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

CNL-14-055

April 2, 2014

10 CFR 50.90
10 CFR 50.4
10 CFR 50.36

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

Subject: **Response to Request for Additional Information Regarding License Amendment to Update the Final Safety Analysis Report Regarding Changes to the Hydrologic Analysis for Watts Bar Nuclear Plant Unit 1**

References:

1. Letter from TVA to NRC, "Application to Revise Watts Bar Nuclear Plant Unit 1 Updated Final Safety Analysis Report Regarding Changes to Hydrologic Analysis, TAC No. ME8200 (WBN-UFSAR-12-01)," dated July 19, 2012. (ADAMS Accession No.: ML12236A167)

2. Letter from TVA to NRC, "Watts Bar Nuclear Plant (WBN) Unit 2 - Long-Term Stability Analysis Methodology," dated September 6, 2012. (ADAMS Accession No.: ML12279A191)

3 Electronic Mail from NRC to TVA, “Watts Bar Nuclear Station, Unit 1 – Request for Additional Information Related to License Amendment Request to Updated Final Safety Analysis Report Changes Associated With Hydrologic Analysis (TAC No. ME9130),” dated March 21, 2014

By letter dated July 19, 2012 (Reference 1), the Tennessee Valley Authority (TVA) submitted a license amendment request (LAR) to revise the Watts Bar Nuclear Plant (WBN) Unit 1 Updated Final Safety Analysis Report regarding changes to the Hydrologic Analysis. By letter dated September 6, 2012 (Reference 2), TVA submitted additional information regarding the WBN Unit 2, Long-Term Dam Stability Analysis Methodology. By electronic mail from NRC to TVA dated March 21, 2014 (Reference 3), TVA received a Request for Additional Information (RAI) related to the reference 1 LAR. In a teleconference on March 24, 2014, Mr. Andrew Hon, NRR Project Manager for WBN Unit 1, and TVA agreed that TVA would provide the response to the RAI by April 1, 2014.

The enclosure to this letter contains TVA's response to the Reference 3 RAI.

There are no new regulatory commitments included in this submittal. Please address any questions regarding this request to Ed Schrull at (423) 751-3850.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 1st day of April 2014.

Respectfully,

J. W. Shea
Vice President, Nuclear Licensing

Enclosure:

Response to NRC Request for Additional Information (RAI)

cc (Enclosure):

NRC Regional Administrator - Region II
NRC Resident Inspector – Watts Bar Nuclear Plant
Director, Division of Radiological Health - Tennessee State Department of Environment and Conservation
NRC Project Manager – Watts Bar Nuclear Plant

Enclosure

Response to NRC
Request For Additional Information

References:

1) Letter from TVA to NRC, "Application to Revise Watts Bar Nuclear Plant Unit 1 Updated Final Safety Analysis Report Regarding Changes to Hydrologic Analysis, TAC No. ME8200 (WBN-UFSAR-12-01)," dated July 19, 2012. (ADAMS Accession No.: ML12236A167)

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Request for Additional Information

The Reference 1 license amendment request (LAR) seeks approval to revise the WBN 1 Updated Safety Analysis Report (UFSAR) to adopt a revised hydrologic analysis for the WBN 1 site. For embankment breaching, the updated hydrologic analysis in Reference 1 assumed that no breaching would occur except Watts Bar West Saddle Dike which fails completely. Therefore, the Cherokee and Douglas dams were assumed to not be breached with the revised hydraulic analysis and new peak maximum flood (PMF) height and flow.

Reference 2 notes that TVA recently completed finite element analyses to re-evaluate the stability analysis for both the Cherokee and Douglas Dams utilizing current industry standards. This re-evaluation indicated the potential for failure of portions of the dams in extreme flood events. As a result, the Cherokee and Douglas dams will require modifications to ensure that the dams meet current industry stability criteria. These modifications are currently scheduled to not be completed until the end of 2014. TVA also noted in Reference 2 that these new analyses do not invalidate the nuclear design basis analysis of record.

Please provide a description of which stability analysis for the Cherokee and Douglas dams will be the analysis of record if the proposed LAR noted by Reference 1 is approved and provide any additional details regarding the stability assumptions for these dams in Reference 1 based on the information provided to the NRC in Reference 2.

TVA Response:

The stability analysis for the Cherokee and Douglas dams described in Reference 1 will remain the analysis of record (AOR) for Watts Bar Nuclear Plant (WBN), Unit 1. As discussed in Reference 2, the results of the analysis completed using current River Operations industry standards do not invalidate the WBN Unit 1 dam stability AOR. TVA has procedural controls in place that ensure that hydrology-related issues are identified and managed including the impact of such issues on various aspects of the nuclear plant's current licensing basis.