

## **KHNPDCDRAIsPEm Resource**

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**Sent:** Friday, June 10, 2016 4:19 PM  
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**Subject:** APR1400 Design Certification Application RAI 495-8627 [9.1.2 - New and Spent Fuel Storage]  
**Attachments:** APR1400 DC RAI 495 MCB 8627.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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## REQUEST FOR ADDITIONAL INFORMATION 495-8627

Issue Date: 06/10/2016  
Application Title: APR1400 Design Certification Review – 52-046  
Operating Company: Korea Hydro & Nuclear Power Co. Ltd.  
Docket No. 52-046  
Review Section: 09.01.02 - New and Spent Fuel Storage  
Application Section: 9.1.2

### QUESTIONS

#### 09.01.02-56

The applicant credits the spent fuel pool liner as performing an important to safety function in FSAR Section 9.1.3.3.2: “The leakage probability is very low because the SFP stainless steel liner is a seismic Category I structure” (GDC 62, requiring maintenance of SFP inventory).

The staff has examined FSAR Chapter 3, 9, and 17 and Topical Report APR1400-K-Q-TR-11005 “KHNP Quality Assurance Program Description (QAPD) for the APR1400 Design Certification” Rev 5 and cannot determine the specific Quality Assurance (QA) requirements for the spent fuel pool liner. QA requirements for the spent fuel pool system and the spent fuel pool liner are vaguely discussed in two sections of the FSAR:

1. As is described in FSAR Section 3.2 and Table 3.2-1 the spent fuel cavity (which is protected by the spent fuel pool liner) is part of the Auxiliary Building. The Auxiliary Building is constructed to ACI 397 and requires a 10 CFR 50 Appendix B qualified QA program. However, ACI 397 does not have requirements for liners. It is unclear whether the spent fuel pool liner would be considered a supplemental system to the spent fuel cavity or a component of the spent fuel cavity requiring an Appendix B QA program. Several SSCs in the spent fuel pool cleanup and makeup system are described in FSAR Table 3.2-1 with different codes of construction and quality assurance requirements than the Auxiliary Building; however, the spent fuel pool liner is not listed in Table 3.2-1.
2. FSAR Section 3.8.4.6.1.4 states that the spent fuel pool liner will meet the QA requirements described in FSAR Section 3.8.4.6.1. FSAR Section 3.8.4.6.1 states that the components should meet the general QA program requirements of FSAR Chapter 17. The QA requirements in Chapter 17 include safety-related (Appendix B) SSCs, non-safety related SSCs (Part III, Section 1), and augmented quality non-safety related SSCs (Part III, Section 2).

FSAR Chapter 3 does not provide clear QA requirements.

The staff is concerned that a COL applicant referencing the APR1400 design might use the QA requirements specified in the QAPD Part III, Section 1 (non-Appendix B and non-augmented QA program). QAPD Part III, Section 1.7 “Control of Purchased Items and Services” and Section 1.18 “Audits” would not be sufficient to preclude the use of sensitized stainless steel in the spent fuel pool liner. Part III, Section 1 would not require material verification by testing or verification of the trustworthiness of a supplier. The use of sensitized material could result in unanticipated leakage (in both location and size of leakage) which is not consistent with the assumptions in Section 9.1 of FSAR.

The applicant should provide the staff with the QA requirements for the spent fuel pool liner. Additionally the applicant should revise the FSAR or QAPD to provide clear guidance for a COL applicant related the QA requirements for spent fuel pool liner.”