REVISED 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.: **218-8183**

SRP Section: **11.02 – Liquid Waste Management System**

Application Section: **11.2**

Date of RAI Issue: **09/21/2015**

Question No. 11.02-4

In the description of the Inspection, Test Analysis for the following design commitments in Table 2.7.6.1-2 the applicant states the following:

> In design commitment 2 the applicant states “Test of the as-built LWMS discharge valves will be performed using a simulated test signal.”
>
> In design commitment 4, the applicant states: “Tests of the radiation monitor alarm signal will be performed to verify that signal is annunciated in the MCR and radwaste control room using simulated test signals at the required setpoint.”
>
> In design commitment 6, the applicant states: “…and signal tests will be conducted to verify alarm, pump shut-off, and valve closure.

In review of “simulated test signal” and “simulated tests,” the NRC staff believes that this implies that an electric signal will be used in place of a radiation source. NRC staff finds that this method does not test they system as a whole as it does not functionally test the radiation detector which is an essential component. Testing of this component is essential in verifying information that would be used to justify compliance with 10 CFR 50 Appendix I Dose Objectives, 10 CFR 20 Appendix B Table 2 limits, and 10 CFR 20.1301 and 1302 dose limits to a member of the public.

NRC staff requests that the applicant address the use of a radiation source in testing the LWMS in place of the currently cited simulated test signal.

Response – (Rev. 1)

The liquid radwaste system effluent radiation monitors, PR-RE-183/184, are included in Process and Effluent Radiation Monitoring and Sampling System (PERMSS), which is described in DCD Tier 1, subsection 2.7.6.4 and functional test information for the radiation detectors is provided

in that subsection. Subsection 2.7.6.1 describes the verification for LRS discharge valve operation, pump operation, and alarms upon receipt of a high radiation signal from the radiation detector.

A radiation check source is used to test each radiation monitor. DCD Tier 1, Subsection 2.7.6.4.1 will be revised to include LWMS radiation monitors are tested using a radiation check source, as well.

In addition, DCD Tier 1, Table 2.7.6.4-3 and Table 2.7.6.5-3, and DCD Tier 2, Subsection 11.5.2.1 will be also revised to use the words “radiation check source” instead of integral activated check source.

Impact on DCD

DCD Tier 1, Subsection 2.7.6.4.1, Table 2.7.6.4-3 (1 of 2), Table 2.7.6.5-3, and DCD Tier 2, Subsection 11.5.2.1 will be revised. (Refer to the Attachment in Question 11.3-7 of RAI 219-8199.)

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 Environmental Report.