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

CNL-15-043

March 12, 2015

10 CFR 50.54(f)

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

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

Watts Bar Nuclear Plant, Unit 2
Construction Permit No. CPPR-92
NRC Docket No. 50-391

Subject: **Flood Hazard Reevaluation Report for Watts Bar Nuclear Plant, Response to NRC 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**

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 (ML12053A340)

2. NRC Letter, "Prioritization of Response Due Dates for Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Flooding Hazard Reevaluations for Recommendation 2.1 of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated May 11, 2012 (ML12097A509)

3. Letter from TVA to NRC, "Tennessee Valley Authority (TVA) - Extension Request Regarding the Flooding Hazard Reevaluation Report Required by NRC Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Recommendation 2.1, Flooding, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2013 (ML13080A073)

4. Letter from TVA to NRC, "Revised Commitments for the Extension Request Regarding the Flooding Hazard Reevaluation Report Required by NRC Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendation 2.1, Flooding, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated May 9, 2013 (ML13133A004)

5. Letter from NRC to TVA, "Sequoyah Nuclear Plant, Units 1 and 2, and Watts Bar Nuclear Plant, Units 1 and 2 - Relaxation of Response Due Dates Regarding Flooding Hazard Reevaluations for Recommendation 2.1 of the Near-Term Task Force Review of the Insights from the Fukushima Dai-ichi Accident," dated July 1, 2013 (ML13163A296)

6. Letter from NRC to NEI, "Trigger Conditions for Performing an Integrated Assessment and Due Date for Response," dated December 3, 2012 (ML12326A912)

7. Letter from TVA 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 Review of Insights from the Fukushima Dai-ichi Accident," dated November 27, 2012 (ML12335A340)

On March 12, 2012, the NRC issued Reference 1 to all power reactor licensees and holders of construction permits in active or deferred status. Enclosure 2 of Reference 1 requested that each licensee perform a reevaluation of external flooding sources and report the results in accordance with the NRC's prioritization plan (Reference 2).

The report due date established for Watts Bar Nuclear Plant (WBN), Units 1 and 2, was March 12, 2013. Due to the amount of time required to complete evaluation of upstream and downstream dams to fully assess the flood hazard for the WBN site, WBN submitted References 3 and 4 requesting an extension of the due date from March 12, 2013 to March 12, 2015. The NRC authorized the due date extension in Reference 5.

The purpose of this letter is to provide the Flooding Hazard Reevaluation Report (HRR) for WBN, Units 1 and 2. Specifically, Enclosure 1 of this letter provides the WBN Flooding HRR. The enclosed flooding HRR describes the approach, methods and results from the reevaluation of flood hazards at WBN, Units 1 and 2. The eight flood-causing mechanisms, and a combined effect flood identified in Attachment 1 to Enclosure 2 of Reference 1, are described in the report along with the potential effects on WBN, Units 1 and 2.

The Flooding HRR shows that some flood levels exceed the Current Licensing Basis (CLB) levels. The increased levels are the results of newer methodologies and guidance which typically exceed the methodologies and guidance which were used to establish the CLB for existing plants. It is noted that WBN, Unit 2 is under construction. The CLB flood levels presented in the Enclosure for WBN, Unit 1 will be the same CLB flood levels for WBN, Unit 2 when the Unit 2 licensing application is approved.

In accordance with Reference 6, an Integrated Assessment (IA) is required if flood levels determined during the flood hazard reevaluation are not bounded by the CLB flood levels. Enclosure 2 of Reference 1 specifies that the IA be completed and a report submitted within two years of submitting the Flooding HRR. An IA will be completed and a report submitted no later than March 12, 2017.

As discussed in Reference 1, the NRC stated that the current regulatory approach, and the resultant plant capabilities, gave the NRC the confidence to conclude that an accident with consequences similar to the Fukushima accident is unlikely to occur in the United States. The NRC concluded that continued plant operations and the continuation of licensing activities did not pose an imminent risk to public health and safety. The flooding walkdowns for WBN, Unit 1 CLB flood protection features have been performed and the results were provided in Reference 7. The flood walkdowns verified that the flood protection systems for WBN, Unit 1 are available, functional and implementable and any degraded or nonconforming flood protection features were entered in TVA's Corrective Action Program. The Reference 1 walkdowns were not required for WBN, Unit 2. Flood protection requirements are being addressed as an integral part of the WBN, Unit 2 completion.

Section 12 of the Flooding HRR provides a discussion of the interim actions taken or planned to address the higher flooding levels relative to the CLB flood levels. These actions will enhance the current capability to maintain the plant in a safe condition during the beyond-design-basis external flooding events that exceed the CLB flood levels and as a result, continued plant operation does not impose an imminent risk to the public health and safety while completing the IA.

In parallel with development of the required IA for WBN, TVA is continuing with several additional actions associated with understanding and mitigating potential flood hazards. Specifically, TVA continues to develop the Flood Mitigation System for WBN as described in TVA letters to the NRC dated April 16, 2013 (ML13108A107) and July 1, 2013 (ML13189A135) and as described in periodic updates to the NRC. In addition, TVA is developing updates to site specific precipitation data using advanced techniques and may engage in further dialogue with the NRC in the future.

Enclosure 2 of this letter provides a list of new regulatory commitments.

If you have any questions regarding this submittal, please contact Beth Wetzel at (423) 751-2403.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 12th day of March 2015.

Respectfully,

J. W. Shea
Vice President, Nuclear Licensing

Enclosures:

1. Near-Term Task Force (NTTF) - Recommendation 2.1 Mitigating Strategies Flood Hazard Evaluation Report for Watts Bar Nuclear Plant

2. List of Commitments

cc (Enclosures):

NRR Director - NRC Headquarters
NRO Director - NRC Headquarters
NRR JLD Director - NRC Headquarters
NRC Regional Administrator - Region II
NRC Project Manager - Watts Bar Nuclear Plant
NRC Senior Resident Inspector - Watts Bar Nuclear Plant, Unit 1
NRC Senior Resident Inspector - Watts Bar Nuclear Plant, Unit 2

ENCLOSURE 2

LIST OF COMMITMENTS

1. TVA will complete the March 12, 2012, 50.54(f) Request for Information required Integrated Assessment for Watts Bar Nuclear Plant, Units 1 and 2 and submit a report no later than March 12, 2017.

2. As an interim action until the permanent solution to prevent overflow of Douglas Saddle Dams 1 and 3 is implemented, TVA will implement an Emergency Action Plan to install HESCO barriers across the crests of both Douglas Saddle Dams 1 and 3 to prevent overtopping of these saddle dams.

3. As an interim action until the Watts Bar Nuclear Plant Integrated Assessment is complete, TVA will implement procedures to install sandbags to protect doors and equipment access pathways into the Diesel Generator Building. The procedures to install sandbags to protect doors and equipment pathways into the Diesel Generator Building will be revised by May 31, 2015.