
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 (03.07.02-16):

Provide a listing or table indicating which analysis method is used for each of the Seismic Category I, Seismic Category II, and non-seismic SSCs, or justify why such a description is not provided in the DCD. SRP Subsections 3.7.2 11.1 through 3.7.2.11.14 provide acceptance criteria for the seismic system analysis, but the acceptability of the SSCs cannot be evaluated without descriptions of the methodologies used. It is noted that the applicant has provided such information in Table 3.7.2-1 of the DCD for a subset of the structures. It is stated in Sections 3.7.2.8.2 and 3.7.2.8.4 that the design of the turbine building (T/B) and Auxiliary building (A/B) are based on a seismic dynamic analysis using a three-dimensional lumped mass model. Provide detailed description of these models and analysis 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 and is dynamically analyzed with a finite element (FE) model using ACS SASSI. Descriptions of the analyses methodologies and the analyses results are presented in Technical Report MUAP-10006, Rev. 3.

The seismic category II Turbine Building is also dynamically analyzed with a FE model using ACS SASSI. Descriptions of the analyses, methodologies and the analyses results are presented in Technical Report MUAP-11002 Rev. 2.

The design criteria for the non-seismic Access Building (AC/B) are presented in Technical Report MUAP-10024, Rev. 1. No dynamic analysis is performed for the AC/B. The AC/B seismic loads and load combinations are discussed in Sections 3.6 and 3.9 of the Technical Report, respectively. As stated in Section 2.2 of the report, the AC/B is designed to satisfy the seismic requirements of Occupancy Category IV in accordance with the International Building Code (IBC).

DCD Tier 2 Table 3.7.2-1 has been updated with the information described above.

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.