

4.5 COASTDOWN OPERATION AT END OF CYCLE

Toward the very end of a fuel cycle, the reactor core may reach a point at which it no longer has sufficient nuclear fuel to allow full power operation under normal operating conditions. Operation beyond that point is called coastdown operation. During coastdown operation, the reactor thermal power gradually decreases. However, it is possible to minimize (or even delay the start of) the loss of thermal power during the coastdown operation by reducing the RCS inlet temperature. Reducing the RCS inlet temperature at end of cycle adds positive reactivity to the core by taking advantage of the negative moderator temperature coefficient.

The reload safety analyses support both a RCS bulk inlet temperature coastdown and a thermal power coastdown. The inlet temperature may be reduced to 537°F. As long as the inlet temperature remains $\geq 537^{\circ}\text{F}$, the thermal power level shall be $\leq 100\%$ but \geq the inlet temperature/power program limit. To operate below 537°F or below 31.25% power, the plant must be on the inlet temperature/power program shown in Figure 4-9. The coastdown must end when the burnup reaches the cycle specific burnup limit.

Figure 4-18 shows the allowed combination of thermal power and RCS inlet temperature during coastdown operation.