L44 140930 003

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

CNL-14-168

September 30, 2014

10 CFR 50.4

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

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

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: **Sixth Progress Update on Improved Flood Mitigation System Project and Commitment Change to Improved Flood Mitigation System Milestones**

References:

1. Letter from TVA to NRC, "Commitment to Install Improved Flood Mitigation Systems," dated April 16, 2013 (ML13108A107)
2. Letter from TVA to NRC, "Progress Update on Improved Flood Mitigation System Project," dated July 1, 2013 (ML13189A135)
3. Letter from TVA to NRC, "Second Progress Update on Improved Flood Mitigation System Project," dated September 30, 2013 (ML13276A048)
4. Letter from TVA to NRC, "Third Progress Update on Improved Flood Mitigation System Project," dated December 31, 2013 (ML14003A171)
5. Letter from TVA to NRC, "Fourth Progress Update on Improved Flood Mitigation System Project," dated March 31, 2014 (ML14092A279)
6. Letter from TVA to NRC, "Fifth Progress Update on Improved Flood Mitigation System Project," dated July 25, 2014

By letter dated April 16, 2013, the Tennessee Valley Authority (TVA) committed to install improved flood mitigation systems at the Sequoyah Nuclear Power Plant (SQN), Units 1 and 2, and the Watts Bar Nuclear Plant (WBN), Units 1 and 2 (Reference 1). TVA committed to complete implementation of the improved flood mitigation systems at SQN and WBN by December 31, 2016. TVA also committed to provide periodic written updates regarding the progress of the project. During a public meeting on June 27, 2013, TVA briefed the NRC regarding the status of the improved flood mitigation project and provided the first progress update on July 1, 2013 (Reference 2). TVA also committed in the first progress update (Reference 2) to develop a set of major tasks through TVA's engineering design and project controls processes and to discuss these major tasks as part of the periodic written progress updates. TVA submitted the second progress update on September 30, 2013 (Reference 3), the third progress update on December 31, 2013 (Reference 4), the fourth progress update on March 31, 2014 (Reference 5) and the fifth progress update on July 25, 2014 (Reference 6).

The purpose of this letter is to provide the sixth written update regarding the progress of the improved flood mitigation system project consistent with Commitment 2 in Enclosure 2 of the Reference 1 letter and Commitment 1 in Enclosure 1 of the Reference 2 letter. This letter also provides a change to the Table of Improved Flood Mitigation System Milestones as described in Enclosure 1 of Reference 1.

During the June 27, 2013, public meeting and in the first update (Reference 2), TVA advised the NRC that engineering design and project controls for the project were being developed consistent with TVA's existing design and project management procedures. The Project Status Schedule, provided in Table 1 on page 3 of this letter, lists the major tasks associated with the design and project controls developed to implement the flood mitigation system. Table 1 is used to provide the overall status of the improved flood mitigation system project each quarter. The status of the Table 1 tasks from July 1, 2014, to September 12, 2014, is provided below.

- Task 5, Conduct Engineering Design Phase, continues in-progress and remains on schedule.

As presented in the fifth progress report, the storage location for the enhanced flood mode decay heat removal and Reactor Coolant System (RCS) makeup systems has been revised from the Mitigation Strategies (FLEX) building as described in Enclosure 1 of Reference 1. The decay heat removal system and the RCS makeup systems will be installed in the existing Additional Equipment Building (AEB) at SQN and WBN. The AEB is a seismic Category 1 building constructed to the respective site's current licensing basis. These systems will be installed at AEB elevation 740.5 feet at SQN and AEB 763.5 feet at WBN, 18.5 feet above the SQN Probable Maximum Flood (PMF) level and 24.3 feet above the WBN PMF level. A condensate recovery system will not be utilized as part of the enhanced flood mode system for decay heat removal. Also, the water source for the Enhanced Flood Mode System for Decay Heat Removal and Enhanced Flood Mode RCS Makeup system has been revised from a "high quality" water source to a "filtered" water source as noted in Table 2.

In addition, electrical power for these systems will be provided by FLEX 225 kva diesel generators rather then FLEX 3 MWe diesels. Table 2 provides the revised improved flood mitigation system milestones as described above. Table 2 supersedes the Table of Improved Flood Mitigation System Milestones as provided in Enclosure 1 of Reference 1.

The milestone revisions described previously and in Table 2 do not change the December 31, 2016, date to implement the improved flood mitigation systems at SQN Units 1 and 2 or WBN Units 1 and 2 as described in Enclosures 1 and 2 of Reference 1.

TABLE 1
PROJECT STATUS SCHEDULE

	Task	Scheduled Start	Scheduled Finish	Status
1	Team Organization Structure		05/29/13	Complete
2	Develop Project Plan		10/30/13	Complete
3	Perform Conceptual Design Phase		10/30/13	Complete
4	Perform Preliminary Design Phase		04/30/14	Complete
5	Conduct Engineering Design Phase	05/01/14	04/30/15	In-Progress
6	Procure Long-Lead Items	11/01/14	10/21/15	Not Started
7	Implementation	05/01/15	12/15/16	Not Started

TABLE 2
Table of Improved Flood Mitigation System Milestones

Milestone #	Milestone Name	Description (revisions shown bold text)	Completion Date
1	Hardened Structure Constructed	A Hardened Structure will be constructed on site that will meet or exceed NEI12-06. • Seismic Design 2X SSE HCLPF • Wind speed/Missile criteria 360 MPH • No less than 15 feet above current PMF levels • Will also store portable FLEX equipment	SQN: June 2015 WBN: November 2015
Revised 1	**Existing Additional Equipment Building**	**The existing Additional Equipment Building (AEB) will be used to store the improved flood mitigation system enhanced flood mode system and enhanced flood mode RCS makeup system. The systems will be installed on AEB elevation 740.5 feet at SQN and 763.5 feet at WBN.**	SQN: **December 2016** WBN: **December 2016**
2	3.0 MWe Diesels (One per operating unit)	The 3.0 MWe diesels are designed to provide extended coping in accordance with NEI 12-06 guidance. Diesels with diverse and redundant distribution will be available onsite to reduce reliance on off-site equipment.	SQN: December 2015 WBN: August 2014
Revised 2	**225 kva** Diesels (One per operating unit)	The **225 kva** diesels are designed to provide extended coping in accordance with NEI 12-06 guidance. Diesels with diverse and redundant distribution will be available onsite to reduce reliance on off-site equipment.	SQN: December 2015 WBN: **December** 2014
3	Install Hardened Enhanced Flood Mode System for Decay Heat Removal	The system will be installed in the Hardened Structure and operable, including having required training and procedures in place and take advantage of the FLEX 3.0 MWe diesel power. • Will provide a high quality water source available through the duration of a flooding event. • Will utilize a condensate recovery system to achieve service time for two operating units when relying on the clean water source. • Maintenance and testing will be developed in accordance with NEI 12-06.	SQN: December 2016 WBN: December 2016
Revised 3	Install Hardened Enhanced Flood Mode System for Decay Heat Removal	The system will be installed in the **Additional Equipment Building** and operable, including having required training and procedures in place and take advantage of the FLEX **225 kva** diesel power. • Will provide a **filtered** water source available through the duration of a flooding event. • Maintenance and testing will be developed in accordance with NEI 12-06.	SQN: December 2016 WBN: December 2016

TABLE 2
Table of Improved Flood Mitigation System Milestones
(continued)

Milestone #	Milestone Name	Description (revisions shown bold text)	Completion Date
4	Install a Hardened Enhanced Flood Mode RCS Makeup system	The system will be installed in the Hardened Structure and operable, including having required training and procedures in place and take advantage of the FLEX 3.0 MWe diesel power. • An RCS Make-up Pump and controls will be installed in the Hardened Structure. • Piping will be routed to the plant to allow the system to be placed in service with minimal manual staging activities. • A water supply from the clean water source will be available for enhancing RCS make-up capacity. • Maintenance and testing will be developed in accordance with NEI 12-06.	SQN: December 2016 WBN: December 2016
Revised 4	Install a Hardened Enhanced Flood Mode RCS Makeup system	The system will be installed in the **Additional Equipment Building** and operable, including having required training and procedures in place and take advantage of the FLEX **225 kva** diesel power. • An RCS Make-up Pump and controls will be installed in the **Additional Equipment Building**. • Piping will be routed to the plant to allow the system to be placed in service with minimal manual staging activities. • A water supply from the **filtered** water source will be available for enhancing RCS make-up capacity. • Maintenance and testing will be developed in accordance with NEI 12-06.	SQN: December 2016 WBN: December 2016

TVA will provide the seventh quarterly written progress update regarding the improved flood mitigation system project by December 31, 2014, consistent with Commitment 2 in Enclosure 2 of TVA's letter to NRC dated April 16, 2013 (Reference 1).

There are no new regulatory commitments contained in this letter.

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

Respectfully,

J. W. Shea
Vice President, Nuclear Licensing

cc: See Page 4

cc:

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