



May 18, 2012

L-2012-230
10 CFR 50.90

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

Re: St. Lucie Plant Unit 2
Docket No. 50-389
Renewed Facility Operating License No. NPF-16

Supplemental Response to NRC Mechanical and Civil Engineering Branch
(EMCB) Regarding Extended Power Uprate License Amendment Request

References:

- (1) R. L. Anderson (FPL) to U.S. Nuclear Regulatory Commission (L-2011-021), "License Amendment Request for Extended Power Uprate," February 25, 2011, Accession No. ML110730116.
- (2) Email from T. Orf (NRC) to C. Wasik (FPL), "St. Lucie 2 EPU draft RAIs – Mechanical & Civil Engineering Branch (EMCB)," January 13, 2012.
- (3) R. L. Anderson (FPL) to U.S. Nuclear Regulatory Commission (L-2012-059), "Response to NRC Mechanical and Civil Engineering Branch (EMCB) Request for Additional Information Regarding Extended Power Uprate License Amendment Request," February 29, 2012, Accession No. ML12065A148.
- (4) R. L. Anderson (FPL) to U.S. Nuclear Regulatory Commission (L-2012-177), "Supplemental Response to NRC Mechanical and Civil Engineering Branch (EMCB) Regarding Extended Power Uprate License Amendment Request," April 19, 2012, Accession No. ML12114A225.

By letter L-2011-021 dated February 25, 2011 [Reference 1], Florida Power & Light Company (FPL) requested to amend Renewed Facility Operating License No. NPF-16 and revise the St. Lucie Unit 2 Technical Specifications (TS). The proposed amendment will increase the unit's licensed core thermal power level from 2700 megawatts thermal (MWt) to 3020 MWt and revise the Renewed Facility Operating License and TS to support operation at this increased core thermal power level. This represents an approximate increase of 11.85% and is therefore considered an Extended Power Uprate (EPU).

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By email from the NRC Project Manager dated January 13, 2012 [Reference 2], additional information was requested by the NRC staff in the Mechanical and Civil Engineering Branch (EMCB) to support their review of the EPU License Amendment Request (LAR). The request for additional information (RAI) identified 47 questions. By letter L-2012-059 dated February 29, 2012 [Reference 3], FPL provided the requested information. In that letter, FPL also committed to provide a supplemental response to RAI EMCB-1 in a separate submittal.

FPL's first supplemental response to RAI EMCB-1 was contained in letter L-2012-177 [Reference 4]. In that response, FPL indicated that an additional supplemental response would be provided to address the remaining open items associated with RAI EMCB-1. The attachment to this letter provides FPL's final response to RAI EMCB-1.

This submittal does not alter the significant hazards consideration or environmental assessment previously submitted by FPL letter L-2011-021 [Reference 1].

This submittal contains no new commitments and no revisions to existing commitments.

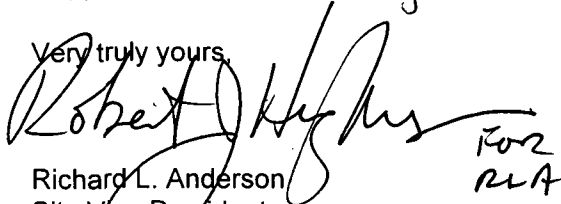
In accordance with 10 CFR 50.91(b)(1), a copy of this letter is being forwarded to the designated State of Florida official.

Should you have any questions regarding this submittal, please contact Mr. Jack Hoffman, St. Lucie Extended Power Uprate LAR Project Manager, at 772-467-7493.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed on 18-May-2012

Very truly yours,


Richard L. Anderson
Site Vice President
St. Lucie Plant

Attachment (1)

cc: Mr. William Passetti, Florida Department of Health

**Supplemental Response to NRC Mechanical and Civil Engineering
Branch (EMCB) Request for Additional Information**

The following information is provided by Florida Power & Light (FPL) in response to the U. S. Nuclear Regulatory Commission's (NRC) Request for Additional Information (RAI). This information was requested to support the Extended Power Uprate (EPU) License Amendment Request (LAR) for St. Lucie Nuclear Plant Unit 2 that was submitted to the NRC by FPL via letter (L-2011-021) dated February 25, 2011, Accession Number ML110730116.

In an email dated January 13, 2012 from NRC (Tracy Orf) to FPL (Chris Wasik), Subject: St. Lucie 2 EPU draft RAIs - Mechanical & Civil Engineering Branch (EMCB), the NRC requested additional information regarding FPL's request to implement the EPU. The RAI consisted of forty-seven (47) questions from the NRC's Mechanical and Civil Engineering Branch (EMCB). By letter L-2012-059 dated February 29, 2012, Accession No. ML12065A148, FPL provided the requested information. In that letter, FPL also committed to provide a supplemental response to RAI EMCB-1 in a separate submittal. FPL's first supplemental response to RAI EMCB-1 was contained in letter L-2012-177 dated April 19, 2012, Accession No. ML12114A225. In that response, FPL indicated that an additional response would be provided to address the remaining open items associated with RAI EMCB-1. This attachment provides FPL's final supplemental response to RAI EMCB-1.

EMCB-1

The staff requests that the licensee provide assurance that all structural modifications and/or additions have been identified and designed and that all structural evaluations and required design calculations to demonstrate that all systems, structures and components (SSCs) credited to and/or affected by the proposed extended power uprate (EPU) have been completed and controlled documentation exists which finds said SSCs structurally adequate to perform their intended design functions under EPU conditions.

Supplemental Response:

As described in letter L-2012-059, FPL advised the NRC that with the exception of the EPU modifications listed below, applicable safety related and/or seismic piping and associated structural evaluations and design calculations for affected systems, structures and components (SSCs) credited to and/or affected by the proposed EPU have been completed. The following EPU modifications were identified as not being complete at that time:

- Main Steam, Feedwater, and Condensate Pipe Support Modification,
- Chemical and Volume Control System (CVCS) Vent Modification,
- Control Room Air Conditioning Margin Improvement.

FPL letter L-2012-177 provided the completed design details for the first two EPU modifications listed above.

Piping stress summary data for the remaining EPU modification, the Control Room Air Conditioning Margin Improvement, is provided in Table 1. A list of the associated pipe support modifications is provided in Table 2.

This response also confirms that the attachment steel calculations associated with the Main Steam, Feedwater, and Condensate Pipe Support Modification located in the Turbine Building are complete.

This submittal completes the FPL response to RAI EMCB-1.

Table 1

| Component Cooling Water (CCW) Supply and Return Lines Maximum Stress Summary for EPU Conditions | | | | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------|------------------------------|----------------------------------|-------------------------------|-------------------------------|
| Piping Analysis Description | Loading Condition (Note 1) | Existing Stress (psi) | EPU Stress (psi) (Note 2) | Allowable Stress (psi) | Design Margin (Note 3) |
| CCW Supply Line Piping | Equation 8 | 2,263 | 2,260 | 15,000 | 0.151 |
| | Equation 9U | 4,120 | 3,501 | 18,000 | 0.194 |
| | Equation 9F | 4,358 | 3,827 | 36,000 | 0.106 |
| | Equation 10 | 4,963 | 14,206 | 22,500 | 0.631 |
| | Equation 11 | N/A | 14,917 | 37,500 | 0.398 |
| CCW Return Line Piping | Equation 8 | 2,218 | 2,261 | 15,000 | 0.151 |
| | Equation 9U | 8,678 | 2,704 | 18,000 | 0.150 |
| | Equation 9F | 11,198 | 2,862 | 36,000 | 0.080 |
| | Equation 10 | 10,438 | 27,451 | 22,500 | 1.220 |
| | Equation 11 | N/A | 28,993 | 37,500 | 0.773 |

- Notes:
1. The pipe stress analysis equation numbers listed correspond to ASME Section III, Subsection NC-3652 equation numbers.
 2. In accordance with the ASME code, the overstress condition for Equation 10 is acceptable as long as all nodes pass Equation 11.
 3. Design margin is the ratio of the EPU stress divided by the allowable stress.

Table 2

| Component Cooling Water (CCW) Supply and Return Lines Pipe Support Summary for EPU Conditions | | | |
|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Piping System | Pipe Support Mark Number | Support Attribute of Concern | Resolution |
| CCW Supply Line Piping | CC-2051-5 CC-2051-8 CC-2051-19 CC-2051-28 CC-2051-31 | No modification required | N/A |
| | CC-2051-36 | Located on section of pipe which is being deleted | Support deleted |
| | CC-2051-43 CC-2051-46 CC-2051-74 CC-2051-89 CC-2051-201 | No modification required | N/A |
| | CC-2051-541 | Located on portion of pipe which is being deleted | Support deleted |
| | CC-2162-8046 | Anchor | N/A |
| | CC-2164-8048 | Integral welded attachment fails | Increase stanchion size |
| | CCW Return Line Piping | CC-2052-5 CC-2052-8 CC-2052-17 CC-2052-20 CC-2052-38 CC-2052-41 CC-2052-61 CC-2052-92 CC-2052-95 CC-2052-631 | No modification required |
| CC-2052-6442 | | Located on portion of pipe which is being deleted | Support deleted |
| CC-2163-8050 | | Anchor | N/A |
| CC-2165-8041 | | Integral welded attachment fails | Increase stanchion size |