



November 23, 2011

L-2011-495
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 Reactor Systems Branch Request for Additional Information
Regarding the 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 – Reactor Systems Branch and Nuclear Performance Branch (SRXB and SNPB)," October 11, 2011.

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).

In an email from the NRC Project Manager dated October 11, 2011 [Reference 2], additional information was requested by the NRC staff in the Reactor Systems Branch (SRXB) to support their review of the EPU License Amendment Request (LAR). The request for additional information (RAI) identified one question (SRXB-103). The Attachment to this letter provides FPL's response to RAI SRXB-103.

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

ADD
MLR

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

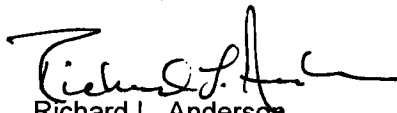
In accordance with 10 CFR 50.91(b)(1), a copy of this letter is being forwarded to the designated State of Florida official.

Should you have any questions regarding this submittal, please contact Mr. 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 *23 - November - 2011*

Very truly yours,

A handwritten signature in black ink, appearing to read "Richard L. Anderson", with a stylized flourish at the end.

Richard L. Anderson
Site Vice President
St. Lucie Plant

Attachment

cc: Mr. William Passetti, Florida Department of Health

Response to NRC Reactor Systems Branch 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 review of 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), February 25, 2011, Accession No. ML110730116.

In an email dated October 11, 2011 from T. Orf (NRC) to C. Wasik (FPL), Subject: St. Lucie 2 EPU draft RAIs – Reactor Systems Branch and Nuclear Performance Branch (SRXB and SNPB), the NRC staff requested additional information regarding FPL's request to implement the EPU. The RAI consisted of one question. The response to this RAI is provided below.

SRXB-103

Page 2.8.4.3-6 indicates that the LTOP enable temperature limits are conservative.

List the limits of the current LTOP enable temperature during cooldown and disable temperature during heat-up and show that they are consistent with the TS LTOP temperature limits. Discuss the derivation of the LTOP enable and disable temperature limits. If the derivation follows the guidance specified in Section B.2 of BTP RSB 5-2 of SRP 5.2.2, specify the values of the RT_{NDT} used in the derivation and justify that they are adequate for the EPU conditions.

Response

The current LTOP enable temperature values are taken from Table 3.4-3 of the St. Lucie Unit 2 Technical Specifications. Since the actual RCS temperatures and pressures are compared for this evaluation, the instrument uncertainty of 10°F has been removed from the values shown below.

Heatup: 236°F
Cooldown: 214°F

Updated LTOP enable temperature values are shown below. Since the actual RCS temperatures and pressures are compared for this evaluation, the instrument uncertainty of 10°F has been removed.

Heatup: 231.1°F
Cooldown: 210°F

The derivation of these values follows the guidance specified in Section B.2 of BTP RSB 5-2 of SRP 5.2.2. The values of the RT_{NDT} used in the derivation are 160°F for heatup and 160°F for cooldown. RT_{NDT} is the highest adjusted reference temperature (ART) for weld or base metal in the beltline region at one-fourth of the vessel thickness from the vessel inner surface. This is determined per Regulatory Guide 1.99, Revision 2. As discussed in further detail in LAR Attachment 5, Section 2.1.2.2.5, the RT_{NDT} value of 160 °F remains valid at EPU conditions up to 47 effective full power years (EFPY).