



SEP 06 2012

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
License Amendment Request No. 224 Regarding Technical Specification 3/4.6.2.3 -
Recirculation pH Control System and NaTB Basket Minimum Loading Requirement

Reference:

- (1) J. Paige (NRC) to M. Nazar (FPL), "Turkey Point Units 3 and 4 – "Issuance of Amendments Regarding Alternative Source Term (TAC Nos. ME1624 and ME1625)," Accession No. ML110800666, June 23, 2011.

On June 23, 2011, the U.S. Nuclear Regulatory Commission (NRC) issued Amendment Nos. 244 and 240 to Renewed Facility Operating License Nos. DPR-31 and DPR-41 for the Turkey Point Nuclear Plant, Units Nos. 3 and 4, respectively, with supporting Safety Evaluation Report (SER) regarding the Alternative Source Term (AST) [Reference 1].

The Recirculation pH Control System is a passive safeguard consisting of ten stainless steel wire mesh baskets located in the containment basement and containing a total of at least 11,061 lbm of sodium tetraborate decahydrate (NaTB). This passive system assures that there is sufficient NaTB available in the containment to ensure a sump pH greater than 7.0 at the onset of the recirculation phase of a postulated loss-of-coolant accident (LOCA). The proposed license amendment request will reduce the minimum NaTB basket loading to 7,500 lbm in order to lessen the long term sump pH profile, recover design margin, and facilitate NaTB basket loading and maintenance activities.

Description of the proposed TS change with supporting justification and a no significant hazards determination and environmental consideration are provided in the Enclosure to this letter.

The Turkey Point Plant Nuclear Safety Committee (PNSC) has reviewed the proposed license amendments. The proposed TS change has been evaluated in accordance with 10 CFR 50.91(a)(1), using the criteria in 10 CFR 50.92(c). FPL has determined that the proposed TS change does not involve a significant hazards consideration.

The proposed license amendments change requirements with respect to the use of a facility component located within the restricted area as defined in 10 CFR Part 20. FPL has determined that the proposed amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite, and no significant increase in individual or cumulative occupational radiation exposure. Therefore, FPL has concluded that the proposed amendments meet the criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and, pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment need not be prepared in connection with issuance of the amendments.

This letter 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.

ADD
NRR

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 September 6, 2012.

Very truly yours,



Michael Kiley
Site Vice President
Turkey Point Nuclear Plant

Enclosure

cc: USNRC Regional Administrator, Region II
USNRC Project Manager, Turkey Point Nuclear Plant
USNRC Senior Resident Inspector, Turkey Point Nuclear Plant
Ms. Cindy Becker, Florida Department of Health

Enclosure
Turkey Point Units 3 and 4

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- Recirculation pH Control System and
NaTB Basket Minimum Loading Requirement**

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1.0 Purpose and Scope

Florida Power and Light Company (FPL) proposes to amend Renewed Facility Operating Licenses DPR-31 and DPR-41 for Turkey Point Units 3 and 4 by reducing the minimum required sodium tetraborate decahydrate (NaTB) basket loading from 11,061 lbm to 7,500 lbm in Technical Specification (TS) 3/4.6.2.3. This change, when implemented, will lessen the long term sump pH profile while ensuring sump pH remains above 7.0 throughout the recirculation phase of a loss of coolant accident (LOCA), recover design margin to upper pH limits, and facilitate NaTB basket loading and maintenance activities.

2.0 Background Information

On June 23, 2011, the U.S. Nuclear Regulatory Commission (NRC) issued Amendment Nos. 244 to DPR-31 and 240 to DPR-41 with supporting Safety Evaluation Report (SER) regarding the Alternative Source Term (AST) [Reference 1]. The amendments included new TS 3/4.6.2.3, Recirculation pH Control System. The Recirculation pH Control System is a passive safeguard consisting of ten stainless steel wire mesh baskets located in the containment basement with sufficient NaTB to maintain the sump pH greater than 7.0 throughout the LOCA recirculation phase

The current specified value in TS 3/4.6.2.3 for the minimum total NaTB mass in these ten baskets is 11,061 lbm. This minimum value was provided in the original AST License Amendment Request (LAR No. 196) [Reference 2]. Subsequent calculations demonstrated that the minimum required NaTB mass to achieve a sump pH of >7.0 is actually as low as 6,427 lbm. Although the results of these revised calculations were submitted in response to a NRC Request for Additional Information (RAI) via letter L-2010-082 dated April 28, 2010 [Reference 3], the original proposed TS value was not changed at that time.

Parametric analyses were conducted for maximum sump pH profiles assuming realistic time-dependent containment sump temperatures and maximum NaTB dissolution rates based on various reduced basket loading options. With full baskets (15,816 lbm NaTB), the peak pH is 8.006. With the fill level reduced to 7,500 lbm, the peak pH drops to about 7.680.

As both the AST and EPU license amendments for Units 3 and 4 have been issued, and fully implemented for Unit 3, FPL proposes to reduce the current TS 3/4.6.2.3 minimum required NaTB mass from 11,061 lbm to 7,500 lbm, leaving more than 1000 lbm of margin to the analyzed minimum of 6,427 lbm. This change reduces the basket loading requirement, and when implemented, will reduce the long-term post-LOCA sump pH profile, allow recovery of design margin to upper pH limits and facilitate basket maintenance activities while assuring sump pH remains above 7.0 throughout the post-LOCA recirculation phase.

3.0 Description of Proposed Changes

The proposed TS change involves TS 3/4.6.2.3 only. In order to provide a more specific description of the proposed change, a TS mark-up is attached and a description is provided below with a brief justification.

4.0 Basis/Justification for the Proposed Changes

4.1 Changes to the PTN Technical Specifications

4.1.1 Technical Specification Surveillance Requirement 4.6.2.3 Recirculation pH Control System

Current TS

The Recirculation pH Control System shall be demonstrated OPERABLE:

- a. At least once per 18 months by
 2. Collectively contain ≥ 11061 pounds (227 cubic feet) of sodium tetraborate decahydrate, or equivalent.

Proposed TS

The Recirculation pH Control System shall be demonstrated OPERABLE:

- a. At least once per 18 months by
 2. Collectively contain ≥ 7500 pounds (154 cubic feet) of sodium tetraborate decahydrate, or equivalent.

Basis for the Change: Previous calculations have shown that as little as 6,427 lbm of NaTB is sufficient to bring the containment sump pH to greater than 7.0 at the onset of the post-LOCA containment spray recirculation phase. The calculations considered both the minimum post-LOCA containment sump pH at the time of containment spray recirculation to support radiological analyses and maximum post-LOCA containment sump pH over the course of the accident. The 7,500 lbm case satisfies the minimum sump pH requirement at the onset of the recirculation phase, and when implemented, will reduce the long-term sump pH profile, allow recovery of design margin to upper pH limits and facilitate NaTB basket loading and maintenance activities. A markup of the proposed TS change is attached.

5.0 List of Commitments

None

6.0 Conclusion

The proposed amendments will reduce the minimum required NaTB basket loading from 11,061 lbm to 7,500 lbm in Technical Specification (TS) 3/4.6.2.3. This change, when implemented, will lessen the long term sump pH profile, allow recovery of design margin to upper pH limits and facilitate NaTB basket loading and maintenance activities.

7.0 No Significant Hazards Determination

The Commission has provided standards in 10 CFR 50.92(c) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazard if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The proposed license amendments to Renewed Facility Operating Licenses DPR-31 for Turkey Point Unit 3 and DPR-41 for Turkey Point Unit 4 will reduce the minimum required NaTB basket loading from 11,061 lbm to 7,500 lbm in TS 3/4.6.2.3. This change, when implemented, will lessen the long term sump pH profile, allow recovery of design margin to upper pH limits and facilitate NaTB basket loading and maintenance activities.

FPL has reviewed this proposed license amendment for FPL's Turkey Point Units 3 and 4 and determined that its adoption would not involve a significant hazards consideration. The bases for this determination are:

The proposed amendments do not involve a significant hazards consideration for the following reasons:

1. Do the proposed amendments involve a significant increase in the probability or consequences of an accident previously evaluated?

No. The proposed amendments do not affect any precursors to any accident previously evaluated. The proposed amendments do affect the passive recirculation pH control system consisting of ten stainless steel baskets loaded with NaTB but do not adversely affect the system performance or its contribution to the mitigation strategy for a design basis large break loss of coolant accident (LBLOCA). The proposed TS change, when implemented, will reduce the minimum required NaTB basket loading from 11,061 lbm to 7,500 lbm in TS 3/4.6.2.3. This change will also lessen the long term sump pH profile, allow recovery of design margin and facilitate NaTB basket loading and maintenance activities.

Therefore, the proposed amendments do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Do the proposed amendments create the possibility of a new or different kind of accident from any accident previously evaluated?

No. The proposed amendments do not directly or indirectly affect any recognized accident initiators. The proposed amendments do affect the passive recirculation pH control system consisting of ten stainless steel baskets loaded with NaTB but do not adversely affect the system performance or its contribution to the mitigation strategy for a design basis LBLOCA. The proposed TS change, when implemented, will reduce the minimum required NaTB basket loading from 11,061 lbm to 7,500 lbm in TS 3/4.6.2.3. This change will lessen the long term sump pH profile, allow recovery of design margin to upper pH limits and facilitate NaTB basket loading and maintenance activities while it continues to ensure that the design basis minimum sump pH of 7.0 is maintained throughout the recirculation phase of a LOCA.

Therefore, the proposed amendments do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Do the proposed amendments involve a significant reduction in the margin of safety?

No. The proposed amendments will reduce the minimum required NaTB basket loading from 11,061 lbm to 7,500 lbm in TS 3/4.6.2.3. This change, when implemented, will also lessen the long term sump pH profile, allow recovery of design margin to upper pH limits and facilitate NaTB basket loading and maintenance activities. This change continues to assure that containment sump pH reaches 7.0 by onset of containment spray recirculation phase in response to a LBLOCA and lessens the peak and long-term sump pH such that post-accident chemical precipitate generation and the potential for stainless steel stress corrosion cracking is reduced.

Therefore, the proposed amendments do not involve a significant reduction in the margin of safety.

Based on the above discussion, FPL has determined that the proposed amendments do not involve a significant hazards consideration.

8.0 Environmental Consideration

10 CFR 51.22(c)(9) provides criteria for and identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. A proposed amendment of an operating license for a facility requires no environmental assessment, if the operation of the facility in accordance with the proposed amendment does not: (1) involve a significant hazards consideration, (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, and (3) result in a significant increase in individual or cumulative occupational radiation exposure.

FPL has reviewed this LAR and determined that the proposed amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of this amendment. The basis for this determination follows.

Basis

This change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) for the following reasons:

1. As demonstrated in the 10 CFR 50.92 evaluation, the proposed amendment does not involve a significant hazards consideration.
2. The proposed amendment does not result in a significant change in the types or increase in the amounts of any effluents that may be released offsite. The proposed amendments do not adversely affect the post-LOCA containment source term since the minimum sump pH is maintained above 7.0 throughout the recirculation phase. The proposed amendments do not adversely affect the fuel, reactor coolant system components and piping, or the containment building and its penetrations. The proposed amendments do not directly or indirectly affect effluent discharges.
3. The proposed amendment does not result in a significant increase in individual or cumulative occupational radiation exposure. The proposed amendments do not adversely affect the post-LOCA containment source term since the minimum sump pH continues to be maintained above 7.0 throughout the recirculation phase. The proposed amendments do not adversely affect the fuel, reactor coolant system components and piping, the containment or its penetrations. The proposed amendments do not directly or indirectly affect the radiological source terms.

9.0 Summary of Results

The proposed amendments will reduce the minimum required NaTB basket loading from 11,061 lbm to 7,500 lbm in Technical Specification (TS) 3/4.6.2.3. This change, when implemented, will lessen the long term sump pH profile, allow recovery of design margin to upper pH limits and facilitate NaTB basket loading and maintenance activities.

10.0 Reference

1. J. Paige (NRC) to M. Nazar (FPL), "Turkey Point Units 3 and 4 – "Issuance of Amendments Regarding Alternative Source Term (TAC Nos. ME1624 and ME1625)," Accession No. ML110800666, June 23, 2011.
2. M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2009-133), "License Amendment Request 196: Alternative Source Term and Conforming Amendment," Accession No. ML092050277, June 25, 2009.
3. M. Kiley (FPL) to U.S. Nuclear Regulatory Commission (L-2010-082), "Supplement to License Amendment Request 196 (ADAMS Accession No. ML092050112) – Revised Summary of Turkey Point Sump pH Calculation Inputs, Assumptions, Methodology, and Results," Accession No. ML101200063, April 28, 2010.

CONTAINMENT SYSTEMS

3/4.6.2.3 RECIRCULATION pH CONTROL SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.3 The Recirculation pH Control System shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With the Recirculation pH Control System Inoperable, restore the buffering agent to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the next 72 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.3 The Recirculation pH Control System shall be demonstrated OPERABLE:

- a. At least once per 18 months by
 - 1. Verifying that the buffering agent baskets are in place and intact;
 - 2. Collectively contain \geq ~~11064 pounds (227 cubic feet)~~ of sodium tetraborate decahydrate, or equivalent.

7500 pounds (154 cubic feet)