US-APWRRAIsPEm Resource

From: Sent: To: Cc: Subject: Attachments: Ciocco, Jeff Monday, May 20, 2013 7:36 AM us-apwr-rai@mhi.co.jp; US-APWRRAIsPEm Resource Reddy, Devender; Donoghue, Joseph; Ward, William; Lee, Samuel US-APWR Design Certification Application RAI 1037-7045 (7.8) US-APWR DC RAI 1037 SRSB 7045.pdf

MHI,

The attachment contains the subject Request for Additional Information (RAI). This RAI was sent to you in draft form. Your licensing review schedule assumes technically correct and complete responses within 30 days of receipt of RAIs.

Please submit your RAI response to the NRC Document Control Desk.

Thank you,

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REQUEST FOR ADDITIONAL INFORMATION 1037-7045

Issue Date: 5/20/2013

Application Title: US-APWR Design Certification - Docket Number 52-021

Operating Company: Mitsubishi Heavy Industries

Docket No. 52-021

Review Section: 07.08 - Diverse Instrumentation and Control Systems Application Section:

QUESTIONS

07.08-31

D3 Coping Analysis criteria

In Section 5.0 of the MUAP-07014-P, revision 5, it states that the criteria used in the D3 coping analysis is based on: 1) pressure boundary (PB) integrity, 2) coolability, and 3) the dose not to exceed 10 percent of the 10 CFR 100 guidelines. Further, it states that dose evaluations are not necessary if coolability is maintained except for the events which lead to release of primary coolant from RCS outside the containment vessel (CV). Please explain:

a) The basis for not requiring dose evaluations, if the coolability is maintained. Also, explain why the dose is within 10 percent, if the coolability is maintained.b) Clarify the exception for the events which lead to release of primary coolant from RCS outside the CV.

07.08-32

Event Evaluation Methods

In MUAP-07014-P, revision 5, Section 4.6, "Event Evaluation Methods," it states that each Chapter 15 event is evaluated based on one of the following methods:

1) Equivalent protection, 2) Expertly judged, and 3) Analyzed

The staff requests the basis for this categorization, and more importantly provide justification as most of them are not analyzed or expertly judged. For example: In Section 5.2, "Decrease in Heat Removal by the Secondary System," only "Loss of External Load" is analyzed. The other events, such as turbine trip, loss of condenser vacuum, closure of main steam isolation valve, and steam pressure regulator failure are not specifically analyzed or shown how they are similar or different to the event with which they are compared.

The staff needs a specific and brief description of all such events in order to make a clear distinction between those events which are expertly judged versus analyzed. Further, describe how they are bounded by those categories that are analyzed and/or expertly judged.

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07.08-33

ATWS acceptance criteria (MUAP-07014 R5, section 4.3)

Explain why the 3200 psig pressure acceptance criteria is applicability to the US-APWR design when the reactor coolant hydrostatic pressure boundary integrity test uses a lower acceptance pressure.

07.08-34

Since the pressurizer safeties have the capacity to limit RCS pressure below 3200 psig what role does the DAS low, low S/G setpoint play in ensuring pressure boundary integrity? Are there cases where the low, low S/G setpoint is credited and no credit is assumed for the pressurizer safeties?

