

**REQUEST FOR ADDITIONAL INFORMATION 648-4872 REVISION 0**

10/12/2010

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)

06.02.06-31

**RAI 6.2.6-31:**

In RAI 3794 question 6.2.6-27, The staff requested the applicant to confirm that the US-APWR containment will be designed to permit appropriate periodic inspection of all important areas.

In a letter, dated November 27, 2009, Mitsubishi responded to RAI 6.2.6-27 that the PCCV is designed being able to perform appropriate periodic inspection for the accessible interior and exterior surfaces of the containment system including penetrations in order to meet the ILRT test prerequisites.

The staff has reviewed the response and the following information is requested:

RAI 6.2.6-27 requested that the DCD be revised to clearly state its commitment to GDC 53, as it relates to the design of containment to permit inspection. The RAI also requested that MHI specify if that are containment important areas to be inspected beyond penetrations. Neither of these aspects of the RAI were completely answered. Rather the response detailed the US-APWR inservice testing and inspection commitments. And the response stated that the PCCV is designed being able to perform appropriate periodic inspection for the accessible interior and exterior surfaces of the containment system including penetrations." This statement includes a restrictive word "accessible."

The concern underlying this RAI relates to GDC-53 compliance — ensuring that the containment is designed to permit inspection of all important areas. During the past several years there have been reports of containment degradation in operational NPPs. Some of these were in areas that were difficult or impossible to inspect periodically, thus preventing detection before degradation has proceeded quite far. Important areas may include: penetrations, the liner intersection with the base concrete inside containment, and locations where the floors or platforms are adjacent to the liner. Thus, NRC desires a clear statement of commitment to design the containment in accordance with GDC 53 in Tier 2 of the DCD. This would add assurance that any areas that are important to inspect will be designed to be accessible for inspection, minimizing the potential of an applicant taking a future exception to inspection of an area because it is not accessible.

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The staff requests you clarify the DCD. Also, please specify in your RAI response and in the DCD, if those areas of the US-APWR containment (such as described above) are important to be inspected.

06.02.06-32

### RAI 6.2.6-32:

In RAI 2016 question 6.2.6-17, RAI 3794 question 6.2.6-26 and RAI 4358 question 6.2.6-28, 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 April 16, 2010, Mitsubishi responded to RAI 6.2.6-28 with a clarification that previously proposed changes to DCD section 6.2.6.1 would not be made. Specifically, in the response to RAI 6.2.6-26, the applicant proposed to clarify the 7<sup>th</sup> and 8<sup>th</sup> bullets of the 4<sup>th</sup> paragraph of DCD Section 6.2.6.1 to state that these exceptions to venting and draining pathways for the type A test would not apply to the pre-operational type A test. The staff has reviewed the RAI response and the following information is requested:

- 1) In regard to the 7<sup>th</sup> bullet, The RAI response indicated that the previously proposed clause “except for the Pre-operational ILRT” need not be added because there would be no test data of Type B and C tests within the previous 24 calendar months at the time the Pre-operational ILRT would be conducted. The staff believes that this assertion is not necessarily true. It is conceivable some test data on some pathways may be available, and a future applicant could attempt to credit this data in order to avoid venting and draining the pathway for the pre-operational ILRT. ANS/ANSI 56.8-1994 permits a similar exception to draining these pathways, but with an additional qualifier: “**For planning and scheduling purposes, or ALARA considerations**, pathways which are B or C testing within the previous 24 calendar months need not be vented or drained during type A test.” The staff considers that planning and scheduling and ALARA considerations would not be applicable to a pre operational ILRT test, and exceptions to venting and draining of these pathways would not be justified for any pathways which have B or C test data at the time of the pre-operational ILRT. Therefore the DCD must clarify that the exceptions for venting and draining pathways would not be used for the Pre-operational ILRT as compared to an operational ILRT. Please clarify the DCD.
- 2) In regard to the 8<sup>th</sup> bullet, the RAI response is not clear, and the above discussion applies. The bullet currently states “For planning and Scheduling purposes, or ALARA considerations, pathways in systems which are required for proper conduct of the Type A test need not be vented or drained” Again, the staff views that planning scheduling and ALARA considerations do not apply to the Pre-operational ILRT.

The staff notes that planning or scheduling purposes or ALARA considerations are not issues during the preop. phase, and thus are not appropriate reasons to conduct the Preop. Type A test without proper venting and draining. The concern here is that the

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proposed MHI wording would allow the Preop. Type A test to be performed with few or even no CIVs vented and drained. Therefore, if intending to utilize the NEI 94-01 exceptions for venting and draining: (1) ensure your wording matches that of NEI 94-01; and (2) note that the staff position is that the 4<sup>th</sup> bullet on page 6 of NEI 94-01 does not apply for the Preop. Type A test. Please provide updated words for this section of the DCD.

06.02.06-33

### **RAI 6.2.6-33:**

The staff requested in RAI 329 question 6.2.6-6, RAI 2016 question 6.2.6-14, RAI 3794 6.2.4-24 and RAI 4358 6.2.6-30 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 April 16, 17, 2010 MHI provide a response to RAI 6.2.6-30.

The NRC staff reviewed the response the following items remain:

1. Item 2 of the RAI response states that the containment isolation configuration of the non-essential CW system was modified, and penetrations number 408 and 409 are now subject to type C testing. You also state that the new configuration would be properly categorized as subject to GDC 56 rather than GDC 57, as currently indicated in DCD table 6.2.4-3. Clarify the DCD to include this line in Tier 2 DCD paragraph 6.2.4.3.2 and add to Table 6.2.4-2.
2. Item 3 of the RAI response states that Note 4 will be added to specified penetrations; however it does not discuss removal of Note 4 as reference to sheet 16 penetrations 214, 224, 261 and 271. Please clarify table 6.2.4-3 to remove this note from these penetrations since they are subject to type C testing, and the note does not apply to them.