



MAR 31 2011

L-2011-092
10 CFR 50.90

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555-0001

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Response to NRC Request for Additional Information (RAI) Regarding
Extended Power Uprate (EPU) License Amendment Request (LAR) No. 205
and Probabilistic Risk Assessment Issues

References:

- (1) M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2010-113), "License Amendment Request No. 205: Extended Power Uprate (EPU)," (TAC Nos. ME4907 and ME4908), Accession No. ML103560169, October 21, 2010.
- (2) Email from J. Paige (NRC) to T. Abbatiello (FPL), "Turkey Point EPU – PRA Licensing (APLA) Request for Additional Information - Round 1," Accession No. ML110730528, March 14, 2011.

By letter L-2010-113 dated October 21, 2010 [Reference 1], Florida Power and Light (FPL) requested to amend Facility Operating Licenses DPR-31 and DPR-41 and revise the Turkey Point Units 3 and 4 Technical Specifications (TS). The proposed amendment will increase each unit's licensed core power level from 2300 megawatts thermal (MWt) to 2644 MWt and revise the Renewed Facility Operating Licenses and TS to support operation at this increased core thermal power level. This represents an approximate increase of 15% and is therefore considered an extended power uprate (EPU).

By email from the U.S. Nuclear Regulatory Commission (NRC) Project Manager (PM) dated March 14, 2011 [Reference 2], additional information regarding probabilistic risk assessment (PRA) issues was requested by the NRC staff in the Probabilistic Risk Assessment Licensing Branch (APLA) to support their review of the EPU LAR. The RAI consisted of two questions from APLA regarding the impact of EPU on initiating event frequencies and PORV challenges during feed-and bleed operations. These two RAI questions and the applicable FPL responses are documented 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 State Designee of Florida.

This submittal does not alter the significant hazards consideration or environmental assessment previously submitted by FPL letter L-2010-113 [Reference 1].

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

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Should you have any questions regarding this submittal, please contact Ms. Olga Hanek, Acting Licensing Manager, at (305) 246-6607.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on March 31, 2011.

Very truly yours,

A handwritten signature in black ink, appearing to read "Michael Kiley", written in a cursive style.

Michael Kiley
Site Vice President
Turkey Point Nuclear Plant

Attachment

cc: USNRC Regional Administrator, Region II
USNRC Project Manager, Turkey Point Nuclear Plant
USNRC Resident Inspector, Turkey Point Nuclear Plant
Mr. W. A. Passetti, Florida Department of Health

Turkey Point Units 3 and 4
RESPONSE TO NRC RAI REGARDING EPU LAR NO. 205
AND APLA PRA LICENSING ISSUES

ATTACHMENT

Response to Request for Additional Information

The following information is provided by Florida Power and 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 License Amendment Request (LAR) No. 205, Extended Power Uprate (EPU), for Turkey Point Nuclear Plant (PTN) Units 3 and 4 that was submitted to the NRC by FPL letter L-2010-113 on October 21, 2010 [Reference 1].

In an email dated March 14, 2011 [Reference 2], the NRC staff requested additional information regarding FPL’s request to implement the Extended Power Uprate. The RAI consisted of two questions from the NRC Probabilistic Risk Assessment (PRA) Licensing Branch (APLA) required for their review of the EPU LAR regarding the risk implications of EPU on initiating event frequencies and Power Operated Relief Valve (PORV) challenges during feed-and-bleed operations. These two RAI questions and the applicable FPL responses are documented below.

APLA-1.1 Due to potentially reduced operating margins for various systems, describe changes to initiating event frequencies associated with loss of service water system, loss of component cooling water, and loss of instrument air from pre-EPU to post-EPU. If differences in these frequencies exists pre-EPU to post-EPU, describe the risk implications associated with these changes.

None of these initiating event frequencies are expected to change for EPU because there is no change to the design capacities of these support systems. The initiating event frequencies are the same as the pre-EPU values. However, in support of the Turkey Point EPU LAR submittal, the loss of Component Cooling Water (CCW) initiating event frequency was increased by 10% to assess the effect on the Core Damage Frequency (CDF) and the Large Early Release Frequency (LERF). The effect was negligible.

For this RAI response, further sensitivity studies increasing the loss of service water (Intake Cooling Water (ICW)) and loss of instrument air initiating event frequencies by 10% were performed with similar results. The increases in CDF and LERF were very low, less than 6E-09 per year for CDF and less than 3E-10 per year for LERF.

Initiating Event	Risk Measure	Increase in Risk Measure due to 10% Increase in Initiating Event Frequency (per year)
Loss of U3 ICW	U3 CDF	1E-09
Loss of U3 ICW	U3 LERF	< 5E-10
Loss of U4 ICW	U4 CDF	2E-09
Loss of U4 ICW	U4 LERF	< 5E-11
Loss of U3 Instrument Air	U3 CDF	5E-09
Loss of U3 Instrument Air	U3 LERF	2E-10
Dual-Unit Loss of Instrument Air	U3 CDF	1E-09
Dual-Unit Loss of Instrument Air	U3 LERF	1E-10
Loss of U4 Instrument Air	U4 CDF	5E-09
Loss of U4 Instrument Air	U4 LERF	2E-10
Dual-Unit Loss of Instrument Air	U4 CDF	2E-09
Dual-Unit Loss of Instrument Air	U4 LERF	< 5E-11

APLA-1.2 Due to increased decay heat during EPU operations, additional pressure operated relief valves (PORVs) may be required for successful feed-and-bleed, especially if charging is unavailable. Describe changes in success criteria for successful feed-and-bleed pre-EPU and post-EPU, and the resulting risk implications.

Both the pre-EPU and post-EPU success criteria require two power operated relief valves (PORVs) and one High-Head Safety Injection (HHSI) pump for feed-and-bleed operations. Per Licensing Report (LR) Section 2.13.2.6.1.3.1, to achieve this for the most limiting scenarios (total loss of feedwater), (1) the low steam generator water level reactor trip setpoint was increased from 10% to 16% narrow range to provide a larger initial heat sink, and (2) the feed-and-bleed initiation was changed from 22% to 33% wide range to start feed-and-bleed sooner. With these changes, the time available to the operator to implement feed-and-bleed after a loss of all feedwater decreased from 64 minutes to 20 minutes for EPU. If charging is available for injection, then the time available to initiate feed-and-bleed increases to 36 minutes. Although these changes to feed-and-bleed operations decrease the times available for the implementation of the required operator actions, the allotted times have been determined to be well within the capability of the operator to perform. Therefore, the resulting risk implications are considered minimal.

References

1. M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2010-113), "License Amendment Request No. 205: Extended Power Uprate (EPU)," (TAC Nos. ME4907 and ME4908), Accession No. ML103560169, October 21, 2010.
2. Email from J. Paige (NRC) to T. Abbatiello (NRC), "Turkey Point EPU – PRA Licensing (APLA) Request for Additional Information - Round 1," Accession No. ML110730528, March 14, 2011.