Turkey Point Unit 3 and Unit 4

License Amendment Request: Revise Fire Protection Program in Support of Reactor Coolant Pump Seal Replacement Project

June 22, 2022

Open Session

Agenda

- Purpose
- Licensing Approach Uses RG 1.205
- License Amendment Content
- PRA Analysis
- Data Supporting RCP Seal Failure Model
- Schedule
- Questions and Comments

Purpose

- Inform NRC of licensing approach
- Request NRC input on use of previous modifications and certain NUREGs
- Request NRC input regarding review schedule

Licensing Approach Uses RG 1.205

- **LAR content will follow NEI 06-02 standard format**
- **LAR Technical Evaluation section will include change evaluation information included in RG 1.205**
  - Integrated assessment of change in risk
    - -- PRA methods
    - -- PRA acceptability
    - -- Cumulative risk of changes
    - -- Data used to support the PRA
    - -- Operator actions
  - Defense in depth evaluation
  - Safety margins
  - Acceptance criteria per RG 1.174

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License Amendment Content

- **License Amendment Outline**

  - 1.0 SUMMARY DESCRIPTION
  - 2.0 DETAILED DESCRIPTION
  - 2.1 System Description and Operation
    - -- Describes current RCP seals – provides history of RCP seals at Turkey Point – inclusion of current RCP seals in NFPA 805 transition
  - 2.2 Framatome RCP Hydrostatic Seal with PSDS
    - -- Description of Framatome seal and PSDS
  - 2.3 Current Requirements /Description of Proposed Change
    - -- License condition establishes requirements for risk-informed FPP changes
    - -- Modify FPP for new RCP seal installation
  - 2.4 Reason for Proposed Change
    - -- Changing RCP seal - The conclusions of the PRA evaluation of the new RCP seal modification provide results that exceed the Fire Protection License Condition (SRFOL Condition 3.D) threshold for risk-informed changes that may be implemented without prior NRC approval. Therefore, prior NRC approval for this risk informed change is being sought in this license amendment request.

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- 3.0 TECHNICAL EVALUATION
  - -- RG 1.205 describes a change evaluation process to be used for risk-informed changes to the FPP. The plant change evaluation process includes an integrated assessment of the acceptability of the change in risk, defense in depth, and safety margins, regardless of the methods or approaches used to evaluate the change. RG 1.174 provides acceptance guidance applicable to NFPA 805 plant change evaluations.
- 3.1 Fire Probabilistic Risk Assessment
- 3.1.1 Summary of PRA Approach
  - -- This section is a summary of the PRA analysis (which will be attached)
- 3.1.2 Acceptability of PRA Approach
  - -- This is the PRA quality section
- 3.1.3 Cumulative Risk of Changes
  - -- Review of plant changes affecting Fire PRA since NFPA 805 implementation
- 3.1.4 Summary of PRA Methods
  - -- To include the NUREGs not previously used in Turkey Point Fire PRA
- 3.1.5 Summary of Data Used to Support the PRA
  - -- This is a summary of the kinds of data used by the PRA – failure probabilities and testing – proprietary reports to be attached
- 3.1.6 Operator Action
  - -- Describes operator action to turn off RCPs

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- 3.2 Defense-in-Depth Discussion
  - -- Based on lack of RCP seal impact on fire protection (starting and mitigating fire) and nuclear safety defense-in-depth
- 3.3 Safety Margin
  - -- Based on guidance from RG 1.205 for codes used and safety analysis acceptance criteria being met.
- 3.4 Conclusion
- 4.0 REGULATORY EVALUATION
- 4.1 Applicable Regulatory Requirements/Criteria
  - -- Includes 10CFR50.48, GDC 3 and RG 1.205
- 4.2 Precedent – none to date for post-transition NFPA 805 risk-informed changes
- 4.3 No Significant Hazards Consideration
- 4.4 Conclusion
- 5.0 ENVIRONMENTAL CONSIDERATION
- 6.0 REFERENCES

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PRA Analysis

- **Fire risk increase estimated to be in Region II of RG 1.174**
- **Area-wide incipient detection in the 4 kV Switchgear rooms**
  - Not credited in NFPA 805 Fire PRA
  - Will evaluate credit as a risk offset for the RCP seal modification risk increase
  - Will use NUREG-2180 area-wide incipient detection credit method
- **Guidance on combined change requests per RG 1.205 will be addressed**

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PRA Analysis

- **Risk informed applications are currently under review from other licensees that use NUREG 2230 and 2233 for the Fire PRA portion of the submittal**
  - NRC approval (where available) does not address the use of the NUREGs specifically
  - Incorporation of the latest NRC guidance on interruptible fires and transient fire size (NUREG-2230 and NUREG-2233)
  - Use of modified event tree for NUREG-2230
  - Use of updated heat release rate for transients based on NUREG-2233

Data Supporting RCP Seal Failure Model

- **Testing**
  - Testing of the PSDS included actuation of the PSDS and testing of the seals ability to remain sealed after actuation
- **Methods Used**

- **Operating Experience**
  - The Framatome PSDS is currently installed at one US plant and multiple international plants

Schedule

- LAR submittal scheduled for Summer 2022
- Seal installation scheduled for U4 fall 2023 outage
- Request NRC review within a year
- FPL will provide enhanced support for NRC review to support a one-year review schedule

Questions and Comments