

From: [Philpott, Stephen](#)
To: [Thompson, Russell R](#)
Cc: [Valentin-Olmeda, Milton](#)
Subject: Request for Supporting Information for the Browns Ferry SPRA Audit Review
Date: Wednesday, May 13, 2020 4:29:00 PM

Good afternoon Russell,

I hope that you're doing well and staying healthy. The purpose of this email is to request the following information to support the audit review of the Browns Ferry Nuclear Plant (BFN) 50.54(f) seismic probabilistic risk assessment (SPRA) submittal dated December 17, 2019 (Agencywide Document Access and Management System (ADAMS) Accession No. [ML19351E391](#)). The NRC staff is using a technical checklist (see ADAMS Accession No. [ML18173A017](#)) to guide this review. The following audit questions will support this effort. Please provide your responses to the following questions via your Certrec IMS Browns Ferry SPRA audit site.

Browns Ferry Nuclear Plant

Seismic Plant-Response Model Questions

Question 1 – Topic #14 - Peer Review of the Seismic PRA, Accounting for NEI 12-13 (SPID Section 6.7)

Section 5.2 and Appendix A of the BFN SPRA submittal describe the peer review process used to establish the technical adequacy of the SPRA. The submittal explains that the SPRA full-scope peer review and subsequent focused-scope peer review were conducted against the Capability Category II (CC-II) supporting requirements of PRA Standard American Society of Mechanical Engineers/American Nuclear Society (ASME/ANS) RA-S Case 1 utilizing the peer review guidance in Nuclear Energy Institute (NEI) guidance document NEI 12-13. Please address the following regarding implementation of the seismic PRA peer review process:

- a. Clarify that the seismic PRA full-scope peer review considered the NRC staff's comments and proposed resolutions regarding the use of PRA Standard ASME/ANS RA-S Case 1 provided with its letter dated March 12, 2018 (ADAMS Accession No. [ML18017A963](#)).
- b. If not, provide the results of a gap assessment against the NRC staff's comments and proposed resolutions. Discuss the impact of identified gaps on the SPRA submittal.

Question 2 - Topic #14 – Peer Review of the Seismic PRA, Accounting for NEI 12-13 (SPID Section 6.7)

Table A-6 of the submittal provides the dispositions for each of the internal events PRA (IEPRA) Facts and Observations (F&Os). Table A-2 notes that SPRA F&O 19-1, which identified two of the IEPRA open F&Os as potentially impacting the SPRA (F&Os 2-31 and 6-50), was closed by the SPRA Independent Assessment Team (IAT). However, it is the

NRC staff's assessment that two open F&Os regarding the human reliability analysis (F&Os 4-25 and 6-30) could impact the SPRA results and insights. Please address the following:

- a. F&O 4-25, regarding the timing assumed for screened human failure events (HFEs)
The IEPRA IAT identified two issues with the disposition of this F&O: 1) the HFEs for which timing information was clarified are not those identified in the F&O, nor is there any discussion of the basis for the HFEs selected for clarification of timing; and 2) Assumption 10 in NDN-000-999-2007-0032 assumes that screened HFEs all have a delay time of 24 hours, which is inconsistent with some of the event descriptions (some screened events list times of 15 minutes or less).
 - i. Identify and describe the operator actions identified in the original F&O for which screening HFEs without timing information are still used, and the HFEs for which Assumption 10 is inconsistent with the event descriptions.
 - ii. Provide justification, such as a sensitivity study, that the HFE timing issues identified in F&O 4-25 do not impact the conclusions of the SPRA submittal (i.e, SCDF, SLERF, importance measures).
- b. F&O 6-30, regarding the determination of HFE dependency levels The IEPRA IAT 1) noted that the dependency analyses were completely redone, 2) could not determine how the dependency analysis was performed, 3) noted that there were discrepancies in how HFEs with screening human error probabilities (HEPs) were treated, and 4) could not determine how dependent HFEs were identified for the sensitivity analysis. The IAT concluded that there is a potential that the revised dependency analysis may constitute an upgrade.
 - i. Provide a comprehensive disposition to each of the issues identified in the IAT assessment of this F&O. In the response, discuss the significance of these issues to the SPRA submittal.
 - ii. Provide justification, such as a sensitivity study, that the dependency analysis issues identified in F&O 6-30 do not significantly impact the SPRA submittal results (i.e, SCDF, SLERF, importance measures).

Please let me know when the responses are made available so that we can proceed with the audit review. If a conference call would be helpful to clarify or further explain any of these audit question, please let me know and I will be happy to arrange a call.

Thank you,
Steve

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