Arkansas Nuclear One (ANO)
Units 1 & 2

10 CFR 50.69 License Amendment Request

NRC Pre-submittal Meeting

August 4, 2020

Entergy®

Agenda

- ✓ Introduction/Opening Remarks
- ✓ ANO 10 CFR 50.69 Overview
  - ✓ PRA Technical Adequacy
  - ✓ Deviations from NEI 00-04
    - ✓ Extreme Wind or Tornado
    - ✓ Seismic Hazard
    - ✓ Passive Categorization
- ✓ Schedule
- ✓ Closing Remarks

ANO 10 CFR 50.69 Overview

- ✓ LAR and Program follow NEI 00-04 (exceptions noted on later slides)
- ✓ Standard approval timeframe requested (12 to 15 months)

PRA Technical Adequacy

- ✓ Internal Events (Including Flooding and Fire)
  - ✓ Probabilistic Risk Assessment (PRA) model technical adequacy previously evaluated by the NRC for TSTF-425 and NFPA 805.
  - ✓ Facts & Observations (F&O) closure peer reviews performed in accordance with the NEI 05-04 Appendix X approach in 2019.
  - ✓ Additional updates/upgrades have been peer reviewed. A Flood and LERF Peer Review was conducted in 2017 and 2019, respectively.
  - ✓ Changes to the as-built, as-operated plant are reviewed periodically to determine if model impacts require an off-cycle update.
  - ✓ Sensitivity studies will be performed in accordance with NEI 00-04 for areas such as Human Reliability Analysis (HRA) and Common Cause Failures (CCF).
  - ✓ Additional sensitivity studies will be performed to address applicable uncertainties associated with specific system(s) being categorized.

PRA Uncertainty Evaluation

- ✓ Process Defined in NUREG-1855 Revision 1 and EPRI Technical Reports 1016737 and 1026511
  - ✓ Identification of internal events/internal flooding PRA model plant-specific sources, and generic sources per EPRI 1016737
  - ✓ Identification of internal fire PRA model plant-specific sources, and generic sources per Appendix B of EPRI 1026511.
  - ✓ Consideration of generic Level 2 model sources per Appendix E of EPRI 1026511, as applicable to LERF.
  - ✓ Consideration of Parameter and Completeness uncertainties
  - ✓ Documented in Sources of Uncertainty Reports / Model Notebooks
- ✓ NEI 00-04 specifies sensitivity studies to be conducted for each PRA model to address key sources of uncertainty.
  - ✓ Human Error, Common Cause, Maintenance, Fire Suppression

FLEX

- ✓ FLEX Feed Pump
  - ✓ Internal Events - Credited in Unit 1 for extended loss of AC power (ELAP) cases
  - ✓ Internal Events - Not Credited in Unit 2 (will be credited in future model)
  - ✓ Fire - Not Credited in either unit
- ✓ FLEX portable DG
  - ✓ Internal Events – Not Credited.
  - ✓ Fire – Credited for long term DC power for Unit 2 ELAP
  - ✓ Fire - Not Credited in Unit 1

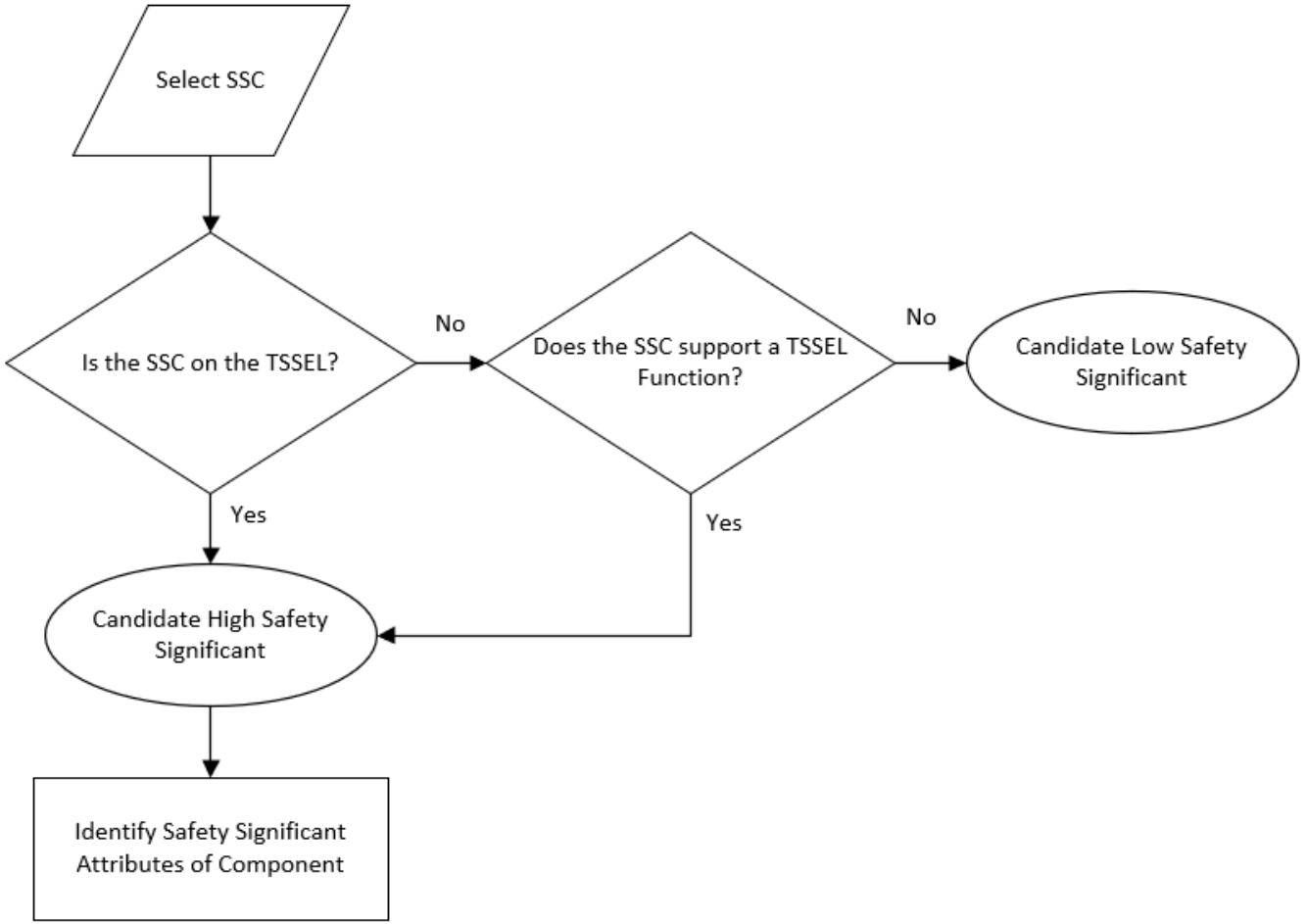
Incipient Detection

- ✓ Very Early Warning Fire Detection System (VEWFDS)
  - ✓ Installed in Unit 2 Only
  - ✓ Installed in Key Electrical Cabinets
  - ✓ Procedures Established to Address System Operation and Response
  - ✓ Credit in the Fire PRA removed during NFPA-805 Approval Process given NUREG 2180 was not published

Deviations from NEI 00-04

- ✓ Tornado Safe Shutdown Equipment List (TSSEL)
  - ✓ ANO1/2 will use a Tornado Safe Shutdown Equipment List (TSSEL) for extreme wind or tornado hazard (missiles only)
  - ✓ Tornado Safe Shutdown paths developed to identify the safety functions and associated sets of equipment credited to achieve and maintain safe shutdown
  - ✓ Similar to Seismic Margins Analysis (SMA) SSEL approach - High Safety Significant (HSS) components are identified by determining if the component is credited on the TSSEL.
  - ✓ ANO1/2 will ensure that the TSSEL reflects the as built as operated plant.
  - ✓ As stated in NEI 00-04, a structure, system, or component (SSC) identified as HSS by a non-PRA method for external events “may not be re-categorized by the IDP.”

Deviations from NEI 00-04



Deviations from NEI 00-04

Seismic Justification Referencing EPRI 3002017583

- ✓ ANO1/2 will reference EPRI 3002017583 for seismic considerations in the categorization process.
- ✓ ANO1/2 will document justification for being a “Tier 2 Plant” and provide justification to the integrated decision-making panel (IDP).
- ✓ Conclusions and results from existing seismic studies and walkdowns, as they apply to the system being categorized, will be included in information provided to the IDP.
- ✓ ANO1/2 will follow the guidance for the lead Tier 2 plant, LaSalle.

Deviations from NEI 00-04

- ✓ Passive components and the passive function of active components will be evaluated using the ANO Risk-Informed Repair/Replacement Activities (RI-PRA) method.

- ✓ The use of this method was previously approved by the NRC in the Vogtle 10 CFR 50.69 application.

- ✓ ASME Code Class 1 SSCs with a pressure retaining function, as well as supports, will be assigned as HSS for passive categorization. This will result in HSS for its risk-informed safety classification and cannot be changed by the IDP.

Schedule

- LAR Submittal expected by end of September 2020
- Standard approval timeframe requested (12 to 15 months)

Closing Remarks