

KHNPDCDRAIsPEm Resource

From: Ciocco, Jeff
Sent: Monday, December 28, 2015 10:25 AM
To: apr1400rai@khnp.co.kr; KHNPDCDRAIsPEm Resource; Harry (Hyun Seung) Chang; Andy Jiyong Oh; Steven Mannon
Cc: Makar, Gregory; Mitchell, Matthew; Wunder, George; Lee, Samuel
Subject: APR1400 Design Certification Application RAI 355-8438 (09.05.04 - Emergency Diesel Engine Fuel Oil Storage and Transfer System)
Attachments: APR1400 DC RAI 355 MCB 8438.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 questions. We may adjust the schedule accordingly.

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

Thank you,

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REQUEST FOR ADDITIONAL INFORMATION 355-8438

Issue Date: 12/28/2015

Application Title: APR1400 Design Certification Review – 52-046

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

Docket No. 52-046

Review Section: 09.05.04 - Emergency Diesel Engine Fuel Oil Storage and Transfer System

Application Section:

QUESTIONS

09.05.04-8

Please describe the codes and standards that will be applied to the coatings on the underground tanks, piping, and other components. In addition, describe your plans to add this information to the FSAR. This information is needed for conformance with position C.9 of Regulatory Guide 1.137, Rev. 2, which states that external corrosion should be addressed by following NACE International standard practice SP0169-2007, "Control of External Corrosion on Underground or Submerged Metallic Piping Systems." If SP0169-2007 is not being used, provide a justification for the proposed alternative. For additional background, the staff notes that License Renewal Interim Staff Guidance, LR-ISG-2015-01, "Changes to Buried and Underground Piping and Tank Recommendations," identifies loss of material on steel and copper components in underground vaults due to moisture in the air.

09.05.04-9

FSAR Tier 2 Subsection 9.5.4.5 states that inservice inspection of Emergency Diesel Engine Fuel Oil System (EDEFOS) piping is governed by the requirements of ASME Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components." This subsection of the FSAR does not identify the inspection code for the storage tanks and day tanks. RG 1.137, Rev. 2, Position C7, states that ASME Code, Section XI applies to fuel oil system components designed to the ASME Code, Section III, "Rules for Construction of Nuclear Facility Components." Please confirm that the storage tanks and day tanks in the EDEFOS will be inspected according to ASME Code, Section XI, and discuss your plans to include this information in the FSAR.

09.05.04-10

FSAR Subsection 9.5.4.5 states that fuel oil samples are tested for specific gravity, cloud point, viscosity, water content, and sediment content prior to adding new fuel to the storage tanks. APR1400 Technical Specification 5.5.13.a.2 and Regulatory Guide 1.137, Rev. 2, "Fuel Oil Systems for Emergency Power Supplies," (Position C.13.3.4) include flash point and exclude cloud point in the list of parameters to test prior to adding new fuel to the storage tanks. (According to RG 1.137, cloud point is one of the parameters measured in accordance with ASTM D975 within 31 days after new fuel delivery.) Please provide your plans to revise the FSAR to address this apparent discrepancy.

REQUEST FOR ADDITIONAL INFORMATION 355-8438

09.05.04-11

The APR1400 Technical Specifications Bases for Surveillance Requirement 3.8.3.3 refer to ASTM International D5452-12, "Standard Method for Particulate Contamination in Aviation Fuels by Laboratory Filtration," for sampling and determining particulate concentration in stored fuel. However, Regulatory Guide (RG) 1.137, Rev. 2, "Fuel Oil Systems for Emergency Power Supplies," (Positions C.13.1 and C.13.8) references ASTM International D6217-11, "Standard Test Method for Particulate Contamination in Middle Distillate Fuels by Laboratory Filtration." Please discuss your plans to revise the Technical Specifications Bases to conform to RG 1.137, Rev. 2, since FSAR Tier 2, Table 1.9-1, "Conformance with Regulatory Guides," identifies no exceptions to conformance. Alternatively, provide a justification for using ASTM D5452-12 and identify this in the FSAR as an exception to RG 1.137, Rev. 2.

09.05.04-12

The KHNP response on November 13, 2015 (ADAMS Accession Number ML15317A521) to Action Item Nos. AI 9-45.3 and AI 9-45.5, proposes revisions to FSAR Subsection 9.5.4. These revisions would state that fuel in the storage tanks and day tanks will be sampled periodically according to the Fuel Oil Testing Program in Section 5.5.13 of the Technical Specifications (TS), and that sediment and moisture are removed in accordance with TS Surveillance Requirement (SR) 3.8.3.5. The staff requests clarification on the following: (1) TS 5.5.13 does not appear to include a provision for sampling fuel from the day tanks, (2) SR 3.8.3.5 as written does not apply to day tanks, and (3) SR 3.8.3.5 does not apply to sediment.



United States Nuclear Regulatory Commission

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