REQUEST FOR ADDITIONAL INFORMATION 463-3746 REVISION 0

10/6/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 16 - Technical Specifications
Application Section: 16

QUESTIONS for Technical Specification Branch (CTSB)

16-299

Provide the additional information and update the following RAI response for Post Accident Monitoring (PAM) Instrumentation Tech Spec 3.3.3.

Request for Additional Information No. 167-1769

QUESTIONS for Technical Specification Branch (CTSB)

16-284

In RAI-SRP16-CTSB-1769/284, the staff requested the applicant provide a summary of the analyses to confirm that the list of Post Accident Monitoring (PAM) instrumentation contained in the APWR GTS, Table 3.3.3-1, includes the entire population of instruments required to address the requirements of General Design Criteria (GDC) 13, 19 and 64, the guidance in Revision 4 of Regulatory Guide (RG) 1.97, and the selection criteria included in IEEE Standard 497-2002. Endorsed IEEE Standard 497-2002 provides criteria for selecting PAM instrumentation variables, instead of providing a list of variables to monitor (which was the approach taken in the 1983 Revision 3 of RG 1.97). The discussion of these criteria on page iv of IEEE Standard 497-2002 states “Accident monitoring variable selection must be consistent with the plant specific emergency operating procedures (EOPs) and abnormal operating procedures (AOPs). The variables selected from these procedures need to be the minimum set to assess that safety-related functions are performed and safety systems operate acceptably.” The applicant's response (provided in Chapter 7 Request For Additional Information item 07.05-8), does not describe how it is possible to provide a “complete” PAM Instrumentation Technical Specification prior to COL issuance, when PAM variable selection criteria in RG 1.97, Revision 4, depend on prior development of Emergency Procedure Guidelines (EPGs), EOPs and AOPs (guidelines and procedures which cannot be developed before COL issuance). This issue is identified as Open Item OI-SRP16-CTSB-1769/284 in the U.S. APWR Safety Evaluation Report.

The staff has reviewed its current position, as stated in the STS Reviewer’s Note, regarding which accident monitoring instrumentation should be in technical specifications, in comparison to Regulatory Guide 1.97, “Criteria for Accident Monitoring Instrumentation for Nuclear Power Plants,” Revision 4, June 2008. It is the NRC staff’s position that technical specifications should include (1) all Regulatory Guide 1.97,

Revision 4, Type A instruments, and (2) all Regulatory Guide 1.97, Revision 4, Type B and Type C instruments in accordance with the units Regulatory Guide 1.97 Safety Evaluation Report. Therefore, a COL applicant should include a technical specification that meets this staff position if the applicant references Regulatory Guide 1.97, Revision 4.

Identification of Regulatory Guide 1.97, Revision 4, Type A, Type B, and Type C accident monitoring instrumentation functions depends on development of emergency operating procedures (EOPs) and abnormal operating procedures (AOPs), which is a post-COL activity. Therefore COL applicants implementing Regulatory Guide 1.97, Revision 4, should use guidance from DC/COL-ISG-8, "Necessary Content of Plant-Specific Technical Specifications When a Combined License Is Issued," December 2008, in order to complete the plant-specific technical specification list of PAM instrumentation functions. This guidance provides three options:

- Option 1 involves the use of plant-specific information. Option 1 appears impracticable for PAM instrumentation technical specifications because the list of Type A, Type B, and Type C PAM instrumentation functions cannot be finalized before COL issuance.

- Option 2 involves the use of useable bounding information. Option 2 may be practical if the COL applicant is able to develop a truly bounding list of Type A, Type B and Type C PAM instrumentation functions to be included in the plant-specific technical specifications. However, if a Regulatory Guide 1.97, Revision 4, analysis considering plant-specific EOPs and AOPs, which are based on the as-built plant, shows that additional PAM instrumentation functions are necessary, then the COL holder would need to request a license amendment to make changes to the plant-specific technical specification PAM instrumentation required functions list. The NRC would need to approve this amendment before the COL holder would be allowed to load fuel.

- Option 3 involves an administrative program to control PAM instrumentation functions. Option 3 would require establishing a plant-specific administrative controls program technical specification that would require using an NRC-approved methodology to determine the required PAM instrumentation functions, and maintaining the list of required PAM instrumentation functions in a specified document with appropriate regulatory controls. Option 3 may be practical because the approved methodology, Regulatory Guide 1.97, Revision 4, is already established. This approach is advantageous because COL holders would not necessarily need to request a license amendment to make changes to the PAM instrumentation required functions list post COL. However, the program technical specification would need to be developed prior to COL issuance.

The applicant is requested to propose changes as described in the attached document.