

## KHNPDCDRAIsPEm Resource

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**Sent:** Wednesday, August 05, 2015 6:25 PM  
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**Cc:** Ciocco, Jeff; Lee, Samuel; Dias, Antonio; Umana, Jessica; Curran, Gordon  
**Subject:** APR1400 Design Certification Application RAI 127-8010 (Emergency Diesel Engine Combustion Air Intake and Exhaust System)  
**Attachments:** APR1400 DC RAI 127 SPSB 8010.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 the RAI question. We may adjust the schedule accordingly.

Please submit your RAI response to the NRC Document Control Desk.

Thank you,

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**Sent Date:** 8/5/2015 6:24:34 PM  
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**U.S.NRC**

United States Nuclear Regulatory Commission

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## REQUEST FOR ADDITIONAL INFORMATION 127-8010

Issue Date: 08/05/2015

Application Title: APR1400 Design Certification Review – 52-046

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

Docket No. 52-046

Review Section: 09.05.08 - Emergency Diesel Engine Combustion Air Intake and Exhaust System

Application Section: 9.5.8

### QUESTIONS

#### 09.05.08-1

10 CFR 52.47(a)(2) requires that a standard design certification applicant provide a description and analysis of the structures, systems, and components (SSCs) of the facility, with emphasis upon performance requirements, the bases, with technical justification therefore, upon which these requirements have been established, and the evaluations required to show that safety functions will be accomplished.

DCD Tier 2, Section 9.5.8.4 indicates that “[s]ystem components and piping are tested to pressures designated by ASME Section III Class 3.” However, DCD Tier 1, Table 2.6.2-1 and Table 3.2-1 indicate that ASME Section III Class is not applicable to the emergency diesel engine combustion air intake and exhaust system (EDECAIES).

The applicant is requested to clarify the classification applied to the EDECAIES.

#### 09.05.08-2

In accordance with NUREG-0800, SRP 9.5.8, the safety analysis report is reviewed to verify each emergency diesel generator (EDG) should have an independent and reliable combustion air intake and exhaust system sized and physically arranged for no degradation of engine function when the diesel generator set must operate continuously at the maximum rated power output. NUREG-0800, SRP 14.2 provides additional guidance on review of the acceptability of the pre-operational and startup tests.

DCD Section 9.5.8.4 indicates that “[i]nspection and functional testing are performed prior to initial operation as described in Section 14.2; thereafter, the system is periodically tested along with the complete EDG system in accordance with the Technical Specifications as described in Chapter 16. This testing demonstrates the performance of leaktightness, operability, and the capability of the system to function as intended under accident condition.”

The staff is unable to locate any emergency diesel engine combustion air intake and exhaust system (EDECAIES) leaktightness or operability testing in Section 14.2.

The applicant is requested to clarify the testing applied to the EDECAIES.

## REQUEST FOR ADDITIONAL INFORMATION 127-8010

### 09.05.08-3

In accordance with SRP 9.5.8, the essential EDECAIES portions are classified Quality Group C and seismic Category I. Components and system descriptions in the SAR that identify mechanical and performance characteristics are reviewed to verify whether the seismic and quality classifications have been included and whether the piping and instrumentation diagrams (P&IDs) indicate any points of change at system or system component interfaces. SRP 9.5.8 also states that failures of any non-seismic Category 1 structure, system, or component (SSC) (or failures of other non-seismic components or systems) will not affect the safety functions of the system adversely.

Although Table 3.2-1 indicates all components of EDECAIES are Quality Class G, DCD Tier 2, Figure 9.5.8-1 does not define seismic and quality group designation for emergency diesel generator (EDG) piping located upstream of designation flag/classification on the Exhaust Gas Outlet line.

The applicant is requested to provide description and designation of this piping to ensure they are designed so that they will not degrade the operability of Seismic I SSCs during a design basis accident event and update DCD and figure accordingly.