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## 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.:** 229-8194  
**SRP Section:** 11.04 – Solid Waste Management System  
**Application Section:** 11.4  
**Date of RAI Issue:** 09/28/2015

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### **Question No. 11.04-2**

10 CFR 50 Appendix A GDC 1 and 2 as they relate to Quality Assurance standards and identification of structures systems and components important to safety be designed to withstand the effects of natural phenomena. 10 CFR 50 Appendix A GDC 60 and Regulatory Guide 1.143 as it relates to the control of release of radioactive materials and the radwaste system safety classifications.

Staff review of DCD section 11.4.5 indicates that insufficient details are provided to describe the boundaries of the systems and their corresponding safety classifications. Staff is seeking sufficient details describing the radwaste systems including their respective isolation components. Currently the Staff is unable to determine if each system's isolation components are also included in the safety classification for the systems. DCD section 11.4.5 that states:

“The safety classifications for the LWMS components applies to components up to and including the nearest valves, fittings, and/or welded/flanged nozzle connections.” This does not provide a description of isolation components in the description of LWMS systems.

DCD Section 11.3.1.3 clarifies this stating: “The safety classification for the GRS components applies to components, up to and including the nearest isolation valves, fittings, and/or welded/flanged nozzle connections.”

Each radwaste SSC classification need to address the following information:

1. All components connected to a component classified as a RW-IIa (ex. Piping, pumps, etc) are also classified as RW-IIa, up to and including the nearest isolation component (ex. Isolation valves), on each connection, to the RW-IIa component.
2. All components connected to a component classified as a RW-IIb (ex. Piping, pumps, etc) are also classified as RW-IIb, up to and including the nearest isolation component (ex. Isolation valves), on each connection, to the RW-IIb component.

3. All components connected to a component classified as a RW-IIc (ex. Piping, pumps, etc) are also classified as RW-IIc, up to and including the nearest isolation component (ex. Isolation valves), on each connection, to the RW-IIc component.

Please address the items above and provide a mark-up on the proposed DCD changes.

### **Response**

Section 11.4.5 will be revised to address the system component boundary for each radwaste safety classification.

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### **Impact on DCD**

DCD Tier 2 Section 11.4.5 will be revised as indicated in the attached markup.

### **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.

**APR1400 DCD TIER 2**

The process control program contains the planned effluent discharge flow rates and addresses the numerical guidelines in 10 CFR 50 Appendix I (Reference 22), as described in above Subsection 11.4.3. The program is prepared in accordance with the requirements of 10 CFR 71 (Reference 10) and the guidance of NUREG-1301 (Reference 35), NUREG-0133 (Reference 36), NRC RG 1.109 (Reference 37), NRC RG 1.111 (Reference 38), or NRC RG 1.113 (Reference 39). The program includes a description of how the NUREGs, NRC RGs, and alternative methods are implemented.

#### 11.4.5 Component Descriptions

A summary of the SWMS components, including the design of the tanks and pumps, is shown in Table 11.4-4. The capacities, materials of construction, and applicable codes are included.

The SWMS components are determined for the radioactive safety classification in accordance with the guidance provided in RG 1.143 (Reference 15). The component safety classification is summarized in Table 11.4-4. Accordingly, the SWMS is classified as RW-IIa, based on the highest safety classification for the components within the system boundary. The SWMS components are housed within the compound building, which has been determined to be RW-IIa.

~~The SWMS safety classification applies to the components, up to and including the nearest valves, fittings, and/or welded/flanged nozzle connections.~~

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##### 11.4.5.1 Tanks

###### 11.4.5.1.1 Spent Resin Storage Tank

Each of the two SRSTs is a cylindrical vertical tank with a hemispherical head and bottom and has a connection for transfer of spent resins to the dewatering system.

The SRST for low-activity spent resin is sized to hold at least two batches of spent resin from the source of the greatest input. The SRST for high-activity spent resin is sized to collect a volume of spent resin for 10 years of generation, which satisfies the 30-day criterion of ANSI/ANS-55.1 (Reference 14).

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The system component boundary for each radwaste safety classification will be applied as follows.

- a. All components connected to a component classified as RW-IIa (Piping, Pumps, etc.) are also classified as RW-IIa, up to and including the nearest isolation component (ex. Isolation valves), on each connection, to the RW-IIa component.
- b. All components connected to a component classified as RW-IIb (Piping, Pumps, etc.) are also classified as RW-IIb, up to and including the nearest isolation component (ex. Isolation valves), on each connection, to the RW-IIb component.
- c. All components connected to a component classified as RW-IIc (Piping, Pumps, etc.) are also classified as RW-IIc, up to and including the nearest isolation component (ex. Isolation valves), on each connection, to the RW-IIc component.