Florida Power & Light Company, 6501 S. Ocean Drive, Jensen Beach, FL 34957

March 31, 2012

L-2012-141
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

Response to NRC Steam Generator Tube Integrity and Chemical Engineering Branch Request for Additional Information 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 1 EPU - RAI SG Tube Integrity and Chem. Engineering Branch (CSGB)," March 26, 2012.

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).

By email from the NRC Project Manager dated March 26, 2012 [Reference 2], additional information related to spent fuel pool Metamic™ inserts was requested by the NRC staff in the Steam Generator Tube Integrity and Chemical Engineering Branch (CSGB) to support their review of the St. Lucie Unit 1 EPU License Amendment Request (LAR). The request for additional information (RAI) identified one question. Subsequent discussion with the NRC Project Manager indicated the question is also applicable to St. Lucie Unit 2. The response to this RAI is provided in the attachment to this letter.

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

A D 1
NRR

This submittal contains no new 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. Christopher Wasik, St. Lucie Extended Power Uprate LAR Project Manager, at 772-467-7138.

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

Executed on 31-March-2012

Very truly yours,

Richard L. Anderson
Site Vice President
St. Lucie Plant

Attachment

cc: Mr. William Passetti, Florida Department of Health

Response to NRC Steam Generator Tube Integrity & Chemical Engineering Branch Request for Additional Information

The following information is provided by Florida Power & Light Company (FPL) in response to the U. S. Nuclear Regulatory Commission's (NRC) Request for Additional Information (RAI). This information was requested to support the review of the Extended Power Uprate (EPU) License Amendment Request (LAR) for St. Lucie 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 March 26, 2012 from T. Orf (NRC) to C. Wasik (FPL), Subject: St. Lucie 1 EPU - RAI SG Tube Integrity and Chem. Engineering Branch (CSGB), the NRC staff requested additional information regarding FPL's request to implement the St. Lucie Unit 1 EPU. The RAI consisted of one question from the NRC's Steam Generator Tube Integrity & Chemical Engineering Branch (CSGB). Subsequent discussion with the NRC Project Manager indicated the question is also applicable to St. Lucie Unit 2. FPL designated this question as RAI CSGB-12. This question and the FPL response are documented below.

CSGB-12

The licensee references Holtec International report HI-2043215, "Sourcebook for Metamic Performance Assessment," Revision 3, and EPRI report 1003137, "Qualification of METAMIC for Spent-Fuel Storage Application," as the basis for performing the visual inspection and physical measurement elements of the Metamic™ Surveillance Program. The staff has previously reviewed a topical report by Holtec International, report HI-2022871, "Use of Metamic in Spent Fuel Pool Applications," for plant specific use by Arkansas Nuclear One Units 1 and 2 (ANO) with limitations of use (ML031360755).

Page 17 of Holtec Report HI-2043215, referenced by the St. Lucie Unit 1, references Holtec report HI-2022871 concerning the results of gamma radiation testing to determine the resistance of Metamic™ to radiation damage. In the previous safety evaluation of Holtec report HI-2022871 for ANO Units 1 and 2, the staff found that there was not enough data available to indicate that the corrosion and radiation tests were comparable between coupons of 31 weight percent B_4C and 40 weight percent B_4C; therefore, the staff limited the inserts to be used to a weight percent of 31 weight percent B_4C. Holtec report HI-2043215 includes additional testing on the corrosion resistance of Metamic™ with 40 weight percent B_4C; however, the report listed no additional testing for radiation resistance at 40 weight percent B_4C. Pending further testing or justification, the staff finds that a B_4C content of 31 weight percent remains the upper limit for inserts to be used in a SFP application.

Concerning the proposed EPU, the staff is unclear as to what the maximum allowed B_4C weight percent will be for the inserts proposed for use in the St. Lucie Unit 1 SFP.

Please provide the maximum B_4C weight percent of the Metamic™ inserts to be used in the SFP.

Response

The St. Lucie Unit 2 Metamic™ inserts are described in the response to NRC request for additional information (FPL letter L-2011-524, dated December 27, 2011; ML11364A043). This letter includes a description of the Metamic™ inserts and notes that a minimum B_4C content of 24.5 weight percent is specified. This letter also discusses the sample coupons to be used in the surveillance program and that "The coupons are identical in composition and manufacturing process as the Metamic™ inserts." FPL has received the 20 Metamic™ coupons to be installed in the spent fuel pools (10 per unit). The Certificate of Compliance provided with the coupons documents the B_4C content for each of the 20 coupons. The B_4C content of the St. Lucie coupons ranges from a low of 25.07 weight percent to a high of 25.98 weight percent. None of the St. Lucie coupons have a B_4C content of 31 weight percent or greater.