Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

CNL-14-017

February 7, 2014

50.54(f)

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

Browns Ferry Nuclear Plant, Units 1, 2, and 3
Facility Operating License Nos. DPR-33, DPR-52, and DPR-68
NRC Docket Nos. 50-259, 50-260, and 50-296

Sequoyah Nuclear Plant, Units 1 and 2
Facility Operating License Nos. DPR-77 and DPR-79
NRC Docket Nos. 50-327 and 50-328

Watts Bar Nuclear Plant, Unit 1
Facility Operating License No. NFP-90
NRC Docket No. 50-390

Subject: **Update to Response to NRC 10 CFR 50.54(f) Request for Information Regarding Near-Term Task Force Recommendation 2.3, Flooding - Review of Available Physical Margin (APM) Assessments**

References:

1. NRC Letter, "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident," dated March 12, 2012

2. NRC Letter to Nuclear Energy Institute, "Endorsement of Nuclear Energy Institute (NEI) 12-07, "Guidelines for Performing Verification Walkdowns of Plant Flood Protection Features,"" dated May 31, 2012

3. TVA Letter to NRC, "Tennessee Valley Authority (TVA) - Fleet Response to NRC Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding the Flooding Walkdown Results of Recommendation 2.3 of the Near-Term Task Force (NTTF) Review of Insights from the Fukushima Dai-ichi Accident," dated November 27, 2012

4. NRC Letter, "Request for Additional Information Associated with Near-Term Task Force Recommendation 2.3, Flooding Walkdowns," dated December 23, 2013

On March 12, 2012, the Nuclear Regulatory Commission (NRC) staff issued Reference 1 requesting information pursuant to Title 10 of the Code of Federal Regulations 50.54(f). Enclosure 4 of that letter contains specific requested information associated with Near-Term Task Force Recommendation 2.3 for Flooding. Per Reference 2, the NRC endorsed Nuclear Energy Institute (NEI) 12-07, "Guidelines for Performing Verification Walkdowns of Plant Flood Protection Features," dated May 31, 2012. By Reference 3, Tennessee Valley Authority (TVA) submitted its final report in response to the request for information.

The requirements of NEI 12-07, section 5.8, "Documentation of Available Physical Margin," include: identify the available physical margin (APM) associated with each applicable flood protection feature; determine if the margin provided is small; and, evaluate any small margins that have potentially significant consequences through the corrective action program. The results of this effort were to be maintained on site for future NRC audits.

Following the NRC staff's initial review of the walkdown reports, regulatory site audits were conducted at a sampling of plants. Based on the walkdown report reviews and site audits, the staff identified additional information necessary to allow them to complete its assessments. Accordingly, by Reference 4, the NRC staff has issued a request for additional information (RAI). Reference 4 requested a response by January 31, 2014. TVA requested an extension to February 7, 2014, via phone call with the Watts Bar Nuclear Plant (WBN) NRC Project Manager on January 29, 2014. The RAI questions and TVA's responses for Browns Ferry Nuclear Plant (BFN), Units 1, 2, and 3, Sequoyah Nuclear Plant (SQN), Units 1 and 2, and WBN, Unit 1, are provided below.

RAI 1

Confirmation that the process for evaluating APM was reviewed.

TVA Response:

TVA has completed a review of the process used at BFN, Units 1, 2, and 3, SQN, Units 1 and 2, and WBN, Unit 1, to evaluate APMs.

RAI 2

Confirmation that the APM process is now or was always consistent with the guidance in NEI 12-07 and discussed in this RAI.

TVA Response:

The original walkdown effort followed the guidance provided in NEI 12-07, including a definition for a small margin. Additional actions have been taken to make the process consistent with the information provided in this RAI.

RAI 3

If changes are necessary, a general description of any process changes to establish this consistency.

TVA Response:

As stated above, the original walkdown effort followed the guidance provided in NEI 12-07, including a definition for a small margin. However, a specific APM had not been assigned to the seals associated with flood protection features. These items have now been addressed in accordance with the guidance provided in this RAI and entered into the corrective action process, as appropriate, for further evaluation.

RAI 4

As a result of the audits and subsequent interactions with industry during public meetings, NRC staff recognized that evaluation of APM for seals (e.g., flood doors, penetrations, flood gates, etc.) was challenging for some licensees. Generally, licensees were expected to use either Approach A or Approach B (described below) to determine the APM for seals:

a) *If seal pressure ratings were known, the seal ratings were used to determine APM (similar to example 2 in Section 3.13 of NEI 12-07). A numerical value for APM was documented. No further action was performed if the APM value was greater than the pre-established small-margin threshold value. If the APM value was small, an assessment of "significant consequences" was performed and the guidance in NEI 12-07 Section 5.8 was followed.*

b) *If the seal pressure rating was not known, the APM for seals in a flood barrier is assumed to be greater than the pre-established small-margin threshold value if the following conditions were met: (1) the APM for the barrier in which the seal is located is greater than the small-margin threshold value, and (2) there is evidence that the seals were designed/procured, installed, and controlled as flooding seals in accordance with the flooding licensing basis. Note that in order to determine that the seal has been controlled as a flooding seal, it was only necessary to determine that the seal configuration has been governed by the plant's design control process since installation. In this case, the APM for the seal could have been documented as "not small".*

As part of the RAI response, state if either Approach A or Approach B was used as part of the initial walkdowns or as part of actions taken in response to this RAI. No additional actions are necessary if either Approach A or B was used.

If neither Approach A or B was used to determine the APM values for seals (either as part of the walkdowns or as part of actions taken in response to this RAI), then perform the following two actions:

- *Enter the condition into the CAP (note: it is acceptable to utilize a single CAP entry to capture this issue for multiple seals). CAP disposition of "undetermined" APM values for seals should consider the guidance provided in NEI 12-07, Section 5.8. The CAP disposition should confirm all seals can perform their intended safety function against floods up to the current licensing basis flood height. Disposition may occur as part of the Integrated Assessment. If an Integrated Assessment is not performed, determine whether there are significant consequences associated with exceeding the capacity of the seals and take interim action(s), if necessary, via the CAP processes. These actions do not need to be complete prior to the RAI response.*

- *Report the APM as "undetermined" and provide the CAP reference in the RAI response.*

TVA Response:

As part of the initial walkdowns, TVA performed visual inspections of seals (e.g. flood doors, penetrations, flood gates, etc.) at BFN, Units 1, 2, and 3, SQN, Units 1 and 2, and WBN, Unit 1. All seals were inspected for signs of degradation, and corrective actions were taken, if required. TVA used a combination of Approach A and Approach B as part of the initial walkdowns. If seal pressure rating data was known, the seal ratings were used to determine APM (similar to example 2 of Section 3.13 of NEI 12-07), then a numerical value for APM was documented. If no seal rating information was available, then the APM was assumed to be greater than the established small-margin threshold value if the flood licensing basis documentation provided evidence that the seals were designed/procured, installed, and controlled as flooding seals.

For BFN, Units 1, 2, and 3:

As part of the actions taken to address this RAI, an APM value was determined for some flood seals. If an APM could not be determined for a seal, an APM value of “undetermined” was assigned and the seal has been entered into the CAP for further evaluation of its available physical margin. Disposition will occur as part of the Integrated Assessment or if significant consequences associated with exceeding the capacity of the seals are determined, interim actions will be pursued, if necessary, via the CAP. The CAP reference for BFN is Problem Evaluation Report (PER) number 840938.

For SQN, Units 1 and 2:

As part of the actions taken to address this RAI, an APM value was determined for each flood seal. It is noted, after the flooding walkdowns and prior to receipt of this RAI, TVA identified in the CAP degraded/nonconforming issues with seal penetrations in the Essential Raw Cooling Water (ERCW) building. Corrective actions are in place and scheduled to resolve these issues. Additional flood seal documentation has been established for the Diesel Generator Building. Documentation of flood seals for the Unit 1 and 2 Shield Buildings are in progress. The corrective actions are documented in CAP PER number 655763.

For WBN, Unit 1:

As part of the actions taken to address this RAI, APM values were determined for flood seals in accordance with a combination of Approach A and Approach B.

This letter contains no new regulatory commitments.

If you have any questions regarding this submittal, please contact Kevin Casey at (423) 751-8523.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 7th day of February 2014.

Respectfully,

J. W. Shea
Vice President, Nuclear Licensing

cc: NRC Regional Administrator - Region II
NRR Director - NRC Headquarters
NRC Senior Resident Inspector - Browns Ferry Nuclear Plant
NRR Project Manager - Browns Ferry Nuclear Plant
NRC Senior Resident Inspector - Sequoyah Nuclear Plant
NRR Project Manager - Sequoyah Nuclear Plant
NRC Senior Resident Inspector - Watts Bar Nuclear Plant
NRR Project Manager - Watts Bar Nuclear Plant