

**From:** [Poole, Justin](#)  
**To:** [Hodge, Jessie D:\(Constellation Nuclear\)](#)  
**Cc:** [Danna, James](#)  
**Subject:** Request for Additional Information RE: TSTF-505 LAR  
**Date:** Wednesday, May 04, 2022 10:52:00 AM  
**Attachments:** [L-2021-LLA-0143 TSTF-505 RAIs .pdf](#)

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Jessie,

By letter dated July 30, 2021, as supplemented by letter dated March 4, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession Number ML21211A053 and ML22063A135, respectively), Constellation Energy Generation, LLC (formally Exelon Generation Company, LLC, the licensee) requested changes to the Technical Specifications (TSs) for Renewed Facility Operating License DPR-59 for James A. FitzPatrick Nuclear Power Plant (FitzPatrick). The proposed changes would modify TS requirements to permit the use of Risk Informed Completion Times in accordance with TSTF-505, Revision 2, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b." In reviewing the submitted information, the U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is necessary to complete its review.

On April 18, 2022, the NRC staff sent the licensee DRAFT RAIs to ensure that the questions are understandable, the regulatory basis is clear, there is no proprietary information contained in the RAIs, and to determine if the information was previously docketed. On April 27, 2022, the NRC and the licensee held a clarifying call. During the call, it was decided that the second question needed to be modified to include Technical Specification (TS) 3.6.1.6.C. On May 2, 2022, the licensee requested a response date of 45 days from the date of this email. The NRC staff informed the licensee that this timeframe is acceptable. The attached is the final version of the RAIs. These RAIs will be put in ADAMS as a publicly available document.

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*NRR/DORL/LPL I*  
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REQUEST FOR ADDITIONAL INFORMATION REGARDING PROPOSED  
LICENSE AMENDMENT REQUEST  
TO REVISE TECHNICAL SPECIFICATIONS TO ADOPT  
TECHNICAL SPECIFICATIONS TASK FORCE-505, REVISION 2,  
CONSTELLATION ENERGY GENERATION, LLC  
JAMES A. FITZPATRICK NUCLEAR POWER PLANT  
DOCKET NO. 50-333

By letter dated July 30, 2021, as supplemented by letter dated March 4, 2022, Exelon Generation Company, LLC (on February 1, 2022, Exelon Generation Company, LLC was renamed Constellation Energy Generation, LLC (the licensee)) submitted a license amendment request (LAR) for James A. FitzPatrick Nuclear Power Plant (FitzPatrick). The proposed amendment would modify TS requirements to permit the use of Risk Informed Completion Times in accordance with TSTF-505, Revision 2, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b," (ADAMS Accession No.ML18183A493).

**APLA RAI 01 – Open Phase Condition**

Section C.1.4 of Regulatory Guide (RG) 1.200 states the base (e.g., Model of Record) Probabilistic Risk Assessment (PRA) is to represent the as-built, as-operated plant to the extent needed to support the application. Furthermore, the licensee is to have a process that identifies updated plant information that necessitate changes to the base PRA model.

From the revised voluntary initiative<sup>1</sup> and resulting industry guidance in Nuclear Energy Institute (NEI) 19-02<sup>2</sup> on estimating Open Phase Condition (OPC) and Open Phase Isolation System (OPIS) risk, it is understood that the risk impact of an OPC can vary widely dependent on electrical switchyard configuration and design. In light of these observations, provide the following information:

- a) Discuss FitzPatrick's evaluation of the risk impact associated with OPC events including the likelihood of OPC initiating plant trips and the impact of those trips on PRA-modeled structures, systems, and components (SSCs). Also, explain whether an OPIS has been installed at FitzPatrick and if it has been installed, then discuss its functionality and any operator actions needed to operate the system or needed in response to the system.
- b) Clarify whether any installed OPIS equipment and associated operator actions are credited in the PRAs that support this application. If OPIS equipment and associated operator actions are credited, then provide the following information:

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<sup>1</sup> Doug True to Ho Nieh, Ltr re: "Industry Initiative on Open Phase Condition, Revision 3," dated June 6, 2019 (ADAMS Accession No. ML19163A176).

<sup>2</sup> Nuclear Energy Institute (NEI) 19-02, "Guidance for Assessing Open Phase Condition Implementation Using Risk Insights," Revision 0, April 2019 (ADAMS Accession No. ML19122A321).

- i. Describe the OPIS equipment and associated actions that are credited in the PRA models.
- ii. Describe the impact that this treatment, if any, has on key assumptions and sources of uncertainty for the categorization process.
- iii. Discuss human reliability analysis methods and assumptions used for crediting OPIS alarm manual response.
- iv. Discuss how OPC related scenarios are modelled for non-internal event scenarios such as fire, seismic, flooding, high winds, tornado, and other external events.
- v. Regarding inadvertent OPIS actuation:
  - a. Explain whether scenarios regarding inadvertent actuation of the OPIS, if applicable, are included in the Real Time Risk (RTR) model that supports the risk-informed completion time (RICT) calculations.
  - b. If inadvertent OPIS actuation scenarios are not included in the RTR model, then provide justification with basis that confirms the exclusion of this inadvertent actuation has no adverse impact to the RICT program.
- c) If OPC and OPIS are not included in the application PRA models (whether OPIS equipment is installed or not), provide justification with basis that confirms the exclusion of this failure mode and mitigating system has no adverse impact to the RICT program.
- d) As an alternative to part (c), propose a mechanism to ensure that OPC-related scenarios are incorporated into the application PRA models prior to implementing the RICT program.

#### **APLA RAI 02 – PRA Model for TS LCO 3.3.7.2.A**

NEI TR 06-09-A (ADAMS Accession No. ML122860402) specifies that where the SSC is not modeled in the PRA, and its impact cannot otherwise be quantified using conservative or bounding approaches, the Risk-Managed Technical Specifications (RMTS) are not applicable, and the existing front-stop completion time (CT) would apply. The U.S. Nuclear Regulatory Commission (NRC) safety evaluation to NEI TR 06-09-A (ADAMS Accession No. ML18267A259) further specifies under Limitations and Conditions number 9 that the LAR should confirm “that the CRMP [configuration risk management program] tools can be readily applied for each TS LCO [Technical Specification Limiting Condition for Operation] within the scope of the plant-specific RMTS submittal.” Furthermore, Section 2.3, Item 11 of TSTF-505, Rev. 2 states in part, [t]he traveler will not modify Required Actions for systems that do not affect core damage frequency (CDF) or large early release frequency (LERF) or for which a RICT cannot be quantitatively determined.

- a. For TS 3.3.7.2.A in response to APLA Audit Question 08.e the licensee provides in supplement dated March 4, 2022 (ADAMS Accession No. ML22063A135) for calculating a RICT for TS LCO 3.3.7.2.A, the PRA model will either 1) not include credit for fission product scrubbing by the condenser, or 2) will credit fission product scrubbing by, if justified, “creating a condenser scrubbing model to be used for stuck open MSIV

scenarios.” This implies that a RICT for this equipment out of service (OOS) configuration can be calculated regardless of whether a condenser scrubbing model is available, which is contrary to the comment in LAR Table E1-1 for this LCO that “the SSCs are not modeled.” The supplement further states that “[r]elated to the mechanical vacuum pump isolation function in RICT calculations, if failed or unavailable, this would likely be assumed to fail any credit taken for condenser pathway scrubbing.” The implication of this statement is that the condenser scrubbing model would likely not be credited when calculating a RICT for this LCO. The NRC staff is unable to make a determination that the scope of the PRA model and RTR tool are appropriate for the RICT application. Address the following:

1. Identify and describe what SSCs modeled in the PRAs are being used as the surrogate for the condenser air removal pump isolation instrumentation and confirm that their failure rate is bounding with respect to the failure rate for the instrumentation.
  2. Confirm that a RICT can be calculated using the current PRA models without the new condenser scrubbing model consistent with the excerpts provided above from NEI TR 06-09-A and provide an estimate of the RICT for TS LCO 3.3.7.2.A assuming no credit for condenser scrubbing.
  3. Explain what the purpose is for the condenser scrubbing model proposed with respect to calculating a RICT for TS LCO 3.3.7.2. A.
  4. Alternatively, remove TS LCO 3.3.7.2.A from the scope of the RICT program.
- b. For TS 3.6.1.6.C in Attachment 6 of the license amendment request the licensee provides an implementation item to update the PRA models to include SSCs prior to exercising the RICT program for this TS.
1. Identify and describe what SSCs are presently modeled in the PRA, and the surrogate if applicable, used to assess the failure of the function for TS 3.6.1.6.C.
  2. Confirm that a RICT can be determined using the current PRA models consistent with the excerpt provided above from NEI 06-09-A and provide an estimate of the RICT for the TS LCO 3.6.1.6.C.
  3. Alternatively, remove TS LCO 3.6.1.6.C from the scope of the RICT program.

#### **EEEB RAI 01 – TS 3.8.7.A**

TSTF 505 requires licensees to identify technical specifications being considered for RICTs that may have a potential loss of function to apply a note that specifically states that the RICT does not apply for loss of function. The NRC staff identified TS 3.8.7.A as having a potential loss of function, requests use of RICT, but does not include the required note in the TS markup in Attachment 2 of the LAR.

Provide a revised marked up of TS 3.8.7.A which includes the appropriate note for loss of function.