REQUEST FOR ADDITIONAL INFORMATION NO. 180-1594 REVISION 1

2/5/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 03.06.01 - Plant Design for Protection Against Postulated Piping Failures in Fluid Systems Outside Containment
Application Section: 3.6.1

QUESTIONS for Balance of Plant Branch 1 (AP1000/EPR Projects) (SBPA)

03.06.01-1

RAI 3.6.1-1

Branch Technical Position 3-3 Section B.2 “Design Features” states that protective structures and compartments should be designed to seismic Category I requirements. The staff's review of Tier 2 DCD Section 3.6.1 did not find confirmatory statement that the protective structures and compartments used to protect SSCs from pipe rupture would be designed to seismic standards.

The staff requests the applicant to include in the Final Safety Analysis Report (FSAR) the seismic standards that the protective structures and equipment use to protect SSCs from pipe rupture would be designed to.

03.06.01-2

RAI 3.6.1-2

In DCD Tier 1 and Tier 2, the applicant identified high- and moderate-energy piping (greater than 2.5 cm (1 inch) diameter) within the containment vessel and the reactor building. The staff was unable to confirm that US-APWR systems are properly identified all high- and moderate-energy piping systems since the maximum normal operating pressures and temperatures are not specified. The staff also noted that some systems that typically are considered high or moderate energy system for a PWR were not included in these lists.

The staff requests the applicant to update the FSAR to include the maximum normal operating pressures and temperatures for all the fluid containing systems.

03.06.01-3

RAI 3.6.1-3

In DCD Tier 2, Appendix 3D “US-APWR Equipment Qualification List Safety and Important To Safety Electrical And Mechanical Equipment” the applicant identifies the systems and components important to plant safety or shutdown. However, the applicant

has not identified which of the safety systems are located near to high- or moderate-energy piping systems. The applicant also failed to provide the layout of the site piping systems (the drawing should present the location of all the safety-related/important to safety SSCs, the pipe layout, and the barriers), in order to allow the staff to verify that all the SSCs that need to be protected have been identified.

The staff requests the applicant to provide detailed layout drawings of the site piping systems (the drawing should present the location of all the safety-related/important to safety SSCs, the pipe layout, and the barriers).

03.06.01-4

RAI 3.6.1-4

In DCD Tier 1 Section 2.2 “Structural and System Engineering,” Table 2.2-4 “Structural and Systems Engineering Inspections, Tests, Analyses, and Acceptance Criteria (Sheet 3 of 3),” ITAAC 2.2-17 states that safety-related SSCs are designed to withstand the dynamic effects of pipe breaks. As described in DCD Tier 1 Section 1.4.5, all ITAAC items must be completed before fuel load. The staff finds that this closure schedule is inappropriate for ITAAC 2.2-17. In order to provide sufficient time for the staff evaluation of the applicant’s measures for the protection against pipe failure the staff requests that the pipe break hazards analysis report should be completed before the start of construction phase.

The staff requests the applicant justify why ITAAC 2.2-17 cannot be completed before the start of the construction phase.

03.06.01-5

RAI 3.6.1-5

In DCD Tier 1 Table 2.2-4, ITAAC 2.2-17 makes reference to Tier 1 Section 2.3 “Piping Systems and Components” ITAAC #6 for the required tests/analyses and acceptance criteria. The staff could not find this ITAAC. Section 2.3 has only 4 ITAACs.

The staff requests the applicant to correct this reference in Tier 1.

03.06.01-6

RAI 3.6.1-6

The staff reviewed DCD Tier 1 Section 2.2 and Section 2.3 and found that the applicant has not proposed an ITAAC to re-evaluate the pipe break hazards analysis after the construction phase is completed.

The staff requests the applicant to justify why there is no need for a reconciliatory evaluation of the pipe break hazards analysis.