

POWER DISTRIBUTION LIMITS

SURVEILLANCE REQUIREMENTS

4.2.2.1 The provisions of Specification 4.0.4 are not applicable.

4.2.2.2 F_{xy} shall be evaluated to determine if $F_Q(Z)$ is within its limit by:

- a. Using the movable incore detectors to obtain a power distribution map at any THERMAL POWER greater than 5% of RATED THERMAL POWER.
- b. Increasing the measured F_{xy} component of the power distribution map by 3% to account for manufacturing tolerances and further increasing the value by 5%* to account for measurement uncertainties.
- c. Comparing the F_{xy} computed (F_{xy}^C) obtained in b, above to:

1. The F_{xy} limits for RATED THERMAL POWER (F_{xy}^{RTP}) for the appropriate measured core planes given in e. and f., below, and

2. The relationship:

$$F_{xy}^L = F_{xy}^{RTP} [1 + PF_{xy}(1-P)]$$

where F_{xy}^L is the limit for fractional THERMAL POWER operation expressed as a function of F_{xy}^{RTP} , PF_{xy} is the power factor multiplier for F_{xy} in the CORL, and P is the fraction of RATED THERMAL POWER at which F_{xy} was measured.

- d. Remeasuring F_{xy} according to the following schedule:

1. When F_{xy}^C is greater than the F_{xy}^{RTP} limit for the appropriate measured core plane but less than the F_{xy}^L relationship, additional power distribution maps shall be taken and F_{xy}^C compared to F_{xy}^{RTP} and F_{xy}^L :
 - a) Either within 24 hours after exceeding by 20% of RATED THERMAL POWER or greater, the THERMAL POWER at which F_{xy}^C was last determined, or
 - b) At least once per 31 EFPD, whichever occurs first.

* For Cycle 11, when the number of available movable detector thimbles is greater than or equal to 50% and less than 75% of the total, the 5% measurement uncertainty shall be increased to $[5\% + (3-T/14.5)(1\%)]$ where T is the number of available thimbles.

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SURVEILLANCE REQUIREMENTS (Continued)

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 the COLR 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 $F_0(Z)$ to determine if $F_0(Z)$ is within its limit whenever F_{xy}^C exceeds F_{xy}^L .
- 4.2.2.3 When $F_0(Z)$ is measured pursuant to specification 4.10.2.2, an overall measured $F_0(Z)$ shall be obtained from a power distribution map and increased by 3% to account for manufacturing tolerances and further increased by 5%* to account for measurement uncertainty.

* For Cycle 11, when the number of available movable detector thimbles is greater than or equal to 50% and less than 75% of the total, the 5% measurement uncertainty shall be increased to $[5\% + (3-T/14.5)(1\%)]$ where T is the number of available thimbles.

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SURVEILLANCE REQUIREMENTS

4.2.3.1 $F_{\Delta H}^N$ shall be determined to be within its limit by using the movable incore detectors to obtain a power distribution map:

- a. Prior to operation above 75% of RATED THERMAL POWER after each fuel loading, and
- b. At least once per 31 Effective Full Power Days.
- c. The provisions of Specification 4.0.4 are not applicable.

4.2.3.2 The measured $F_{\Delta H}^N$ of 4.2.3.1 above, shall be increased by 4%* for measurement uncertainty.

* For Cycle 11, when the number of available movable detector thimbles is greater than or equal to 50% and less than 75% of the total, the 4% measurement uncertainty shall be increased to $[4\% + (3-T/14.5)(1\%)]$ where T is the number of available thimbles.

INSTRUMENTATION

MOVABLE INCORE DETECTORS

LIMITING CONDITION FOR OPERATION

3.3.3.2 The movable incore detection system shall be OPERABLE with:

- a. At least 75%* of the detector thimbles,
- b. A minimum of 2 detector thimbles per core quadrant, and
- c. Sufficient movable detectors, drive, and readout equipment to map these thimbles.

APPLICABILITY: When the movable incore detection system is used for:

- a. Recalibration of the excore neutron flux detection system,
- b. Monitoring the QUADRANT POWER TILT RATIO, or
- c. Measurement of $F_{\Delta H}^N$, $F_Q(Z)$ and F_{xy} .

ACTION:

With the movable incore detection system inoperable, do not use the system for the above applicable monitoring or calibration functions. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.2 The movable incore detection system shall be demonstrated OPERABLE at least once per 24 hours by normalizing each detector output to be used during its use when required for:

- a. Recalibration of the excore neutron flux detection system, or
- b. Monitoring the QUADRANT POWER TILT RATIO, or
- c. Measurement of $F_{\Delta H}^N$, $F_Q(z)$ and F_{xy} .

* For Cycle 11, when the number of available movable detector thimbles is greater than 50% but less than 75% of the total, the movable incore system can be considered OPERABLE provided the $F_{\Delta H}^N$, $F_Q(z)$ and F_{xy} uncertainties are appropriately adjusted. Also there should be a minimum of four thimbles available per quadrant, where quadrant includes both horizontal-vertical and diagonally-bounded quadrants (eight individual quadrants in total).