

## KHNPDCRAIsPEm Resource

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**From:** Ciocco, Jeff  
**Sent:** Wednesday, September 16, 2015 10:16 AM  
**To:** apr1400rai@khnp.co.kr; KHNPDCRAIsPEm Resource; Harry (Hyun Seung) Chang; Andy Jiyong Oh; Christopher Tyree  
**Cc:** Drzewiecki, Timothy; McKirgan, John; Steckel, James; Lee, Samuel  
**Subject:** APR1400 Design Certification Application RAI 217-8217 (15.04.04-15.04.05 - Startup of an Inactive Loop or Recirculation Loop at an Incorrect Temperature, and Flow Controller Malfunction Causing an Increase in BWR Core Flow Rate)  
**Attachments:** APR1400 DC RAI 217 SRSB 8217.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.

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:** 266

**Mail Envelope Properties** (0b60ca32ac804ed2b6d4777447d3182b)

**Subject:** APR1400 Design Certification Application RAI 217-8217 (15.04.04-15.04.05 - Startup of an Inactive Loop or Recirculation Loop at an Incorrect Temperature, and Flow Controller Malfunction Causing an Increase in BWR Core Flow Rate)

**Sent Date:** 9/16/2015 10:16:07 AM

**Received Date:** 9/16/2015 10:16:11 AM

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<b>Files</b>	<b>Size</b>	<b>Date &amp; Time</b>
MESSAGE	497	9/16/2015 10:16:11 AM
APR1400 DC RAI 217 SRSB 8217.pdf		96197
image001.jpg	5040	

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**Expiration Date:**

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# REQUEST FOR ADDITIONAL INFORMATION 217-8217

Issue Date: 09/16/2015

Application Title: APR1400 Design Certification Review – 52-046

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

Docket No. 52-046

Review Section: 15.04.04-15.04.05 - Startup of an Inactive Loop or Recirculation Loop at an Incorrect Temperature, and Flow Controller Malfunction Causing an Increase in BWR Core Flow Rate

Application Section:

## QUESTIONS

### 15.04.04-1

GDC 10 requires that the reactor coolant system (RCS) is designed with appropriate margin to ensure that specified acceptable fuel design limits are not exceeded during normal operations, including anticipated operational occurrences (AOOs). GDC 15 and 28 require that the RCS is designed with sufficient margin to ensure the pressure boundary will not be breached during normal operations, including AOOs.

As part of the review of the analysis for the startup of an inactive reactor coolant pump (SIRCP) event, presented in DCD Section 15.4.4, staff audited the calculation note that is the basis for the qualitative description provided in DCD Section 15.4.4. This calculation note, APR1400-F-A-TM-12035-P, lacked sufficient detail regarding the input parameters for staff to understand the basis for the selected values. Staff is requesting the following additional information:

1) Shutdown margin referenced Technical Specifications, but Technical Specifications references the Core Operating Limits Report (COLR). Explain how the values used in the safety analyses that reference the COLR are checked prior to loading fuel.

2) The analysis uses maximum primary to secondary temperature differences, but it is not clear why the values provided are conservative. Explain how the maximum primary to secondary temperature differences are bounding.



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