
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

1/31/2013

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.: NO. 856-6094 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 03.07.02-164:

In MUAP-11011 (R0), Figure 2.0-1, Plant Layout of the US-APWR Standard Plant (Page 3), it is shown that the US-APWR Standard Plant consists of R/B, T/B, PS/B and A/B. However, in Table 1.0-1, this combination is not included in the cases considered. The applicant is requested to include “R/B+T/B+PS/B+A/B” in SSI/SSSI Model columns. If this is not feasible to include this case, the applicant is requested to justify the omission of this case. The applicant is also requested to address if it considered the use of a lumped mass stick model for PS/B to determine if the analysis for this case would be feasible.

ANSWER:

Technical Report MUAP-11011, Rev. 0 has been superseded and the relevant information on the structure-soil-structure interaction (SSSI) analysis methodology has been incorporated into Technical Report MUAP-10006, Rev. 3.

The seismic design basis for the US-APWR has been updated to perform soil-structure interaction (SSI) analyses using dynamic finite element (FE) models of the reactor building (R/B) complex, which now consists of the R/B, prestressed concrete containment vessel (PCCV), containment internal structure (CIS), east and west power source buildings (PS/Bs), auxiliary building, and essential service water pipe chase (ESWPC) supported on a combined basemat. Lumped mass stick models are no longer used in the US-APWR standard plant structure-soil-structure interaction analysis.

The SSSI analysis evaluates the effect of the turbine building (T/B) on the seismic category I R/B complex, as documented in Subsection 03.3.4.2 of Technical Report MUAP-10006, Rev. 3. The results of this evaluation are documented in Subsection 03.4.1.3 of the same report.

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.