

average coolant temperature is varied by first increasing and then decreasing temperature by 5°F. During the change in temperature, reactivity feedback is compensated by discrete changes in rod motion. The change in reactivity is then calculated by the summation of reactivity (obtained from a reactivity calculator strip chart recorder) associated with the temperature change. Acceptance criteria state that the measured value shall not differ from the predicted value by more than $\pm 0.4 \times 10^{-4} (\Delta k/k)/^{\circ}\text{F}$ (predicted value obtained from Physics Test Manual curves).

The moderator coefficient of reactivity is calculated in conjunction with the temperature coefficient measurement. After the temperature coefficient has been measured, a predicted value of fuel Doppler coefficient of reactivity is added to obtain moderator coefficient. This value must not be in excess of the acceptance criteria limit of $+0.5 \times 10^{-4} (\Delta k/k)/^{\circ}\text{F}$.

9.2.3. Control Rod Group Reactivity Worth

Control bank group reactivity worths (groups 5, 6, and 7) are measured at hot zero power conditions using the boron/rod swap method. This technique consists of establishing a deboration rate in the reactor coolant system and compensating for the reactivity changes of this deboration by inserting control rod groups 7, 6, and 5 in incremental steps. The reactivity changes that occur during these measurements are calculated based on Reactimeter data, and differential rod worths are obtained from the measured reactivity worth versus the change in rod group position. The differential rod worths of each of the controlling groups are then summed to obtain integral rod group worths. The acceptance criteria for the control bank group worths are as follows:

1. Individual bank 5, 6, 7 worth:

$$\left| \frac{\text{predicted value} - \text{measured value}}{\text{measured value}} \times 100 \right| \leq 15$$

2. Sum of groups 5, 6, and 7:

$$\left| \frac{\text{predicted value} - \text{measured value}}{\text{measured value}} \times 100 \right| \leq 10$$