where

P is the fraction of full power at which the core is operating

$K(Z)$ is the function given in Figure TS 3.10-2

Z is the core height location F_Q

F_Q^T (Ej) is the function given in Figure TS 3.10-7

E_j is the fuel rod exposure for which F_Q is measured

b. $F_{\Delta H}^N$ Limits

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$F_{\Delta H}^N \leq 1.55 \left[1 + 0.2(1-P)\right]$ For 0 to 24,000 MWD/MTU burnup fuel

$F_{\Delta H}^N \leq 1.52 \left[1 + 0.2(1-P)\right]$ For greater than 24,000 MWD/MTU fuel

where P is the fraction of full power at which the core is operating

2. If either measured hot channel factor exceeds the values specified in 3.10.b.1, the reactor power shall be reduced so as not to exceed a fraction of the design value equal to the ratio of the F_Q^N or $F_{\Delta H}^N$ limit to measured value, whichever is less, and the high neutron flux trip setpoint shall be reduced by the same ratio. If subsequent incore mapping cannot, within a 24 hour period, demonstrate that the hot channel factors are met, the overpower ΔT and overtemperature ΔT trip setpoints shall be similarly reduced.

3. Following initial loading and at regular effective full power monthly intervals thereafter, power distribution maps using the movable detection system, shall be made to confirm that the hot channel factor limits of specification 3.10.b.1 are satisfied. For the purpose of this confirmation:

direct control over $F^N_{\Delta H}$ and (c) an error in the predictions for radial power shape, which may be detected during startup physics tests can be compensated for in F_Q by tighter axial control, but compensation for $F^N_{\Delta H}$ is less readily available. When a measurement of $F^N_{\Delta H}$ is taken, experimental error must be allowed for and 4% is the appropriate allowance.

The $F^N_{\Delta H}$ limits of specification 3.10.b.1.b include consideration of fuel rod bow effects. Since the effects of rod bow are dependent on fuel burnup, an additional penalty is incorporated in a decrease in the $F^N_{\Delta H}$ limit of 2% for -15000 MWD/MTU fuel burnup, 4% for the 15000-24000 MWD/MTU fuel burnup, and 6% for greater than 24000 MWD/MTU fuel burnup. These penalties are counter-balanced by credits for increased Reactor Coolant flow and lower Core inlet temperature. The Reactor Coolant System flow has been determined to exceed design by greater than 8%. Since the flow channel protective trips are set on a percentage of full flow, significant margin to DNB is provided. One half of the additional flow is taken as a DNB credit to offset 2% of the $F^N_{\Delta H}$ penalty. The existence of 4% additional reactor coolant flow will be verified after each refueling at power prior to exceeding 95% power. If the reactor coolant flow measured per loop averages less than 92560 gpm, the $F^N_{\Delta H}$ limit shall be reduced at the rate of 1% for every 1.8% of reactor coolant design flow (89000 gpm design flow rate) for fuel with greater than 15000 MWD/MTU burnup. Uncertainties in reactor coolant flow have already been accounted for in the flow channel protective trips for design flow. The assumed T_{inlet} for DNB analysis was 540°F while the normal T_{inlet} at 100% power is approximately 532°F. The reduction of maximum allowed T_{inlet} at 100% power to 536.5°F as addressed in specification 3.10.k provides an additional 2% credit to offset the rod bow penalty. The combination of the penalties and offsets results in a required 2% reduction of allowed $F^N_{\Delta H}$ for high burnup fuel, 24000 MWD/MTU.