

# REQUEST FOR ADDITIONAL INFORMATION 786-5881 REVISION 3

7/26/2011

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 15 - Introduction - Transient and Accident Analyses  
Application Section: 15.0

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

15-30

The Doppler reactivity used in the non-LOCA analysis in Chapter 15 includes a Doppler power coefficient of reactivity and a Doppler fuel temperature coefficient of reactivity. In order for the staff to determine that the values selected for these parameters in the Chapter 15 analysis are suitably conservative, please address the following:

a. DCD Table 15.0-1 identifies the feedback extreme (maximum or minimum) assumed for the Doppler reactivity coefficient for each event and references a figure showing the Doppler power coefficient. It is not clear from this description which extreme is assumed for the Doppler fuel temperature coefficient of reactivity and the numerical values of this parameter are not provided. Please add the minimum and maximum values assumed for the Doppler fuel temperature coefficients of reactivity to the DCD and clarify that the Doppler reactivity coefficients described in Table 15.0-1 include both Doppler power and Doppler fuel temperature coefficients, except as noted.

b. For all 15.2 and 15.3 events, discuss the basis used to determine which Doppler feedback extreme was assumed and demonstrate that the assumed value is suitably conservative or bounding.

15-31

The only reference in the Tier 2 DCD for MUAP-07026-P, "Mitsubishi Reload Evaluation Methodology," is in Chapter 16, TS 5.6.3. The NRC requests MUAP-07026-P be added as a Reference to Chapter 15 in order for the NRC to evaluate this document as part of the Chapter 15 SE.

15-32

In order to find that the acceptance criteria on fuel cladding integrity is maintained for the event specific analysis in Chapter 15, identify the numerical value of the 95/95 departure from nucleate boiling ratio (DNBR) in the DCD.