



FEB 15 2012

L-2012-050

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 Reactor Systems Branch Request for Additional Information
Regarding Extended Power Uprate License Amendment Request No. 205 and
New Fuel Storage Requirements

References:

- (1) M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2010-113), "License Amendment Request for Extended Power Uprate (LAR 205)," Accession No. ML103560169, October 21, 2010.
- (2) J. Paige (U. S. Nuclear Regulatory Commission) to M. Nazar (FPL), "Turkey Point Nuclear Plant, Units 3 and 4 – Issuance of Amendments Regarding Fuel Criticality Analysis (TAC Nos. ME4470 and ME4471)," Accession No. ML11216A057, October 31, 2011.
- (3) M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2011-390), "Supplement 2 to the Extended Power Uprate License Amendment Request No. 205 Regarding New and Spent Fuel Storage Requirements," Accession No. ML11318A284, November 9, 2011.
- (4) M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2011-541), "Response to NRC Reactor Systems Branch Request for Additional Information Regarding Extended Power Uprate License Amendment Request No. 205," Accession No. ML11362A356, December 22, 2011.
- (5) Email from J. Paige (NRC) to S. Hale (FPL), "RE: SE Open Item on New Fuel Storage Area," February 13, 2012.

By letter L-2010-113 dated October 21, 2010 [Reference 1], Florida Power and Light Company (FPL) requested to amend Renewed Facility Operating Licenses DPR-31 and DPR-41 and revise the Turkey Point Units 3 and 4 (PTN) 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).

On October 31, 2011, the U.S. Nuclear Regulatory Commission (NRC) issued Amendments 246 and 242 to Renewed Facility Operating Licenses DPR-31 and DPR-41 for Turkey Point Units 3 and 4, respectively, addressing both new and spent fuel storage requirements [Reference 2].

By letter L-2011-390 dated November 9, 2011 [Reference 3], FPL revised the originally proposed EPU changes to Technical Specification 5.5.1 Fuel Storage – Criticality to account for the NRC's issuance of Amendments 246 and 242 for Turkey Point Units 3 and 4. This reduced the scope of the remaining TS changes to only TS 5.5.1.1.d that revises the maximum fuel enrichment loading to 5.0 wt% U-235 and TS 5.5.1.2.b that revises the existing new fuel storage requirements.

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On November 18, 2011, the NRC Project Manager (PM) informed FPL that the Reactor Systems Branch (SRXB) Technical Reviewer questioned the language used in the proposed change to TS 5.5.1.2.b. Specifically, the reviewer questioned the inclusion of the parenthetical statement "*or an equivalent amount of other burnable absorber.*" On December 22, 2011, FPL provided its response with documentation to support this language in the proposed TS to the NRC via letter L-2011-541 [Reference 4]. Subsequent review by the SRXB Technical Reviewer resulted in several more questions regarding this issue as documented in an email from the NRC PM to FPL on February 13, 2012 [Reference 5] and indicated that FPL's position would not be acceptable to the staff. Therefore, in consideration of the schedule constraints, FPL proposes to eliminate the parenthetical statement from TS 5.5.1.2.b in order to preclude further regulatory review and comment resolution cycles on this issue. FPL's response is provided in Attachment 1 to this letter.

The Turkey Point Plant Nuclear Safety Committee (PNSC) has reviewed the proposed TS change.

This proposed TS change 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.

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

Should you have any questions regarding this submittal, please contact Mr. Robert J. Tomonto, Licensing Manager, at (305) 246-7327.

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

Executed on February 15, 2012.

Very truly yours,



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 REACTOR SYSTEMS BRANCH REQUEST FOR
ADDITIONAL INFORMATION REGARDING EXTENDED POWER UPRATE
LICENSE AMENDMENT REQUEST NO. 205 AND
NEW FUEL STORAGE REQUIREMENTS

ATTACHMENT 1

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) 205, Extended Power Uprate (EPU), for Turkey Point Nuclear Plant (PTN) Units 3 and 4 that was submitted to the NRC by FPL via letter (L-2010-113) dated October 21, 2010 (Reference 1).

On October 31, 2011, the U.S. Nuclear Regulatory Commission (NRC) issued Amendments 246 and 242 to Renewed Facility Operating Licenses DPR-31 and DPR-41 for Turkey Point Units 3 and 4, respectively, addressing both new and spent fuel storage requirements (Reference 2).

By letter L-2011-390 dated November 9, 2011 (Reference 3), FPL revised the originally proposed EPU changes to Technical Specification 5.5.1 Fuel Storage – Criticality to account for the NRC's issuance of Amendments 246 and 242 for Turkey Point Units 3 and 4. This reduced the scope of the remaining TS changes to only TS 5.5.1.1.d that revises the maximum fuel enrichment loading to 5.0 wt% U-235 and TS 5.5.1.2.b that revises the existing new fuel storage requirements.

On November 18, 2011, the NRC Project Manager (PM) informed FPL that during review of the supplemental submittal the Reactor Systems Branch (SRXB) Technical Reviewer questioned the language used in the proposed change to TS 5.5.1.2.b. Specifically, the reviewer questioned the basis for the inclusion of the parenthetical statement "*or an equivalent amount of other burnable absorber*" and requested that the parenthetical statement be deleted. The basis for the NRC's request was apparently that the criticality analysis provided in WCAP-17094-P, Revision 3, "Turkey Point Units 3 and 4 New Fuel Storage Rack and Spent Fuel Pool Criticality Analysis," dated February 2011 (Reference 4) did not discuss how an equivalent amount of another burnable absorber would be determined. Also, there was nothing in the analysis about how a different absorber would affect the criticality analysis for both fresh and depleted fuel.

On November 22, 2011, FPL informed the NRC PM during the weekly telephone call that it intended to keep the parenthetical statement as written and indicated that further documentation would be provided to support the technical basis for the change. FPL provided the supporting documentation to the NRC via letter L-2011-541 [Reference 5] on December 22, 2011. Subsequent review by the SRXB Technical Reviewer resulted in several more questions regarding this issue as documented in an email from the NRC PM to FPL on February 13, 2012 [Reference 6] which indicated that FPL's position would not be acceptable to the staff. Therefore, in consideration of the schedule constraints, i.e., Advisory Committee on Reactor Safeguards (ACRS) subcommittee hearing on February 24, 2012 and the NRC staff's Draft Safety Evaluation Report, FPL proposes to simply eliminate the parenthetical statement from TS 5.5.1.2.b in order to preclude any further regulatory review and comment resolution cycles on this issue. FPL's response is provided below.

Response

FPL letter L-2011-390 dated November 9, 2011 (Reference 3) supplemented the EPU application by a proposed revision to TS 5.5.1 of the TS Amendments 246 and 242, which were approved on October 31, 2011 (Reference 2). Specifically, the supplement proposed a revision to TS 5.5.1.1.d and 5.5.1.2.b to increase the maximum allowable enrichment in the Spent Fuel Pool (SFP) storage racks and the New Fuel Storage Area (NFSA) from 4.5 wt% ²³⁵U to 5.0 wt% ²³⁵U. The proposed change to TS 5.5.1.2.b required that storage of fresh fuel assemblies in the NFSA with nominal enrichments greater than 4.5 wt% ²³⁵U have 16 or more Integral Fuel Burnable Absorber (IFBA)

rods or an equivalent amount of other burnable absorber. As the staff has indicated that the parenthetical statement will not be acceptable without further substantiating analyses, FPL proposes to credit only IFBA rods in the NFSA and to delete the previously proposed parenthetical phrase "*or an equivalent amount of other burnable absorber.*" A description of the proposed TS change is provided below.

Changes to the PTN Technical Specifications

Technical Specification 5.5.1 Fuel Storage - Criticality

Approved TS (Proposed TS per L-2011-390 dated November 9, 2011)

- 5.5.1.2 The racks for new fuel storage are designed to store fuel in a safe subcritical array and shall be maintained with:
- b. Fuel assemblies placed in the New Fuel Storage Area shall contain **no more than a nominal 4.5 weight percent of U-235 if the assembly contains no burnable absorber rods and no more than 5.0 weight percent of U-235 if the assembly contains at least 16 IFBA rods (or an equivalent amount of other burnable absorber).**

Revised TS

- 5.5.1.2 The racks for new fuel storage are designed to store fuel in a safe subcritical array and shall be maintained with:
- b. Fuel assemblies placed in the New Fuel Storage Area shall contain **no more than a nominal 4.5 weight percent of U-235 if the assembly contains no burnable absorber rods and no more than 5.0 weight percent of U-235 if the assembly contains at least 16 IFBA rods.**

Basis for the Change:

Integral burnable absorbers credited in the NFSA will be limited to IFBA rods. The proposed parenthetical phrase "or an equivalent amount of other burnable absorber" in TS 5.5.1.2.b will be deleted in order to preclude further regulatory review and comment resolution cycles on this issue and to facilitate the NRC staff's review and approval of the proposed TS change and EPU LAR No. 205.

See attached TS 5.5.1.2.b (TS page 5-5) markup. The TS change previously proposed for TS 5.5.1.1.d under Reference 3 is also shown in the markup.

DESIGN FEATURES

5.5 FUEL STORAGE

5.5.1 CRITICALITY

5.5.1.1 The spent fuel storage racks are designed and shall be maintained with:

- a. A k_{eff} less than 1.0 when flooded with unborated water, which includes an allowance for biases and uncertainties as described in UFSAR Chapter 9.
- b. A k_{eff} less than or equal to 0.95 when flooded with water borated to 500 ppm, which includes an allowance for biases and uncertainties as described in UFSAR Chapter 9.
- c. A nominal 10.6 inch center-to-center distance for Region I and 9.0 inch center-to-center distance for Region II for the two region spent fuel pool storage racks. A nominal 10.1 inch center-to-center distance in the east-west direction and a nominal 10.7 inch center-to-center distance in the north-south direction for the cask area storage rack.
- d. A maximum enrichment loading for fuel assemblies of 4.5 weight percent of U-235. 5.0
- e. No restriction on storage of fresh or irradiated fuel assemblies in the cask area storage rack.
- f. Fresh or irradiated fuel assemblies not stored in the cask area storage rack shall be stored in accordance with Specification 5.5.1.3.
- g. The Metamic neutron absorber inserts shall have a minimum certified ^{10}B areal density greater than or equal to 0.015 grams $^{10}\text{B}/\text{cm}^2$.

5.5.1.2 The racks for new fuel storage are designed to store fuel in a safe subcritical array and shall be maintained with:

- a. A nominal 21 inch center-to-center spacing to assure k_{eff} equal to or less than 0.98 for optimum moderation conditions and equal to or less than 0.95 for fully flooded conditions.
- b. Fuel assemblies placed in the New Fuel Storage Area shall contain ~~no more than 4.5 weight percent of U-235.~~

no more than a nominal 4.5 weight percent of U-235 if the assembly contains no burnable absorber rods and no more than 5.0 weight percent of U-235 if the assembly contains at least 16 IFBA rods.

References

1. M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2010-113), "License Amendment Request for Extended Power Uprate (LAR 205)," Accession No. ML103560169, October 21, 2010.
2. J. Paige (U. S. Nuclear Regulatory Commission) to M. Nazar (FPL), "Turkey Point Nuclear Plant, Units 3 and 4 – Issuance of Amendments Regarding Fuel Criticality Analysis (TAC Nos. ME4470 and ME4471)," Accession No. ML11216A057, October 31, 2011.
3. M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2011-390), "Supplement 2 to the Extended Power Uprate License Amendment Request No. 205 Regarding New and Spent Fuel Storage Requirements," Accession No. ML11318A284, November 9, 2011.
4. WCAP-17094-P, Revision 3, "Turkey Point Units 3 and 4 New Fuel Storage Rack and Spent Fuel Pool Criticality Analysis," February 2011.
5. M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2011-541), "Response to NRC Reactor Systems Branch Request for Additional Information Regarding Extended Power Uprate License Amendment Request No. 205," Accession No. ML11362A356, December 22, 2011.
6. Email from J. Paige (NRC) to S. Hale (FPL), "RE: SE Open Item on New Fuel Storage Area," February 13, 2012.