

# REQUEST FOR ADDITIONAL INFORMATION 555-4385 REVISION 0

3/22/2010

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 09.01.04 - Light Load Handling System (Related to Refueling)

Application Section: SRP 9.1.4

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

09.01.04-17

The fuel handling machine (section 9.1.4.2.1.2) has an auxiliary hoist, but the purpose of the hoist was not clear. The auxiliary hoist has the load capacity to lift a fuel assembly, but is configured to preclude latching on to fuel assembly. Therefore, the staff submitted RAI 09.01.04-06 asking the applicant to explain the purpose and uses of the auxiliary hoist on the fuel handling machine and revise the DCD accordingly.

In response to RAI 200-1983, 09.01.04-06, the applicant detailed the purpose and use of the auxiliary hoist on the fuel handling machine as being limited to handling inserts for spent fuel assemblies and pool-separating gates. However, the applicant failed to propose any DCD revision to define the purpose and use of the auxiliary hoist on the fuel handling machine for inclusion in the DCD.

In addition, the applicant has used the term "Hooks" and "Hoists" throughout the DCD on the various cranes. The staff is unclear which crane components are being referred to by the use of the term "hooks". For example, both "auxiliary hoist" and "auxiliary hook" are used in Section 9.1.4 and it is not clear whether these terms are being used to describe the same component. Or, whether they are referring to hoists that contain multiple hooks. ASME codes contain separate requirements for hooks and hoists, therefore it is important to clearly define each.

The applicant should address the following. The response should include DCD markup pages which show the planned revisions.

- Define "hook" and "hoist" as they relate to the cranes components and update the DCD to indicate them consistently.
- Provide descriptive language to clearly define the function of the auxiliary hoist and update the DCD accordingly.

Reference: MHI's Responses to US-APWR DCD RAI No. 200-1983; MHI Ref: UAP-HF-09197; dated April 23, 2009; ML091170060.

09.01.04-18

DCD Section 9.1.4.2.2.2 specifies that irradiated and new fuel assemblies are individually lifted from a spent fuel rack by using the fuel handling machine, transferred

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to the up-ender and then to inside containment. However, it is not clear how new fuel is placed in the spent fuel racks, nor is there a clear description of the integrated use of the new fuel storage pit, fuel inspection pit and the spent fuel pit in the processes that accept new fuel and for the refueling operation. There is no description of the purpose of the fuel inspection pit.

In response to **RAI 200-1983, 09.01.04-07**, the applicant provided a description of the process for transferring new fuel assemblies from the new fuel storage pit to the reactor as requested. The RAI response included a statement that the new fuel assembly is lifted using the fuel handling machine auxiliary hoist. This appears to contradict the answer provided for **RAI 09.01.04-06**, which limits the use of the auxiliary hoist of the fuel handling machine (FHM) to handling inserts for spent fuel assemblies and pool-separating gates. The staff cannot fully evaluate the balance of the new fuel movement process until the confusion involving the exact purpose and uses, including specific limitations, of the auxiliary hoist are fully explained. The applicant also described the purpose of the fuel inspection pit as an avenue to allow underwater visual inspection of irradiated fuel, but failed to propose any descriptive language for inclusion in the DCD as directed.

- The staff requests clarification of FHM auxiliary hoist use and proposals for detailed language with respect to new fuel transfer and the fuel inspection pit for inclusion in the DCD.
- The staff requests the submission of a complete, detailed, and reviewable answer with appropriate language for inclusion in the DCD regarding the handling process of new fuel after its receipt into the new fuel storage pit, including the role the fuel inspection pit and new fuel elevator play during new fuel receipt.

Reference: MHI's Responses to US-APWR DCD RAI No. 200-1983; MHI Ref: UAP-HF-09197; dated April 23, 2009; ML091170060.

### 09.01.04-19

In response to **RAI 200-1983, 09.01.04-11**, the applicant acknowledged that the reference to a "decontamination pit" is incorrect and should be replaced by "cask washdown pit". The applicant proposed replacing the "decontamination pit" language with "cask washdown pit" in Tier 2, Section 9.1.4.2.2.4, ninth bullet. The change was made in Revision 2. However, the eleventh bullet of the same section also references a "decontamination pit."

The staff requests the applicant to:

- Propose corrective language to the Tier 2, Section 9.1.4.2.2.4, eleventh bullet, with respect to the "decontamination pit" for revision of the DCD.
- Confirm that "decontamination pit" name change has been revised throughout the complete DCD.

Reference: MHI's Responses to US-APWR DCD RAI No. 200-1983; MHI Ref: UAP-HF-09197; dated April 23, 2009; ML091170060.

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09.01.04-20

In its response to **RAI 200-1983, 09.01.04-13**, the applicant proposed an additional ITAAC requirement in Table 2.7.6.4-2 (Design Commitment 7) of DCD that provides a reference to Design Commitment numbers 1, 2b, 3b, and 4b of DCD Tier 1 Table 2.11.2-2, "Containment Isolation System Inspections, Tests, Analyses, and Acceptance Criteria," to describe the ITAAC for the fuel transfer tube as part of the primary reactor containment.

This is an inappropriate use of ITAAC Table 2.7.6.4-2 of Tier 1, since the additional design commitment 7 does not include any inspection or acceptance criteria for acceptable closure of the proposed ITAAC. A more appropriate location to include a reference to ITAAC in Table 2.11.2-2 would be in Section 2.7.6.4.2 (similar to that done in Section 2.7.6.9.2)

Therefore, the applicant is requested to revise Table 2.7.6.4-2 and Tier 1 to properly define any necessary reference.

Reference: MHI's Responses to US-APWR DCD RAI No. 200-1983; MHI Ref: UAP-HF-09197; dated April 23, 2009; ML091170060.