## RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**03/22/2013**

**US-APWR Design Certification**

**Mitsubishi Heavy Industries**

**Docket No. 52-021**

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| **RAI NO.:** | **NO. 766-5819 REVISION 3** |
| **SRP SECTION:** | **03.07.02 – Seismic System Analysis** |
| **APPLICATION SECTION:** | **3.7.2** |
| **DATE OF RAI ISSUE:** | **06/09/2011** |

**QUESTION NO. RAI 03.07.02-57:**

In MUAP-11002 (R0) Subsection 5.2.1, “Subsurface Profiles/Properties,” (page 15), the applicant presents Equation 5-1 for the maximum recommended thickness of a subsurface profile layer. However, a similar equation should also be imposed on the finite element mesh size so that the finite element model is able to transmit the same cut-off frequency of the wave motion represented by Equation 5-1.
The staff noted in Section 5.4 of the report that the mesh size of 13 feet was used. If the cut-off frequency is chosen to be that of ZPA (50 Hz), the element size of 13 feet cannot transmit this wave component. The applicant is requested to provide a rationale for choosing the element size used in the SSI analyses.

**ANSWER:**

This answer revises and replaces the previous MHI answer that was transmitted by letter UAP-HF-11393, dated November 16, 2011 (ML11326A130).

Per Equation 4.2-2 of Technical Report MUAP-11002 Rev. 2, the maximum passing frequency was evaluated in terms of the shear wave velocities, which have been updated in Technical Report MUAP-10006 Rev. 3, and the coarse mesh model element size of approximately 12 feet. As discussed in Subsection 4.2.1 of Technical Report MUAP-11002 Rev. 2, the mesh size and passing frequencies are justified based on the frequency content of the input motion.

**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.

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