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March 28, 2001

L-01-031

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

**Subject: Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
Unit 1 Capsule Y Revised Reactor Vessel Integrity
Database Information**

This letter provides revised information for the NRC Reactor Vessel Integrity Database (RVID) that reflects the Beaver Valley Power Station (BVPS) Unit 1 surveillance Capsule Y analysis. The revised information is provided as Attachment A, which contains markups of RVID screens and reports, reflecting the results of the Capsule Y analysis. Incorporation of this information will provide the most current data available for the Unit 1 BVPS surveillance program.

The Unit 1 Capsule Y was removed for evaluation in the spring of 2000 and the analysis has recently been completed. The results of this analysis are documented in WCAP-15571, "Analysis of Capsule Y from Beaver Valley Unit 1 Reactor Vessel Radiation Surveillance Program," Revision 0. As required by 10 CFR 50, Appendix H, the Capsule Y analysis results were submitted by letter L-01-027 dated March 7, 2001.

If there are any questions concerning this matter, please contact Mr. Thomas S. Cosgrove, Manager, Regulatory Affairs at 724-682-5203.

Sincerely,



Lew W. Myers

- c: Mr. L. J. Burkhart, Project Manager
Mr. D. M. Kern, Sr. Resident Inspector
Mr. H. J. Miller, NRC Region I Administrator

A008

Letter L-01-031

Attachment A

Beaver Valley Power Station Unit 1

Capsule Y RVID Markups

Reactors Vessel Integrity Database - Plant Detail

File Edit Help

BEAVER VALLEY 1

Log Date/Time: 2/26/93 12:59:53 AM

Docket No: 50-334

License No: DPR-66

Manufacturer: COMBUSTION ENGINEERING

NSSS Designer: WESTINGHOUSE

Owner/Group: WOG

Reactor Type: PWR

EOL Years: 32

EOL Date: 1/29/16

Vessel Thickness: 7.88

Vessel Radius: 78.5

28

Additional Data

Print Close

Additional Notes

Closure Flange

RTrnd(u) values, chemistries, and neutron fluence values for the limiting material in the BV1 RPV (plate number B6603-1) and the belline welds are from the July 9, 1996 letter from DLC, subject: "Response to Request for Additional Information, Generic Letter 92-01, Revision 1, Supplement 1, Reactor Vessel Structural Integrity."

RTrnd(u) values, chemistries, and neutron fluence values for the remaining belline plate materials are from the August 2, 1996 PTS assessment for BV1 from J.O.

FORGE PLATES, BELLINE

SURVEILLANCE DATA

FORGINGS, PLATES, WELDS FOR THIS PLANT

BASE METAL

FLUX TYPE

BELLINE ID

PLATE DETAIL

HEAT ID

INTERMEDIATE SHELL

B6607-1

PLATE DETAIL

C4391-1

INTERMEDIATE SHELL

B6607-2

PLATE DETAIL

C4391-2

LOWER SHELL

B7203-2

PLATE DETAIL

C6293-2

LOWER SHELL

B6603-1

PLATE DETAIL

C6317-1

LOWER SHELL

B6603-1

Record 1

of 7

Form View

Reactor Vessel Integrity Database - [Plate Detail]

File Edit Help

Plate Detail [Navigation Buttons] [Print] [Close]

Plant: **BEAVER VALLEY 1** Reactor Type: **PWR** Vessel Thickness: **7.88**
Docket No: **50-334** Log Date/Time: **12/22/98 10:42:30 AM** Plate ID (generated by system): **70**

INPUT DATA

Heat ID: **C4381-1** Yrs Calc: **32** **28**
Beltline ID: **INTERMEDIATE SHELL B6607-1**
Base Metal: **A 533B**

Chemistry

Value	Method
Cu: 0.140 Ni: 0.620	
P: 0.015 S: 0.018	

CALCULATED DATA

Value	Method
RTndt(u): 43.0	MTEB 5-2 RTndt(u)
Fluence Factor @ EOL: 1.301	fluence(ID)*(28-1 log(fluence(ID)))
Chemistry Factor: 100.5	TABLE
Δ RTndt @ EOL: 130.0	FF*CF
σ(u): 0.0	MTEB 5-2 RTndt(u)
σ(Δ): 17.0	NO SURVEILLANCE DATA
Margin: 34.0	POSITION 1.1 (NO S DATA)
RTpts @ EOL: 207.8	RTndt(u) + ΔRTndt + Margin
USE @ EOL (14T): 66.0	1.952 fluence (14T) @ EOL
%Drop @ EOL (14T): 28.0	POSITION 1.2 (NO S DATA)

ENTER OVERRIDE VALUES, OTHERWISE LEAVE BLANK

Limiting Material: **+**

Unirr USE: **0.0** **DIRECT** **+**

94.0 **211.0** **68.0** **28.0** **1.329** **133.6** **2.21**

Record: 1 of 7

Form View FLTR

Reactor Vessel Integrity Database - [Plate Detail]

File Edit Help

Plate Detail

Print Close

Plant: BEAVER VALLEY 1 Reactor Type: PWR Vessel Thickness: 7.83
Decklet No: 50-334 Log Date/Time: 12/22/98 10:44:18 AM Plate ID (generated by system): 416

INPUT DATA

Heat ID: 24381-2 Yrs Calc: 28
Beltline ID: INTERMEDIATE SHELL 96607-2
Base Metal: A 533B

Chemistry

	Cu	Ni
P	0.0140	0.0520
S	0.0015	0.0016

3.54

Value Method

Fluence @ EOL	Rtint @ EOL	Method
3132	73.0	MTEB 5-2

241.0

ENTER OVERALL VALUES, OTHERWISE LEAVE BLANK

Limiting Material:
Unit USE: 83.0 DIRECT

CALCULATED DATA

Value	Method	Rtint @ EOL
73.0	MTEB 5-2	Rtint @ EOL
1.301	Fluence Factor @ EOL	Fluence @ EOL
100.5	Chemistry Factor	Fluence @ EOL
136.4	A Rtint @ EOL	Fluence @ EOL
0.0	α(u)	Fluence @ EOL
17.0	NO SURVEILLANCE DATA	Fluence @ EOL
34.0	POSITION 1.1 (NO S DATA)	Fluence @ EOL
237.8	Margin	Fluence @ EOL
28.7	USE @ EOL (14T)	Fluence @ EOL
1.953	POSITION 1.2 (NO S DATA)	Fluence @ EOL

1.329

60.0

28.0

2.21

133.6

Record 2 of 7

Form View

FLTR

Reactor Vessel Integrity Database - [Plate Detail]

File Edit Help

Plate Detail

Print Close

Plant: BEAVER VALLEY 1
Docket No: 50-334 Log Date/Time: 12/22/88 11:17:28 AM
Reactor Type: PWR Vessel Thickness: 7.68
Plate ID (generated by system): 418

INPUT DATA

Heat ID: 36283-2 Yrs Calc: 32
Bottom ID: LOWER SHELL 87703-2
Base Metal: A 533B

28

1.329

131.2

CALCULATED DATA

Chemistry

Value	Method
Cu: 0.140	NI: 0.570
P: 0.015	S: 0.015

Fluence (D) EOL: 20.0
Chem Factor: 3.024
RT (D) EOL: 185.0
Fluence (D) EOL: 185.0
Chem Factor: 1.275
RT (D) EOL: 181.6
Fluence (D) EOL: 185.0
Chem Factor: 1.275
RT (D) EOL: 181.6

Method: MTEB 5-2

ENTER OVER VALUES, OTHERWISE LEAVE BLANK

Limiting Material: USE @ EOL (1/4T) 26.1
Unir USE: 85.0

USE @ EOL (1/4T): 26.1
%Drop @ EOL (1/4T): 26.1

Fluence (1/4T) @ EOL: 1895
POSITION 1.2 (NO S DATA)

2.21

61.0

28.0

85.0

3.54

185.0

181.6

1895

26.1

26.1

2.21

61.0

28.0

85.0

Record 3 of 7
Form View

FLUR

Reactor Vessel Integrity Database - [Plate Detail] File Edit Help

Plate Detail

Print Close

Plant: **BEAVER VALLEY 1** Reactor Type: **PWR** Vessel Thickness: **7.88**
Docket No.: **50-334** Log Date/Time: **7/17/92 2:21:31 PM** Plate ID (Generated by system): **417**

INPUT DATA

Heat ID: **25812.1** Yrs Calc: **32** **28**
Baseline ID: **COVER SHELL BS903.1**
Base Metal: **A 533B**

Chemistry
C: **0.200** Ni: **0.540**
P: **0.010** S: **0.015**

CALCULATED DATA **Show Notes**

Value	Method	RTint(0)
1.329	MTEB 5-2	27.0
259.0	MTEB 5-2	206.7
198.3	POSITION 2.1 (S DATA)	17.0
56.0	POSITION 2.2 (S DATA)	34.1
2.21	POSITION 2.3 (S DATA)	34.1
83.0	POSITION 2.4 (S DATA)	34.1
33.0	POSITION 2.5 (S DATA)	34.1
149.2 using surveillance data + full σ(A).	POSITION 2.6 (S DATA)	34.1

Fluence (D) EOL: **13.024** RTint(0): **27.0** Method: **MTEB 5-2** RTint(0): **27.0**
Chem Factor: **1.293** Fluence (D) EOL: **1.293** SURVEILLANCE NON-RATIO: **1.293**
σ(A): **0.0** Chemistry Factor: **1.583** SURVEY CALC OREML: **1.583**
Margin: **17.0** σ(A): **17.0** MTEB 5-2 OVERRIDE: **1.583**
USE @ EOL (TAT): **52.7** RTint(0) + ORint + Margin: **1.583**
%DROP @ EOL (TAT): **34.1** POSITION 2.1 (S DATA): **1.583**

Linking Material: **YES** Unitr USE: **80.0** DIRECT: **34.1**

Record: **4** of **7** **FLTR**

Form View

Reactor Vessel Integrity Database - [Weld Detail]

File Edit Help

Weld Detail

Plant: BEAVER VALLEY 1 Reactor Type: PWR Vessel Thickness: 7.88
Docket No: 50-334 Log Date/Time: 12/22/98 11:21:01 AM Weld ID (generated by system): 804

INPUT DATA

Heat ID: 305414 Yrs Calc: 32 28 0.903
Beltline ID: LOWER SHELL AXIAL WELD 20-714 Capsules:
Flux Type: LINDE 1092 Heat Wire: 305414 Flux Lot: 3947 Weld Code: LINDE 1092

Chemistry

Cu: 0.337 Ni: 0.609 0.61
P: 0.012 S: 0.010

ALCULATED DATA

Value Method

RTndt(u): -56.0 GENERIC RTndt(w)
Fluence Factor @ EOL: 0.908 Fluence(DT)(28-1 log(Fluence(DT)))
Chemistry Factor: 203.1 TABLE
ΔRTndt @ EOL: 189.9
o(u): 17.0 GENERIC RTndt(w)
o(Δ): 28.0 NO SURVEILLANCE DATA
Margin: 68.5 POSITION 1.1 (NO DATA)
RTpts @ EOL: 199.4 RTndt(u) + ΔRTndt + Margin
USE @ EOL (1/4T): 62.2 Fluence (1/4T) @ EOL
%drop @ EOL (1/4T): 35.5 POSITION 1.2 (NO DATA)

0.34

0.708

223.9

61.0

38.0

0.441

2.1

2.1

202.2

Sister plant surveillance ratio.

Delete "NO".

Delete "NO".

Record 5 of 7

Form View

FLTR

Reactor Vessel Integrity Database - [Weld Detail]

File Edit Help

Weld Detail

Plant: BEAVER VALLEY 1 Reactor Type: PWR Vessel Thickness: 7.68
 Docket No: 50-334 Log Date/Time: 12/22/93 11:18:33 A Weld ID: 28 0.903

INPUT DATA

Heat ID: 305424 Yrs Calc: 32 Location: Orientation:
 Beltline ID: INTER SHELL AXIAL WELD 19-714 Capsules:
 Flux Type: LINDE 1092 Heat Wire: 305424 Flux Lot: 3889 Weld Code: LINDE 1092

Chemistry

Cu: 0.273 Ni: 0.629
 P: 0.013 S: 0.010

Value Method

RTnd(u): -56.0 GENERIC
 Fluence(ID) EOL: 0.721
 Chem Factor: ENTER OVER VALUES, OTHERWISE LEAVE BLANK
 $\alpha(u)$: 17.0
 $\alpha(A)$:
 Margin: 44
 Limiting Material:
 Unirr USE: 112.0 SURV WELD

CALCULATED DATA

Value Method RTnd(u)

Fluence Factor @ EOL: 0.903
 Chemistry Factor: 198.4
 $\Delta RTnd @ EOL$: 180.2
 $\alpha(u)$: 17.0
 $\alpha(A)$: 14.0
 Margin: 44
 RTpts @ EOL: 168.7
 USE @ EOL (1/4T): 77.7
 $\%Drop @ EOL (1/4T)$: 30.5

Fluence @ EOL: 28.1 log(fluence(10))
 SURVEILLANCE RATIO
 SURVEY CALC DETAIL
 SURVEILLANCE DATA
 POSITION 2.1 (S DATA)
 RTnd(u) + DRTRnd + Margin
 Fluence (1/4T) @ EOL
 POSITION 2.2 (S DATA)

191.7
 173.1
 0.28
 0.63
 0.708
 65.5
 183.0
 25.0
 84.0
 28.0
 0.441

Table

Add "No".

Record 5 of 7

Form View

FLTR

In "Show Notes" Add: "Table information used since surveillance data was non-credible and not as conservative as table values, so table values were applied."



Insert 5

Insert 4

Insert 3

Insert 2

Insert 1

Insert 8

Insert 7

~~C - Reactor Vessel Integrity Database
PTS Summary Report
BEAVER VALLEY 1~~

Printed 3/7/2004 11:50:45A
Page 1

[illegible]

RT and UV values, chemical indices, and neutron fluence values for the remaining being plate materials are from the July 2, 1966 PTS assessment for BVI from J.D. Siebert (DLC) to the US NRC Document Reference for BVI, "Reactor Vessel Structural Integrity,"

~~The USNRC Safety Evaluation Report (SER) of the August 1996 revised PTS assessment was submitted in the letter dated October 1, 1997 from Dr. Benjamin (USNRC) to J. Cross (DLC). This SER concluded that, based on information provided by the licensee, BVI would remain below the PTS screening criteria through expiration of license (EOL). Updated USE values for BVI boiling materials are from the September 10, 1993 revision from DLC.~~

For the PTS assessment of Plate No. B7203-2, the PWD corrects typographical errors in the NRC SER (corrected from 55.5 to 55.6) and corrects the SER (corrected from 18.9 to 19.0). The correct margin term value for Plate No. B7203-2 is 34.0 F (corrected from 35.5 F as printed in the SER) and the correct corrected OI (RTTS value for Plate No. B7203-2 is 18.9 F (corrected from 21.9 F as printed in the SER).

The revised Rf value for Plate No. B593-1 reflects the NPD detector value referenced in the NPD SER dated October 1, 1991.

The revised PTS summary sheet values for A511 (A511 No. 20-714 (Heat No. 30544), A511 (A511 No. 30544), and Circumferential Weld No. 11-714 (Heat No. 30424), and Circumferential Weld No. 11-714 (Heat No. 30436) reflect changes to the chemical composition as reported by the Owners Group (CEOG) Technical Report CE NPD-1038 (June 1991).

[illegible]

Notes need to be revised by the NRC.

Insert 1

211
241
185
259
212
175
101

Insert 2

3.54
3.54
3.54
3.54
0.708
0.708
3.53

Insert 3

133.6
133.6
131.2
198.3
202.2
173.1
112.3

Insert 4

1.329
1.329
1.329
1.329
0.903
0.903
1.329

Insert 5

98.7
149.2
223.9
191.7
84.8

Insert 6

SURVEILLANCE RATIO
SURVEILLANCE RATIO
TABLE
SURVEILLANCE RATIO

Insert 7

65.5
44.0

Insert 8

POSITION 2.1 (S DATA)
POSITION 2.1 (S DATA)
POSITION 2.1 (S DATA)

Insert 9

0.21
0.34
0.28
0.27

Insert 10

0.61
0.63

[illegible][illegible]

Insert 11

84

84

Insert 12

68

60

61

56

Insert 13

2.21

2.21

2.21

2.21

0.441

0.441

2.20

Insert 14

94

Insert 15

85

83

Insert 16

28

28

28

33

38

25

35

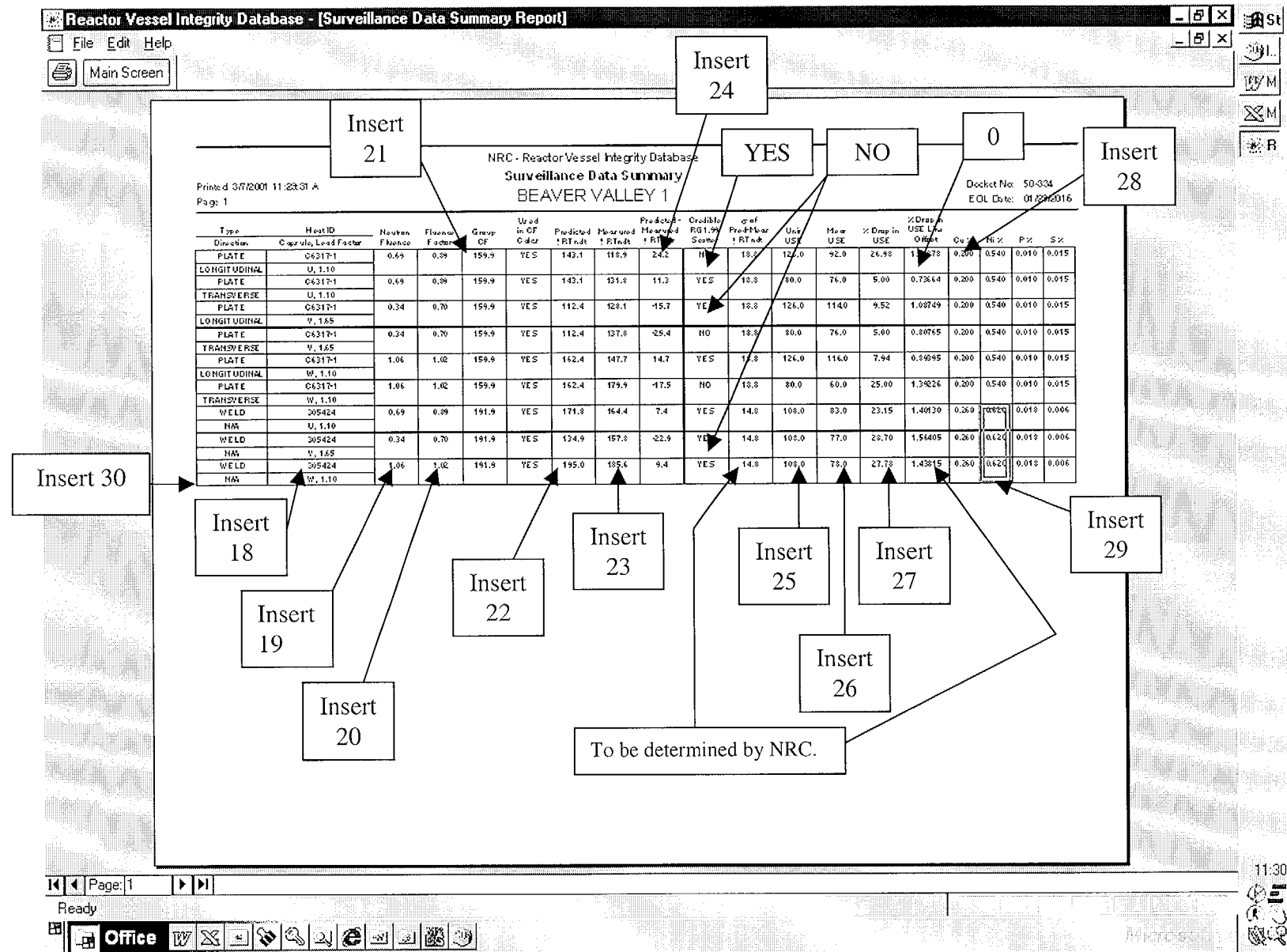
Insert 17

0.21

0.34

0.27

0.27



<u>Insert 18</u>	<u>Insert 19</u>	<u>Insert 20</u>	<u>Insert 21</u>	<u>Insert 22</u>	<u>Insert 23</u>
<u>C6317-1</u>	<u>0.646</u>	<u>0.878</u>	<u>147.2</u>	<u>129.2</u>	<u>118.93</u>
<u>U, 1.05</u>	<u>0.646</u>	<u>0.878</u>	<u>147.2</u>	<u>129.2</u>	<u>131.84</u>
<u>C6317-1</u>	<u>0.323</u>	<u>0.689</u>	<u>147.2</u>	<u>101.4</u>	<u>128.49</u>
<u>U, 1.05</u>	<u>0.323</u>	<u>0.689</u>	<u>147.2</u>	<u>101.4</u>	<u>137.81</u>
<u>C6317-1</u>	<u>0.986</u>	<u>0.996</u>	<u>147.2</u>	<u>146.6</u>	<u>148.52</u>
<u>V, 1.60</u>	<u>0.986</u>	<u>0.996</u>	<u>147.2</u>	<u>146.6</u>	<u>179.99</u>
<u>C6317-1</u>	<u>0.646</u>	<u>0.878</u>	<u>181.6</u>	<u>159.4</u>	<u>166.32</u>
<u>V, 1.60</u>	<u>0.323</u>	<u>0.689</u>	<u>181.6</u>	<u>125.1</u>	<u>159.72</u>
<u>C6317-1</u>	<u>0.986</u>	<u>0.996</u>	<u>181.6</u>	<u>180.9</u>	<u>187.73</u>
<u>W, 1.09</u>					
<u>C6317-1</u>					
<u>W, 1.09</u>					
<u>305424</u>					
<u>U, 1.05</u>					
<u>305424</u>					
<u>V, 1.60</u>					
<u>305424</u>					
<u>W, 1.09</u>					

Insert 24

10.3
-2.64
-27.09
-36.41
-1.92
-33.39
-6.92
-34.62
-6.83

Insert 25

135
81
135
81
135
81
112
112
112

Insert 26

105
78
114
75
114
59
83
88
78

Insert 27

30
3
21
6
21
22
29
24
34

Insert 28

0.21
0.21
0.21
0.21
0.21
0.21
0.26
0.26
0.26

Insert 29

0.61
0.61
0.61

Insert 30

New information to be added to table.

PLATE	C6317-1	2.15	1.21	147.2	YES	178.1	142.18	35.92	NO		135	110	25		0.21	0.54	0.01	0.015
LONGITUDINAL	Y, 1.22																	
PLATE	C6317-1	2.15	1.21	147.2	YES	178.1	166.93	11.17	YES		81	71	10		0.21	0.54	0.01	0.015
TRANVERSE	Y, 1.22																	
WELD	305424	2.15	1.21	181.6	YES	219.7	179.69	40.01	NO		112	77	35		0.26	0.61	0.08	0.006
N/A	Y, 1.22																	

To be determined by NRC.

