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## RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

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1/31/2013

### US-APWR Design Certification

### Mitsubishi Heavy Industries

Docket No. 52-021

**RAI NO.:** NO. 810-5874 REVISION 3  
**SRP SECTION:** 03.07.02 – Seismic System Analysis  
**APPLICATION SECTION:** 3.7.2  
**DATE OF RAI ISSUE:** 08/22/11

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#### QUESTION NO. RAI 03.07.02-95:

In Subsection 3.7.2.3.10.1 of DCD (R3), "Validation Method," item (ii) under the subtitle of "Static Loading Analysis", (page 3.7-26) states, "By fixing the upper level of the basemat, a set of vertically distributed horizontal loads, which is established considering the earthquake excitation, is applied at each of the main floor levels of the FE model and the resulting horizontal displacements are evaluated at the top level of each floor."

The applicant's approach is different from the 1g static analysis specified in SRP Acceptance Criteria 1.A.iv.(2) in SRP 3.7.2. The Applicant is requested to provide a justification that shows that the proposed approach produces conservative or equivalent results relative to a 1g static analysis.

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#### ANSWER:

This answer revises and replaces the previous MHI answer that was transmitted by letter UAP-HF-11402 (ML11332A148).

Subsection 3.7.2.3.10 of DCD has been changed to reflect that dynamic finite element models are used for the seismic analysis of the reactor building (R/B) complex, and not lumped mass stick models. Validation of the models is performed in compliance with the provisions of SRP 3.7.2 Acceptance Criteria 1.A.iv.(2), including a 1g static analysis in all three orthogonal directions of excitation. Section 02.4.1.2 of Technical Report MUAP-10006, Rev. 3, describes the validation methodology and Section 02.5.1.3 presents the validation results for the R/B complex models. Therefore, the revised approach for the validation of the R/B complex models complies with the provisions for performing 1g static analyses for purposes of dynamic model validation as stipulated in SRP 3.7.2 Acceptance Criteria 1.A.iv.(2).

#### Impact on DCD

There is no impact on the DCD.

**Impact on R-COLA**

There is no impact on the COLA.

**Impact on S-COLA**

There is no impact on the 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.

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