

10 CFR 50.90

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January 7, 2021

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001Nine Mile Point Nuclear Station, Unit 2
Renewed Facility Operating License No. NPF-69
NRC Docket No. 50-410

Subject: Responses to Request for Additional Information Questions 27 and 28 for Nine Mile Point Nuclear Station, Unit 2, to Adopt TSTF-505, "Provide Risk- Informed Extended Completion Times - RITSTF Initiative 4b," Revision 2

References:

1. Letter from D. Gudger (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "License Amendment Request to Revise Technical Specifications to Adopt Risk Informed Completion Times TSTF-505, Revision 2, "Provide Risk- Informed Extended Completion Times - RITSTF Initiative 4b," dated October 31, 2019
2. Letter from M. Marshall (Senior Project Manager, U.S Nuclear Regulatory Commission) to R. Reynolds (Exelon Generation Company, LLC), "Nine Mile Point Nuclear Station, Unit 2 – Request for Additional Information RE: Review of License Amendment Request to Revise Technical Specifications to Adopt Risk Informed Completion Times (EPID L-2019-LLA-0234)," dated July 30, 2020
3. Letter from D. Gudger (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Request for Additional Information for Nine Mile Point Nuclear Station, Unit 2, to Adopt TSTF-505, 'Provide Risk- Informed Extended Completion Times - RITSTF Initiative 4b,' Revision 2," dated August 28, 2020
4. Letter from M. Marshall (Senior Project Manager, U.S Nuclear Regulatory Commission) to R. Reynolds (Exelon Generation Company, LLC), "Nine Mile Point Nuclear Station, Unit 2 – Request for Additional Information to Support Review of License Amendment Request to Revise Technical Specifications to Adopt Risk Informed Completion Times (EPID L-2019-LLA-0234)," dated September 2, 2020

5. Letter from D. Gudger (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, "Request for Additional Information for Nine Mile Point Nuclear Station, Unit 2, to Adopt TSTF-505, 'Provide Risk- Informed Extended Completion Times - RITSTF Initiative 4b,' Revision 2," dated October 2, 2020
6. Letter from M. Marshall (Senior Project Manager, U.S Nuclear Regulatory Commission) to R. Reynolds (Exelon Generation Company, LLC), "Nine Mile Point Nuclear Station, Unit 2 – Withdrawal and Replacement of Request for Additional Information to Support Review of License Amendment Request to Revise Technical Specifications to Adopt Risk-Informed Completion Times (EPID L-2019-LLA-0234)," dated September 28, 2020
7. Letter from M. Marshall (Senior Project Manager, U.S Nuclear Regulatory Commission) to R. Reynolds (Exelon Generation Company, LLC), "Nine Mile Point Nuclear Station, Unit 2 – Request for Additional Information Re: Review of License Amendment Request to Revise Technical Specifications to Adopt Risk-Informed Completion Times (EPID L-2019-LLA-0234)," dated September 28, 2020
8. Letter from M. Marshall (Senior Project Manager, U.S Nuclear Regulatory Commission) to R. Reynolds (Exelon Generation Company, LLC), "Nine Mile Point Nuclear Station, Unit 2 – Request for Additional Information Re: Review of License Amendment Request to Revise Technical Specifications to Adopt Risk-Informed Completion Times (EPID L-2019-LLA-0234)," dated December 15, 2020

By letter dated October 31, 2019 (Reference 1), Exelon Generation Company, LLC (Exelon) requested to change the Nine Mile Point Nuclear Station, Unit 2 (NMP2) Technical Specifications (TS). 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).

In a letter dated July 30, 2020 (Reference 2), the NRC provided a Request for Additional Information (RAI) to support their continued review of Reference 1. The letter contained RAI Questions 1 through 5. Exelon provided the responses to these RAIs in Reference 3.

On September 2, 2020, the NRC provided a second Request for Additional Information (RAI) (Reference 4) to support their continued review of Reference 1. This request contained RAI Questions 6 through 25. Exelon provided the responses to these RAIs (except for Question 17) in Reference 5.

On September 28, 2020, the NRC redacted Question 17 as written and provided a revised question 17 (ML 20272A280) (Reference 6). In addition, the NRC provided a new RAI Question 26 (ML 20273A237) (Reference 7).

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On December 15, 2020, the NRC provided a Request for Additional Information (RAI) (Reference 8) to support their continued review of Reference 1. This request contained RAI Questions 27 and 28.

Attachment 1 to this letter contains the NRC's RAI Questions 27 and 28 immediately followed by Exelon's response.

Exelon has reviewed the information supporting a finding of no significant hazards consideration and the environmental consideration provided to the NRC in Reference 1. The supplemental information provided in this letter does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. Furthermore, the supplemental information provided in this letter does not affect the bases for concluding that neither an environmental impact statement nor an environmental assessment needs to be prepared in connection with the proposed amendment.

There are no commitments contained in this response.

If you should have any questions regarding this submittal, please contact Ron Reynolds at 610- 765-5247.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 7th day of January 2021.

Respectfully,

David T. Gudger

David T. Gudger
Senior Manager - Licensing
Exelon Generation Company, LLC

Attachment 1: Response to Request for Additional Information

cc:	USNRC Region I Regional Administrator	w/attachments
	USNRC Senior Resident Inspector – NMP	"
	USNRC Project Manager, NRR – NMP	"
	A. L. Peterson, NYSERDA	"

ATTACHMENT 1

Nine Mile Point Nuclear Station, Unit 2
Renewed Facility Operating License NPF-69
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Request for Additional Information
Adopt Risk Informed Completion Times

Response to Request for Additional Information

Section 50.36(c)(2) of 10 *Code of Federal Regulations* requires technical specifications to contain limiting conditions of operation that describe the lowest functional capability of equipment required for safe operation of a plant. Licensees are required to follow any remedial actions permitted by the technical specifications. Those remedial actions need to be completed within a set time frame, commonly referred to as a completion time or allowed outage time. The risk-informed completion time program that Exelon has requested to adopt at Nine Mile Point 2 is one way of establishing or changing a completion time using a risk-informed approach that relies on probabilistic risk assessments (PRAs), including the fire PRAs.

RAI 27:

In its response to RAI 24 (ADAMS Accession No. ML20276A020), the licensee explains that influence factors were applied using the guidance in FAQ 12-0064 by an informal expert panel. The response explained that credit for administrative controls was not applied to reduce any transient fire frequencies, and therefore, any violations of transient combustible administrative controls are not applicable to assignment of influence factors. The response stated that an influence factor of "0" for was not assigned for maintenance, occupancy, or hot work for any physical analysis unit (PAU). However, an influence factor of "0" for storage was assigned to the suppression pool and hydrogen storage PAUs. The response did not justify the assignment of a "0" influence factor as requested in the RAI. The NRC staff acknowledges that the suppression pool atmosphere is inerted most of the time, which would prevent a transient fire, but notes that a fire is possible when the containment is not inerted.

Concerning the hydrogen storage area, the licensee stated:

The entire Bin 17 frequency associated with fixed hydrogen tanks was assigned to SITE-43 which influenced the decision to eliminate the additional contribution from transient fires due to storage.

Therefore, it appears that the underestimation of risk associated with applying a "0" storage influence factor to SITE-43 (the PAU for bulk hydrogen storage) was done to offset the overestimation of risk associated with applying the whole Bin 17 ignition frequency to PAU SITE-43. It is not clear how the risk associated with SITE-43 is overestimated and how fires from hydrogen tanks are related to fires from the storage of transients, and thus would represent a reasonable trade-off for applying an assigning a "0" storage influence to this PAU. Also, it is not clear how SITE-43 contributes to the overall risk.

- a) Explain what fraction of time the containment is not inerted at power and why assignment of an influence factor for storage of "0" to the suppression pool PAU is still justified.
- b) Concerning the influence factor for storage of "0" assigned to SITE-43:
 - i) Explain how the fire risk associated with SITE-43 is overestimated and how fires from hydrogen tanks are related to the storage of transients, and thus represent a reasonable trade-off for assigning a "0" storage influence factor to this PAU.
 - ii) Include discussion of the transient combustible controls for SITE-43.
 - iii) Explain how much SITE-43 contributes to the overall fire risk.

- c) Justify that there are no PAUs for Nine Mile Point 2 that experience significantly more work orders compared to the average number of work orders for a typical compartment, so that an influence factor of "50" is not used for either hot work or electro-mechanical maintenance.

Exelon Response to RAI 27:

Response to RAI 27a:

A '0' was applied as the weighting factor for Storage for RB-POOL (RB Suppression Pool): The containment atmosphere is inerted with nitrogen gas during reactor operation. On an annual basis during at-power operation, it is estimated that containment is not inerted less than 1% of the time. Technical Specification 3.6.3.2 has a required completion time of 24 hours to restore oxygen concentration in the primary containment to within limits when it is greater than 4.0 volume percent. Oxygen concentration must be less than 4% 24 hours after thermal power is greater than 15% RTP following startup and 24 hours prior to reducing thermal power to less than 15% RTP prior to the next scheduled reactor shutdown. Nine Mile Point Unit 2 is on a 24-month refueling schedule.

There are no fixed ignition sources and no credited FPRA targets in this PAU; therefore, the impact on the RICT calculations is minimal even if the influence factor for Storage was increased from 0 to 1. RB-POOL, which was analyzed as PAU burnout, is not a significant contributor to fire risk; increasing an influence factor in this PAU will decrease the general transient frequency in other PAUs within the CAR generic location.

Response to RAI 27b:

- i) The contribution from general transients is essentially 2 orders of magnitude below the Bin 17 contribution for hydrogen storage. Additionally, there are no credited FPRA targets in this PAU; therefore, the impact on the RICT calculations is minimal even if the influence factor for Storage was increased from 0 to 1.
- ii) SITE-43 is an outdoor PAU consisting of skid-mounted horizontal H₂ tanks on a concrete pad surrounded by security fencing which establishes a combustible exclusion zone around the hydrogen components.
- iii) SITE-43, which was analyzed as PAU burnout, is not a significant contributor to fire risk; increasing an influence factor in this PAU will decrease the general transient frequency in other PAUs within the PW generic location.

Response to RAI 27c:

Regarding the use (or non-use) of the weighting factor of 50, a review of work orders was not explicitly performed. An informal expert panel relied on historical knowledge, plant experience, and the FAQ guidance to assign the relative rankings. The weighting factor of 50 – applicable to a rank of 'very high' for maintenance or hot work – was not assigned. Typically, a 2-unit site will assign a 50 to the shared Turbine Deck to account for the staging of combustible materials and increased level of maintenance activities prior to and during a refueling outage while the other unit remains at power. However, NMP1 and NMP2 do not share a common Turbine Building. While materials may be staged on the Turbine Deck (TB-50C) prior to an outage, the expert panel determined that no PAUs, including TB-50C, warranted a weighting factor of 50 for maintenance or hot work. Additionally, the credited FPRA targets in TB-50C are limited to UNL

failures; therefore, the impact on the RICT calculations is minimal even if the applicable influence factors were increased for this PAU. TB-50C, which was analyzed as PAU burnout, is not a significant contributor to fire risk; increasing an influence factor in this PAU will decrease the applicable transient bin frequency in other PAUs within the TB generic location.

RAI 28:

In response to RAI 12f (ADAMS Accession No. ML20276A020) on the uncertainty associated with its main control room (MCR) abandonment analysis due to loss of control, the licensee stated that it modified its analysis of fires in the main control board (MCB) and its MCR abandonment analysis due to loss of control using NUREG-2178, Volume 2 and NUREG-1921, Supplement 2. In the RAI response, the licensee stated that "this updated MCB treatment was subject to a focused scope peer review and the results from that review have been addressed in the applicable Fire PRA notebook." However, the licensee did not indicate whether any new findings and observations (F&Os) were generated from the focused scope peer review and no F&Os with associated disposition were provided in the RAI response.

- a) Indicate whether this focused scope peer review covered use of both NUREG-2178, Volume 2 on the MCB and the use of NUREG-1921, Supplement 2 on MCR abandonment due to LOC.
- b) If not, justify the exclusion of either method from the focused scope peer review (e.g., the method was considered PRA maintenance). Your justification should include a discussion of why the excluded method is not an upgrade to the fire PRA.
- c) Indicate whether any F&Os were generated by the focused scope peer review.
- d) If F&Os were generated, indicate whether these F&Os were closed by an F&O closure review or by another peer review.

Exelon Response to RAI 28:

Response to RAI 28a:

The scope of the focused scope peer review (FSPR) - which was observed by the NRC - included: 1) for the Fire PRA, a limited fire scenario selection (FSS) review to address application of the NUREG-2178 V2 event tree approach, and 2) for internal events, a limited human reliability (HR) review to address the use of ASEP vs. HCR for the HRA time reliability correlation. The FSPR did not address NUREG-1921, Supplement 2 since the approach was not applied.

Response to RAI 28b:

Loss of Control (LOC) abandonment was not credited in the 2020 update of the Fire PRA and not in the model of record at the time of the LAR. LOC abandonment may be an option to provide a success path for high CCDP scenarios in III.G.3 fire areas (areas that rely on the remote shutdown panel for success). Basically, the revised treatment of MCB fires from Appendix L to the NUREG-2178 V2 event tree approach significantly reduced the contribution from MCB fires, including the associated Loss of Habitability (LOH) MCRAB fire, and eliminated the uncertainty surrounding the potential crediting of LOC abandonment for specific scenarios.

Response to RAI 28c:

There were 3 finding level F&Os related to the HR scope as discussed in the response to RAI-7 b). There was one finding level F&O (22-1) related to the FSS scope involving documentation of the fire modeling tools (SR FSS-H4). The SR was considered met, but F&O 22-1 was generated to correct two inconsistencies between the text description and the actual model application. In both cases, the text was updated to match the model.

Response to RAI 28d:

The F&Os from the FSPR have been addressed but have not been the subject of an independent assessment of the resolutions using the NEI 07-12 Appendix X process for F&O closure.