
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

03/22/2013

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.: NO. 909-6315 REVISION 3
SRP SECTION: 03.07.02 - SEISMIC SYSTEM ANALYSIS
APPLICATION SECTION: 3.7.2
DATE OF RAI ISSUE: 03/05/2012

QUESTION NO. 03.07.02-205:

In its response to RAI No. 766-5819, Revision 0, Question No. 03.07.02-44, the Applicant stated that the element size of the coarse mesh model meets the criterion in SRP 3.7.2 by making comparisons of the several response quantities of the coarse mesh model with those of the fine mesh model. However, the staff does not consider the fine mesh model to be a "valid" model for the comparison because the fine mesh model can only represent the dynamic property of the structure up to 21 Hz which is far less than the zero period acceleration (ZPA) of 50 Hz. The fine mesh model, therefore, does not meet the SRP Acceptance Criteria 1.A.iv.(1) of SRP 3.7.2 which states in part, that "It is important to ensure that, for each excitation direction (2 horizontal and vertical), all modes with frequencies less than the ZPA (or PGA [peak ground acceleration]) frequency of the corresponding spectrum are adequately represented in the dynamic solution." As a result of this, the staff finds the Applicant's response to be unacceptable. Further, the Applicant referred its answer, in part, to RAI 03.07.02-57 which was not included in this response package.

The Applicant is requested to provide information that show that its approach for the fine mesh model meets the SRP Acceptance Criteria 1.A.iv.(1) of SRP 3.7.2. In addition, the Applicant is requested to provide its response to RAI 03.07.02-57 for the staff's review.

ANSWER:

This answer revises and replaces the previous MHI answer that was transmitted by letter UAP-HF-12124, dated June 5, 2012 (ML12158A478).

In Technical Report MUAP-11002 Rev. 2, the analysis of the fine mesh model has been updated per the SRP Acceptance Criteria to include analysis results representing the dynamic properties greater 50 Hz. Discussion of the fine mesh model and validation of the coarse mesh model is presented in Subsections 2.4.1 and 3.1.3 of Technical Report MUAP-11002 Rev. 2.

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.