

## KHNPDCRAIsPEm Resource

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**Sent:** Tuesday, September 08, 2015 1:22 PM  
**To:** apr1400rai@khnp.co.kr; KHNPDCRAIsPEm Resource; Harry (Hyun Seung) Chang; Andy Jiyong Oh; Christopher Tyree  
**Cc:** Foli, Adakou; Wunder, George; Lee, Samuel  
**Subject:** APR1400 Design Certification Application RAI 204-8237 (09.05.03 - Lighting Systems)  
**Attachments:** APR1400 DC RAI 204 EEB 8237.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 this RAI question 09.05.03-8. 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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**Received Date:** 9/8/2015 1:22:15 PM  
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MESSAGE	650	9/8/2015 1:22:15 PM
APR1400 DC RAI 204 EEB 8237.pdf		91928
image001.jpg	5040	

**Options**

**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
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# REQUEST FOR ADDITIONAL INFORMATION 204-8237

Issue Date: 09/08/2015  
Application Title: APR1400 Design Certification Review – 52-046  
Operating Company: Korea Hydro & Nuclear Power Co. Ltd.  
Docket No. 52-046  
Review Section: 09.05.03 - Lighting Systems  
Application Section:

## QUESTIONS

### 09.05.03-5

NUREG-0800, Section 9.5.3 states: "The emergency lighting system(s) is acceptable if the integrated design of the system(s) will provide adequate emergency lighting in all areas required for firefighting, control, and maintenance of equipment used for implementing safe shutdown of the plant during all plant operating conditions, and the access routes to and from these areas." In Section 9.5.3.2 of the DCD Tier 2, the applicant provided the following areas where the emergency AC [alternating current] lighting system is provided: the main control room, radwaste control room, emergency technical support center, operational support center, remote shutdown room, emergency diesel generator room, Class 1E battery room, Class-1E switchgear room, and their access aisles for the safety-related equipment. The staff determined that the applicant may not have identified all areas where the emergency lighting systems should be provided.

Please identify any other areas required for firefighting, control, and maintenance of equipment used for implementing safe shutdown of the plant during all plant operating conditions and the access routes to and from these areas, where the emergency lighting system will be provided.

### 09.05.03-6

DCD Tier 2, Section 9.5.3.2 states: "The security lighting is powered from offsite and backed up by the AAC source upon loss of offsite power. The COL applicant is to provide offsite power for the security lighting system." However, DCD Tier 2, Section 1.8.1, Table 1.8-2, COL 9.5(14) states: "The COL applicant is to provide electric power for the security lighting system."

Please modify the statement "electric power" in Table 1.8-2 to indicate that the power source for the security lighting system is "offsite power," as stated in section 9.5.3.2.

### 09.05.03-7

DCD Tier 2, Section 9.5.3.3 stated that the self-contained battery lighting located in Class 1E equipment areas meets seismic Category I requirements. The staff determined that other lighting fixtures located in the vicinity of safety-related equipment may not be supported so that the fixtures may adversely impact the safety-related equipment when subjected to seismic loading of a safe shutdown earthquake.

Please provide the seismic category classification for all other lighting fixtures (normal, emergency AC, and emergency direct current (DC) lighting systems) located in the vicinity of safety-related equipment.

### 09.05.03-8

DCD Tier 2, Section 9.5.3.4 states: "The emergency lighting is inspected and tested periodically."

Please identify the programs that will address inspection and testing of the emergency AC and DC lighting systems.

