

US-APWRRAlSPeM Resource

From: Ciocco, Jeff
Sent: Tuesday, May 29, 2012 9:53 AM
To: us-apwr-rai@mhi.co.jp; US-APWRRAlSPeM Resource
Cc: VanWert, Christopher; Donoghue, Joseph; Reyes, Ruth; Hamzehee, Hossein
Subject: US-APWR Design Certification Application RAI 932-6408 (6.3)
Attachments: US-APWR DC RAI 932 SRSB 6408.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 932-6408 REVISION 0

5/29/2012

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 06.03 - Emergency Core Cooling System
Application Section: 6.3

QUESTIONS for Reactor System, Nuclear Performance and Code Review (SRSB)

06.03-105

During the public meeting on February 9th, 2012, MHI described twelve overflow pipes that return ECCS and CS water back to the RWSP. These twelve pipes are arranged in three sets, with four pipes in each set. One set of pipes is located in the reactor cavity and two sets are located in the header compartment. Provide information that describes the flow rates into, between, and out of the reactor cavity and header compartments during a LOCA and if there is a difference in the water level between these two compartments.

06.03-106

The T1 analysis (time, as described in ML12034A062) treats the hold-up volume for the three buffer rooms (reactor cavity, header compartment, and CV drain pump room) as one volume in the analysis. It appears that treatment as one volume is not consistent with the design given that the reactor cavity and header compartment are cross connected post accident whereas the CV drain pump room is independent. Treatment as one volume could be a potential non-conservatism in the analysis if the buffer rooms fill up at different rates such that the reactor cavity and header compartment overflow sooner than the T1 analysis indicates. Provide information to demonstrate that the header compartment and the reactor cavity will reach their overflow elevation consistent with the T1 analysis considering that the buffer rooms/areas are not one volume.

06.03-107

the T1 and T2 analyses (as described in ML12034A062) depend on the actuation/operation of certain components (e.g. rupture plates) to route water between rooms. Provide a summary of all such components which require activation or operation including the quantity and location. Describe the safety function(s) of these components and describe how the safety function(s) are achieved.

06.03-108

Provide the technical basis, in the T2 analysis, for the uniform flow assumption into the RWSP from the three sets of overflow pipes.

