

REQUEST FOR ADDITIONAL INFORMATION 305-2331 REVISION 1

4/2/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 15.02.08 - Feedwater System Pipe Breaks Inside and Outside Containment (PWR)
Application Section: 15.2.8

QUESTIONS for Reactor System, Nuclear Performance and Code Review (SRSB)

15.02.08-1

Question 15.2.8-1

In DCD Section 15.2.8, Feedwater System Pipe Break, the applicant states that only the case without offsite power available is presented, and that the RCPs remain running until the ECCS signal is reached. LOOP and RCS trips are assumed to be concurrent with the turbine trip. This sequence of events as presented is inconsistent with the previous approach (DCD Section 15.0.0.7) that assumes the turbine trip and immediate reactor trip initiate a 3-second delayed LOOP that results in a delayed coast down of the RCPs until the rods and sufficient negative reactivity have been inserted in the core to cause the DNBR to increase; therefore minimum DNBR always occurs before the initiation of a LOOP. This apparent inconsistency in methodology prompts the staff to question MHI to explain why the turbine/reactor trip, LOOP, RCP coast down sequence should differ between various transients. Isn't this a generic sequence of events?

15.02.08-2

Question 15.2.8-2

In FSAR Section 15.2.8, "Feedwater Piping Breaks Inside and Outside Containment", it is indicated that the RCPs coast down at 100 seconds into the event (see Figure 15.2.8-6). Discuss the basis for this assumption.

15.02.08-3

Question 15.2.8-3

In FSAR Section 15.2.8, "Feedwater Piping Breaks Inside and Outside Containment", provide the transient curve for DNBR verses time and the calculated amount of fuel failure based on the criterion that all fuel pins with MDNBR below the DNBR limit are assumed to fail.