
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

1/31/2013

**US-APWR Design Certification
Mitsubishi Heavy Industries
Docket No. 52-021**

RAI NO.: NO. 212-1950 REVISION 1
SRP SECTION: 03.07.02 – Seismic System Analysis
APPLICATION SECTION: 3.7.2
DATE OF RAI ISSUE: 02/25/09

QUESTION NO. RAI 03.07.02-01 (03.07.02-20):

Section 3.7.2.4 of the DCD states that the SSI analysis conservatively neglects the effects of embedment of the common R/B and PCCV basemat. The natural frequency of the structure is sensitive to the embedment effect and the seismic response of subsystem and equipment can be lower or higher depending on the seismic input ground motion and the frequency of subsystem or equipment of interest. Provide a technical basis including studies or test data to demonstrate that neglecting the effects of embedment results in conservative results.

ANSWER:

This answer revises and replaces the previous MHI answer that was transmitted by letter UAP-HF-09188 (ML091320443).

The seismic category I reactor building (R/B) complex, which includes the R/B, prestressed concrete containment vessel (PCCV), containment internal structure (CIS), east and west power source buildings (PS/Bs), auxiliary building (A/B), and essential service water pipe chase (ESWPC) have been structurally integrated and supported on a combined basemat. The standard plant seismic methodology has been updated to consider embedment effects as part of the design-basis. Technical Report MUAP-10006, Rev. 3, Sections 01.1.0, 03.1.0, 03.3.1, 03.3.4, and 03.4.1 describe the embedded effects. This also is incorporated into Subsection 3.7.2.4 of the DCD. Therefore, it is not necessary to provide a technical basis to demonstrate that neglecting the effects of embedment results in conservative results.

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.