

NRR-DMPSPEm Resource

From: Kuntz, Robert
Sent: Tuesday, February 26, 2019 5:53 AM
To: Gohdes, Peter D.
Subject: Request for Additional Information RE: Prairie Island 50.69 Amendment Request
Attachments: Prairie Island 50.69 RAI.docx

Mr. Gohdes,

By letter dated July 20, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18204A393), Northern States Power Company, a Minnesota corporation (NSPM, the licensee) submitted a license amendment request (LAR) for Prairie Island Nuclear Generating Plant, Units 1 and 2 (PINGP) to add a new license condition to the Renewed Facility Operating Licenses to allow the implementation of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.69, "Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors." .

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the submittals and determined that additional information is required to complete its technical review. The NRC staff's request for additional information (RAI) is attached. During a clarification call conducted on February 25, 2019 a 60-day response time was requested. Upon consultation with NRC management a 60-day response time is granted. Therefore, the NRC staff expects a response to the attached RAI by April 29, 2019.

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REQUEST FOR ADDITIONAL INFORMATION (RAI)
REGARDING LICENSE AMENDMENT REQUEST
TO ADOPT 10 CFR 50.69 RISK-INFORMED CATEGORIZATION OF
STRUCTURES, SYSTEMS, AND COMPONENTS
NORTHERN STATES POWER COMPANY
PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2
DOCKET NOS. 50-282 AND 50-306

By letter dated July 20, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18204A393), Northern States Power Company, a Minnesota corporation (NSPM, the licensee) submitted a license amendment request (LAR) for Prairie Island Nuclear Generating Plant, Units 1 and 2 (PINGP). The licensee proposed to add a new license condition to the Renewed Facility Operating Licenses to allow the implementation of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.69, "Risk-informed categorization and treatment of structures, systems and components for nuclear power reactors." The provisions of 10 CFR 50.69 allow adjustment of the scope of structures, systems, and components (SSCs) subject to special treatment requirements (e.g., quality assurance, testing, inspection, condition monitoring, assessment, and evaluation) based on a method of categorizing SSCs according to their safety significance.

Section 3.1.1 of the LAR states that NPSM will implement the risk categorization process in accordance with Nuclear Energy Institute (NEI) 00-04, Revision 0, "10 CFR 50.69 SSC Categorization Guideline," (ADAMS accession No. ML052910035). Regulatory Guide (RG) 1.201, Revision 1, "Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to their Safety Significance" (ADAMS Accession No. ML061090627) endorses the categorization method described in NEI 00-04, Revision 0, with clarifications, limitations, and conditions.

Both RG 1.201 and NEI 00-04 cite RG 1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," (ADAMS Accession No. ML090410014), which describes an acceptable approach for determining whether a probabilistic risk assessment (PRA), in total or the parts that are used to support an application, is sufficient to provide confidence in the results, such that the PRA can be used in regulatory decision making for light-water reactors. It endorses, with clarifications, the American Society of Mechanical Engineers (ASME)/American Nuclear Society (ANS) PRA Standard ASME/ANS RA-Sa-2009 (ASME/ANS 2009 Standard or PRA Standard). This RG provides guidance for determining the technical acceptability of a PRA by comparing the PRA to the relevant parts of the ASME/ANS 2009 Standard using a peer review process.

The Nuclear Regulatory Commission (NRC) staff reviewed the LAR and determined that additional information is needed to determine if the licensee has implemented the guidance in NEI 00-04, as endorsed by RG 1.201, appropriately as a means to demonstrate compliance

with all of the requirements in 10 CFR 50.69. The following requests for additional information (RAIs) outline the specific issues and information needed to complete the NRC staff's review:

1. Proposed License Condition

10 CFR 50.69(b)(2)(ii) requires that a LAR to implement 50.69 include a "description of the measures taken to assure that the quality and level of detail of the systematic processes that evaluate the plant...(including the plant-specific probabilistic risk assessment (PRA), margins-type approaches, or other systematic evaluation techniques)... are adequate for the categorization of SSCs."

10 CFR 50.69(c)(1)(i) and (ii) require that a licensee's PRA be of sufficient quality and level of detail to support the SSC categorization process, and that all aspects of the integrated, systematic process used to characterize SSC importance must reasonably reflect the current plant configuration and operating practices, and applicable plant and industry operational experience.

The guidance in NEI 00-04 allows licensees to implement different approaches, depending on the scope of their PRA (e.g., the approach if a seismic margins analyses is relied upon is different and more limiting than the approach if a seismic PRA is used). RG 1.201, Revision 1 states that "as part of the NRC's review and approval of a licensee's or applicant's application requesting to implement 50.69, the NRC staff intends to impose a license condition that will explicitly address the scope of the PRA and non-PRA methods used in the licensee's categorization approach."

Section 3 of the LAR states that the licensee has submitted a separate LAR dated May 18, 2018 (ADAMS Accession No. ML18138A402), as supplemented on July 10, 2018 (ADAMS Accession No. ML18074A308), requesting revision of the license condition associated with implementation of NFPA 805. Table A-1 of this LAR, "Table A-1 - Risk Significant Modifications Related to Implementation of NFPA 805" lists several risk-significant plant modifications that are credited in the fire PRA model but which are not yet installed in the plant. Because of the NRC staff's concurrent review of a separate LAR to revise the NFPA 805 modifications, the list provided in Table A-1 may yet change. Therefore, Table A-1 may not contain all modifications that would affect the plant PRA models. The NRC staff notes that the fire PRA model used for SSC categorization shall reflect the as-built, as-operated plant. This can be accomplished by completion of all NFPA 805 required modifications that affect PRA models or, if not all of these modifications are completed, by ensuring the as-built, as-operated plant PRA risk results satisfy all RG 1.174 acceptance guidelines.

Section 2.3 of the LAR Enclosure proposed the following license condition:

NSPM is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 structures, systems, and components (SSCs) specified in the license amendment request dated July 20, 2018.

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

NSPM shall complete the modifications listed in Table A-1 of the license amendment request dated July 20, 2018, prior to implementation.

The proposed license condition does not explicitly address the use of PRA and non-PRA approaches or provide assurance that PRA models used for SSC categorization reflect the as-built, as-operated plant. The final paragraph proposed in the license condition in the LAR references the modifications listed in Table A-1 of the LAR. RG 1.174 guidance is that the PRA used to support an application is technically acceptable and reflects the as-built, as-operated plant. The LAR provided insufficient information for the NRC staff to confirm that the sub-set of NFPA-805 modifications in Table A-1 were necessary and sufficient, and notes that additional method or plant changes may be required to yield a technically acceptable PRA that reflects the as-built, as-operated plants.

Therefore, the staff has included a general statement in the final paragraph of the sample licensee condition provided below that is intended to ensure that all changes that are required to complete the transition to NFPA 805 and that are also modelled in the PRA are completed prior to implementation of the 50.69 categorization process.

Provide a license condition that explicitly addresses all the categorization approaches used by the staff and all the NFPA 805 changes that affect the PRA, e.g.:

NSPM is approved to implement 10 CFR 50.69 using the processes for categorization of Risk Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 structures, systems, and components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding and fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 SSCs and their associated supports; and the results of non PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards, i.e., seismic margin analysis (SMA) to evaluate seismic risk, and a screening of other external hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009; as specified in License Amendment No. [XXX] dated [DATE].

Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

NSPM shall [ensure that the fire PRA model used for SSC categorization reflects the as-built, as-operated plant using the fire PRA and plant configuration that will be accepted to support final NFPA-805 implementation for both PINGP units at the time of the 50.69 categorization] prior to implementation.

Note that if additional implementation items are identified, the license condition may need to be expanded to address them.

2. Open/Partially Open Findings in the Process of Being Resolved

10 CFR 50.69(c)(i) requires that a licensee's PRA must be of sufficient quality and level of detail to support the categorization process and must be subjected to a peer review process assessed against a standard or set of acceptance criteria that is endorsed by the NRC.

10 CFR 50.69(b)(2)(iii) requires that the results of the peer review process conducted to meet 10 CFR 50.69 (c)(1)(i) criteria be submitted as part of the application.

The licensee used RG 1.200, Rev. 2, which describes one acceptable approach to determine if a PRA, in total or the parts that are used to support an application, is sufficient to provide confidence in the results, such that it can be used in regulatory decision making for light-water reactors. Section 4.2 of RG 1.200 states that the LAR should include a discussion of the resolution of the peer review facts and observations (F&Os) that are applicable to the parts of the PRA required for the application. This discussion should take the following forms:

- A discussion of how the PRA model has been changed and
- A justification in the form of a sensitivity study that demonstrates the accident sequences or contributors significant to the application decision were not adversely impacted (remained the same) by the particular issue.

Attachment 3 of the LAR, "Disposition and Resolution of Open Peer Review Findings and Self-Assessment Open Items," provides finding-level F&Os that are still open or only partially resolved after the F&O closure review.

F&O ES-C1-01 and FSS-D7-01 resolutions involve updates to the fire PRA model of record (MOR). Attachment 2 of the LAR states the fire PRA MOR used for risk categorization is Revision 5.3-APP1. Address the following related to the resolutions of ES-C1-01 and FSS-D7-01

- i. ES-C1-01 states that "[c]riteria have been provided for a minimum level of redundancy and diversity to meet the intent of the ASME PRA standard with respect to determining if instrumentation needs to be modeled."

Identify the source of these criteria or, if developed by the licensee, summarize and justify the criteria.

- ii. FSS-D7-01 states that the new fire PRA "incorporated the updated unreliability for the pre-action suppression system. The process used to calculate the fire ignition frequencies for structural steel fire scenarios was re-performed. The non-suppression probability for the deluge systems was revised to correct the identified errors."

Identify the source of the updated unreliability or, if developed by the licensee, summarize and justify the values.

3. Other External Hazards

10 CFR 50.69(b)(2)(ii) requires that the quality and level of detail of the systematic processes that evaluate the plant for external events during operation is adequate for the categorization of SSCs.

Section 3.2.4 of the LAR states that Attachment 4 provides a summary of the other external hazards screening. The Attachment 4 entry for External Flooding hazard states the PINGP analysis was recently updated in response to a 50.54(f) request and this hazard remains bounded by the current licensing basis. The entry continues to state an additional analysis was performed for local intensity precipitation (LIP) and determined that PINGP has effective flood protection based on, "available physical margin and the reliability of protection features."

Provide clarification if the protection features used to screen LIP are included in the risk categorization process. Include in this discussion if the categorization for these SSCs will be in accordance with Figure 5.6 of NEI 00-04.

4. SSCs Categorization Based on Other External Hazards

10 CFR 50.69(b)(2)(ii) requires that the quality and level of detail of the systematic processes that evaluate the plant for external events during operation is adequate for the categorization of SSCs.

Section 3.2.4 of the LAR states, “[a]s part of the categorization assessment of other external hazard risk, an evaluation is performed to determine if there are components being categorized that participate in screened scenarios and whose failure would result in an unscreened scenario. Consistent with the flow chart in Figure 5-6 in Section 5.4 of NEI 00-04, these components would be considered high safety significance (HSS). All remaining hazards were screened from applicability and considered insignificant for every SSC and, therefore, will not be considered during the categorization process.”

The last sentence implies that the assessment has been completed and concludes that all other external hazards will never need evaluation during categorization. The individual plant examination of external events (IPEEE) screening process did not include the additional step illustrated in Figure 5-6 in Section 5.4 of NEI 00-04. Figure 5-6 and its associated text states that an evaluation is performed to determine if there are components being categorized that participate in screened external event scenarios whose failure would result in an unscreened scenario.

Clarify how the screening criteria in LAR Attachment 5, “Progressive Screening Approach for Addressing External Hazards,” satisfy the guidelines that HSS will be assigned to SSCs whose failure would cause a screened external event scenario to become unscreened.

5. Shutdown Risk

10 CFR 50.69(b)(2)(ii) requires that quality and level of detail of the systematic processes that evaluate the plant for shutdown is adequate for the categorization of SSCs.

LAR Section 3.2.5 states “SSCs that meet the two criteria (i.e., considered part of a primary shutdown safety system or failure would initiate an event during shutdown conditions described in Section 5.5 of NEI 00-04) will be considered preliminary HSS.” NEI 00-04 states that SSCs can be identified as HSS for either criterion. Therefore:

- i. Confirm that the proper statement in LAR Section 3.2.5 should be “SSCs that meet one-of-two criteria (i.e., considered part of a ‘primary shutdown safety system’ or failure would initiate an event during shutdown conditions) described in Section 5.5 of NEI 00-04 will be considered preliminary HSS.”
- ii. If the correction in part (i) above cannot be confirmed (i.e., only SSCs that meet both NUMARC 91-06 criteria will be considered HSS) then justify how this approach ensures the proper identification of SSCs as having HSS.

6. Key Assumptions and Uncertainties that Could Impact the Application

10 CFR 50.69(c)(1)(i) requires the licensee to consider the results and insights from the PRA during categorization. The guidance in NEI 00-04 specifies sensitivity studies to be conducted for each PRA model to address uncertainty. The sensitivity studies are performed to ensure that assumptions and sources of uncertainty (e.g., human error, common cause failure, and maintenance probabilities) do not mask importance of components. NEI 00-04 guidance states that additional “applicable sensitivity studies” from characterization of PRA adequacy should be considered.

The guidance in NEI 00-04 specifies that sensitivity studies be conducted for each PRA model to address sources of uncertainty. The sensitivity studies are performed to ensure that assumptions and sources of uncertainty (e.g., human error, common cause failure, and maintenance probabilities) do not mask importance of components. NEI 00-04 guidance states that applicable sensitivity studies from characterization of PRA adequacy should be considered.

Section 3.2.7 of the LAR states that the detailed process of identifying, characterizing and qualitative screening of model uncertainties is found in Section 5.3 of NUREG-1855, “Guidance on the Treatment of Uncertainties Associated with PRAs in Risk-Informed Decision Making,” March 2009 (Revision 0) (ADAMS Accession No. ML090970525) and Section 3.1.1 of EPRI Technical Report (TR)-1016737. The NRC staff notes that one of these sources has been superseded. Revision 1 of NUREG-1855, “Guidance on the Treatment of Uncertainties Associated with PRAs in Risk-Informed Decisionmaking,” dated March 2017 (ADAMS Accession No. ML17062A466) references updated EPRI guidance in TR-1026511, “Practical Guidance on the Use of PRA in Risk-Informed Applications with a Focus on the Treatment of Uncertainty” (2012).

The NRC staff notes that Stages C, D, E, and F of NUREG-1855 (Revision 1) provides guidance on how to identify key sources of uncertainty relevant to the application.

LAR Section 3.2.7 states that “Only those assumptions or sources of uncertainty that could significantly impact the risk calculations were considered key for this application,” and are provided in Attachment 6. Attachment 6 of the LAR contains 10 key assumptions/sources of uncertainties. The LAR does not describe how the key assumptions and sources of uncertainty were identified, and whether the outcome described in the LAR was the result of a comprehensive examination for key assumptions and sources of uncertainty using recent industry guidance.

- i. Provide a description of the process used to determine how the candidate key assumptions and sources of uncertainty were identified and evaluated for the internal event (including internal flooding) and fire PRAs. Include in the discussion explanation of how uncertainty issues associated with plant specific features, modeling choices, and generic industry concerns were addressed. Also, include in the description explanation of whether the assumptions and sources of uncertainty documented in the PRA modeling notebooks were reviewed to determine if they could have a possible impact on the application.
- ii. Describe how the process described in Part (i) above is consistent with NUREG-1855, Revision 1, or another NRC-accepted method.

- iii. If the process of identifying key assumption or sources of uncertainty for these PRA models cannot be justified, provide the results of an updated assessment of key sources of uncertainty or assumptions. Include a description of the specific assumptions and sources of uncertainty key to this application in enough detail so that its impact on the application can be clearly understood and a specific sensitivity study could be defined to examine the impact on 50.69 categorization.
- iv. If the response to part (iii) above results in the identification of key assumptions or sources of uncertainty that should be addressed as part of the 50.69 categorization then propose a mechanism to ensure that the identified sensitivity study is performed as part of PINGP's 50.69 categorization process.

7. Dispositions of Possible Key Assumptions and Uncertainties

10 CFR 50.69(c)(1)(i) and (ii) require that a licensee's PRA be of sufficient quality and level of detail to support the SSC categorization process, and that all aspects of the integrated, systematic process used to characterize SSC importance must reasonably reflect the current plant configuration and operating practices, and applicable plant and industry operational experience.

The guidance in NEI 00-04 specifies sensitivity studies to be conducted for each PRA model to address uncertainty. The sensitivity studies are performed to ensure that assumptions and sources of uncertainty (e.g., human error, common cause failure, and maintenance probabilities) do not mask importance of components. NEI 00-04 guidance states that additional "applicable sensitivity studies" from characterization of PRA adequacy should be considered.

The dispositions to the 10 assumption/uncertainty items identified in Attachment 6 of the LAR can be summarized as follows: (1) four state that sensitivity studies will be performed "as necessary," (2) four (including all three for the fire PRA model) conclude that it is not a source of uncertainty for the application, (3) one is addressed by the general NEI 04-10 human error probability (HEP) sensitivity analysis, and (4) one will be treated on a "case-by-case basis as needed."

- i. Explain how a sensitivity study will be determined to be necessary and "as needed."
- ii. The sixth uncertainty item in Attachment 6 concerns thermally-induced steam generator tube rupture (TI-SGTR). The LAR states that TI-SGTR is primarily a phenomenological uncertainty for Large Early Release Frequency (LERF) and that its impact on LERF is low enough such that no impact on 50.69 categorization is expected. However, the LAR also states that TI-SGTR can be significant for some non-station black out sequences.
 - a. Provide justification, such as a sensitivity study, that the exclusion of a TI-SGTR does not impact 50.69 categorization for any SSCs.
 - b. Alternatively, propose a mechanism to ensure this issue is addressed as a sensitivity study during the 50.69 categorization process.

8. Flowserve N9000 RCP and Abeyance Seal Modeling

10 CFR 50.69(c)(1)(i) and (ii) require that a licensee's PRA be of sufficient quality and level of detail to support the SSC categorization process, and that all aspects of the integrated, systematic process used to characterize SSC importance must reasonably reflect the current plant configuration and operating practices, and applicable plant and industry operational experience.

The guidance in NEI 00-04 specifies sensitivity studies to be conducted for each PRA model to address uncertainty. The sensitivity studies are performed to ensure that assumptions and sources of uncertainty (e.g., human error, common cause failure, and maintenance probabilities) do not mask importance of components. NEI 00-04 guidance states that additional "applicable sensitivity studies" from characterization of PRA adequacy should be considered.

Section 3.3 of the LAR states a focused-scope peer review was conducted to address the incorporation of Flowserve N9000 Reactor Coolant Pump seals. The disposition to F&O SY-A17-01 in Attachment 3 of the LAR states, "the N-9000 RCP seal model must obtain NRC review and approval." The NRC staff notes that the N-9000 RCP seal model is approved for Combustion Engineering (CE) plants using the guidance of WCAP-16175-P-A with conditions, limitations, and modifications in the NRC staff safety evaluation (SE) (ADAMS Accession No. ML071130383). The staff's SE that "[a]dditional conditions, limitations, and modifications are provided in this SE to address some of the issues that must be addressed by application of TR WCAP-16175-P, Revision 0, RCP seal failure model to non-CE plants." The LAR did not address if the PINGP PRA model implementation used all applicable guidance in this WCAP.

The NRC staff also notes that abeyance seals are sometimes used as a backup to Flowserve RCP seal packages to limit leakage if excessive flow from the mechanical face seals occurs (ADAMS Accession No. ML15222A357). There is currently no NRC accepted methodology to model the abeyance seal in PRAs.

In light of these observations:

- i. Confirm that the PRA model implementation of the N-9000 RCP seal was in accordance with WCAP-16175-P-A and addressed all applicable NRC staff conditions, limitations, and modifications as described in the associated safety evaluation. Alternatively, describe the methodology used to model the N-9000 RCP seal and justify that this methodology is acceptable.
- ii. If the baseline PRA model of record used for this LAR credits an abeyance RCP seal, provide the PRA methodology to model the abeyance seal and describe how this inclusion impacts the categorization.
- iii. Propose a mechanism that ensures an NRC approved abeyance RCP seal model is available before incorporation of an abeyance seal into the PRA MORs.

9. Integrated PRA Hazards Model

10 CFR 50.69(c)(1)(ii) of require that SSC functional importance be determined using an integrated, systematic process. NEI 00-04, Section 5.6, "Integral Assessment," discusses the need for an integrated computation using available importance measures. It further states that

the “integrated importance measure essentially weights the importance from each risk contributor (e.g., internal events and fire PRAs) by the fraction of the total core damage frequency [or LERF] contributed by that contributor.” The guidance provides formulas to compute the integrated Fussel-Vesely (FV), and integrated Risk Achievement Worth (RAW).

The LAR does not address the integration of importance measures across all hazards (i.e., internal events, internal flooding, and fire). Therefore:

- i. Explain how the integration of importance measures across hazards for 50.69 categorization process will be performed and whether it will be performed using an integrated one-top model across multiple PRA hazards.
- ii. If an integrated one-top model across multiple PRA hazards will be used, then discuss how the individual importance measures (e.g., FV and RAW) for the PRA one-top model are derived, and justify why the importance measures generated do not deviate from the NEI guidance or Table 3-1 of the LAR. If the practice or method used to generate the integrated importance measures is determined to deviate from the NEI guidance, then justify why the integrated importance measures computed are appropriate for use in the categorization process.

10. Incorporation of FLEX into the PRA Models

The NRC memorandum dated May 30, 2017, “Assessment of The Nuclear Energy Institute 16-06, ‘Crediting Mitigating Strategies in Risk-Informed Decision Making,’ Guidance for Risk-Informed Changes to Plants Licensing Basis” (ADAMS Accession No. ML17031A269), provides the NRC’s staff assessment of challenges to incorporating FLEX equipment and strategies into a PRA model in support of risk-informed decision making in accordance with the guidance of RG 1.200. The LAR does not state whether or not the licensee has incorporated FLEX mitigating strategies and associated equipment into the PRA models at PINGP.

Provide the following information separately for internal events PRA, external hazard PRAs, and external hazard screening as appropriate:

- i. State whether FLEX equipment and strategies have been credited in the PRA. If their inclusion is not expected to impact the PRA results used in the categorization process provide brief statement to confirm the PRA results are not impacted. If not incorporated no additional response is needed.
- ii. If the equipment or strategies have been credited, and their inclusion is expected to impact the PRA results used in the categorization process please provide the following information separately for the IEPRA, FPRA, external hazards PRA(s), and external hazards screening as appropriate:
 - a. A discussion detailing the extent of incorporation, i.e. summarize the supplemental equipment and compensatory actions, including FLEX strategies that have been quantitatively credited for each of the PRA models used to support this application.
 - b. A discussion detailing the methodology used to assess the failure probabilities of any modeled equipment credited in the licensee’s mitigating strategies (i.e., FLEX). The discussion should include a justification explaining the rationale for

parameter values, and whether the uncertainties associated with the parameter values are considered in accordance with ASME/ANS RA-Sa-2009, as endorsed by RG 1.200, Revision 2.

- c. A discussion detailing the methodology used to assess operator actions related to FLEX equipment and the licensee personnel that perform these actions. The discussion should include:
- A summary of how the impact of the plant-specific human error probabilities and associated scenario-specific performance shaping factors listed in (a)-(j) of supporting requirement HR-G3 of ASME/ANS RA-Sa-2009 were evaluated.
 - Whether maintenance procedures for the portable equipment were reviewed for possible pre-initiator human failures that renders the equipment unavailable during an event, and if the probabilities of the pre-initiator human failure events were assessed as described in HLR-HR-D of ASME/ANS RA-Sa-2009.
 - If the procedures governing the initiation or entry into mitigating strategies are not explicit provide a discussion detailing the technical bases for probability of failure to initiate mitigating strategies.
- d. ASME/ANS RA-Sa-2009 defines PRA upgrade as the incorporation into a PRA model of a new methodology or significant changes in scope or capability that impact the significant accident sequences or the significant accident progression sequences. Section 1-5 of Part 1 of ASME/ANS RA-Sa-2009 states that upgrades of a PRA shall receive a peer review in accordance with the requirements specified in the peer review section of each respective part of ASME/ANS RA-Sa-2009.

Therefore, provide the following:

1. An evaluation of the model changes associated with incorporating mitigating strategies, which demonstrates that none of the following criteria is satisfied: (1) use of new methodology, (2) change in scope that impacts the significant accident sequences or the significant accident progression sequences, (3) change in capability that impacts the significant accident sequences or the significant accident progression sequences, OR
2. A mechanism to ensure that a focused-scope peer review is performed on the model changes associated with incorporating mitigating strategies, and associated F&Os are resolved to Capability Category II prior to implementation of the 50.69 categorization program. An example mechanism would be a table of listed implementation items referenced in a license condition.

12. Implementation Items

10 CFR 50.69(b)(2)(ii) requires that a licensee's application contain a description of the measures taken to assure that the quality and level of detail of the systematic processes that evaluate the plant for internal and external events during normal operation, low power, and shutdown are adequate for the categorization of SSCs.

If the responses to RAIs 1 through 11 above require any follow-up actions prior to implementation of the 50.69 categorization process, provide a list of those actions and any PRA modeling changes including any items that will not be completed prior to issuing the amendment but must be completed prior to implementing the 50.69 categorization process. Propose a mechanism that ensures these activities and changes will be completed and appropriately reviewed and any issues resolved prior to implementing the 50.69 categorization process (for example, a license condition that includes all applicable implementation items and a statement that they will be completed prior to implementation of the 50.69 categorization process).