

**REQUEST FOR ADDITIONAL INFORMATION (RAI)
PRESSURIZED WATER REACTOR OWNERS GROUP
PWROG-14001-P, REVISION 1
“PRA MODEL FOR THE GENERATION III WESTINGHOUSE SHUTDOWN SEAL”
(TAC NO. MF4397)**

RAI APHB-1

Section 4.4.4 of TR-FSE-14-1, Revision 1, states “an exhaustive extent-of-condition evaluation is crucial to understanding how a design is deficient. Testing to failure should be utilized in this evaluation wherever possible.” Additional information is needed to justify using previously conducted tests identified in Section 7.1 of TR-FSE-14-1, Revision 1, for Generation III design qualification []

[]. Provide justification for the acceptance of previously conducted tests identified in Section 7.1 that may not follow the [] (specifically the test described in Sections 7.1.2, 7.1.3, and 7.1.4).

RAI APHB-2

Section 7.3.2 of TR-FSE-14-1, Revision 1, states

[].” Additional information is needed to justify the achievement of an [] during conditioning tests. Explain in detail why the [] described in Section 7.1.2 of TR-FSE-14-1, Revision 1, was not included for service conditioning of other components used in the [] that are subjected to [] qualification testing.

RAI APHB-3

Figure 7.3-13 of TR-FSE-14-1, Revision 1, shows the sequence of []

[]. Additional information is needed to justify why the Generation III SDS []

[]. Discuss the basis for [] qualification testing. Explain in detail why Generation III SDS components are not subjected to [] qualifications.

RAI APHB-4

Section 7.3.6 of TR-FSE-14-1, Revision 1, states “[]

[].” Section 4 of TR-FSE-14-1, Revision 1, describes operating experience that includes the []

[]. Additional information is needed for the NRC staff to adopt an [] for the Generation III SDS.

A. Justify why [] given previous operating experience.

- B. Explain how the SDS will be selected for [] qualification testing. Discuss whether each model of RCP will be subjected to [] qualification testing. If not, provide the justification.
- C. Include the details of the [] qualification testing and the anticipated completion date(s).

RAI APHB-5

In Section 2.5.1 of PWROG-14001-P/NP, Revision 1, the mean failure rate of []. The variance of the associated beta distribution was also calculated. Additional information is needed to understand the [] used in the previous SDS design that are also included in the Generation III SDS design.

Provide a sensitivity analysis of mean failure rate, as well as the variance of the associated beta distribution, that include the []. Calculate the mean failure rate as well as the variance of the associated beta distribution given the previous []. Justify why the [] mean failure rate is not utilized [] previously conducted qualification tests of Section 7.1 of TR-FSE-14-1, Revision 1.

RAI APHB-6

Sections 2.5.4.2 of PWROG-14001-P/NP, Revision 1, states that the [] were, in part, due to the fact that design analysis and qualification testing for previous generations of the SDS [] on the SDS performance. While the NRC staff noted that the applicant discussed the [] as well as the [], the applicant has not explained in detail [] in the previous SDS performance. The applicant has not provide the justification why any of those [] for Generation III SDS are [] previous generations of the SDS.

- A. Identify the specific [] in the design analysis and qualification testing for previous generations of the SDS.
- B. For each identified [] in Part (A), describe the [] in the design analysis and qualification testing for Generation III SDS.
- C. Justify why those [] made in the design analysis and qualification testing for the Generation III SDS are [] previous generations of the SDS as well as to [] the Generation III SDS.

RAI APHB-7

Sections 2.5.4.2 of PWROG-14001-P/NP, Revision 1, states that the []. The applicant has not explained and identified the [] in the Generation III SDS. Furthermore, the applicant has not provided justification why the [] by previous generations of the SDS as well as to [] the Generation III SDS.

- A. Identify and describe the [] that have been [] due to the [].
- B. Indicate the specific [] not included in the previous generation of the SDS, which has [] identified in Part (A).
- C. Justify why those [] identified in Part (A).
- D. Justify why those [] are sufficient to [] by previous generations of the SDS as well as to [] the Generation III SDS.

RAI APHB-8

Sections 2.5.4.2 of PWROG-14001-P/NP, Revision 1, indicates that a [] of the Generation III SDS ensured that all aspects of the []. The applicant has not identified and explained the aspects of []

[]. Furthermore, the applicant has not provided the justification that those [] of the SDS as well as to [] the Generation III SDS.

- A. Discuss the []. Identify the [].
- B. Justify why those [] by previous generation of the SDS as well as to [] the Generation III SDS.

RAI APHB-9

Section 2.5.4.2 of PWROG-14001-P/NP, Revision 1, states

[].” Section 2.5.4.3 of PWROG-14001-P/NP, Revision 1, also states “[

].” The applicant has not explained how conditions experienced

by the Generation III SDS testing specimens were []. Furthermore, the applicant has not justified why [] with pumps models described in Section 2.1 of PWROG-14001-P/NP, Revision 1.

- A. Explain in detail how conditions experienced by the Generation III SDS testing specimens were [].
- B. Justify why [] with pumps models described in Section 2.1.

RAI APHB-10

PWROG-14001-P/NP, Revision 1, indicates that *American Society of Mechanical Engineers/American Nuclear Society (ASME/ANS) RA-Sb-2013*, "Standard for Level 1 / Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications," September 2013, is one of the references. The NRC staff notes that ASME/ANS RA-Sb-2013 is not endorsed by the NRC.

- A. Identify any Generation III SDS analyses that utilized provisions in ASME/ANS RA-Sb-2013 that are different from those, as endorsed by the staff, in ASME /ANS RA-Sa-2009.
- B. Justify why those Generation III SDS analyses that utilized provisions that have not been endorsed by the NRC staff are acceptable.

RAI EPNB-1

In Section 2.2 of PWROG-14001-P, it is stated that "[

].” In a letter from the NRC to Westinghouse dated May 28, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14132A128), it is stated that “Credit for the SHIELD® seals is only endorsed for Westinghouse RCP Models 93, 93A, and 93-A-1. Additional information would be needed to justify use of the SHIELD® seals in other RCP models.” This letter was written in regard to the acceptability of the SHIELD® seal for use in extended loss of alternating current power (ELAP) evaluations for Order EA-12-049, "Order to Modifying Licenses With Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (ADAMS Accession No. ML12054A735). Explain in detail why the SHIELD® seal for RCP Model 100-A should now be endorsed without any additional information besides what is in TR-FSE-14-1, Revision 1.

RAI EPNB-2

Section 2.2.4 of PWROG-14001-P, states “The results of the endurance tests demonstrate a 95% reliability with a 95% confidence level that the polymer ring can withstand [

].” Does this [] bound the cold leg temperatures of all United States nuclear plants that could use the SHIELD® seal?