From:	Wentzel, Michael
Sent:	Tuesday, November 10, 2020 9:40 AM
To:	Taylor, Andrew Charles
Cc:	Williams, Gordon Robert; Wells, Russell Douglas
Subject:	Sequoyah Nuclear Plant, Units 1 and 2 - Audit Plan and Setup of Online Reference Portal (EPID L-2020-LLA-0004)
Attachments:	Redacted - Sequoyah 1 and 2 - Supplement to Audit Plan and Setup of Online Reference Portal (EPID L-2020-LLA-0004).pdf

Dear Mr. Taylor:

By application dated January 14, 2020, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20016A396); as supplemented by letters dated February 18, May 14, and August 12, 2020 (ADAMS Accession Nos. ML20049H184, ML20135H067, and ML20225A170, respectively); the Tennessee Valley Authority (TVA), submitted a license amendment request to revise the Sequoyah Nuclear Plant, Units 1 and 2, Updated Final Safety Analysis Report hydrologic analysis.

By email dated September 14, 2020 (ADAMS Accession No. ML20261H418), the U.S. Nuclear Regulatory Commission (NRC) staff issued a plan for the audit of information supporting the license amendment request. The NRC staff is issuing the attached supplement to that plan to include the review of information pertaining to TVA's software dedication process to the scope of the regulatory audit. As such, the NRC staff requests that the online reference portal be populated with the additional information identified in revised Section IV of the audit plan. The NRC staff may request additional documents during the review, which will be transmitted to you via email. The NRC staff's supplemental audit plan contains information that has been designated as proprietary. The redacted version of the supplemental audit plan is attached. The version containing proprietary information will be transmitted to you separately via an appropriate mechanism.

Related to the inclusion of information pertaining to TVA's software dedication process to the scope of the regulatory audit, TVA's August 12, 2020, letter stated its intent to provide the final response to the NRC staff's July 1, 2020, request for additional information (ADAMS Accession No. ML20189A211) at a later date agreed to by TVA and NRC. With the inclusion of this additional, related information to the scope of the regulatory audit, the NRC staff agrees that it would be appropriate for TVA to delay its response to the staff's request for additional information until a date to be agreed upon after the staff has had an opportunity to complete its audit activities.

If you have any questions, please contact me at (301) 415 6459 or michael.wentzel@nrc.gov.

Sincerely,

Michael J. Wentzel, Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Hearing Identifier: NRR_DRMA
Email Number: 880

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From: Wentzel, Michael

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Recipients:
"Williams, Gordon Robert" <grwilliams1@tva.gov>
Tracking Status: None
"Wells, Russell Douglas" <rdwells0@tva.gov>
Tracking Status: None
"Taylor, Andrew Charles" <actaylor@tva.gov>
Tracking Status: None

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Sensitivity: Normal
Expiration Date:

SUPPLEMENT TO AUDIT PLAN

REGARDING LICENSE AMENDMENT REQUEST TO

REVISE UPDATED FINAL SAFETY ANALYSIS REPORT

HYDROLOGIC ANALYSIS

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

I. BACKGROUND

By application dated January 14, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20014353A016); as supplemented by letters dated February 18 May 14, and August 12, 2020 (ADAMS Accession Nos. ML20049H184 and ML20135H067, ML20225A170, respectively); the Tennessee Valley Authority (TVA; the licensee) submitted a license amendment request (LAR) for Sequoyah Nuclear Plant (Sequoyah), Units 1 and 2. The proposed amendments would revise the Sequoyah, Units 1 and 2, Updated Final Safety Analysis Report (UFSAR) to reflect the results from new hydrologic analysis performed by the licensee.

By email dated September 14, 2020 (ADAMS Accession No. ML20261H418), the U.S. Nuclear Regulatory Commission (NRC) staff issued its plan for audit of information that supports the LAR. On October 13, 2020 (ADAMS Accession No. ML20293A080), the NRC and TVA staff participated in a closed meeting to discuss responses to NRC requests for additional information pertaining to the software dedication process used support the LAR. Based on that meeting, the NRC staff has determined that expanding the audit to include information associated with the software dedication process would be the most efficient approach toward a timely resolution of questions associated with this LAR review and will allow the NRC staff to confirm that the analyses, validation tests to support software dedication, and references support the requested licensing action.

II. REVISIONS TO AFFECTED SECTIONS

The revised sections of the NRC staff's September 14, 2020, audit plan are indicated, below:

IV. INFORMATION REQUEST

Information Request (IR) 2.4-2: Software Quality Assurance and Documentation

1. Dedication of the Probable Maximum Precipitation (PMP) Evaluation Tool

    a. Documentation on the methodology, test cases, and test results to independently validate the output of the PMP Evaluation Tool.

b. Documentation that provides basis to demonstrate that the test cases selected to validate the output of the PMP Evaluation Tool is sufficient to dedicate this tool for use in the intended application as described in the LAR.

c. Information to respond to NRC staff questions related to the dedication and operation of the PMP Evaluation tool as described in Enclosure 1 of this audit plan.

IV. AUDIT TEAM

Team Member	Title	Division	Area of Responsibility
Deanna Zhang	Senior Reactor Operations Engineer	NRR/DRO/IQVB	Technical Review

In addition, the NRC staff's September 14, 2020, audit plan is revised to include the following new section:

VII. AUDIT DISCUSSION TOPICS

A. Discussion Topics Related to the Dedication and Intended Use of the Probable Maximum Precipitation (PMP) Evaluation Tool

1. As described in the LAR, Section 2.4.3.1, "Probable Maximum Precipitation":

> The updated PMP depth-area-duration [DAD] characteristics for three storm types at each point of a gridded network over the Tennessee River drainage basis for three storm types: local, general, and tropical. The resolution of the PMP gridded network is 0.025 by 0.025 decimal degrees with each grid cell having an approximate area of 2.5-square miles for a total of 12,966 grid points above Wheeler dam. Gridded PMP values are calculated using the PMP Evaluation Tool, described in Topical Report TVA-NPG-AWA16-A and further described in Attachment A to this enclosure. This tool applies moisture transposition, in-place maximization, and orographic transposition adjustment factors to analyzed storm depth-area-duration value for the PMP area size and duration of interest to yield an adjusted rainfall value at a single grid point location... This process is repeated for each grid point on the gridded network within the PMP area of interest to determine the final point PMP rainfall depths.

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a. Clarify the difference between (1) test area sizes, (2) DAD data area sizes, and (3) watershed area sizes and how they are related.

b. How do the test problems with area sizes between values in DAD tables provide basis for validating the functions of the PMP Evaluation Tool for basins of interest in the TVA project?

2. As described in the LAR, Section 2.4.2.3 “Effects of Local Intense Precipitation,” “PMP for the plant drainage system and roofs of safety-related structures is defined in Topical Report TVA-NPG-AWA16-A…[and] would produce a maximum one-hour depth of 13.8 inches.”

   Section 3.7 of the NRC staff’s safety evaluation associated with the Topical Report states that “While the local PMP provides localized, small-scale PMP estimates across the TVA Basin, nearly all data provided is outside the scope of the NRC's review, as stated in Section 3.0; instead, the LIP depths provide site-specific calculations relevant for on-site flooding at each of TVA's three operating nuclear power plants which may result from LIP [local intense precipitation] over the powerblock. The final 1-hour, 1-mi^2 [1-square mile] LIP depths were 11.60, 13.81, and 13.81 inches at BFN [Browns Ferry Nuclear Plant, Units 1, 2, and 3], WBN [Watts Bar Nuclear Plant, Units 1 and 2], and SQN [Sequoyah], respectively.”

   a. Given the limitations and conditions of the Topical Report and since site-specific LIP calculations were used in place of local PMP data, clarify whether application of the PMP Evaluation Tool Package for local type events should be considered within the scope of the NRC staff’s software dedication audit since local PMP data were outside the scope of the NRC staff’s Topical Report review.