



GE Nuclear Energy

GERIS 2000 Examination Summary Sheet

Project: TVA, Browns Ferry Nuclear Plant, Unit 3

System: Reactor Pressure Vessel

Weld ID: V-1-B

ASME Code Category: B-A

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

Supporting Data: Examination Data Sheets E-02-00 thru E-02-02, Indication Data Sheet 02-001, Indication Evaluation Sheets, Screen Prints, Exam Patch Location Map, Exam Coverage Plots, GERIS 2000 Setup Records and Manual Examination Data Sheets D-146, D-147, D-148 and D-149.

Examination Summary

The ultrasonic examination of weld V-1-B resulted in no recorded indications that exceed the allowable standards of IWB-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-E Nozzle at 150°, 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 83%.

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.

The GERIS 2000 system recorded one (1) indication with the 45° shear wave scan that was evaluated and found to be acceptable per the referencing Code section.

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: *Cliff Mas*

GE Reviewer: *Jeresa Kimball*

LEVEL: *III* DATE: *12/16/93*

LEVEL: *III* DATE: *12-15-93*

UTILITY Review: *Don Woody*

ANII Review:

TITLE: *IV* DATE: *1/26/94*

TITLE: *Albert Todd* DATE: *7/12/94*



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GERIS 2000 Indication Evaluation Sheet

Project: TVA, Browns Ferry Unit 3
Weld ID: V-1-B
Patch: BF-128

Exam Data Sheet No.: E-02-02
Ind. Data Sheet No.: 02-001
Indication: 02-001

Flaw Thruwall Dimension = 0.35
Flaw Length "I" = 0.50
Seperation with clad "S" = 2.44
Surface Separation "S" = 2.25

T nominal = 6.38
Clad T nominal = 0.19

Flaw is acceptable by Table IWB-3510-1

**ASME Section XI, 1986 Edition
 TABLE IWB-3510-1 for 4" to 12"**

a/l	Surface %	Subsurface %	Surface %	Subsurface %
0.00	1.90	2	~	~
0.05	2.00	2.2	~	~
0.10	2.20	2.5	~	~
0.15	2.50	2.9	~	~
0.20	2.80	3.3	~	~
0.25	3.30	3.8	~	~
0.30	3.80	4.4	~	~
0.35	4.40	5.1	4.45	5.16 Y
0.40	5.00	5.8	~	~
0.45	5.10	6.7	~	~
0.50	5.20	7.6	~	~
			Allowed	Allowed
			4.45	5.16

a = 0.177
 a/l value = 0.354
 Y = 1.000

Flaw is Subsurface

Allowed a/t = 5.16%
 a/t = 2.77%

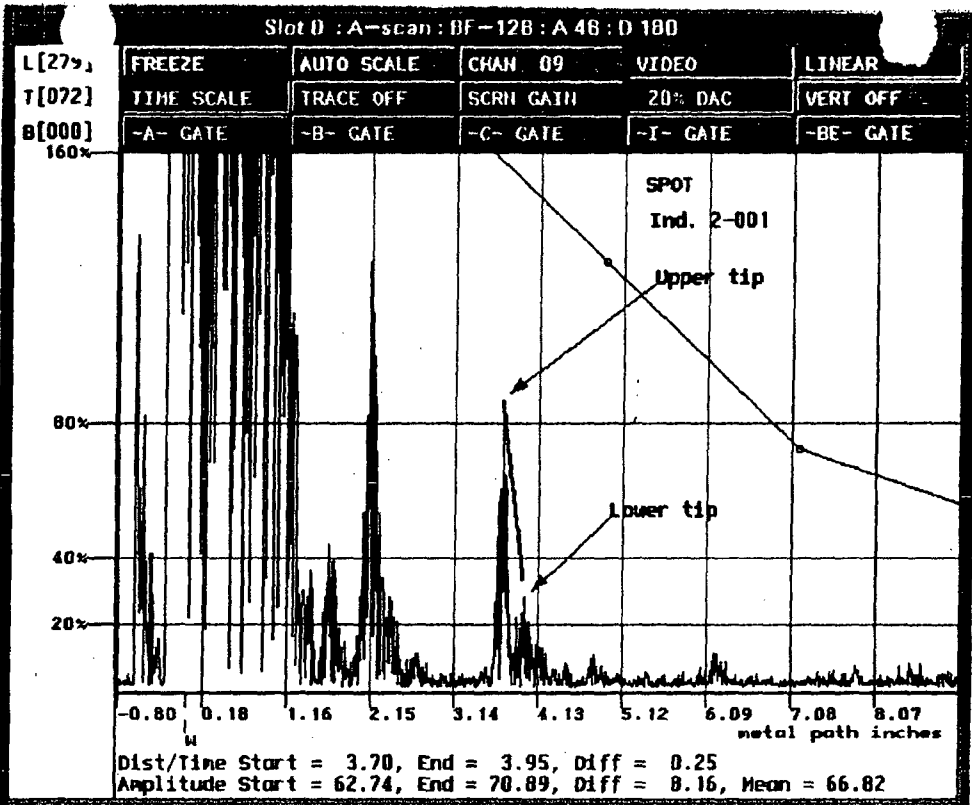
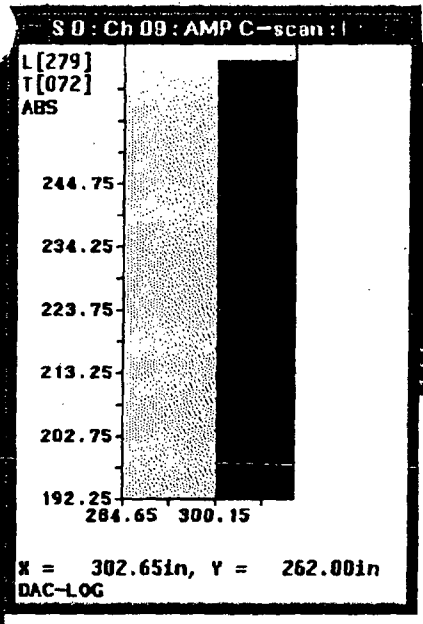
Comments:

S 0 : Scale

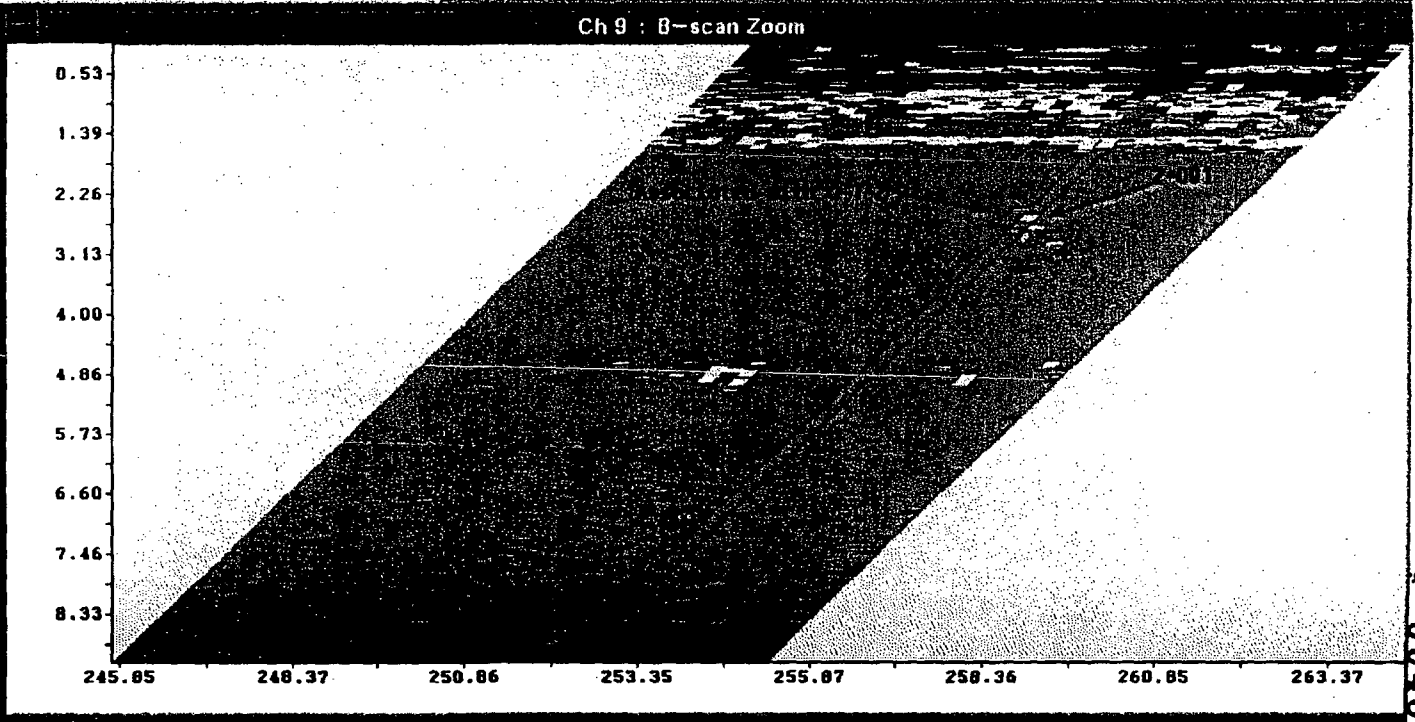
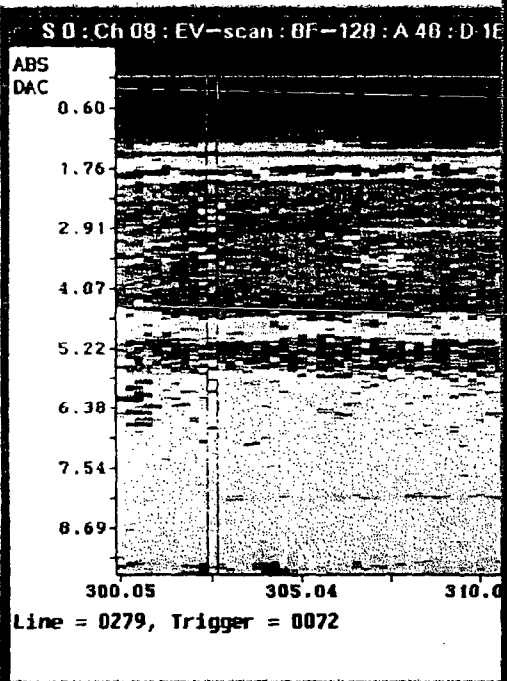
32.3
36.6
41.0
45.3
49.7
54.0
58.4
62.7
67.1
71.4
75.8
80.1
84.5
88.8
93.2

100%
50%
20%

DAC

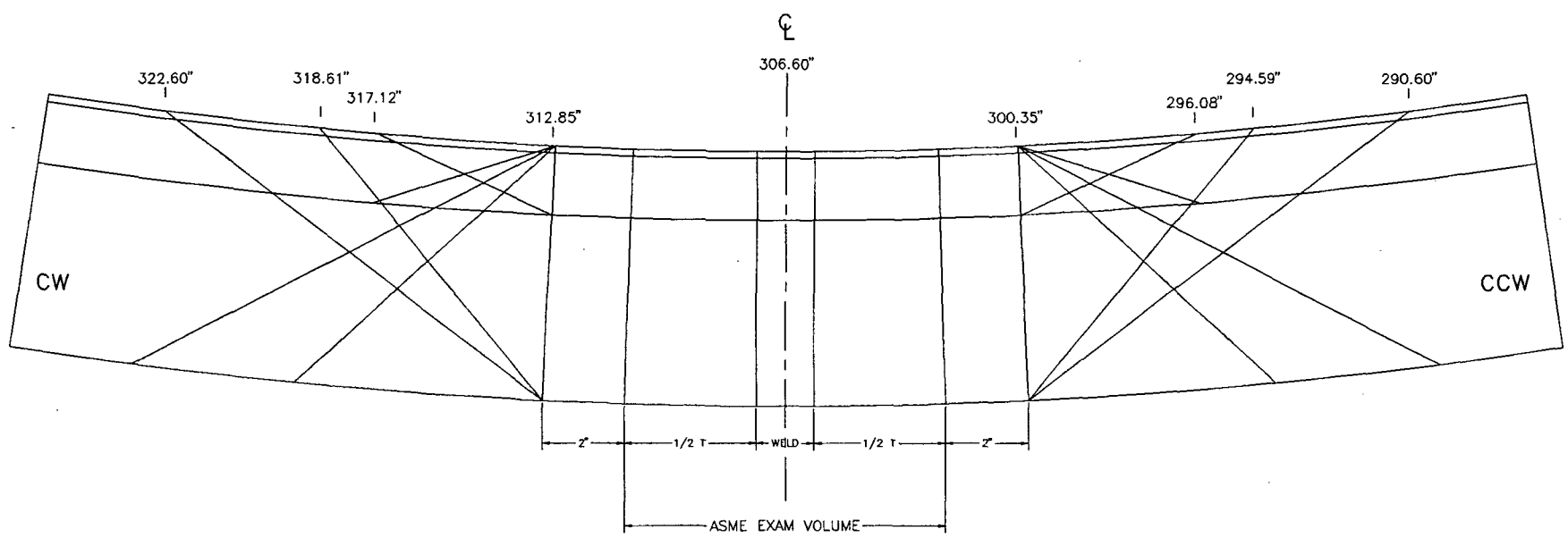


001



R 1158
T 0216
00459

PART 0000 0402

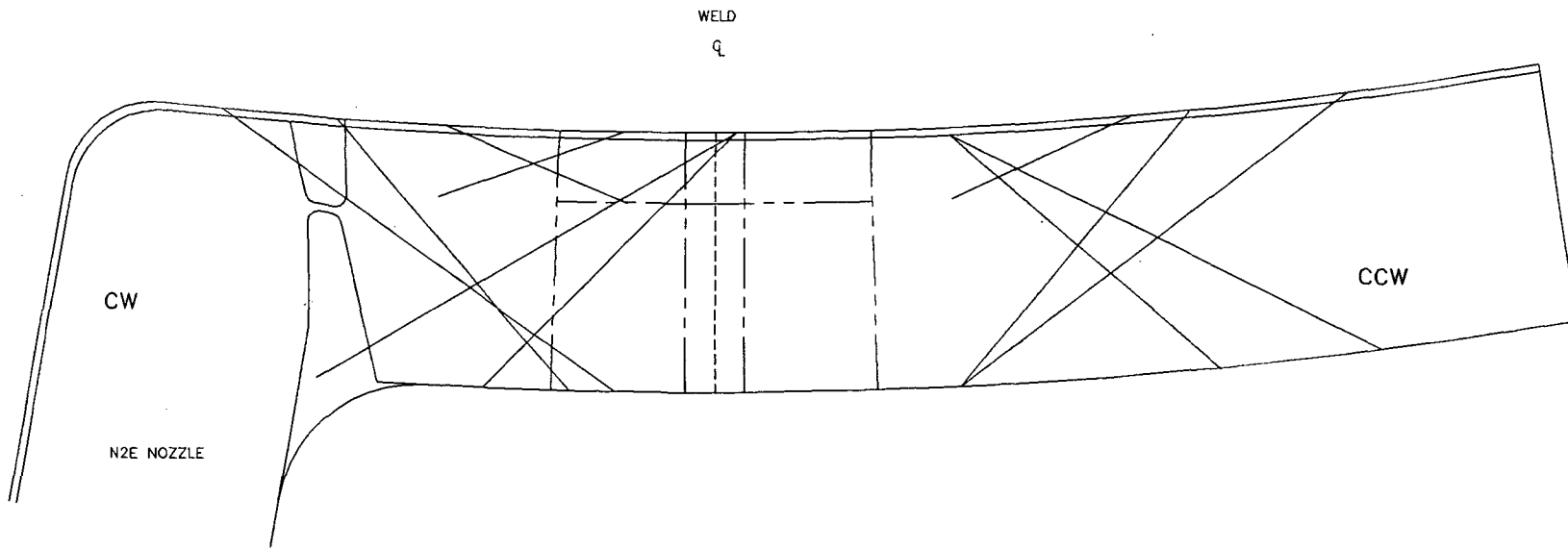


Nominal Clad T = 3/16"
 Nominal Base Metal T = 6 3/8"
 1 Degree = 2.19"

CH.	ANGLE	DIR.	MIN X	MAX X
1	0 W	0	300.35	312.85
2	0 W	90	300.35	312.85
3	70 UP	0	300.35	312.85
4	70 CW	90	296.08	312.85
5	70 DN	180	300.35	312.85
6	70 CCW	270	300.35	317.12
7	45 UP	0	300.35	312.85
8	45 CW	90	294.59	312.85
9	45 DN	180	300.35	312.85
10	45 CCW	270	300.35	318.61
11	60 UP	0	300.35	312.85
12	60 CW	90	290.60	312.85
13	60 DN	180	300.35	312.85
14	60 CCW	270	300.35	322.60
15	0 BM	0	300.35	322.60
16	0 BM	90	290.60	312.85

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00461



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

6469 0000 0462

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00462

GE NUCLEAR ENERGY	BROWNS FERRY UNIT 3	N2E NOZ. AUTOMATED SCAN LIMIT	SCALE: NONE	DWG. V1ABC-NZ	REV. 0
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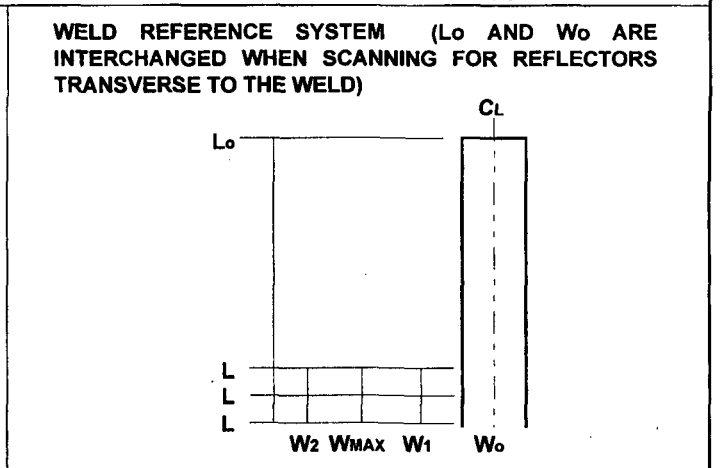
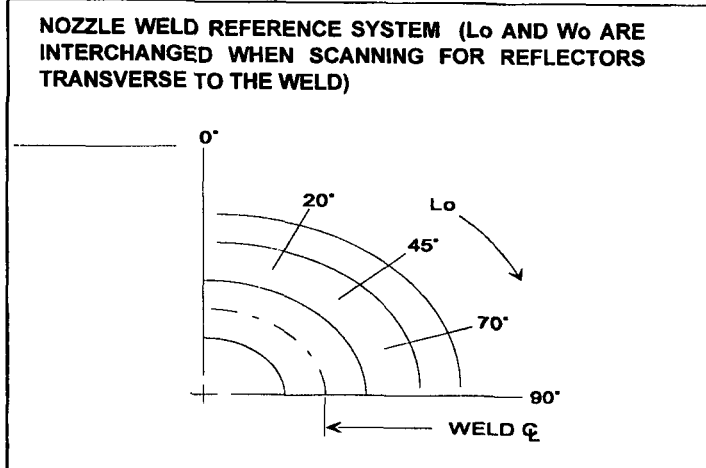
ULTRASONIC EXAMINATION DATA SHEET

SITE: <u>BROWNS FERRY</u>	PROCEDURE NO.: <u>GE-UT-300</u>	REPORT NO.: <u>E-02</u>
UNIT: <u>3</u>	REVISION NO.: <u>6</u>	DATA SHEET NO.: <u>D-149</u>
PROJECT NO.: <u>D0387</u>	FRR NO.: <u>004</u>	CALIBRATION SHEET NO.: <u>0° N/A</u> <u>45° N/A</u> <u>60° C-161 cap</u>

SYSTEM: Rpv EXAM SURFACE TEMP: 73 °F COUPLANT: Ultrasel II EXAM START: 0234
 WELD ID: VIB THERMOMETER S/N: L0250CL BATCH NO.: 093011 EXAM END.: 0251

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

Lo REFERENCE TOE OF WELD C-1-2 0° SCAN SENSITIVITY N/A dB
 Wo REFERENCE weld E 45° SCAN SENSITIVITY N/A dB
 60° SCAN SENSITIVITY 71.6 dB

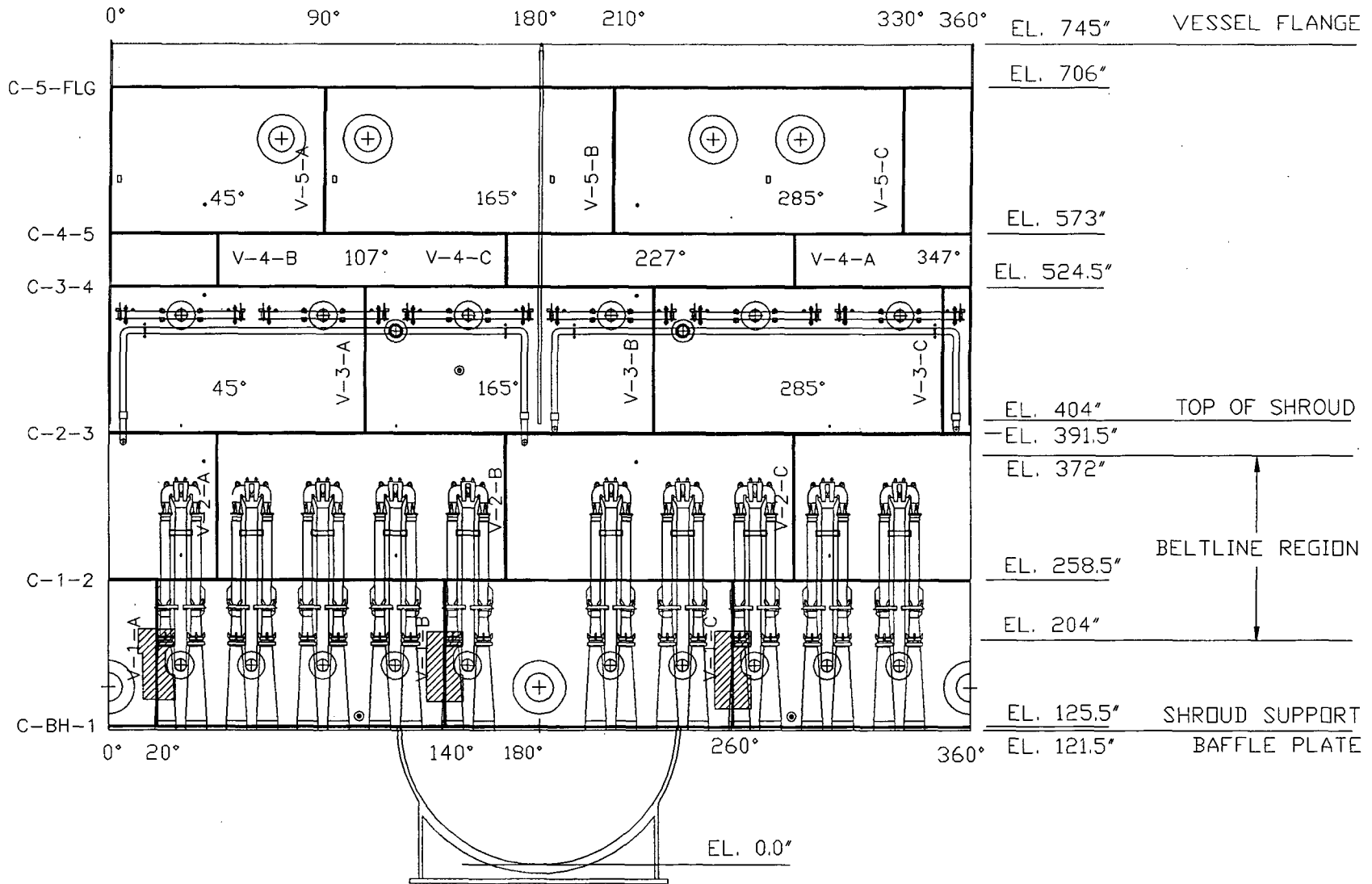


L/R	% DAC (MAX)	W1 20% DAC	WF1 50% DAC	WM MAX DAC	WF2 50% DAC	W2 20% DAC	MP1 20% DAC	MPF1 50% DAC	MP MAX DAC	MPF2 50% DAC	MP2 20% DAC	CONTINUOUS (C) OR SPOT (S) TRANSVERSE (T)	CW/CCW TOP OR BOTTOM
<u>NO RECORDABLE INDICATIONS.</u>													

REMARKS: Examined from 148" to 211" Elevation, Exam limited to a "W" of 8" from an elevation of 172" to 198" on the CCW side of the weld due to configuration of N&E.

<u>Tamara Vob II</u> EXAMINED BY	<u>11-17-93</u> LEVEL	<u>11-17-93</u> DATE	<u>D J Wood</u> UTILITY REVIEW	<u>1/26/94</u> DATE
<u>CR MS</u> GE REVIEWED BY	<u>12/9/93</u> DATE	<u>Albert Ladd</u> ANII REVIEW	<u>8/25/94</u> DATE	PAGE: <u>1</u> OF: <u>1</u>

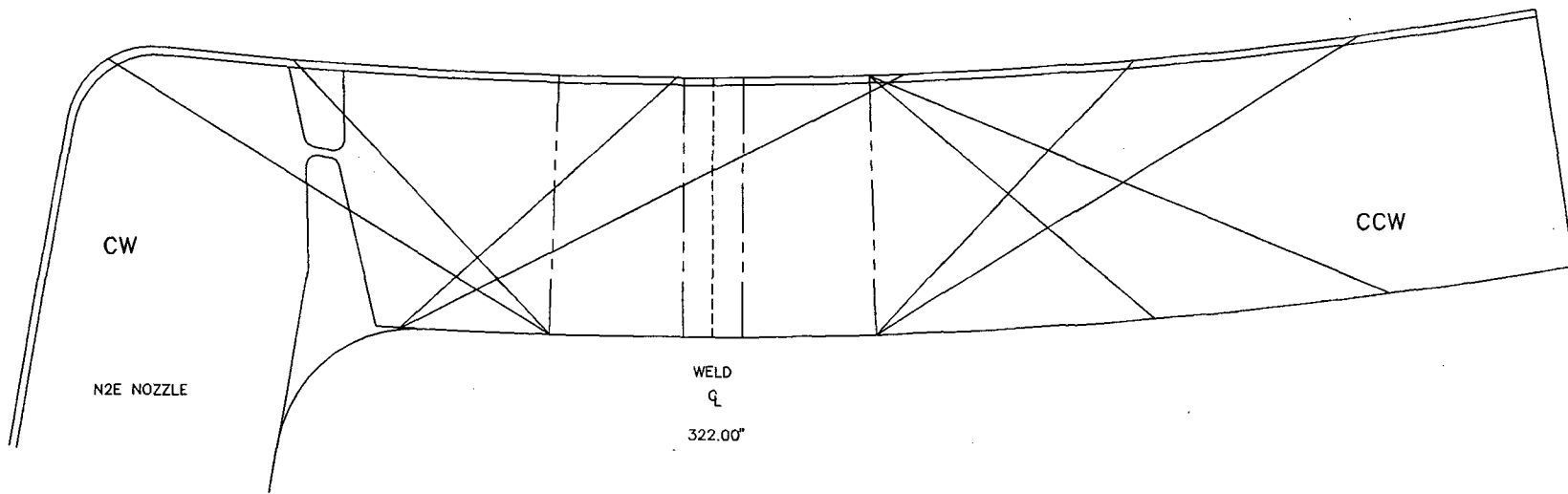
BROWNS FERRY UNIT-3 WELD LOCATIONS



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

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0000 0000

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