



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 28, 2024

LICENSEE: Tennessee Valley Authority

FACILITY: Browns Ferry Nuclear Plant, Units 1, 2, and 3

SUBJECT: SUMMARY OF MAY 29, 2024, PARTIALLY CLOSED MEETING WITH TENNESSEE VALLEY AUTHORITY TO DISCUSS A PROPOSED LICENSE AMENDMENT REQUEST REGARDING THE HYDROLOGIC ANALYSIS UPDATES (EPID L-2024-LRM-0053)

On May 29, 2024, the U.S. Nuclear Regulatory Commission (NRC) staff held a partially closed meeting with representatives of the Tennessee Valley Authority (TVA, the licensee) to discuss a proposed license amendment request (LAR) for Browns Ferry Nuclear Plant, Units 1, 2, and 3 (Browns Ferry). The meeting notice and agenda for this meeting, dated April 16, 2024, are available at Agencywide Documents Access and Management System (ADAMS) Accession No. ML24122A556. The licensee's slides for the public portion of the meeting are available at ADAMS Accession No. ML24149A133. A list of the meeting attendees is enclosed.

The Browns Ferry design basis hydrological model is described in Section 2.4, Appendix 2.4A, of the Browns Ferry Updated Final Safety Analysis Report. Currently, the model uses historical TVA unsteady flow software called Simulated Open Channel Hydraulics (SOCH), which has limited capability, requiring manual interfaces between multiple river model segments and dam rating curve balancing in the performance of hydrological analysis. TVA identified issues with spillway dam stability assumptions, which required an update of the design basis model. TVA decided to utilize the US Army Corps of Engineer (USACE) Hydraulics Engineering Center-River Analysis Software (HEC-RAS) for the update and to apply the NRC-approved Topical Report TVA-NPG-AWA16-A for probable maximum precipitation (PMP) for consistency with the assumptions (except Chickamauga Dam boundary assumptions) in the Sequoyah Nuclear Plant and Watts Bar Nuclear LARs.

TVA briefly described the PMP methodology employed in Topical Report TVA-NPG-AWA16-A. The methodology defines rainfall depth-area-duration data for three storm types (i.e., local, general, and tropical) on a gridded network over the TVA drainage basin comprising dozens of sub-basins. Browns Ferry is located in sub-basin 65. TVA described the areal distribution of gridded rainfall which utilizes PMP nesting criteria. Nested total rainfall depths were developed for certain time increments from 1 to 72-hour durations and applied to each of the TVA sub-basins. TVA noted that use of gridded rainfall allows a more detailed analysis of PMP events.

TVA described the seven key updates for the hydrologic analysis, which are: (1) changed PMP bases document and application of precipitation to the upstream drainage basins; (2) revised process of determining the controlling PMP storms and resulting probable maximum flood; (3) changed hydrological modeling software to HEC-RAS, utilizing the same basic model as Sequoyah and Watts Bar; (4) updated the criteria applied in the determination of dam stability and applied revised stability results in the model; (5) updated overland windspeed data; (6)

added the seismically-induced dam failure flooding analysis; and (7) revised the warning time hydrologic basis for rainfall on rivers and streams and seismically-induced dam failure floods.

TVA noted that the scope of the Browns Ferry LAR is the same as the scope of the Sequoyah amendment, which was approved on March 26, 2024. TVA plans to submit the LAR for Browns Ferry in September 2024. The NRC staff asked TVA why it decided to prepare an LAR rather than perform the update to analysis under the criteria in section 50.59 of Title 10 of the *Code of Federal Regulations*. TVA stated that the NRC staff's safety evaluation for the topical report indicated that an LAR should be submitted.

No regulatory decisions were made at this meeting.

No comments or public meeting feedback forms were received.

Please direct any inquiries to me at 301-415-1627 or Kimberly.Green@nrc.gov.

/RA/

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Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-259, 50-260, and 50-296

Enclosure: List of Attendees

cc: Listserv

LIST OF ATTENDEES

MAY 29, 2024, PARTIALLY CLOSED MEETING WITH TENNESSEE VALLEY AUTHORITY

PROPOSED LICENSE AMENDMENT REQUEST REGARDING HYDROLOGIC ANALYSIS

UPDATES FOR BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3

Name	Organization
Kim Green	U.S. Nuclear Regulatory Commission (NRC)
Ken See	NRC
Deanna Zhang	NRC
Barbara Hayes	NRC
Perry Buckberg	NRC
Scott DeNeale	Oak Ridge National Laboratory
Andy Taylor	Tennessee Valley Authority (TVA)
Karen Carboni	TVA
Dennis Lundy	TVA
Steve Carlyle	TVA
Don Lewis	TVA
Janelle Schlamp	TVA
Tom Spink	TVA
Stu Henry	Barge Design
Robbie Blackwell	Barge Design
Rajiv Prasad	Pacific Northwest National Laboratory
Sheryl Sweet	Florida Power and Light
Chris Rochon	EPRI

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ADAMS Accession Nos.:
ML24176A127 (Package)
ML24176A125 (Meeting Summary)
ML24122A556 (Meeting Notice)
ML24149A133 (Slides)

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NAME	KGreen	ABaxter	DWrona	KGreen
DATE	06/21/24	06/27/24	06/27/24	06/28/24

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