

## KHNPDCRAIsPEm Resource

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**From:** Ciocco, Jeff  
**Sent:** Wednesday, December 02, 2015 3:00 PM  
**To:** apr1400rai@khnp.co.kr; KHNPDCRAIsPEm Resource; Harry (Hyun Seung) Chang; Andy Jiyong Oh; Steven Mannon  
**Cc:** Nolan, Ryan; Dias, Antonio; Ng, Ronnie; Lee, Samuel  
**Subject:** APR1400 Design Certification Application RAI 325-8362 (03.05.02 - Structures Systems and Components To Be Protected From Externally-Generated Missiles)  
**Attachments:** APR1400 DC RAI 325 SPSB 8386.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, 60 days to respond to this RAI. 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  
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# REQUEST FOR ADDITIONAL INFORMATION 325-8386

Issue Date: 12/02/2015

Application Title: APR1400 Design Certification Review – 52-046

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

Docket No. 52-046

Review Section: 03.05.02 - Structures Systems and Components To Be Protected From Externally-Generated Missiles

Application Section: 3.5.2

## QUESTIONS

03.05.02-7

### Follow-up to Question 3.5.2-3

GDC 2 requires that SSCs important to safety to be protected against natural phenomena. The design bases for these SSCs are to reflect the importance of the safety functions to be performed. Also, GDC 60 requires that the nuclear power unit design include means to suitably control the release of radioactive materials in gaseous and liquid effluents and to handle radioactive solid waste produced during normal reactor operation, including anticipated operational occurrences. RG 1.143 provides guidance for the radwaste management SSCs. In addition, although not referenced in RG 1.143, GDC 61 requires that radioactive waste and other systems which may contain radioactivity be designed with appropriate containment and confinement during both normal and postulated accident conditions.

In response to RAI 8046, Question 3.5.2-3, item c, the applicant stated that the compound building does not function as a missile barrier and provided a DCD markup that removes the associated statement in DCD Tier 1, Section 2.2.4. Due to this deletion, it is unclear to the staff how the compound building, and therefore, the radwaste systems conform to the guidance of RG 1.143.

DCD Tier 2, Section 11.2 specifies that the compound building is classified as RW-IIa. Table 2 of RG 1.143 specifies that RW-IIa facilities should be protected against tornado missiles. In order to conform to RG 1.143, the applicant is requested to revise the response to Question 3.5.2-3, item c, and include in its application:

- a. an evaluation of the missile protection provided by the compound building, including the identification of tornado missile spectra and associated velocities, demonstrating that the compound building meets or exceeds the criteria of RW-IIa; or
- b. a full evaluation of the radiological consequences demonstrating that a total unmitigated radiological release (considering the maximum inventory in the building) would not result in a dose of greater than 100 mrem at the protected area boundary or 5 rem to site personnel. (Note: while RG 1.143, Regulatory Position 5, indicates that the dose limit at the protected area boundary is 500 mrem, SRP 11.2 clarifies that for the purposes of the SRP the dose limit is 100 mrem, consistent with 10 CFR 20.1301. Therefore, unless an alternative approach to the SRP is proposed, the limit is 100 mrem at the protected area boundary.)



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