

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.: 364-8421

SRP Section: 09.01.01 - Criticality Safety of Fresh and Spent Fuel Storage and Handling

Application Section: DCD Tier 2, Section 9.1.1

Date of RAI Issue: 01/11/2016

Question No. 09.01.01-27

Title 10 of the Code of Federal Regulations (10 CFR) Part 50, Appendix A, General Design Criteria 62 requires preventing criticality in the fuel storage and handling system through the use of physical systems or processes.

Technical Report APR1400-Z-A-NR-14011 "Criticality Analysis of New and Spent Fuel Storage Racks" describes the criticality calculations used to evaluate the adequacy of the new and spent fuel storage racks.

The "Bias and Uncertainty" calculations in this document include a tolerance on the "cell pitch." Confirm whether or not that the cell pitch tolerance includes both positional tolerances and form tolerances (e.g. straightness of the fuel assembly tube/slot).

Response

The cell pitch tolerance means the positional tolerance needed to account for the slight differences that may occur during the fabrication of the fuel storage rack. The lower parts of the fuel storage cells are installed within the cell pitch tolerance of []^{TS} on the rack baseplate. And the upper parts of the cells are fixed by the gap spacers (Region I) and the connecting bars (Region II) so that the cell pitches are maintained within the tolerance of []^{TS}. The form tolerance, which is applied to the outermost surfaces of the rack, does not affect the cell pitch.

Therefore, the cell pitch tolerance applied to the criticality analysis includes the positional tolerance only.

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.