

# REQUEST FOR ADDITIONAL INFORMATION 462-3752 REVISION 1

10/6/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 11.02 - Liquid Waste Management System  
Application Section: 11.2 - Liquid Waste Management System

## QUESTIONS for Balance of Plant Branch 1 (AP1000/EPR Projects) (SBPA)

### 11.02-22

The staff asked the applicant in Request for Additional Information (RAI) 186-2009, Question 11.02-13 to provide a description in the DCD of any automatic actuations based on detection of radioactivity levels in the discharge stream or failure of the radiation detector. The applicant replied to RAI 186-2009 Revision 1, Question 11.02-13, dated March 10, 2009. In the response, the applicant stated, "In the case that radioactivity in the liquid discharge stream is detected to be above the predetermined setpoint, the monitor pump is automatically shut off and the discharge valve is automatically closed and the corresponding alarm in the Main Control Room is automatically activated." The staff reviewed the response and identified the following needed information.

A) Provide an explanation of why the automatic shut off of the monitor pump is not discussed in Section 11.5.2.5.1, "Liquid Radwaste Discharge Radiation monitor (RMS-RE-35)," as it relates to radioactivity levels in the discharge stream exceeding the predetermined setpoint.

B) Verify that both discharge valves automatically close when radioactivity in the liquid discharge stream is detected to be above the predetermined setpoint, and update the DCD accordingly.

C) Provide a description in the DCD of any actuations or interlocks based on a failure of the radiation detector.

### 11.02-23

The staff asked the applicant in Request for Additional Information (RAI) 186-2009, Question 11.02-8 to address inconsistencies in Figure 11.2-1, Sheet 1 of 3. The inconsistencies included design flow rates and design temperatures. The applicant replied to RAI 186-2009 Revision 1, Question 11.02-8, dated March 10, 2009. In the response, the applicant stated, "For item A through G, the Table on Figure 11.2-1, all three sheets, indicates design conditions and not operating conditions. The Table will be replaced to show only normal operating conditions in order to address the inconsistencies listed above."

The applicant is requested to provide in the DCD both the design conditions and the normal operating conditions. The design conditions coupled with the normal operating

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conditions provide insight into the system's capability to meet the anticipated processing requirements of the plant.

### 11.02-24

The staff asked the applicant in Request for Additional Information (RAI) 186-2009, Question 11.02-9, item "B," to explain why the neutralizing agent measuring tank is not included in Table 11.2-3. The applicant replied to RAI 186-2009 Revision 1, Question 11.02-9, item "B", dated March 10, 2009. In the response, the applicant stated, "The neutralizing agent measuring tank is part of a vendor purchased package to neutralize the chemical drain tank as required. Therefore this information is not available at this time."

In the absence of specific vendor supplied specifications, the applicant is requested to provide in Table 11.2-3 of the DCD, acceptable design parameters for such a tank conforming to the topics addressed for the other tanks summarized in Table 11.2-3.

### 11.02-25

The staff asked the applicant in Request for Additional Information (RAI) 186-2009, Question 11.02-9, item "C," to explain why the waste effluent strainers, detergent drain strainers, and the neutralizing agent measuring tank were not discussed in Section 11.2.2 of the DCD or any of the tables. The applicant replied to RAI 186-2009 Revision 1, Question 11.02-9, item "C," dated March 10, 2009. In the response, the applicant stated, "The strainers are a piping item installed in-line. Per normal industry practice these are stainless steel strainers of a basket-type with 25 micron to 550 micron mesh. These components are not discussed individually in the DCD, but do meet the LWMS requirements."

The applicant is requested to include in the DCD the discussion given in the response to RAI 186-2009, Question 11.02-9, item "C," as appropriate.

### 11.02-26

The staff asked the applicant in Request for Additional Information (RAI) 186-2009, Question 11.02-11 to provide a description in the DCD of how the reactor coolant drain subsystem meets the SRP criteria that processing equipment should be assumed to be unavailable for 2 consecutive days per week. The applicant replied to RAI 186-2009 Revision 1, Question 11.02-11, dated March 10, 2009. In the response, the applicant stated, "The Reactor Coolant Drain Subsystem collects waste from the...accumulator (ACC) drainage. The collected liquid waste is stored in the Containment Vessel Reactor Coolant Drain Tank (CVDT)." Additionally, the applicant stated, "If the Reactor Coolant Drain Tank subsystem is not available, the tank content can be drained to the Containment Vessel Sump to be forwarded to LWMS for processing. There is no direct release from the CVCS system." The staff reviewed the response and identified the following needed information.

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A) Provide in Figure 11.2-1 (sheet 3 of 3) indication that the accumulator drains, reactor coolant system (RCS) loop drains, permanent cavity seal drain, reactor cavity drain, RCS pressurizer relief tank drain, and reactor coolant pump no. 3 seal leakoffs are capable of flowing in the direction of the CVDT.

B) Explain and provide in the DCD assurance that the liquid waste management system (LWMS) is capable of processing the additional liquid from the CVDT in the event the CVDT is unavailable during a period of maximum expected inputs to the LWMS.

11.02-27

The staff asked the applicant in Request for Additional Information (RAI) 186-2009, Question 11.02-15 to provide in the DCD additional discussion of the component classifications with reference to the three safety classes for radwaste management facilities. The applicant replied to RAI 186-2009 Revision 1, Question 11.02-15, dated March 10, 2009. In the response, the applicant stated, "The Auxiliary Building is classified as RW-IIa and is discussed in DCD Revision 1 Section 3.7.2.8.4. Component classifications for the LWMS are presented in DCD Section 3.2, Table 3.2-2, item 15, which are consistent with Table 1 of Regulatory Guide (RG) 1.143."

The staff recognizes that Section 3.2.2.5, "Other Equipment Classes," states, "The codes and standards defined in RG 1.143, Table 1, are applied to equipment Class 6 components." RG 1.143, Regulatory Position 5, "Classification of Radwaste Systems for Design Purposes," states, "Any systems or components in a RW-IIa facility that store, process, or handle radioactive waste in excess of the A<sub>1</sub> quantities given in Appendix A, 'Determination of A<sub>1</sub> and A<sub>2</sub>,' to 10 CFR Part 71, 'Packaging and Transportation of Radioactive Material,' are classified as RW-IIa. These systems or components that process radioactive waste in excess of the A<sub>2</sub> quantities but less than the A<sub>1</sub> quantities given in Appendix A to 10 CFR Part 71 are classified as RW-IIb. All other components are classified as RW-IIc. This classification may be modified for specific radwaste components."

The applicant is requested to provide a discussion of each of the LWMS components and the quantities of radioactive waste they process. Based on this discussion, provide in the DCD appropriate classifications (RW-IIa, RW-IIb, or RW-IIc) for the systems or components that process radioactive waste.