

KHNPDCDRAIsPEm Resource

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Sent: Monday, June 15, 2015 9:14 AM
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Subject: APR1400 Design Certification Application RAI 27-7944 (03.11 - Environmental Qualification of Mechanical and Electrical Equipment)
Attachments: APR1400 DC RAI 27 EEB 7944.pdf; image001.jpg

KHNP

The attachment contains the subject request for additional information (RAI). This RAI was sent to you in draft form. Your licensing review schedule assumes technically correct and complete responses within 30 days of receipt of RAIs.

Please submit your RAI response to the NRC Document Control Desk.

Thank you,

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Hearing Identifier: KHNP_APR1400_DCD_RAI_Public
Email Number: 32

Mail Envelope Properties (A67A2D233B3FBB4C8B5109AD7C39550715C4CCCF9A)

Subject: APR1400 Design Certification Application RAI 27-7944 (03.11 - Environmental Qualification of Mechanical and Electrical Equipment)
Sent Date: 6/15/2015 9:14:18 AM
Received Date: 6/15/2015 9:14:24 AM
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REQUEST FOR ADDITIONAL INFORMATION 27-7944

Issue Date: 06/15/2015

Application Title: APR1400 Design Certification Review – 52-046

Operating Company: Korea Hydro & Nuclear Power Co. Ltd.

Docket No. 52-046

Review Section: 03.11 - Environmental Qualification of Mechanical and Electrical Equipment

Application Section:

QUESTIONS

03.11-1

In DCD Tier 2, Revision 0, Section 3.11.2 states that, “Environmental qualification of Class 1E equipment is in accordance with the requirements of 10 CFR 50.49, NRC RG 1.89 (Reference 2), and IEEE Std. 323 (Reference 3).” In Section 3.11.8, Reference 3 is given as IEEE Std. 323-2003, “IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations.” DCD, Tier 2, Section 1.9, Table 1.9-1, “APR1400 Conformance with Regulatory Guides,” states that, “IEEE Standard 323-2003 is applied instead of IEEE Standard 323-1974 because NRC RG 1.209 endorses the current national qualification standard (IEEE Standard 323-2003).”

The NRC staff has not endorsed IEEE Std. 323-2003 for environmental qualification of Class 1E electrical equipment in the harsh environment, with the exception of safety-related computer based I&C systems located in a mild environment as addressed in RG 1.209, March 2007. RG 1.89, Revision 1, “Environmental Qualification of Certain Electric Equipment Important to Safety for Nuclear Power Plants,” endorses IEEE Std 323-1974, “IEEE Standard for Qualifying Class 1E Equipment for Nuclear Power Generating Stations.” The procedures described by IEEE Std 323-1974 are acceptable to meet the requirements in 10 CFR 50.49, “Environmental qualification of electric equipment important to safety for nuclear power plants,” to ensure that the Class 1 equipment can perform its safety functions in harsh environments.

Since IEEE Std 323-1974 remains the current standard of record and is endorsed by Regulatory Guide 1.89 for environmental qualification, provide the justification why IEEE Std. 323-2003 is acceptable for qualification of Class 1E electrical equipment in the harsh environment. Otherwise, Section 3.11 of the DCD Tier 2, Revision 0 needs to be modified to reflect the change from IEEE Std 323-2003 to IEEE Std 323-1974.

