4.4 Thermal–Hydraulic Design

The information in this section of the reference ABWR DCD, including all subsections, tables, and figures, is incorporated by reference with the following departures and supplements.

STD DEP Admin

STD DEP 4.4-1

4.4.3 Description of the Thermal-Hydraulic Design of the Reactor Coolant System

STD DEP 4.4-1

The ABWR stability evaluation was provided in ABWR Licensing Topical Report (LTR) NEDO-33336P "ABWR Stability Evaluation," dated June 15, 2007. The information from pages C-2 and C-3 is incorporated by reference.

Figures 4.4-1, 4.4-2, and 4.4-4 are incorporated by reference from pages C-5, C-6, and C-8 of the NEDO-33336P LTR.

4.4.3.1.3 Reactor Coolant System Geometric Data

STD DEP Admin

Table 4.4-5 provides the flow path length, height, liquid level, minimum elevations, and minimum flow areas for each major flow path volume within the reactor vessel. ~~and recirculation loops of the Reactor Coolant System.~~

4.4.3.5.2 MCPR Operating Limit Calculational

STD DEP Admin

A plant-unique MCPR operating limit is established to provide adequate assurance that the fuel cladding integrity safety limit for that plant is not exceeded for any moderate frequency AOO. This operating requirement is obtained by addition of the maximum ~~vCPR~~ DCPR *value for the most limiting AOO (including any imposed adjustment factors) from conditions postulated to occur at the plant to the fuel cladding integrity safety limit.*

4.4.7 COL License Information

4.4.7.1 Power/Flow Operating Map

The following site-specific supplement addresses COL License Information Item 4.2.

The specific power/flow operating map to be used at the plant will be prepared and provided as an amendment to the FSAR in accordance with 10 CFR 50.71(e), at least one year prior to fuel load. This operating map will be used in the final fuel analysis for the initial core loading to determine the analysis domain. (COM 4.4-1)

4.4.7.2 Thermal Limits

The following site-specific supplement addresses COL License Information Item 4.3.

The results of the analysis to determine the thermal limits will be provided as an amendment to the FSAR in accordance with 10 CFR 50.71(e), at least one year prior to fuel load. This analysis will reflect the final fuel design for the initial core loading. (COM 4.4-2)

4.4.8 References

STD DEP 4.4-1

4.4-17 NEDO-33336, "Advanced Boiling Water Reactor (ABWR) Stability Evaluation," June 2007.

4.4-18 NEDO-31960-A, "BWR Owners' Group Long-term Stability Solutions Licensing Methodology," November 1995.

4.4-19 NEDO-31960-A Supplement 1, "BWR Owners' Group Long-term Stability Solutions Licensing Methodology," November 1995.

4.4-20 NEDO-32465-A, "Reactor Stability Detect and Suppress Solutions Licensing Basis Methodology for Reload Application," August 1996.