

# **REQUEST FOR ADDITIONAL INFORMATION 834-6035 REVISION 3**

10/5/2011

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation  
Application Section: 19.1.5

## **QUESTIONS for PRA and Severe Accidents Branch (SPRA)**

19-552

DCD Page 19.1-114, last bullet, "Consequential effects of HELB as well as moderate-energy line break (MELB) events are considered in the internal flooding PRA." The staff could not find any description of the modeling of HELB or MELB. Describe how HELB and MELB are modeled in the internal flooding PRA.

19-553

There are inconsistencies (i.e., fire frequencies and CDFs) between DCD Revision 3, Table 19.1-58 and PRA Revision 3, Table 23.10-1. Please revise these tables to resolve discrepancies.

19-554

DCD Table 19.1-57, Item 13 indicates that the partial loss of CCW is not considered as a fire-induced initiator. However, PRA Page 23-13 indicates that partial loss of CCW is modeled as a fire-induced initiating event in the fire PRA. Please clarify this inconsistency and revise, as necessary. In addition, provide explanation if partial loss of CCW is no longer considered in the fire PRA.

19-555

The NRC staff observed that DCD Chapter 9 was recently revised to incorporate CCW modifications. However, it is unclear as to whether these CCW changes would have any impact on the PRA and DCD Chapter 19. Please identify the impacts on the internal events, fire, and flood PRA, if there are any, and describe how these impacts would be incorporated into the PRA and DCD Chapter 19.

19-556

DCD Page 19.1-113, second bullet states that "Fire protection seals for penetrations or fire protection doors are effective to mitigate the impact of flood." This statement is inconsistent with the key assumption (i) on Page 19.1-112 "Fire protection doors are

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considered as flood propagation paths.” Clarify these statements and revise the DCD and PRA as necessary.

19-557

The list of internal fire key assumptions on Page 19.1-93 of US-APWR DCD is incomplete as compared to DCD Table 19.1-119, Sheet 40 and also as compared to Chapter 23 of the US-APWR PRA. In addition, the list of internal flood key assumptions on Page 19.1-111 is different from Table 19.1-119, Sheet 44. Revise the DCD so that the key assumptions are consistent and appropriately documented.

19-558

PRA Section 23.2.2 indicates that the US-APWR fire PRA includes the intake structure as one of the plant areas. Furthermore, this section states that since the intake structure design had not been finalized yet, a hypothetical design of intake structure was postulated. The staff could not find any fire evaluation on the intake structure including the list of fire areas and compartments in Attachment 23A. Please clarify Section 23.2.2 information regarding the intake structure.

19-559

(Follow-up to Question 19-457) In the response to Question 19-457, MHI agrees to include a combined license (COL) action item that ensures the COL applicant that references the US-APWR design certification will conduct a plant walk-down to confirm that the assumptions used in the US-APWR PRA remain valid with respect to the internal fire and flood events. The staff reviewed DCD Revision 3 and could not find this commitment in Section 19.3 “Open, Confirmatory, and COL Action Items Identified as Unresolved.” Please revise the DCD to specifically incorporate this commitment as stated.