

# REQUEST FOR ADDITIONAL INFORMATION 494-3978 REVISION 1

12/1/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 03.07.01 - Seismic Design Parameters

Application Section: SRP 3.7.1

QUESTIONS for Structural Engineering Branch 1 (AP1000/EPR Projects) (SEB1)

03.07.01-2

In the response to RAI 3.7.1-7, the applicant refers to “required allowable bearing capacity,” for seismic Category I structures basemats. This terminology as used in the DCD is unclear. Is it the intention to state that the minimum ultimate bearing capacity of the soil should be 15 ksf, 30 ksf, or is the intended meaning something else?

Also, describe how the proposed value of 15 ksf, which is based on static bearing pressure, is significant to the plant design, and explain how static bearing pressures and dynamic bearing pressures and corresponding soil capacities will be used in the plant design.

Reference: MHI response to RAI 211-1946, dated 4/23/2009, MHI Ref: UAP-HF-09187, ML091170058.

03.07.01-3

In Section 3.7.1.3 of Revision 1 of the DCD, the applicant states that a SASSI analysis can be performed to consider incoherency to reduce the high-frequency response. Describe in detail the proposed methodology to account for incoherency of seismic waves on the SSI analysis.

03.07.01-4

Per the response to RAI 3.7.1-4, the 6<sup>th</sup> paragraph of Subsection 3.7.2.4.1 of Revision 2 of the DCD states that soil properties may be considered strain-independent for subgrade materials with initial shear wave velocities of 3,500 ft/s or higher, to be confirmed by the COL Applicant. The same language is used in COL Item COL3.7(8). The staff’s view is that the value of 3,500 ft/s is an arbitrary value in this context and that stating that soil properties may be considered to be strain-independent for higher initial shear wave velocities is unacceptable. Describe the criteria to be used to determine if the subgrade properties are strain-independent.

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Reference: MHI response to RAI 211-1946, dated 3/25/2009, MHI Ref: UAP-HF-09112, ML090890516.