RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

03/29/2013

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	**NO. 494-3978 REVISION 1**
SRP SECTION:	**03.07.01 - Seismic Design Parameters**
APPLICATION SECTION:	**3.7.1**
DATE OF RAI ISSUE:	**12/01/2009**

QUESTION NO. 03.07.01-02:

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.

ANSWER:

This answer revises and replaces the previous MHI answer that was transmitted by letter UAP-HF-10022 (ML100330617).

The minimum allowable static bearing capacity has been established by conservatively rounding up the static bearing pressure demand calculated for the reactor building (R/B) complex standard plant. The minimum allowable dynamic bearing capacity has been established based upon maximum dynamic pressure demand. Refer to the responses to RAI 94-1491, Question 02.05.04-01, for the methodology to establish the static and dynamic bearing pressure demands.

The maximum static and dynamic bearing pressure demands are listed in Design Control Document (DCD) Tier 2, Table 2.0-1, and Tier 1, Table 2.1-1.

The ultimate bearing capacity (static and dynamic) of the soil/subgrade is site-specific, and is determined based on the soil conditions at each site. DCD Section 3.7.1.3 specifies a factor of safety of 2.5 for the ultimate static bearing capacity versus the minimum allowable static bearing capacity; and a factor of safety of 2 for the ultimate dynamic bearing capacity versus

the minimum allowable dynamic bearing capacity. However, the DCD indicates that different values may be justified based on site-specific geotechnical conditions.

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 the Technical/Topical Report.

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