

REQUEST FOR ADDITIONAL INFORMATION 487-3939 REVISION 1

11/9/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 06.01.01 - Engineered Safety Features Materials

Application Section: 6.1.1

QUESTIONS for Component Integrity, Performance, and Testing Branch 1 (AP1000/EPR Projects)
(CIB1)

06.01.01-11

Background

In the response to RAI 379-2756 question 06.01.01-10, the applicant provided a limit on turbidity of 1 ppm for the RWSP. The EPRI Guidelines do not provide a recommended value for turbidity or total suspended solids in refueling water storage tanks. However, turbidity is typically measured in nephelometric turbidity units (NTU) rather than parts per million. Parts per million (ppm) would generally be an appropriate unit for total suspended solids. The staff believes the applicant intended to apply the limit of 1 ppm to total suspended solids rather than turbidity. The EPRI guidelines allow either turbidity or total suspended solids to be measured for refueling water storage tanks.

Requested Information

Clarify whether the applicant intended to specify measurement of total suspended solids rather than turbidity since the limiting value for turbidity was given in parts per million, which is a unit more appropriate for total suspended solids. If so, the staff requests that applicant modify their proposed Table 6.1-3 accordingly.

06.01.01-12

Background

Regarding sodium, the EPRI PWR Primary Water Chemistry Guidelines recommend sampling for sodium in the refueling water storage tank if there is a possible mechanism whereby sodium could contaminate the refueling water storage tank. In the response to RAI 379-2756 question 06.01.01-10, the applicant provided the following explanation for the absence of a limiting value for sodium:

“In US-APWR, NaTB is used at letdown line of spray system, therefore ingress of Na dose [sic] not occur. This specification is almost consistent with EPRI Guidelines except Na.”

The staff notes that the NaTB (sodium tetraborate) buffer used for post-accident sump pH control is stored in baskets in containment, and would not have the potential for

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ingress into the RWSP unless the containment spray system were inadvertently actuated. Therefore, the staff agrees that sodium would not need to be sampled on a regular basis. However, the meaning of the applicant's statement that "NaTB is used at letdown line of spray system is unclear.

Requested Information

1. Clarify the meaning of "letdown line of spray system" included in the explanation for sodium not being subject to routine measurement in the RWSP.
2. Is there any potential for the sodium from the sodium tetraborate (NaTB) baskets to reach the RWSP during normal operation (in the absence of an inadvertent actuation of the containment spray system)? If so, what corrective actions would be recommended?