

REQUEST FOR ADDITIONAL INFORMATION 914- 6365 REVISION 3

3/27/2012

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 03.02.02 - System Quality Group Classification

Application Section: 3.2.2

QUESTIONS for Engineering Mechanics Branch (EMB)

03.02.02-21

The permanent cavity seal (PCS) is included in DCD Table 3.2-2 as part of the Fuel Handling and Refueling system. The NRC requested that the applicant clarify the safety classification of the PCS components in RAI 724-5524 Question 03.02.02-20. In its response to RAI 724-5524 Question 03.02.02-20, the applicant revised the classification of the PCS to Equipment Class 3 and Quality Group C. However, because the PCS was reclassified to QG C, it was unclear to the staff whether the PCS was designed using the ASME Code Section III, Class 3 rules. The response to RAI 887-6261 Question 09.01-04-23 regarding applicable codes and standards for the PCS stated that, since the PCS is not a pressure-retaining component for the reactor coolant system, ASME Code Section III does not apply to the seal itself. Moreover, based on the indirect relationship with the reactor vessel, this response also stated that the ASME Code Section III is not applicable to the PCS, including the connecting weld between the seal and the seal ledge. The response to RAI Question 09.01.04-23 references Note 1 in Table 3.2-3, which applies to components not designed to the ASME Code, and references Note 3(5) in Table 3.2-2, which corresponds to codes and standards as defined in the design bases.

Since the revised classification of the PCS is Equipment Class 3 and Quality Group C in the response to RAI Question 03.02.02-20 and Table 3.2-2, the staff does not understand which codes and standards other than the ASME Code Section III, Class 3 can be applied to the PCS and its connecting welds, in accordance with RG 1.26.

- (a) Clarify this apparent discrepancy between the Equipment Class 3 and the associated ASME Code Section III, Class 3 in Table 3.2-3, the Quality Group C, and the use of other codes and standards than ASME Code Section III, Class 3 for the PCS design.
- (b) Furthermore, the staff notes that there are no codes or standards defined in design bases for the design of the PCS and its connecting welds. Therefore, identify which codes and standards are being used for the design and construction (e.g., welding) of this component.
- (c) The applicant is also requested to discuss the need to include in Tier 1 the PCS construction code and to provide an ITAAC for its verification.

03.02.02-22

RAI Questions 03.02.02-6, 03.02.02-9 and 03.03.02-11 have requested additional information regarding DCD Table 3.2-3 Note 5 that addresses codes and standards

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defined in the design basis that are applied to nonsafety-related Equipment Class 5. The responses to these RAIs identify codes and standards and the process to apply the latest editions of these codes for nonsafety-related Equipment Class 5. However, in regard to specific codes and standards applied to various components listed in DCD Table 3.2-2, there appears to be a discrepancy regarding Table 3.2-2 Note 3(5) and the codes and standards designated in Table 3.2-3. For various components, Note 3 (5) in Table 3.2-2 references codes and standards as those defined in the design basis. Since Table 3.2-3 identifies that ASME Section III Class 1, 2 and 3 applies to the corresponding Equipment Class 1, 2 and 3 and QG A, B and C, it is understood that the ASME Section III Code is applied to Quality Group A, B and C pressure-retaining components and their supports. For example, any component designated QG A, B or C would be expected to be constructed to ASME Section III, but in Table 3.2-2 various equipment Class 3 QG 3 emergency gas turbine auxiliary system components reference Note 3 (5) for codes and standards rather than Note 3 (3) for ASME Section III, Class 3. It is presumed that Table 3.2-2 Note 3 (5) is used only to signify that the code of record referenced in the DCD will be documented for each pressure retaining component in design basis documents. Further, staff understands that Table 3.2-3 Note 5 is only applied to nonsafety-related Equipment Class 5 components and, as such, does not specifically apply to safety-related Equipment Class 1, 2, or 3 and the reference to codes and standards in the design basis is not intended to negate the ASME Code classification.

Also, since Note 3 (5) does not identify the specific code, it is not clear what specific codes and standards apply to various safety-related and nonsafety-related systems and components, including Equipment Class 2 fuel assemblies and Equipment Class 5 risk-significant systems and components.

In addition, it is not clear that Tier 1 includes all the risk-significant components included in Tier 2, including the ASME Code Class. Since Tier 1 information is to be based on Tier 2 information, Tier 1 information should be consistent with Tier 2. For example, it is not clear where the ASME Code classification of the PCS or HVAC systems is included in Tier 1.

Therefore, to resolve these apparent discrepancies, clarify the application of Table 3.2-2 Note 3 (5) and Table 3.2-3 Note 5 to define specific codes and standards used to establish the individual component design basis and licensing basis for pressure-retaining components and their supports. The entire Table 3.2-2 codes and standards column including the notes and Tier 1 should be reviewed and revised as necessary for clarity and consistency concerning ASME Code class and the designated codes and standards.

03.02.02-23

Since RG 1.26 is limited to pressure-retaining components and their supports, the basis for assigning quality groups classifications and appropriate codes and standards to items that are not pressure-retaining components or their supports is not clear. For example, Quality Group B is assigned to fuel assemblies, Quality Group D is assigned to reactor internal structures and Quality Group C is assigned to the new fuel storage rack and certain other nonpressure-retaining structures in Table 3.2-2. Clarify the basis for quality

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group classifications and appropriate codes and standards for systems and components that are not pressure-retaining or their supports and revise Table 3.2-2 as appropriate.