
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

02/27/2013

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

RAI NO.: NO. 542-4262 REVISION 2
SRP SECTION: 03.07.02 – Seismic System Analysis
APPLICATION SECTION: 3.7.2
DATE OF RAI ISSUE: 03/02/2010

QUESTION NO. 03.07.02-07 (03.07.02-34):

In Section 3.7.5, "Combined License Information," of Revision 2 of the DCD, the applicant's action item COL 3.7 (11) has been deleted. The original action item from DCD Rev 1 stated that, "It is the responsibility of the COL Applicant to confirm the masses and frequencies of the PCCV polar crane and fuel handling crane and to determine if coupled site-specific analyses are required." Provide the basis for deleting this action item from Rev 2 of the DCD. Also, provide the criteria that are used to model the PCCV polar crane and fuel handling crane in the seismic model of the reactor building and containment internal structures. What criteria will be used to determine if coupled site-specific analyses are required and who will be responsible for making such a determination?

ANSWER:

This answer revises and replaces the previous MHI answer that was transmitted by letter UAP-HF-10086 (ML100950104).

The requirements of ASME NOG-1 require that the crane design analyses be performed by coupling the crane models with the building models. To account for the effects of dynamic coupling with the building structures, the Prestressed Concrete Containment Vessel (PCCV) polar crane and the Reactor Building (R/B) fuel handling crane are incorporated into the US-APWR standard plant design by using typical mass and stiffness properties anticipated for the cranes in the R/B complex dynamic and detailed structural finite element models. The PCCV polar crane and R/B fuel handling crane are procured on a site-specific basis. COL Item 3.7(11) has been reinstated into DCD Tier 2, Subsections 3.7.2.3.2 and 3.7.5 and [Subsection 1.8, Table 1.8-2 (Sheet 5)]. COL Item 3.7(11) requires the COL Applicant to confirm the masses and frequencies of the PCCV polar crane and fuel handling crane and, where applicable, to implement any changes to the standard plant masses and stiffnesses of the cranes in the site-specific Soil-Structure Interaction (SSI) analyses of the R/B complex and site-specific crane analyses.

Impact on DCD

There is no impact on the DCD.

Impact on R-COLA

The revised COL Item 3.7(11) is required to be addressed in the R-COLA with mark-ups in a future revision to the R-COLA.

Impact on S-COLA

The revised COL Item 3.7(11) is required to be addressed in the S-COLA with mark-ups in a future revision to 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.