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Cooper RICT & 50.69 LARs NRC Pre-submittal Meeting

January 2026

COOPER NUCLEAR STATION
NEBRASKA PUBLIC POWER DISTRICT

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Cooper Presenters

- Steve Norris, 50.69/RICT Project Manager
- Troy Barker, Strategic….
- Steve Nelson, Regulatory Affairs & Compliance Manager
- Ole Olson, Principal PRA Engineer

Agenda

- Introduction / Opening Remarks
- Scope of License Amendment Requests
  - 50.69
  - TSTF-505
  - TSTF-591
  - TSTF-439
- PRA Technical Adequacy
- PRA Model Assumptions and Sources of Uncertainty
- Schedule
- Closing Remarks

Scope of License Amendment Requests

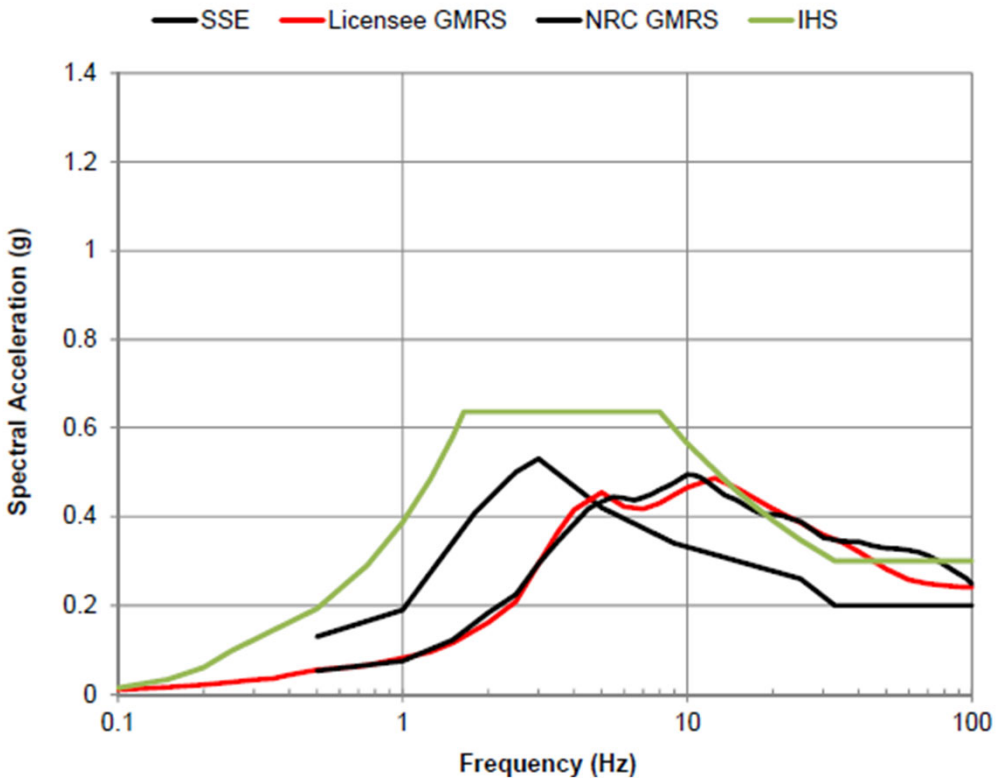
- 50.69 LAR based on NEI 00-04
- Risk Informed Completion Time (RICT) LAR based on TSTF-505 Revision 2 and NEI 06-09.
- TSTF-439 – Eliminate Second Completion Times Limiting Time From Discovery of Failure to Meet an LCO
- TSTF-591 – Revise the Risk Informed Completion Time (RICT) Program
- Two LARs will be submitted; 1) 50.69 2) RICT (TSTF-505, TSTF-439, TSTF-591)

Cooper 10 CFR 50.69 Overview

- LAR and Program follow NEI 00-04 with exception to seismic
  - PRA evaluations utilizing internal events, internal flooding, and fire PRA models.
  - Other external hazards screened per the ASME PRA Standard.
  - Shutdown safety assessment based on NUMARC 91-06.
  - Seven qualitative criteria in Section 9.2 of NEI 00-04.
  - Defense-in-depth and integral assessments.
  - Passive categorization will follow the enhanced passive methodology (EPRI 3002033536).
- EPRI enhanced passive categorization methodology
  - In August 2023 EPRI requested NRC review and approval of EPRI 3002025288, “Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components” (ML23234A266).
  - Supplements: November 2023 (ML23334A210), June 2024 (ML24180A016), April 2025 (ML25121A201).
  - NRC issued a Safety Evaluation approving the methodology in July 2025 (ML25168A015).
  - In August 2025, EPRI published the final, NRC-approved version of the methodology as TR 3002033536 (Revision 1-A), incorporating supplemental information provided during audits and in response to RAIs (ML25241A331).

Cooper 10 CFR 50.69 Overview (Seismic)

- The approach for assessing seismic risk follows the same approach licensed for LaSalle (Tier 2 pilot)
- Based on EPRI 3002017583 and information provided in the LAR (e.g., RAIs incorporated by reference)
- The CNS GMRS is above 0.2g and exceeds the SSE in a portion of the response spectrum between 1 & 10 Hz
- CNS was not required to perform an SPRA in response to Fukushima
- CNS meets the criteria for Tier 2 per EPRI 3002017583 (ML21082A170).



Cooper RICT Overview

- Single LAR will be submitted for TSTF-505, TSTF-439, and TSTF-591.
- RICT portions of the LAR based on TSTF-505 Rev 2, TSTF-591 Rev 0, and NEI 06-09.
- Eliminate Second Completion Times portion of LAR based on TSTF-439 Rev 2.
- RICT Applicable in Modes 1 and 2
- Some administrative variations from TSTF-505.
- Includes additional LCO 3.6.1.9 for RHR Containment Sprays that is not included in NUREG-1433.

PRA Technical Adequacy

- Cooper has PRA models for Full Power Internal Events and Internal Flooding (FPIE) and Fire (FPRA).
- The PRA models have been assessed against RG 1.200 Revision 3.
- Finding and Observation (F&O) closure reviews were conducted on these PRA models. Findings were reviewed and closed using the process documented in Appendix X to NEI 05-04, NEI 07-12 and NEI 12-13, “Close-out of Facts and Observations” (F&Os) as accepted by NRC in the letter dated May 3, 2017.
- Probabilistic Risk Assessment (PRA) model technical adequacy was previously evaluated by the NRC for TSTF-425 and NFPA 805.

PRA Technical Adequacy

- Internal Events and Internal Flooding PRA Model
  - A full-scope peer review of the CNS FPIE PRA model including internal flooding was conducted in 2008. The reviews were performed using the NEI 05-04 process, the ASME/ANS PRA Standard (ASME/ANS RASc-2007), and Regulatory Guide 1.200, Revision 1. Subsequent F&O closure reviews were conducted in 2022. All Findings were closed with all applicable Supporting Requirements (SRs) meeting Capability Category (CC) II or greater of the ASME/ANS PRA Standard.
  - CNS performed a self-assessment as to whether the resolution of each Finding constituted maintenance or upgrade of the PRA, as defined in the ASME/ANS PRA standard. The F&O Independent Assessment Team concurred with the CNS assessment that there were no PRA upgrades associated with the resolution of findings.

PRA Technical Adequacy

- Fire PRA Model
  - A FSPR FPRA report for CNS was issued in March of 2011. F&O closure reviews were conducted in September of 2024 and August of 2025 to close all open Findings. The FSPR was performed using the NEI 07-12 process, the ASME/ANS PRA Standard (ASME/ANS RASa- 2009), and Regulatory Guide 1.200, Revision 2.
  - An additional focused scope peer review was conducted in August of 2024 to review application of the high energy arc fault fire modeling methodology contained in NUREG 2262. F&O closure reviews were conducted in August of 2025 to close all open Findings. All of the reviews were performed using the NEI 17-07 process, the ASME/ANS PRA Standard (ASME/ANS RASa- 2009), and Regulatory Guide 1.200, Revision 3.
  - CNS performed a self-assessment as to whether the resolution of each Finding constituted maintenance or upgrade of the PRA, as defined in the ASME/ANS PRA standard. The F&O Independent Assessment Team concurred with the CNS assessment that there were no PRA upgrades associated with the resolution of findings.

Credit for FLEX Equipment

- Cooper PRA models credit use of FLEX equipment and Cooper intends to continue crediting FLEX during the 10 CFR 50.69 categorization process.
- CNS is a “N+1” FLEX strategy plant, meaning there are provisions for on-site redundant FLEX equipment to support the safety functional requirements beyond the minimum necessary to support the single unit
- A sensitivity analysis was performed to measure the overall risk impact of FLEX by removing credit for FLEX strategies from the internal events and internal flooding PRA models. The result of the sensitivity analysis was that removing credit for FLEX strategies from the CNS FPIE model, there was a minimal increase in the CDF.
- The FLEX strategies were modeled in the CNS PRA prior to issuance of the May 6, 2022 NRC Memorandum providing guidance on crediting mitigating strategies in PRA. The modeling of FLEX in the CNS PRA has not been validated to comply with the May 6, 2022 memorandum. CNS will validate and update the FLEX modeling as necessary to comply with the May 6, 2022 memorandum prior to 50.69 or RICT program implementation

PRA Model Uncertainties and Assumptions

- Cooper followed the processes defined in NUREG-1855, EPRI 1016737, and EPRI 1026511
  - Assessment of potential sources key to respective applications and disposition/treatment for the application
  - Identification of plant-specific sources and generic sources for all Hazards per EPRI 1016737
  - Identification of Fire PRA plant-specific sources and generic sources per Appendices of EPRI 1026511
  - Consideration of generic Level 2 sources per EPRI1026511 Appendix E as applicable to LERF
  - Consideration of both parameter & completeness uncertainties

Potential Review Efficiencies

- LARS
  - Both RICT and 50.69 license amendment requests are consistent with their applicable templates or model applications.
- PRA Models
  - Same PRA models used for both LARs
  - PRA technical adequacy and key sources of uncertainty similar for both applications
  - All models have been peer reviewed
  - No open findings
- TSTF-439 needed for TSTF-505
  - Streamlined approach where both are approved together
- Potential for combined Audit

Timeline for Submittals

- Two separate submittal will be made
  - 50.69 LAR is expected to be submitted by end of January 2026
  - RICT LAR is expected to be submitted April 2026.
  - TSTF-439 and TSFT-591 will be submitted in conjunction with RICT
- Changes to schedule will be communicated to the NRC Project Manager in a timely manner.
- A 6 month NRC review is requested.

Closing Remarks