer: <u>Krautkramer</u>		Type: Single <input checked="" type="checkbox"/> Dual <input type="checkbox"/> Size: <u>1.0</u>	Freq: <u>2.25</u> Mhz Wedge <u>SW5</u>
Serial No: <u>794</u>		Manufacturer: <u>KBA</u>	Ser no: <u>F21878</u>
		Meas. <u>4</u> <u>60°</u>	

INSTRUMENT SETTINGS	CALIBRATION	METHOD	CABLES
Gain: <u>45/51.5</u>	Reflector Type: <u>S.D. HOLES</u>		RG58 <input checked="" type="checkbox"/>
Range: <u>20.0"</u>	Amplitude: <u>80</u>		RG174 <input type="checkbox"/>
MTVEL: <u>126.0</u>	Metal Path: <u>2.8</u>		Length: <u>10'</u>
Delay: <u>11.4</u>	<u>1/8 node</u>		Initial Cal Time: <u>0840</u>
Pulser: <u>HIGH</u>	<u>2/8 node</u>		Cal Checks
Reject: <u>CH</u>	<u>3/8 node</u>		Time
Freq: <u>1-5</u>	<u>5/8 node</u>	Initials	
Zero: <u>14.45</u>	other <u>NOTCH</u>	0850 <u>LM</u>	
Display: <u>FULL WAVE</u>	Cal Direction: axial <input type="checkbox"/> circ. <input type="checkbox"/>	0930 <u>LM</u>	
PRF: <u>HIGH</u>	Wave Mode: Long <input type="checkbox"/> shear <input checked="" type="checkbox"/>	0935 <u>LM</u>	
	surf. <input type="checkbox"/>	1026 <u>LM</u>	
Jack: T <input type="checkbox"/> R <input checked="" type="checkbox"/>	Remarks: _____	1040 <u>LM</u>	
	Item No: <u>C01.010.003 & C01.010.004</u>	FINAL	

Reviewer: <u>Aug L. Bill</u>	Level: <u>III</u>	Date: <u>6-29-95</u>	Authorized Inspector: <u>YMB</u>	Date: <u>6-30-95</u>
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DUKE POWER COMPANY

FORM NDE-UT-1E

ULTRASONIC CALIBRATION SHEET FOR USK-7D INSTRUMENTS

REVISION 2

Station: <u>ONS</u>	Unit: <u>3</u>	Date: <u>6-28-95</u>	Sheet Number: <u>95-0-3-066</u>												
Procedure: <u>640</u>	Rev: <u>I</u> F/C: <u>0</u>	Couplant: <u>ULTRAGEL II</u>	Batch Number: <u>94325</u>												
Examiner: <u>ME Houser</u>	Level: <u>I</u>	Calibration Block ID: <u>40339</u>	Pyrometer S/N: <u>NKND 27023</u>												
Examiner: <u>James H. Boser</u>	Level: <u>I</u>	Calibration Block Temp: <u>66°F</u>	Cal. due: <u>951101</u>												
REFERENCE BLOCK		SIMULATOR BLOCK													
ID: <u>1076-83</u>		ID: <u>A04396</u> Reflector Type: <u>13/65</u>													
Type: <u>IIW</u> Material: <u>C/S</u>		Gain: <u>33.0</u> Signal Ampl: <u>39%</u> Metal Path: <u>1.4</u>													
INSTRUMENT		TRANSDUCER													
Manufacturer: <u>Krautkramer</u>		Type: Single <input checked="" type="checkbox"/> Dual <input type="checkbox"/> Size: <u>1.0"</u> Freq: <u>2.25</u> Mhz Wedge <u>1/A</u>													
Serial No: <u>32810-1392</u>		Manufacturer: <u>AEROTECH</u> Ser no: <u>F21879</u> Meas. <u>Δ</u> <u>15</u> °													
INSTRUMENT SETTINGS	CALIBRATION		METHOD												
Gain: <u>38.0</u>	Reflector Type	Amplitude %FSH													
Range: <u>10.0"</u>	<u>1/8 node</u>	<u>68%</u>													
MTVEL: <u>237.2</u>	<u>1/8 node</u>	<u>80%</u>													
Delay: <u>9.7</u>	<u>1/8 node</u>	<u>71%</u>													
Pulser: <u>17144</u>	<u>1/8 node</u>														
Reject: <u>OFF</u>	other														
Freq: <u>1-5</u>	Cal Direction: axial <input checked="" type="checkbox"/> circ. <input type="checkbox"/> <u>N/A</u>		CABLES RG58 <input checked="" type="checkbox"/> RG174 <input type="checkbox"/> Length: <u>10'</u> Initial Cal Time <u>0836</u> Cal Checks <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Time</th> <th>Initials</th> </tr> </thead> <tbody> <tr> <td><u>1045</u></td> <td><u>GEH/JHA</u></td> </tr> <tr> <td><u>Final</u></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>	Time	Initials	<u>1045</u>	<u>GEH/JHA</u>	<u>Final</u>							
Time	Initials														
<u>1045</u>	<u>GEH/JHA</u>														
<u>Final</u>															
Zero: <u>N/A</u>	Wave Mode: Long <input checked="" type="checkbox"/> shear <input type="checkbox"/>														
Display: <u>FULL</u>	surf. <input type="checkbox"/>														
PRF: <u>HIGH</u>	Remarks:														
Jack: T <input checked="" type="checkbox"/> R <input type="checkbox"/>	Item No: <u>COI.010.003</u> , <u>COI.010.004</u>														
Reviewer: <u>Larry L. Bell</u>	Level: <u>III</u>	Date: <u>6-29-95</u>	Authorized Inspector: <u>YALBC</u>												
			Date: <u>6-30-95</u>												

DUKE POWER COMPANY						FORM NDE-UT-1E	
ULTRASONIC CALIBRATION SHEET FOR USK-7D INSTRUMENTS						REVISION 2	
Station: <u>OLONEE</u>		Unit: <u>3</u>		Date: <u>6/28/95</u>		Sheet Number: <u>9503067</u>	
Procedure: <u>NDE620</u>		Rev: <u>2</u> F/C: <u>9501</u>		Couplant: <u>LITRAGE II</u>		Batch Number: <u>94325</u>	
Examiner: <u>James W Setzer</u>		Level: <u>II</u>		Calibration Block ID: <u>40339</u>		Pyrometer S/N: <u>MCNDE27023</u>	
Examiner: <u>B. Dan Gally</u>		Level: <u>I</u>		Calibration Block Temp: <u>72° F</u> ^{65° F} _{6/28/95}		Cal. due: <u>951101</u>	
REFERENCE BLOCK				SIMULATOR BLOCK			
ID: <u>1076-83</u>				ID: <u>A04396</u>			
Type: <u>IIW</u> Material: <u>C/S</u>				Reflector Type: <u>B/W</u>			
				Gain: <u>23db</u> Signal Ampl: <u>65%</u> Metal Path: <u>2.0"</u>			
INSTRUMENT				TRANSDUCER			
Manufacturer: <u>Krautkramer</u>				Type: Single <input checked="" type="checkbox"/> Dual <input type="checkbox"/> Size: <u>1.0</u> Freq: <u>2.25</u> Mhz Wedge <u>SWS</u>			
Serial No: <u>32810 921</u>				Manufacturer: <u>AeroTECH</u> Ser no: <u>E30936</u> Meas. <u>4</u> <u>70</u> °			
INSTRUMENT SETTINGS		CALIBRATION		METHOD		CABLES	
Gain	<u>50.0</u>	Reflector Type	<u>Hole</u>	Amplitude	<u>%FSH</u>	Metal Path	<u>inches</u>
Range	<u>8.0</u>	1	<u>#8-node</u>	<u>80%</u>		<u>1.81</u>	
MTVEL	<u>126.0</u>	2	<u>#8-node</u>	<u>50%</u>		<u>3.38</u>	
Delay	<u>17.5</u>	3	<u>#8-node</u>	<u>22%</u>		<u>5.04</u>	
Pulser	<u>High</u>		<u>/8 node</u>				
Reject	<u>OFF</u>		<u>other 1/4 T</u>	<u>50%</u>		<u>3.42</u>	
Freq	<u>1-5</u>	Cal Direction: axial <input checked="" type="checkbox"/> circ. <input checked="" type="checkbox"/>					
Zero	<u>N/A</u>	Wave Mode: Long. <input type="checkbox"/> shear <input checked="" type="checkbox"/>					
Display	<u>FULL</u>	surf. <input type="checkbox"/>					
PRF	<u>High</u>	Remarks: <u>NEAR SURFACE EXAM</u>					
Jack: T <input checked="" type="checkbox"/> R <input type="checkbox"/>		Calibration Reflectors Verified					
		Item No: <u>COL.010.003 & COL.010.004</u>					
Reviewer: <u>Doug L. Ball</u>		Level: <u>III</u>		Date: <u>6-29-95</u>		Authorized Inspector: <u>YMB</u>	
				Date: <u>6-30-95</u>			

Initial Cal Time
0813

Cal Checks

Time	Initials
<u>0820</u>	
<u>1030</u>	
<u>E: N/A</u>	

DUKE POWER COMPANY

FORM NDE-UT-1E

ULTRASONIC CALIBRATION SHEET FOR USK-7D INSTRUMENTS

REVISION 2

Station: OCONEEUnit: IIIDate: 6/28/95Sheet Number: 95-0-3-068Procedure: NDE 640Rev: I FIC: NONECouplant: ULTRAGEL IIBatch Number: 94325Examiner: Rod SheffieldLevel: IICalibration Block ID: 40339Pyrometer S/N: MCNDE 27023Examiner: James B. RameLevel: ICalibration Block Temp: 66° FCal. due: 95/10/1

REFERENCE BLOCK

ID: 1076-83Type: IIWMaterial: C/S

SIMULATOR BLOCK

ID: A04396Reflector Type: B/WGain: 2Signal Ampl: 7670Metal Path: 1"

INSTRUMENT

Manufacturer: KrautkramerSerial No: 32810-3019

TRANSDUCER

Type: Single ☒ Dual ☐ Size: 1.0" Freq: 2.25 Mhz Wedge INT.Manufacturer: Aerotech Ser no: M17211Meas. Δ 0°

INSTRUMENT SETTINGS

Gain	<u>21.0</u>
Range	<u>10.0</u>
MTVEL	<u>231.0</u>
Delay	<u>.5</u>
Pulser	<u>HIGH</u>
Reject	<u>OFF</u>
Freq	<u>1-5</u>
Zero	<u>32.58</u>
Display	<u>Full</u>
PRF	<u>HIGH</u>

Jack: T ☐ R ☒

CALIBRATION

Reflector Type	Amplitude %FSH	Metal Path inches
<u>Hole</u>		
<u>1 /8 node</u>	<u>80%</u>	<u>1.2</u>
<u>2 /8 node</u>	<u>70%</u>	<u>2.4</u>
<u>3 /8 node</u>	<u>59%</u>	<u>3.6</u>
<u>/8 node</u>		

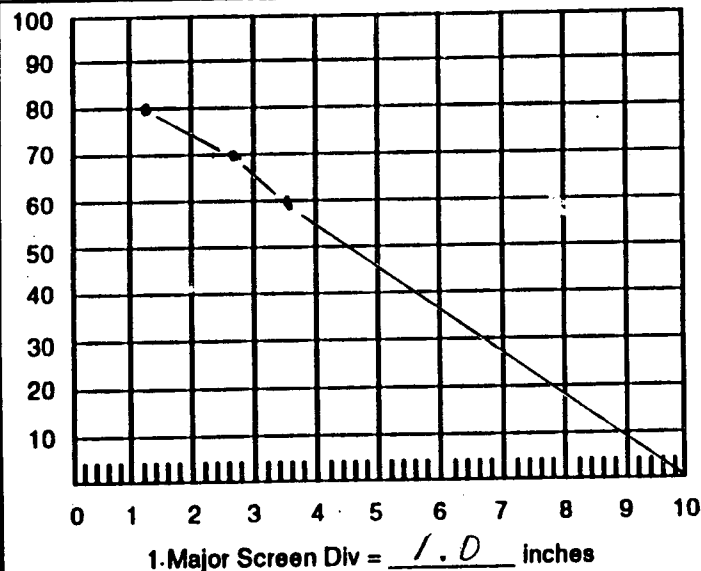
other

Cal Direction: axial ☒ circ. ☒Wave Mode: Long ☒ shear ☐
surf. ☐

Remarks:

Item No: Col. 010.003 AND Col. 010.004

METHOD



CABLES

RG58 ☒RG174 ☐Length: 10'

Initial Cal Time

0830

Cal Checks

Time Initials

<u>1015</u>	<u>RGS</u>

Reviewer: Larry D. BibbLevel: IIIDate: 6-29-95

Authorized Inspector

Y11130

Date:

6-30-95

DUKE POWER COMPANY

Exam Start: 0929

Form NDE-UT-2A

Exam Finish: 1024

Revision 4

ULTRASONIC EXAMINATION DATA SHEET FOR PLANAR REFLECTORS

Station: OCONEE

Unit: 3

Component/Weld ID: 3SGA-WG8-3

Date: 6-28-95

Weld Length (in.): 460"

Surface Condition: GROUND

Lo: W AXIS

Surface Temperature: 68° E

Pyrometer S/N: MCNDE 27023

Cal Due: 951101

Examiner: *Sam Mon DE Tower B II*
Richard B Childers Level: IIExaminer: *James A Panel* Level: I
Bob Sheffield Level: IIProcedure: NDE 640 Rev: 1
NDE 620 Rev: 2

FC:

Calibration Sheet No: 95-0-3-068
95-0-3-066

95-01

95-0-3-062

Scans:

45 ☒ 64.6 dB 70 ☐ dB45T ☒ 64.6 dB 70T ☐ dB60 ☐ dB60T ☐ dB

Other: 0° 27db 15° 52 dB

Configuration: CIRC

Flow →

NOZZLE to SHELL

BELT

Scan Surface: OD

Applies to NDE-680 only

Skew Angle:

IND #	<input checked="" type="checkbox"/>	Max % Ref	Mp Max	W Max	L Max	L1	L2	W1	Mp1	W2	Mp2	Beam Dir	Exam surf.	Scan	Damps
						20%dac HMA	20%dac HMA	20%dac HMA	20%dac HMA	20%dac HMA	20%dac HMA				
						50%dac	50%dac	50%dac	50%dac	50%dac	50%dac				
						100% dac	100% dac	100% dac	100% dac	100% dac	100% dac				
1	45°	502	7.15	5.0	360 INTER	-	-	4.6	6.8	5.2	7.3	2	1	AXIAL	No
	0°														
	15°														
	45°														

Remarks: SEE 70° DATA SHEET

Limitations: (see NDE-UT-4) ☐ * 90% or greater coverage obtained: yes ☒ no ☐

Sheet 1 of 10

Reviewed By:

Level:

Date:

Authorized Inspector

Date

Item No:

Aug L. Babb

III

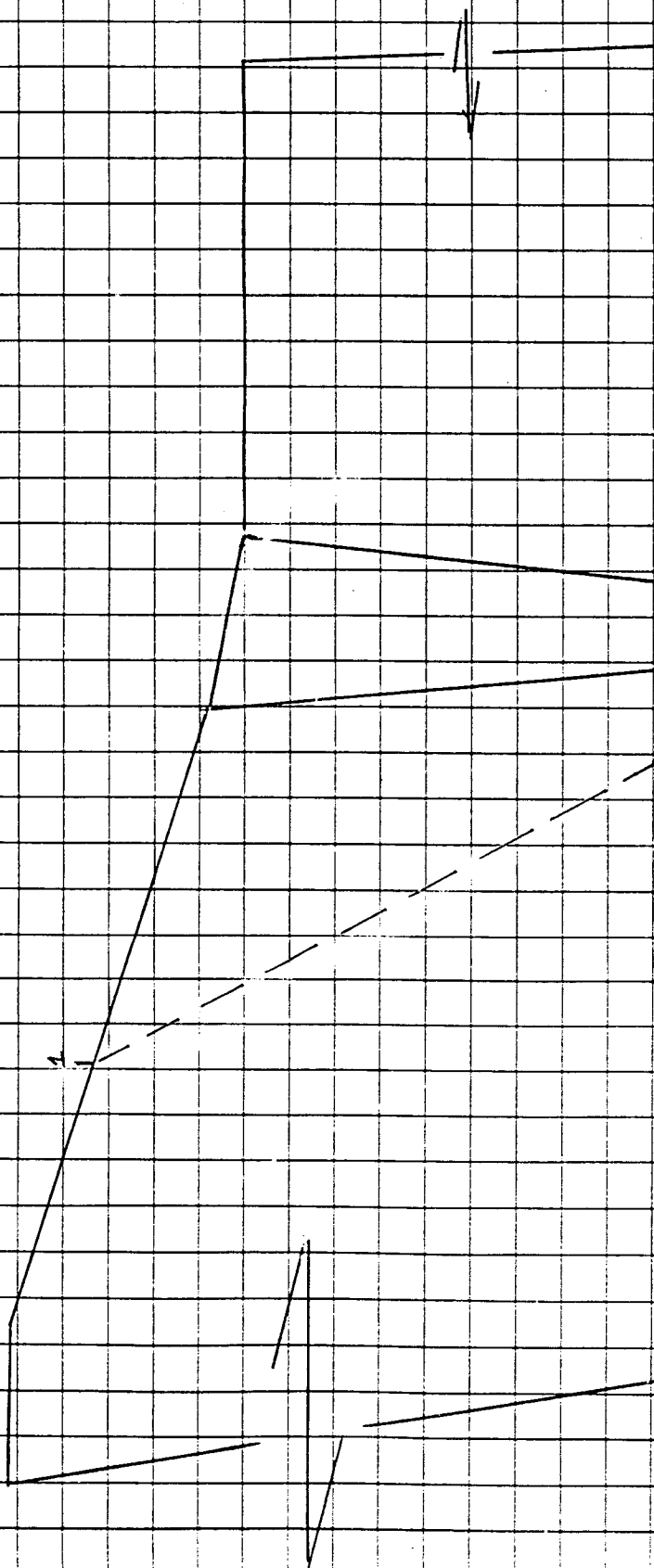
6-29-95

J.M.C.

6-30-95

C01.010.003

Station O CONEE Unit 3 Rev. _____ File No. _____ Sheet 2 Of 10
Subject PLOT SHEET
COI. 010,003 By WJ Moss Date 5-28-95
Prob No. 3SGA-WGAB-3 Checked By Jay L. Bilt Date _____



SCALE $1\frac{1}{2}'' = 10'$

DUKE POWER COMPANY				Form NDE-UT-8	
Unit 3 - 35GA-WG-8-3 ULTRASONIC INDICATION RESOLUTION SHEET C01.010.003				Revision 1	
Acceptance Standard: N/A					
INDICATION 1 AFTER PLOTTING WAS DETERMINED TO BE A GEOMETRIC REFLECTOR DUE TO					
O.D. TAPER AND I.D. GEOMETRY.					
Acceptable Indications: YES					
Rejectable Indications: NONE					
These indications have been compared with previous ultrasonic data <input checked="" type="checkbox"/> yes <input type="checkbox"/> No previous data available					
Examiner <u>Nancy Moss</u>		Level: <u>I</u>		Date: <u>6-28-95</u>	
Reviewer: <u>Aug L. Bill</u>		Level: <u>III</u>		Date: <u>6-29-95</u>	
Authorized Inspector: <u>Y. M. B. C.</u>				Date: <u>6-30-95</u>	
				Sheet <u>3</u> of <u>10</u>	

DUKE POWER COMPANY

Exam Start: 0935

Form NDE-UT-2A

ULTRASONIC EXAMINATION DATA SHEET FOR PLANAR REFLECTORS

Exam Finish: 1026

Revision 4

Station: Oconee Nuclear

Unit: 3

Component/Weld ID: 3SGA-W68-3

Date: 6-28-95

Weld Length (in.): 460"

Surface Condition: As Ground

"W" Axis of
Lo: Vessel

Surface Temperature: 68 ° F

Pyrometer S/N: MCNAIE 27023

Cal Due: 951101

Examiner: Larry Mayhew

Level: III

Scans:

45 ☐ dB 70 ☒ 64 dB

Examiner: B. Dale Galt

Level: I

45T ☐ dB 70T ☒ 64 dB

Procedure: NDE 620 Rev: 2

FC:

95-01

60 ☒ 65.5 dB

Calibration Sheet No:

9503065

9503067

60T ☒ 65.5 dB

Other: _____ dB

Configuration: Circ.

Flow → → →
Shell to Shell

Scan Surface: OD

Applies to NDE-680 only

Skew Angle:

IND #	Max % Ref	Mp Max	W Max	L Max	L1	L2	W1	Mp1	W2	Mp2	Beam Dir	Exam surf.	Scan	Damps
					20%dac HMA	20%dac HMA	20%dac HMA	20%dac HMA	20%dac HMA	20%dac HMA				
					50%dac	50%dac	50%dac	50%dac	50%dac	50%dac				
					100% dac	100% dac	100% dac	100% dac	100% dac	100% dac				
1	60	50	8.6	6.0"		360° INT.	INDICATION				2	1	Axial	No
	60	No	Other	Recordable	Indications									
	70	No	RECORDABLE	INDICATIONS										

Remarks: * SEE 70° DATA

Limitations: (see NDE-UT-4) ☒ * 90% or greater coverage obtained: yes ☒ no ☐

Sheet 4 of 10

Reviewed By:

Level:

Date:

Authorized Inspector

Date

Item No:

Jay L. Bubb

III

6-29-95

Y213C

6-30-95

Col. 010-003

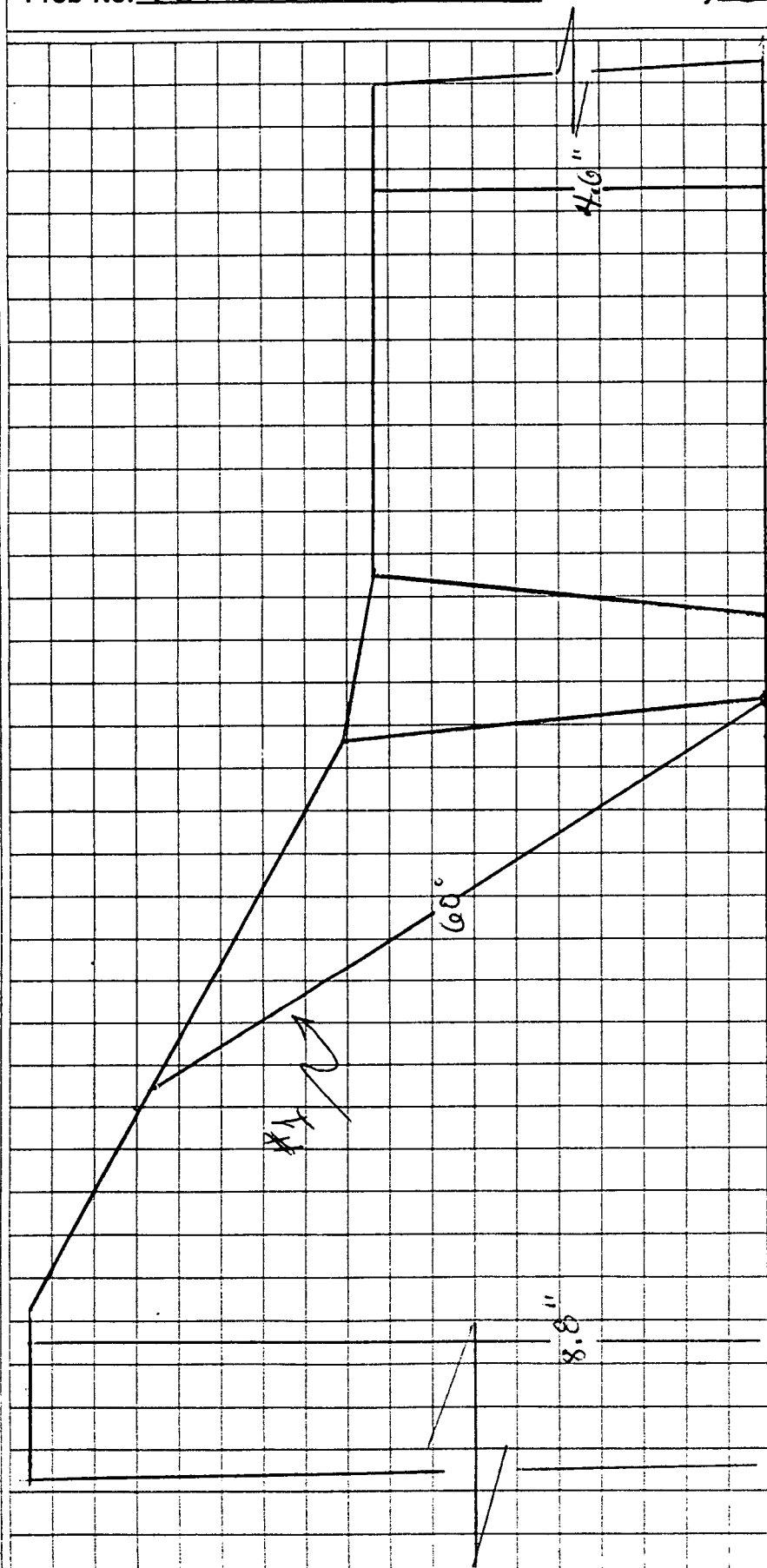
Station O'CONNOR Unit 3 Rev. _____ File No. 35GA-WG8-3 Sheet 5 of 10
Subject _____

Prob No. COI. 010. 003

Checked By Larry D. Bilt

By Larry D. Bilt Date 6-28-95

Date 6-29-95



DUKE POWER COMPANY

Form NDE-UT-8

ULTRASONIC INDICATION RESOLUTION SHEET

Revision 1

Acceptance Standard:

After plotting and reviewing previous data, it was determined that indication #1 with the 60° was a geometric reflector due to O.D. taper and I.D. geometry.

35GA-WGE-3 COI 010.003

Acceptable Indications: #1

Rejectable Indications: NONE

These indications have been compared with previous ultrasonic data ☐ yes ☐ No previous data available

Examiner

Larry Maubler

Level:

III

Date:

6-28-95

Sheet 6 of 10

Reviewer:

Guy L. Bell

Level:

III

Date:

6-29-95

Authorized Inspector:

JMB

Date:

6-30-95

**DUKE POWER COMPANY
UT PROFILE/PLOT SHEET**

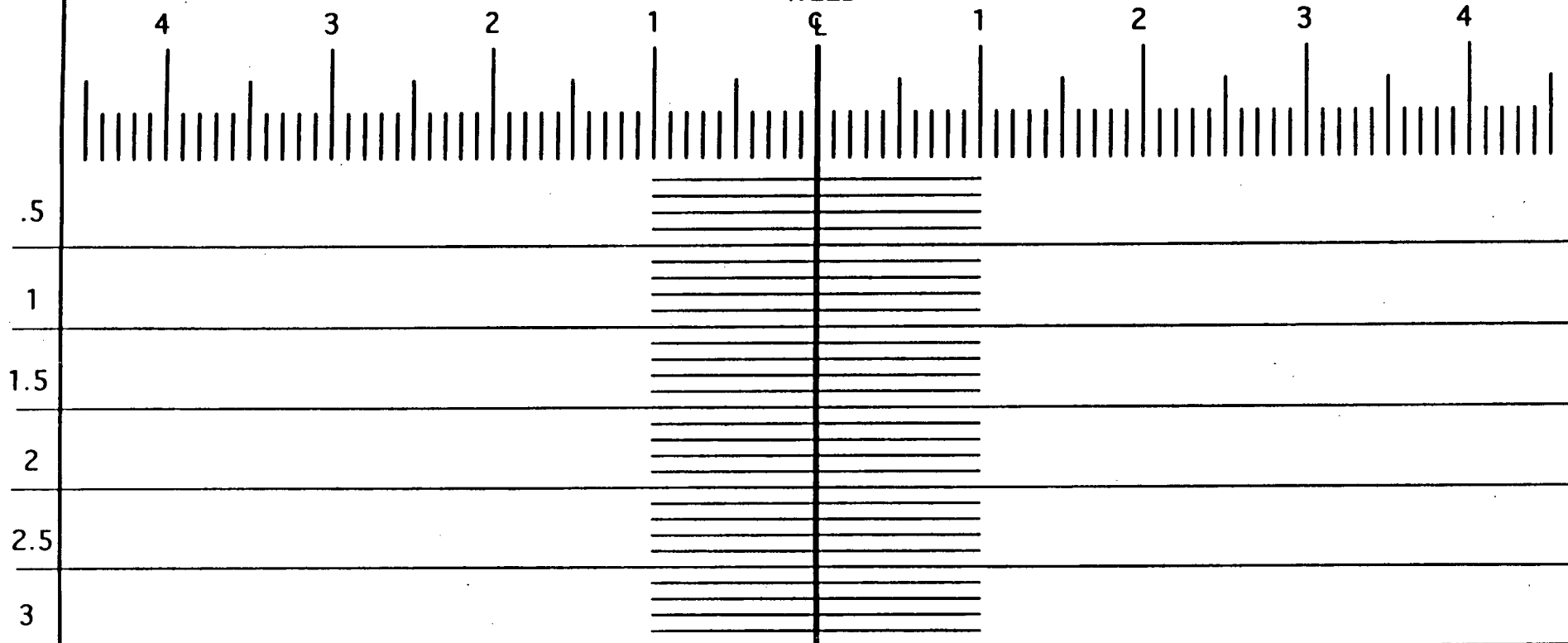
NDE-UT-5

Revision 1

EXAMINATION SURFACE 1

WELD

EXAMINATION SURFACE 2



Component ID/Weld No. 3SGA-WG8-3

Remarks: SEE ATTACHED PLOT SHEET (1/2" SCALE)

Item No: COI-010.003

Examiner: Mary Mon

Level: B

Date: 6-28-95

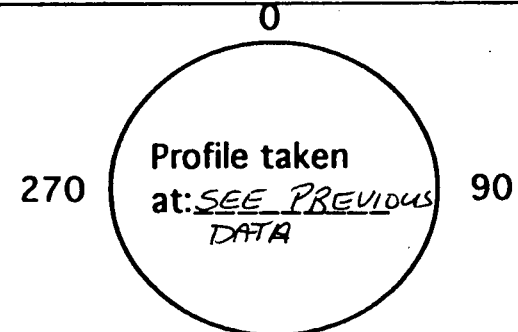
Reviewed By: Shirley L. Bell

Level: III

Date: 6-29-95

Authorized Inspector: YMC

Date: 6-31-95



180 Sheet 7 of 10

DUKE POWER COMPANY

ISI LIMITATION REPORT

FORM NDE- UT-4

Revision 1

Component/Weld ID: 3 SGA W68-3 Item No: Col-010-003

remarks:

☐ NO SCAN SURFACE BEAM DIRECTION
☐ LIMITED SCAN ☐ 1 ☐ 2 ☐ 1 ☐ 2 ☐ cw ☐ ccw
 FROM L_____ to L_____ INCHES FROM WO_____ to _____
 ANGLE: ☐ 0 ☐ 45 ☐ 60 other _____ FROM _____ DEG to _____ DEG

*Physical Limitations
only Coverage
Exceeds 90%*

☐ NO SCAN SURFACE BEAM DIRECTION
☐ LIMITED SCAN ☐ 1 ☐ 2 ☐ 1 ☐ 2 ☐ cw ☐ ccw
 FROM L_____ to L_____ INCHES FROM WO_____ 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 WO_____ 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 WO_____ to _____
 ANGLE: ☐ 0 ☐ 45 ☐ 60 other _____ FROM _____ DEG to _____ DEG

Sketch(s) attached

☒ yes

☐ no

Prepared By: James W. Sledge

Level: IB

Date: 6/29/95

Sheet 8 of 10

Reviewed By:

Greg L. Bell III

Date:

6-29-95

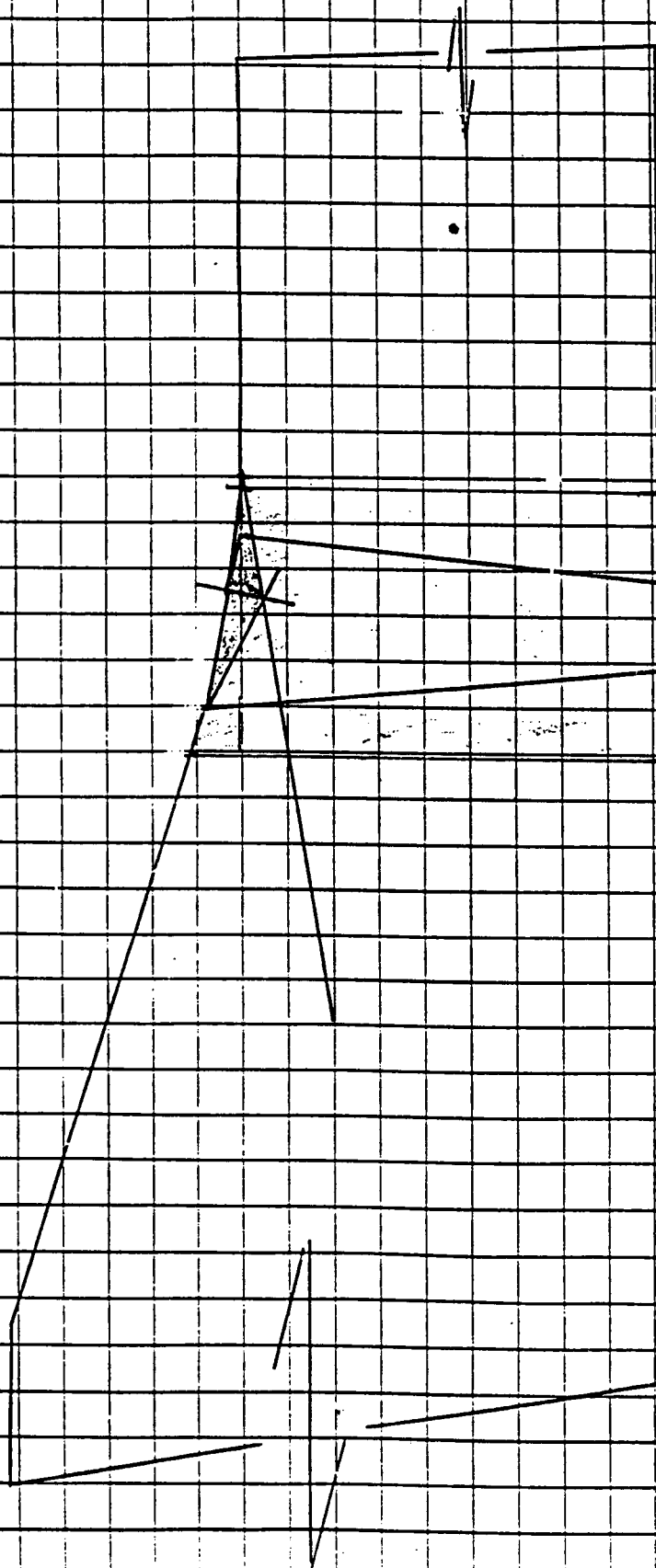
Authorized Inspector:

MMSC

Date:

6-30-95

Station OCONEE Unit 3 Rev. _____ File No. _____ Sheet 9 Of 10
 Subject IMPROVED COVERAGE OF EXAM.
 By James W. Sater Date 6/29/95
 Prob No. 3-SGA-WGB-3 & 4 Checked By Lucy L. Bubb Date 6-29-95



SCALE $1/2" = 10'$

$$\frac{.4 \times 1.3}{2} + \frac{.4 \times 1.3}{2} = .52$$

$$\begin{aligned} 4.6 \times 3 &= 13.8 + \\ .4 \times 3.0 &= 1.2 \\ &= 15.0 \text{ SPIN} \end{aligned}$$

$\therefore .52 < 10\% \text{ OF } 15$
 $\therefore \text{GREATER } > 90\% \text{ COVERAGE.}$

Station OCONEE Unit 3 Rev. _____ File No. _____ Sheet 10 Of 10
Subject SHELL to SHELL WELD ON STEAM GEN.
By James W. Sitzer II Date 6/29/95
Prob No. COI. 010. 003
COI. 010. 004 Checked By July L. Bell III Date 6-29-95

WELD #s 3-SGA-WGB-3 & 4 (ITEM No. COI.010.003 & COI.010.004) HAD BEEN IN THE PAST REPORTED TO HAVE APPROXIMATELY 32% LOSS OF COVERAGE OF EXAM VOLUME DUE TO PART GEOMETRY.

HOWEVER DUE TO IMPROVED TECHNIQUE AND UPDATED PROCEDURES, A "NEAR SURFACE" EXAM WAS DONE CONSISTING OF A 70° SHEAR WAVE CALIBRATED IN THE TOP 1/4 OF MAT'L THICKNESS AND SCANNING WAS DONE IN ALL 4 DIRECTIONS.

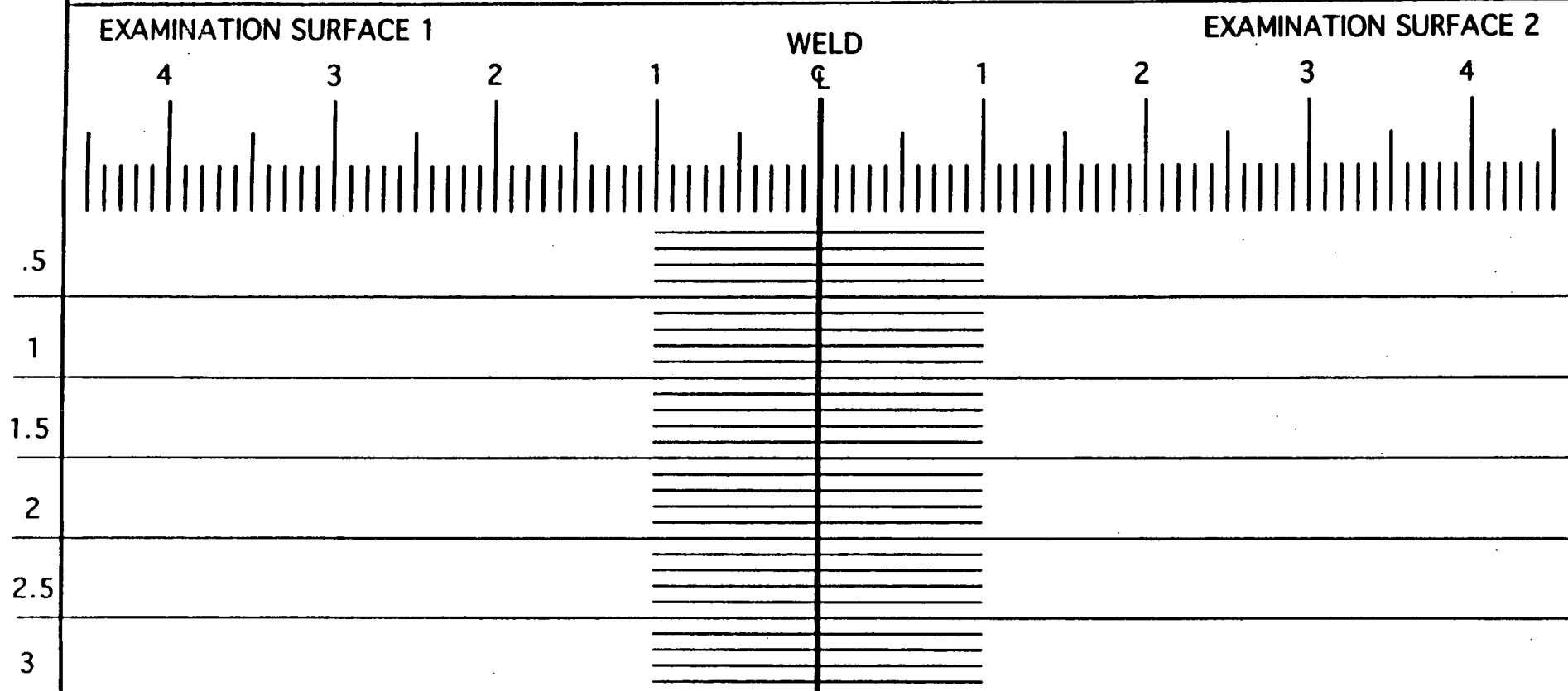
EVEN THOUGH THIS CONSIDERED A SEPERATE EXAM, AREA PICKUP BY THIS EXAM CAN SUPPLEMENT THE WELD VOLUME/BASE METAL EXAM. THIS WILL INCREASE COVERAGE TO GREATER THAN 90% AND ELIMINATE A REQUEST FOR RELIEF OF THESE TWO WELDS,

DUKE POWER COMPANY										Exam Start: 0845		Form NDE-UT-2A			
ULTRASONIC EXAMINATION DATA SHEET FOR PLANAR REFLECTORS										Exam Finish: 0925		Revision 4			
Station: Ocone				Unit: 3		Component/Weld ID: 3SGA-WG-8-4				Date: 6-28-95					
Weld Length (in.): 460"				Surface Condition: As Ground				Lo: W-Axis		Surface Temperature: 68 ° F.					
Examiner: Gary M... Level: II				Scans: 45 <input checked="" type="checkbox"/> 64.6 dB 70 <input type="checkbox"/> dB 45T <input checked="" type="checkbox"/> 64.6 dB 70T <input type="checkbox"/> dB 60 <input type="checkbox"/> dB 60T <input type="checkbox"/> dB 15° @ 52 dB Other: 0° - 27 dB dB				Pyrometer S/N: MCNDE 27023							
Examiner: Rod... Level: II								Cal Due: 951101							
Procedure: NDE 620 Rev: 2 FC: 95-01 Calibration Sheet No: 95-0-3-062 95-0-3-068 95-0-3-066								Configuration: CIRC. → Flow → SHELL to SHELL Scan Surface: OD Applies to NDE-680 only Skew Angle:							
IND #	<input checked="" type="checkbox"/>	Max % Ref	Mp Max	W Max	L Max	L1	L2	W1	Mp1	W2	Mp2	Beam Dir	Exam surf.	Scan	Damps
						20% dac HMA	20% dac HMA	20% dac HMA	20% dac HMA	20% dac HMA	20% dac HMA				
						50% dac	50% dac	50% dac	50% dac	50% dac	50% dac				
						100% dac	100% dac	100% dac	100% dac	100% dac	100% dac				
	0°		No	RECORDABLE	INDICATION										
1	45°	40%	7.1	4.5	360 INTER	-	-	4.1	6.9	4.5	7.3	1	2	AXIAL	No
	45°		No	OTHER RECORDABLE	INDICATIONS										
	15°		No	RECORDABLE	INDICATIONS										
Remarks: SEE 70° DATA SHEET															
Limitations: (see NDE-UT-4) <input type="checkbox"/> * 90% or greater coverage obtained: yes <input checked="" type="checkbox"/> no <input type="checkbox"/>												Sheet 1 of 10			
Reviewed By: Ann L. Bibb				Level: III		Date: 6-29-95		Authorized Inspector: JMB				Date: 6-30-95		Item No: 001.010.004	

DUKE POWER COMPANY
UT PROFILE/PLOT SHEET

NDE-UT-5

Revision 1



Component ID/Weld No. 3SGA-WG8-4

Remarks: PLOTTING DONE ON ATTACHED SHEET
TO 1/2" SCALE

Item No: COI-010-004

Examiner: Gary A. Moss

Level: II

Date: 8-28-95

Reviewed By: W. L. Babb

Level: III

Date: 6-29-95

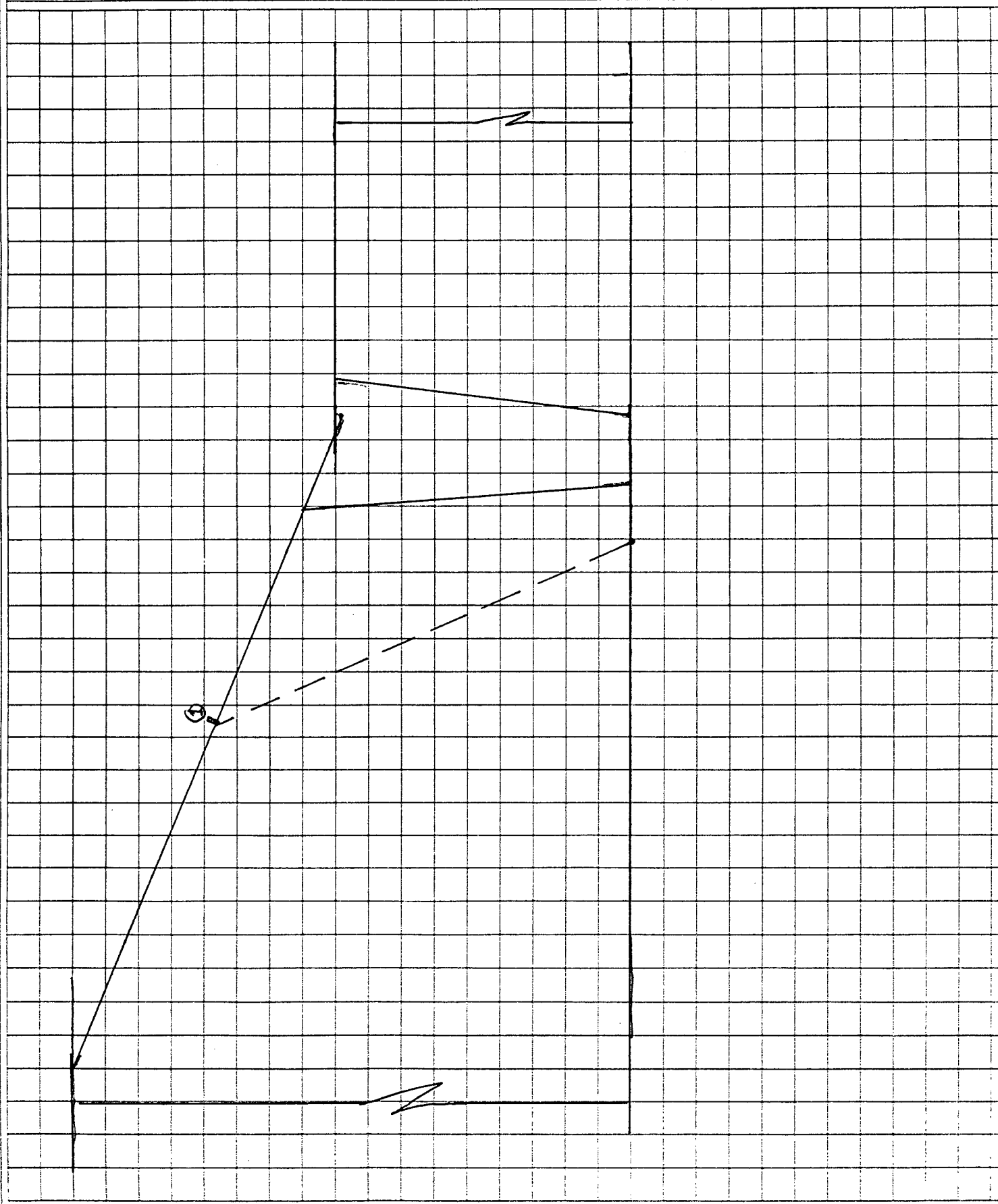
Authorized Inspector: Y. M. B.

Date: 6-30-95

0
270 Profile taken at: SEE PREVIOUS DATA 90

180 Sheet 2 of 10

Station DCONEE Unit 3 Rev. _____ File No. _____ Sheet 3 Of 10
Subject PLOT SHEET
COL. 010.004 By Richard B. Childers Date 6-28-95
Prob No. 3SGA-WG8-4 Checked By Aug. L. Bell Date 6-29-95



DUKE POWER COMPANY				Form NDE-UT-8	
ULTRASONIC INDICATION RESOLUTION SHEET				Revision 1	
Acceptance Standard: N/A					
INDICATION #1 AFTER PLOTTING WAS DETERMINED TO BE					
A GEOMETRIC REFLECTOR DUE TO O.D. TAPER AND I.D. GEOMETRY					
UNIT 3					
3SGA-WG8-4					
COI. 010. 004					
Acceptable Indications: YES					
Rejectable Indications: NONE					
These indications have been compared with previous ultrasonic data <input checked="" type="checkbox"/> yes <input type="checkbox"/> No previous data available					
Examiner: Richard B Childers		Level: II		Date: 6-28-95	
Reviewer: Guy L. Bell		Level: III		Date: 6-29-95	
Authorized Inspector: YMC				Date: 6-30-95	
				Sheet 4 of 10	

<h1 style="margin: 0;">DUKE POWER COMPANY</h1> <h2 style="margin: 0;">ULTRASONIC EXAMINATION DATA SHEET FOR PLANAR REFLECTORS</h2>										Exam Start: 0852		Form NDE-UT-2A	
										Exam Finish: 0930		Revision 4	
Station: Oconee Nuclear				Unit: 3		Component/Weld ID: 3SGA-W68-4				Date: 6-28-95			
Weld Length (in.): 460"				Surface Condition: ^{AS} Ground			"W" Axis of Lo: Vessel		Surface Temperature: 68 ° F				
Examiner: Larry Mauldin Level: III				Scans: 45 <input type="checkbox"/> _____ dB 70 <input checked="" type="checkbox"/> 64 dB 45T <input type="checkbox"/> _____ dB 70T <input checked="" type="checkbox"/> 64 dB 60 <input checked="" type="checkbox"/> 65.5 dB 60T <input checked="" type="checkbox"/> 65.5 dB Other: _____ dB			Pyrometer S/N: MCNDE 27023						
Examiner: James W. Sipe Level: II							Cal Due: 951101						
Procedure: NDE 620 Rev: 2							Configuration: Circ. → → → Flow → → → Shell to Shell						
Calibration Sheet No: 9503065 9503067							Scan Surface: OD Applies to NDE-680 only						
								Skew Angle:					

IND #	Max % Ref	Mp Max	W Max	L Max	L1	L2	W1	Mp1	W2	Mp2	Beam Dir	Exam surf.	Scan	Damps
					20%dac HMA	20%dac HMA	20%dac HMA	20%dac HMA	20%dac HMA	20%dac HMA				
					50%dac	50%dac	50%dac	50%dac	50%dac	50%dac				
					100% dac	100% dac	100% dac	100% dac	100% dac	100% dac				
1	60	32	7.824	5.0"		360° INT.	INDICATION				1	2	AXIAL	NO
	60	NO	Other Recordable Indications											
	70	NO	Recordable Indications											

Remarks: * SEE 70° DATA

Limitations: (see NDE-UT-4) <input checked="" type="checkbox"/> * 90% or greater coverage obtained: yes <input checked="" type="checkbox"/> no <input type="checkbox"/>										Sheet 5 of 10			
Reviewed By: <u>Larry S. Bell</u>			Level: <u>III</u>		Date: <u>6-29-95</u>		Authorized Inspector: <u>MISC</u>			Date: <u>6-30-95</u>		Item No: <u>C01-010-004</u>	

DUKE POWER COMPANY

Form NDE-UT-8

ULTRASONIC INDICATION RESOLUTION SHEET

Revision 1

Acceptance Standard:

After plating and receiving previous data, it was determined that indication #1 with the 60° was a geometric reflector due to O.D. taper and I.D. geometry.

3SGA-WG 8-4 C01.010.004

Acceptable Indications: #1

Rejectable Indications: None

These indications have been compared with previous ultrasonic data ☒ yes ☐ No previous data available

Examiner

Larry Maulder

Level:

III

Date:

6-28-95

Sheet 7 of 10

Reviewer:

Guy S. Bibb

Level:

III

Date:

6-29-95

Authorized Inspector:

MBC

Date:

6-30-95

DUKE POWER COMPANY

ISI LIMITATION REPORT

FORM NDE- UT-4

Revision 1

Component/Weld ID: 3 SGA-WG 8.4 Item No: CO1-010-004

remarks:

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

*PHYSICAL LIMITATIONS
 only COVERAGE
 EXCEEDS 90%*

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

Sketch(s) attached
☒ yes ☐ no

Prepared By: James W. Stipe Level: II Date: 6/29/95

Sheet 8 of 10

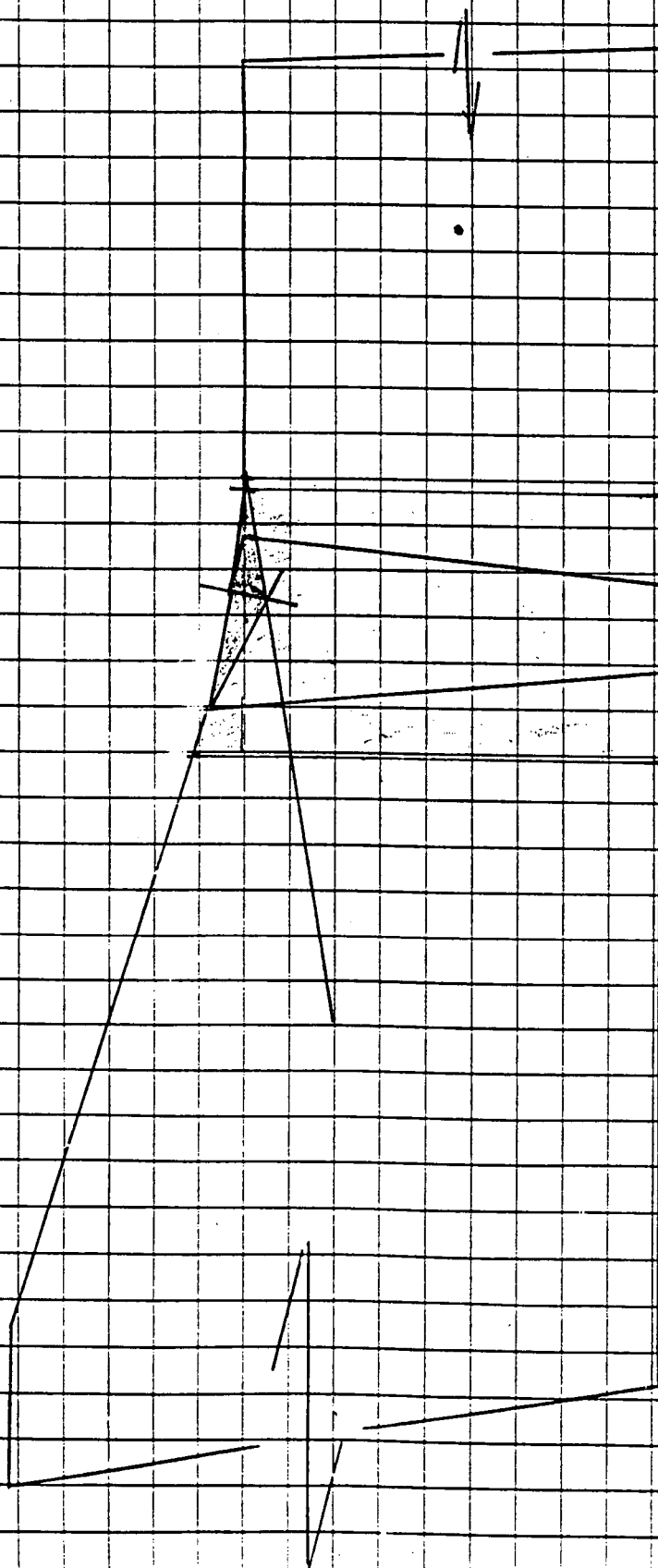
Reviewed By: Dwight L. Beld III Date: 6-29-95

Authorized Inspector: [Signature]

Date: 6-30-95

Station Oconee Unit 3 Rev. _____ File No. _____ Sheet 9 Of 10
 Subject IMPROVED COVERAGE OF EXAM.

By James W. Eitz Date 6/29/98
 Prob No. 3-SGA-WGB-3 & 4 Checked By Greg L. Bell Date 6-29-95



SCALE $1/2" = 1.0'$

$$\frac{.4 \times 1.3}{2} + \frac{.4 \times 1.3}{2} = .52$$

$$4.6 \times 3 = 13.8 +$$

$$.4 \times 3.0 = 1.2$$

$$= 15.0 \text{ Spm}$$

$$\therefore .52 < 10\% \text{ of } 15$$

$$\therefore \text{GREATER } > 90\%$$

COVERAGE.

Station: OCONEE Unit 3 Rev. _____ File No. _____ Sheet 10 Of 10
Subject: SHELL to SHELL WELD ON STEAM GEN.
By James W. Sitzer II Date 6/29/95
Prob No. COI. 010. 003,
COI. 010. 004 Checked By Aug. I. Buhl III Date 6-29-95

WELD #s 3-SGA-WGB-3 & 4 (ITEM No. COI.010.003 & COI.010.004) HAD BEEN IN THE PAST REPORTED TO HAVE APPROXIMATELY 32% LOSS OF COVERAGE OF EXAM VOLUME DUE TO PART GEOMETRY.

HOWEVER DUE TO IMPROVED TECHNIQUE AND UPDATED PROCEDURES, A "NEAR SURFACE" EXAM WAS DONE CONSISTING OF A 70° SHEAR WAVE CALIBRATED IN THE TOP 1/4 OF MAT'L THICKNESS AND SCANNING WAS DONE IN ALL 4 DIRECTIONS.

EVEN THOUGH THIS CONSIDERED A SEPERATE EXAM, AREA PICKUP BY THIS EXAM CAN SUPPLEMENT THE WELD VOLUME/BASE METAL EXAM. THIS WILL INCREASE COVERAGE to GREATER THAN 90% AND ELIMINATE A REQUEST FOR RELIEF OF THESE TWO WELDS.

DUKE POWER COMPANY
ULTRASONIC INDICATION RESOLUTION SHEET

Form NDE-UT-8

Revision 1

Acceptance Standard:

Indication #1 - 60° & #3 - 45° are geometric reflectors due to OD taper and ID geometry. A similar indication can be seen on weld 3SGA-WG8-2. Indications #1 - 45° & #2 - 45° are planar flaws previously monitored by B&W since 1982. These indications are 4.8% and 6.5% through wall respectively. Indications #2 - 60° & #3 - 60° are planar flaws previously recorded on 8/6/92. These indications are 4.5% & 4.8% through wall respectively.

Item No: C01.010.001

Acceptable Indications: #1 - 60° & #1 - 45°

Rejectable Indications: #1 - 45°, #2 - 45°, #2 - 60°, & #3 - 60°

These indications have been compared with previous ultrasonic data ☒ Yes ☐ No previous data available

Examiner:

Jay A. Eaton

Level:

II

Date:

10/21/96

Sheet 7 of 11

Reviewer:

Gary Moss

Level:

II

Date:

10/21/96

Authorized Inspector:

JMB

Date:

10-25-96