

TABLE 4.3-1 (Continued)

TABLE NOTATIONS

\*With the reactor trip breakers in the closed position, the CEA drive system capable of CEA withdrawal, and fuel in the reactor vessel.

#The provisions of Specification 4.0.4 are not applicable when reducing reactor power to less than 10% of RATED THERMAL POWER from a reactor power level greater than 10% of RATED THERMAL POWER. Upon reducing power below 10% of RATED THERMAL POWER, a CHANNEL FUNCTIONAL TEST shall be performed within 2 hours if not performed during the previous 31 days. This requirement does not apply with the reactor trip breakers open.

- (1) Each startup or when required with the reactor trip breakers closed and the CEA drive system capable of rod withdrawal, if not performed in the previous 7 days.
- (2) Heat balance only (CHANNEL FUNCTIONAL TEST not included), above 15% of RATED THERMAL POWER: adjust the Linear Power Level signals and the CPC addressable constant multipliers to make the CPC  $\Delta T$  power and CPC nuclear power calculations agree with the calorimetric calculation if absolute difference is greater than 2%. During PHYSICS TESTS, these daily calibrations may be suspended provided these calibrations are performed upon reaching each major test power plateau and prior to proceeding to the next major test power plateau.
- (3) Above 15% of RATED THERMAL POWER, verify that the linear power sub-channel gains of the excore detectors are consistent with the values used to establish the shape annealing matrix elements in the Core Protection Calculators.
- (4) Neutron detectors may be excluded from CHANNEL CALIBRATION.
- (5) After each fuel loading and prior to exceeding 70% of RATED THERMAL POWER, the incore detectors shall be used to determine the shape annealing matrix elements and the Core Protection Calculators shall use these elements.
- (6) This CHANNEL FUNCTIONAL TEST shall include the injection of simulated process signals into the channel as close to the sensors as practicable to verify OPERABILITY including alarm and/or trip functions.
- (7) Above 70% of RATED THERMAL POWER, verify that the total RCS flow rate as indicated by each CPC is less than or equal to the actual RCS total flow rate determined by either using the reactor coolant pump differential pressure instrumentation or by calorimetric calculations and if necessary, adjust the CPC addressable constant flow coefficients such that each CPC indicated flow is less than or equal to the actual flow rate. The flow measurement uncertainty is included in the BERR1 term in the CPC and is equal to or greater than 4%.
- (8) Above 70% of RATED THERMAL POWER, verify that the total RCS flow rate as indicated by each CPC is less than or equal to the actual RCS total flow rate determined by calorimetric calculations.
- (9) The quarterly CHANNEL FUNCTIONAL TEST shall include verification that the correct values of addressable constants are installed in each OPERABLE CPC.
- (10) At least once per 18 months and following maintenance or adjustment of the reactor trip breakers, the CHANNEL FUNCTIONAL TEST shall include independent verification of the undervoltage trip function and the shunt trip function.

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ATTACHMENT B

TABLE 4.3-1 (Continued)  
TABLE NOTATIONS

\*With the reactor trip breakers in the closed position, the CEA drive system capable of CEA withdrawal, and fuel in the reactor vessel.

#The provisions of Specification 4.0.4 are not applicable when reducing reactor power to less than  $10^{-4}\%$  of RATED THERMAL POWER from a reactor power level greater than  $10^{-4}\%$  of RATED THERMAL POWER. Upon reducing power below  $10^{-4}\%$  of RATED THERMAL POWER, a CHANNEL FUNCTIONAL TEST shall be performed within 2 hours if not performed during the previous 31 days. This Requirement does not apply with the reactor trip breakers open.

- (1) Each startup or when required with the reactor trip breakers closed and the CEA drive system capable of rod withdrawal, if not performed in the previous 7 days.
- (2) Heat balance only (CHANNEL FUNCTIONAL TEST not included):

- a. Between 15% and 80% of RATED THERMAL POWER, compare the Linear Power Level, the CPC  $\Delta T$  power, and CPC nuclear power signals to the calorimetric calculation.

If any signal is within -0.5% to +10% of the calorimetric calculation, then do not calibrate except as required during initial power ascension following refueling.

If any signal is less than the calorimetric calculation by more than 0.5%, then adjust the affected signal(s) to within 0.0% to +10.0% of the calorimetric calculation.

If any signal is greater than the calorimetric calculation by more than 10%, then adjust the affected signal(s) to within 0.0% to 10% of the calorimetric.

- b. At or above 80% of RATED THERMAL POWER, compare the Linear Power Level, the CPC  $\Delta T$  power, and CPC nuclear power signals to the calorimetric calculation. If any signal differs from the calorimetric calculation by an absolute difference of more than 2%, then adjust the affected signal(s) to agree with the calorimetric calculation within -2% to +2%.

During PHYSICS TESTS, these daily calibrations may be suspended provided these calibrations are performed upon reaching each major test power plateau and prior to proceeding to the next major test power plateau.

- (3) Above 15% of RATED THERMAL POWER, verify that the linear power subchannel gains of the excore detectors are consistent with the values used to establish the shape annealing matrix elements in the Core Protection Calculators.
- (4) Neutron detectors may be excluded from CHANNEL CALIBRATION.
- (5) After each fuel loading and prior to exceeding 70% of RATED THERMAL POWER, the incore detectors shall be used to determine or verify acceptable values for the shape annealing matrix elements used in the Core Protection Calculators.
- (6) This CHANNEL FUNCTIONAL TEST shall include the injection of simulated process signals into the channel as close to the sensors as practicable to verify OPERABILITY including alarm and/or trip functions.

- (7) Above 70% of RATED THERMAL POWER, verify that the total RCS flow rate as indicated by each CPC is less than or equal to the actual RCS total flow rate determined by either using the reactor coolant pump differential pressure instrumentation or by calorimetric calculations and if necessary, adjust the CPC addressable constant flow coefficients such that each CPC indicated flow is less than or equal to the actual flow rate. The flow measurement uncertainty is included in the BERR1 term in the CPC and is equal to or greater than 4%.
- (8) Above 70% of RATED THERMAL POWER, verify that the total RCS flow rate as indicated by each CPC is less than or equal to the actual RCS total flow rate determined by calorimetric calculations.
- (9) The quarterly CHANNEL FUNCTIONAL TEST shall include verification that the correct values of addressable constants are installed in each OPERABLE CPC.
- (10) At least once per 18 months and following maintenance or adjustment of the reactor trip breakers, the CHANNEL FUNCTIONAL TEST shall include independent verification of the undervoltage trip function and the shunt trip function.