
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

02/27/2013

**US-APWR Design Certification
Mitsubishi Heavy Industries
Docket No. 52-021**

RAI NO.: NO. 853-6029 REVISION 3
SRP SECTION: 03.07.02 – Seismic System Analysis
APPLICATION SECTION: 3.7.2
DATE OF RAI ISSUE: 10/24/2011

QUESTION NO. 03.07.02-149:

In Subsection 5.2 of MUAP-11006 (R0), the applicant states that transient dynamic analysis was used for validation of the various LMSMs and that “ARS indicate that the LMSM captures the global structure response to dynamic loads in all direction properly.” The ARS presented in the report do not support the applicant’s conclusion. The staff observed that in many cases, the ARS from the LMSM are significantly lower than the ISRS from the dynamic FE models, particularly in the frequency band of 1-8 Hz. A few examples of this are shown in Figures 5.2.2.3-51, 5.2.2.3-52, 5.2.2.3-54, 5.2.2.3-55, and 5.2.3.3-5. The applicant is requested to (1) state the acceptance criteria and justification used in drawing the conclusion that the LMSMs properly capture the structural response to dynamic loading, and (2) discuss the impact of the deficiencies of the LMSM ARS on the validity of the embedment, sliding, and structure-soil-structure interaction studies performed using LMSMs.

ANSWER:

A lumped mass stick model of the seismic category I structures is no longer used for the associated studies (Structure-Soil-Structure Interaction (SSSI) in Technical Report MUAP-11011 and embedment and water table in Technical Report MUAP-11007). Technical Report MUAP-11006 is withdrawn.

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.