
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.: 105-8038
SRP Section: 03.11 - Environmental Qualification of Mechanical and Electrical Equipment
Application Section: 3.11
Date of RAI Issue : 07/23/2015

Question No. 03.11-2

In DCD Tier 2, Revision 0, Section 3.11.8 references NRC Regulatory Guides (RGs) and IEEE standards for the qualification of electrical equipment and components. DCD, Tier 2, Section 1.9, Table 1.9-1, "APR1400 Conformance with Regulatory Guides," states that APR 1400 conforms with all the referenced RGs in section 3.11.8. It is not clear in the content in DCD Tier 2, Revision 0, Section 3.11, "Environmental Qualification of Mechanical and Electrical Equipment," how the APR 1400 design conforms with these RGs.

Section 50.49 of 10 CFR Part 50, requires that three categories of electric equipment important to safety be qualified for their application and specified performance and provides requirements for establishing environmental qualification methods and qualification parameters. The reference RGs in Section 3.11.8 provides acceptable means for qualifying electrical equipment and components. Provide a description of how the APR 1400 APR1400 design conforms with the RGs listed below to show that the requirements of 10 CFR 50.49 are met.

- Regulatory Guide 1.40, "Qualification of Continuous Duty Safety-Related Motors for Nuclear Power Plants," Rev. 1, U.S. Nuclear Regulatory Commission, February 2010.
- Regulatory Guide 1.63, "Electric Penetration Assemblies in Containment Structures for Nuclear Power Plants," Rev. 3, U.S. Nuclear Regulatory Commission, February 1987.
- Regulatory Guide 1.73, "Qualification Tests of Electric Valve Operators Installed Inside the Containment of Nuclear Power Plants," Rev. 1, U.S. Nuclear Regulatory Commission, October 2013.
- Regulatory Guide 1.156, "Qualification of Connection Assemblies for Nuclear Power Plants," Rev. 1, U.S. Nuclear Regulatory Commission, July 2011.
- Regulatory Guide 1.158, "Qualification of Safety-Related Lead Storage Batteries for Nuclear Power Plants," U.S. Nuclear Regulatory Commission, February 1989.

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- Regulatory Guide 1.180, "Guidelines for Evaluating Electromagnetic and Radio-Frequency Interference in Safety-Related Instrumentation and Control Systems," Rev. 1, U.S. Nuclear Regulatory Commission, October 2003.
 - Regulatory Guide 1.209, "Guidelines for Environmental Qualification of Safety-Related Computer-Based Instrumentation and Control Systems in Nuclear Power Plants," U.S. Nuclear Regulatory Commission, March 2007.
 - Regulatory Guide 1.210, "Qualification of Safety-Related Battery Chargers and Inverters for Nuclear Power Plants," U.S. Nuclear Regulatory Commission, June 2008.
 - Regulatory Guide 1.211, "Qualification of Safety-Related Cables and Field Splices for Nuclear Power Plants," U.S. Nuclear Regulatory Commission, April 2009.
 - Regulatory Guide 1.213, "Qualification of Safety-Related Motor Control Centers for Nuclear Power Plants," U.S. Nuclear Regulatory Commission, May 2009

Response

The equipment qualification is fundamentally performed by equipment suppliers who furnish their safety related equipment. By specifying the applicable RGs initially in the design and procurement specifications, KHNP requires that the suppliers comply with the qualification requirements contained in the RGs.

By observing the qualification tests which are performed and reviewing the qualification documents supplied for the procured equipment, KHNP makes final confirmation that the supplied equipment complies with the RGs and satisfies the requirements of 10 CFR 50.49 for the APR1400 design.

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 Reports.