
Industry/TSTF Standard Technical Specification Change Traveler

Move Allowable Value from LCO 3.3.2 to SR 3.3.2.4

Priority/Classification 2) Consistency/Standardization

NUREGs Affected: 1430 1431 1432 1433 1434

Description:

The Allowable Value for the Power Rate of Change - High Trip function in LCO 3.3.2 was moved from the LCO to SR 3.3.2.4.

Justification:

The ITS convention is to provide Allowable Values in the Surveillances, not in the LCO. (See the Specifications in Sections 3.3, 3.4, and 3.7). This change is for consistency.

Revision History

OG Revision 0

Revision Status: Closed

Revision Proposed by: Calvert Cliffs

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 14-Mar-96

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 14-Mar-96

TSTF Review Information

TSTF Received Date: 12-Apr-96 Date Distributed for Review 12-Apr-96

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

NA WOG, BWOG, BWRs

TSTF Resolution: Approved Date: 14-May-96

NRC Review Information

NRC Received Date: 17-Jul-96 NRC Reviewer: C. Schulten

NRC Comments:

9/18/96 - Review pending.

10/13/96 - The package is incomplete without confirming Bases changes. In addition, the proposed changes do not agree in format and substance to the statement of allowable Value requirements used in the STS SRs. Proposed changes should be submitted that agree with the format of SR 3.3.7.2 (Analog): "Verify the Power Rate of Change - High setpoint and Allowable Value is equal to or less than [2.6] dpm."

3/24/97 - C. Grimes modified package based on above comment.

Final Resolution: Superseded by Revision

Final Resolution Date: 24-Jun-97

4/2/98

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

Revision Proposed by: NRC

Revision Description:

Added necessary Bases revision. The NRC suggested revising the SR addition to match SR 3.3.7.2. However, TSTF-186 revises SR 3.3.7.2 because it is incorrect. Therefore, the insert was modeled after NUREG-1430, SR 3.3.15.3 and SR 3.3.16.3. The resulting insert states, "Perform Channel Calibration, including bypass removal functions, with allowable value =< [2.6] dpm."

TSTF Review Information

TSTF Received Date: 11-Apr-97

Date Distributed for Review 17-Apr-97

OG Review Completed: BWO WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 13-May-97

NRC Review Information

NRC Received Date: 24-Jun-97

NRC Reviewer: C. Schulten

NRC Comments:

(No Comments)

Final Resolution: NRC Approves

Final Resolution Date: 06-Oct-97

Incorporation Into the NUREGs

File to BBS/LAN Date:

TSTF Informed Date:

TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

LCO 3.3.2	RPS Instrumentation - Shutdown (Analog)
LCO 3.3.2	RPS Instrumentation - Shutdown (Digital)
LCO 3.3.2 Bases	RPS Instrumentation - Shutdown (Analog)
LCO 3.3.2 Bases	RPS Instrumentation - Shutdown (Digital)
SR 3.3.2.4	RPS Instrumentation - Shutdown (Analog)
SR 3.3.2.4	RPS Instrumentation - Shutdown (Digital)
SR 3.3.2.4 Bases	RPS Instrumentation - Shutdown (Analog)
SR 3.3.2.4 Bases	RPS Instrumentation - Shutdown (Digital)

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3.3 INSTRUMENTATION

3.3.2 Reactor Protective System (RPS) Instrumentation—Shutdown (Analog)

LCO 3.3.2 Four Power Rate of Change—High RPS trip units and associated instrument channels shall be OPERABLE with an Allowable Value of $\leq [2.6]$ dpm.

APPLICABILITY: MODES 3, 4, and 5, with any reactor trip circuit breakers (RTCBS) closed and any control element assembly capable of being withdrawn.

-----NOTE-----
Trip may be bypassed when THERMAL POWER is $< [1E-4]\%$ RTP.
Bypass shall be automatically removed when THERMAL POWER is $\geq [1E-4]\%$ RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Power Rate of Change—High trip unit or associated instrument channel inoperable.	A.1 Place affected trip unit in bypass or trip.	1 hour
	<u>AND</u>	
	A.2.1 Restore channel to OPERABLE status.	[48] hours
	<u>OR</u>	
	A.2.2 Place affected trip unit in trip.	48 hours

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.3.2.1	Perform a CHANNEL CHECK of each wide range power channel.	12 hours
SR 3.3.2.2	Perform a CHANNEL FUNCTIONAL TEST on the Power Rate of Change trip function.	92 days
SR 3.3.2.3	Perform a CHANNEL FUNCTIONAL TEST on each automatic bypass removal function.	92 days
SR 3.3.2.4	<p>-----NOTE----- Neutron detectors are excluded from CHANNEL CALIBRATION. -----</p> <p>Perform a CHANNEL CALIBRATION, including bypass removal functions[⊙]</p>	[18] months

with allowable value
 $\leq [2.6] \text{ dpm.}$

3.3 INSTRUMENTATION

3.3.2 Reactor Protective System (RPS) Instrumentation—Shutdown (Digital)

LCO 3.3.2 Four RPS Logarithmic Power Level—High trip channels and associated instrument and bypass removal channels shall be OPERABLE. Trip channels shall have an Allowable Value of $\leq [1.93]\%$ RTP.

APPLICABILITY: MODES 3, 4, and 5, with any reactor trip circuit breakers (RTCBs) closed and any control element assembly capable of being withdrawn.

-----NOTE-----
Trip may be bypassed when THERMAL POWER is $> [1E-4]\%$ RTP.
Bypass shall be automatically removed when THERMAL POWER is $\leq [1E-4]\%$ RTP.

ACTIONS

-----NOTE-----
If a channel is placed in bypass, continued operation with the channel in the bypassed condition for the Completion Time specified by Required Action A.2 or C.2.2 shall be reviewed in accordance with Specification 5.5.1.2.e.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One RPS logarithmic power level trip channel inoperable.	A.1 Place channel in bypass or trip.	1 hour
	<u>AND</u> A.2 Restore channel to OPERABLE status.	Prior to entering MODE 2 following next MODE 5 entry

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SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.3.2.4 -----NOTE----- Neutron detectors are excluded from CHANNEL CALIBRATION. -----</p> <p>Perform a CHANNEL CALIBRATION on each logarithmic power channel, including bypass removal function.</p>	<p>[18] months</p>
<p>SR 3.3.2.5 Verify RPS RESPONSE TIME is within limits.</p>	<p>[18] months on a STAGGERED TEST BASIS</p>

- with allowable value for trip channels
 $\leq [0.93]\%$ RTP.

BASES

LCO
(continued)

Actions allow maintenance (trip channel) bypass of individual channels, but the bypass activates interlocks that prevent operation with a second channel in the same Function bypassed. Plants are restricted to 48 hours in a trip channel bypass condition before either restoring the Function to four channel operation (two-out-of-four logic) or placing the channel in trip (one-out-of-three logic). At plants where adequate channel to channel independence has been demonstrated, specific exceptions have been approved by the NRC staff to permit one of the two-out-of-four channels to be bypassed for an extended period of time.

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B 3.3-47

Only the Allowable Values are specified for each RPS trip Function ~~in the LCO~~. Nominal trip setpoints are specified in the plant specific setpoint calculations. The nominal setpoints are selected to ensure the setpoints measured by CHANNEL FUNCTIONAL TESTS do not exceed the Allowable Value if the bistable is performing as required. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable, provided that operation and testing are consistent with the assumptions of the plant specific setpoint calculations. Each Allowable Value specified is more conservative than the analytical limit assumed in the safety analysis in order to account for instrument uncertainties appropriate to the trip Function. These uncertainties are defined in the "Plant Protection System Selection of Trip Setpoint Values" (Ref. 4).

This LCO requires four channels of Power Rate of Change—High to be OPERABLE in MODES 3, 4, and 5, when the RTCBs are closed and the CEA Drive System is capable of CEA withdrawal. MODE 1 and 2 requirements are addressed in LCO 3.3.1. This trip is not credited in the safety analysis. Therefore, the Allowable Value is not derived from an analytical limit.

Specified in SR 3.3.4.2

APPLICABILITY

This LCO is applicable to the Power Rate of Change—High reactor trip in MODES 3, 4 and 5. MODES 1 and 2 are addressed in LCO 3.3.1.

The power rate of change trip is required in MODES 3, 4, and 5, with the RTCBs closed and a CEA capable of being withdrawn to provide backup protection for boron dilution

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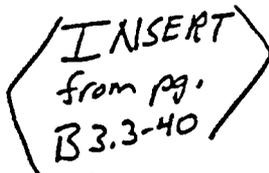
BASES

SURVEILLANCE
REQUIREMENTS

SR 3.3.2.4 (continued)

operational between successive tests. CHANNEL CALIBRATIONS must be performed consistent with the plant specific setpoint analysis.

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B 3.3-40



The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis. The requirements for this review are outlined in Reference [5].

The Frequency is based upon the assumption of an [18] month calibration interval in the determination of the magnitude of equipment drift.

The Surveillance is modified by a Note to indicate that the neutron detectors are excluded from CHANNEL CALIBRATION because they are passive devices with minimal drift and because of the difficulty of simulating a meaningful signal.

REFERENCES

1. 10 CFR 50, Appendix A.
 2. 10 CFR 100.
 3. FSAR, Chapter [14].
 4. "Plant Protection System Selection of Trip Setpoint Values."
 5. CEN-327, June 2, 1986, including Supplement 1, March 3, 1989.
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BASES

LCO
(continued)

Actions allow maintenance (trip channel) bypass of individual channels, but the bypass activates interlocks that prevent operation with a second channel in the same Function bypassed. With one channel in each Function trip channel bypassed, this effectively places the plant in a two-out-of-three logic configuration in those Functions. Plants are restricted to 48 hours in a trip channel bypass condition before either restoring the function to four channel operation (two-out-of-four logic) or placing the channel in trip (one-out-of-three logic).

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B 3.3-52

Only the Allowable Values are specified for this RPS trip Function ~~in the LCO~~. Nominal trip setpoints are specified in the plant specific setpoint calculations. The nominal setpoint is selected to ensure the setpoint measured by CHANNEL FUNCTIONAL TESTS does not exceed the Allowable Value if the bistable is performing as required. Operation with a trip setpoint less conservative than the nominal trip setpoint, but within its Allowable Value, is acceptable provided that operation and testing are consistent with the assumptions of the plant specific setpoint calculations. Each Allowable Value specified is more conservative than the analytical limit assumed in the safety analysis in order to account for instrument uncertainties appropriate to the trip Function. These uncertainties are defined in the "Plant Protection System Selection of Trip Setpoint Values" (Ref. 4). A channel is inoperable if its actual trip setpoint is not within its required Allowable Value.

This LCO requires all four channels of the Logarithmic Power Level—High to be OPERABLE in MODE 2, and in MODE 3, 4, or 5 when the RTCBs are closed and the CEA Drive System is capable of CEA withdrawal.

Specified in
SR 3.3.4.2

The Allowable Value is high enough to provide an operating envelope that prevents unnecessary Logarithmic Power Level—High reactor trips during normal plant operations. The Allowable Value is low enough for the system to maintain a safety margin for unacceptable fuel cladding damage should a CEA withdrawal event occur.

The Logarithmic Power Level—High trip may be bypassed when THERMAL POWER is above 1E-4% RTP to allow the reactor to be brought to power during a reactor startup. This bypass is automatically removed when THERMAL POWER decreases below 1E-4% RTP. Above 1E-4% RTP, the Linear Power Level—High

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BASES

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REQUIREMENTS

SR 3.3.2.3 (continued)

functions and is performed once within 92 days prior to each startup. This SR is identical to SR 3.3.1.13. Only the Applicability differs.

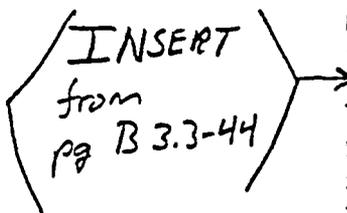
Proper operation of bypass permissives is critical during plant startup because the bypasses must be in place to allow startup operation and must be removed at the appropriate points during power ascent to enable certain reactor trips. Consequently, the appropriate time to verify bypass removal function OPERABILITY is just prior to startup. The allowance to conduct this Surveillance within 92 days of startup is based on the reliability analysis presented in topical report CEN-327, "RPS/ESFAS Extended Test Interval Evaluation" (Ref. 6). Once the operating bypasses are removed, the bypasses must not fail in such a way that the associated trip Function gets inadvertently bypassed. This feature is verified by the trip Function CHANNEL FUNCTIONAL TEST, SR 3.3.2.2. Therefore, further testing of the bypass function after startup is unnecessary.

SR 3.3.2.4

SR 3.3.2.4 is the performance of a CHANNEL CALIBRATION every 18 months. This SR is identical to SR 3.3.1.10. Only the Applicability differs.

CHANNEL CALIBRATION is a complete check of the instrument channel excluding the sensor. The Surveillance verifies that the channel responds to a measured parameter within the necessary range and accuracy. CHANNEL CALIBRATION leaves the channel adjusted to account for instrument drift between successive calibrations to ensure that the channel remains operational between successive tests. CHANNEL CALIBRATIONS must be performed consistent with the plant specific setpoint analysis.

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pg B 3.3-44



The as found and as left values must also be recorded and reviewed for consistency with the assumptions of the surveillance interval extension analysis. The requirements for this review are outlined in Reference [3].

The Frequency is based upon the assumption of an [18] month calibration interval for the determination of the magnitude

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