
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

02/27/2013

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: 02/25/2009

QUESTION NO. 03.07.02-01 (03.07.02-23):

In Section 3.7.1.1 of the DCD it is stated that the essential service water pipe tunnel (ESWPT), the power source fuel storage vaults (PSFSVs), and the ultimate heat sink related structures (UHSRS) are Seismic Category I buildings and structures, but are not included as part of the standard plant. Provide a detailed description of the seismic input, modeling procedure, and seismic analysis methods for each of the structures in order to review their adequacy in accordance with the SRP section 3.7.2 guidelines.

ANSWER:

This answer revises and replaces the previous MHI answer that was transmitted by letter UAP-HF-09113 (ML090930727).

The Essential Service Water Pipe Tunnel (ESWPT) has been separated into two components. The portion of the ESWPT that runs east-west on the south side of the Reactor Building (R/B) complex has been incorporated into the R/B complex structure. This portion is now called the Essential Service Water Pipe Chase (ESWPC). The ESWPC is included in the R/B complex model evaluated in Technical Report MUAP-10006, Rev. 3. The remainder of the ESWPT, the Power Source Fuel Storage Vaults (PSFSVs) and Ultimate Heat Sink Related Structures (UHSRS) are discussed below.

The configuration, orientation, and layout of the ESWPT, PSFSVs, and UHSRS may differ among COLA plants. The detailed description of the seismic input, modeling procedure, and seismic analysis methods for the ESWPT, PSFSVs, and UHSRS are dependent on site-specific parameters such as the site-specific depth of bedrock (if not a soil site), depth of embedment, depth of foundation with respect to other structures, and tornado loadings.

Because the exact configuration, orientation, and layout of the ESWPT, PSFSV, and UHSRS are dependent on site conditions, the DCD Tier 2 specifies, in various COL Items in Sections 3.7 and 3.8 that these structures are to be designed and analyzed by the COL Applicant on a site-specific basis.

- COL Item 3.7(21) is a general requirement that obligates the COL Applicant to perform the seismic design of these structures.
- COL Items 3.8(15) and 3.8(19) are also general requirements that obligate the COL Applicant to perform the structural and seismic design of the ESWPT, PSFSVs, and UHSRS.
- COL Items 3.7(5), 3.7(24), and 3.7(30) provide requirements for the COL Applicant with respect to seismic input, including development/verification of seismic input motion.
- COL Items 3.7(3), 3.7(4), 3.7(10), 3.7(22), and 3.7(26) provide requirements for the COL Applicant with respect to seismic analysis methods and modeling.
- COL Item 3.7(9) requires the COL Applicant to assure that safety-related site-specific structures, systems, and components (SSCs) are not jeopardized by the failure of non-seismic category I SSCs.

The detailed descriptions of the seismic input, modeling procedure, and seismic analysis methods for the ESWPT, PSFSVs, and UHSRS are provided and documented by the COL Applicant for each new US-APWR reactor on a site-specific basis in the respective COLA.

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.