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Sent: Tuesday, November 15, 2022 1:21 PM
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Cc: Lois James; Ngola Otto; Mehdi Reisi Fard; Christopher Hunter; Mihaela Biro; Andrachek, James
Subject: NRC PRA Comments on PWROG-20037-NP-B, PRA Upgrade/Maintenance and Newly Developed Methods Examples, Risk Management Committee PA-RMSC-1647, March 2022
Attachments: NRC Comments PWROG-20037-NP R0B (10.25.2022).docx

Attached please find the subject document. Please let me know if you need further information. Thank you.

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NRC Comments on PWROG-20037-NP, Revision 0-B

1. Section 3.1, GENERIC CLARIFICATIONS

Comment. The first generic clarification provided, along with the supporting text, can lead to the conclusion that using a method from the PRA for one hazard to another is always a maintenance activity. If a PRA method is used in one hazard PRA (e.g., internal events) and then its use is extended to a different hazard PRA (e.g., seismic), it is important to recognize whether the use is identical or involved changes. Specifically, the context for use can change across hazards due to hazard-specific considerations. In addition, the method can impact one or more SRs that were not previously included in the PRA (e.g., Section 3.5.8, Seismic HRA). The use of the existing PRA method in these cases would constitute an upgrade.

Recommendation. The applicable text in the section should be revised to ensure the reader is aware of the factors that would result in the use of an existing PRA method to another hazard could be an upgrade instead of a maintenance activity.

Comment. The text in this section could be further clarified. Specifically, some of the examples are referenced with little detail, which can be confusing.

Recommendation. Suggest including the references to specific examples included in the section. For example, the text for “use of different software” can reference examples 3.2.15 and 3.2.18. The text for “data update” could reference examples 3.2.2 and 3.2.3.

2. Section 3.2.6, Accident Sequences Modeling Containment Sump Plugging

Comment. The last point in the sentence in the change portion of this section is unclear. Specifically, a reader could assume that if a detailed sump plugging model is already used, then switching to the WCAP-16882-NP method is not an upgrade.

Recommendation. Recommend deleting “*and no detailed sump plugging model existed previously.*”

3. Section 3.2.10, System Modeling for Reactor Coolant Pump (RCP) Seal

Comment. The overall rationale whether a PRA change due to a change in the RCP seals and the associated RCP seal model constitutes a PRA upgrade or maintenance is not provided. In addition, while the examples provided in the section are likely the most typical changes, they are not fully inclusive.

Recommendation. Recommend providing an overall rationale for when a change in the RCP seal model would constitute a PRA upgrade or maintenance. It should also be noted in the text that the examples provided are not an inclusive list RCP seal types/models.

4. Section 3.3.1, Internal Flooding Initiating Events Frequency (Generic data update)

Comment. The practical example provided in the last sentence of the discussion portion of this section does not (by itself) provide many readers with sufficient information to aid in the understanding.

Recommendation. Further explanation of the example on why it would not represent a PRA upgrade would be highly beneficial.

5. Section 3.5.4, Fragility Walkdown

Comment. The title of this section and supporting text should be modified to clarify that walkdowns themselves are not the method, but rather new fragility updates due to follow-up walkdowns. The purpose of a walkdown is to determine if an SSC fragility requires an update. As walkdown itself is not modeled in a PRA model, a walkdown should not be classified as maintenance or upgrade. However, fragility updates due to the walkdown can be classified as maintenance or upgrade.

Recommendation. The title of this section could be changed to “*New Fragility Updates due to Walkdowns*”. In addition, we suggest changing the last part of the last sentence in this section to “*in this case fragility updates due to the new walkdown may be considered an upgrade.*”

6. Section 3.5.8, Seismic Human Reliability Analysis – Detailed

Comment. The section title is unclear.

Recommendation. Suggest changing the section title to “*Seismic Human Reliability Analysis for New SR(s)*”.

7. Section 3.6.1, Tornado Missile Hit Probabilities

Comment. The last sentence in the discussion portion of this section is unclear.

Recommendation. Suggest changing this sentence to “*Although TORMIS also calculates the hit probability, a conditional failure probability of 1.0 given missile hit is assumed.*”

8. Section 3.7.1, Use of Mechanistic Model for Flood Hazard Evaluation

Comment. The last point provided in the discussion portion of this section could be expanded for clarity. If the mechanistic model is used in other hazard PRA model, and its application is different from the original one, this could be an upgrade.

Recommendation. Suggest some text to enhance the clarification of maintenance and upgrade (see comment on Section 3.1).

9. Section 4, PRA METHOD EXAMPLES

Comment. The section title is not clear.

Recommendation. Suggest changing the section title to “**PRA NEWLY DEVELOPED METHOD EXAMPLES**”

Comment. There is a typo in 2nd sentence of the third paragraph

Recommendation. The word “have” should be deleted in “...has not yet **have** been used in a risk-informed application accepted by the U.S. NRC...”

Comment. The report needs to include clarity on the resources and scope expectation for NRC reviews under either licensing or oversight frameworks for NDMs in NUREGs that are used in licensee PRAs.

Recommendation. Suggest adding the following language to report: “A NDM technical acceptability peer review is not expected to add value to NDMs documented in NUREGs. Submission of such methods to the NRC as part of a risk-informed application is expected to be more efficient if the methods are used without deviations. NRC reviewers would then review those NDMs as a part of the licensing actions. However, the level of effort for such reviews can vary based on several factors such as the context of the method documented in the NUREG compared to its use in the PRA (i.e., was the method intended for use in a PRA), extent of familiarity of the reviewers with the NDM, level of specificity for the NDM (e.g., framework or implementation details), or any deviations from the method documented in the NUREG. If NDMs documented in NUREGs are used without submission to the NRC staff as part of licensing actions, review of the methods can occur under the oversight process subject to the above caveats about the level of effort.”

10. Section 4.1, METHODS DEVELOPED SEPARATELY FROM STATE OF PRACTICE

Comment. The NDMs provided in this section appear to be in various states of review and use. It is unclear whether technical acceptability has been fully established for these methods.

Recommendation. Suggest clarifying the purpose of including these NDMs in the report. It would be beneficial to note that the list of NDMs provided in this report is merely for exemplification of what constitutes an NDM, and the inclusion of these NDMs as examples does not make any statements regarding their acceptability.