

## KHNPDCDRAIsPEm Resource

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**From:** Ward, William  
**Sent:** Friday, August 07, 2015 8:02 PM  
**To:** 'apr1400rai@khnp.co.kr'; KHNPDCDRAIsPEm Resource; 'Chang, Harry'; 'Yunho Kim (yshh8226@gmail.com)'; jiyong.oh5@gmail.com; daegeun.ahn@gmail.com; Mannon, Steven (steven.mannon@aecom.com)  
**Cc:** Ciocco, Jeff; Lee, Samuel; Wunder, George; Zimmerman, Jacob; Ray, Sheila  
**Subject:** APR1400 Design Certification Application RAI 144-8093 (8.2 - Offsite power System)  
**Attachments:** image001.jpg; APR1400 DC RAI 144 EEB 8093.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 the RAI question. We may adjust the schedule accordingly.

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

Thank you,

**William R. Ward, P.E.**  
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**Hearing Identifier:** KHNP\_APR1400\_DCD\_RAI\_Public  
**Email Number:** 153

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**Subject:** APR1400 Design Certification Application RAI 144-8093 (8.2 - Offsite power System)  
**Sent Date:** 8/7/2015 8:02:07 PM  
**Received Date:** 8/7/2015 8:02:11 PM  
**From:** Ward, William

**Created By:** William.Ward@nrc.gov

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Files	Size	Date & Time
MESSAGE	777	8/7/2015 8:02:11 PM
image001.jpg	4205	
APR1400 DC RAI 144 EEB 8093.pdf		79816

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**Priority:** Standard  
**Return Notification:** No  
**Reply Requested:** No  
**Sensitivity:** Normal  
**Expiration Date:**  
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## REQUEST FOR ADDITIONAL INFORMATION 144-8093

Issue Date: 08/07/2015

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

#### 08.02-6

GDC 17 states that electric power from the transmission network to the onsite electric distribution system shall be supplied by two physically independent circuits (not necessarily on separate rights of way) designed and located so as to minimize to the extent practical the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. APR1400 discusses the UATs and SATs in DCD Tier 2, Section 8.2.1.3. IEEE Std.-666-1991, reaffirmed 1996, "IEEE Design Guide for Electric Power Service Systems for Generating Systems," recommends, in addition to overcurrent and differential current protection, sudden pressure and ground fault protection in order to fully protect large power transformers. This standard is endorsed in RG 1.204 with regard to the protection provided by these protective schemes against lightning strikes. Please discuss the protection schemes for the large power transformers (MT, UATs, and SATs), in regards to the recommendations in IEEE 666-1991.