

May 16, 2018

MEMORANDUM TO: Dennis C. Morey, Chief
Licensing Processes Branch
Division of Licensing Projects
Office of Nuclear Reactor Regulation

FROM: Brian J. Benney, Senior Project Manager /RA/
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SUBJECT: SUMMARY OF APRIL 4, 2018, PUBLIC MEETING WITH THE
PRESSURIZED WATER REACTOR OWNERS GROUP TO DISCUSS
TO IMPLEMENTATION OF THE SHIELD® PROBABALISTIC RISK
ASSESSMENT MODEL, PWROG-14001-P, REVISION 1, "PRA
MODEL FOR THE GENERATION III WESTINGHOUSE SHUTDOWN
SEAL"

On April 4, 2018, a public meeting was held between the U.S. Nuclear Regulatory Commission (NRC) staff and the Pressurized Water Reactor (PWR) Owners Group (PWROG) representatives. The purpose of this meeting was for the PWROG representatives to meet with NRC staff to gather feedback and further insights to smooth implementation of the SHIELD® probabilistic risk assessment (PRA) model in future license amendment applications.

The PWROG representatives explained that requests for additional information have a high cost for the industry, and they also appear negatively as performance indicators. The PWROG representatives presented its case to justify why the use of the SHIELD® PRA model should be considered a PRA maintenance activity. In addition PWROG representatives presented a recommendation for the use of a license condition for any license amendment request submitted prior to the approval of the PWROG-14001.

The PWROG representatives acknowledged that the interpretation of the American Society of Mechanical Engineers/American Nuclear Society PRA standard is unclear. The presentation by the representatives focused on the subtle wording differences between an upgrade and a maintenance activity. In particular, PRA Maintenance Upgrades will: introduce a new methodology, include a scope change (i.e., include addition of new external hazard or addition of a new process if one not there previously), or result in change in capability. The representatives stated that the design change is minor, and that the methodologies used are not new. Each plant that would apply the SHIELD® PRA model would already have incorporated the WOG 2000 model. Therefore, the PWROG's position is that, in general, adding the model for the Shield® would be considered a maintenance update provided there is no accompanying change in scope or capability. PWROG-14001 is an approved model for assessing the impact of the design change to install the seals.

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The PWROG representatives stated that crediting the Generation III seals can change the accident sequences and the risk insights, and prudence may call for a peer review. The PWROG representatives further stated that, per the standard, a peer review is not required to be performed solely for this change, but that an internal review should be performed and thoroughly documented. The PWROG representatives also argued that a peer review would not provide any real value based on the limited change.

The NRC staff stated that initial audits of the implementation of the topical indicated that the complexity of implementation appears to depend, largely, on how much credit is taken for the seals. Limited credit would involve only adding the failure modes and probabilities to the original WOG 2000 models. However, additional credit may require new thermal-hydraulic evaluations to ensure that temperature limits are not exceeded and that issues such as asymmetric cooling may need to be evaluated. The NRC staff stated that information related to how the licensee implemented the approved methodology in the PRA should be included in the license amendment requests (LARs) which credit the shield regardless of whether the change is considered maintenance or an upgrade. The submitted information should demonstrate that the limitations and conditions were met for the use of the SHIELD® PRA model. Additionally, the NRC staff suggested submitting, on a plant-specific basis, justification for why its application of SHIELD® PRA model is maintenance and not an upgrade. Specifically, summaries of previous and current modeling treatment for asymmetric cooling conditions if needed to demonstrate that the temperature limitations of Shield® can be met, or confirmation that no credit for Shield© is included in the model for these scenarios. The PWROG has developed a white paper that deals with this justification generically, but plants would need to ensure the assumptions and other claims support their individual case.

During the presentation, feedback was provided to the PWROG representatives. The NRC staff thanked the representatives for the presentation and provided pertinent feedback to the industry.

A list of attendees is available in the Agencywide Documents Access and Management System (ADAMS) at Accession No. ML18094A941. Additional supporting materials may be found in ADAMS at Accession No. ML18072A215, ML18094A000, and ML18094A373.

Docket No. 99902037

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**ADAMS Accession Nos.: Package: ML18072A211; Summary: ML18094A942;
Attendees List: ML18092A941; Supporting Materials: ML18072A215, ML18094A000,
ML18094A373; *concurrence via e-mail NRC-001**

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