

REACTIVITY CONTROL SYSTEMS

MODERATOR TEMPERATURE COEFFICIENT

LIMITING CONDITION FOR OPERATION

- 3.1.1.4 The moderator temperature coefficient (MTC) shall be within the limits specified in the CORE OPERATING LIMITS REPORT. The maximum upper design limit shall be:
- Less positive than $+0.5 \times 10^{-4} \Delta k/k/^\circ F$ whenever THERMAL POWER is $\leq 70\%$ of RATED THERMAL POWER, and
 - Less positive than $0.0 \Delta k/k/^\circ F$ whenever THERMAL POWER is $> 70\%$ of RATED THERMAL POWER.

APPLICABILITY: MODES 1 and 2*#

ACTION:

With the moderator temperature coefficient outside any one of the above limits, be in at least HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

- 4.1.1.4.1 The MTC shall be determined to be within its limits by confirmatory measurements. MTC measured values shall be extrapolated and/or compensated to permit direct comparison with the above limits. (Note 1)
- 4.1.1.4.2 The MTC shall be determined at the following frequencies and THERMAL POWER conditions during each fuel cycle:
- Prior to initial operation above 5% of RATED THERMAL POWER, after each fuel loading. (Note 1)
 - At any THERMAL POWER, prior to reaching a RATED THERMAL POWER equilibrium boron concentration of 800 ppm.
 - At any THERMAL POWER, within 14 EFPD after reaching a RATED THERMAL POWER equilibrium boron concentration of 300 ppm. (Note 2)

* With $K_{eff} \geq 1.0$.

See Special Test Exception 3.10.2.

Note 1: For fuel cycles that meet the applicability requirements given in WCAP-16011-P-A, the verification prior to entering MODE 1 may be made using the predicted MTC as adjusted for the measured boron concentration.

Note 2: The MTC determination of surveillance 4.1.1.4.2.c is not required if the results of the tests required in surveillances 4.1.1.4.2.a and 4.1.1.4.2.b are within a tolerance of $\pm 0.16 \times 10^{-4} \Delta k/k/^\circ F$ from the corresponding design values. For cycles that meet the applicability requirements given in WCAP-16011-P-A, the MTC determination of surveillance 4.1.1.4.2.c is not required if the result of the test required in surveillance 4.1.1.4.2.b is within a tolerance of $\pm 0.16 \times 10^{-4} \Delta k/k/^\circ F$ from the corresponding design value.