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## Industry/TSTF Standard Technical Specification Change Traveler

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**Add new Condition C for 3.2.1 Actions**

NUREGs Affected:  1430    1431    1432    1433    1434

Classification: 1) Technical Change

Recommended for CLIP?: No

Priority: 3)Low

Simple or Complex Change: Complex

Correction or Improvement: Correction

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### 1.0 DESCRIPTION

A new Condition C is added to NUREG-1430, TS 3.2.1, for the condition, "Regulating rod groups sequence or overlap requirements not met." Required Action C.1 requires restoration of the regulating groups to within limits within 2 hours. Condition A is revised to remove reference to sequence or overlap, or any combination, not met.

### 2.0 PROPOSED CHANGE

NUREG-1430, Specification 3.2.1, Condition A is revised to eliminate the phrase, "or sequence or overlap, or any combination, not met." A new Condition C is created to address regulating rod sequence or overlap not within limit. Condition C states, "Regulating rod groups sequence or overlap requirements not met." In this Condition, Required Action C.1 requires restoration of the regulating rod groups sequence and overlap to within limits within 2 hours.

In summary, this change provides specific ACTIONS to be followed when regulating rod group sequence or overlap is not met. The Bases are revised to reflect the changes to the Technical Specifications.

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### 3.0 BACKGROUND

The status of the regulating rods are an initial condition assumption used in all safety analyses that assume rod insertion upon reactor trip. The insertion limits, sequence, and overlap of the regulating rods directly affect the core power distributions, the worth of a potential ejected rod, the assumptions of available Shutdown Margin (SDM), and the initial reactivity insertion rate.

The applicable criteria for these reactivity and power distribution design requirements are described in 10 CFR 50, Appendix A, GDC 10, "Reactor Design," GDC-26, "Reactivity Control System Redundancy-and Capability," GDC 28, "Reactivity Limits," and in 10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light Water Nuclear Power Plants."

Limits on regulating rod insertion have been established, and all rod positions are monitored and controlled during power operation to ensure that the power distribution and reactivity limits defined by the design power peaking and SDM limits are not violated.

The regulating rod groups operate with a predetermined amount of position overlap, in order to approximate a linear relation between rod worth and rod position (integral rod worth). To achieve this approximately linear relationship, the regulating rod groups are withdrawn and operated in a predetermined sequence. The automatic control system controls reactivity by moving the regulating rod groups in sequence within analyzed ranges. The group sequence and overlap limits are specified in the COLR.

NUREG-1430, Specification 3.2.1, ACTION A, applies when regulating rod group insertion limits, sequence or overlap requirements are not met. The existing actions to monitor hot channel factors and restore within 24 hours are sufficient for not meeting the rod group insertion limits, but do not adequately address not meeting the sequence or overlap limits. Therefore, a new Condition, Condition C, is created to address regulating rod group sequence or overlap requirements not being met. This new Condition requires restoration within 2 hours.

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#### 4.0 TECHNICAL ANALYSIS

The Required Actions for Condition A provide insufficient remedial measures should the regulating group sequence or overlap requirements not be met. Specifically, reactivity considerations associated with these conditions are not addressed by Required Actions A. 1 and A.2. Therefore, Condition C is added to address this situation. Condition C requires restoration of the sequence or overlap to within limits within 2 hours. Otherwise, a plant shutdown is required. This Completion Time is reasonable to complete the action and restore group sequence or overlap to within limits. The Required Actions and Completions Times are consistent with those in similar Specifications in the WOG and CEOG NUREGs (NUREGs 1431 and 1432). In addition, the proposed Completion Time of 2 hours is reasonable because the likelihood of the simultaneous occurrence of either an LOCA or a non-LOCA event during this short period, together with an inadequate power distribution or reactivity capability, is sufficiently low.

As discussed in the Applicable Safety Analysis section of the Bases, SDM requirements are met by ensuring the regulating and safety rod positions are maintained above pre-designated insertion limits. The existing and proposed Conditions of LCO 3.2.1 prevent long term operation with rods inserted in restricted operation regions of the core or with overlap or sequencing limits exceeded in order to both limit power peaking and minimize possible long term effects on SDM. Condition D requires immediate action to restore SDM if rod insertion limits are exceeded. In addition, proposed Condition C limits the time in which overlap or sequencing limits may be exceeded to 2 hours where 24 hours is allowed by the existing specification. Provided the rods remain above the specified insertion limits, exceeding sequencing or overlap limits for short durations will not result in a noticeable impact on SDM.

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## 5.0 REGULATORY ANALYSIS

### 5.1 No Significant Hazards Consideration

A change to NUREG-1432 is proposed to provide an appropriate Condition and Required Action for events involving regulating or safety rod overlap and/or sequencing limits being exceeded.

The TSTF has evaluated whether or not a significant hazards consideration is involved with the proposed generic change by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed change adds a new Condition to NUREG-1430, Specification 3.2.1, "Regulating Rod Insertion Limits," to address the condition of rod group sequence or overlap requirements not being met. Regulating rod group sequence or overlap requirements not being met are not an initial condition of any accident previously evaluated. As a result, the probability of any accident previously evaluated is not affected. Regulating rod group sequence or overlap requirements are assumptions in the mitigation of accidents previously evaluated. However, the consequences of any accident previously evaluated during the use of the proposed ACTION are no different from the consequences of the same accident during the use of the existing ACTION. In addition, this change lessens the time during which operation may continue with the rod group sequence or overlap requirements not met. Therefore, the consequences of any accident previously evaluated are not significantly increases.

Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed change adds a new Condition to NUREG-1430, Specification 3.2.1, "Regulating Rod Insertion Limits," to address the condition of rod group sequence or overlap requirements not being met. There are no changes in plant design or methods of operation associated with this change.

Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

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The proposed change adds a new Condition to NUREG-1430, Specification 3.2.1, "Regulating Rod Insertion Limits," to address the condition of rod group sequence or overlap requirements not being met. The proposed change provides more appropriate remedial and compensatory actions for the condition of the regulating rod group sequence or overlap requirements not being met. The proposed change also lessens the time during which reactor operation may continue with the sequence or overlap requirements not met.

Therefore, this change does not involve a significant reduction in a margin of safety.

Based on the above, the TSTF concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

#### 5.1 Applicable Regulatory Requirements/Criteria

The applicable regulatory criteria for the reactivity and power distribution design requirements are described in 10 CFR 50, Appendix A, GDC 10, "Reactor Design," GDC-26, "Reactivity Control System Redundancy-and Capability," GDC 28, "Reactivity Limits," and in 10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light Water Nuclear Power Plants." Compliance with these criteria is not affected by the proposed change, as the change only addresses remedial and compensatory measures taken when the design condition is not met.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the approval of the proposed change will not be inimical to the common defense and security or to the health and safety of the public.

#### 6.0 ENVIRONMENTAL CONSIDERATIONS

The proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

#### 7.0 REFERENCES

None

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### Revision History

**OG Revision 0**

**Revision Status: Closed**

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22-Sep-02

**OG Revision 0****Revision Status: Closed**

Revision Proposed by: ANO

Revision Description:  
Original Issue

**Owners Group Review Information**

Date Originated by OG: 29-Dec-98

Owners Group Comments  
(No Comments)

Owners Group Resolution: Approved Date: 19-Mar-99

**TSTF Review Information**

TSTF Received Date: 19-Mar-99 Date Distributed for Review 17-Jun-99

OG Review Completed:  BWOG  WOG  CEOG  BWROG

TSTF Comments:

Applicable to BWOG only. Make Condition C hours to be consistent with CE and WOG. Modify justification.

TSTF Resolution: Approved Date: 07-Jul-99

**NRC Review Information**

NRC Received Date: 20-Jul-99

NRC Comments:

The Reactor Systems Branch has reviewed the proposed changes (documented in the attached TSTF-345) to BAW Standard Technical Specification (STS) 3.2.1 requested by the Technical Specifications Branch. The proposal would add a new Condition C that reads: "Regulating rod groups sequence or overlap requirements not met," and Required Action C.1 that reads: "Restore regulating groups to within limits," and a Completion Time of 2 hours in the BAW STS. The following is our review comments:

1. The proposed STS 3.2.1 Condition C is an improvement over the existing BAW STS 3.2.1 Condition A, which does not contain sufficient remedial measures should the regulating control rod group sequence or overlap requirements not be met. The added TS assures that if the control banks are found to be out of sequence or in the wrong overlap configuration, they are required to be restored to meet the sequence and overlap limits specified in the Core Operating Limits Report (COLR). The proposed TS is also consistent with Action B.2 of Westinghouse (WOG) STS 3.1.6 (NUREG 1431, Revision 2). Therefore, we conclude that the added STS is acceptable.
2. The proposed Completion Time of 2 hours is reasonable because the likelihood of the simultaneous occurrence of either an LOCA or a non-LOCA event during this short period, together with an inadequate power distribution or reactivity capability, is sufficiently low. It is also consistent with the Completion Time for a comparable action (B.2) in WOG STS 3.1.6. Therefore, we conclude that the proposed Completion Time of 2 hours is acceptable.
3. In order to assure that the adequate shutdown margin requirement (SDM) is maintained for the conditions with the regulating group out of sequence or in the wrong overlap configuration, the following actions should be considered to include as part of action items in BAW STS 3.2.1 Condition C:
  - To verify in one hour that the SDM meets the required limit specified in the COLR, or
  - To initiate boration and restore the SDM to within the required limit in one hour.

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**OG Revision 0****Revision Status: Closed**

The actions to verify or to restore the required SDM are comparable to actions included in WOG STS 3.1.6 Required Actions B.1.1 and B.1.2.

8/21/02 - In conversation between Bob Tjader of the NRC and David Bice of the CEOG TSTF, it was determined that the restoration periods of Conditions A and C, along with the rod insertion requirements of Condition D, adequately address any SDM issues that may result from rod deviations. Therefore, it is not necessary to add redundant SDM verifications and actions to the newly proposed Condition C. However, the staff does require a short discussion relevant to SDM issues to be added to Section 4.0 of the submittal. The TSTF agrees with this request.

Final Resolution: Superseded by Revision

Final Resolution Date: 29-Nov-01

**TSTF Revision 1****Revision Status: Active****Next Action: NRC**

Revision Proposed by: TSTF

Revision Description:

Based on NRC comments and subsequent followup conversation between Bob Tjader and David Bice, a discussion is added to Section 4.0 of the submittal relevant to SDM requirements.

**TSTF Review Information**

TSTF Received Date: 12-Sep-02

Date Distributed for Review 12-Sep-02

OG Review Completed:  BWOG  WOG  CEOG  BWROG

TSTF Comments:

BWOG and CEOG chairmen believe recommended changes are not consistent with the plant design. To discuss with NRC.

TSTF Resolution: Approved Date: 12-Sep-02

**NRC Review Information**

NRC Received Date: 30-Sep-02

**Affected Technical Specifications**

LCO 3.2.1 Bases Regulating Rod Insertion Limits

Action 3.2.1 Bases Regulating Rod Insertion Limits

Action 3.2.1.A Regulating Rod Insertion Limits

Action 3.2.1.A Bases Regulating Rod Insertion Limits

Action 3.2.1.B Bases Regulating Rod Insertion Limits

Action 3.2.1.C Regulating Rod Insertion Limits

Change Description: Renamed Action D

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Action 3.2.1.C      Regulating Rod Insertion Limits  
Change Description:    New Action

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Action 3.2.1.C Bases    Regulating Rod Insertion Limits  
Change Description:    Renamed Action D

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Action 3.2.1.C Bases    Regulating Rod Insertion Limits  
Change Description:    New Action

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Action 3.2.1.D      Regulating Rod Insertion Limits  
Change Description:    Renamed Action E

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Action 3.2.1.D Bases    Regulating Rod Insertion Limits  
Change Description:    Renamed Action E

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3.2 POWER DISTRIBUTION LIMITS

3.2.1 Regulating Rod Insertion Limits

LCO 3.2.1 Regulating rod groups shall be within the physical insertion, sequence, and overlap limits specified in the COLR.

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**- NOTE -**  
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Not required for any regulating rod repositioned to perform SR 3.1.4.2.  
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APPLICABILITY: MODES 1 and 2.

**ACTIONS**

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Regulating rod groups inserted in restricted operational region <del>or sequence or overlap, or any combination, not met.</del>	<p>A.1 -----NOTE----- Only required when THERMAL POWER is &gt; 20% RTP. ----- - Perform SR 3.2.5.1</p> <p><b>AND</b></p> <p>A.2 Restore regulating rod groups to within limits.</p>	<p>Once per 2 hours</p> <p>24 hours from discovery of failure to meet the LCO</p>
B. Required Action and associated Completion Time of Condition A not met.	B.1 Reduce THERMAL POWER to less than or equal to THERMAL POWER allowed by regulating rod group insertion limits.	2 hours
<del>C. Regulating rod groups sequence or overlap requirements not met.</del>	<del>C.1 Restore regulating rod groups sequence and overlap to within limits.</del>	<del>2 hours</del>

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p><del>DE</del>. Regulating rod groups inserted in unacceptable operation region.</p>	<p><del>DE</del>.1 Initiate boration to restore SDM to within the limit as specified in the COLR.</p> <p>AND</p>	15 minutes
	<p><del>DE</del>.2.1 Restore regulating rod groups to within restricted operation region.</p> <p>OR</p>	2 hours
	<p><del>DE</del>.2.2 Reduce THERMAL POWER to less than or equal to the THERMAL POWER allowed by the regulating rod group insertion limits.</p>	2 hours
<p><del>ED</del>. Required Actions and associated Completion Times of Conditions C or D not met.</p>	<p><del>ED</del>.1 Be in MODE 3.</p>	6 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
<p>SR 3.2.1.1 Verify regulating rod groups are within the sequence and overlap limits as specified in the COLR.</p>	12 hours
<p>SR 3.2.1.2 Verify regulating rod groups meet the insertion limits as specified in the COLR.</p>	12 hours
<p>SR 3.2.1.3 Verify SDM is within the limit as specified in the COLR.</p>	Within 4 hours prior to achieving criticality

## BASES

## APPLICABLE SAFETY ANALYSES (continued)

the APSR position, the AXIAL POWER IMBALANCE, and the QPT. This potential for fuel cladding damage exists because changes in the power distribution can cause increased power peaking and correspondingly increased local linear heat rates (LHRs).

The SDM requirement is met by limiting the regulating and safety rod insertion limits such that sufficient inserted reactivity is available in the rods to shut down the reactor to hot zero power with a reactivity margin that assumes that the maximum worth rod remains fully withdrawn upon trip (Ref. 4). Operation at the SDM based regulating rod insertion limit may also indicate that the maximum ejected rod worth could be equal to the limiting value.

Operation at the regulating rod insertion limits may cause the local core power to approach the maximum linear heat generation rate or peaking factor with the allowed QPT present.

The regulating rod and safety rod insertion limits ensure that the safety analysis assumptions for SDM, ejected rod worth, and power distribution peaking factors remain valid (Refs. 3, 5, and 6).

The regulating rod insertion limits LCO satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii).

## LCO

The limits on ~~CONTROL ROD~~ regulating rod group physical insertion, sequence, ~~including group~~ and overlap, and insertion positions as defined in the COLR, must be maintained because they ensure that the resulting power distribution is within the range of analyzed power distributions and that the SDM and ejected rod worth are maintained.

The overlap between regulating groups provides more uniform rates of reactivity insertion and withdrawal and is imposed to maintain acceptable power peaking during regulating rod motion.

Error adjusted maximum allowable setpoints for regulating rod insertion are provided in the COLR. The setpoints are derived by an adjustment of the measurement system independent limits to allow for THERMAL POWER level uncertainty and rod position errors.

Actual alarm setpoints implemented in the unit may be more restrictive than the maximum allowable setpoint values to provide additional conservatism between the actual alarm setpoint and the measurement system independent limit.

## BASES

## LCO (continued)

LCO 3.2.1 has been modified by a Note that suspends the LCO requirement for those regulating rods not within the limits of the COLR solely due to testing in accordance with SR 3.1.4.2, which verifies the freedom of the rods to move. This SR may require the regulating rods to move below the LCO limit, which would otherwise violate the LCO.

## APPLICABILITY

The regulating rod sequence, overlap, and physical insertion limits shall be maintained with the reactor in MODES 1 and 2. These limits maintain the validity of the assumed power distribution, ejected rod worth, SDM, and reactivity insertion rate assumptions used in the safety analyses. Applicability in MODES 3, 4, and 5 is not required, because neither the power distribution nor ejected rod worth assumptions are exceeded in these MODES. SDM in MODES 3, 4, and 5 is governed by LCO 3.1.1, "SHUTDOWN MARGIN (SDM)."

## ACTIONS

The regulating rod insertion alarm setpoints provided in the COLR are based on both the initial conditions assumed in the accident analyses and on the SDM. Specifically, separate insertion setpoints are specified to determine whether the unit is operating in violation of the initial conditions (e.g., the range of power distributions) assumed in the accident analyses or whether the unit is in violation of the SDM or ejected rod worth limits. Separate insertion limits are provided because different Required Actions and Completion Times apply, depending on which insertion limit has been violated. The area between the boundaries of acceptable operation and unacceptable operation, illustrated on the regulating rod insertion limit figures in the COLR, is the restricted region. The actions required when operation occurs in the restricted region are described under Condition A. [The action required when operation occurs with the regulating rod group sequence or overlap requirements not met is described under Condition C.](#) The actions required when operation occurs in the unacceptable region are described under Condition D.

## A.1

Operation with the regulating rods in the restricted region shown on the regulating rod insertion figures specified in the COLR ~~or with any group sequence or overlap outside the limits specified in the COLR~~ potentially violates the LOCA LHR limits ( $F_Q(Z)$  limits), or the loss of flow accident DNB peaking limits ( $F_{\Delta H}^N$  limits). ~~The design calculations assume no deviation in nominal overlap between regulating rod groups. However, deviations of 5% of the core height above or below the nominal overlap may be typical and do not cause significant differences in core reactivity, in power distribution, or in rod worth, relative to the design calculations.~~

## BASES

## ACTIONS (continued)

~~The group sequence must be maintained because design calculations assume the regulating rods withdraw and insert in a predetermined order.~~

For verification that  $F_Q(Z)$  and  $F_{\Delta H}^N$  are within their limits, SR 3.2.5.1 is performed using the Incore Detector System to obtain a three dimensional power distribution map. Verification that  $F_Q(Z)$  and  $F_{\Delta H}^N$  are within their limits ensures that operation with the regulating rods inserted into the restricted region does not violate the ECCS or DNB criteria (Ref. 7). The required Completion Time of 2 hours is acceptable in that it allows the operator sufficient time for obtaining a power distribution map and for verifying the power peaking factors. Repeating SR 3.2.5.1 every 2 hours is acceptable because it ensures that continued verification of the power peaking factors is performed as core conditions (primarily regulating rod insertion and induced xenon redistribution) change.

Monitoring the power peaking factors  $F_Q(Z)$  and  $F_{\Delta H}^N$  does not provide verification that the reactivity insertion rate on the rod trip or the ejected rod worth limit is maintained, because worth is a reactivity parameter rather than a power peaking parameter. However, if the COLR figures do not show that a rod insertion limit is ejected rod worth limited, then the ejected rod worth is no more limiting than the SDM based rod insertion limit in the core design (Ref. 8). Ejected rod worth limits are independently maintained by the Required Actions of Conditions A and ~~DE~~.

Required Action A.1 is modified by a Note that requires the performance of SR 3.2.5.1 only when THERMAL POWER is greater than 20% RTP. This establishes a Required Action that is consistent with the Applicability of LCO 3.2.5, "Power Peaking Factors."

## A.2

Indefinite operation with the regulating rods inserted in the restricted region, ~~or in violation of the group sequence or overlap limits~~, is not prudent. Even if power peaking monitoring per Required Action A.1 is continued, reactivity limits may not be met and the abnormal regulating rod insertion ~~or group configuration~~ may cause an adverse xenon redistribution, may cause the limits on AXIAL POWER IMBALANCE to be exceeded, or may adversely affect the long term fuel depletion pattern. Therefore, ~~power peaking monitoring is allowed for up to restoration of~~ regulating groups to within their limits is required within 24 hours after discovery of failure to meet the requirements of this LCO. This required Completion Time is reasonable based on the low probability of an event occurring simultaneously with the limit out of specification in this relatively short time period. In addition, it precludes long term depletion

## BASES

## ACTIONS (continued)

with abnormal group insertions ~~or configurations~~, thereby limiting the potential for an adverse xenon redistribution.

## B.1

If the regulating rods cannot be ~~restored~~ positioned within the acceptable ~~operating region~~ limits shown on the figures in the COLR within the required Completion Time (i.e., Required Action A.2 not met), then the limits can be restored by reducing the THERMAL POWER to a value allowed by the regulating rod insertion limits in the COLR. The required Completion Time of 2 hours is sufficient to allow the operator to complete the power reduction in an orderly manner and without challenging the plant systems. Operation for up to 2 hours more in the restricted region shown in the COLR is acceptable, based on the low probability of an event occurring simultaneously with the ~~limit~~ regulating rod position out of specification in this relatively short time period. In addition, it precludes long term depletion with abnormal group insertions or configurations and limits the potential for an adverse xenon redistribution.

## C.1

Operation with the regulating rod groups out of sequence or with the group overlap limits exceeded may represent a condition beyond the assumptions used in the safety analyses. The design calculations assume no deviation in nominal overlap between regulating rod groups. However, small deviations in group overlap, as allowed by the COLR, may occur and would not cause significant differences in core reactivity, in power distribution, or rod worth, relative to the design calculations. Group sequence must be maintained because design calculations assume the regulating rods withdraw and insert in a predetermined order. The Completion Time of 2 hours is intended to restrict operation in this condition because of the potential severity associated with gross violations of group sequence or overlap requirements. The 2 hour Completion Time is based on operating experience which supports the restoration time without unnecessarily challenging unit operation and the low probability of an event occurring simultaneously with the limit out of specification.

## BASES

## ACTIONS (continued)

DE.1

Operation in the unacceptable region shown on the figures in the COLR corresponds to power operation with an SDM less than the minimum required value or with the ejected rod worth greater than the allowable value. The regulating rods may be inserted too far to provide sufficient negative reactivity insertion following a reactor trip and the ejected rod worth may exceed its initial condition limit. Therefore, the RCS boron concentration must be increased to restore the regulating rod insertion to a value that preserves the SDM and ejected rod worth limits. The RCS boration must occur as described in Section B 3.1.1. The required Completion Time of 15 minutes to initiate boration is reasonable, based on limiting the potential xenon redistribution, the low probability of an accident occurring in this relatively short time period, and the number of steps required to complete this Action. This period allows the operator sufficient time for aligning the required valves and for starting the boric acid pumps. Boration continues until the regulating rod group positions are restored to at least within the restricted operation~~a~~ region, which restores the minimum SDM capability and reduces the potential ejected rod worth to within its limit.

DE.2.1

The required Completion Time of 2 hours from initial discovery of a regulating rod group in the unacceptable region until its restoration to within the restricted operating region shown on the figures in the COLR allows sufficient time for borated water to enter the RCS from the chemical addition and makeup systems, thereby allowing the regulating rods to be withdrawn to the restricted region. Operation in the restricted region for up to an additional 2 hours is reasonable, based on limiting the potential for an adverse xenon redistribution, the low probability of an accident occurring in this relatively short time period, and the number of steps required to complete this Action.

DE.2.2

The SDM and ejected rod worth limit can also be restored by reducing the THERMAL POWER to a value allowed by the regulating rod insertion limits in the COLR. The required Completion Time of 2 hours is sufficient to allow the operator to complete the power reduction in an orderly manner and without challenging the plant systems. Operation for up to 2 hours more in the restricted region shown in the COLR is acceptable, based on the low probability of an event occurring simultaneously with the limit out of specification in this relatively short time period. In addition, it precludes long term depletion with abnormal group insertions or configurations and limits the potential for an adverse xenon redistribution.

BASES

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## ACTIONS (continued)

## ED.1

If the ~~regulating rods cannot be restored to within the acceptable operating limits for the original THERMAL POWER, or if the power reduction cannot be completed within the required Completion Time~~ [Required Actions and associated Completion Times of Conditions C or D are not met](#), then the reactor is placed in MODE 3, in which this LCO does not apply. This Action ensures that the reactor does not continue operating in violation of the peaking limits, the ejected rod worth, the reactivity insertion rate assumed as initial conditions in the accident analyses, or the required minimum SDM assumed in the accident analyses. The required Completion Time of 6 hours is reasonable, based on operating experience regarding the amount of time required to reach MODE 3 from RTP without challenging plant systems.

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