
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD

Docket No. 52-046

RAI No.: 434-8352

SRP Section: SRP 19

Application Section: 19.1

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Question No. 19-88

10 CFR 52.47(a)(27) states that a DC application must contain an FSAR that includes a description of the design-specific PRA and its results. For additional guidance, Standard Review Plan (SRP) Chapter 19.0, draft Revision 3, Section II, "Acceptance Criteria," Item 9E on Page 19.0-14 states "Peer review of the DC PRA is not required prior to application. However, if a peer review was conducted prior to the application; the staff should examine the peer review report. If a certain aspect of the PRA deviates from accepted good practices, the applicant/holder should justify that this deficiency does not impact the PRA results or risk insights. Otherwise, applicants/holders need to correct the deficiency and resubmit the PRA results and risk insights. If a peer review has not been performed, the applicants/holders should justify why their PRAs are adequate in terms of scope, level of detail, and technical acceptability. PRA self-assessment is an acceptable tool for assessing the technical adequacy of a PRA performed in support of an application for a design certification."

The staff reviewed APR1400 design control document (DCD) Section 19.1.2, "Quality of PRA" and Table 19.1-1 "Characterization of PRA Relative to Supporting Requirements in ASME PRA Standard," and compared the information against the peer review report, entitled "RG 1.200 PRA Peer Review Against the ASME PRA Standard Requirements for the APR-1400-DC PRA," dated August 2013, and found discrepancies and inconsistencies among these documents.

Therefore, in order for the staff to reach a reasonable finding that the scope, level of detail, and technical adequacy of the design-specific PRA are appropriate, please address the following items and revise the DCD accordingly:

- a) Provide more detailed information and justification for the statement(s) stated in DCD Table 19.1-1 that most aspects of the PRA elements satisfy ASME/ANS PRA Standard Capability Category II or greater.
- b) Clarify whether the supporting requirements (SRs) identified in Table 19.1-1 as “do not meet at least Capability Category II” would meet Capability Category I of the ASME/ANS PRA Standard “RA-Sa-2009”, and if not state why.
- c) Identify the actions taken to disposition the peer review findings provided in the peer review report and discuss the associated impacts of these findings on APR1400 DC Application.
- d) Identify the ASME/ANS PRA Standard SRs categorized as “not applicable” during the DC stage and state why.
- e) Justify the impacts on DCD Chapter 19 for those SRs, if any, identified as “does not meet” during DC stage.
- f) Characterize the impacts on APR1400 DC PRA resulting from the SRs identified as “cannot meet” during DC stage.
- g) Explain the inconsistency in the Capability Category grading as provided in the peer review report and DCD Table 19.1-1.
- h) Discuss the technical adequacy of APR1400 fire and low power and shutdown PRAs and justify their sufficiency to support the DC application.

Response

- a) DCD Table 19.1-1 was revised to say ‘satisfy ASME/ANS PRA Standard Capability Category I or greater’ from ‘satisfy ASME/ANS PRA Standard Capability Category II or greater’ (see the response to AI 19-129).
- b) DCD Table 19.1-1 was revised to say “do not meet at least Capability Category I” from “do not meet at least Capability Category II” (see the response to AI 19-129). In addition, justification for not meeting at least Capability Category I will be provided during next PRA update.
- c) The peer review findings provided in the peer review report were dispositioned with the actions to be taken which will be address during the next PRA update. The associated impacts of these findings on APR1400 DC Application will be discussed as part of the next PRA update.
- d) The ASME/ANS PRA Standard SRs categorized as “not applicable” during the DC stage will be identified and justified during the next PRA update.

- e) The ASME/ANS PRA Standard SRs categorized as “does not meet” during the DC stage will be justified during the next PRA update.
 - f) The ASME/ANS PRA Standard SRs categorized as “cannot meet” during the DC stage will be characterized during the next PRA update.
 - g) The inconsistency in the Capability Category grading as provided in the peer review report and DCD Table 19.1-1 will be reviewed as a part of the next PRA update.
 - h) The technical adequacy of APR1400 fire and low power shutdown PRAs and the justification for their sufficiency to support the DC application will be demonstrated by performing the gap analyses using the industry PRA standards. The gap analyses are planned to be performed as part of the next PRA update.
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Impact on DCD

There is no impact on the DCD.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical, Topical, or Environmental Report.