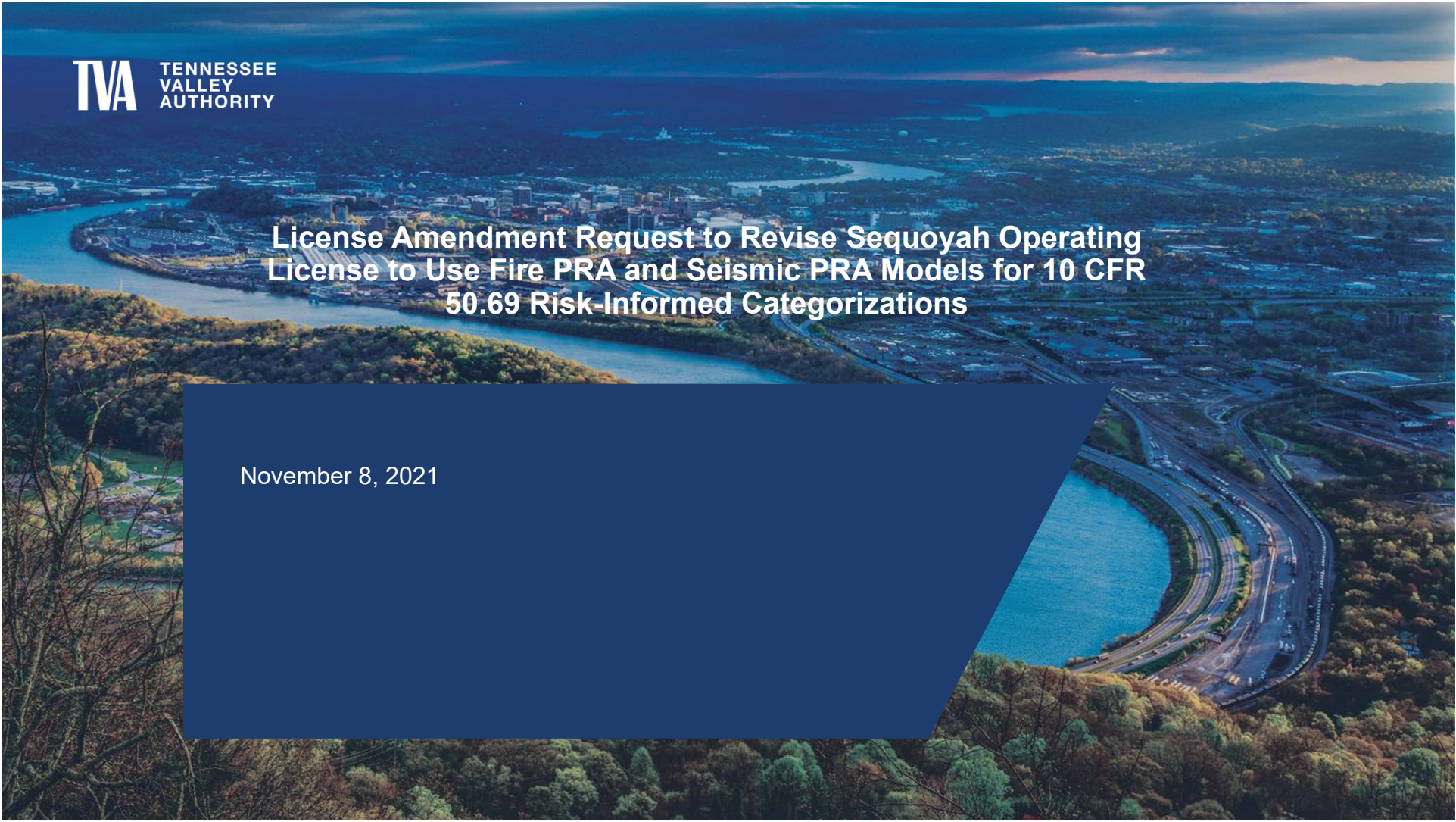


The background of the slide is a wide-angle aerial photograph. It shows a large river, likely the Tennessee River, winding through a city. The city's skyline is visible in the distance under a dramatic, cloudy sky. In the foreground, there are dense green trees and a multi-lane highway with several vehicles. A dark blue semi-transparent shape, resembling a large arrow pointing towards the bottom right, is overlaid on the lower half of the image.

License Amendment Request to Revise Sequoyah Operating License to Use Fire PRA and Seismic PRA Models for 10 CFR 50.69 Risk-Informed Categorizations

November 8, 2021

Agenda

- Describe upcoming license amendment request (LAR)
 - Scope of the Request
 - PRA Technical Acceptability
- LAR Schedule
- Summary
- Questions/Comments?

Scope of the Request

- LAR revises the existing 10 CFR 50.69 License Condition
 - To allow use of a fire PRA (FPRA) to replace use of the fire Safe Shutdown Equipment List in paragraph (1).
 - To allow use of a seismic PRA (SPRA) to replace use of a seismic margin analysis to evaluate seismic risk in paragraph (1).
 - Replaces examples of changes to the categorization process requiring prior NRC approval in paragraph (3).

Scope of the Request

a fire PRA; a seismic PRA

- (1) TVA is approved to implement 10 CFR 50.69 using the processes for categorization of Risk Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 structures, systems, and components (SSCs) using: Probabilistic Risk Assessment (PRA) model to evaluate risk associated with internal events, including internal flooding; using the fire safe shutdown equipment list in the SQN Fire Protection Report referenced in the Updated Final Safety Analysis Report to evaluate internal fire events; the NUMARC 96-01 shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 SSCs and their associated supports; and the results of non PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards, i.e., seismic margin analysis (SMA) to evaluate seismic risk, and a screening of other external hazards updated using the criteria in the endorsed ASME/ANS RA-Sa-2009 PRA Standard for other external hazard screening significance; as specified in Unit 1 License Amendment 346.

(as revised by License Amendment ____)

Scope of the Request

- (2) Prior to implementation of the provisions of 10CFR 50.69, TVA shall complete the items below;
 - a. Items listed in Enclosure 1, Attachment 1, "SQN 10 CFR 50.69 PRA Implementation Items," in TVA letter CNL-19-002, "Response to Request for Additional Information Regarding Application to Modify Sequoyah Nuclear Plant Units 1 and 2, Application to Adopt 10 CFR 50.69, "Risk-informed Categorization and Treatment of Structures, Systems, and Components for Nuclear Power Reactors, (SQN-TS-17-06)(EPID: L-2018-LLA-0066)," dated March 21, 2019.
- (3) Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from ~~a seismic margins approach to a seismic probabilistic risk assessment approach, change from alternative method for internal fire to a fire probabilistic risk assessment approach~~).

the NUMARC 96-01 shutdown safety assessment process to assess shutdown risk to a shutdown PRA approach

PRA Technical Acceptability

Fire

- ASME/ANS RA-Sa-2009 (Part 4), RG 1.200 peer reviewed
- Appendix X of NEI 05-04, 07-12, and 12-13 finding closure review
- No open Fire PRA F&Os

Note – The FPRA is currently under audit with the Sequoyah TSTF-505 LAR so there may be some opportunities for review synergy.

PRA Technical Acceptability (continued)

Seismic

- ASME/ANS RA-Sb–2013 (Part 5), RG 1.200 peer reviewed
- Appendix X of NEI 05-04, 07-12, and 12-13 finding closure review
- No open Seismic PRA F&Os

Note – The SPRA is currently under audit with the Sequoyah TSTF-505 LAR so there may be some opportunities for review synergy.

Schedule

- Projected submittal in December 2021 with a requested approval within one year
- A 90-day implementation period is proposed

Summary

- Sequoyah LAR to allow use of FPRA and SPRA for 10 CFR 50.69 risk-informed categorizations scheduled to be submitted in December 2021 with approval requested in one year
- FPRA and SPRA are technically acceptable for use in 10 CFR 50.69 risk-informed categorizations

**Questions/
Comments**

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