Industry/TSTF Standard Technical Specification Change Traveler

3.1.8 and 3.1.9 SR Frequency Change

Classification: 3) Improve Specifications

NUREGs Affected: ☑ 1430 ☑ 1431 ☐ 1432 ☐ 1433 ☐ 1434

Description:

Change Frequency for SR 3.1.8.3 and 3.1.9.2 to "Prior to performance of PHYSICS TESTS."

Justification:

Verification of nuclear overpower trip setpoint requires actual determination of bistable voltages for each of the four channels. This requires each channel to be placed in bypass, the SR performed, and then restoration of the channel and return to service. For four channels, approximately two hours of each eight hour period would be spent performing the SR. This is excessively restrictive and unduly burdensome on the operation of the unit, especially during a period of time when PHYSICS TESTS are being performed. Further, the short time frame during which the unit is expected to be conducting PHYSICS TESTS does not warrant the increased verification requirements. SR 3.1.8.3 and SR 3.1.9.2 impose a significantly shorter testing interval on the identical equipment than the interval imposed by the RPS SRs in Section 3.3 without any justification for the belief that the RPS will not similarly function with a comparable reliability.

This change is consistent with approved Traveler TSTF-108, Rev. 1.

Industry Contact:	Clarkson, Noel	(864) 855-3077	ntclarks@duke-energy.com
NRC Contact:	Tjader, Bob	301-314-1187	trt@nrc.gov

Revision History

OG Revision 0 **Revision Status: Active** **Next Action: EXCEL**

Revision Proposed by: BWOG

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 16-Jun-99

OG Review Completed: ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF Comments:

Consistent with TSTF-108 approval by NRC. Add to justification. Applicable to BWOG and WOG (WOG SR 3.1.9.2).

TSTF Resolution: Approved Date: 07-Jul-99

Incorporation Into the NUREGs

File to BBS/LAN Date: TSTF Informed Date: TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

SR 3.1.8.3	PHYSICS TESTS Exceptions - MODE 1	NUREG(s)- 1430 Only
SR 3.1.8.3 Bases	PHYSICS TESTS Exceptions - MODE 1	NUREG(s)- 1430 Only
SR 3.1.9.2	PHYSICS TESTS Exceptions - MODE 2	NUREG(s)- 1430 1431 Only
SR 3.1.9.2 Bases	PHYSICS TESTS Exceptions - MODE 2	NUREG(s)- 1430 Only

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. THERMAL POWER > 85% RTP. OR Nuclear overpower trip setpoint > 10% higher than PHYSICS TESTS power level. OR Nuclear overpower trip setpoint > 90% RTP. OR $F_Q(Z)$ or $F^N_{\Delta H}$ not within limits.	B.1 Suspend PHYSICS TESTS exceptions.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.8.1	Verify THERMAL POWER is ≤ 85% RTP.	1 hour
SR 3.1.8.2	Perform SR 3.2.5.1.	2 hours
SR 3.1.8.3	Verify nuclear overpower trip setpoint is ≤ 10% RTP higher than the THERMAL POWER at which the test is performed, with a maximum setting of 90% RTP.	~~8 hours~~ Prior to performance of PHYSICS TESTS.

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. SDM not within limit.	B.1 Initiate boration to restore SDM to within limit. AND B.2 Suspend PHYSICS TESTS exceptions.	15 minutes 1 hour
C. Nuclear overpower trip setpoint is not within limit. OR Nuclear instrumentation source and intermediate range high startup rate CONTROL ROD withdrawal inhibit inoperable.	C.1 Suspend PHYSICS TESTS exceptions.	1 hour

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.9.1	Verify THERMAL POWER is ≤ 5% RTP.	1 hour
SR 3.1.9.2	Verify nuclear overpower trip setpoint is ≤ 25% RTP.	~~8 hours~~ Prior to performance of PHYSICS TESTS.

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BASES

SURVEILLANCE REQUIREMENTS

SR 3.1.8.1 (continued)

determine any degradation of the established thermal margin during PHYSICS TESTS.

SR 3.1.8.2

Verification that $F_Q(Z)$ and $F^N_{\Delta H}$ are within their limits ensures that core local linear heat rate and departure from nucleate boiling ratio will remain within their limits, while one or more of the LCOs that normally control these design limits are out of specification. The required Frequency of 2 hours allows the operator adequate time for collecting a flux map and for performing the hot channel factor verifications, based on operating experience. If SR 3.2.5.1 is not met, PHYSICS TESTS are suspended and LCO 3.2.5 applies. This Frequency is more conservative than the Completion Time for restoration of the individual LCOs that preserve the $F_Q(Z)$ and $F^N_{\Delta H}$ limits.

SR 3.1.8.3

Verification that the nuclear overpower trip setpoint is within the limit specified for each PHYSICS TEST ensures that core protection at the reduced power level is established ~~and will remain in place~~ during the PHYSICS TESTS. Performing the verification ~~once every 8 hours~~ allows the operator adequate time for ~~determining any~~ verifying ~~degradation of~~ the established trip setpoint margin before ~~and during~~ PHYSICS TESTS ~~, and for adjusting the nuclear overpower trip setpoint.~~

prior to the performance of PHYSICS TESTS

SR 3.1.8.4

The SDM is verified by performing a reactivity balance calculation, considering the following reactivity effects:

a. Reactor Coolant System (RCS) boron concentration;

b. CONTROL ROD position;

c. RCS average temperature;

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BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.1.9.3

Verification that the nuclear overpower trip setpoint is within the limit specified for PHYSICS TESTS ensures that core protection at the reduced power level is established and will remain in place during PHYSICS TESTS. Performing the verification once per 8 hours allows the operator adequate time for determining any degradation of the established trip setpoint margin before and during PHYSICS TESTS, and for adjusting the nuclear overpower trip setpoint.

prior to the performance of PHYSICS TESTS

verifying

SR 3.1.9.4

The SDM is verified by performing a reactivity balance calculation, considering the following reactivity effects:

a. RCS boron concentration;

b. CONTROL ROD position;

c. RCS average temperature;

d. Fuel burnup based on gross thermal energy generation;

e. Xenon concentration; and

f. Isothermal temperature coefficient (ITC).

Using the ITC accounts for Doppler reactivity in this calculation because the reactor is subcritical, and the fuel temperature will be changing at the same rate as the RCS.

The Frequency of 24 hours is based on the generally slow change in required boron concentration and on the low probability of an accident occurring without the required SDM.

REFERENCES

1. 10 CFR 50, Appendix B, Section XI.

2. 10 CFR 50.59.

3. Regulatory Guide 1.68, Revision 2, August 1978.

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SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.1.9.1	Verify THERMAL POWER is ≤ 85% RTP.	1 hour
SR 3.1.9.2	Verify Power Range Neutron Flux—High trip setpoints are ≤ 10% above the PHYSICS TEST power level, and ≤ 90% RTP.	~~Within 8 hours prior to initiation of PHYSICS TESTS~~ Prior to performance of PHYSICS TESTS
SR 3.1.9.3	Perform SR 3.2.1.1 and SR 3.2.2.1.	12 hours
SR 3.1.9.4	Verify SDM is ≥ [1.6]% Δk/k.	24 hours

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BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.1.9.2

Verification of the Power Range Neutron Flux – High trip setpoints ~~within 8 hours~~ prior to ~~initiation~~ performance of the PHYSICS TESTS will ensure that the RTS is properly set to perform PHYSICS TESTS.

SR 3.1.9.3

The performance of SR 3.2.1.1 and SR 3.2.2.1 measures the core $F_Q(Z)$ and the $F^N_{\Delta H}$, respectively. If the requirements of these LCOs are met, the core has adequate protection from exceeding its design limits, while other LCO requirements are suspended. The Frequency of 12 hours is based on operating experience and the practical amount of time that it may take to run an incore flux map and calculate the hot channel factors.

SR 3.1.9.4

The SDM is verified by performing a reactivity balance calculation, considering the following reactivity effects:

a. Reactor Coolant System (RCS) boron concentration;

b. Control bank position;

c. RCS average temperature;

d. Fuel burnup based on gross thermal energy generation;

e. Xenon concentration;

f. Samarium concentration; and

g. Isothermal temperature coefficient (ITC).

Using the ITC accounts for Doppler reactivity in the calculation because the reactor is subcritical, and the fuel temperature will be changing at the same rate as the RCS. The Frequency of 24 hours is based on the generally slow change in required boron concentration and on the low probability of an accident without the required SDM.

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