

REQUEST FOR ADDITIONAL INFORMATION 709-5489 REVISION 2

3/7/2011

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 03.07.01 - Seismic Design Parameters

Application Section: 3.7.1

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

03.07.01-13

3.7.1-17

This request for additional information (RAI) is necessary for the staff to determine if the application meets the requirements of 10 CFR Part 50, Appendix A, General Design Criteria 2; 10 CFR Part 50 Appendix S; and 10 CFR Part 100; as well as the guidance in NUREG-0800,

"Standard Review Plan for the Review of Safety Analysis for Nuclear Power Plants," Chapter

3.7.1, "Seismic Design Parameters."

In its response dated November 11, 2010 to staff's RAI No. 643-4967, Revision 1, (Question NO. 03.07.1-16), the applicant made certain statements with regard to the applicability of the US-APWR certified standard design response spectra (CSDRS) to hard rock sites in Central and Eastern United States (CEUS), relative to response spectra characteristic in the high-frequency range. Specifically, the applicant stated the following:

1. It is recognized that for some of the hard rock sites in Central and Eastern United States (CEUS), the US-APWR CSDRS does not envelope the response spectra characteristic in the high-frequency range.
2. CSDRS are expected to envelope many sites in the central and eastern United States in order to maximize the applicability of the US-APWR standard plant design; however it is anticipated that there are some site-specific instances, particularly on hard rock sites in high seismic areas, where high-frequency exceedances of the CSDRS may occur.

In order to determine whether the requested US-APWR standard design is usable for a multiple number of units or at a multiple number of sites in the United States without reopening or repeating the staff's review, the staff requests that MHI provide quantitative information and details of specific analyses and data developed to support its response to RAI No. 643-4967, Revision 1, (Question NO. 03.07.1-16), dated November 11, 2010, particularly regarding the two statements noted above. The staff also requests that the applicant discuss whether the analysis of the site specific variation for the hard rock sites, where the US-APWR CSDRS does and does not envelope the response spectra characteristic in the high-frequency range, will lead to site-specific variations in the plant designs among plants that reference the US-APWR design. The applicant should also discuss the extent of such variations, as appropriate.