

## KHNPDCDRAIsPEm Resource

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**Sent:** Monday, June 15, 2015 9:44 AM  
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**Cc:** Ray, Sheila; Zimmerman, Jacob; Steckel, James; Lee, Samuel  
**Subject:** APR1400 Design Certification Application RAI 28-7942 (08.02 - Offsite Power System)  
**Attachments:** APR1400 DC RAI 28 EEB 7942.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. However, KHNP requests and we grant 45 days to respond to the RAI. We may adjust the schedule accordingly.

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

Thank you,

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**Hearing Identifier:** KHNP\_APR1400\_DCD\_RAI\_Public  
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## REQUEST FOR ADDITIONAL INFORMATION 28-7942

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: 08.02 - Offsite Power System

Application Section:

### QUESTIONS

#### 08.02-1

Standard Review Plan (SRP) states that “adequate provisions are made in the design of the plant and the offsite and onsite power systems for grounding, surge protection, and lightning protection. The reviewer evaluates the plant/station grounding systems, the methods of equipment and structural grounding, ac power system neutral grounding and ground fault current limiting features, surge and lightning protection features for outdoor equipment and circuits, and the measures for isolation of instrumentation grounding systems. Regulatory Guide (RG) 1.204 and IEEE Std 665, 666, 1050, and C62.23, provide acceptable guidelines for the design, installation, and performance of station grounding systems and surge and lightning protection systems.

RG1.206, Section C.I.8.2.1 states that “the applicant should identify the potential effects that must be considered during testing, the margins being applied, and how the design incorporates these requirements for offsite power supplies, including, but not limited to, high-voltage transmission networks, medium-voltage distribution networks, switchyard equipment (bus work, transformers, circuit breakers, disconnect switches, surge protective devices, control, communication, grounding, and lightning systems), switching capacitors, and voltage control equipment between the switchyard and the plant.”

The applicant states in the DCD Tier 2, Section 8.2.2.2, “Conformance with NRC Regulatory Guides” that APR1400 design conforms with RG 1.204 and has additional information in Section 8.3.1.1.8. COL item 8.3(2) states the COL applicant is to describe and provide detailed ground grid and lightning protection. COL item 8.3(5) states that the COL applicant is to provide insulation coordination of surge and lightning protection.

The staff requests, per RG 1.206, identify the potential effects that must be considered during testing, the margins being applied, and how the design incorporates these requirements for offsite power supplies, specifically regarding the surge protective devices, grounding, and lightning systems.

