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

FPL

April 19, 2012

L-2012-176
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 Accident Dose 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) R. L. Anderson (FPL) to U.S. Nuclear Regulatory Commission (L-2011-467), "Response to NRC Accident Dose Branch Request for Additional Information Regarding Extended Power Uprate License Amendment Request," November 14, 2011, Accession No. ML11320A286.

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 letter L-2011-467 dated November 14, 2011 [Reference 2], FPL responded to a Request for Additional Information (RAI) from NRC staff in the Accident Dose Branch (AADB). The FPL response addressed RAI AADB-12 and provided revised accident dose calculations for the St. Lucie Unit 2 EPU.

During a phone call between FPL and the NRC on March 23, 2012, additional information related to accident dose calculations was requested by NRC staff in the Accident Dose Branch to support their review of the EPU LAR. The request included four questions applicable to St. Lucie Unit 2. FPL has designated these RAIs as

A001
NRR

AADB-13 through AADB-16. The responses to these RAIs are provided in the attachment to this letter.

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

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.

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 19-April-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 Accident Dose Branch Request for Additional Information

By letter L-2011-021, dated February 25, 2011, Accession Number ML110730116, Florida Power & Light (FPL) requested to amend the St. Lucie Unit 2 Renewed Facility Operating License to increase the licensed core thermal power level from 2700 megawatts thermal (MWt) to 3020 MWt, which constitutes an extended power uprate (EPU).

During a phone call between FPL and the NRC on March 23, 2012, additional information related to accident dose calculations was requested by NRC staff in the Accident Dose Branch (AADB) to support their review of the EPU LAR. The request included four questions applicable to St. Lucie Unit 2. FPL has designated these RAIs as AADB-13 through AADB-16. The questions, paraphrased by FPL, and responses are provided below.

### AADB-13

**Why was L-11 used as the intake point for the waste gas decay tank rupture event, versus using the control room (CR) outside air intake (OAI) midpoint like was used for other analyzed events?**

### Response

A RADTRAD sensitivity run with in-leakage into the midpoint was made, with only a small impact on the CR immersion dose (0.19085 increased to 0.21567 REM TEDE). This result is well below the 5 REM TEDE dose limit. The site boundary dose for this case decreased due to increased nuclide retention in the CR. NRC Branch Technical Position 11-5 provides the acceptance criteria for this event in the form of a dose limit at the exclusion area boundary. Therefore, the sensitivity results confirm that a conservative set of assumptions was used to generate the site boundary dose, and also confirm that a conservative basis was established for the proposed Technical Specification (TS) limit on waste gas decay tank (WGDT) radioactive material inventory.

### AADB-14

**For the WGDT rupture event, why were both CROAIs assumed to be in operation, versus the assumption in other events where only the most limiting CROAI was assumed to be in operation?**

### Response

Both the north and south CROAIs are open during normal system operation. Unlike the loss of coolant accident (LOCA) event for each unit, the EPU alternative source term (AST) WGDT analysis utilized a conservative composite set of inputs from among a number of Unit 1 and Unit 2 potential inputs to form a single, common, bounding dose analysis. Due to the possibility of unspecified other release points from the reactor auxiliary building (RAB), the LOCA dose analyst did not utilize the Regulatory Guide (RG) 1.194 dilution credit. In contrast, the EPU AST WGDT analysis was constructed using a composite, conservative set of inputs from both Unit 1

and Unit 2 potential inputs. Therefore, the additional conservatism of neglecting the dilution credit was not required to ensure that the EPU AST WGDT analysis produced, overall, a conservative result.

**AADB-15**

**As provided in letter L-2011-404, Page 13, clarify table Note 1 on wind sector locations of intakes. This is potentially inconsistent with the detailed selection process, whereby the Unit 2 waste gas decay tank (WGDT) candidate X/Q's were adjusted (before comparison to Unit 1 for selection of most limiting case) per the allowance of RG 1.194, Section 3.3.2.2 for release receptor pairs that are NOT in the same sector.**

**Response**

For events analyzed in EPU LAR Attachment 5, Section 2.9.2, only releases from the plant vent stack accounted for the dilution flow credit for the intakes being in separate wind direction windows per section 3.3.2.2 of RG 1.194. It is conservative not to credit the dilution flow credit for these analyses even if the intakes are in separate wind directions for other release points.

The WGDT dose analysis is included in LAR Attachment 5, Section 2.9.3, as modified by FPL letter L-2011-467, dated November 14, 2011, Accession No. ML11320A286. For the WGDT dose analysis, in cases where the intakes are in separate wind direction windows, the dilution flow credit was applied.

**AADB-16**

**Verify that the L-7A and L-7B louvers listed on Page 8 of the attachment to Unit 2 AADB RAI response letter L-2011-404 are Unit 2 components.**

**Response**

The L-7A and L-7B louvers are Unit 2 components. The unit designation was inadvertently ommitted in the RAI response. The correct designations for the louvers are 2L-7A and 2L-7B.