RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

1/31/2013

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	**NO. 856-6094 REVISION 3**
SRP SECTION:	**03.07.02 – Seismic System Analysis**
APPLICATION SECTION:	**3.7.2**
DATE OF RAI ISSUE:	**10/24/11**

QUESTION NO. RAI 03.07.02-174:

In Subsection 3.3.1 of MUAP-11011 (R0), "Effect on Ground Motion at Adjacent Building Foundation Locations," the fourth paragraph (Page 9) states, "Figure 3.3.1-2 presents a comparison of the 5%-damped ARS of the CSDRS compatible acceleration time histories in two orthogonal horizontal directions (H1 and H2) that are used for the site-independent SSI analyses. The plots show that the differences between the 5%-damped ARS of the two horizontal components can be more than 20%."

The applicant presents the difference between the 5%-damped ARS of H1 and H2 in Figure 3.3.1-2. The staff considers this information to be of no value since these two horizontal components are statistically independent, per RG 1.208. Hence, the difference between the 5%-damped ARS does not carry any meaningful information. The applicant is requested to provide information that discuss the significance and relevance of the difference between the 5%-damped ARS of two statistically independent horizontal components and how it affects the SSSI analysis of standard plant SSCs.

ANSWER:

Technical Report MUAP-11011, Rev. 0 has been superseded and the relevant information on the structure-soil-structure interaction analysis methodology has been incorporated into Technical Report MUAP-10006, Rev. 3.

The reactor building (R/B) complex now consists of the 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) structurally integrated and supported on a common basemat. A structure-soil-structure interaction (SSSI) analysis of the influence of the Turbine Building on the R/B complex was performed as described in Subsections 03.3.3 and 03.3.4.2 of Technical Report MUAP-10006, Rev. 3. The SSSI analysis produced some instances where the results were higher than the soil-structure interaction results. As such, the design basis envelope for the US-APWR includes the SSSI results.

It is agreed that the difference in acceleration response spectra of H1 and H2 has no meaningful basis for SSSI analysis. Figure 3.3.1-2 and the associated discussion in Technical Report MUAP-11011 are not included in Technical Report MUAP-10006, Rev. 3.

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 Technical/Topical Report

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