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.:	**334-8373**
SRP Section:	**03.12 – ASME Code Class 1,2, and 3 Piping Systems and Piping Components and Their Associated Supports**
Application Section:	**Section 3.12**
Date of RAI Issue:	**12/14/2015**

Question No. 03.12-17

According to SRP Section 3.12, Subsection II.D.xi, pipe support gaps should account for the diametrical expansion of the pipe due to pressure and temperature.

DCD Tier 2, Section 3.12.6.11, “Pipe Support Gaps and Clearances,” states that the normal design practice for the APR1400 is to use a nominal cold condition gap of 1.6 mm (1/16 inch) on each side of the pipe in the restrained direction and that these small gaps allow radial thermal expansion of the pipe as well as allow rotation of the pipe at the support.

The applicant is requested to discuss how the specified pipe support gap will be checked against the maximum combined radial growth of the pipe due to temperature and pressure to assure that adequate clearance exist to avoid any thermal binding. To the extent that the response addresses programmatic or operational activities that are outside the scope of design certification, the applicant is requested to describe these and include in the DCD a provision for COL applicants to describe these activities.

Response

As stated in DCD Tier 2 Section 3.12.6.11, support gaps are provided on each side of the pipe in the restrained direction and the designed gaps are included in the design drawings. In accordance with NRC Bulletin 79-14, piping system reconciliation (including supports) is performed in the construction stage to verify that as-built support configuration (including the location, orientation, size, gap) is reconciled with the as-designed support configuration. Through this piping system reconciliation, the pipe support gaps are checked to ensure they are constructed in accordance with design to avoid any thermal binding.

A related statement is included in DCD Tier 1 ITAAC for each system that an inspection of the as-built piping including supports be performed as documented in the ASME design report or data report. This is also consistent with the statements in DCD Tier 2 Section 3.12.2.3, “In

addition, ASME Section III requires that design reports for all ASME Class 1, 2, and 3 piping systems demonstrating and documenting that as-built piping system and pipe support configurations adhere to the requirements of the design specification (Reference 6).”

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 any Technical, Topical, or Environment Report.