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SAGER, D.A.      Florida Power & Light Co.  
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SUBJECT: Forwards responses to GL 92-01, Rev 1, Suppl 1, "RV Structural Integrity." Util considers submittal complete response to requests in GL supplement.      O

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**FPL**

Florida Power & Light Company, P.O. Box 128, Fort Pierce, FL 34954-0128

August 16, 1995

L-95-232  
10 CFR 50.4  
10 CFR 50.54(f)

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

RE: St. Lucie Units 1 and 2  
Docket Nos. 50-335 and 50-389  
Reactor Vessel Structural Integrity  
Generic Letter 92-01 Revision 1 Supplement Response

The Florida Power and Light Company (FPL) responses to Generic Letter (GL) 92-01, Revision 1, Supplement 1, Reactor Vessel Structural Integrity, for St. Lucie Units 1 and 2 are attached.

The Nuclear Regulatory Commission (NRC) issued NRC GL 92-01 R1 S1 on May 19, 1995, to require licensees to identify, collect, and report any new data pertinent to analysis of structural integrity of their reactor pressure vessel (RPV). It also requires an assessment of the impact of this new data on RPV integrity analyses relative to the requirements of 10 CFR 50.60, 10 CFR 50.61, Appendices G and H to 10 CFR 50, and any potential impact on low temperature overpressure (LTOP) limits or pressure-temperature (P/T) limits.

The Generic Letter supplement requested licensees to provide a response to item 1 within 90 days and items 2 through 4 within six months.

- (1) Provide a description of those actions taken or planned to locate all data relevant to the determination of RPV Integrity, or an explanation of why the existing data base is considered complete as previously submitted.
- (2) Provide an assessment of any change in best-estimate chemistry based on consideration of all relevant data.
- (3) Provide a determination of the need for use of the ratio procedure in accordance with the established Position 2.1 of Regulatory Guide 1.99, Revision 2, for those licensees that use surveillance data to provide a basis for the RPV integrity evaluation.

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St. Lucie Units 1 and 2  
Docket Nos. 50-335 and 50-389  
Reactor Vessel Structural Integrity  
Generic Letter 92-01 Revision 1 Supplement Response

L-95-232

- (4) Provide a written report on any newly acquired data as specified above. In addition, include the results of any necessary revisions to the evaluation of RPV integrity in accordance with the requirements of 10 CFR 50.60, 10 CFR 50.61, Appendices G and H to 10 CFR Part 50, and any potential impact on the LTOP or P/T limits in the Technical Specifications or a certification that previously submitted evaluations remain valid. Revised evaluations and certifications should include consideration of Position 2.1 of Regulatory Guide 1.99, Revision 2, as applicable, and any new data.


This letter and the two attachments provide the FPL response to NRC requests items 1, 2, 3, and 4 for St. Lucie Units 1 and 2. FPL has previously undertaken several initiatives to ensure that all "relevant" and limiting data for the determination of reactor vessel integrity for St. Lucie Units 1 and 2 is complete as previously submitted. FPL considers the attachments of this submittal our complete response to the requests in the Generic Letter Supplement.

FPL is participating in industry efforts to address the chemical variability of its non-limiting welds to eliminate any discrepancy in the NRC and industry databases. This effort is expected to be complete and is scheduled to be submitted to the NRC by September 1, 1997.

The attached information is provided pursuant to the requirements of Section 182a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f).

Please contact us if there are any questions about this submittal.

Very truly yours,

  
D. A. Sager  
Vice President  
St. Lucie Plant

DAS/GRM

Attachments

cc: Stewart D. Ebnetter, Regional Administrator, Region II, USNRC  
Senior Resident Inspector, USNRC, St. Lucie Plant



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St. Lucie Units 1 and 2  
Docket Nos. 50-335 and 50-389  
Reactor Vessel Structural Integrity  
Generic Letter 92-01 Revision 1 Supplement Response

L-95-232

STATE OF FLORIDA            )  
  )  
COUNTY OF ST. LUCIE        )            ss.

D. A. Sager being first duly sworn, deposes and says:

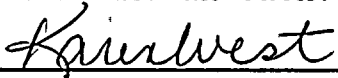
That he is Vice President, St. Lucie Plant for the Nuclear Division of Florida Power & Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information and belief, and that he is authorized to execute the document on behalf of said Licensee.

  
\_\_\_\_\_  
D. A. Sager

STATE OF FLORIDA  
COUNTY OF ST. LUCIE

The foregoing instrument was acknowledged before me this 16<sup>th</sup> day of August, 19 95 by D. A. Sager, who is personally known to me and who did take an oath.

  
\_\_\_\_\_  
KAREN WEST  
Name of Notary Public

My Commission expires 4-18-98  
Commission No. CC 359926



KAREN WEST  
MY COMMISSION # CC359926 EXPIRES  
April 18, 1998  
BONDED THRU TROY FARM INSURANCE, INC.



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St. Lucie Units 1 and 2  
Docket Nos. 50-335 and 50-389  
Reactor Vessel Structural Integrity  
Generic Letter 92-01 Revision 1 Supplement Response

L-95-232

Attachment 1

Response to

NRC GL 92-01 Revision 1 Supplement 1

For

St. Lucie Unit 1





Response to NRC GL 92-01 Supplement 1

St. Lucie Unit 1

Background

The St Lucie Unit 1 reactor pressure vessel (RPV) was designed and manufactured by Combustion Engineering Inc.(CE). The weld wires used to fabricate the beltline welds were copper (Cu) coated and one heat of wire had a B-4 modified nickel (Ni) alloy addition in the wrought wire. The remaining beltline weld wires were of low Ni content. No RPV beltline welds utilized supplemental cold Ni wire additions during fabrication. With low Ni welds fabricated without cold wire Ni additions, the Ni variability is very low and comparable to that of plate material.

Limiting RPV Materials for EOL  $RT_{PTS}$ , P/T limit curves and LTOP.

As a result of the Cu coated weld wire and modified Ni content of one of the weld heats, the St Lucie Unit 1 RPV is weld limited for 10 CFR 50.61  $RT_{PTS}$  at end of life (EOL) and for the current pressure temperature (P/T) limit curves and low temperature overpressure protection (LTOP) analysis.

The St. Lucie Unit 1 limiting beltline weld heat is 305424 with Linde 1092 flux and had previously been identified by FPL as the same heat and flux lot used to fabricate a Beaver Valley Unit 1 RPV beltline weld as well as its RPV surveillance test program. Two sources of data were known to be available to determine the best estimate weld chemistry of this weld; the original CE weld qualification<sup>1</sup> and the Beaver Valley Unit 1 surveillance program<sup>2</sup>. FPL submitted this best estimate weld chemistry in its initial response to GL 92-01<sup>3</sup>. For the St. Lucie Unit 1 RPV: the highest  $RT_{PTS}$  at end of license (EOL) is 227°F as listed in the NRC RVID<sup>4</sup> and

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<sup>1</sup> "Atypical Weld Material In Reactor Pressure Vessel Welds" CE Response to I&E Bulletin 78-12, June 8, 1979, Section VIII, Page 23, Lab # D8160.

<sup>2</sup> "Analysis of Capsule W from Duquesne Light Co. Beaver Valley Unit 1 Reactor Vessel Radiation Surveillance Program", Westinghouse Electric Corp., Nov. 1988, WCAP-12005.

<sup>3</sup> FPL Letter, L-92-189, "St. Lucie Units 1 and 2 Docket No. 50-335 and 50-389, Generic Letter 92-01, Revision 1, Response", W. H. Bohlke to NRC, July 1, 1992.

<sup>4</sup> "Reactor Vessel Integrity Database - Version 1.1", U.S. Nuclear Regulatory Commission, July 1995.



corresponds to the limiting weld heat 305424. Due to the low Ni content of the remaining weld heats, the RVID EOL RT<sub>PTS</sub> of these welds are more than 100°F below that of the limiting weld and below all of the six beltline plates. All six beltline plates have RVID EOL RT<sub>PTS</sub> values of below 200°F.

#### Activities to Identify Relevant Data and Sources

##### **Westinghouse Owners Group RPVDATA Database:**

The Westinghouse Owners Group (WOG) Materials and Chemistry Subcommittee has compiled a database, RPVDATA, of all information relevant to reactor vessel integrity that is available from Westinghouse Electric Corporation docketed GL 92-01 responses and previous EPRI databases on reactor vessel integrity. The information included in the database is from original fabrication records, reactor vessel surveillance program testing, and other supplemental testing performed by Westinghouse. FPL reviewed this database and identified other "sister" plants that contain identical reactor vessel weld heats, and that would be relevant to the determination of reactor vessel integrity for St. Lucie Unit 1. Two other plants were identified as having the identical weld heat (305424) as the St. Lucie Unit 1 limiting weld. However, all of this data had previously been incorporated into the current best estimate chemistry determination. Additional sister plants were noted for the other low Ni weld heats but no new "relevant" data would make these welds more limiting than weld heat 305424 for St. Lucie Unit 1.

##### **NRC Reactor Vessel Integrity Database (RVID):**

FPL received the initial public issue of the NRC Reactor Vessel Integrity Database<sup>5</sup> (RVID). FPL has reviewed this database to identify additional "sister" plants that contain identical reactor vessel weld heats and that would be relevant to the determination of reactor vessel integrity for St. Lucie Unit 1. One new plant was identified but the weld was out of its beltline so the licensee used a non-measured, upper bound Ni value of 1.00%, which was not considered relevant for this low Ni weld wire. No other new plants were identified that had not been previously identified by the WOG RPVDATA database.

##### **CEOG-Reactor Vessel Working Group:**

The Combustion Engineering Owners Group (CEOG) has formed the Reactor Vessel Working Group (RVWG) to address the issue of weld chemistry variability for CE fabricated reactor vessel welds. This

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<sup>5</sup> "Reactor Vessel Integrity Database - Version 1.1", U.S. Nuclear Regulatory Commission, July 1995.

task will focus on compiling data from original fabrication records, research data files, and log books compiled by CE. In addition, the task will compile data from surveillance test and supplemental test results by CE, other NSSS suppliers, and utilities. The relevant data will be used to determine a best estimate chemistry for each weld heat fabricated by CE. FPL is participating in this effort which is expected to take a minimum of 18 months to complete<sup>6</sup> plus an additional 6 months to assess the significance of the new data. The length of this schedule does not impact safety because the limiting weld heat (305424) for St. Lucie Unit 1 has already been determined using the best estimate chemistry of all the currently available and relevant data. The remaining welds are low Ni welds and would not become more limiting than heat 305424, therefore, would not be directly "pertinent" to evaluation of reactor vessel integrity for St. Lucie Unit 1.

Responses to NRC GL 92-01 Supplement 1<sup>7</sup> Questions:

NRC Request 1:

Provide a description of those actions taken or planned to locate all data relevant to the determination of RPV integrity, or an explanation of why the existing data base is considered complete as previously submitted.

FPL Response 1:

The St. Lucie Unit 1 RVP is weld limited for the determination of reactor vessel integrity. The limiting material for determining RPV Integrity is the beltline weld heat 305424 with an EOL  $RT_{PTS}$  of  $227^{\circ}F^8$ . The best estimate chemistry for this weld heat was determined from all available data, including the original CE weld qualification and a sister

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<sup>6</sup> CE Owners Group Letter CEOG-95-390, "CEOG Reactor Vessel Working Group Activities...", David Sager to U.S. Nuclear Regulatory Commission, July 27, 1995.

<sup>7</sup> Generic Letter (GL) 92-01, Revision 1, Supplement 1 "Reactor Vessel Structural Integrity", NRC to all holders of licensed nuclear power reactors; May 19, 1995.

<sup>8</sup> "Reactor Vessel Integrity Database - Version 1.1", U.S. Nuclear Regulatory Commission, July 1995.

plant surveillance weld, and is considered complete as previously submitted<sup>9</sup>.

The girth weld is heat 90136 and is the surveillance weld for St. Lucie Unit 1. This weld has an EOL  $RT_{PTS}$  of  $80^{\circ}F^{10}$  due to the low Ni content. A through section chemical analysis was performed on this surveillance test block by the CEOG. This analysis matched the Cu content previously reported and confirmed the low Ni content of the weld, however, not all "relevant" data has been used to determine the best estimate chemistry for this heat. Once all the data is used to determine the best estimate chemistry for heat 90136, as described above in the CEOG RVWG, it will not become more limiting than the current limiting weld heat for St. Lucie Unit 1. Initial upper shelf energies and  $RT_{NDT}$  values have been determined from the surveillance welds for both heats 305424 and 90136. This information has been provided in the earlier responses to GL 92-01<sup>11, 12</sup>.

The remaining beltline heats 34B009 and A8746 were used in the intermediate shell axial welds and have an EOL  $RT_{PTS}$  of  $120^{\circ}F^{13}$ . These heats have previously been studied by the CEOG to determine the best estimate chemistry and were updated in the response to GL 92-01 RAI<sup>14</sup>. No new information is expected that could make these welds more limiting than heat 305424.

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<sup>9</sup> FPL Letter, L-92-189, "St. Lucie Units 1 and 2 Docket No. 50-335 and 50-389, Generic Letter 92-01, Revision 1, Response", W. H. Bohlke to NRC, July 1, 1992.

<sup>10</sup> "Reactor Vessel Integrity Database - Version 1.1", U.S. Nuclear Regulatory Commission, July 1995.

<sup>11</sup> FPL Letter, L-92-189, "St. Lucie Units 1 and 2 Docket No. 50-335 and 50-389, Generic Letter 92-01, Revision 1, Response", W. H. Bohlke to NRC, July 1, 1992.

<sup>12</sup> FPL Letter, L-93-286, "St. Lucie Units 1 and 2 Docket No. 50-335 and 50-389, Generic Letter 92-01, Revision 1, Response to Request for Additional Information (RAI)", D. A. Sager to NRC, November 15, 1993.

<sup>13</sup> "Reactor Vessel Integrity Database - Version 1.1", U.S. Nuclear Regulatory Commission, July 1995.

<sup>14</sup> FPL Letter, L-93-286, "St. Lucie Units 1 and 2 Docket No. 50-335 and 50-389, Generic Letter 92-01, Revision 1, Response to Request for Additional Information (RAI)", D. A. Sager to NRC, November 15, 1993.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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FPL is participating in the CEOG RVWG effort to address the issue of weld chemistry variability for CE fabricated reactor vessel welds. This task as described above will compile all relevant data to determine a best estimate chemistry for each weld heat fabricated by CE. The scheduled completion of this effort is a minimum of 18 months plus an additional 6 months (September 1, 1997) to assess the significance of the new data. The length of this schedule does not impact safety because the limiting weld heat (305424) for St. Lucie Unit 1 has already been determined using the best estimate chemistry of all the currently available relevant data. The remaining welds are low Ni welds and would not become more limiting than heat 305424. Therefore, the remaining welds would not be directly "pertinent" to evaluation of reactor vessel integrity for St. Lucie Unit 1.

NRC Request 2:

Provide an assessment of any change in best-estimate chemistry based on consideration of all relevant data.

FPL Response 2:

The limiting material for determining RPV integrity for St. Lucie Unit 1 is the beltline weld 305424. A review of the NRC RVID and WOG RPV DATA databases show no additional data that has not already been used in determining the best estimate chemistry being used for St. Lucie Unit 1. Since no change is expected to the best estimate chemistry for the St. Lucie Unit 1 limiting reactor vessel weld material, there will be no impact relative to reactor vessel structural integrity. Should any new best estimate chemistry is identified for the St. Lucie Unit 1 beltline materials, it will be reported by September 1, 1997, after the completion of the CEOG RVWG task described above.

NRC Request 3:

Provide a determination of the need for use of the ratio procedure in accordance with the established Position 2.1 of Regulatory Guide 1.99, Revision 2, for those licensees that use surveillance data to provide a basis for the RPV integrity evaluation.

FPL Response 3:

The determination of vessel integrity for the St. Lucie Unit 1 reactor vessel materials has been made using the best



estimate chemistry without the use of surveillance data, therefore the ratio procedure is not used.

NRC Request 4:

Submit a written report providing any newly acquired data as specified above and (1) the results of any necessary revisions to the evaluation of RPV integrity in accordance with the requirements of 10 CFR 50.60, 10 CFR 50.61, Appendices G and H to 10 CFR Part 50, and any potential impact on the LTOP or P/T limits in the Technical Specifications or (2) a certification that previously submitted evaluations remain valid. Revised evaluations and certifications should include consideration of Position 2.1 of Regulatory Guide 1.99, Revision 2, as applicable, and any new data.

FPL Response 4:

The previously submitted LTOP analysis and P/T limits curves in the Technical Specifications were based on the St. Lucie Unit 1 limiting weld 305424 which had the highest 1/4T and 3/4T adjusted  $RT_{NDT}$  for the period of applicability. Since no new information is currently available for the limiting weld materials this analysis remains valid. The upper shelf energy (USE) values for the weld materials reported for the St. Lucie Unit 1 reactor vessel are all in accordance with the 10 CFR 50 Appendix G limit of 50 ft-lbs at EOL as previously submitted in the responses to the GL 92-01<sup>15,16</sup> and are based on actual surveillance data or conservative generic estimates.

**Conclusion:**

The complete response to the NRC Generic Letter 92-01 supplement 1 questions 1 through 4 are provided above. This GL is considered complete for St. Lucie Unit 1 since the limiting material (weld heat 305424) best estimate chemistry was determined from all known industry available data for that heat. However, FPL is participating in the CEOG RVWG task to determine best estimate

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<sup>15</sup> FPL Letter, L-92-189, "St. Lucie Units 1 and 2 Docket No. 50-335 and 50-389, Generic Letter 92-01, Revision 1, Response", W. H. Bohlke to NRC, July 1, 1992.

<sup>16</sup> FPL Letter, L-93-286, "St. Lucie Units 1 and 2 Docket No. 50-335 and 50-389, Generic Letter 92-01, Revision 1, Response to Request for Additional Information (RAI)", D. A. Sager to NRC, November 15, 1993.



chemistry values for all CE weld materials. Any changes in best estimate chemistry for the non-limiting reactor vessel beltline welds will be reported by September 1, 1997. The schedule for determining changes to the best estimate weld chemistry for the non-limiting welds (weld heats 90136 and 34B009/A8746) should have no effect on determination of reactor vessel integrity due to the low Ni content and since they are greater than 100°F below the EOL  $RT_{PTS}^{17}$  of the limiting weld heat 305424.

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<sup>17</sup> "Reactor Vessel Integrity Database - Version 1.1", U.S. Nuclear Regulatory Commission, July 1995.

**Responses to NRC GL 92-01 Supplement 1<sup>5</sup> Questions:****NRC Request 1:**

Provide a description of those actions taken or planned to locate all data relevant to the determination of RPV Integrity, or an explanation of why the existing data base is considered complete as previously submitted.

**FPL Response 1:**

The St. Lucie Unit 2 Reactor Vessel is a low Cu low Ni weld fabricated vessel. The limiting material for determining RPV Integrity is the beltline plate material. A review of the NRC RVID and WOG RPV DATA databases show no identical match of heats for the limiting plate materials, therefore, no new data is expected. The original data submitted in the responses to GL 92-01<sup>6,7</sup> for this limiting plate material was based on actual CMTR data and complete material property tests. Therefore, the data is considered complete as previously submitted. The most limiting weld material has an EOL RT<sub>PTS</sub> of 47°F which is greater than 200°F below the 10 CFR 50.61 screening criteria and greater than 100°F below the limiting plate<sup>8</sup>. The weld material is therefore not pertinent in determinations of reactor vessel integrity. Additionally, the three sister plants identified as having identical weld heats as St. Lucie Unit 2 are not limited by these weld heats but are all plate limited and have EOL RT<sub>PTS</sub> values over 100°F below the 10 CFR 50.61 screening criteria.

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<sup>5</sup> Generic Letter (GL) 92-01, Revision 1, Supplement 1 "Reactor Vessel Structural Integrity", NRC to all holders of licensed nuclear power reactors; May 19, 1995.

<sup>6</sup> FPL Letter, L-92-189, "St. Lucie Units 1 and 2 Docket No. 50-335 and 50-389, Generic Letter 92-01, Revision 1, Response", W. H. Bohlke to NRC, July 1, 1992.

<sup>7</sup> FPL Letter, L-93-286, "St. Lucie Units 1 and 2 Docket No. 50-335 and 50-389, Generic Letter 92-01, Revision 1, Response to Request for Additional Information (RAI)", D. A. Sager to NRC, November 15, 1993.

<sup>8</sup> "Reactor Vessel Integrity Database - Version 1.1", U.S. Nuclear Regulatory Commission, July 1995.

St. Lucie Units 1 and 2 L-95-232  
Docket Nos. 50-335 and 50-389  
Reactor Vessel Structural Integrity  
Generic Letter 92-01 Revision 1 Supplement Response

Attachment 2

Response to

NRC GL 92-01 Revision 1 Supplement 1

For

St. Lucie Unit 2



Response to NRC GL 92-01 Supplement 1

St. Lucie Unit 2

**Background**

The St Lucie Unit 2 reactor pressure vessel (RPV) was designed and manufactured by Combustion Engineering Inc.(CE). The RPV was fabricated after the effects of copper (Cu) on irradiation embrittlement were known. The weld wires used to fabricate the beltline welds were low in Cu content and were not Cu coated. The weld wires were also low in Nickel (Ni) content and the welds did not utilize supplemental cold Ni wire additions during fabrication. With low Cu and low Ni welds fabricated without cold wire Ni additions, the chemical variability is very low and comparable to that of plate material.

**Limiting RPV Materials for EOL  $RT_{PTS}$ , P/T limit curves and LTOP.**

As a result of the low Cu and low Ni welds, the St Lucie Unit 2 RPV is plate limited for 10 CFR 50.61  $RT_{PTS}$  at end of life (EOL) and is plate controlling for the current pressure temperature (P/T) limit curves and low temperature overpressure protection (LTOP) analysis. For the St. Lucie Unit 2 RPV: the highest  $RT_{PTS}$  at end of license (EOL) is 163°F (more than 100°F below the screening criteria), for plate material; the highest  $RT_{PTS}$  at EOL is 47°F for beltline weld materials<sup>1</sup>. With low EOL  $RT_{PTS}$  values and plate limiting critical material, no additional information on our non-Cu coated non-limiting beltline welds will be "relevant" for determining the structural integrity of the reactor vessel since it is controlled by the plate properties.

Activities to Identify Relevant Data and Sources

**Westinghouse Owners Group RPVDATA Database:**

The Westinghouse Owners Group (WOG) Materials and Chemistry Subcommittee has compiled a database, RPVDATA, of all information relevant to reactor vessel integrity that is available from Westinghouse Electric Corporation docketed NRC Generic Letter (GL) 92-01 responses and previous EPRI databases on reactor vessel integrity. The information included in the database is from original fabrication records, reactor vessel surveillance program testing, and other supplemental testing performed by Westinghouse. FPL has reviewed this database to determine other "sister" plants that contain identical reactor vessel weld heats and that would be

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<sup>1</sup> "Reactor Vessel Integrity Database - Version 1.1", U.S. Nuclear Regulatory Commission, July 1995.

relevant to the determination of reactor vessel integrity for St. Lucie Unit 2. Three plants were identified as having identical weld heats but no plants were identified as having identical plate heats.

**NRC Reactor Vessel Integrity Database (RVID):**

FPL received the initial public issue of the NRC Reactor Vessel Integrity Database<sup>2</sup> (RVID). FPL has reviewed this database to identify additional "sister" plants that contain identical reactor vessel weld heats and that would be relevant to the determination of reactor vessel integrity for St. Lucie Unit 2. No plants were identified other than the three previously identified by the WOG RPVDATA database.

**CEOG-Reactor Vessel Working Group:**

The Combustion Engineering Owners Group (CEOG) has formed the Reactor Vessel Working Group (RVWG) to address the issue of weld chemistry variability for CE fabricated reactor vessel welds. This task will focus on compiling data from original fabrication records, research data files, and log books compiled by CE. In addition, the task will compile data from surveillance test, supplemental test results by CE, other NSSS suppliers, and utilities. The relevant data will be used to determine a best estimate chemistry for each weld heat fabricated by CE. FPL is participating in this effort which is expected to take a minimum of 18 months to complete<sup>3</sup> plus an additional 6 months to assess the significance of any new data. The length of this schedule does not impact safety because the weld materials are not limiting and are not directly "pertinent" to evaluation of reactor vessel integrity. In fact, the St. Lucie Unit 2 reactor vessel beltline weld materials will remain greater than 200°F below the PTS screening limit of 270°F as documented in the RVID<sup>4</sup>.

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<sup>2</sup> "Reactor Vessel Integrity Database - Version 1.1", U.S. Nuclear Regulatory Commission, July 1995.

<sup>3</sup> CE Owners Group Letter CEOG-95-390, "CEOG Reactor Vessel Working Group Activities...", David Sager to U.S. Nuclear Regulatory Commission, July 27, 1995.

<sup>4</sup> "Reactor Vessel Integrity Database - Version 1.1", U.S. Nuclear Regulatory Commission, July 1995.



NRC Request 2:

Provide an assessment of any change in best-estimate chemistry based on consideration of all relevant data.

FPL Response 2:

The limiting material for determining RPV integrity is the beltline plate material. A review of the NRC RVID and WOG RPV DATA databases show no identical match of heats for the limiting plate materials, therefore, no new data is expected. Since there is no change to the best estimate chemistry for the St. Lucie Unit 2 limiting reactor vessel plate material, there will be no impact relative to reactor vessel structural integrity.

NRC Request 3:

Provide a determination of the need for use of the ratio procedure in accordance with the established Position 2.1 of Regulatory Guide 1.99, Revision 2, for those licensees that use surveillance data to provide a basis for the RPV integrity evaluation.

FPL Response 3:

The determination of vessel integrity for the St. Lucie Unit 2 reactor vessel materials has been made using the best estimate chemistry without the use of surveillance data. Only one surveillance capsule has been tested from this unit and therefore position 2 and specifically position 2.1 is not applicable for the St. Lucie Unit 2.

NRC Request 4:

Submit a written report providing any newly acquired data as specified above and (1) the results of any necessary revisions to the evaluation of RPV integrity in accordance with the requirements of 10 CFR 50.60, 10 CFR 50.61, Appendices G and H to 10 CFR Part 50, and any potential impact on the LTOP or P/T limits in the Technical Specifications or (2) a certification that previously submitted evaluations remain valid. Revised evaluations and certifications should include consideration of Position 2.1 of Regulatory Guide 1.99, Revision 2, as applicable, and any new data.

FPL Response 4:

The previously submitted LTOP analysis and P/T limits curves in the Technical Specifications were based on the St. Lucie Unit 2 limiting intermediate shell plate M-605-1 (A-8490-2). This plate had the highest 1/4T and 3/4T adjusted  $RT_{NDT}$  for the period of applicability. Since no new information is available for the limiting plate materials, the previously submitted analysis remains valid. The upper shelf energy values for the weld materials reported for the St. Lucie Unit 2 reactor vessel are all in accordance with the 10 CFR 50 Appendix G limit of 50 ft-lbs at EOL as previously submitted in the response to the GL 92-01 and are identical or conservatively lower than those values reported by the three sister plants in the RVID.

Conclusion:

The complete response to NRC Generic Letter 92-01, Revision 1, Supplement 1<sup>9</sup>, questions 1 through 4 are provided above. The response to this Generic Letter is considered complete for St. Lucie Unit 2. Since FPL is participating in the CEOG RVWG task to determine best estimate chemistry values for weld materials, any changes in best estimate chemistry for the non-limiting reactor vessel beltline welds will be reported by September 1, 1997. The schedule for determining changes to the best estimate weld chemistry will have no effect on determination of reactor vessel integrity. These welds are not limiting materials, are both low in Cu and Ni, and are greater than 200°F below the 10 CFR 50.61 screening criteria at EOL.

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<sup>9</sup> Generic Letter (GL) 92-01, Revision 1, Supplement 1 "Reactor Vessel Structural Integrity," NRC to all holders of licensed nuclear power reactors; May 19, 1995.