

10 CFR 50.90

March 29, 2016

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

R.E. Ginna Nuclear Power Plant
Renewed Facility Operating License No. DPR-18
NRC Docket No. 50-244

SUBJECT: Supplemental Response to Request for Additional Information -
Application for Technical Specifications Change Regarding Risk-Informed
Justification for the Relocation of Specific Surveillance Frequency
Requirements to a Licensee Controlled Program (Adoption of TSTF-425,
Revision 3)

- REFERENCES:**
1. Letter from James Barstow (Exelon) to U.S. Nuclear Regulatory Commission, "Application for Technical Specifications Change Regarding Risk-Informed Justification for the Relocation of Specific Surveillance Frequency Requirements to a Licensee Controlled Program (Adoption of TSTF-425, Revision 3)," dated June 4, 2015. Letter from the U.S. Nuclear Regulatory Commission to
 2. Letter from Diane Render (NRC) to Bryan C. Hanson (President and Chief Nuclear Officer-Exelon), "R.E. GINNA NUCLEAR POWER PLANT - REQUEST FOR ADDITIONAL INFORMATION REGARDING: RISK-INFORMED TECHNICAL SPECIFICATIONS INITIATIVE SB" (CAC NO. MF6358), dated January 7, 2016.
 3. Letter from David T. Gudger (Exelon) to U.S. Nuclear Regulatory Commission, "Response to Request for Additional Information - Application for Technical Specifications Change Regarding Risk-Informed Justification for the Relocation of Specific Surveillance Frequency Requirements to a Licensee Controlled Program (Adoption of TSTF-425, Revision 3)," dated February 3, 2016.

By letter dated February 3, 2016 (Reference 3) Exelon Generation Company, LLC (Exelon) responded to a U.S. Nuclear Regulatory Commission (NRC) Request for Additional Information (RAI) (Reference 2).

On March 15, 2016, a teleconference was held between NRC and Exelon personnel to clarify Exelon's response to RAI questions 2.c, 2.d.iv, 3, and 15.

Attachment 1 to this letter contains the NRC's supplemental RAI to these questions followed by Exelon's response. Regarding the supplemental RAI to RAI 2.c and 2.d.iv, the original RAI 2 (as stated in Reference 2) is included in Attachment 1 followed by the NRC's supplemental RAI and Exelon's response. Exelon response to 2.c and 2.d.iv replaces the response previously provided to RAI 2.c and 2.d.iv in Reference 3. Exelon response to RAI 3 and 15 supplements the original response to RAI 3 and 15 in Reference 3.

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 additional information provided in this response does not affect the bases for concluding that the proposed license amendment does not involve a significant hazards consideration. Furthermore, the additional information provided in this response 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 Enrique Villar at 610-765-5736.

I declare under penalty of perjury that the foregoing is true and correct. Executed on the 29th day of March 2016.

Respectfully,



David T. Gudger
Manager - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Attachment: 1. Supplemental Response to Supplemental Request for Additional Information

cc:	USNRC Region I Regional Administrator	w/attachment
	USNRC Senior Resident Inspector - Ginna	"
	USNRC Project Manager, NRR - Ginna	"
	A. L. Peterson, NYSERDA	"

ATTACHMENT 1

License Amendment Request

**R. E. Ginna Nuclear Power Plant
Docket No. 50-244**

**Application for Technical Specification Change Regarding Risk-
Informed Justification for the Relocation of Specific Surveillance
Frequency Requirements to a Licensee Controlled Program
(Adoption of TSTF-425, Revision 3)**

Supplemental Response to Supplemental Request for Additional Information

SUPPLEMENTAL REQUEST FOR ADDITIONAL INFORMATION

REGARDING ADOPTION OF TSTF-425

EXELON GENERATION COMPANY, LLC

R. E. GINNA NUCLEAR POWER PLANT

DOCKET NO. 50-244

Original RAI 2 (as stated in Reference 2)

The LAR indicates that a Fire PRA, associated with transition to NFPA-805, was performed and Peer Reviewed in August 2012. However, the facts and observations (F&Os) identified from the NFPA-805 Fire Peer Review were not provided for consideration in the LAR associated with RITS-5b changes to TS Surveillance Frequencies. The LAR states:

The 2012 fire PRA peer review for the PRA ASME model update identified 183 Supporting Requirements (SR) to be reviewed for the Ginna PRA. Of these 2 were not met, 2 met capability category (CC) 1, 8 partially met CC 2, 17 met CC 2, 13 partially met CC 3, 7 met CC 3, and 118 fully met all capability requirements and 16 were not applicable. There were 19 findings and 22 suggestions issued to address potential gaps to compliance with the PRA standard. There were 3 Best Practices. All of the findings from the fire PRA peer review have since been closed. As the results of this peer review have already been communicated to the NRC as part of the NFPA-805 submittal and subsequent requests for additional information (RAI), these will not be catalogued in this document.

Previous responses described above and in the NFPA-805, submittals are associated with assessing the PRA technical adequacy to address fire-related hazards. To the extent that there were deficiencies in the Fire PRA models associated with systems, structures, and components for which changes to TS Surveillance Frequencies are being sought, there is no equivalent clarification of how the Fire PRA related F&Os will not have an impact on the Technical Specifications Task Force (TSTF)-425, Revision 3. It is the NRC's position that Fire PRA related F&Os must be considered when evaluating TS Surveillance Frequency changes. Therefore provide the following:

- a. An assessment of how the 2012 Fire Peer Review F&Os have been resolved to assure PRA Technical Adequacy with respect to TSTF-425, not NFPA-805. Include discussion as to whether the disposition applies to changes in risk as well as the base-line risk, since the peer review is against the latter, but the application involves the former as well.
- b. For those Fire PRA related F&Os, which are dispositioned as not having an impact on TSTF-425, Revision 3, provide the technical basis for this determination.

- c. Discussion of how the licensee plans to incorporate updates to fire PRA state-of-the-art enacted since the 2012 peer review, including but not limited to updated fire ignition frequencies and non-suppression probabilities (as per NUREG-2169, "Nuclear Power Plant Fire Ignition Frequency and Non-Suppression Probability Estimation Using the Updated Fire Events Database") and updated spurious operation occurrence probabilities and probabilities for duration exceedance (as per NUREG/CR-7150, Volume 2, "Joint Assessment of Cable Damage and Quantification of Effects from Fire").
- d. Consistent with the requirements in Table A-4 of RG 1.200, Revision 2, clarify how the Fire PRA addresses the following requirements with regard to differential risk evaluations related to TSTF-425, Revision 3:
 - i. In SR FSS-A4, RG 1.200, Revision 2 changes "one of more" to "sufficient."
 - ii. In Fire PRA F&O FSS-F1-01, RG 1.200, Revision 2 changes SR FSS-F1 from "one or more fire scenarios that could" to "a sufficient number of fire scenarios to characterize."
 - iii. In Fire PRA F&O FSS-G5-01: Is potential failure of the wall water spray system to provide structural integrity of the boundary addressed? This includes the probability that the system does not perform its function such that the boundary could be breached and result in a multi-compartment fire scenario (e.g., the assumption of perfect reliability versus high reliability, is non-conservative).
 - iv. In Fire PRA F&O SF-A1-02, provide a disposition that addresses the item of concern, namely failure of the analysis to fully assess the potential impact of a seismically induced failure (rupture or spurious operation of fire protection features on the post-earthquake response).
 - v. The disposition of SR FSS-G5 partly justifies reclassifying the F&O as CC II based on the disposition cited for F&O FSS-G5-01 discussed previously. The concern discussed previously needs to be resolved in order for the CC II assignment to be fully justified.

NRC Supplemental RAI to RAI 2.c

In the response, NUREG-2178, "Refining and Characterizing Heat Release Rates from Electrical Enclosures during Fire (RACHELLE-FIRE)," was among three source documents cited as affecting fire frequency development, specifically by "reduc[ing] the heat release rates, [thereby] reducing the electrical cabinet high risk scenario frequencies." Was NUREG-2178 only used to re-partition enclosures (e.g., self-extinguishing fires vs. fires that propagate)? If so, was this the means by which it was used to alter fire ignition frequencies? Additionally, it is stated that the cited effects "should" result in a net reduction of the higher risk scenarios and, as a result, "the existing NFPA-805 model is conservative with regard to TSTF-425 delta risk calculations." Is this conclusion of conservatism definitive, or an expectation, given the use of "should" vs. "shall?"

Exelon Response to Supplemental RAI to RAI 2.c

The response stated below replaces the original response to RAI 2.c as stated in Reference 3.

The NUREG/CR-7150 Vol 2 information was already included in the NFPA805 analysis. The next revision of the fire model will incorporate NUREG/CR 6850 Appendix L, NUREG-2169, and NUREG-2178. All three of these changes affect fire scenario frequency development. NUREG-2169 will cause an increase in the Main Control Board (MCB) and electrical cabinet frequencies. NUREG-2178 will reduce the Heat Release Rates (HRR) of most of the electrical cabinets on the site. Reducing HRRs of an electrical cabinet will cause a corresponding reduction in the associated severity factor (i.e. damage is limited to the ignition source). This causes a consequent increase in the frequencies of only the ignition source being affected (i.e. the low risk significant scenario). That frequency increase is then removed from the associated scenario where damage occurs beyond the ignition source (i.e. the higher risk scenario). As a result, the frequency of ignition-source-damage-only increases while the frequency of damage-beyond-the-ignition-source decreases. This causes a net reduction in risk due to electrical cabinet fires. Appendix L will lower the MCB frequencies. These three changes in aggregate should result in a net reduction in risk. As a result, the existing NFPA805 model is believed to be conservative with regard to TSTF-425 delta risk calculations.

However, as these changes are all frequency related, no masking issues are introduced or removed by these updates. Issues can be masked when a conservative assumption is made that prevents changes in the risk from being seen by the risk model. An example would be if the main feed water system were assumed to fail on every trip (this is an example only and is not the case at Ginna). This would mask any surveillance frequency impacts that could affect the failure likelihood of the Main Feedwater System. A risk increase would exist but the CCDP and CLERP would not result in an increase. As the NUREG updates (6850, 2169, and 2178) only affect fire scenario frequencies and not the CCDP or CLERP for a given scenario, no masking is introduced.

NRC Supplemental RAI to RAI 2.d.iv

The response does not appear to specifically cite the item of concern in Fire PRA F&O SF-A1-02, namely the failure to address the impact of seismically-induced rupture or spurious operation of fire protection features on post-earthquake plant responses. Presumably, such responses would include operator actions that could be affected due to inadvertent actuation of suppression systems or other extinguishing agents in areas where not needed to fight a fire (e.g., impeding access). Confirm that such operator actions would not be affected.

Exelon Response to Supplemental RAI to RAI d.iv

The response stated below replaces the original response to RAI 2.d.iv as stated in Reference 3.

As discussed in the NFPA805 Table V-1, all of the areas in the global analysis boundary were assessed and dispositioned as not having a significant seismic impact that is not already bounded by existing fire scenarios.

The original F&O was a scoping issue only. The first part of the finding in Table V-1 of the NFPA805 submittal report states "The licensee sufficiently addressed (assessed) the potential

impact of a seismically induced failure or spurious operation of fire protection features on the PERFORMANCE OF POST-EARTHQUAKE FIRE PROTECTION EQUIPMENT AND FIRE BRIGADE.” This finding was based on the fact that during the initial assessment the high radiation areas were not walked down. Although not walked down, these areas were assessed to ensure that the post-earthquake mitigation strategy for fire mitigation is acceptable. This review was documented in the updated version of the Seismic Fire Notebook. The review was the closure basis for the original finding as documented in NFPA805 Table V-1.

In regards to operator actions, Ginna has both FLEX related and major incident related procedures that direct the use of alternative means of fire suppression in the event the installed suppression systems are unavailable.

NRC Supplemental RAI to RAI 3

Confirm that the Gap Assessment for the current Probabilistic Risk Analysis (PRA) model of record against Rev. 2 of RG-1.200 concludes that F&O IE-C10-01 (related to IE-C12 in the 2009 version of the ASME/ANS PRA Standard) has been resolved.

Exelon Response to Supplemental RAI to RAI 3

The response stated below supplements the original response to RAI 3 as stated in Reference 3.

Ginna PRA F&O IE-C10-01 (related to IE-C12 in the 2009 version of the ASME/ANS PRA Standard) has been resolved, and is now has a status of “complete.”

NRC Supplemental RAI to RAI 15

Was the cited LERF assessment based upon the PWROG Simplified LERF Methodology contained in WCAP-16341-P? Additionally, in modelling human recovery actions (e.g., the two cited in the response - late restoration of offsite power and late RCS depressurization), do any of these actions depend on the functioning of active components which are subject to changes in Technical Specification surveillance test intervals such as, but not limited to, batteries, electrical breakers, PORVs, and instrument air systems?

Exelon Response to Supplemental RAI to RAI 15

The response stated below supplements the original response to RAI 15 as stated in Reference 3.

The Ginna PRA LERF assessment utilizes the methodology set forth in the PWROG document WCAP-16341-P, Simplified Level 2 Modeling.

The modeling for recovery actions for “early Reactor Coolant System (RCS) depressurization” includes the hardware and support system functions, such as Power Operated Relief Valves (PORVs). The modeling for recovery actions for “late RCS depressurization” do not impact LERF results, and does not impact the risk assessment for surveillance test interval analysis.

Offsite power recovery is credited in both the Level 1 (CDF) accident sequences and the Level 2 (LERF) accident sequence for station blackout events. Offsite power is supplied to the plant through the 115 KV Switchyard Station 13A, which is located outside of the protected area. No breakers located in Switchyard Station 13A are within the scope of the Surveillance Frequency Control Program.

Component basic events to recover power to the site's safety-related 480V busses are modeled in the Level 1 (CDF) accident sequences but not in the Level 2 (LERF) accident sequences. The risk significance of the LERF power recovery event is very low. Some components between Station 13A and the safety-related 480V busses are in the scope of the Surveillance Frequency Change Program.

An Updating Requirements Evaluation (URE) has been initiated to add the offsite power recovery component basic events to the Level 2 model. Until the URE item is closed, the URE will be reviewed for applicability for each Surveillance Test Interval (STI) change evaluation as required by Exelon procedure guidance.