REQUEST FOR ADDITIONAL INFORMATION 923-6420 REVISION 3

4/24/2012

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 06.02.01 - Containment Functional Design
Application Section: 6.2.1 Containment Functional Design

QUESTIONS for Containment & Ventilation Branch (SCVB)

06.02.01-21

Assessing the Impact of the GSI-191 Closure Plan Changes on the US-APWR Containment Pressure/Temperature and Sub-compartment Analyses

During the February 9, 2012 meeting at NRC, MHI presented the outline of the US-APWR GSI-191 Closure Plan (ML120820125). The staff extracted information from ML120820125 for this follow-up RAI that has been designated as PROPRIETARY. No proprietary information is to be included in the eRAI system.

The conceptual changes proposed by the applicant, as a part of the US-APWR GSI-191 Closure Plan, have reduced the free containment volume; and may have reorganized the sub-compartments, and modified their capacities and the interconnecting flow resistances. The staff needs to establish that the new recirculation concept has no adverse impact on the containment functional design analyses performed for US-APWR DCD Section 6.2.1. This could potentially involve the following safety evaluations:

· Containment Pressure/Temperature under Hypothetical Piping Rupture (Section 6.2.1.1)

· Containment Sub-compartments Analysis (Section 6.2.1.2)

· Mass and Energy Release Analysis for Postulated Loss-of-Coolant Accidents (Section 6.2.1.3)

· Mass and Energy Release Analysis for Postulated Secondary System Pipe Ruptures (Section 6.2.1.4)

· Minimum Containment Pressure Analysis for Emergency Core Cooling System Performance Capability Studies (Section 6.2.1.5)

The applicant should provide justifications that the proposed design changes are conservative and do not adversely impact the various containment and the sub-compartment analyses. Also update any applicable changes to the DCD Tier 1 and Tier 2 contents and the related topical/technical reports. Please also confirm whether or not Topical Report MUAP-07031-P(R0), “Sub-compartment Analyses for US-APWR Design Confirmation”, would be affected by the proposed design changes.