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. STPNOC will provide an updated Stability Option III analysis once fuel is procured and the associated safety analysis is performed. This information will be available no later than 1 year prior to fuel load (COM 4.4-3).

STD DEP Admin

STD DEP 6C-1

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.~~

4.4.5.5.2 ~~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~~ ΔCPR 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.

4.4.6 Testing and Verification

STD DEP 6C-1

The testing and verification techniques to be used to assure that the planned thermal and hydraulic design characteristics of the core have been provided, and will remain within required limits throughout core lifetime are discussed in Chapter 14.

An analysis is performed to determine the required cooling for a fuel assembly post-LOCA. This analysis is discussed in Appendix 6C and is used to develop acceptance criteria for a downstream fuel effects test performed prior to initial cycle operation.

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.

No departures are being taken from the fuel design licensing basis that is described in the reference ABWR DCD, including the core loading map used for response analysis in Figure 4.3-1 and the basic control strategy in Table 4A-1. Consequently, the specific

power/flow operating map to be used at the plant is provided in subsection 4.4.3.3.1 and Figures 4.4-1 and 4.4-2 of the DCD.

4.4.7.2 Thermal Limits

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

No departures are being taken from the fuel design licensing basis that is described in the reference ABWR DCD, including the core loading map used for response analysis in Figure 4.3-1 and the basic control strategy in Table 4A-1. Consequently, the results of the analysis to determine the thermal limits are provided in subsection 4.4.3.3.1 of the DCD.