



Pre-Submittal Meeting August 2026



License Amendment Request to Adopt 10 CFR 50.69, “Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors”

Agenda

- Introductions
- Background
- License Amendment Request (LAR) Scope
- LAR Overview
- Approach for Addressing Seismic Risk
- Passive Categorization Methodology
- Schedule
- Questions

Participants

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Background

- NextEra Energy Duane Arnold (NextEra) submitted a LAR to adopt 10 CFR 50.69 at Duane Arnold Energy Center (DAEC) on August 31, 2017 (ML17243A469).
- On June 12, 2018, NextEra requested to withdraw the LAR based on business considerations (ML18166A172).
- The NRC acknowledged the request to withdraw the LAR on June 20, 2018 (ML18165A260 / ML18165A397).
- On January 23, 2025, NextEra submitted a letter outlining the regulatory pathway for the potential reauthorization of power operations at DAEC (ML25023A265).
- Use of alternative treatments will be implemented through adoption of 10 CFR 50.69 as part of the restart strategy.

10 CFR 50.69 LAR Scope

- The proposed amendment would add a condition to the DAEC license to document the NRC's approval for the use of 10 CFR 50.69
- The license condition identifies the processes to be used for categorization of structures, systems and components (SSCs)
 - Internal events, internal flooding, internal fire risk – PRA model
 - Shutdown risk – Shutdown safety assessment process
 - Passive component risk – Arkansas Nuclear One, Unit 2 (ANO-2) method, with a license condition that allows transition to the Enhanced Passive Methodology
 - External hazards (excluding seismic risk) – IPEEE screening updated using the ASME/ANS PRA Standard screening process
 - Seismic risk – EPRI Tier 1 alternative seismic approach as described in the LAR

10 CFR 50.69 LAR Overview

- Categorization process follows NEI 00-04 (except for the evaluation of seismic risk)
 - PRA evaluations utilizing internal events, internal flooding, and fire PRA models
 - Non-PRA evaluations including external events screening and shutdown safety assessment
 - Seven qualitative criteria in Section 9.2 of NEI 00-04
 - Defense-in-depth assessment
 - Passive categorization using ANO-2 methodology, with a license condition that allows transition to the Enhanced Passive Methodology
- External hazards
 - Screened in accordance with GL 88-20 and updated to use the criteria in ASME PRA Standard RA-Sa-2009
 - Currently updating the external hazards screening information previously submitted in the initial 50.69 LAR (Att. 4 of ML17243A469)

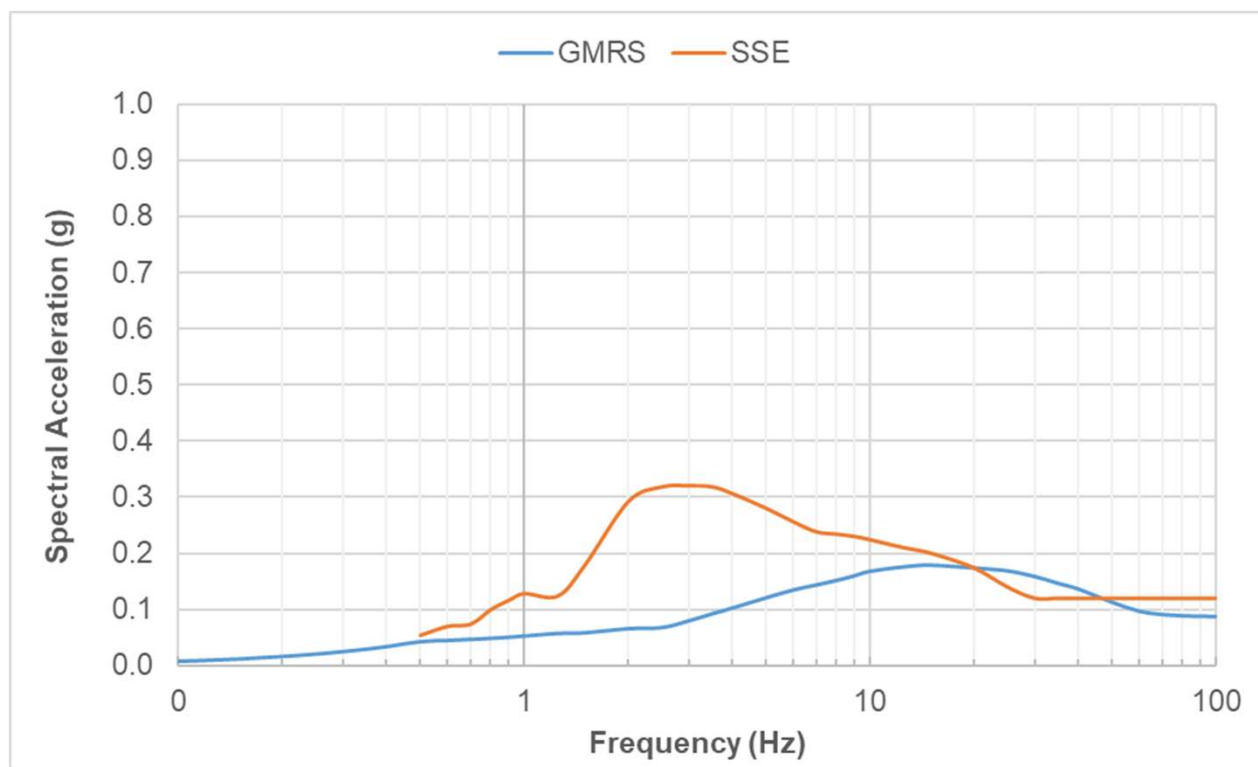
10 CFR 50.69 LAR Overview

- PRA Model Technical Adequacy
 - The 50.69 LAR will provide the current PRA technical adequacy basis, including disposition of open peer review findings and key assumptions and sources of uncertainty applicable to categorization.
 - The NRC previously reviewed the technical adequacy of the DAEC PRA models as part of approvals for the Surveillance Frequency Control Program (ML120110282) and transition to NFPA 805 (ML13210A449).
- Seismic risk will be addressed using the EPRI Tier 1 alternative seismic approach (ML21082A170).
- The LAR requests approval to use the ANO-2 approach to support categorization of the Control Building Chillers, with a license condition allowing transition to the EPRI Enhanced Passive Methodology (ML25241A331).

Approach for Addressing Seismic Risk

- The approach for assessing seismic follows the same approach licensed for St. Lucie & Turkey Point (Tier 1).
- The LAR will incorporate by reference the case studies from EPRI 3002017583.
- The DAEC GMRS peak acceleration is less than 0.2g and less than the SSE between 1.0 and 10 Hz.
- Seismic risk is expected to be a small contributor to total plant risk consistent with the EPRI Tier 1 approach.

Comparison of the DAEC GMRS & SSE



Passive Categorization

- The license condition approves use of the ANO-2 approach solely for categorization of the Control Building Chillers.
- The site is actively procuring commercial grade chillers; use of the ANO-2 approach supports completion of categorization for this system in support of restart.
- The license condition would allow transition to the EPRI Enhanced Passive Methodology, upon completion of the plant-level evaluation of the pressure retention function across all systems.
- Once the IDP approves the plant-level evaluation, the results will supersede those from ANO-2, and the ANO-2 approach would no longer be used.

License Condition

NextEra Energy Duane Arnold, LLC (NEDA) 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) models to evaluate risk associated with internal events, internal flooding, and internal fire; the 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, Class 3, and non-class SSCs and their associated supports; the results of non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach described in NEDA's submittal letter dated [DATE]; as specified in License Amendment No. [XXX] dated [DATE].

NEDA is approved to apply the ANO-2 passive categorization methodology solely to the Control Building Chiller system for purposes of 10 CFR 50.69 categorization. NEDA is also approved to transition to the Enhanced Risk-Informed Categorization Methodology for Pressure Boundary Components, as described in NEDA's letter dated [DATE], and as approved in License Amendment No. [XXX] dated [DATE]. The enhanced methodology supports categorization of RISC-1, RISC-2, RISC-3, and RISC-4 SSCs by performing a plant-level evaluation of the pressure retention function across all systems, treating the pressure boundary function as a system for 10 CFR 50.69 categorization purposes. Until completion of the plant-level evaluation using the enhanced methodology, the categorization of the Control Building Chiller system performed using the ANO-2 passive categorization methodology will remain valid. Upon completion of the plant-level evaluation using the enhanced methodology, the ANO-2 approach will no longer be used for 10 CFR 50.69 categorization purposes.

Current Schedule

- Plan to submit the LAR in Q3 2026
- What questions do you have?