
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

1/31/2013

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.: NO. 776-5851 REVISION 3
SRP SECTION: 03.07.02 – Seismic Systems Analysis
APPLICATION SECTION: 3.7.2
DATE OF RAI ISSUE: 06/15/11

QUESTION NO. RAI 03.07.02-69:

In Subsection 2.2 of the MUAP-11001 (R0), "Material Properties," (page 6) the last sentence states "The critical damping ratio of 7% is for bolted steel structures at SSE stress level per Regulatory Guide 1.61(Reference 7.13)."

The staff noticed that 7% is allowed only if "Bolted Steel with Bearing Connections," are used. Otherwise, damping is limited to 4% (e.g., welded or bolted with friction joints). The Applicant is requested to provide a confirmatory statement in the Report that "Bolted Steel with Bearing Connections" are used.

ANSWER:

This answer revises and replaces the previous MHI answer that was transmitted by letter UAP-HF-11262 (ML11228A129).

Technical Report MUAP-11001 has been superseded and the relevant information incorporated into Technical Report MUAP-10006, Rev. 3. The reactor building (R/B), prestressed concrete containment vessel (PCCV), containment internal structure (CIS), east and west power source buildings (PS/Bs), auxiliary building (A/B), and essential service water pipe chase (ESWPC) are now structurally integrated and supported on a common basemat to form the R/B complex. Technical Report MUAP-10006, Rev. 3, presents the information relevant to the added A/B and PS/Bs as well as the other buildings that make up the R/B complex.

Tables 02.4.1.1.1-2 and 02.4.1.1.3-1 of Technical Report MUAP-10006, Rev. 3 show that the operating-basis earthquake and safe-shutdown earthquake damping values of steel structures are 3% and 4%, respectively, for the soil-structure interaction analyses of the R/B complex per RG 1.61. "Bolted Steel with Bearing Connections" are not used.

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.