

## KHNPDCRAIsPEm Resource

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**From:** Ciocco, Jeff  
**Sent:** Monday, December 07, 2015 9:29 AM  
**To:** apr1400rai@khnp.co.kr; KHNPDCRAIsPEm Resource; Harry (Hyun Seung) Chang; Andy Jiyong Oh; James Ross  
**Cc:** Gilmer, James; McKirgan, John; Vera, John; Olson, Bruce; Lee, Samuel  
**Subject:** APR1400 Design Certification Application RAI 328-8422 (04.04 - Thermal and Hydraulic Design)  
**Attachments:** APR1400 DC RAI 328 SRSB 8422.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:** 377

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**Subject:** APR1400 Design Certification Application RAI 328-8422 (04.04 - Thermal and Hydraulic Design)  
**Sent Date:** 12/7/2015 9:28:49 AM  
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## REQUEST FOR ADDITIONAL INFORMATION 328-8422

Issue Date: 12/07/2015

Application Title: APR1400 Design Certification Review – 52-046

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

Docket No. 52-046

Review Section: 04.04 - Thermal and Hydraulic Design

Application Section: 4.4.6.1, also in 4.3 and 7.2

### QUESTIONS

#### 04.04-7

Title 10 of the Code of Federal Regulations, Part 52.47, "Contents of Applications; technical information" requires, in part, that the application must contain a level of design information sufficient to enable the Commission to judge the applicant's proposed means of assuring that construction conforms Title to the design and to reach a final conclusion on all safety questions associated with the design before the certification is granted. The information submitted for a design certification must include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC.

Technical Report APR1400-F-C-NR-14001-P, Rev. 0, "CPC Setpoint Analysis Methodology for APR1400" was submitted as Enclosure # 63 to letter MKD/NW-14-0037L, "Submittal of APR1400 Technical Reports," dated December 23, 2014. However, it is not referenced in the DCD, either in the relevant sections 4.3, 4.4, or 7.2, or in Table 1.6-2, "List of Technical Reports". The staff considers this report to contain design information necessary for the Commission to reach a safety finding on the design. Staff seeks to clarify the regulatory standing of this document and ensure design basis commitments are clearly established. Please provide an explanation of the intended use of this document with respect to establishing the design basis of the plant and indicate where the relevant design information is contained in the DCD or reference the document appropriately to establish a clear design basis for the APR1400 Core Protection Calculator System.

#### 04.04-8

Title 10 of the Code of Federal Regulations, Part 52.47, "Contents of Applications; technical information" requires, in part, that the application must contain a level of design information sufficient to enable the Commission to judge the applicant's proposed means of assuring that construction conforms to the design and to reach a final conclusion on all safety questions associated with the design before the certification is granted. The information submitted for a design certification must include performance requirements and design information sufficiently detailed to permit the preparation of acceptance and inspection requirements by the NRC.

Topical Report CENPD-170, "CPC, Assessment of the Accuracy of PWR Safety System Actuation as Performed by the Core Protection Calculators," was provided to the staff for audit. The staff considers this report to contain design information necessary for the Commission to reach a safety finding on the design. This document contains necessary details on the intended function and operation of the Core Protection calculator, including processes used to develop and adjust system constants, which cannot be found in the DCD or the associated technical report APR1400-F-C-NR-14003-P, "Functional Design Requirements for a Core Protection Calculator System for APR1400." Staff seeks to clarify the regulatory standing of this document and ensure design basis commitments are clearly established. Please provide an explanation of the intended use of this document with respect to establishing the design basis of the plant and indicate where the relevant design information is contained in the DCD or reference the document appropriately to establish a clear design basis for the APR1400 Core Protection Calculator System.



**U.S.NRC**

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