

REQUEST FOR ADDITIONAL INFORMATION 552-4358 REVISION 2

3/16/2010

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 06.02.06 - Containment Leakage Testing
Application Section: 6.2.6

QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)

06.02.06-28

RAI 6.2.6-28:

In RAI 2016 question 6.2.6-17 and RAI 3794 question 6.2.6-26, The staff requested the applicant clarify the exceptions to venting and draining pathways which are to be Type A tested, for both the Operational and Preoperational Integrated Leakage Rate Tests.

In a letter dated November 27, 2009, Mitsubishi responded to RAI 6.2.6-26 with proposed revision to the DCD Section 6.2.6. The staff has reviewed the proposed changes and the following information is requested:

- 1) The RAI requested the DCD section 6.2.6 be revised to make it clear that exceptions to venting and draining for the Type A test (ILRT) do not apply to the pre-operational leak rate testing. The response stated that 6.2.6 would be changed and provided a bullet list of nine vent and drain conditions for the DCD. The 7th bullet notes "except for the Pre-operational ILRT." This phrase should also be added on the 8th bullet, but was not. In addition to the proposed changes in the RAI response, please add "except for the Pre-operational ILRT" to the 8th bullet for the DCD

06.02.06-29

RAI 6.2.6-29:

Provide analysis of cooling requirements for concrete adjacent to hot penetrations

The staff requested the applicant clarify details associated with design features that will provide cooling to the "hot" penetrations of the main steam, blow down, feedwater, RHR, CVCS or any other system piping where the internal temperature exceed 65.5 °C (150°F)

In Chapter 3 of the DCD, on Figure 3.8.1-8, Sheets 12, 13, and 14 depict the containment penetrations for main steam, feed water, and blow down piping, respectively. These drawings show insulation around the pipes passing through the respective penetrations. However, the shell of each penetration is welded to the wall of the penetrating pipe and the penetration itself has gussets imbedded in the containment concrete. The staff asked the applicant to demonstrate, by

REQUEST FOR ADDITIONAL INFORMATION 552-4358 REVISION 2

providing a heat transfer calculation, how the high temperature of these pipes is dissipated such that the containment concrete does not exceed the 93.3 °C (200°F) limit locally around the penetration as stated in DCD section 3.8.1.5.3, "Acceptance Criteria with respect to concrete temperatures", or specify how cooling is provided to these penetrations and depict the penetration cooling connections on appropriate diagrams of Figure 6.2.4-1, since the location of the penetration cooling connections may have a bearing on testing configurations for the penetrations.

In a letter dated September 17, 2008, Mitsubishi responded to RAI 329 question 6.2.6-11 that MHI will prepare analysis to document that the concrete temperature adjacent to penetrations with high temperature process lines meets the limits provided in subsection 3.8.1.5.3 after the detail specification of these penetrations (e.g., insulation) is decided. MHI can demonstrate the containment concrete does not exceed the 93.3 °C (200°F) limit locally around the hot penetrations based on MHI's experience in Japan.

The staff has reviewed the response. The staff awaits the submittal of this analysis and the referenced operational experience in Japan . Please provide the information or provide a date when it will be provided to the staff for review.

06.02.06-30

RAI 6.2.6-30:

The staff requested in RAI 329 question 6.2.6-6, RAI 2016 question 6.2.6-14 and RAI 3794 question 6.2.6-24 the applicant provide justification for those lines with CIVs indicated on DCD Table 6.2.4-3 which are not planned to be Type C tested. In a letter dated September 17, 2008 MHI provide a response to RAI 6.2.6-6.

The NRC staff reviewed the response and issued RAI 6.2.6-14 to request that the response to RAI 6.2.6-6 be added to the DCD and to resolve outstanding questions. The response to RAI 6.2.6-6 has been added to DCD revision 2 and is acceptable.

Based on review of DCD Revision 2 against the proposed DCD changes in RAI 6.2.4-14 response the following items remain:

1. On figure 6.2.4-1 sheet 12 of 51, state or indicate somewhere that there are two series 3/4" valves where SIS-VLV-225 (A,B,C,D) are located.
2. The response to question 3 of RAI-14 was not included in DCD Rev. 2. That is, on table 6.2.4-3, the reference to note 5, information on the non-essential CW system, was not included for penetrations 408 and 409.
3. A mistake appeared to have been made in referencing note 4 to Table 6.2.4-3. DCD Rev. 2 added note 4 as reference to Sheet 16 (penetrations 214,224,261 & 271) rather than Sheet 18 (penetrations

REQUEST FOR ADDITIONAL INFORMATION 552-4358 REVISION 2

151,154,155 & 158). So that Sheet 16 has a note that is not applicable and Sheet 18 is missing a necessary note.

4. Table 6.2.4-3 has two new notes # 7 & 8, which appear to be identical.
5. The committed change to DCD Section 9.2.7.3.2 was not made in Rev. 2.