


GE Nuclear Energy

GERIS 2000 Examination Summary Sheet

Project: TVA, Browns Ferry Nuclear Plant, Unit 3

System: Reactor Pressure Vessel

Weld ID: V-1-A

ASME Code Category: B-A

Calibration Sheets: C-003, C-159, C-160 and C-161

Supporting Data: Examination Data Sheets E-01-00 thru E-01-03, Exam Patch Location Map, Exam Coverage Plots, GERIS 2000 Setup Records and Manual Examination Data Sheet D-142, D-143, D-144 and D-145.

Examination Summary

The ultrasonic examination of weld V-1-A resulted in no recorded indications that exceed the allowable standards of IVB-3500, ASME Section XI, 1986 Edition, No Addenda.

The ASME Section XI required examination volume was examined with the GERIS 2000 System from the RPV inside surface utilizing Procedure No. GE-UT-700, Rev. 2. This examination was limited due to the N2-A Nozzle at 30°, surveillance specimen brackets and the lower limit of the GERIS 2000 manipulator. Areas that could not be examined using the GERIS 2000 and accessible from the outside surface were examined by the manual technique utilizing Procedure No. GE-UT-300, Rev. 6, FRR-004. The total examination coverage was calculated to be 82%.

The GERIS 2000 utilizes an array of search units arranged to effectively examine the weld and adjacent base material parallel and perpendicular to the weld axis in two directions. The transducer package consisted of 0° longitudinal, 45° and 60° shear wave, and 70° refracted longitudinal (RL) wave search units.

No indications were recorded with the GERIS 2000.

The manual technique utilized 0° longitudinal, 45° and 60° shear wave search units both parallel and perpendicular to the weld axis in two directions to effectively examine the weld and adjacent base material.

No indications were recorded with the manual technique.

Fabrication records and previous examination results were reviewed prior to the completion of this examination summary.

GERIS Analyst: <i>CJ Ma</i>	GE Reviewer: <i>Deena Kimball</i>
LEVEL: <i>TII</i> DATE: <i>12/15/93</i>	LEVEL: <i>III</i> DATE: <i>12-15-93</i>
UTILITY Review: <i>2 reviews</i>	ANII Review:
TITLE: <i>1A</i> DATE: <i>1/26/94</i>	TITLE: <i>Albert Loh</i> DATE: <i>7/12/94</i>



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GERIS 2000 Examination Data Sheet

Project: TVA, Browns Ferry, Unit 3

Weld ID: V-1-A

Exam Data Sheet: E-01-00

Procedure No.: GE-UT-700

Revision No.: 2

FRR No.: N/A

[illegible]

Comments: N/A

Limitations: Nozzle N2-A at 30°, surveillance specimen bracket at 30° and lower scan limit of the GERIS 2000 manipulator.

Analyst: C. E. N. S.

Level: IV Date: 12/8/93

Reviewed By: [Signature]

Level: II Date: 12/13/93



GERIS 2000 Examination Data Sheet

Ind. Data Sheet Series: 01-XXX

Comments: N/A

Indication Codes: 1 = Flaw, 2 = OD Surface, 3 = OD Attachment, 4 = Nozzle, 5 = Other

Level: II Date: 12/13/93

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GE Nuclear Energy

GERIS 2000 Examination Data Sheet

Project: TVA, Browns Ferry, Unit 3
Weld ID: V-1-A
Cal. ID: C-003

Exam Data Sheet No.: E-01-02
Patch ID: BF-125
Ind. Data Sheet Series: 01-XXX

[illegible]

Comments: N/A

Data Sheet Codes: G-XXX; "G" = Geometry (may be typical), 6-XXX; "6" = Weld Sequence, XXX = Sheet Number
Indication Codes: 1 = Flaw, 2 = OD Surface, 3 = OD Attachment, 4 = Nozzle, 5 = Other

Analyst: CE/M

Level: III Date: 12/8/93

Reviewed By:

Level: II Date: 12/13/93



GERIS 2000 Examination Data Sheet

Exam Data Sheet No.: E-01-03**Patch ID:** BF-126**Ind. Data Sheet Series: 01-XXX**[illegible]

Comments: N/A

Indication Codes: 1 = Flaw, 2 = OD Surface, 3 = OD Attachment, 4 = Nozzle, 5 = Other

Analyst: (Signature)

Level: III

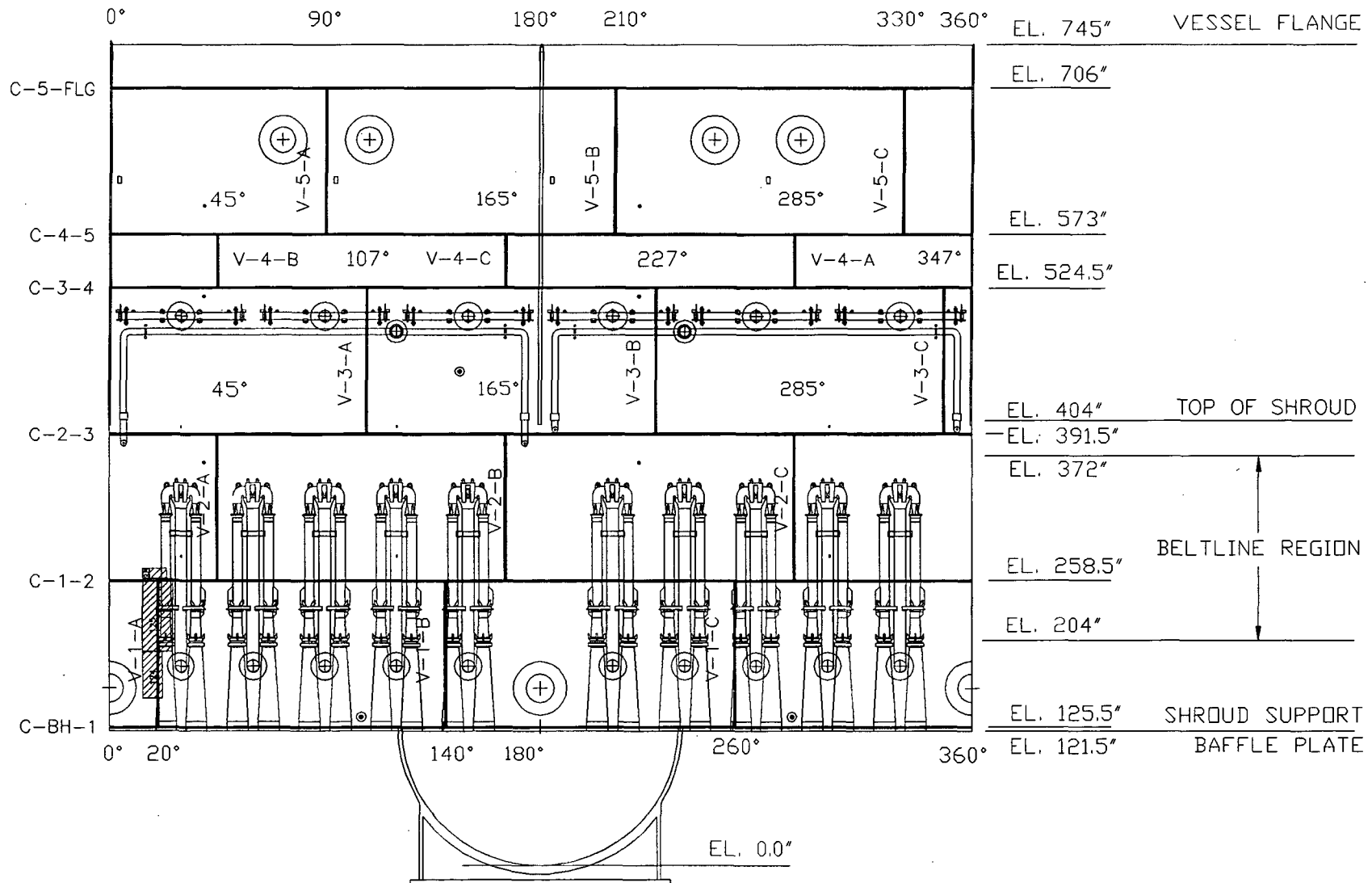
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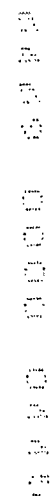
Reviewed By:

Level: II

Date: 12/13/93

BROWNS FERRY UNIT-3 WELD LOCATIONS



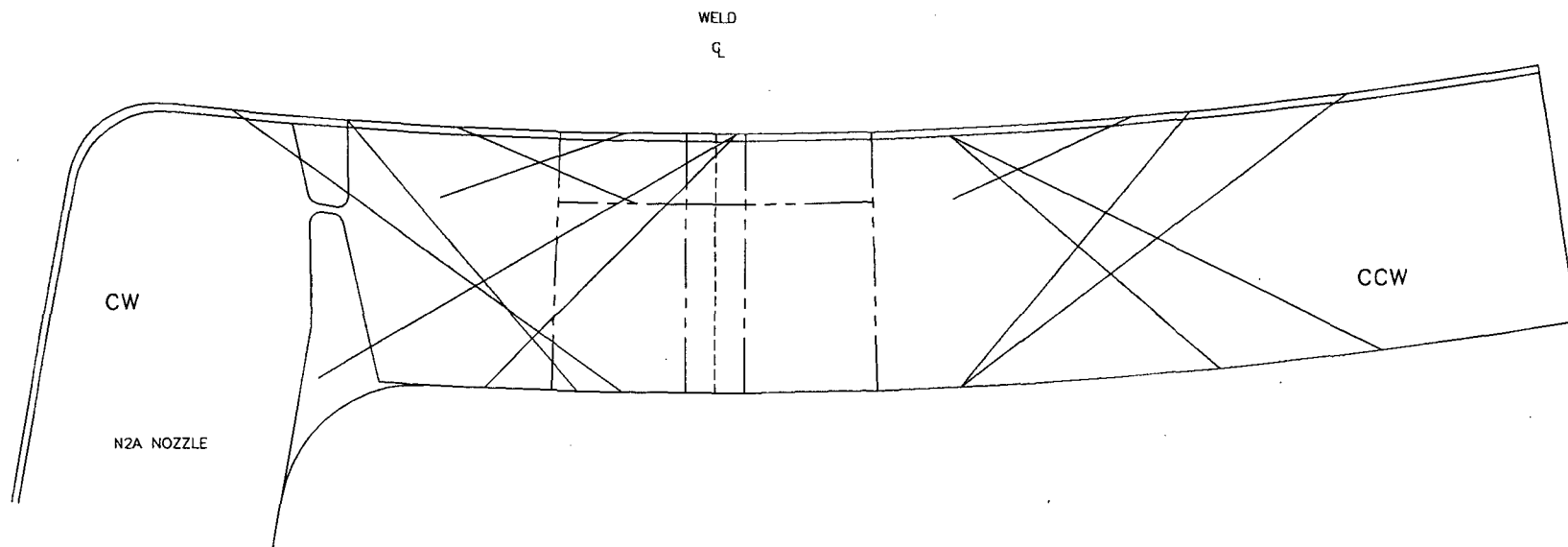


70F15 00444

21157

0000 0000

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Nominal Clad T = 3/16"
 Nominal Base Metal T = 6 3/8"
 1 Degree = 2.19"

GE NUCLEAR ENERGY

BROWNS FERRY UNIT 3

N2A NOZ. AUTOMATED SCAN LIMIT

SCALE: NONE

DWG. V1ABC-NZ

REV. 0

8 OF 15 # 00475



GE Nuclear Energy

ULTRASONIC EXAMINATION DATA SHEET

SITE: BFNP

PROCEDURE NO.: GE-UT-300

REPORT NO.: E-01

UNIT: 3

REVISION NO.: 6

DATA SHEET NO.: D-142

PROJECT NO.: 00387

FRR NO.: 004

CALIBRATION SHEET NO.: 0° C-159

45° N/A 60° N/A

SYSTEM: RPV EXAM SURFACE TEMP: 73 °F COUPLANT: Ultrage II EXAM START: 0052

WELD ID: VIA THERMOMETER S/N: L0250CL BATCH NO.: 093011 EXAM END.: 0106

BEAM ANGLE: ☒ 0° ☐ 45° ☐ 60° ☐ OTHER N/A

SURFACE CONDITION: ☒ SMOOTH ☐ GROUND ☐ OTHER N/A

MATERIAL TYPE: ☒ CS ☐ SS ☐ OTHER N/A

EXAM SURFACE: ☐ ID ☒ OD

L₀ REFERENCE Toe of Weld C-1-2

0° SCAN SENSITIVITY 57.6 dB

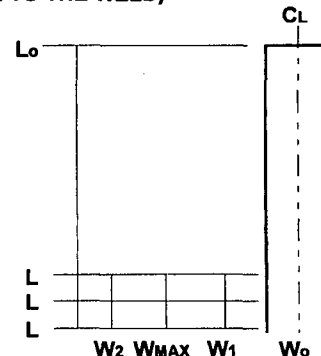
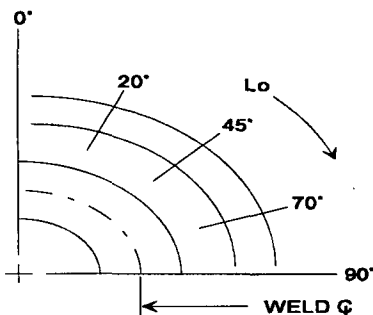
W₀ REFERENCE Weld

45° SCAN SENSITIVITY N/A dB

60° SCAN SENSITIVITY N/A dB

NOZZLE WELD REFERENCE SYSTEM (L₀ AND W₀ ARE INTERCHANGED WHEN SCANNING FOR REFLECTORS TRANSVERSE TO THE WELD)

WELD REFERENCE SYSTEM (L₀ AND W₀ ARE INTERCHANGED WHEN SCANNING FOR REFLECTORS TRANSVERSE TO THE WELD)



L/R	% DAC (MAX)	W1 20% DAC	WF1 50% DAC	WM MAX DAC	WF2 50% DAC	W2 20% DAC	MP1 20% DAC	MPF1 50% DAC	MP MAX DAC	MPF2 50% DAC	MP2 20% DAC	CONTINUOUS (C) OR SPOT (S) TRANSVERSE (T)	CW/CCW TOP OR BOTTOM
	No Recordable Indications, Weld Metal Exam												

REMARKS: Examined from 149.5" to 213.5" elevation.

<u>Timothy Moran</u> EXAMINED BY LEVEL <u>II</u> DATE <u>11-17-93</u>	<u>2K Woody</u> UTILITY REVIEW DATE <u>1/26/94</u>
<u>CE M25</u> GE REVIEWED BY DATE <u>12/2/93</u>	<u>Albert Todd</u> ANII REVIEW DATE <u>8/25/94</u>

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GE Nuclear Energy

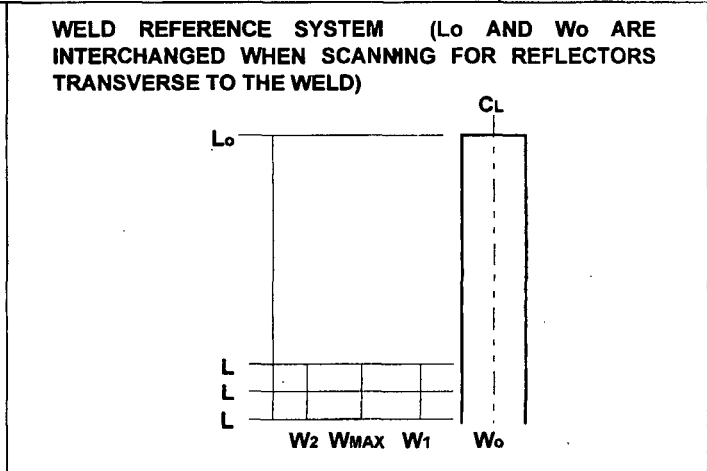
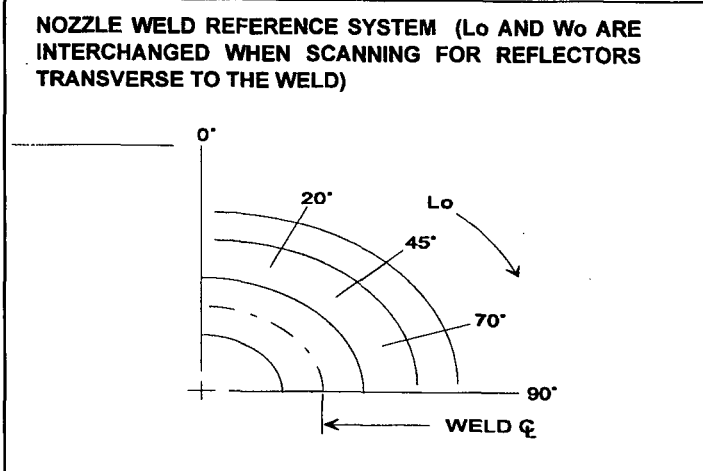
ULTRASONIC EXAMINATION DATA SHEET

SITE: <u>BFNP</u>	PROCEDURE NO.: <u>GE-UT-300</u>	REPORT NO.: <u>E-01</u>
UNIT: <u>3</u>	REVISION NO.: <u>6</u>	DATA SHEET NO.: <u>D-143</u>
PROJECT NO.: <u>00387</u>	FRR NO.: <u>004</u>	CALIBRATION SHEET NO.: <u>0° C-159</u> <u>45° N/A</u> <u>60° N/A</u>

SYSTEM: <u>RPV</u>	EXAM SURFACE TEMP: <u>73</u> °F	COUPLANT: <u>Ultrage II</u>	EXAM START: <u>0255</u>
WELD ID: <u>VIA</u>	THERMOMETER S/N: <u>L0250CL</u>	BATCH NO.: <u>093011</u>	EXAM END: <u>0325</u>

BEAM ANGLE: <input checked="" type="checkbox"/> 0° <input type="checkbox"/> 45° <input type="checkbox"/> 60° <input type="checkbox"/> OTHER <u>N/A</u>	SURFACE CONDITION: <input checked="" type="checkbox"/> SMOOTH <input type="checkbox"/> GROUND <input type="checkbox"/> OTHER <u>N/A</u>
MATERIAL TYPE: <input checked="" type="checkbox"/> CS <input type="checkbox"/> SS <input type="checkbox"/> OTHER <u>N/A</u>	EXAM SURFACE: <input type="checkbox"/> ID <input checked="" type="checkbox"/> OD

Lo REFERENCE <u>Toe of Weld C-1-2</u>	0° SCAN SENSITIVITY <u>57.6</u> dB
Wo REFERENCE <u>Weld E</u>	45° SCAN SENSITIVITY <u>N/A</u> dB
	60° SCAN SENSITIVITY <u>N/A</u> dB



L/R	% DAC (MAX)	W1 20% DAC	WF1 50% DAC	WM MAX DAC	WF2 50% DAC	W2 20% DAC	MP1 20% DAC	MPF1 50% DAC	MP MAX DAC	MPF2 50% DAC	MP2 20% DAC	CONTINUOUS (C) OR SPOT (S) TRANSVERSE (T)	CW/CCW TOP OR BOTTOM
No Recordable Indications, Base Metal Exam													

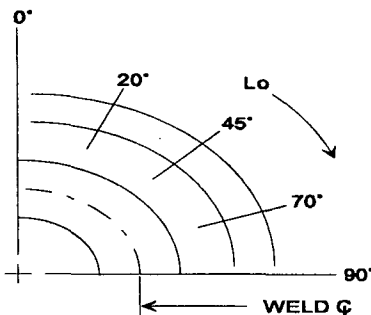
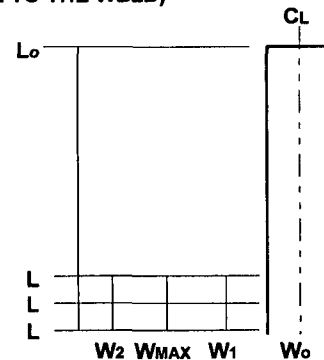
REMARKS: Examined from 149.5" to 213.5" elevation. Exam limited to a "W" of 12.5" from an elevation of 172" to 198" on the CCW side of the weld due to the configuration of N2A. Exam also limited to a "W" of 13" from an elevation of 149.5" to 191" on the CW side of the weld due to the configuration of N1A.

EXAMINED BY: <u>Timothy Nov II</u>	LEVEL: <u>II</u>	DATE: <u>11-17-93</u>	UTILITY REVIEW: <u>Alwood</u>	DATE: <u>1/26/94</u>
GE REVIEWED BY: <u>CS MS</u>	DATE: <u>12/9/93</u>	ANII REVIEW: <u>Albert Ladd</u>	DATE: <u>8/25/94</u>	PAGE: <u>1</u> OF: <u>1</u>



GE Nuclear Energy

ULTRASONIC EXAMINATION DATA SHEET

SITE: BFNPPROCEDURE NO.: GE-UT-300REPORT NO.: E-01UNIT: 3REVISION NO.: 6DATA SHEET NO.: D-145PROJECT NO.: 00387FRR NO.: 004CALIBRATION SHEET NO.: 0° N/A45° N/A 60° C-161SYSTEM: RPVEXAM SURFACE TEMP: 73 °FCOUPLANT: Ultrage IIEXAM START: 0129WELD ID: VIATHERMOMETER S/N: L0250CLBATCH NO.: 093011EXAM END: 0151BEAM ANGLE: ☐ 0° ☐ 45° ☒ 60° ☐ OTHER N/ASURFACE CONDITION: ☒ SMOOTH ☐ GROUND ☐ OTHER N/AMATERIAL TYPE: ☒ CS ☐ SS ☐ OTHER N/AEXAM SURFACE: ☐ ID ☒ ODL₀ REFERENCE Toe of Weld C-1-2W₀ REFERENCE Weld0° SCAN SENSITIVITY N/A dB45° SCAN SENSITIVITY N/A dB60° SCAN SENSITIVITY 71.6 dBNOZZLE WELD REFERENCE SYSTEM (L₀ AND W₀ ARE INTERCHANGED WHEN SCANNING FOR REFLECTORS TRANSVERSE TO THE WELD)WELD REFERENCE SYSTEM (L₀ AND W₀ ARE INTERCHANGED WHEN SCANNING FOR REFLECTORS TRANSVERSE TO THE WELD)

L/R	% DAC (MAX)	W1 20% DAC	WF1 50% DAC	WM MAX DAC	WF2 50% DAC	W2 20% DAC	MP1 20% DAC	MPF1 50% DAC	MP MAX DAC	MPF2 50% DAC	MP2 20% DAC	CONTINUOUS (C) OR SPOT (S) TRANSVERSE (T)	CW/CCW TOP OR BOTTOM
	No	Recordable	Indications										

REMARKS: Examined from 149.5" to 213.5" elevation. Exam limited to a "W" of 12.5" from an elevation of 172" to 191" on the CCW side of the weld due to the configuration of N2A. Exam also limited to a "W" of 13" from an elevation of 149.5 to 191" on the CW side of the weld due to the configuration of N1A.

Examined by Tammy N. O'Neil 11-17-93
LEVEL DATE

Utility Review Dr. Wood 1-26-94
UTILITY REVIEW DATE

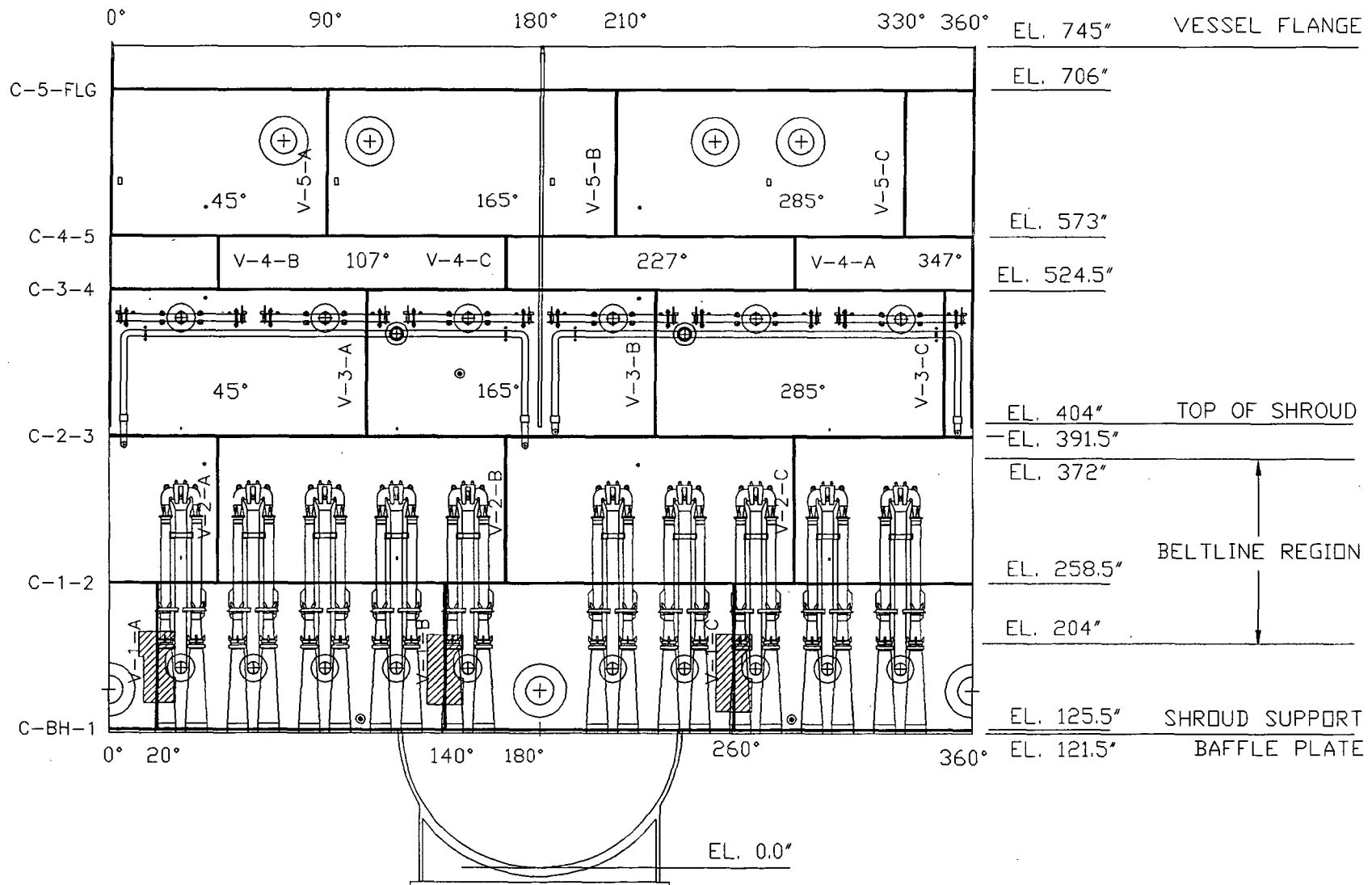
Reviewed by CL MS 12/3/93
GE REVIEWED BY DATE

ANII Review Albert Ladd 8/5/94
ANII REVIEW DATE

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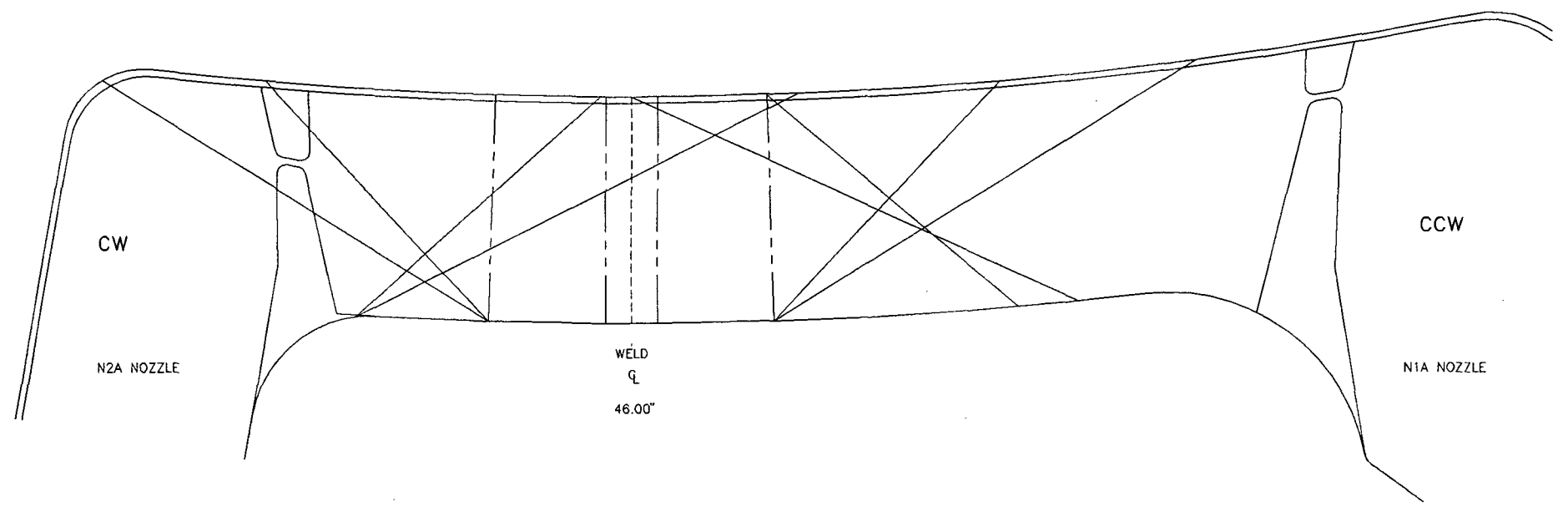
FORM UT-14 REV. 6

BROWNS FERRY UNIT-3 WELD LOCATIONS



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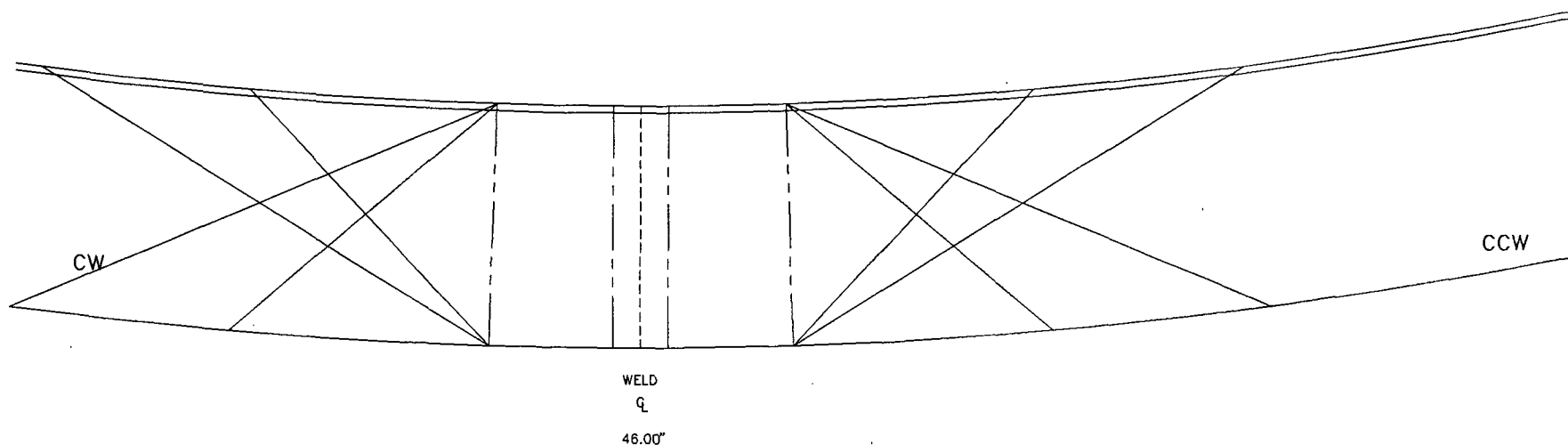
Nominal Clad T = 3/16"
Nominal Base Metal T = 6 3/8"

00451 140F15

GE NUCLEAR ENERGY	BROWNS FERRY UNIT 3	WELD V-1-A MANUAL PICKUP	SCALE: NONE	DWG. MANV-1-A	REV. 0
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0000 0000 0000

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Nominal Clad T = 3/16"
Nominal Base Metal T = 6 3/8"

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GE NUCLEAR ENERGY

BROWNS FERRY UNIT 3

WELD V-1-A MANUAL PICKUP

SCALE: NONE

DWG. MANV-1-A

REV. 0