

## Industry/TSTF Standard Technical Specification Change Traveler

Revise completion time for reducing Power Range High trip setpoint from 8 to 72 hours

Priority/Classification 3) Improve Specifications

NUREGs Affected:  1430  1431  1432  1433  1434

Description:

Revise completion time for reducing Power Range High trip setpoint from 8 to 72 hours.

Justification:

As written, the Completion Time of 8 hours to reduce the Power Range Neutron Flux-High trip setpoints presents an unjustified burden on the operation of the plant. A Completion Time of 72 hours will allow time to perform a second flux map to confirm the results, or determine that the condition was temporary, without implementing an unnecessary trip setpoint change, during which there is increased potential for a plant transient and human error. Following a significant power reduction, at least 24 hours are required to re-establish steady state xenon prior to taking a flux map, and approximately 8 to 12 hours to obtain a flux map, and analyze the data. A significant potential for human error can be created through requiring the trip setpoints to be reduced within the same time frame that a unit power reduction is taking place, and within the current 8 hour period. Setpoint adjustment is estimated to take approximately 4 hours per channel (review of plant condition supportive of removing channels from service, tripping of bistables, setpoint adjustments, and channel restoration), adding 2 hours for necessary initial preparations (procedure preps, calibration equipment checks, obtaining tools and approvals), it is reasonable to expect a total of 18 hours. Further, setpoint changes should only be required for extended operation in this condition. Finally, the Bases for making this setpoint change is exactly the same as the NUREG Bases provided for the 72 hour Completion Time of LCO 3.2.1 Required Action A.4, which is also a setpoint reduction. Therefore, a Completion Time of 72 hours is proposed.

### Revision History

OG Revision 0

Revision Status: Active

Next Action:

Revision Proposed by: Ginna

Revision Description:

Original Issue

### Owners Group Review Information

Date Originated by OG: 09-Nov-95

Owners Group Comments

Ginna # 4

Owners Group Resolution: Approved Date: 09-Nov-95

### TSTF Review Information

TSTF Received Date: 27-Nov-95

Date Distributed for Review 27-Nov-95

OG Review Completed:  BWOG  WOG  CEOG  BWROG

TSTF Comments:

CEOG - Not applicable to CEOG

BWOG - Not applicable

BWROG - Not applicable

TSTF Resolution: Approved Date: 30-Apr-96

4/2/98

**NRC Review Information**

NRC Received Date: 17-Jul-96

NRC Reviewer: R. Tjader

NRC Comments:  
9/18/96 - Approved

Final Resolution: NRC Approves

Final Resolution Date: 18-Sep-96

**Incorporation Into the NUREGs**

File to BBS/LAN Date:

TSTF Informed Date:

TSTF Approved Date:

NUREG Rev Incorporated:

**Affected Technical Specifications**

Action 3.2.1B.A Fq(z) (Fq Methodology)

Action 3.2.1A.A Fq(z) (Fxy Methodology)

Action 3.2.1B.A Bases Fq(z) (Fq Methodology)

Action 3.2.1A.A Bases Fq(z) (Fxy Methodology)

Action 3.2.2.A Nuclear Enthalpy Rise Hot Channel Factor

Action 3.2.2.A Bases Nuclear Enthalpy Rise Hot Channel Factor

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3.2 POWER DISTRIBUTION LIMITS

3.2.1A Heat Flux Hot Channel Factor (F<sub>0</sub>(Z)) (F<sub>xy</sub> Methodology)

LCO 3.2.1A F<sub>0</sub>(Z) shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. F <sub>0</sub> (Z) not within limit.	A.1 Reduce THERMAL POWER ≥ 1% RTP for each 1% F <sub>0</sub> (Z) exceeds limit.	15 minutes
	<u>AND</u>	
	A.2 Reduce AFD acceptable operation limits by the percentage F <sub>0</sub> (Z) exceeds limit.	4 hours
	<u>AND</u>	
	A.3 Reduce Power Range Neutron Flux—High trip setpoints ≥ 1% for each 1% F <sub>0</sub> (Z) exceeds limit.	8 hours
<u>AND</u>		
A.4 Reduce Overpower ΔT trip setpoints ≥ 1% for each 1% F <sub>0</sub> (Z) exceeds limit.	72 hours	
<u>AND</u>		
		(continued)

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3.2 POWER DISTRIBUTION LIMITS

3.2.1B Heat Flux Hot Channel Factor (F<sub>0</sub>(Z)) (F<sub>0</sub> Methodology)

LCO 3.2.1B F<sub>0</sub>(Z), as approximated by F<sub>0</sub><sup>C</sup>(Z) and F<sub>0</sub><sup>U</sup>(Z), shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. F <sub>0</sub> <sup>C</sup> (Z) not within limit.	A.1 Reduce THERMAL POWER ≥ 1% RTP for each 1% F <sub>0</sub> <sup>C</sup> (Z) exceeds limit.	15 minutes
	<u>AND</u>	
	A.2 Reduce Power Range Neutron Flux—High trip setpoints ≥ 1% for each 1% F <sub>0</sub> <sup>C</sup> (Z) exceeds limit.	8 hours
	<u>AND</u>	
	A.3 Reduce Overpower ΔT trip setpoints ≥ 1% for each 1% F <sub>0</sub> <sup>C</sup> (Z) exceeds limit.	72 hours
	<u>AND</u>	
	A.4 Perform SR 3.2.1.1.	Prior to increasing THERMAL POWER above the limit of Required Action A.1

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3.2 POWER DISTRIBUTION LIMITS

3.2.2 Nuclear Enthalpy Rise Hot Channel Factor (F<sub>ΔH</sub><sup>N</sup>)

LCO 3.2.2 F<sub>ΔH</sub><sup>N</sup> shall be within the limits specified in the COLR.

APPLICABILITY: MODE 1.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- Required Actions A.2 and A.3 must be completed whenever Condition A is entered. ----- F<sub>ΔH</sub><sup>N</sup> not within limit.</p>	<p>A.1.1 Restore F<sub>ΔH</sub><sup>N</sup> to within limit.</p>	<p>4 hours</p>
	<p><u>OR</u></p>	
	<p>A.1.2.1 Reduce THERMAL POWER to &lt; 50% RTP.</p>	<p>4 hours</p>
	<p><u>AND</u></p>	
	<p>A.1.2.2 Reduce Power Range Neutron Flux—High trip setpoints to ≤ 55% RTP.</p>	<p>8 hours</p>
<p><u>AND</u></p>		
<p>A.2 Perform SR 3.2.2.1.</p>	<p>24 hours</p>	
<p><u>AND</u></p>	<p>(continued)</p>	

72  
8 hours

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BASES

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APPLICABILITY (continued) reactor coolant to require a limit on the distribution of core power.

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ACTIONS

A.1

Reducing THERMAL POWER by  $\geq 1\%$  for each  $1\%$  by which F<sub>0</sub>(Z) exceeds its limit maintains an acceptable absolute power density. The Completion Time of 15 minutes provides an acceptable time to reduce power in an orderly manner and without allowing the plant to remain in an unacceptable condition for an extended period of time.

A.2

When core peaking factors are sufficiently high that LCO 3.2.3 does not permit operation at RTP, the Acceptable Operation Limits for AFD are scaled down. This percentage reduction is equal to the amount, expressed as a percentage, by which F<sub>0</sub>(Z) exceeds its specified limit. This ensures a near constant maximum linear heat rate in units of kilowatts per foot at the acceptable operation limits. The Completion Time of 4 hours for the change in setpoints is sufficient, considering the small likelihood of a severe transient in this relatively short time period, and the preceding prompt reduction in THERMAL POWER in accordance with Required Action A.1.

A.3

A reduction of the Power Range Neutron High trip setpoints by  $\geq 1\%$  for each  $1\%$  by which F<sub>0</sub>(Z) exceeds its specified limit, is a conservative action for protection against the consequences of severe transients with unanalyzed power distributions. The Completion Time of 8 hours is sufficient, considering the small likelihood of a severe transient in this period, and the preceding prompt reduction in THERMAL POWER in accordance with Required Action A.1.

72

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BASES

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ACTIONS  
(continued)

A.2

A reduction of the Power Range Neutron Flux—High trip setpoints by  $\geq 1\%$  for each  $1\%$  by which  $F_0^C(Z)$  exceeds its limit, is a conservative action for protection against the consequences of severe transients with unanalyzed power distributions. The Completion Time of 8 hours is sufficient considering the small likelihood of a severe transient in this time period and the preceding prompt reduction in THERMAL POWER in accordance with Required Action A.1.

72

A.3

Reduction in the Overpower  $\Delta T$  trip setpoints by  $\geq 1\%$  for each  $1\%$  by which  $F_0^C(Z)$  exceeds its limit, is a conservative action for protection against the consequences of severe transients with unanalyzed power distributions. The Completion Time of 72 hours is sufficient considering the small likelihood of a severe transient in this time period, and the preceding prompt reduction in THERMAL POWER in accordance with Required Action A.1.

A.4

Verification that  $F_0^C(Z)$  has been restored to within its limit, by performing SR 3.2.1.1 prior to increasing THERMAL POWER above the limit imposed by Required Action A.1, ensures that core conditions during operation at higher power levels are consistent with safety analyses assumptions.

B.1

If it is found that the maximum calculated value of  $F_0(Z)$  that can occur during normal maneuvers,  $F_0^V(Z)$ , exceeds its specified limits, there exists a potential for  $F_0^C(Z)$  to become excessively high if a normal operational transient occurs. Reducing the AFD by  $\geq 1\%$  for each  $1\%$  by which  $F_0^V(Z)$  exceeds its limit within the allowed Completion Time of 2 hours, restricts the axial flux distribution such that even if a transient occurred, core peaking factors are not exceeded.

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## BASES

## ACTIONS

A.1.1 (continued)

75% RTP, and within 24 hours after reaching or exceeding 95% RTP. In addition, Required Action A.2 is performed if power ascension is delayed past 24 hours.

A.1.2.1 and A.1.2.2

If the value of  $F_{\Delta H}^N$  is not restored to within its specified limit either by adjusting a misaligned rod or by reducing THERMAL POWER, the alternative option is to reduce THERMAL POWER to < 50% RTP in accordance with Required Action A.1.2.1 and reduce the Power Range Neutron Flux—High to  $\leq 55\%$  RTP in accordance with Required Action A.1.2.2. Reducing RTP to < 50% RTP increases the DNB margin and does not likely cause the DNBR limit to be violated in steady state operation. The reduction in trip setpoints ensures that continuing operation remains at an acceptable low power level with adequate DNBR margin. The allowed Completion Time of 4 hours for Required Action A.1.2.1 is consistent with those allowed for in Required Action A.1.1 and provides an acceptable time to reach the required power level from full power operation without allowing the plant to remain in an unacceptable condition for an extended period of time. The Completion Times of 4 hours for Required Actions A.1.1 and A.1.2.1 are not additive.

The allowed Completion Time of 8 hours to reset the trip setpoints per Required Action A.1.2.2 recognizes that, once power is reduced, the safety analysis assumptions are satisfied and there is no urgent need to reduce the trip setpoints. This is a sensitive operation that may inadvertently trip the Reactor Protection System.

A.2

Once the power level has been reduced to < 50% RTP per Required Action A.1.2.1, an incore flux map (SR 3.2.2.1) must be obtained and the measured value of  $F_{\Delta H}^N$  verified not to exceed the allowed limit at the lower power level. The unit is provided 20 additional hours to perform this task over and above the 4 hours allowed by either Action A.1.1 or Action A.1.2.1. The Completion Time of 24 hours is acceptable because of the increase in the DNB margin, which

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