

## KHNPDCDRAIsPEm Resource

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**Sent:** Tuesday, September 01, 2015 5:28 AM  
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**Cc:** Curran, Gordon; Dias, Antonio; Wunder, George; Lee, Samuel  
**Subject:** APR1400 Design Certification Application RAI 186-8009 (09.05.07 - Emergency Diesel Engine Lubrication System)  
**Attachments:** APR1400 DC RAI 186 SPSB 8009.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, 60 days to respond to RAI question 09.05.07-1 and 30 days to respond to RAI question 09.05.07-2. 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:** 235

**Mail Envelope Properties** (d8254cbdddf040cf86c15f398c2b51df)

**Subject:** APR1400 Design Certification Application RAI 186-8009 (09.05.07 - Emergency Diesel Engine Lubrication System)  
**Sent Date:** 9/1/2015 5:27:56 AM  
**Received Date:** 9/1/2015 5:27:59 AM  
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Files	Size	Date & Time
MESSAGE	695	9/1/2015 5:27:59 AM
APR1400 DC RAI 186 SPSB 8009.pdf		87993
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 186-8009

Issue Date: 09/01/2015

Application Title: APR1400 Design Certification Review – 52-046

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

Docket No. 52-046

Review Section: 09.05.07 - Emergency Diesel Engine Lubrication System

Application Section: 9.5.7

### QUESTIONS

#### 09.05.07-1

APR-1400 DCD Tier 2 Section 9.5.7.2.1 states that, while in standby, the motor-driven prelube oil pump draws oil from the engine sump tank and delivers it through the lube oil/preheating water heat exchanger and the full-flow filter to the engine. DCD Tier 2 Section 9.5.7.2.1 states that, while in standby, the motor-driven prelube oil pump draws oil from the engine sump tank and delivers it through the lube oil/preheating water heat exchanger and the full-flow filter to the engine.

NUREG/CR-0660, "Enhancement of Onsite Emergency Diesel Generator Reliability," cautions against pre-lube periods exceeding 5 minutes unless approved by the diesel manufacturer. NUREG-0800, SRP 9.5.7, Section III.3.F and G, which is based on NUREG/CR-0660, state similar caution.

The applicant is requested to justify the emergency diesel engine lubrication system (EDELS) compliance with the guidelines presented in NUREG/CR-0660, and revise the DCD accordingly to clarify compliance with the above guidelines.

#### 09.05.07-2

In accordance with NUREG-0800, SRP 9.5.7, onsite lubricating oil storage capacity for each diesel engine sufficient for seven days operation after any design basis event and a continuous loss of off-site power as specified in ANSI/ANS-59.52.. NUREG-0800, SRP 14.2 provides additional guidance on review of the acceptability of the pre-operational and startup tests.

Emergency Diesel Generator Auxiliaries Test #106 in DCD Tier 2, Section 14.2 confirms the 7-day requirement for fuel oil storage, but does not confirm the 7-day requirement for lubricating oil storage.

The applicant is requested to provide assurance that the lubricating oil storage design will contain and confirm the 7-day storage requirement. The DCD should be revised accordingly.

