

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

1. Moderator Temperature Coefficient BOL and EOL limits and 60 ppm and 300 ppm surveillance limits for Specification 3.1.3,
 2. Shutdown Bank Insertion Limit for Specification 3.1.5,
 3. Control Bank Insertion Limits for Specification 3.1.6,
 4. Axial Flux Difference limits for Specification 3.2.3,
 5. Heat Flux Hot Channel Factor for Specification 3.2.1,
 6. Nuclear Enthalpy Rise Hot Channel Factor for Specification 3.2.2,
 7. Overtemperature and Overpower Delta T setpoint parameter values for Specification 3.3.1,
 8. Accumulator and Refueling Water Storage Tank boron concentration limits for Specification 3.5.1 and 3.5.4,
 9. Reactor Coolant System and refueling canal boron concentration limits for Specification 3.9.1,
 10. Spent fuel pool boron concentration limits for Specification 3.7.15,
 11. SHUTDOWN MARGIN for Specification 3.1.1,
 12. 31 EFPD Surveillance Penalty Factors for Specifications 3.2.1 and 3.2.2, and
 13. Reactor Makeup Water Pumps Combined Flow Rates limit for Specifications 3.3.9 and 3.9.2.
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:
1. WCAP-9272-P-A, "WESTINGHOUSE RELOAD SAFETY EVALUATION METHODOLOGY" (W Proprietary).
 2. WCAP-10266-P-A, "THE 1981 VERSION OF WESTINGHOUSE EVALUATION MODEL USING BASH CODE" (W Proprietary).

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

than the measured factor is of the current limit, additional actions must be taken. These actions are to meet the $F_q(X,Y,Z)$ limit with the last $F^M_q(X,Y,Z)$ increased by the appropriate factor specified in the COLR or to evaluate $F_q(X,Y,Z)$ prior to the projected point in time when the extrapolated values are expected to exceed the extrapolated limits. These alternative requirements attempt to prevent $F_q(X,Y,Z)$ from exceeding its limit for any significant period of time without detection using the best available data. $F^M_q(X,Y,Z)$ is not required to be extrapolated for the initial flux map taken after reaching equilibrium conditions since the initial flux map establishes the baseline measurement for future trending. Also, extrapolation of $F^M_q(X,Y,Z)$ limits are not valid for core locations that were previously rodded, or for core locations that were previously within $\pm 2\%$ of the core height about the demand position of the rod tip.

$F_q(X,Y,Z)$ is verified at power levels $\geq 10\%$ RTP above the THERMAL POWER of its last verification, 12 hours after achieving equilibrium conditions to ensure that $F_q(X,Y,Z)$ is within its limit at higher power levels.

The Surveillance Frequency of 31 EFPD is adequate to monitor the change of power distribution with core burnup. The Surveillance may be done more frequently if required by the results of $F_q(X,Y,Z)$ evaluations.

The Frequency of 31 EFPD is adequate to monitor the change of power distribution because such a change is sufficiently slow, when the plant is operated in accordance with the TS, to preclude adverse peaking factors between 31 day surveillances.

REFERENCES

1. 10 CFR 50.46.
2. UFSAR Section 15.4.8.
3. 10 CFR 50, Appendix A, GDC 26.
4. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
5. DPC-NE-2011PA "Duke Power Company Nuclear Design Methodology for Core Operating Limits of Westinghouse Reactors".

BASES

SURVEILLANCE REQUIREMENTS (continued)

This Surveillance verifies that the AFD, as indicated by the NIS excore channel, is within its specified limits and is consistent with the status of the AFD monitor alarm. With the AFD monitor alarm inoperable, the AFD is monitored every hour to detect operation outside its limit. The Frequency of 1 hour is based on operating experience regarding the amount of time required to vary the AFD, and the fact that the AFD is closely monitored. With the AFD monitor alarm OPERABLE, the Surveillance Frequency of 7 days is adequate considering that the AFD is monitored by a computer and any deviation from requirements is alarmed.

REFERENCES

1. DPC-NE-2011PA, "Duke Power Company Nuclear Design Methodology for Core Operating Limits of Westinghouse Reactors".
2. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
3. UFSAR, Chapter 7.