RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD

Docket No. 52-046

RAI No.: **532-8689**

SRP Section: **06.02.02 - Containment Heat Removal Systems**

Application Section:

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Question No. 06.02.02-45

To meet GDC 2 and 10 CFR Part 50, Appendix S, structures and components important to safety are designed to withstand the effects of earthquakes without loss of capability to perform their safety functions. The DCD, Tier 2, Section 3.9.3, Table 3.9-2, indicated that the square root of sum of square (SRSS) method is used to combine the SSE, dynamic system and hydrodynamic loads, as Table 3.9-2 showed SRSS (SSE + DF+IRWST). The SRSS method is acceptable for combining SSE, dynamic system and hydrodynamic loads. In Technical Report, APR1400-E-N-NR-14002-NP, Rev. 0, “IRWST Sump Strainer and Trash Rack Structural Analysis,” Table 1-1 load combinations of Service Level D, indicates that SSE is combined algebraically with hydrodynamic load (PDE), as shown (SSE+PDE). It is not clear if the SRSS method is used to combine SSE and PDE, such as SRSS (SSE+PDE). The staff requests that the applicant clarify whether the SRSS method is used to combine the SSE and PDE loads.

Response

The absolute sum method is used for the loading combination of the SSE and postulated dynamic loads in the IRWST sump structural analysis as listed in Table 1-1 of the Technical Report referenced above. The absolute sum method is more conservative than the square root of sum of squares (SRSS) method. Therefore, the IRWST sump structural analysis demonstrates that the IRWST sump strainer is designed to withstand the effects of earthquakes without loss of capability to perform the safety functions.

Impact on DCD

There is no impact on the DCD.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Reports

There is no impact on the Technical/Topical/Environmental Report.