December 7, 2015
L-2015-293
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 Request for Additional Information Regarding
License Amendment Request No. 237, Application to Revise
Technical Specification Figure 3.1-2, Boric Acid Tank Minimum Volume

References:

1. Florida Power & Light Company letter L-2015-065, "License Amendment Request No. 237, Application to Revise Technical Specification Figure 3.1-2, Boric Acid Tank Minimum Volume," April 16, 2015.
2. NRC Request for Additional Information regarding Turkey Point Units 3 and 4 LAR 237 (CACs MF6148 and MF6149), August 20, 2015.
3. NRC Request for Additional Information regarding Turkey Point Units 3 and 4 LAR 237 (CACs MF6148 and MF6149), August 21, 2015.

In Reference 1, Florida Power & Light Company (FPL) requested an amendment to Renewed Facility Operating Licenses DPR-31 and DPR-41 for Turkey Point Units 3 and 4, respectively. The proposed amendment would revise Technical Specification Figure 3.1-2, "Boric Acid Tank Minimum Volume," to reflect a correction to the instrument uncertainty calculation.

In References 2 and 3, the NRC requested additional information determined to be needed in order to complete their review of the amendment request. The enclosure to this letter contains the requested information. The additional information provided does not impact the no significant hazards determination and environmental considerations previously submitted to the NRC by Reference 1.

There are no new commitments or changes to existing commitments made in this submittal.

A001
NRR

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

If you have any questions or require additional information, please contact Mitch Guth at 305-246-6698.

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

Executed on December 7, 2015.

Sincerely,

Thomas Summers
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
Florida Department of Health

Response to Request for Additional Information Regarding Turkey Point Units 3 and 4 License Amendment Request No. 237:

Application to Revise Technical Specifications Figure 3.1-2, Boric Acid Tank Minimum Volume

Enclosure

EICB RAI-1

In its application dated April 16, 2015, the licensee indicated that one of the two errors identified in the calculation for measurement of the boric acid volume uncertainty is the total loop uncertainty (TLU). Please provide a summary of how the licensee calculated the TLU and how the TLU error was identified.

FPL Response

The error was identified during an internal review of the TLU calculation. The error was documented in the Corrective Action Program (CAP) Action Request (AR) 01940683. The AR summarized the error as follows:

The three Boric Acid Storage Tanks (BASTs) are cross-tied together to effectively create "one common tank" for both Units 3 and 4. The TLU was calculated following a square-root-sum-of-the-squares (SRSS) methodology to determine the TLU for three instrument loops that monitor BAST level in the three BASTs (i.e., one for each tank). However, when the calculation converted the TLU into equivalent tank volume uncertainty (in gallons), the conversion was based on the volume of a single tank as opposed to the volume of the "one common tank." As a result, the volume that represents the TLU (in terms of gallons) was off by a factor of three. Consequently, the current Technical Specification (TS) curves shown in Figure 3.1-2, "Boric Acid Tank Minimum Volume," are non-conservative because they do not incorporate the appropriate equivalent tank volume uncertainty for the minimum BAST volume for both the one and two unit operation curves.

The TLU of the BASTs was recalculated. For the purposes of determining measurement uncertainty, the tanks were considered to be statistically independent. As such, the total measurement uncertainty for an individual tank was calculated and then applied equally to all three tanks to achieve total boric acid measurement uncertainty in gallons. This approach is consistent with the way Operations uses the information from the level instrumentation to validate TS compliance. The level is read from each of the three BAST level indicators and then added together to arrive at a total volume.

EICB RAI-2

Please confirm whether the TLU is calculated for each tank. Given that there are three tanks that are connected together, how is the total uncertainty for all three tanks considered?

FPL Response

The TLU of the BASTs was recalculated. For the purposes of determining measurement uncertainty, the tanks were considered to be statistically independent. As such, the total measurement uncertainty for an individual tank was calculated and then applied equally to all three tanks to achieve total boric acid measurement uncertainty in gallons. This approach is also consistent with the way Operations uses the information from the level instrumentation to validate

TS compliance. The level is read from each of the three BAST level indicators and then added together to arrive at a total volume. Refer to the response provided for EICB RAI-1 above for further details.

EICB RAI-3

Please confirm that all three tanks are identical (e.g., in internal diameter and height of the tanks) and the method used for measuring the tank level.

FPL Response

The three Boric Acid Storage Tanks T-205A, T205B & T205C are identical in height and internal diameter.

Level Transmitter LT-106 measures the level in the 'A' Boric Acid Storage Tank (T205A), LT-108 measures the level in the 'B' Boric Acid Storage Tank (T205B), and LT-102 measures the level in the 'C' Boric Acid Storage Tank (T205C). These level transmitters are Rosemount model 1153DB4 differential pressure transmitters with an adjustable range of 0-25 to 0-150 inch water column (WC), and are calibrated to transmit a 4-20 mAdc signal representing the volume of their respective BAST from the top of the maximum vortex to the top of the tank.

The full height of the BASTs is 148.25 inches, and the vortex height is 16 inches. Subtracting the vortex height from the full height of the BASTs, results in a useable height of the tank of 132.25 inches. Additionally, the bubbler tube outlet for the level instrumentation is 4 inches below the vortex level. Therefore, the useable range is from 4 inches above the outlet of the bubbler tube to 136.25 inches above the outlet of the bubbler tube. As such, the subject transmitters are calibrated to a span of 4.0 to 136.25 WC. Figure 1 included below provides an elevation view of a typical boric acid storage tank.

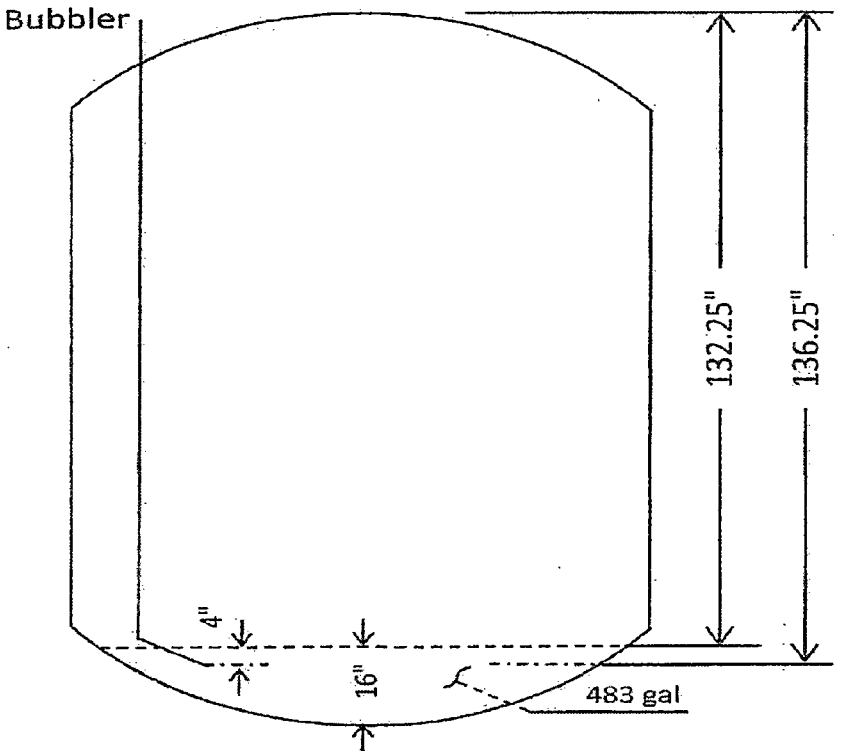

Figure 1 – Typical Boric Acid Tank Elevation View

SRXB RAI-1

As discussed in the application, the nominal boric acid tank (BAT) inventory volume was corrected for both the one- and two-unit operation. These new nominal values were essentially calculated by adding the corrected uncertainty to the old minimum volume (i.e., old nominal values minus incorrect uncertainties). Thus, both the new nominal minus uncertainty BAT volume and the old nominal minus uncertainty BAT volume are the same.

Please confirm that the following evaluations assumed the nominal minus uncertainty volume of the BAT:

- Calculations related to the volume necessary to increase the reactor coolant system boron concentration during the early phase of cooldown such that subsequent use of the refueling water storage tank for contraction will maintain the required shutdown margin throughout the remainder of the cooldown.

- Calculations in determining if the BAT has sufficient boric acid solution to achieve cold shutdown if the most reactive rod cluster control assembly is not inserted.

If it cannot be confirmed that the nominal minus uncertainty BAT volume was assumed in these evaluations, please demonstrate that these evaluations are still valid.

FPL Response

All calculations were performed using nominal BAT volume minus volume uncertainty. The BAT volume requirements determined in the analysis are subsequently increased for volume measurement uncertainty to produce the BAT volume requirements in TS Figure 3.1-2. The analysis performed determines the BAT volume requirements necessary to maintain the required shutdown margin, which includes an assumption of the most reactive rod cluster control assembly not inserted, throughout a cooldown to cold shutdown conditions.