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. : **116-8054**

SRP Section: **14.3-INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE CRITERIA**

Application Section: **14.3**

Date of RAI Issue: **07/27/2015**

Question No. 14.03.08-3

10 CFR 50, GDC 61, requires that the fuel storage and handling, radioactive waste, and other systems which may contain radioactivity shall be designed to assure adequate safety under normal and postulated accident conditions. These systems shall be designed (1) with a capability to permit appropriate periodic inspection and testing of components important to safety, (2) with suitable shielding for radiation protection, (3) with appropriate containment, confinement, and filtering systems, (4) with a residual heat removal capability having reliability and testability that reflects the importance to safety of decay heat and other residual heat removal, and (5) to prevent significant reduction in fuel storage coolant inventory under accident conditions.

SRP Section 14.3 indicates that the purpose of inspections, tests, analysis, and acceptance criteria (ITAAC), is to verify that a facility referencing the design certification is built and operates in accordance with the design certification and applicable regulations.

In addition, SRP Section 14.3.8 indicates that the reviewer should ensure that Tier 1 identifies and describes, commensurate with their safety significance, those SSCs that provide radiation shielding, confinement or containment of radioactivity, ventilation of airborne contamination, or radiation (or radioactivity concentration) monitoring for normal operations and during accidents.

ANSI/ANS-57.1-1992, which is referenced by the applicant, indicates that fuel handling equipment shall be designed so that the operator will not be exposed to greater than 2.5 mrem/hour from an irradiated fuel unit, control component, or both, elevated to the up position interlock with the pool at normal operating water level.

The staff cannot find any ITAAC in Tier 1 to verify that a facility referencing the design certification will be built and operated to ensure that the refueling machine and spent fuel machine will be designed to ensure that the 2.5 mrem/hour limit is not exceeded. Therefore,

please provide an ITAAC to verify that the refueling machine and spent fuel machine are provided with an interlock which will prevent raising an irradiated fuel assembly or control component high enough that the dose to an operator on the refueling bridge exceeds 2.5 mrem/hour with the pool at its normal operating water level.

Response

The Refueling Machine (RM) and Spent Fuel Handling Machine (SFHM) are provided with mechanical stops that are currently included as an ITAAC item (Refer to ITAAC item 8 of Table 2.7.4.4-2). Mechanical stops in both the RM and SFHM restrict withdrawal of the spent fuel assemblies. This results in ensuring a minimum water depth is maintained over the fuel assembly. The resulting radiation level from the spent fuel meets the radiation dose limits in the work area when the shielding of the fuel handling equipment is taken into account.

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 Technical Specifications.

Impact on Technical/Topical/Environmental Reports

There is no impact on any Technical/Topical/Environmental Reports.