

POWER DISTRIBUTION LIMITS

SURVEILLANCE REQUIREMENTS (Continued)

- b) At least once per 31 EFPD, whichever occurs first.
2. When the F_{xy}^C is less than or equal to the F_{xy}^{RTP} limit for the appropriate measured core plane, additional power distribution maps shall be taken and F_{xy}^C compared to F_{xy}^{RTP} and F_{xy}^L at least once per 31 EFPD.
- e. The F_{xy} limit for Rated Thermal Power (F_{xy}^{RTP}) shall be provided for all core planes containing bank "D" control rods and all unrodded core planes in a Radial Peaking Factor Limit Report per specification 6.9.1.9.
- f. The F_{xy} limits of e, above, are not applicable in the following core plane regions as measured in percent of core height from the bottom of the fuel:
1. Lower core region from 0 to 15% inclusive.
 2. Upper core region from 85 to 100% inclusive.
 3. Grid plane regions at $17.8 \pm 2\%$, $32.1 \pm 2\%$, $46.4 \pm 2\%$, $60.6 \pm 2\%$ and $74.9 \pm 2\%$ inclusive.
 4. Core plane regions within $\pm 2\%$ of core height (± 2.88 inches) about the bank demand position of the bank "D" control rods.
- g. Evaluating the effects of F_{xy} on $FQ(Z)$ to determine if $FQ(Z)$ is within its limit whenever F_{xy}^C exceeds F_{xy}^L .

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BASES

- a. abnormal perturbations in the radial power shape, such as from rod misalignment, effect $F_{\Delta H}^N$ more directly than F_Q ,
- b. although rod movement has a direct influence upon limiting F_Q to within its limit, such control is not readily available to limit $F_{\Delta H}^N$, and
- c. errors in prediction for control power shape detected during startup physics test can be compensated for in F_Q by restricting axial flux distributions. This compensation for $F_{\Delta H}^N$ is less readily available.

The radial peaking factor $F_{xy}(z)$ is measured periodically to provide assurance that the hot channel factor, $F_Q(z)$, remains within its limit. The F_{xy} limit for Rated Thermal Power (F_{xy}^{RTP}), as provided in the Radial Peaking Factor Limit Report per specification 6.9.1.9, was determined from expected power control maneuvers over the full range of burnup conditions in the core.

3/4 2.4 QUADRANT POWER TILT RATIO

The quadrant power tilt ratio limit assures that the radial power distribution satisfies the design values used in the power capability analysis. Radial power distribution measurements are made during startup testing and periodically during power operation.

The limit of 1.02 at which corrective action is required provides DNB and linear heat generation rate protection with x-y plane power tilts. A limiting tilt of 1.025 can be tolerated before the margin for uncertainty in F_Q is depleted. The limit of 1.02 was selected to provide an allowance for the uncertainty associated with the indicated power tilt.

The two hour time allowance for operation with a tilt condition greater than 1.02 but less than 1.09 is provided to allow identification and correction of a dropped or misaligned rod. In the event such action does not correct the tilt, the margin for uncertainty on F_Q is reinstated by reducing the power by 3 percent from RATED THERMAL POWER for each percent of tilt in excess of 1.0.

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