

REQUEST FOR ADDITIONAL INFORMATION 353-2335 REVISION 1

5/4/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 15.03.03-15.03.04 - Reactor Coolant Pump Rotor Seizure and Reactor Coolant Pump
Shaft Break
Application Section: 15.3.3

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

15.03.03-15.03.04-1

Question 15.3.3-1

In DCD Section 15.3.3, Reactor Coolant Pump Rotor Seizure, the number of rods predicted to be in DNB was reported to be less than 10%. How many (%) rods went into DNB? What was the distribution for the minimum DNBR for those rods that were calculated not to fail (i.e., remained above the minimum DNBR safety analytical limit)?

15.03.03-15.03.04-2

Question 15.3.3-2

In Section 15.3.3, Reactor Coolant Pump Rotor Seizure, is the number of rods in DNB sensitive to the mixing factors FMXI and FMXO assumed for this transient? Have any sensitivity studies been performed to investigate the effects of variations in these parameters on the number of rods in DNB? What values for FMXI and FMXO were used in the calculations? When does the LOOP occur and when do the RCPs trip in this calculation?

15.03.03-15.03.04-3

Question 15.3.3-3

In Section 15.3.3, "RCP Rotor Seizure", 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 failed.