
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.: 177-8166
SRP Section: 08.01 – Electric Power – Introduction
Application Section: 8.1
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Question No. 08.01-4

APR1400 DCD Table 8.1-2, indicated that the following Regulations are applicable to the APR1400 design: 10 CFR 50.55a, 10 CFR 52.47 (b)(1), 10 CFR 52.80(a), 10 CFR 50.34(f)(2)(v), and 10 CFR 50.34(f)(2)(xiii). However, the DCD for chapter 8 does not discuss how the design meets these requirements. The guidance in Standard Review Plan (SRP) section 8.1 states in part that the DCD should discuss the applicability of the criteria and guidelines listed and include a statement to the effect that they will be implemented or are implemented in the design of the electrical power systems. Please discuss how the APR1400 design conforms to the above requirements.

Response

The electric power system of APR 1400 design conforms to the requirements of 10 CFR 50.55a, 10 CFR 52.47 (b)(1), 10 CFR 52.80(a), 10 CFR 50.34(f)(2)(v), and 10 CFR 50.34(f)(2)(xiii). A discussion on how the APR 1400 design conforms to the above requirements is provided as follows:

10 CFR 50.55a – Codes and standards

Among the codes and standards listed in 10 CFR 50.55a, IEEE Std. 603-1991, “Criteria for Safety Systems for Nuclear Power Generating Stations” (with the correction sheet dated January 30, 1995) is the only one applicable to DCD Tier 2, Chapter 8.

As stated in DCD Tier 2, Subsection 8.3.1.2.2 and 8.3.2.2.2, the Class 1E onsite ac and dc power systems of the APR 1400 are designed to conform with the requirements of IEEE Std. 603-1991 including the correction sheet which is endorsed by NRC RG 1.153.

10 CFR 52.47 (b)(1) and 10 CFR 52.80(a)

10 CFR 52.47(b)(1) requires that a design certification (DC) application contain the proposed inspections, tests, analyses, and acceptance criteria (ITAAC) that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, then a plant that incorporates the APR 1400 design certification has been constructed and will be operated in accordance with the design certification.

10 CFR 52.80(a) requires that a DC or a combined license (COL) application contain the proposed inspections, tests, and analyses, including those applicable to emergency planning, that the licensee will perform, and the acceptance criteria that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, the facility has been constructed and will be operated in conformity with the combined license.

The ITAAC proposed for the electrical systems of APR1400 are described in DCD Tier 2, Subsection 14.3.2.6 and Tier 1, Section 2.6 and are sufficient to meet the requirements of 10 CFR.

10 CFR 50.34(f)(2)(v) and 10 CFR 50.34(f)(2)(xiii)

Conformance with 10 CFR 50.34(f)(2)(v) and 10 CFR 50.34(f)(2)(xiii) is stated in Table 1.9-4 (3 of 11) and (6 of 11) respectively. In addition, a new subsection, 8.3.1.2.3, was proposed to Chapter 8 of the DCD, as a result of KHNP's response to RAI 134-8033, Question No. 08.03.01-12 (Reference KHNP submittal MKD/NW-15-0228L, dated October 28, 2015, ML15301A925). This subsection discusses the APR1400 conformance to the TMI Action Plan requirements.

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.