

REACTOR COOLANT SYSTEM

CORE BARREL MOVEMENT

LIMITING CONDITION FOR OPERATION

3.4.11 Core barrel movement shall be limited to less than the Amplitude Probability Distribution (APD) and Spectral Analysis (SA) Alert Levels for the applicable THERMAL POWER level.

APPLICABILITY: MODE 1.

ACTION:

- a. With the APD and/or SA exceeding their applicable Alert Levels, POWER OPERATION may proceed provided the following actions are taken:

1. APD shall be measured and processed at least once per 24 hours,
2. SA shall be measured at least once per 24 hours and shall be processed at least once per 7 days, and
3. A Special Report, identifying the cause(s) for exceeding the applicable Alert Level, shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within ~~10~~³⁰ days of detection.

- ~~b. With the APD and/or SA exceeding their applicable Action Levels, within 1 hour reduce THERMAL POWER by $\geq 25\%$ of RATED THERMAL POWER and within the next 2 hours demonstrate, through monitoring of the ex-core neutron detectors, that APD and SA~~

- b. With the APD and/or SA exceeding their applicable Action Levels, measure and process APD and SA data within 24 hours to determine if the core barrel motion is exceeding its limits. With the core barrel motion exceeding its limits, reduce the core barrel motion to within its Action Levels within the next 24 hours or be in HOT STANDBY within the following 6 hours.

- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

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CALVERT CLIFFS - UNIT 1 & 2 3/4 4-29

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SURVEILLANCE REQUIREMENTS

4.4.11.1 Baseline Monitoring Core barrel movement Alert Levels and Action Levels as determined by APD and SA monitoring of the excore neutron detectors, shall be determined at nominal THERMAL POWER levels of 25%, 50%, 75% and 100% of RATED THERMAL POWER during the reactor startup test program; these Alert Levels and Action Levels shall be reported in a Special Report pursuant to Specification 6.9.2 within 31 days after initially reaching 100% of RATED THERMAL POWER.

4.4.11.2 Routine Monitoring Core barrel movement shall be determined to be less than the APD and SA Alert Levels by using the excore neutron detectors to measure APD and SA at the following frequencies:

- a. APD data shall be measured ~~at least once per 24 hours and~~ *and* ~~shall be~~ processed at least once per 7 days.
- b. SA data shall be measured and processed at least once per 31 days.

~~4.4.11.3 Reports The results of all periodic APD and SA monitoring shall be included in the Annual Operating Report for the period in which the monitoring was performed.~~

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BASES

3/4.4.10 STRUCTURAL INTEGRITY

The inspection programs for the ASME Code Class 1, 2 and 3 components ensure that the structural integrity of these components will be maintained at an acceptable level throughout the life of the plant. To the extent applicable, the inspection program for these components is in compliance with Section XI of the ASME Boiler and Pressure Vessel Code.

3/4.4.11 CORE BARREL MOVEMENT

This specification is provided to ensure early detection of excessive core barrel movement if it should occur. Core barrel movement will be detected by using four excore neutron detectors to obtain Amplitude Probability Distribution (APD) and Spectral Analysis (SA). Baseline core barrel movement Alert Levels and Action Levels at nominal THERMAL POWER levels of 25%, 50%, 75% and 100% of RATED THERMAL POWER will be determined during the reactor startup test program.

A modification to the required monitoring program may be justified by an analysis of the data obtained and by an examination of the affected parts during the plant shutdown at the end of the first fuel cycle.

3/4.4.12 LETDOWN LINE EXCESS FLOW

This specification is provided to ensure that the bypass valve for the excess flow check valve in the letdown line will be maintained closed during plant operation. This bypass valve is required to be closed to ensure that the effects of a pipe rupture downstream of this valve will not exceed the accident analyses assumptions.

Data from these detectors is to be reduced in ~~two~~ forms.

RMS values are computed from the Amplitude Probability Density (APD) of the signal amplitude. These RMS magnitudes include variations due both to various neutronic effects and internal motion. Consequently, these signals alone can only provide a gross measure of CSB motion. A more accurate assessment of CSB motion is obtained from the Auto and Cross Power Spectral Densities (PSD, XPSD), phase (ϕ) and coherence (COH) of these signals. These data result from a Spectral Analysis (SA) of the excore detector signals.