RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

1/31/2013

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.:	**NO. 342-2000 REVISION 0**
SRP SECTION:	**03.08.04 – OTHER SEISMIC CATEGORY I STRUCTURES**
APPLICATION SECTION:	**3.8.4**
DATE OF RAI ISSUE:	**04/21/09**

QUESTION NO. RAI 03.08.04-01:

In DCD Subsection 3.8.4.1, the first paragraph (Page 3.8-45) states, "Adjoining building basemats are structurally separated by a 4 in. gap at and below the grade. This requirement does not apply to engineered mat fill concrete that is designed to be part of the basemat subgrade for the interface between the R/B, and east and west PS/Bs. To be consistent with seismic modeling requirements of Section 3.7, no 4 in. gap is permitted in the fill concrete between these buildings."

The applicant is requested to provide the following information:

(a) Provide a description for the engineered mat fill concrete, including its dimensions and thickness and concrete strength.

(b) The last sentence of the above quote states that "To be consistent with … no 4 in gap is permitted …" What are the specific seismic modeling requirements of DCD Section 3.7 that make it necessary to eliminate the 4 in. gap between basemats of certain buildings?

ANSWER:

This answer revises and replaces the previous MHI answer that was transmitted by letter UAP-HF-09360 (ML091900558).

The US-APWR standard plant design has been updated and the 4 in gaps between the basemats of the reactor building (R/B) and power source buildings (PS/Bs), as cited in the NRC question, have been eliminated. The discussion in DCD Section 3.8.4.1 has been revised. The R/B, prestressed concrete containment vessel (PCCV), containment internal structure (CIS), east and west power source buildings (PS/Bs), the auxiliary building (A/B) and essential service water pipe chase (ESWPC) have been integrated with reactor building (R/B) structure to form the updated design configuration of the R/B complex on a larger common basemat foundation.

The models used for SSI and SSSI analyses do not include engineered mat fill concrete under any of the US-APWR standard plant foundations since the mat fill concrete is not part of the standard design. The site-independent seismic response analyses and the standard design consider that the foundation of the US-APWR seismic category I and II buildings rest directly on

the surfaces of the generic soil profiles. If the subgrade conditions at a specific site require a layer of fill, its effects on the seismic response will be addressed by the site-specific seismic response analyses that are required by per US-APWR DCD COL Item 3.7 (25).

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.