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W3F1-2004-0109

November 15, 2004

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

SUBJECT: 12-Month Special Report SR-04-001-00 on the 12th
Refueling Steam Generator Tube Inservice Inspection
Waterford Steam Electric Station, Unit 3
Docket No. 50-382
License No. NPF-38

Dear Sir or Madam:

Attached is Special Report (SR) Number SR-04-001-00 for Entergy Operations, Inc (EOI) Waterford Steam Electric Station Unit 3. This report provides the complete results of the Refuel 12 Steam Generator Tube Inservice Inspection. This special report is being submitted in accordance with Technical Specifications 4.4.4.5.b and 6.9.2.

If you have any questions or require additional information, please contact Ron Williams at 504-739-6255.

Very truly yours,

A handwritten signature in black ink, appearing to read "R. Dodds, III".

RAD/RLW/ssf

Attachments

1. Special Report SR-04-001-00, Steam Generator Eddy Current Examination (12TH Refueling Outage)
2. Location and Percent of Wall-Thickness Penetration for Each Indication

Handwritten initials in the bottom right corner, possibly "A217".

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Attachment 1

W3F1-2004-0109

**SPECIAL REPORT SR-04-001-00
STEAM GENERATOR EDDY CURRENT EXAMINATION
(12TH REFUELING OUTAGE)**

**SPECIAL REPORT SR-04-001-00
STEAM GENERATOR EDDY CURRENT EXAMINATION
(12TH REFUELING OUTAGE)**

1.0 INTRODUCTION

This report is submitted in accordance with Technical Specification 4.4.4.5.b. that requires the complete eddy current test results from Refuel #12 to be submitted in a special report pursuant to Technical Specification 6.9.2, within 12 months following the inspection.

The report shall include:

1. Number and extent of tubes inspected.
2. Location and percent of wall-thickness penetration for each indication of an imperfection.
3. Identification of tubes plugged or sleeved.

The eddy current testing examination program was performed to meet and exceed the requirements of Technical Specification 3/4.4.4. Waterford 3 performed all S/G eddy current testing examinations in accordance with EPRI TR 1003138, "PWR Steam Generator Examination Guidelines Revision 6" and its Appendix H qualified techniques. Previous reports contained additional detail as was required in the annual report in revision 0 of NEI 97-06. The current revision (Rev. 1) no longer requires this information; therefore, it has been removed from the format of the report.

2.0 Steam Generator Design

The Waterford 3 Model 70 (3410 MWT) re-circulating steam generators were designed and fabricated by Nuclear Steam System Supplier Combustion Engineering (CE), Inc. in accordance with ASME Code, Section III NB for Class I vessels. The Waterford 3 steam generators each consist of 9,350 high temperature mill annealed Inconel 600 U-tubes arranged in a one-inch inner diameter triangular pitch pattern representing 103,574 ft² of heat transfer area. The U-tubes are 3/4" O.D. by 0.048" nominal wall thickness explosively expanded the full depth of the tubesheet (CE's Expansion Process) and welded to the primary cladding. The secondary tube bundle support structure consists of carbon steel eggcrates. The secondary supports are arranged in the following order:

- seven full horizontal eggcrate supports
- six horizontal partial eggcrate supports
- two anti-vibration straps (hot and cold batwings)
- seven vertical straps

3.0 Inspection Results

3.1 RF12 Scope (Number and Extent Tested)

The Refuel #12 S/G eddy current testing (ECT) program consisted of the following inspection plans in Table 3.1:

Table 3.1
RF12 ECT Inspection

<u>SG #1</u> <u>ECT Examination Type</u>	<u>Inspections</u> <u>Conducted</u>	<u>% Scope</u>	<u>Extent Tested</u>
Bobbin	8906	100	TEH to TEC
RPC ET HL	8906	100	+3 to -8" of TTS
Small Radius U-bends (1-2)	120	100	07H to 07C
Small Radius U-bends (3-10)	102	20	07H to 07C
Previous/New Dents ≥ 2 volt	141	N/A	NA
Previous/New Dings ≥ 5 volt	138	N/A	NA
Previous/New Wear	62	N/A	NA
Special Interest	856	N/A	NA

<u>SG #2</u> <u>ECT Examination Type</u>	<u>Inspections</u> <u>Conducted</u>	<u>% Scope</u>	<u>Extent Tested</u>
Bobbin	8916	100	TEH to TEC
RPC ET HL	8916	100	+3 to -8" of TTS
Small Radius U-bends (1-2)	123	100	07H to 07C
Small Radius U-bends (3-10)	102	20	07H to 07C
Previous/New Dents ≥ 2 volt	106	N/A	NA
Previous/New Dings ≥ 5 volt	185	N/A	NA
Previous/New Wear	89	N/A	NA
Special Interest	328	N/A	NA

NOTE: The U-Bend Low Row (1-10) region of the respective tubes in each S/G were examined with "+Pt." and straight sections inspected with bobbin coil.

3.2 Tube Integrity

Acceptable tube integrity was demonstrated at the end of cycle 12 and condition monitoring requirements on burst pressure (3 Δ NOP) and accident leakage rates were satisfied for all forms of degradation mechanisms identified during the Refuel #12 S/G eddy current testing. All indications identified were well below their associated structural limits. The Waterford 3 Refuel #12 Condition Monitoring Report was

documented via Westinghouse Document SG-SGDA-03-52, "Waterford 3 RF12 Condition Monitoring Report and Interim Operational Assessment."

As part of Waterford 3's adherence to perform In-Situ Screening in accordance with EPRI, TR-107620, "Steam Generator In-Situ Pressure Test Guidelines", Rev. 1, all indications identified were screened with one test required. In-situ pressure testing was performed on the flaw that exceeded the screening criteria. The flaw was taken to main steam line break (MSLB) pressure with zero leakage. The tube R75-C91 is located in SG#2. The condition was entered into Entergy's corrective action program.

4.0 Location and Percent of Wall-Thickness Penetration for Each Indication of an Imperfection

This data is summarized in Attachment 2. The only flaws sized and left in service are for wear.

5.0 Percentage of Tubes Plugged or Sleeved

Table 5.1 list the repairs made in RF12 and the cumulative repairs to date:

Table 5.1 Tubes Repaired to Date

	SG #1 Plugs	SG #1 % Plugged	SG #2 Plugs	SG #2 % Plugged
Prior to RF12	444	4.75 %	434	4.64 %
RF12	127	N/A	50	N/A
Total	571	6.11%	484	5.18 %
Sleeved Tubes	0	N/A	0	N/A

On November 7, 2003 Waterford 3 successfully completed all S/G eddy current examinations and plugging activities. Additionally, Waterford 3 performed visual inspection of the S/G tubesheets for evidence of leaking tube plugs. As a result of the tubesheet scans, Waterford 3 did not identify any leaking tube plugs. The S/G primary side manways were closed on November 14, 2003 to complete the RF#12 inspection.

The following Tables 5.2 and 5.3 list the tubes plugged during RF12 outage in SG #1 and SG #2, respectively.

List of Tubes Plugged During Waterford 3's RF12 Outage

Table 5.2 Steam Generator #1

Tube Count	Row	Column	Tube Count	Row	Column	Tube Count	Row	Column
1	3	1	44	5	63	87	128	114
2	5	1	45	141	63	88	55	115
3	16	2	46	38	64	89	46	116
4	27	3	47	50	68	90	35	117
5	18	6	48	69	69	91	38	118
6	20	14	49	74	70	92	68	118
7	11	15	50	72	74	93	72	118
8	21	15	51	66	76	94	74	118
9	79	15	52	90	78	95	35	119
10	16	16	53	99	79	96	67	119
11	44	18	54	61	81	97	38	120
12	6	22	55	58	82	98	44	120
13	18	22	56	111	83	99	72	120
14	98	24	57	57	87	100	37	121
15	82	26	58	72	88	101	49	121
16	47	29	59	57	89	102	26	122
17	76	30	60	59	89	103	30	122
18	30	38	61	63	89	104	88	122
19	7	39	62	68	90	105	133	123
20	60	40	63	90	90	106	100	124
21	22	42	64	66	92	107	43	125
22	32	46	65	128	92	108	20	126
23	44	46	66	142	94	109	15	127
24	37	47	67	68	96	110	51	127
25	42	48	68	86	96	111	45	129
26	41	49	69	63	97	112	129	129
27	36	50	70	73	97	113	22	130
28	58	50	71	99	103	114	38	130
29	78	50	72	53	105	115	68	132
30	48	54	73	87	105	116	125	133
31	39	55	74	89	105	117	9	135
32	49	55	75	58	106	118	18	136
33	75	55	76	82	106	119	42	136
34	38	56	77	84	106	120	12	138
35	46	56	78	142	106	121	37	141
36	48	56	79	38	108	122	70	142
37	47	57	80	58	108	123	17	145
38	138	58	81	37	109	124	20	146
39	29	59	82	47	109	125	101	151
40	43	61	83	15	111	126	16	160
41	139	61	84	132	112	127	76	160
42	30	62	85	17	113			
43	140	62	86	127	113			

List of Tubes Plugged During Waterford 3's RF12 Outage

Table 5.3 Steam Generator #2

Tube Count	Row	Column	Tube Count	Row	Column	Tube Count	Row	Column
1	48	6	18	19	35	35	65	111
2	1	155	19	19	37	36	73	67
3	4	126	20	21	123	37	75	91
4	6	162	21	21	129	38	75	113
5	9	51	22	25	117	39	78	120
6	10	20	23	27	33	40	83	119
7	10	24	24	27	39	41	89	39
8	10	160	25	29	35	42	90	52
9	11	29	26	29	51	43	91	53
10	12	14	27	34	130	44	93	23
11	12	156	28	37	51	45	107	65
12	15	113	29	42	140	46	107	93
13	16	18	30	45	35	47	108	92
14	16	160	31	53	101	48	117	109
15	16	166	32	54	88	49	122	110
16	19	27	33	56	88	50	135	57
17	19	33	34	58	50			

Attachment 2

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**Location and Percent of Wall-Thickness
Penetration for Each Indication**

Percent of Wall-Thickness Penetrations for S/G #1 – RF12

Row	Column	Indication	% TW	Support	Location
62	10	PCT	21	BW5	-0.73
67	11	PCT	22	BW5	0.98
59	13	PCT	9	BW6	0.72
38	14	PCT	19	BW5	0
74	14	PCT	16	BW1	-1.73
74	14	PCT	22	BW4	0.78
19	15	PCT	21	BW5	-0.84
19	15	PCT	15	BW5	0.75
61	15	PCT	11	BW5	-0.82
61	15	PCT	9	BW5	0.94
61	15	PCT	21	BW6	-0.68
61	15	PCT	10	BW6	1.01
36	16	PCT	21	BW5	0.95
64	16	PCT	20	BW4	-0.76
64	16	PCT	25	BW5	-0.84
64	16	PCT	18	BW5	0.7
36	18	PCT	12	BW5	-1
62	18	PCT	22	BW4	0.84
66	18	PCT	23	BW5	-0.72
82	18	PCT	22	BW4	0.9
73	19	PCT	6	BW4	0.85
42	20	PCT	11	BW5	-0.8
62	20	PCT	14	BW4	-0.76
62	20	PCT	22	BW4	0.76
76	20	PCT	20	BW6	0.87
82	20	PCT	19	BW6	-0.81
55	21	PCT	18	BW6	0.75
81	21	PCT	12	08C	0.78
6	22	PCT	29	TSH	0.11
32	22	PCT	12	BW5	-0.82
78	22	PCT	16	BW5	0.66
78	22	PCT	18	BW6	1.05
70	24	PCT	23	BW5	-0.74
70	24	PCT	21	BW6	0.94
19	27	PCT	17	BW5	0.74
61	27	PCT	11	BW4	0.71
67	27	PCT	10	BW5	0.78
69	27	PCT	9	BW5	1.1
71	27	PCT	9	BW4	-0.73
77	27	PCT	8	BW4	-0.82
77	27	PCT	12	BW5	-0.74
77	27	PCT	10	BW5	0.87
77	27	PCT	17	BW6	-0.87
77	27	PCT	10	BW6	0.93
87	27	PCT	10	BW7	-0.65
83	29	PCT	5	BW5	-0.2

Percent of Wall-Thickness Penetrations for S/G #1 – RF12

87	31	PCT	15	BW3	0.71
87	31	PCT	23	BW3	0.75
105	31	PCT	9	BW7	-0.72
107	31	PCT	12	BW7	-0.78
100	32	PCT	18	09H	-0.96
114	34	PCT	18	BW9	1.71
61	35	PCT	11	BW5	0.85
61	35	PCT	10	BW6	0.67
77	35	PCT	7	BW5	-0.98
105	35	PCT	23	BW5	0.99
59	37	PCT	21	BW6	-1.1
76	38	PCT	18	BW5	-0.95
80	38	PCT	19	BW4	0.81
80	38	PCT	17	BW5	-0.87
80	38	PCT	27	BW6	-0.98
82	38	PCT	23	BW5	-0.89
82	38	PCT	35	BW6	-1.01
21	39	PCT	9	BW5	0.68
51	39	PCT	15	BW6	0.82
109	39	PCT	9	BW5	-0.75
113	39	PCT	12	BW7	0.97
42	40	PCT	9	BW5	0.92
50	40	PCT	15	BW5	-0.96
110	40	PCT	16	BW7	-0.82
114	40	PCT	15	BW6	-0.82
37	41	PCT	17	BW5	-0.92
39	41	PCT	29	BW5	-0.7
87	41	PCT	16	BW9	1.98
70	42	PCT	17	BW6	0.92
88	42	PCT	20	BW3	-0.62
102	42	PCT	26	BW3	-0.79
104	42	PCT	16	BW3	-0.75
110	42	PCT	25	BW3	0.64
116	42	PCT	20	BW6	-0.79
120	42	PCT	18	BW3	-0.7
120	42	PCT	24	BW3	0.83
105	43	PCT	13	BW3	0.85
110	44	PCT	18	BW3	0.82
37	45	PCT	16	BW5	0.98
105	45	PCT	9	BW7	0.62
127	45	PCT	17	BW8	0.66
44	46	PCT	20	BW5	-0.81
44	46	PCT	16	BW5	0.75
67	47	PCT	8	BW6	-0.42
88	48	PCT	22	BW3	-0.71
45	49	PCT	19	BW5	0.75
59	49	PCT	10	BW5	0.95

Percent of Wall-Thickness Penetrations for S/G #1 – RF12

120	50	PCT	19	BW2	0.74
131	51	PCT	7	08C	0.67
46	52	PCT	15	BW5	0.75
43	53	PCT	22	BW5	0.78
105	53	PCT	17	BW3	-1.07
117	53	PCT	11	BW3	-0.73
82	54	PCT	16	BW5	-0.7
82	54	PCT	27	BW5	1.1
82	54	PCT	16	BW6	-0.73
19	55	PCT	18	BW5	0.97
57	55	PCT	17	BW4	0.87
24	56	PCT	8	BW5	-0.81
50	56	PCT	11	BW5	-0.84
50	56	PCT	15	BW5	0.76
50	56	PCT	14	BW5	0.86
126	56	PCT	18	BW2	0.75
23	57	PCT	18	BW5	0.65
51	57	PCT	14	BW4	0.8
28	58	PCT	8	BW5	-0.71
68	58	PCT	18	BW5	-0.81
76	58	PCT	17	BW6	-0.77
96	58	PCT	17	BW3	-0.62
96	58	PCT	14	BW3	0.94
29	59	PCT	18	BW5	-0.75
85	59	PCT	18	BW4	0
129	59	PCT	16	BW3	-0.45
24	60	PCT	10	BW5	-0.84
30	60	PCT	14	BW5	0.68
32	60	PCT	8	BW5	0.84
38	60	PCT	6	BW5	1.01
138	60	PCT	14	09H	-1
81	61	PCT	25	BW4	0.75
26	62	PCT	10	BW9	-1.98
82	62	PCT	10	BW4	-0.89
19	63	PCT	10	BW5	0.76
61	63	PCT	11	BW5	1.12
63	63	PCT	8	BW5	1.32
63	63	PCT	9	BW6	1.05
46	64	PCT	23	BW5	-0.87
43	65	PCT	24	BW5	-0.9
81	65	PCT	21	BW4	-0.68
137	65	PCT	11	BW4	0.73
44	66	PCT	16	BW5	0.72
48	66	PCT	16	BW5	-0.81
50	66	PCT	26	BW5	-0.8
25	67	PCT	18	BW5	-1.11
31	67	PCT	21	BW5	0.87

Percent of Wall-Thickness Penetrations for S/G #1 – RF12

51	67	PCT	32	BW4	0.84
51	67	PCT	22	BW5	-0.78
24	68	PCT	12	BW9	1.52
56	68	PCT	18	BW4	-0.65
114	68	PCT	9	BW1	-1.59
46	70	PCT	21	BW5	0.73
100	70	PCT	11	BW3	-0.81
100	70	PCT	7	BW6	-0.71
48	72	PCT	25	BW5	-0.8
48	72	PCT	21	BW5	0.06
48	72	PCT	18	BW5	0.89
126	72	PCT	9	BW3	0.97
144	72	PCT	6	BW9	1.96
105	73	PCT	11	BW4	0.91
105	73	PCT	18	BW5	0.86
145	73	PCT	26	BW1	0.84
48	74	PCT	12	BW5	-0.79
48	74	PCT	13	BW5	-0.03
48	74	PCT	14	BW5	0.8
108	74	PCT	12	BW3	-0.9
116	74	PCT	10	BW2	0.99
116	74	PCT	12	BW3	0.99
97	75	PCT	20	BW3	-0.94
97	75	PCT	15	BW7	-0.79
101	75	PCT	15	BW3	0.76
98	76	PCT	14	BW3	-0.64
102	76	PCT	13	BW3	0.76
118	76	PCT	12	BW4	0.77
146	76	PCT	23	BW1	1.5
51	77	PCT	27	BW4	0.92
105	77	PCT	14	BW7	0.95
123	77	PCT	10	BW6	-0.65
133	77	PCT	14	BW2	-0.69
133	77	PCT	16	BW3	-0.61
133	77	PCT	16	BW4	-0.58
68	78	PCT	25	BW6	0.99
136	78	PCT	10	BW2	-1.18
146	78	PCT	19	BW4	1.07
49	79	PCT	25	BW9	-1.61
61	79	PCT	8	BW5	0.82
78	80	PCT	9	BW5	-0.61
78	80	PCT	7	BW6	1.02
146	80	PCT	30	BW1	-1.73
83	81	PCT	13	BW3	0.93
107	81	PCT	20	BW3	0.88
82	82	PCT	18	BW5	0.88
53	83	PCT	14	BW9	-1.33

Percent of Wall-Thickness Penetrations for S/G #1 – RF12

53	83	PCT	26	BW9	1.59
55	83	PCT	19	BW9	2.14
67	83	PCT	14	BW9	1
147	83	PCT	15	06C	-0.2
62	84	PCT	14	BW9	-1.91
62	84	PCT	10	BW9	1.89
82	84	PCT	9	BW6	-0.95
82	84	PCT	10	BW6	0.98
73	85	PCT	15	BW9	-1.98
81	85	PCT	8	BW9	1.75
141	85	PCT	31	BW3	-0.96
147	85	PCT	17	09H	0
54	86	PCT	30	BW9	-1.7
56	86	PCT	20	BW9	1.89
58	86	PCT	32	BW9	1.66
60	86	PCT	32	BW9	1.61
62	86	PCT	32	BW9	1.71
80	86	PCT	12	BW9	-1.65
82	86	PCT	16	BW9	0.21
53	87	PCT	27	BW9	-1.93
64	88	PCT	24	BW9	-1.63
72	88	PCT	20	BW9	-1.71
146	88	PCT	19	BW1	1.51
146	88	PCT	7	BW9	1.59
147	89	PCT	19	BW1	-2.13
126	90	PCT	7	BW2	0.71
147	91	PCT	9	BW9	1.9
54	92	PCT	20	08H	0.37
130	94	PCT	4	BW2	-0.82
142	94	PCT	11	BW2	0.9
121	95	PCT	16	BW3	1
145	95	PCT	10	BW9	-2
76	96	PCT	18	BW5	-0.98
82	96	PCT	18	BW5	-0.82
90	96	PCT	12	BW3	-0.89
83	97	PCT	12	BW5	-0.86
83	97	PCT	11	BW6	-0.85
83	97	PCT	7	BW6	0.85
127	97	PCT	20	BW8	0.76
78	98	PCT	21	BW6	0.73
106	98	PCT	8	BW7	0.84
49	99	PCT	19	BW1	1.96
78	100	PCT	21	BW5	-0.74
78	100	PCT	24	BW6	0.96
146	100	PCT	15	BW9	-1.72
145	101	PCT	12	BW1	1.69
145	103	PCT	19	BW1	2.07

Percent of Wall-Thickness Penetrations for S/G #1 – RF12

145	103	PCT	14	BW2	-0.26
145	103	PCT	25	BW8	0.76
145	103	PCT	14	BW9	-1.74
45	105	PCT	18	BW5	-1
45	105	PCT	9	BW5	0.08
45	105	PCT	13	BW5	0.08
125	105	PCT	7	BW9	1.89
107	107	PCT	16	BW6	0.87
107	107	PCT	17	BW7	0.84
117	107	PCT	20	BW7	0.83
24	108	PCT	29	BW5	0.91
42	108	PCT	23	BW5	-0.57
42	108	PCT	9	BW5	0.65
58	108	PCT	11	BW5	-0.88
78	108	PCT	17	BW4	-0.58
78	108	PCT	13	BW5	-0.7
78	108	PCT	9	BW6	-1.01
39	111	PCT	11	BW5	0.94
61	111	PCT	13	BW4	0.78
139	111	PCT	13	BW2	-0.83
22	112	PCT	11	BW5	0.79
42	112	PCT	10	BW5	-0.89
42	112	PCT	9	BW5	0.98
141	113	PCT	11	BW9	-1.95
56	114	PCT	8	BW5	-0.89
56	114	PCT	8	BW5	0.78
45	115	PCT	22	BW1	0.9
45	115	PCT	19	BW5	-0.63
49	115	PCT	18	BW5	-0.69
53	115	PCT	19	BW5	0.81
61	115	PCT	10	BW4	0.77
91	115	PCT	9	BW9	0.47
132	116	PCT	17	BW7	-0.84
99	117	PCT	20	BW4	-0.85
61	119	PCT	8	BW4	0.7
135	119	PCT	30	BW2	-0.78
135	119	PCT	23	BW2	0.68
135	119	PCT	23	BW3	0.81
135	119	PCT	26	BW4	-0.84
135	119	PCT	23	BW4	1.03
135	119	PCT	14	BW7	-0.89
137	119	PCT	9	BW2	-0.47
50	120	PCT	7	BW5	0.9
54	120	PCT	7	BW5	-0.94
54	120	PCT	7	BW5	0.81
72	120	PCT	24	BW4	0.92
133	121	PCT	21	BW2	-0.83

Percent of Wall-Thickness Penetrations for S/G #1 – RF12

133	121	PCT	31	BW2	0.77
133	121	PCT	17	BW3	-0.5
74	124	PCT	27	BW5	-0.87
74	124	PCT	14	BW5	0.97
74	124	PCT	18	BW6	-0.82
133	125	PCT	10	07C	-1
72	126	PCT	17	BW4	-0.83
72	126	PCT	25	BW4	0.98
72	126	PCT	17	BW5	-1.16
72	126	PCT	13	BW5	0.15
72	126	PCT	12	BW6	0.99
82	126	PCT	14	BW6	0.87
61	127	PCT	8	BW4	0.79
123	127	PCT	20	BW2	0.75
127	127	PCT	19	BW3	0.77
131	127	PCT	10	07H	0.77
76	128	PCT	13	BW4	0.6
76	128	PCT	13	BW5	-0.8
76	128	PCT	9	BW5	1.06
76	128	PCT	12	BW6	-0.78
76	128	PCT	24	BW6	0.85
127	129	PCT	10	BW2	-0.69
50	134	PCT	9	BW5	-0.8
59	135	PCT	17	BW5	-0.95
55	137	PCT	19	BW4	0.7
55	137	PCT	17	BW5	0.8
63	137	PCT	24	BW5	-0.97
79	137	PCT	18	BW4	0.78
82	138	PCT	9	BW4	-0.78
82	138	PCT	9	BW4	0.9
82	138	PCT	12	BW5	0.69
82	138	PCT	22	BW6	1.04
57	139	PCT	17	BW4	0.64
61	139	PCT	18	BW4	0.82
67	139	PCT	10	08C	0.74
76	140	PCT	22	BW6	0.98
82	140	PCT	12	BW4	0.89
82	140	PCT	23	BW6	-0.92
82	140	PCT	9	BW6	0.98
78	142	PCT	12	BW4	-0.73
78	142	PCT	10	BW5	0.14
78	142	PCT	12	BW6	-0.81
82	142	PCT	17	BW6	-0.85
48	144	PCT	26	BW5	-0.88
48	144	PCT	11	BW5	0.71
74	144	PCT	7	BW1	-1.29
74	144	PCT	9	BW5	0.81

Percent of Wall-Thickness Penetrations for S/G #1 – RF12

74	144	PCT	11	BW6	0.89
78	144	PCT	24	BW4	-0.92
78	144	PCT	16	BW4	0.78
78	144	PCT	9	BW5	-0.75
78	144	PCT	11	BW5	0.34
78	144	PCT	9	BW6	-0.78
78	144	PCT	22	BW6	0.98
104	144	PCT	10	BW3	-0.89
95	145	PCT	9	09C	0.72
100	146	PCT	8	BW4	-0.73
100	146	PCT	7	BW6	-0.7
100	146	PCT	8	BW6	0.87
104	146	PCT	9	BW3	-0.83
57	147	PCT	21	BW5	0.41
81	147	PCT	21	BW6	0.87
81	149	PCT	21	08C	0.8
83	149	PCT	23	BW7	0.64
44	156	PCT	12	BW5	0.62
81	159	PCT	18	BW9	-2
19	167	PCT	25	BW5	0.76
40	168	PCT	12	BW5	0.76
19	171	PCT	14	BW5	-0.93

Percent of Wall-Thickness Penetrations for S/G #2 – RF12

Row	Column	Indication	% TW	Support	Location
1	45	PCT	14	04C	-0.28
1	53	PCT	13	04C	-0.92
1	175	PCT	9	01H	0.08
3	113	PCT	12	06C	0.2
3	175	PCT	6	01H	-0.83
11	175	PCT	20	BW1	1.4
14	164	PCT	21	04C	-0.33
18	174	PCT	21	02C	-0.83
19	3	PCT	27	BW5	0.81
19	25	PCT	30	BW5	-0.86
19	25	PCT	19	BW5	1
19	65	PCT	28	BW5	-0.87
19	111	PCT	19	BW5	0.94
19	113	PCT	12	BW5	-0.8
19	113	PCT	9	BW5	0.9
19	117	PCT	20	BW5	-0.96
21	109	PCT	22	BW5	0.78
22	44	PCT	9	BW5	-1
22	68	PCT	22	BW9	1.38
23	15	PCT	8	BW5	-0.82
23	27	PCT	18	BW5	-0.91
24	56	PCT	10	BW5	-0.9
24	110	PCT	12	BW5	-0.99
27	137	PCT	18	BW1	-0.76
29	69	PCT	16	BW9	-1.5
32	112	PCT	15	BW5	0.82
33	15	PCT	13	BW5	-0.76
34	144	PCT	18	BW5	-0.86
34	170	PCT	15	BW5	0.84
35	17	PCT	15	BW5	-0.83
35	37	PCT	14	BW5	-0.93
35	53	PCT	15	BW5	-0.86
35	53	PCT	12	BW5	0.92
36	4	PCT	10	BW5	-0.78
36	54	PCT	14	BW5	-0.69
37	65	PCT	12	BW5	-0.67
37	125	PCT	18	BW5	-0.8
37	141	PCT	17	BW5	-0.85
37	155	PCT	25	BW5	-0.84
37	157	PCT	22	BW5	-0.72
37	157	PCT	14	BW5	0.91
40	108	PCT	26	BW5	-0.8
40	108	PCT	25	BW5	0.86
40	154	PCT	19	BW5	0.91
41	9	PCT	13	BW5	-0.29
41	39	PCT	19	BW5	0.95

Percent of Wall-Thickness Penetrations for S/G #2 – RF12

41	69	PCT	20	BW9	-1.96
41	107	PCT	24	BW5	-0.7
41	107	PCT	16	BW5	0.15
41	111	PCT	19	BW5	0.93
41	127	PCT	20	BW5	0.83
41	139	PCT	15	BW5	0.92
41	149	PCT	27	BW5	0.79
41	167	PCT	20	BW5	0.9
42	108	PCT	12	BW5	-0.57
42	108	PCT	16	BW5	0.84
43	37	PCT	25	BW5	-0.72
43	37	PCT	23	BW5	0.87
43	69	PCT	23	BW5	-0.77
43	69	PCT	34	BW5	0.86
43	149	PCT	18	BW5	0.86
44	16	PCT	32	BW5	-0.76
44	16	PCT	13	BW5	0.83
44	40	PCT	16	BW5	-0.7
44	40	PCT	14	BW5	0.86
44	48	PCT	15	BW5	0.94
44	50	PCT	16	BW5	-0.57
44	52	PCT	17	BW5	-0.72
44	52	PCT	11	BW5	0.87
45	69	PCT	19	BW9	-1.57
45	145	PCT	28	BW5	-0.93
45	145	PCT	21	BW5	0.6
45	167	PCT	26	BW5	-0.64
46	6	PCT	22	BW5	-0.81
46	32	PCT	19	BW5	-0.8
46	40	PCT	12	BW5	0.82
46	52	PCT	18	BW5	-0.61
46	52	PCT	12	BW5	0.82
46	64	PCT	34	BW5	0.94
46	68	PCT	21	BW5	-0.67
46	68	PCT	28	BW5	0.88
47	51	PCT	17	BW5	0.91
47	143	PCT	32	BW5	0.85
47	147	PCT	17	BW5	-0.61
47	147	PCT	22	BW5	0.7
48	18	PCT	39	BW5	-0.71
48	18	PCT	20	BW5	0.95
48	30	PCT	13	BW5	-0.78
48	46	PCT	13	BW5	-0.92
48	52	PCT	13	BW5	-0.6
48	52	PCT	5	BW5	0.84
48	70	PCT	22	BW5	-0.67
48	70	PCT	15	BW5	1.1

Percent of Wall-Thickness Penetrations for S/G #2 – RF12

48	128	PCT	34	BW5	0.21
48	128	PCT	36	BW5	0.82
49	149	PCT	25	BW5	0.84
50	142	PCT	20	BW5	-0.74
52	34	PCT	11	BW6	-1.04
52	164	PCT	18	BW9	1.35
53	95	PCT	27	BW1	-1.64
54	84	PCT	27	BW1	-2.08
54	88	PCT	39	BW9	1.97
54	94	PCT	32	BW9	1.69
55	85	PCT	24	BW9	1.79
56	88	PCT	42	BW9	1.7
59	35	PCT	32	BW6	0.7
60	42	PCT	14	BW4	0.77
60	58	PCT	16	BW6	0.67
64	154	PCT	16	BW6	-0.85
65	85	PCT	24	BW9	1.83
65	127	PCT	18	BW4	-0.66
66	50	PCT	25	BW9	1.4
66	96	PCT	17	BW1	2
66	156	PCT	13	08C	-0.15
67	85	PCT	27	BW9	1.99
68	144	PCT	18	BW4	-0.65
69	25	PCT	21	BW6	1.08
69	35	PCT	12	BW5	0.97
69	85	PCT	32	BW9	-1.61
70	56	PCT	14	BW5	0.91
70	138	PCT	10	BW5	0.48
70	160	PCT	18	08C	0.8
71	159	PCT	12	BW4	-0.78
72	104	PCT	18	BW5	0.9
73	53	PCT	10	BW5	-0.92
73	53	PCT	16	BW5	0.84
73	53	PCT	26	BW6	-0.69
73	53	PCT	20	BW6	0.81
73	57	PCT	30	BW6	0.89
74	20	PCT	19	BW9	2.67
74	48	PCT	26	BW4	0.85
74	48	PCT	35	BW5	0.9
74	48	PCT	20	BW6	0.85
74	118	PCT	26	BW4	-0.83
74	118	PCT	27	BW5	-0.77
74	118	PCT	14	BW6	0.9
76	24	PCT	13	BW4	-0.76
76	24	PCT	15	BW5	-0.82
76	24	PCT	12	BW6	1.08
76	156	PCT	12	BW4	0.83

Percent of Wall-Thickness Penetrations for S/G #2 – RF12

77	37	PCT	17	BW4	-0.88
77	37	PCT	21	BW4	0.85
77	37	PCT	19	BW5	-0.91
77	37	PCT	23	BW5	0.72
77	47	PCT	13	BW4	-0.83
77	49	PCT	11	BW5	1.01
77	51	PCT	22	BW4	-0.85
77	57	PCT	22	BW5	-0.91
77	61	PCT	28	BW4	-0.8
77	61	PCT	26	BW4	1.14
77	71	PCT	22	BW4	0.69
77	71	PCT	23	BW5	0.66
77	71	PCT	20	BW6	0.75
77	107	PCT	15	BW4	-0.79
77	107	PCT	18	BW5	-0.7
77	107	PCT	29	BW5	0.15
77	107	PCT	25	BW5	1.01
77	117	PCT	19	BW6	-0.7
78	20	PCT	11	BW4	-0.71
78	28	PCT	14	BW6	-0.78
78	28	PCT	10	BW9	-1.38
79	25	PCT	12	BW6	1.02
79	27	PCT	25	BW9	1.83
79	49	PCT	13	BW6	-0.48
79	139	PCT	16	08C	-0.15
80	26	PCT	13	08C	-0.92
80	28	PCT	14	BW6	0.92
80	48	PCT	34	BW5	-0.96
80	52	PCT	20	BW4	0.8
80	86	PCT	15	BW9	-1.48
80	150	PCT	14	08H	1.04
81	21	PCT	20	BW6	-0.83
81	27	PCT	16	BW4	-0.85
81	27	PCT	21	BW6	1.03
81	33	PCT	23	BW5	-0.99
81	33	PCT	27	BW5	0.76
81	33	PCT	18	BW9	1.86
81	49	PCT	22	BW5	0.97
81	49	PCT	18	BW6	-0.47
81	49	PCT	9	BW6	1.06
81	57	PCT	32	BW4	-0.73
81	61	PCT	15	BW4	0.62
81	87	PCT	22	BW6	0.86
81	91	PCT	14	BW4	1.15
81	91	PCT	12	BW5	1.07
81	97	PCT	18	BW4	1.13
81	97	PCT	28	BW5	0.86

Percent of Wall-Thickness Penetrations for S/G #2 – RF12

81	97	PCT	12	BW6	-0.68
82	22	PCT	13	BW4	0.86
82	26	PCT	17	BW5	-1.07
82	26	PCT	13	BW5	0.68
82	26	PCT	19	BW6	-0.93
82	26	PCT	23	BW6	0.85
82	28	PCT	17	BW4	-1
82	28	PCT	20	BW5	-1
82	28	PCT	27	BW6	0.78
82	54	PCT	15	BW4	0.88
82	64	PCT	25	BW4	0.94
82	64	PCT	21	BW6	-0.88
82	128	PCT	29	BW5	1.17
82	128	PCT	21	BW6	0.77
83	33	PCT	11	BW5	1.01
83	35	PCT	26	BW5	0.9
83	35	PCT	23	BW7	-0.93
83	35	PCT	19	BW7	1.02
83	41	PCT	16	BW3	1.01
83	57	PCT	29	BW3	-0.87
83	107	PCT	22	BW3	-0.8
83	153	PCT	14	BW1	-0.18
83	159	PCT	22	BW9	-1.72
85	87	PCT	16	BW5	0.81
85	143	PCT	19	BW3	-0.61
86	158	PCT	8	BW5	-1
88	132	PCT	14	BW3	-0.76
88	132	PCT	12	BW3	0.89
90	20	PCT	20	09H	-1.05
90	52	PCT	13	03H	-0.81
91	107	PCT	14	BW3	0.97
91	117	PCT	16	BW3	-0.98
91	147	PCT	21	09C	-1.02
92	136	PCT	15	BW4	-0.76
93	149	PCT	22	BW3	-0.76
94	30	PCT	20	09C	0.03
94	40	PCT	16	BW3	-0.83
94	40	PCT	18	BW6	1.05
94	56	PCT	12	BW3	-0.79
94	56	PCT	12	BW4	-0.91
96	42	PCT	24	BW3	-0.81
96	42	PCT	18	BW3	0.81
96	136	PCT	13	BW3	1.08
96	150	PCT	19	BW3	0.84
97	51	PCT	15	BW3	-0.72
97	85	PCT	14	BW3	0.99
97	85	PCT	15	BW4	0.92

Percent of Wall-Thickness Penetrations for S/G #2 – RF12

98	134	PCT	14	BW3	-0.79
98	134	PCT	18	BW3	0.82
100	36	PCT	12	BW5	-0.77
100	134	PCT	10	07C	-0.06
101	25	PCT	33	BW1	2.1
101	149	PCT	25	09C	-0.98
101	149	PCT	25	09C	0.83
102	78	PCT	21	BW3	-0.76
103	147	PCT	14	09C	-1.06
103	149	PCT	28	09H	-0.29
103	149	PCT	12	09H	0.94
104	122	PCT	17	BW3	-0.88
105	59	PCT	16	BW5	0.9
105	85	PCT	21	BW6	-0.77
105	143	PCT	26	09H	-1.17
105	143	PCT	17	09H	-0.03
105	143	PCT	18	BW3	1.14
105	143	PCT	18	BW6	-0.63
106	116	PCT	17	BW7	-0.97
107	51	PCT	10	BW7	-0.68
107	55	PCT	15	BW5	0.25
107	55	PCT	20	BW5	0.96
107	55	PCT	18	BW6	-0.93
109	141	PCT	14	BW5	0.95
110	48	PCT	13	BW3	0.87
110	78	PCT	18	BW6	-0.76
113	109	PCT	25	BW3	0.77
114	42	PCT	12	BW7	0.87
114	54	PCT	16	BW7	1.04
114	106	PCT	19	BW4	-0.15
114	112	PCT	16	BW3	0.87
115	109	PCT	11	BW8	0.75
117	39	PCT	21	BW5	-0.89
119	45	PCT	20	BW4	-0.94
119	67	PCT	13	09C	0.09
121	111	PCT	19	BW7	0.76
123	115	PCT	9	08C	-0.86
125	133	PCT	13	BW4	-0.76
127	125	PCT	10	06C	-0.98
130	50	PCT	8	BW5	-0.88
133	61	PCT	12	BW3	0.24
133	61	PCT	22	BW5	1.06
133	117	PCT	18	BW3	0.81
134	52	PCT	16	BW1	1.36
134	52	PCT	18	BW2	0.75
135	113	PCT	22	BW8	-0.09
137	61	PCT	14	09C	-1.1

Percent of Wall-Thickness Penetrations for S/G #2 – RF12

138	64	PCT	15	BW7	0.82
141	69	PCT	15	BW7	0.75
141	75	PCT	15	BW1	1.81
142	68	PCT	23	10C	-0.16
143	67	PCT	21	BW8	0.64
143	103	PCT	18	BW9	-1.7
144	86	PCT	18	BW1	1.66
144	88	PCT	13	BW9	1.83
144	100	PCT	9	BW9	-1.82
145	77	PCT	16	BW1	1.68
145	77	PCT	16	BW8	-0.81
145	83	PCT	16	BW1	1.75
145	85	PCT	11	BW1	-1.92
145	85	PCT	12	BW7	0.99
145	85	PCT	23	BW8	-0.93
145	85	PCT	26	BW8	0.93
145	85	PCT	20	BW9	-1.54
145	87	PCT	17	BW9	-1.82
145	89	PCT	15	BW4	-0.93
145	89	PCT	13	BW7	-0.92
145	89	PCT	24	BW8	-0.89
145	89	PCT	15	BW8	0.92
145	89	PCT	13	08C	-1.02
145	95	PCT	29	BW8	-0.87
145	95	PCT	18	BW8	0.93
145	101	PCT	13	BW3	0.95
145	103	PCT	22	BW9	1.98
146	78	PCT	28	BW9	1.82
146	80	PCT	24	BW9	1.94
146	82	PCT	27	BW1	1.78
146	84	PCT	28	09H	0.77
146	84	PCT	21	BW9	1.94
146	88	PCT	31	BW1	1.98
146	88	PCT	31	BW9	1.83
146	90	PCT	15	BW9	1.48
147	81	PCT	17	09H	0.76
147	85	PCT	13	BW1	-1.57
147	85	PCT	14	BW6	1.01
147	85	PCT	21	BW7	0.88
147	87	PCT	21	BW2	-0.73
147	87	PCT	17	BW7	-0.86
147	87	PCT	14	BW7	0.53
147	87	PCT	20	BW8	-0.86
147	87	PCT	27	BW8	0
147	91	PCT	30	BW8	-0.87
147	91	PCT	31	BW8	0.03
147	91	PCT	25	BW8	0.81