
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

1/31/2013

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

RAI NO.: NO. 854-6088 REVISION 3
SRP SECTION: 03.07.02 – Seismic System Analysis
APPLICATION SECTION: 3.7.2
DATE OF RAI ISSUE: 10/24/11

QUESTION NO. RAI 03.07.02-158:

Table 4.1.3-1 in MUAP 11007 (R0) indicates that the cracked concrete models will be used for soft site conditions, and uncracked concrete models will be used for stiff site conditions. The report does not indicate the basis for this approach. The applicant is requested to provide the technical basis for this approach and to discuss if the demands on concrete been evaluated for each site condition to see if cracking will occur.

ANSWER:

The US-APWR standard plant design-basis soil-structure interaction (SSI) analyses are documented in Technical Report MUAP-10006, Rev. 3. As stated in Section 03.3.5 of the report, both the cracked and uncracked SSI models are analyzed for the six generic site profiles. The SSI results are enveloped for both structural stiffness levels.

Technical Report MUAP-11007, Rev. 2, provides a study of the effects of groundwater on the standard plant SSI analysis only. As stated in Section 2.4 of the report, three generic unsaturated site profiles (270-200Dry, 270-500Dry and 560-500Dry) are developed to represent the soils at generic sites 270-200, 270-500 and 560-500 when the groundwater levels are low. These three profiles are evaluated for both cracked and uncracked concrete conditions as described in MUAP-11007, Rev. 2, Section 2.5.2.

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.