

From: Michael Mahoney
Sent: Friday, May 5, 2023 5:24 AM
To: Mack, Jarrett
Subject: Turkey Point Nuclear Generating Unit Nos. 3 and 4 - Request for Additional Information - RCP LAR (L-2022-LLA-0128)
Attachments: RAIs - Turkey Point RCP Seal LAR - Redacted.pdf

Hi Jarrett,

By application dated August 26, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22243A161), Florida Power and Light Company (FPL, the licensee) submitted a license amendment request (LAR) for the Turkey Point Nuclear Generating Station, Units 3 and 4 (Turkey Point). The proposed LAR will revise the operating license, paragraph 3.D, Fire Protection, for fire protection program changes that may be made without prior U.S. Nuclear Regulatory Commission (NRC) approval. The change is to support replacement of the currently installed reactor coolant pump (RCP) seals with the Framatome RCP hydrostatic seal package equipped with the Passive Shutdown Seal (PSDS).

The U.S. Nuclear Regulatory Commission (NRC) staff is reviewing your submittal and has identified areas where additional information is needed to complete its review.

As discussed, response to the attached RAIs are requested no later than 30 business days from today's date. Note: RAIs 2, 3, 5 and are expected to responded to with the other RAIs will be sent at a future date, since these RAIs require PRA model changes. If no additional RAIs are needed (or the additional RAIs do not require PRA model changes), then it's expected that RAIs 2, 3, 5 be responded to as soon as possible, after that determination.

The NRC staff considers that timely responses to RAIs help ensure sufficient time is available for staff review and contribute toward the NRC's goal of efficient and effective use of staff resources. If circumstances result in the need to revise the requested response date, please contact me.

Note this is the redacted version of the RAIs, the non-redacted version will send via BOX.

Once this email is added to ADAMS I will provide the accession number.

Thanks

Mike Mahoney

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REQUEST FOR ADDITIONAL INFORMATION
BY THE OFFICE OF NUCLEAR REACTOR REGULATION
REGARDING LICENSE AMENDMENT REQUEST TO
REVISE THE FIRE PROTECTION PROGRAM IN SUPPORT OF
REACTOR COOLANT PUMP SEAL REPLACEMENT PROJECT
FLORIDA POWER AND LIGHT COMPANY
TURKEY POINT NUCLEAR GENERATING STATION, UNITS 3 AND 4
FLORIDA POWER AND LIGHT COMPANY
DOCKET NOS. 50-250 AND 50-251
EPID NO. L-2022-LLA-0128

Background

By application dated August 26, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22243A161), Florida Power and Light Company (FPL, the licensee) submitted a license amendment request (LAR) for the Turkey Point Nuclear Generating Station, Units 3 and 4 (Turkey Point).

The proposed LAR will revise the operating license, paragraph 3.D, Fire Protection, for fire protection program changes that may be made without prior U.S. Nuclear Regulatory Commission (NRC) approval. The change is to support replacement of the currently installed reactor coolant pump (RCP) seals with the Framatome RCP hydrostatic seal package equipped with the Passive Shutdown Seal (PSDS). The following are requests for additional information (RAIs) from staff in the Division of Risk Assessment (DRA).

NRC Staff Requests for Additional Information (RAIs)

1. Sections 3.1.5 and 3.5 (Operator Action and Defense-In-Depth) of the Turkey Point LAR dated August 26, 2022 (ML22243A162) discuss a required RCP trip time of 16 minutes but does not provide the bases for this assumption. Explain the bases for the RCP trip time of 16 minutes. Explain whether this action is a recovery action or a required postfire manual operator action, and whether this action has been incorporated into appropriate procedures and demonstrated to be feasible and reliable. Discuss if there are any other operator actions which need to be performed along with an RCP trip and if so, what are their impacts and how are they credited in the PRA models.
2. Section 3.3 (Risk Analysis Results) of the LAR reports the total core damage frequency (CDF) for full power internal events, internal flood, and fire probabilistic risk assessment (PRA) for U3 and U4 as 8.01E-5 and 7.82E-5, respectively. However, there is no estimate for seismic and other external hazards. Provide seismic and other external hazard contributions to CDF/LERF, or alternately provide a justification for why the Regulatory

Guide 1.174, "An Approach For Using Probabilistic Risk Assessment In Risk-Informed Decisions On Plant-Specific Changes To The Licensing Basis," Revision 3, guidelines are met without quantitative contributions from those hazards. Provide a discussion for how, after taking uncertainty into account for the addition of seismic and other external hazards, the total CDF and LERF will not exceed the RG 1.174 acceptance guidelines.

3. Appendix A of Attachment 1 of the LAR uses the fire CDF and LERF to determine the internal events/flooding delta CDF and LERF. The LAR indicates that fire induced failures of systems to prevent the loss of the RCP seals are larger than random failures; thus, extrapolating internal events/flooding delta CDF and LERF from fire is conservative. However, the NRC staff notes that other fire damage in general plays a role in these scenarios, and thus, comparing the fire induced failure of systems relevant to loss of the RCP seals is only one factor, and perhaps not the dominant factor. Therefore, the NRC staff does not have sufficient information to determine whether the delta risk from internal events/flooding being derived from fires only would be an acceptable approach. As a result, provide a calculation of internal events/flooding delta CDF/LERF which relies only on the internal events/flooding PRA model, and is not extrapolated from the fire PRA model.
4. Indicate whether any upgrades have been made to the PRA since the last peer review of either corresponding hazard.
5. Indicate whether the internal events/flooding model of record identified in Appendix A of Attachment 1 to the LAR is the latest version of this PRA and includes the proposed RCP seal change described in the LAR. If not, indicate why the CDF and LERF of these hazards is acceptable, or otherwise provide quantitative risk values which incorporates the proposed seal changes.
6. In the uncertainty matrix, Table C-4 of Attachment 1 to the LAR, task no. 5, it is stated that a reactor trip alone is assumed as the initiator for all fires that are quantified in the fire PRA. However, the NRC staff acknowledges that other initiators may arise from fire (e.g., loss of offsite power (LOOP)) that have the potential to be more severe. Provide an updated fire CDF/LERF which incorporates these other potential initiators, or a justification for excluding them.
7. Section E.2.1.3 of Attachment 1 to the LAR, indicates that the MCR response is 100% effective, yet there is still the possibility of having an alarm that is silenced by the MCR or not properly investigated, which is reflected in the MCR and plant personnel fault trees. In the application of the methodology presented, this affects the probability listed in Table E-4 for η_2 . The probability of personnel not present in the room should not be 0. The probability should be dictated by the MCR response failure probability. The MCR response is independent of the ability for the system to provide advance warning or prompt warning. Provide further justification for the choice of MCR response and how it was determined that the probability of personnel present in the room is 100%. Alternately, adjust the credit in the table below. (The relevant portion of Table E-4 – η_2 is provided below).

Table E-4 – η_2 Calc Using NUREG-2230 (Cable Spreading Room – In-Cabinet Detection)

<i>Parameter</i>	<i>Value</i>	<i>Justification</i>
Probability of personnel not present in room	0	As specified in NUREG2180, given a failure of the VEWFD system to provide sufficient advance warning, the VEWFD system will still provide prompt detection functions. Therefore, in this case, the incipient detector within the electrical cabinet is considered as personnel always present in the room for NUREG-2230.

8. Page 22 of Attachment 5 to the LAR references a [] regarding corrosion resistance testing for the sealing ring. It further indicates that the results of the testing program show []
 [] Explain how the []
 [] represent the operating conditions of the plant.
9. Page 21 of Attachment 3 to the LAR, indicates that the expected accident temperature environment at the [] would be []. Provide the justification that the expected accident temperature environment at the plant would not exceed [].
10. Section 3.5 of Attachment 1 to the LAR presents failures to actuate, remain sealed, and spurious actuation of the PSDS as time dependent failure rate frequencies. However, the development and evaluation of the failure modes for the PSDS is presented in Attachment 3 to the LAR, as per demand failures. Explain the rationale and justification for the inconsistency of units.