

## **KHNPDCDRAIsPEm Resource**

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**From:** Ciocco, Jeff  
**Sent:** Monday, September 14, 2015 7:04 AM  
**To:** apr1400rai@khnp.co.kr; KHNPDCDRAIsPEm Resource; Harry (Hyun Seung) Chang; Andy Jiyong Oh; Steven Mannon  
**Cc:** Som, Swagata; Wunder, George; Lee, Samuel  
**Subject:** APR1400 Design Certification Application RAI 210-8239 (08.03.01 - AC Power Systems (Onsite))  
**Attachments:** APR1400 DC RAI 210 EEB 8239.pdf

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. 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  
**Email Number:** 258

**Mail Envelope Properties** (3ef3b5e1f1d549f3b6a2a760a65a6c01)

**Subject:** APR1400 Design Certification Application RAI 210-8239 (08.03.01 - AC Power Systems (Onsite))  
**Sent Date:** 9/14/2015 7:04:11 AM  
**Received Date:** 9/14/2015 7:04:13 AM  
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<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	608	9/14/2015 7:04:13 AM
APR1400 DC RAI 210 EEB 8239.pdf		104720
image001.jpg	5040	

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**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
**Recipients Received:**

## REQUEST FOR ADDITIONAL INFORMATION 210-8239

Issue Date: 09/14/2015  
Application Title: APR1400 Design Certification Review – 52-046  
Operating Company: Korea Hydro & Nuclear Power Co. Ltd.  
Docket No. 52-046  
Review Section: 08.03.01 - AC Power Systems (Onsite)  
Application Section: 8.3.1

### QUESTIONS

08.03.01-20

DCD Tier 2 discusses about the physical independence, the criteria governing the physical separation of redundant equipment, including the design of cables and raceways and their implementation, as set forth in IEEE Std. 384 as endorsed by RG 1.75.

For containment, penetration areas, cable spreading rooms, control rooms and other congested areas, discuss when cable derating is required and the criteria used for derating cables in cable raceways.

DCD Section 8.2.1.4 discusses the separation between the preferred power supply I and II. It discusses the cables that are routed from the SATs to the switchgears. The staff noted that the SAT LV side cables appear to be in a congested routing for connecting multiple secondary winding cables to the Class 1E and non-Class 1E switchgear. Please discuss how the APR1400 design addresses cable routing (through the trenches), cable spacing and separation, specifically when sharing safety-related cables of different voltage levels in raceways with non-safety-related cables, so that the design has capacity and capability to avoid unintended safety impact.

Also to satisfy the guidance provided in RG 1.75 for independence of electrical safety systems. Discuss the Administrative Programs that are developed to distinguish 1) cable routing, separation, and cable identification of redundant Class 1E circuits, 2) the independence of non-Class 1E circuits from Class 1E circuits, and 3) determining the raceway fill and whether cable derating is required.



**U.S.NRC**

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