



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

CNL-14-223

December 17, 2014

10 CFR 50.4

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

Browns Ferry Nuclear Plant, Units 1, 2 and 3
Renewed 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 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: **Seventh Quarterly Status Report to the Flooding Hazard Reevaluation Report Extension Request**

- References:
1. 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) Regarding Recommendation 2.1, Flooding, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2013 (ML13080A073)
 2. 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)

3. 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)
4. Letter from TVA to NRC, "First Quarterly Status Report to the Flooding Hazard Reevaluation Report Extension Request Including Technical Paper [sic] Regarding Methodology for Multiple Dam Failures Due to Seismic Events," dated July 19, 2013 (ML13206A003)
5. Letter from TVA to NRC, "Second Quarterly Status Report to the Flooding Hazard Reevaluation Report Extension Request and Response to the Request for Additional Information Related to the Review of Potential Breaches of HESCO Flood Barriers and Earthen Embankments Affecting the Updated Hydro Analysis Results," dated September 30, 2013 (ML13276A050)
6. Letter from TVA to NRC, "Third Quarterly Status Report to the Flooding Hazard Reevaluation Report Extension Request," dated December 31, 2013 (ML14003A146)
7. Letter from TVA to NRC, "Fourth Quarterly Status Report to the Flooding Hazard Reevaluation Report Extension Request," dated March 31, 2014 (ML14092A326)
8. Letter from TVA to NRC, "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 March 11, 2014 (ML14071A094)
9. Letter from NRC to TVA, "Browns Ferry Nuclear Plant Units 1, 2, and 3 - 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 (TAC Nos. MF3620, MF3621, and MF3622)," dated May 9, 2014 (ML14115A287)
10. Letter from TVA to NRC, "Fifth Quarterly Status Report to the Flooding Hazard Reevaluation Report Extension Requests," dated July 25, 2014
11. Letter from TVA to NRC, "Sixth Quarterly Status Report to the Flooding Hazard Reevaluation Report Extension Request," dated September 30, 2014

By letter dated March 12, 2013, Tennessee Valley Authority (TVA) requested an extension to the schedule for submitting the Flooding Hazard Reevaluation Reports (HRRs) for the Sequoyah Nuclear Power Plant (SQN), Units 1 and 2, and the Watts Bar Nuclear Plant (WBN), Units 1 and 2 (Reference 1). After meeting with the Nuclear Regulatory Commission (NRC) on April 29, 2013, TVA committed in a follow-up letter dated May 9, 2013 (Reference 2) to provide the SQN and WBN Flooding HRRs to the NRC by March 12, 2015. The NRC approved the extension request in a July 1, 2013, letter to TVA (Reference 3).

TVA also committed in Reference 2 to provide periodic quarterly status reports of completed actions and progress to completing the HRRs to the SQN and WBN NRC Project Managers starting in June 2013. TVA provided the first quarterly update in a meeting with the NRC on June 27, 2013, and submitted the written update on July 19, 2013 (Reference 4). TVA provided the second quarterly update on September 30, 2013 (Reference 5), the third quarterly update on December 31, 2013 (Reference 6), and the fourth quarterly update on March 31, 2014 (Reference 7).


On March 11, 2014, TVA requested an extension to the schedule for submitting the HRR for the Browns Ferry Nuclear Plant (BFN), Units 1, 2 and 3, by March 12, 2015 (Reference 8). The NRC approved the BFN extension request in a May 9, 2014 letter to TVA (Reference 9). TVA committed in Reference 8 to provide quarterly status reports of completed actions and progress to completing the HRR to the BFN NRC Project Manager with the SQN and WBN HRR status report starting in June 2014. After requesting an extension to the due date, TVA provided the fifth quarterly update, including status of completed actions and progress to completing the BFN HRR, on July 25, 2014 (Reference 10). TVA provided the sixth quarterly update on September 30, 2014 (Reference 11).

The purpose of this letter is to submit the seventh quarterly status report regarding the status of completed actions and progress to completing the BFN, SQN and WBN HRRs. The Enclosure of this letter provides details to the status of tasks required for completion of the HRRs.

There are no new regulatory commitments contained in this letter.

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

Respectfully,



J. W. Shea
Vice President, Nuclear Licensing

Enclosure:

cc: See Page 4

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Enclosure

Seventh Quarterly Update for NTTF Recommendation 2.1, Flooding Hazard
Reevaluation Report (HRR) Extension Request, December, 2014

cc (w/Enclosure):

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

ENCLOSURE

SEVENTH QUARTERLY UPDATE FOR NTTF RECOMMENDATION 2.1, FLOODING HAZARD REEVALUATION REPORT (HRR) EXTENSION REQUEST, DECEMBER 2014

This update provides the status of the main tasks for completing the Flooding Hazard Reevaluation Reports (HRRs) outlined in the 1st quarterly update (Reference 3 of the cover letter). These main tasks are listed in Table 1 of this enclosure for Sequoyah Nuclear Plant (SQN) and Watts Bar Nuclear Plant (WBN) and in Table 2 for Browns Ferry Nuclear Plant (BFN).

As noted in the scheduled finish column of Table 1, completion of SQN and WBN Task 4b, "Sunny Day Dam Failure – Tributary Dams," has been rescheduled from November 2014 to December 2014 to allow additional time for review and approval of the calculations. This has no impact on the final completion date of March 2015. As noted in the status column of Table 1, Task 7, "Perform PMF simulations using results of stability analysis," Task 10, "Perform simulations using results of seismic stability analysis," and Task 11, "Perform simulations to quantify uncertainties," remain in progress and scheduled to complete as scheduled.

As noted in the scheduled finish column of Table 2, BFN Task 6, "Evaluate Stability of 4 dams under PMF conditions" and Task 9, "Evaluate seismic stability of 4 dams," completed as scheduled in September 2014. As noted in the scheduled finish column of Table 2, BFN Task 4, "Sunny Day Dam Failure – 3 Upstream Dams;" Task 5, "Perform PMF simulations - 2 storms - all dams stable;" Task 7, "Perform PMF simulations using results of stability analysis;" Task 10, "Perform simulations using results of seismic stability analysis;" and, Task 11, "Perform simulations to quantify uncertainties," have started, are in progress and scheduled to complete as scheduled.

As reported in the previous update, the vendor providing analysis tasks for the HRR was also supporting the hydrology tasks to support WBN Unit 2 licensing activities for TVA. There are no impacts to the HRR project schedule due to this support work.

TABLE 1
SQN & WBN MAIN TASK STATUS UPDATE - DECEMBER 12, 2014
(updates shown in bold type)

	TASK	START	FINISH	STATUS
1a	Main River Modeling Code Migration (SOCH to HEC-RAS)		Nov 2012	Complete
1b	Tributary River Modeling Code Migration (SOCH to HEC-RAS)		Nov 2013	Complete
2	Confirm critical storm PMP selection		Jan 2013	Complete
3	Perform local intense precipitation analysis for SQN/WBN		May 2013	Complete
4a	Sunny Day Dam Failure – WBH – east embankment failure		Feb 2013	Complete
4b	Sunny Day Dam Failure - Tributary Dams	March 2013	Dec 2014	In-progress
5	Perform PMF simulations - 2 storms - all dams stable	Feb 2013	March 2013*	In-progress*
6	Evaluate Stability of 18 dams under PMF conditions		March 2014	Complete
7	Perform PMF simulations using results of stability analysis	April 2014	Dec 2014	In-progress
8	Develop dam specific seismic hazards		April 2013	Complete
9	Evaluate seismic stability of 18 dams		March 2014	Complete
10	Perform simulations using results of seismic stability analysis	April 2014	Dec 2014	In-progress
11	Perform simulations to quantify uncertainties	June 2014	Dec 2014	In-progress
12	Prepare HRRs with results and interim actions, as required	Jan 2015	March 2015	Not Started
	* Task completed but indicated as in-progress to allow for revisiting the breach modeling techniques in light of the dam stability ISG.			

TABLE 2
BFN MAIN TASK STATUS UPDATE - DECEMBER 12, 2014
(updates shown in bold type)

	TASK	START	FINISH	STATUS
1a	Main River Modeling Code Migration (SOCH to HEC-RAS)		Nov 2012	Complete
1b	Tributary River Modeling Code Migration (SOCH to HEC-RAS)		Nov 2013	Complete
2	Confirm critical storm PMP selection		Jan 2013	Complete
3	Perform local intense precipitation analysis for BFN		Sep 2014	Complete
4	Sunny Day Dam Failure – 3 Upstream Dams	Nov 2014	Dec 2015	Started
5	Perform PMF simulations - 2 storms - all dams stable	Nov 2014	Jan 2015	Started
6	Evaluate Stability of 4 dams under PMF conditions		Sep 2014	Complete
7	Perform PMF simulations using results of stability analysis	Nov 2014	Jan 2015	Started
8	Develop dam specific seismic hazards		Oct 2013	Complete
9	Evaluate seismic stability of 4 dams		Sep 2014	Complete
10	Perform simulations using results of seismic stability analysis	Nov 2014	Jan 2015	Started
11	Perform simulations to quantify uncertainties	Nov 2014	Jan 2015	Started
12	Prepare HRRs with results and interim actions, as required	Jan 2015	Mar 2015	Not Started