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

FPL

February 29, 2012

L-2012-082
10 CFR 50.90

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

Re: St. Lucie Plant Unit 1
Docket No. 50-335
Renewed Facility Operating License No. DPR-67

Response to NRC Reactor Systems Branch (SRXB) Request for Additional Information Regarding Extended Power Uprate License Amendment Request

References:

(1) R. L. Anderson (FPL) to U.S. Nuclear Regulatory Commission (L-2010-259), "License Amendment Request (LAR) for Extended Power Uprate," November 22, 2010, Accession No. ML103560419.

(2) NRC Reactor Systems Branch (SRXB) Audit Conducted at Westinghouse Facilities in Rockville, MD, February 14 and 15, 2012.

By letter L-2010-259 dated November 22, 2010 [Reference 1], Florida Power & Light Company (FPL) requested to amend Renewed Facility Operating License No. DPR-67 and revise the St. Lucie Unit 1 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).

During the course of the NRC SRXB audit conducted at the Westinghouse facilities in Rockville, MD on February 14 and 15, 2012 [Reference 2], the NRC staff requested additional information to support the review of the safety analyses used in the St. Lucie Unit 1 EPU LAR. Additional information related to the limiting steam generator tube rupture (SGTR) mass release analysis was requested. The FPL response to this request is included in Attachment 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.

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NRR

This submittal does not alter the significant hazards consideration or environmental assessment previously submitted by FPL letter L-2010-259 [Reference 1].

Should you have any questions regarding this submittal, please contact Mr. Christopher Wasik, St. Lucie Extended Power Uprate License Amendment Request (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 29-February-2012

Very truly yours,

Richard L. Anderson
Site Vice President
St. Lucie Plant

Attachment

cc: Mr. William Passetti, Florida Department of Health

Response to Request For Additional Information Identified
During Reactor Systems Branch Audit

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 Unit 1 submitted to the NRC by FPL via letter L-2010-259 dated November 22, 2010, Accession Number ML103560419.

The NRC Reactor Systems Branch (SRXB) conducted an audit of the St. Lucie Unit 1 and 2 EPU safety analyses calculations at the Westinghouse facility in Rockville, Maryland February 14 and 15, 2012. During the audit, the NRC identified that additional information would be required regarding the St. Lucie Unit 1 steam generator tube rupture event. The FPL response to the requested information is provided below.

Steam Generator Tube Rupture (SGTR) Mass Release Event

Discuss the break flow rate from the reactor coolant system (RCS) primary side to the affected steam generator (SG) at 2700 seconds following the SGTR event initiation. Discuss the systems for the operator actions to mitigate for consequences of the SGTR during the period from 2700 seconds to the break flow termination. If non-safety grade systems are credited by the operator in SG overfill prevention after 2700 seconds, justify the use of the non-safety systems.

Response

The limiting EPU SGTR event relative to steam release for offsite dose, described in St. Lucie Unit 1 EPU LAR Attachment 5, LR Section 2.8.5.6.2, Steam Generator Tube Rupture, was analyzed to maximize the steam releases without crediting operator actions described in the St. Lucie Unit 1 Emergency Operating Procedure 1-EOP-04, "Steam Generator Tube Rupture (SGTR)."

At the end point of the EPU SGTR steam release event of 45 minutes, the SG MTO is approximately 6458 ft^3. The primary to secondary ruptured tube leakage rate at the end of the 45 minute transient is approximately 26 lbm/sec, or 0.56 ft^3/sec. If the operator takes no actions, it would require approximately 3 hours to lose the available margin to overfill.

The operator actions that must be accomplished in the event of a SGTR are provided in 1-EOP-04. One of the goals of the procedure is to maintain control over the isolated (or affected) SG. Specific operator actions are provided in 1-EOP-04 to maintain the isolated SG level less than 90% narrow range indication. This can be accomplished by any of the following methods (listed in the order presented in the EOP):

- Lowering reactor coolant system (RCS) pressure to below the isolated steam generator pressure, thus enabling back flow. 1-EOP-04 identifies this as the preferred method to control isolated SG level. The back flow method can be accomplished using safety-related equipment (use of charging pumps and auxiliary spray valves to depressurize the RCS).
- Blowing down the isolated SG to the monitor storage tanks.

- Steaming the isolated SG to the condenser.
- Steaming the isolated SG to the atmosphere via the atmospheric dump valves (ADVs). 1-EOP-04 notes that this is the least preferred method to control isolated SG level. A caution note is also provided in the EOP stating "Steaming the isolated SG to atmosphere should only be performed as a last resort."

The St. Lucie Unit 1 SGTR procedure 1-EOP-04 details operator actions which will maintain steam generator level within the control band. The additional timeframe of approximately 3 hours (following the initial 45 minutes) is sufficient for the operators to initiate mitigative actions prior to the loss of SG margin to overfill. Therefore, the steam releases provided in the EPU SGTR analysis will continue to be bounding.