



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

September 30, 2013

10 CFR 50.54(f)

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: 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

- 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)

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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 Pager Regarding Methodology for Multiple Dam Failures Due to Seismic Events," dated July 19, 2013 (ML13206A003)
5. Electronic Mail from NRC to TVA, "SQN 1 & 2 and WBN-1 - RAIs on TVA's Letter Dated January 18, 2013 (ML13025A262) - HESCO Flood Barriers and Earthen Embankments," dated July 23, 2013 (ML13205A165)
6. JLD-ISG-2013-01, "Guidance for Assessment of Flooding Hazards Due to Dam Failure," Revision 0 (ML13151A153)
7. Electronic Mail from TVA to NRC, "Quarterly Update/HESCO analysis RAIs," dated September 18, 2013

By letter dated March 12, 2013, the 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, to provide the SQN and WBN Flooding HRRs to the NRC by March 12, 2015 (Reference 2). 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).

The purpose of this letter is to submit the second quarterly status report regarding the status of completed actions and progress to completing the HRRs. Progress continues on track to complete the HRRs as scheduled to meet the requested March 12, 2015, completion date. Enclosure 1 of this letter provides details to the status of tasks required for completion of the HRRs.

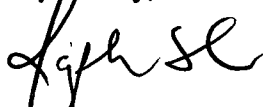
TVA will provide the third quarterly update regarding the status of completed actions and progress to completing the SQN and WBN HRRs by December 31, 2013, consistent with Commitment 1 in the Enclosure of TVA's letter to NRC dated May 9, 2013.

This letter also addresses the Request for Additional Information (RAI) related to the review of potential breaches of HESCO flood barriers and earthen embankments affecting the updated hydro analysis results. These RAIs were received by electronic mail (email) on July 23, 2013 (Reference 5). A response was requested by August 31, 2013. Development of the HRRs will use Interim Staff Guidance (ISG) JLD-ISG-2013-01, "Guidance for Assessment of Flooding Hazards Due to Dam Failure," (Reference 6). Section 7 of the ISG provides specific guidance for analysis of hydrologic failure modes, including consideration of barge impacts. Because consideration of barge impacts will be addressed as indicated in the ISG, TVA confirmed via email (Reference 7) that the RAI response would be addressed when this evaluation is completed.

Enclosure 2 provides the commitment by TVA to address the RAI related to the review of the potential breaches of HESCO flood barriers and earthen embankments affecting the updated hydro analysis results with the HRR. The due date for the HRR is March 12, 2015.

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

Respectfully,



J. W. Shea
Vice President, Nuclear Licensing

Enclosures:

1. 2nd Quarterly Update for NTF Recommendation 2.1, Flooding Hazard Reevaluation Report (HRR) Extension Request, September 30, 2013
2. List of Commitments

cc (w/Enclosures):

NRC Regional Administrator - Region II
NRR Director - NRC Headquarters
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

ENCLOSURE 1

**2nd QUARTERLY UPDATE FOR NTTF RECOMMENDATION 2.1,
FLOODING HAZARD REEVALUATION REPORT (HRR) EXTENSION REQUEST,
SEPTEMBER 30, 2013**

ENCLOSURE

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. As noted in the scheduled finish column, none of the tasks were scheduled to complete this quarter, July 1, 2013 to September 30, 2013. Tasks 1b, Tributary River Modeling Code Migration, 4b, Sunny Day Dam Failure – Tributary Dams, 6, Evaluate Stability of 18 dams under Probable Maximum Flood (PMF) conditions, and 9, Evaluate seismic stability of 18 dams, are in progress and are currently on track to finish as indicated in Table 1.

As presented in the 1st quarterly update, sub-tasks to Task 6 and Task 9 were outlined in Flowcharts 1 and 2. Completion of these sub-tasks also continues as indicated in Table 2 of this enclosure. As noted in Table 2, Field Investigations (Borings) have been completed for all 18 dams. Laboratory Testing was completed for the Chickamauga, Douglas, Fontana, Fort Loudoun, Fort Patrick Henry, Hiwassee, Nottely, and Watts Bar dams during this quarter. Completion of the Laboratory Testing for the Appalachia, Melton Hill, Norris, and Watauga dams has been revised as indicated in Table 2. These revised dates do not impact the overall scheduled completion of the PMF and Seismic Stability Analysis tasks.

In the 1st quarterly update, TVA provided a technical paper regarding a methodology for evaluating multiple dam failures due to seismic events (Enclosure 2 of Reference 3 of the cover letter). TVA will utilize this methodology for evaluation of multiple dam failures due to a single seismic event in lieu of the methodology presented in Section 5.5 of the interim staff guidance, JLD-ISG-2013-01, "Guidance for Assessment of Flooding Hazards Due to Dam Failure." This methodology has been incorporated in the overall task schedule as a sub-task to Task 9. Progress on the status of this methodology will be reported in the 3rd quarterly update consistent with Commitment 1 in the Enclosure of TVA's letter to NRC dated May 9, 2013.

Overall, progress continues to complete the HRRs as scheduled to meet the requested March 12, 2015, completion date.

**TABLE 1
MAIN TASK STATUS UPDATE - SEPTEMBER 2013**

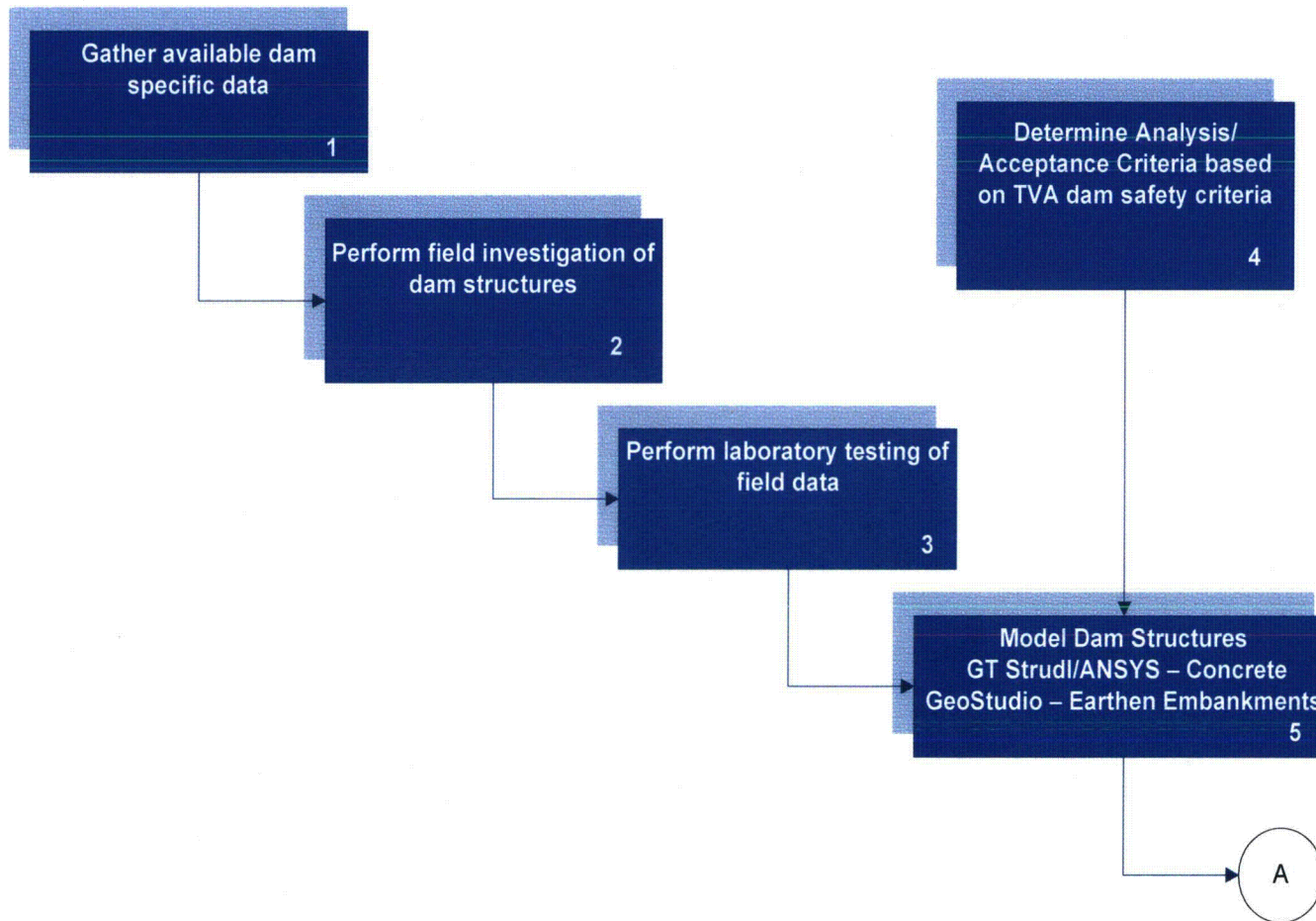
	TASK	START	FINISH	STATUS
1a	Main River Modeling Code Migration (SOCH to HEC-RAS)	May 2012	Nov 2012	Complete
1b	Tributary River Modeling Code Migration (SOCH to HEC-RAS)	March 2013	Nov 2013	In-progress
2	Confirm critical storm PMP selection	Dec 2012	Jan 2013	Complete
3	Perform local intense precipitation analysis for SQN/WBN	Sept 2012	May 2013	Complete
4a	Sunny Day Dam Failure – WBH – east embankment failure	Jan 2013	Feb 2013	Complete
4b	Sunny Day Dam Failure - Tributary Dams	March 2013	Nov 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	Sept 2012	March 2014	In-progress
7	Perform PMF simulations using results of stability analysis	April 2014	Dec 2014	Not Started
8	Develop dam specific seismic hazards	Feb 2013	April 2013	Complete
9	Evaluate seismic stability of 18 dams	Sept 2012	March 2014	In-progress
10	Perform simulations using results of seismic stability analysis	April 2014	Dec 2014	Not Started
11	Perform simulations to quantify uncertainties	June 2014	Dec 2014	Not Started
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.

FLOWCHART 1

PMF AND SEISMIC STABILITY ANALYSIS FLOWCHART

(Note - Blocks 1 - 5 are sub-tasks to Tasks 6 & 9 on next page)
(Note - See Table 2 for status of blocks 2 - 4 for each individual dam)



FLOWCHART 2

PMF AND SEISMIC STABILITY ANALYSIS FLOWCHART

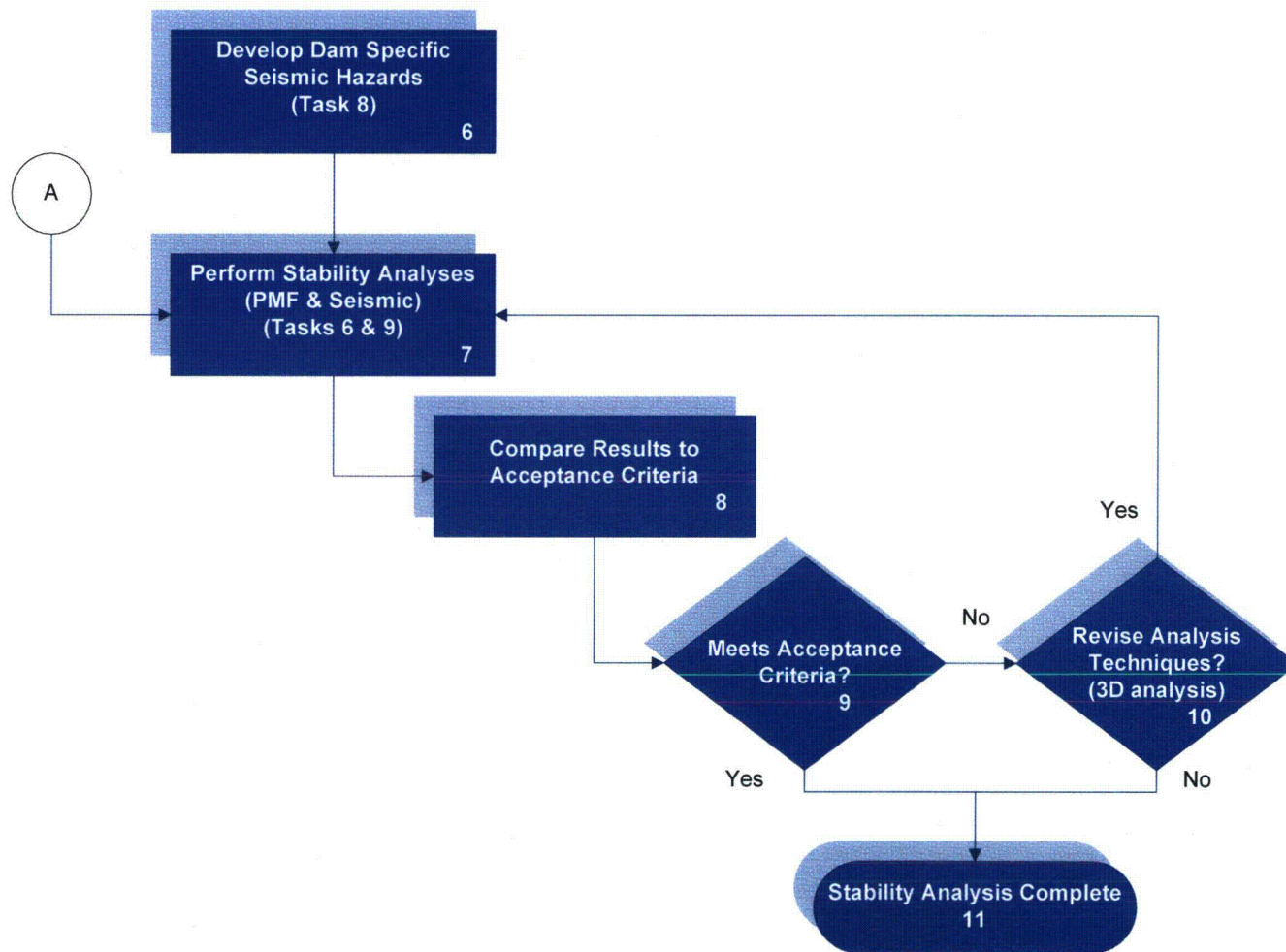


TABLE 2
PMF AND SESIMIC STABILITY ANALYSIS STATUS BY DAM
 (updates as of 09/20/2013 noted in bold text)

	Dam Project	Field Investigation (Borings) (# complete/total # borings) Block 2	Laboratory Testing (ETC - estimate to completion) Block 3	Develop Dam Specific Hazards Block 4	PMF and Seismic Stability Analysis (scheduled completion) Block 7
1	Appalachia	Complete 10/10	ETC 09/30/14	Complete	03/31/14
2	Blue Ridge	Complete - 0/0	N/A	Complete	03/31/14
3	Boone	Complete - 15/15	Complete	Complete	03/31/14
4	Chatuge	Complete - 51/51	Complete	Complete	03/31/14
5	Cherokee	Complete - 41/41	Complete	Complete	03/31/14
6	Chickamauga	Complete 52/52	Complete	Complete	03/31/14
7	Douglas	Complete - 75/75	Complete	Complete	03/31/14
8	Fontana	Complete - 6/6	Complete	Complete	03/31/14
9	Fort Loudoun	Complete - 57/57	Complete	Complete	03/31/14
10	Fort Patrick Henry	Complete - 6/6	Complete	Complete	03/31/14
11	Hiwassee	Complete - 4/4	Complete	Complete	03/31/14
12	Melton Hill	Complete - 7/7	ETC 10/31/14	Complete	03/31/14
13	Norris	Complete - 20/20	ETC 10/15/14	Complete	03/31/14
14	Nottely	Complete - 48/48	Complete	Complete	03/31/14
15	South Holston	Complete - 40/40	Complete	Complete	03/31/14
16	Tellico	Complete - 53/53	Complete	Complete	03/31/14
17	Watauga	Complete - 24/24	ETC 10/11/14	Complete	03/31/14
18	Watts Bar	Complete - 60/60	Complete	Complete	03/31/14

ENCLOSURE 2

LIST OF COMMITMENTS

1. TVA to address the RAI related to the review of the potential breaches of HESCO flood barriers and earthen embankments affecting the updated hydro analysis results with the Hazard Reevaluation Report. The due date for the HRR is March 12, 2015.