

REQUEST FOR ADDITIONAL INFORMATION NO. 124-1638 REVISION 1

12/4/2008

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 10.04.07 - Condensate and Feedwater System

Application Section: 10.4.7

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

10.04.07-1

RAI 10.4.7-1

GDC 4 requires safety-related portions of the condensate and feedwater system (CFS) to be protected against hydraulic instabilities such as water-hammer events. Branch Technical Position (BTP) 10-2, "Design Guidelines to Avoid Water Hammer in Steam Generators," and NRC Generic Letter 2008-01, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems," contain design guidelines and recommendations to reduce, or eliminate piping damage caused by water hammer transients.

FSAR Tier 2, Section 10.4.7.7 provides a discussion of the design features to minimize the potential for water hammer. It is stated in this section of the DCD that water hammer prevention and mitigation is implemented in accordance with NUREG-0927, "Evaluation of Water Hammer Occurrence in Nuclear Power Plants." NUREG-0927 recommends the development and use of adequate operating and maintenance procedures to aid in reducing the frequency of water hammer events. The COL application does not include a COL information item for applicants to review operating and maintenance procedures to ensure that they include precautions to minimize or eliminate water hammer.

The staff requests that the applicant propose a COL information item to provide operating and maintenance procedures to address water hammer issues for the CFS.