



April 16, 2015  
10 CFR 50.90  
L-2015-065

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Turkey Point Units 3 and 4  
Docket Nos. 50-250 and 50-251  
Renewed Facility Operating License Nos. DPR-31 and DPR-41

Subject: License Amendment Request No. 237, Application to Revise  
Technical Specification Figure 3.1-2, Boric Acid Tank Minimum Volume

References:

1. NRC letter to FPL, "Turkey Point Units 3 and 4 – 'Issuance of Amendments Regarding Extended Power Uprate (TAC NOS. ME4907 AND ME4908),' June 15, 2012.
2. NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications that are Insufficient to Assure Plant Safety," December 29, 1998.

Pursuant to 10 CFR 50.90, Florida Power & Light Company (FPL) hereby requests an amendment to the Technical Specifications (TS) for the Turkey Point Nuclear Plant (Turkey Point), Units 3 and 4.

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. The current TS Figure 3.1-2 was approved under Amendments 249 and 245 in June 2012 (Reference 1). The correction to the instrument uncertainty calculation results in a non-conservative minimum acceptable BAT volume curve for one unit operation. Pursuant to Administrative Letter 98-10 (Reference 2), administrative controls have been established to assure that the minimum acceptable BAT volume for one unit operation is maintained within the corrected values until the proposed amendment is approved by the NRC and implemented.

The enclosure to this letter contains a description of the proposed change and includes a no significant hazards determination and environmental considerations.

There are no commitments made in this submission.

The proposed change has been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c) and it has been determined that this change involves no significant hazards consideration.

A 001  
MLR


The Turkey Point Plant Nuclear Safety Committee has reviewed and approved the proposed license amendment. 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 Mr. Mitch Guth at 305-246-6698.

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

Executed on: 4/16/15

Very truly yours,



Michael Kiley  
Vice President  
Turkey Point Nuclear Plant

Enclosure: Application to Revise Technical Specifications

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

Turkey Point Units 3 and 4

License Amendment Request No. 237

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

Enclosure

## 1.0 Description

Pursuant to 10 CFR 50.90, Florida Power & Light Company (FPL) hereby requests an amendment to the Technical Specifications (TS) for the Turkey Point Nuclear Plant (Turkey Point), Units 3 and 4. The proposed amendment would revise TS Figure 3.1-2, "Boric Acid Tank Minimum Volume," to reflect a correction to the instrument uncertainty calculation.

## 2.0 Proposed Change

### Current TS

Figure 3.1-2 is referenced in TS 3.1.2.5 Limiting Condition for Operation (LCO) item a. which states:

The following borated water sources shall be OPERABLE:

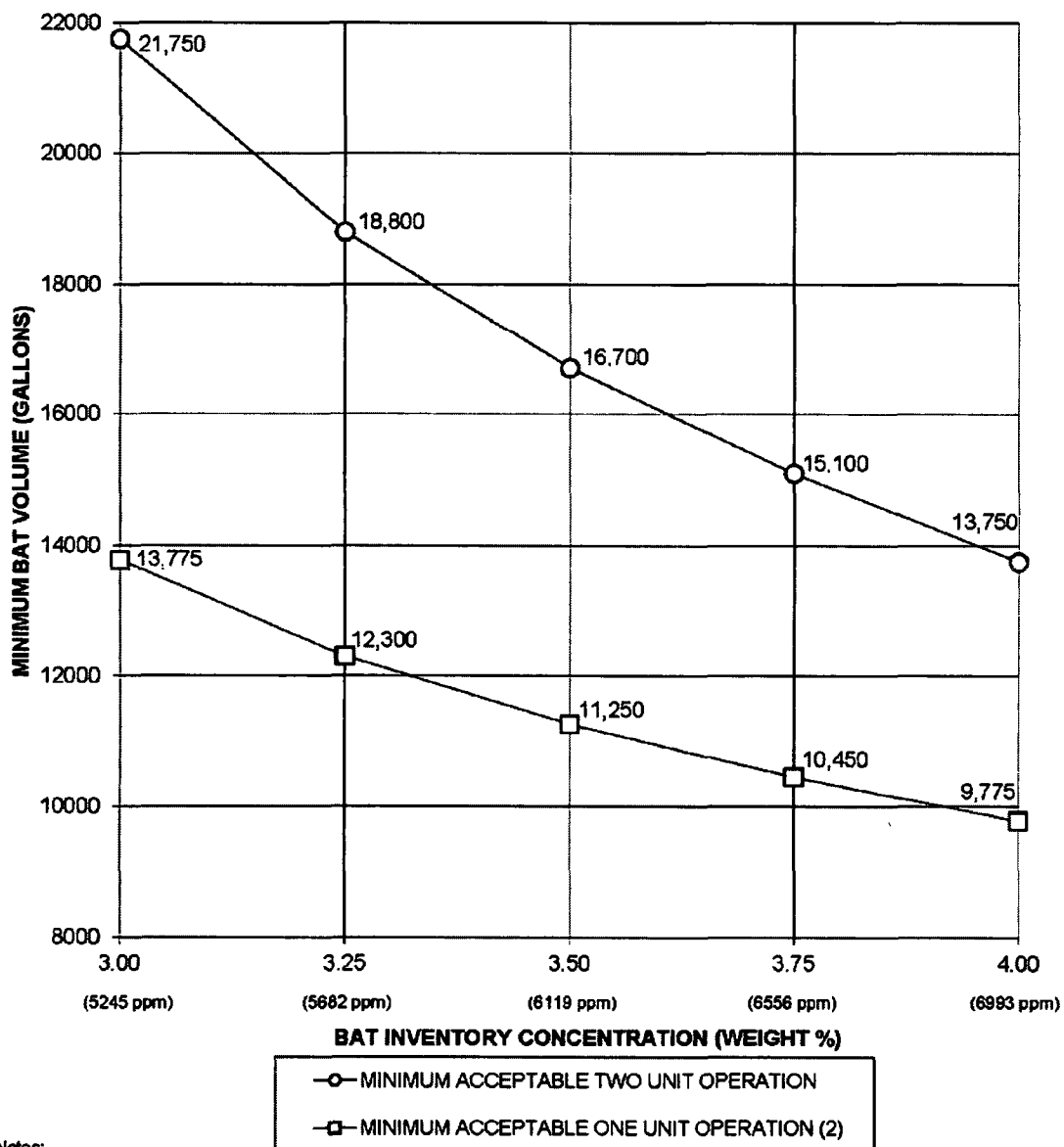
a. A Boric Acid Storage System with:

- 1) A minimum indicated borated water volume in accordance with Figure 3.1-2,
- 2) A boron concentration in accordance with Figure 3.1-2. and
- 3) A minimum boric acid tanks room temperature of 62°F.

The APPLICABILITY is Modes 1, 2, 3, and 4.

Current TS Figure 3.1-2:

Figure 3.1-2  
 BORIC ACID TANK MINIMUM VOLUME (1)  
 Modes 1, 2, 3 and 4



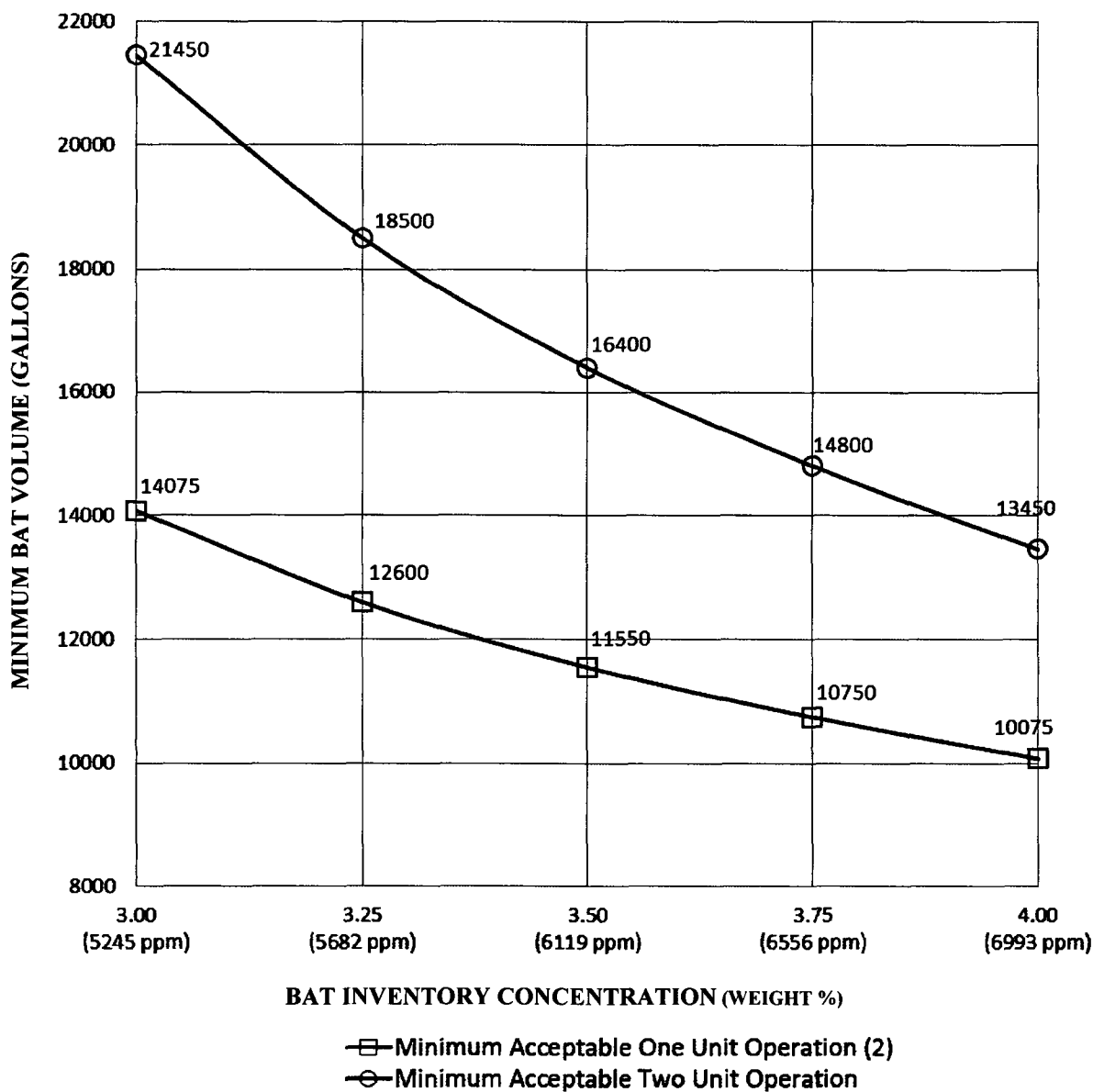
Notes:

- (1) Combined volume of all available boric acid tanks assuming RWST boron concentration between 2400 ppm and 2600 ppm.
- (2) Includes 2900 gallons for the shutdown unit.

Proposed TS

FPL proposes to revise TS Figure 3.1-2 to reflect a correction to the instrument uncertainty calculation. There are no proposed changes to TS 3.1.2.5 Limiting Condition for Operation (LCO) item a.

Figure 3.1-2  
 BORIC ACID TANK MINIMUM VOLUME (1)  
 Modes 1, 2, 3 and 4



Notes:

- (1) Combined volume of all available boric acid tanks assuming RWST boron concentration between 2400 ppm and 2600 ppm.
- (2) Includes 2900 gallons for the shutdown unit.

## **Basis for the Proposed TS Changes**

The three Boric Acid Tanks (BATs) at Turkey Point are shared between both units and are sized to store sufficient boric acid solution to support a cooldown to cold shutdown conditions without letdown. Under these conditions, adequate boration can be achieved simply by providing makeup for coolant contraction from a BAT and the refueling water storage tank (RWST). The minimum volume maintained in the BATs, therefore, is that volume necessary to increase the Reactor Coolant System (RCS) boron concentration during the early phase of the cooldown of each unit, such that, subsequent use of the RWST for contraction makeup will maintain the required shutdown margin throughout the remaining cooldown. In addition, the boric acid tanks have sufficient boric acid solution to achieve cold shutdown for each unit if the most reactive Rod Control Cluster Assembly (RCCA) is not inserted. The concentration of boric acid solution in storage is maintained between 3.0 and 4.0 percent by weight.

TS Figure 3.1-2 establishes the minimum acceptable BAT volume (gallons) for a given boron concentration, for one unit and two unit operation. The current TS Figure 3.1-2, BAT Minimum Volume was approved under Amendments 249 and 245 in June 2012 (Reference 1). An instrument uncertainty of 600 gallons is included in the BATs' minimum volume curve for one unit operation. Two errors have been identified in the calculation of the minimum acceptable BAT volume for a given boron concentration, for one unit and two unit operation in the current TS Figure 3.1-2.

The current TS Figure 3.1-2 BAT minimum volume curve for two unit operation reflects a 1200 gallons uncertainty. The instrument uncertainty of 600 gallons described above was erroneously doubled to 1200 gallons and included in the BAT minimum volume curve for two unit operation. The BATs are common equipment that serves both units. Consequently, the instrument uncertainty for two unit operation should not have been counted twice when establishing the minimum acceptable BAT volume curve.

Additionally, an error was identified in the calculation of BAT volume measurement uncertainty used to establish the minimum acceptable BAT volume for the current TS Figure 3.1-2. The total loop uncertainty (TLU) for the BAT instrumentation that monitors BAT level is calculated using the square-root-sum-of-the-squares (SRSS). There are three BAT instrument loops that monitor BAT level; one for each tank. As described above, the three BATs are cross-tied together effectively creating one common tank for both Units 3 and 4. However, the conversion of the TLU into equivalent tank volume uncertainty (in gallons) was erroneously calculated based on the volume of a single BAT. The calculation should have considered the volume of the common tank for both units comprised of three BATs cross-tied together. As a result, the calculated TLU (in gallons) was underestimated. This error resulted in the instrumentation uncertainty increasing from 600 gallons to 900 gallons. This increase in the instrumentation's uncertainty value requires changes to the minimum acceptable BAT volume for a given boron concentration, for one unit and two unit operation shown on TS Figure 3.1-2.

The current TS Figure 3.1-2 minimum acceptable BAT volume curve for one unit operation reflects a 600 gallons instrument uncertainty. FPL proposes to revise TS Figure 3.1-2 by increasing the minimum acceptable BAT volume curve for one unit operation by 300 gallons to

reflect the revised instrument uncertainty of 900 gallons. This error constitutes a potential non-conservative TS. Pursuant to Administrative Letter 98-10 (Reference 2), administrative controls have been established to assure that the minimum acceptable BAT volume for one unit operation is maintained within the corrected values until the proposed amendment is approved by the NRC and implemented. Review of Turkey Point Units 3 and 4 past operating history since implementation of the current TS Figure 3.1-2 indicates that the units have operated within the proposed minimum acceptable BAT volume curve for one unit operation.

As previously discussed, the current TS Figure 3.1-2 minimum acceptable BAT volume curve for two unit operation erroneously reflect a 1200 gallons uncertainty (a 600 gallons uncertainty doubled). To correct this, the minimum acceptable BAT volume curve for two unit operation has been reduced by 600 gallons. Due to the other error identified in the calculation of BAT volume uncertainty, the BAT volume measurement uncertainty for two unit operation needs to be further revised by 300 gallons, making the final revised uncertainty 900 gallons. Therefore, the minimum acceptable BAT volume curve for two unit operation needs to be reduced by a total of 300 gallons (from 1200 to 600 to 900 gallons). The current TS Figure 3.1-2 BAT minimum volume curve for two unit operation is more restrictive than the proposed corrected values.

#### **4.0 No Significant Safety Hazards Determination**

The Commission has provided standards for determining whether a significant hazards consideration exists as stated in 10 CFR 50.92. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with a 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. A discussion of these standards as they relate to the proposed change request follows.

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

Response: No

Revising the minimum acceptable BAT volume curves for one and two unit operation will not increase the probability of occurrence of an accident. The proposed revision to Figure 3.1-2 corrects the errors identified in the uncertainty calculation for one and two unit operation. Revising the minimum acceptable BAT volume curves provide better assurance that the BATs will continue to perform their required function, thereby ensuring the consequences of accidents previously evaluated are not increased. Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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



Response: No

The proposed change will not install any new or different equipment or modify equipment in the plant. The proposed change will not alter the operation or function of structures, systems or components. The response of the plant and the operators following a design basis accident is unaffected by this change. The proposed change does not introduce any new failure modes and the design basis of the BATs is maintained at the revised minimum volumes. Therefore, the proposed change will not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in-the margin of safety?

Response: No

The proposed change corrects the uncertainty related to BAT volume measurement. The proposed minimum acceptable BAT volume curves for one unit and two unit operation will provide better assurance that adequate shutdown margin is available for any post shutdown time. The limits used in the safety analysis are not affected. Therefore, the proposed change does not involve a significant reduction in the margin of safety.

FPL concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of no significant hazards consideration is justified.

The proposed TS change will not adversely affect plant operation, jeopardize the performance of safety-related equipment, or otherwise compromise public health and safety. Therefore, the proposed change to TS Figure 3.1-2, which increases the BAT minimum acceptable volume curve for one unit operation by 300 gallons and decreases the BAT minimum volume curve for two unit operation by 300 gallons, is justified.

## **5.0 Environmental Consideration**

10 CFR 51.22(c) provides criteria for, and identification of, licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. 10 CFR 51.22 (c)(9) identifies a proposed amendment to an operating license for a facility as a categorical exclusion not requiring an environmental assessment or environmental impact statement if operation of the facility, in accordance with the proposed amendment, would not involve: (i) a significant hazards consideration; (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite; or, (iii) a significant increase in individual or cumulative occupational radiation exposure.

FPL has reviewed the proposed license amendment and concludes that it meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). The following is the basis for this determination.

- i. The proposed license amendment does not involve a significant hazards consideration as described previously in the No Significant Hazards Consideration Evaluation in Section 4.0 above.
- ii. The proposed change is to revise the BAT minimum acceptable volume requirements for one and two unit operation. The proposed change will not result in a significant increase in radiological doses for any design basis accident as discussed in Sections 4.1 and 4.2 above. The proposed change has no effect on radiological releases or effluent releases. Therefore, there will not be a significant increase in the types or amounts of effluents that may be released offsite.
- iii. The proposed change does not modify the design or operation of the plant. The proposed amendment does not affect the radiological source terms. Therefore, the proposed change will not result in any increase in individual or cumulative occupational radiation exposure.

## **6.0 References**

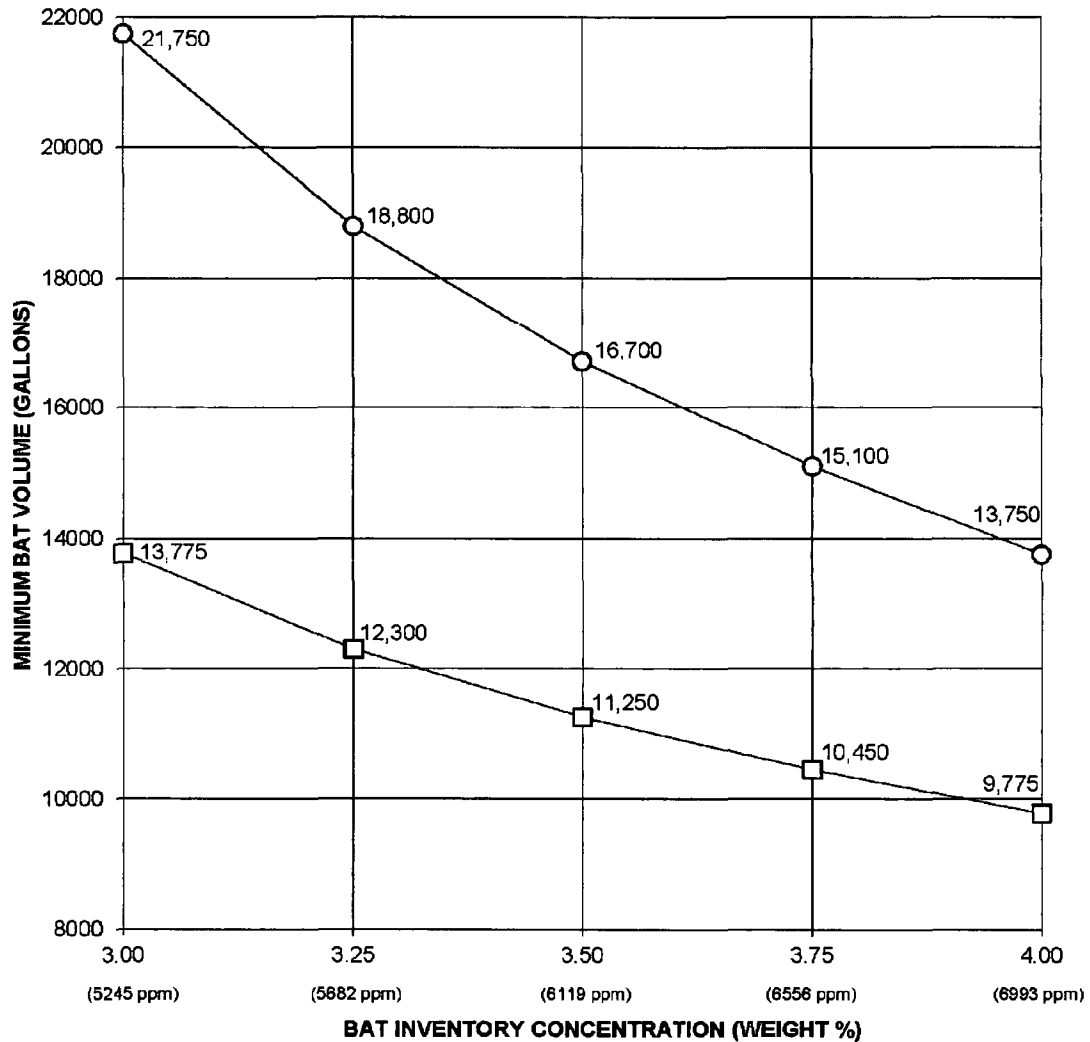
1. NRC letter to FPL, "Turkey Point Units 3 and 4 – Issuance of Amendments Regarding Extended Power Uprate (TAC NOS. ME4907 AND ME4908)," June 15, 2012.
2. NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications that are Insufficient to Assure Plant Safety," December 29, 1998.

Attachment

Proposed Technical Specification Change

Page 3/4 1-14 Mark-Up  
(2 pages)

Figure 3.1-2  
BORIC ACID TANK MINIMUM VOLUME (1)  
Modes 1, 2, 3 and 4



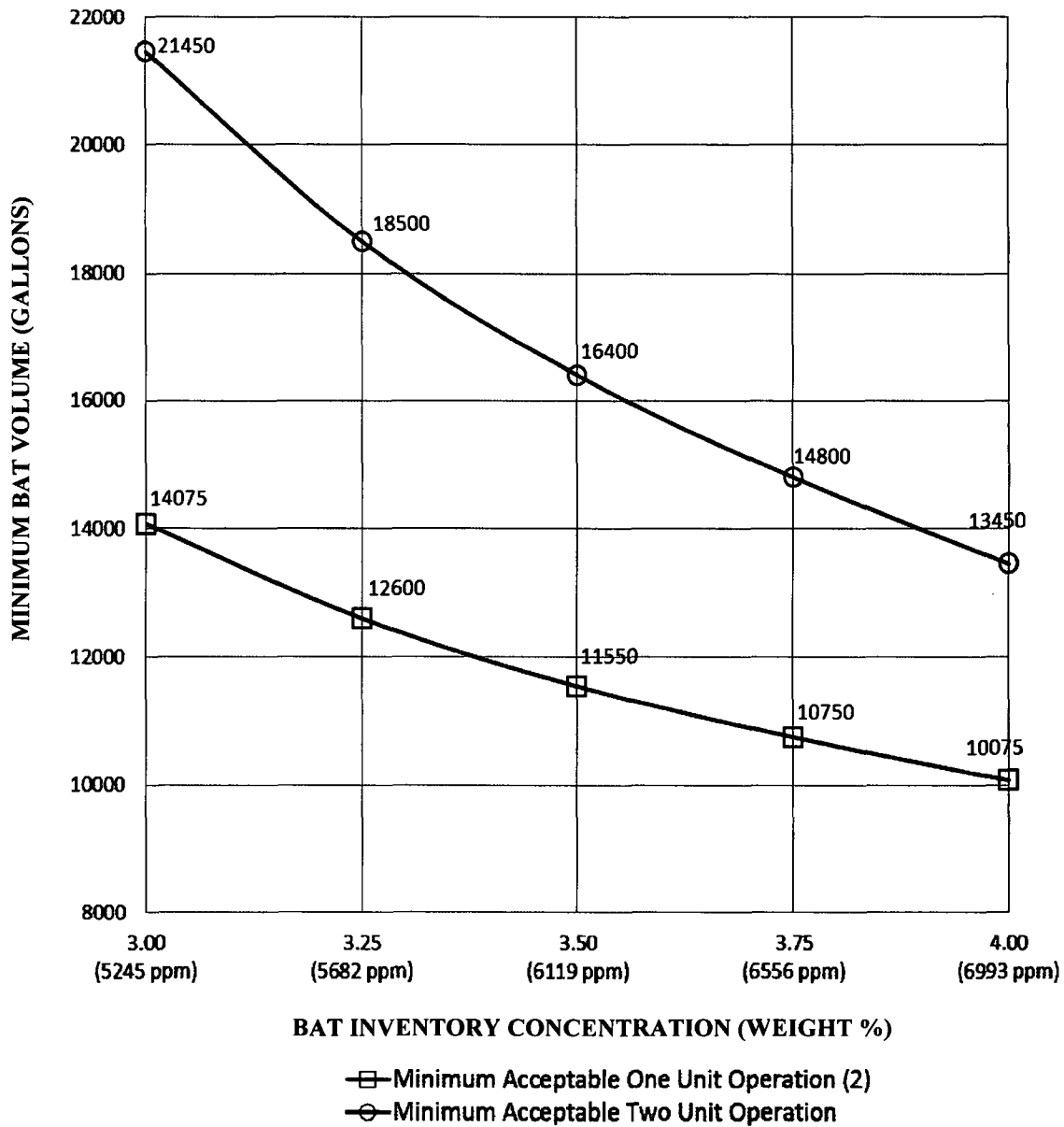
Notes:

- (1) Combined volume of all available boric acid tanks assuming RWST boron concentration between 2400 ppm and 2600 ppm.
- (2) Includes 2900 gallons for the shutdown unit.

**Delete Figure 3.1-2 and  
Insert A**

### INSERT A

Figure 3.1-2  
BORIC ACID TANK MINIMUM VOLUME (1)  
Modes 1, 2, 3 and 4



**Notes:**

- (1) Combined volume of all available boric acid tanks assuming RWST boron concentration between 2400 ppm and 2600 ppm.
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