
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

1/31/2013

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.: NO. 625-4924 REVISION 0
SRP SECTION: 03.07.02 – Seismic System Analysis
APPLICATION SECTION: 3.7.2
DATE OF RAI ISSUE: 08/30/10

QUESTION NO. RAI 03.07.02-24:

This request for additional information (RAI) is necessary for the staff to determine if the application meets the requirements of 10 CFR Part 50, Appendix A, General Design Criteria 2; 10 CFR Part 50 Appendix S; and 10 CFR Part 100; as well as the guidance in NUREG-0800, 'Standard Review Plan for the Review of Safety Analysis for Nuclear Power Plants,' Chapter 3.7.2, 'Seismic Design Parameters.

According to SRP Subsection 3.7.2.II.1.A.iv, simple 1g static analyses of lumped mass stick models should be performed for each of the three excitation directions and compared to the results from the distributed mass model. Figures 5.3.3.1-1 and 5.3.3.1-2 of MUAP-10001, Rev. 1 show elevation vs. displacement results under 1g static loads for the vertical and horizontal (X) directions, but results are not shown for the Y-direction. Also, the caption for Figure 5.3.3.1-2 indicates that the horizontal displacements correspond to vertical loading rather than horizontal loading.

Clarify whether or not the horizontal displacement results in Figure 5.3.3.1-2 are actually due to vertical loading, or if they are from horizontal loading in the X-direction per the guidelines of SRP Subsection 3.7.2.II.1.A.iv. Also, provide the results from 1g static loading in the Y-direction per guidelines of SRP 3.7.2.

Reference: USAPWR Seismic Design Report MUAP-10001, rev 1; dated May 13, 2010; ML101400073

ANSWER:

This answer revises and replaces the previous MHI answer that was transmitted by letter UAP-HF-10300 (ML103120403).

The validation results for the prestressed concrete containment vessel (PCCV) portion of the reactor building (R/B) complex are presented in Technical Report MUAP-10006, Rev. 3, Section 02.5.1.3.2. The validations for 1g static loading are performed by comparing the displacement results for the dynamic finite element (FE) model to those of the detailed FE model as described in Technical Report MUAP-10006, Rev. 3, Section 02.4.1.2. The PCCV validation comparisons for 1g static loading in the north-south (X), east-west (Y), and vertical (Z) directions are presented

in Technical Report MUAP-10006, Rev. 3, Table 02.5.1.3.2.1-1 and Figures 02.5.1.3.2.1-1 through 02.5.1.3.2.1-4, as indicated in the figure captions.

Impact on DCD

There is no impact on the DCD.

Impact on R-COLA

There is no impact on the R-COLA.

Impact on S-COLA

There is no impact on the S-COLA.

Impact on PRA

There is no impact on the PRA.

Impact on Technical/Topical Report

There is no impact on a Technical/Topical Report.

This completes MHI's response to the NRC's question.