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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

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POSITION INDICATION SYSTEMS - OPERATING

LIMITING CONDITION FOR OPERATION

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3.1.3.2 The Digital Rod Position Indication System and the Demand Position Indication System shall be OPERABLE and capable of determining the control rod positions within  $\pm 12$  steps.

APPLICABILITY: MODES 1 and 2.

ACTION:

- a. With a maximum of one digital rod position indicator per bank inoperable:
  1. Determine the position of the nonindicating rod(s) indirectly by the movable incore detectors at least once per 8 hours and immediately after any motion of the nonindicating rod which exceeds 24 steps in one direction since the last determination of the rod's position, or
  2. With four loops operating, reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours, or
  3. With three loops operating, reduce THERMAL POWER to less than 32% of RATED THERMAL POWER within 8 hours.
- b. With a maximum of one demand position indicator per bank inoperable:
  1. Verify that all digital rod position indicators for the affected bank are OPERABLE and that the most withdrawn rod and the least withdrawn rod of the bank are within a maximum of 12 steps of each other at least once per 8 hours, or
  2. With four loops operating, reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours, or
  3. With three loops operating, reduce THERMAL POWER to less than 32% of RATED THERMAL POWER within 8 hours.

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4.1.3.2.1 Each digital rod position indicator shall be determined to be OPERABLE by verifying that the Demand Position Indication System and the Digital Rod Position Indication System agree within 12 steps at least once per 12 hours except during time intervals when the rod position deviation monitor is inoperable, then compare the Demand Position Indication System and the Digital Rod Position Indication System at least once per 4 hours.

4.1.3.2.2 Each of the above required digital rod position indicator(s) shall be determined to be OPERABLE by verifying that the digital rod position indicators agree with the demand position indicators within 12 steps when exercised over the full-range of rod travel at least once per 24 months.

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## 3/4.10 SPECIAL TEST EXCEPTIONS

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#### 3/4.10.1 SHUTDOWN MARGIN

This special test exception provides that a minimum amount of control rod worth is immediately available for reactivity control when tests are performed for control rod worth measurement. This special test exception is required to permit the periodic verification of the actual versus predicted core reactivity condition occurring as a result of fuel burnup or fuel cycling operations.

#### 3/4.10.2 GROUP HEIGHT, INSERTION, AND POWER DISTRIBUTION LIMITS

This special test exception permits individual control rods to be positioned outside of their normal group heights and insertion limits during the performance of such PHYSICS TESTS as those required to: (1) measure control rod worth, and (2) determine the reactor stability index and damping factor under xenon oscillation conditions.

#### 3/4.10.3 PHYSICS TESTS

This special test exception permits PHYSICS TESTS to be performed at less than or equal to 5% of RATED THERMAL POWER with the RCS  $T_{avg}$  slightly lower than normally allowed so that the fundamental nuclear characteristics of the core and related instrumentation can be verified. In order for various characteristics to be accurately measured, it is at times necessary to operate outside the normal restrictions of these Technical Specifications. For instance, to measure the moderator temperature coefficient at BOL, it is necessary to position the various control rods at heights which may not normally be allowed by Specification 3.1.3.6 which in turn may cause the RCS  $T_{avg}$  to fall slightly below the minimum temperature of Specification 3.1.1.4.

#### 3/4.10.4 REACTOR COOLANT LOOPS

This special test exception permits reactor criticality under no flow conditions and is required to perform certain STARTUP and PHYSICS TESTS while at low THERMAL POWER levels.

#### 3/4.10.5 DELETED

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