
Industry/TSTF Standard Technical Specification Change Traveler

Revise Criteria Discussions of Special Test Exceptions

Priority/Classification 2) Consistency/Standardization

NUREGs Affected: 1430 1431 1432 1433 1434

Description:

The criteria discussions in the Special Test Exceptions and Test Exceptions are revised to be consistent with the excepted LCOs.

Justification:

The existing criteria discussions in the Special Test Exception (STE) and Test Exception Bases are inconsistent with the excepted LCOs. The revised wording refers to the excepted LCOs for the applicable criteria. The inserts are used to address the name Special Test Exceptions and Test Exceptions used in LCO 3.0.7 in the respective PWR NUREGs. This wording is consistent with NUREG-1433 and 1434.

Revision History

OG Revision 0

Revision Status: Closed

Revision Proposed by: Millstone 2

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 29-May-96

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 04-Jun-96

TSTF Review Information

TSTF Received Date: 01-Jul-96 Date Distributed for Review 31-Jul-96

OG Review Completed: BWO WOG CEOG BWROG

TSTF Comments:

BWO - Applicable, BWO accepts

WOG - Not applicable, WOG accepts

BWROG - Not applicable, BWROG accepts

TSTF Resolution: Approved Date: 10-Oct-96

2/17/98

NRC Review Information

NRC Received Date: 23-Jan-97 NRC Reviewer: Tjader, Westo

NRC Comments:

2/28/97 - Reviewers recommended modification to Section 3.4, accept Section 3.1. Recommend modification to include same level of discussion of Safety Analyses as in NUREG-1433 and 1434.

3/18/97 - TSTF to consider comments and propose revision is appropriate.

4/16/97 - NRC commented that changing references from the NRC Policy Statement to 10 CFR 50.36(c)(2)(ii) should be done consistently throughout the specifications.

4/16/97 - TSTF prepared a revision eliminating the references to 10 CFR 50.36(c)(2)(ii).

Final Resolution: Superseded by Revision

Final Resolution Date: 24-Jun-97

TSTF Revision 1**Revision Status: Closed**

Revision Proposed by: NRC

Revision Description:

Revision eliminates the reference to 10 CFR 50.36(c)(2)(ii).

TSTF Review Information

TSTF Received Date: 16-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: Tjader, Westo

NRC Comments:

10/7/97 - A duplicate copy of proposed changes was provided to M. Weston for review.

Final Resolution: Superseded by Revision

Final Resolution Date: 07-Oct-97

TSTF Revision 2**Revision Status: Active****Next Action: NRC**

Revision Proposed by: TSTF

Revision Description:

Revision adds NUREG-1431 to applicability and provides appropriate NUREG-1431 pages. Changes the Inserts to be consistent with the exception name used in LCO 3.0.7 for each NUREG

TSTF Review Information

TSTF Received Date: 11-Jan-98 Date Distributed for Review 15-Jan-98

OG Review Completed: BWO WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 05-Feb-98

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Incorporation Into the NUREGs

File to BBS/LAN Date:

TSTF Informed Date:

TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

S/A 3.1.8 Bases	Physics Tests Exceptions - MODE 1	NUREG(s)- 1430 Only
S/A 3.1.9 Bases	Physics Tests Exceptions - MODE 2	NUREG(s)- 1430 Only
S/A 3.1.9 Bases	Physics Tests Exceptions - MODE 1	NUREG(s)- 1431 Only
S/A 3.1.10 Bases	Physics Tests Exceptions - MODE 2	NUREG(s)- 1431 Only
S/A 3.1.11 Bases	SDM Test Exception	NUREG(s)- 1431 Only
S/A 3.4.19 Bases	RCS Loops - Test Exceptions	NUREG(s)- 1431 Only
S/A 3.1.8 Bases	Special Test Exception - SDM (Analog)	NUREG(s)- 1432 Only
S/A 3.1.9 Bases	Special Test Exception - MODES 1 and 2 (Analog)	NUREG(s)- 1432 Only
S/A 3.1.9 Bases	Special Test Exception - SDM (Digital)	NUREG(s)- 1432 Only
S/A 3.1.10 Bases	Special Test Exception - MODES 1 and 2 (Digital)	NUREG(s)- 1432 Only
S/A 3.4.17 Bases	Special Test Exception - RCS Loops	NUREG(s)- 1432 Only

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INSERT 1 (BWO)

As described in LCO 3.0.7, compliance with Test Exceptions LCOs is optional, and therefore no criteria of the NRC Policy Statement apply. Test Exceptions LCOs provide flexibility to perform certain operations by appropriately modifying requirements of other LCOs. A discussion of the criteria satisfied for the other LCOs is provided in their respective Bases.

INSERT 2 (CEOG)

As described in LCO 3.0.7, compliance with Special Test Exception LCOs is optional, and therefore no criteria of the NRC Policy Statement apply. Special Test Exception LCOs provide flexibility to perform certain operations by appropriately modifying requirements of other LCOs. A discussion of the criteria satisfied for the other LCOs is provided in their respective Bases.

INSERT 3 (WOG)

As described in LCO 3.0.7, compliance with Test Exception LCOs is optional, and therefore no criteria of the NRC Policy Statement apply. Test Exception LCOs provide flexibility to perform certain operations by appropriately modifying requirements of other LCOs. A discussion of the criteria satisfied for the other LCOs is provided in their respective Bases.

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surveillance of the $F_0(Z)$, the $F_{\Delta H}^N$, and SDM is required to verify that their limits are not exceeded. The limits for the nuclear hot channel factors are specified in the COLR. Refer to the Bases for LCO 3.2.5 for a complete discussion of $F_0(Z)$ and $F_{\Delta H}^N$. During PHYSICS TESTS, one or more of the LCOs that normally preserve the $F_0(Z)$ and $F_{\Delta H}^N$ limits may be suspended. However, the results of the safety analysis are not adversely impacted if verification that $F_0(Z)$ and $F_{\Delta H}^N$ are within their limits is obtained, while one or more of the LCOs is suspended. Therefore, SRs are placed on $F_0(Z)$ and $F_{\Delta H}^N$ during MODE 1 PHYSICS TESTS to verify that these factors remain within their limits. Periodic verification of these factors allows PHYSICS TESTS to be conducted while continuing to maintain the design criteria.

PHYSICS TESTS include measurement of core nuclear parameters or exercise of control components that affect process variables. Among the process variables involved are AXIAL POWER IMBALANCE and QPT, which represent initial condition input (power peaking) for the accident analysis. Also involved are the movable control components, i.e., the regulating rods and the APSRs, which affect power peaking and are required for shutdown of the reactor. The limits for these variables are specified for each fuel cycle in the COLR.

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- 1.

PHYSICS TESTS satisfy Criteria 1, 2, and 3 of the NRC Policy Statement.

LCO

This LCO permits individual CONTROL RODS to be positioned outside of their specified group alignment and withdrawal limits and to be assigned to other than specified CONTROL ROD groups, and permits AXIAL POWER IMBALANCE and QPT limits to be exceeded during the performance of PHYSICS TESTS. In addition, this LCO permits verification of the fundamental core characteristics and nuclear instrumentation operation.

The requirements of LCO 3.1.4, LCO 3.1.5, LCO 3.1.6, LCO 3.2.1 (for the restricted operation region only), LCO 3.2.3, and LCO 3.2.4 may be suspended during the performance of PHYSICS TESTS provided:

- a. THERMAL POWER is maintained \leq 85% RTP;

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temperature to decrease to 520°F during MODE 2 PHYSICS TESTS, based on the low probability of an accident occurring and on prior operating experience.

PHYSICS TESTS include measurement of core nuclear parameters or exercise of control components that affect process variables.

INSERT
1

PHYSICS TESTS satisfy Criteria 1, 2, and 3 of the NRC Policy Statement.

LCO

This LCO permits individual CONTROL RODS to be positioned outside of their specified group alignment and withdrawal limits and to be assigned to other than specified CONTROL ROD groups during the performance of PHYSICS TESTS. In addition, this LCO permits verification of the fundamental core characteristics.

This LCO also allows suspension of LCO 3.1.3, LCO 3.1.4, LCO 3.1.5, LCO 3.1.6, LCO 3.2.1, and LCO 3.4.2, provided:

- a. THERMAL POWER is \leq 5% RTP;
- b. Nuclear overpower trip setpoints on the OPERABLE nuclear power range channels are set to \leq 25% RTP;
- c. Nuclear instrumentation source range and intermediate range high startup rate CONTROL ROD withdrawal inhibit are OPERABLE; and
- d. SDM is maintained \geq [1.0]% $\Delta k/k$.

The limits of LCO 3.2.3 and LCO 3.2.4 do not apply in MODE 2. Inhibiting CONTROL ROD withdrawal, based on startup rate, also limits local linear heat rate (LHR), departure from nucleate boiling ratio (DNBR), and peak RCS pressure during accidents initiated from low power.

APPLICABILITY

This LCO is applicable in MODE 2 when the reactor is either not critical or when THERMAL POWER is \leq 5% RTP. This LCO is applicable for initial criticality or low power testing, as defined by Regulatory Guide 1.68 (Ref. 3). In MODE 1,

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peaking factor, T_0 and ASI, which represent initial condition input (power peaking) to the accident analysis. Also involved are the shutdown and regulating CEAs, which affect power peaking and are required for shutdown of the reactor. The limits for these variables are specified for each fuel cycle in the COLR.

INSERT
2

~~PHYSICS TESTS meet the criteria for inclusion in the Technical Specifications, since the components and process variable LCOs suspended during PHYSICS TESTS meet Criteria 1, 2, and 3 of the NRC Policy Statement.~~

LCO

This LCO provides that a minimum amount of CEA worth is immediately available for reactivity control when CEA worth measurement tests are performed. The STE 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. The SDM requirements of LCO 3.1.1 and the regulating CEA insertion limits of LCO 3.1.7 may be suspended.

APPLICABILITY

This LCO is applicable in MODES 2 and 3. Although CEA worth testing is conducted in MODE 2, sufficient negative reactivity is inserted during the performance of these tests to result in temporary entry into MODE 3. Because the intent is to immediately return to MODE 2 to continue CEA worth measurements, the STE allows limited operation to 6 consecutive hours in MODE 3, as indicated by the Note, without having to borate to meet the SDM requirements of LCO 3.1.1.

ACTIONS

A.1

With any CEA not fully inserted and less than the minimum required reactivity equivalent available for insertion, or with all CEAs inserted and the reactor subcritical by less than the reactivity equivalent of the highest worth CEA, restoration of the minimum SDM requirements must be accomplished by increasing the RCS boron concentration. The required Completion Time of 15 minutes for initiating

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(continued)

The safety analysis (Ref. 6) places limits on allowable THERMAL POWER during PHYSICS TESTS and requires the LHR and the departure from nucleate boiling (DNB) parameter to be maintained within limits. The power plateau of < 85% RTP and the associated trip setpoints are required to ensure [explain]. SDM shall be maintained \geq [4.5]% $\Delta k/k$.

The individual LCOs governing CEA group height, insertion and alignment, ASI, F_{xy}^T , F_r^T , and T_q preserve the LHR limits. Additionally, the LCOs governing Reactor Coolant System (RCS) flow, reactor inlet temperature (T_c), and pressurizer pressure contribute to maintaining DNB parameter limits. The initial condition criteria for accidents sensitive to core power distribution are preserved by the LHR and DNB parameter limits. The criteria for the loss of coolant accident (LOCA) are specified in 10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light Water Nuclear Power Reactors" (Ref. 7). The criteria for the loss of forced reactor coolant flow accident are specified in Reference 7. Operation within the LHR limit preserves the LOCA criteria; operation within the DNB parameter limits preserves the loss of flow criteria.

During PHYSICS TESTS, one or more of the LCOs that normally preserve the LHR and DNB parameter limits may be suspended. The results of the accident analysis are not adversely impacted, however, if LHR and DNB parameters are verified to be within their limits while the LCOs are suspended. Therefore, SRs are placed as necessary to ensure that LHR and DNB parameters remain within limits during PHYSICS TESTS. Performance of these Surveillances allows PHYSICS TESTS to be conducted without decreasing the margin of safety.

PHYSICS TESTS include measurement of core parameters or exercise of control components that affect process variables. Among the process variables involved are F_{xy}^T , F_r^T , T_q , and ASI, which represent initial condition input (power peaking) to the accident analysis. Also involved are the shutdown and regulating CEAs, which affect power peaking and are required for shutdown of the reactor. The limits for these variables are specified for each fuel cycle in the COLR.

~~PHYSICS TESTS meet the criteria for inclusion in the Technical Specifications, since the components and process~~

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~~variable LCOs suspended during PHYSICS TESTS meet
Criteria 1, 2, and 3 of the NRC Policy Statement.~~

INSERT
2

LCO

This LCO permits individual CEAs to be positioned outside of their normal group heights and insertion limits during the performance of PHYSICS TESTS such as those required to:

- a. Measure CEA worth;
- b. Determine the reactor stability index and damping factor under xenon oscillation conditions;
- c. Determine power distributions for nonnormal CEA configurations;
- d. Measure rod shadowing factors; and
- e. Measure temperature and power coefficients.

Additionally, it permits the center CEA to be misaligned during PHYSICS TESTS required to determine the isothermal temperature coefficient (ITC), MTC, and power coefficient.

The requirements of LCO 3.1.4, LCO 3.1.5, LCO 3.1.6, LCO 3.1.7, LCO 3.2.2, LCO 3.2.3, and LCO 3.2.4 may be suspended during the performance of PHYSICS TESTS, provided:

- a. THERMAL POWER is restricted to test power plateau, which shall not exceed 85% RTP;
- b. SDM shall be $\geq [4.5]\% \Delta k/k$.

APPLICABILITY

This LCO is applicable in MODES 1 and 2 because the reactor must be critical at various THERMAL POWER levels to perform the PHYSICS TESTS described in the LCO section. Limiting the test power plateau to $< 85\%$ RTP ensures that LHRs are maintained within acceptable limits.

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(continued)

~~PHYSICS TESTS meet the criteria for inclusion in the Technical Specifications, since the component and process variable LCOs suspended during PHYSICS TESTS meet Criteria 1, 2, and 3 of the NRC Policy Statement.~~

INSET 2

LCO

This LCO permits individual CEAs to be positioned outside of their normal group heights and insertion limits during the performance of PHYSICS TESTS, such as those required to:

- a. Measure CEA worth;
- b. Determine the reactor stability index and damping factor under xenon oscillation conditions;
- c. Determine power distributions for nonnormal CEA configurations;
- d. Measure rod shadowing factors; and
- e. Measure temperature and power coefficients.

Additionally, it permits the center CEA to be misaligned during PHYSICS TESTS required to determine the isothermal temperature coefficient (ITC), MTC, and power coefficient.

The requirements of LCO 3.1.4, LCO 3.1.5, LCO 3.1.6, LCO 3.1.7, LCO 3.1.8, LCO 3.2.2, and LCO 3.2.3 may be suspended during the performance of PHYSICS TESTS provided:

- a. THERMAL POWER is restricted to test power plateau, which shall not exceed 85% RTP; and
- b. SDM shall be $\geq [5.0]\% \Delta k/k$.

APPLICABILITY

This LCO is applicable in MODES 1 and 2 because the reactor must be critical at various THERMAL POWER levels to perform the PHYSICS TESTS described in the LCO section. Limiting the test power plateau to $< 85\%$ RTP ensures that LHRs are maintained within acceptable limits.

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(continued)

peaking factor, T_q , and ASI, which represent initial condition input (power peaking) to the accident analysis. Also involved are the shutdown and regulating CEAs, which affect power peaking and are required for shutdown of the reactor. The limits for these variables are specified for each fuel cycle in the COLR.

~~PHYSICS TESTS meet the criteria for inclusion in the Technical Specifications since the components and process variable LCOs suspended during PHYSICS TESTS meet Criteria 1, 2, and 3 of the NRC Policy Statement.~~

INSERT 2

LCO

This LCO provides that a minimum amount of CEA worth is immediately available for reactivity control when CEA worth measurement tests are performed. This STE 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. The SDM requirements of LCO 3.1.1 and the regulating CEA insertion limits of LCO 3.1.7 may be suspended.

APPLICABILITY

This LCO is applicable in MODES 2 and 3. Although CEA worth testing is conducted in MODE 2, sufficient negative reactivity is inserted during the performance of these tests to result in temporary entry into MODE 3. Because the intent is to immediately return to MODE 2 to continue CEA worth measurements, the STE allows limited operation to 6 consecutive hours in MODE 3 as indicated by the Note, without having to borate to meet the SDM requirements of LCO 3.1.1.

ACTIONS

A.1

With any CEA not fully inserted and less than the minimum required reactivity equivalent available for insertion, or with all CEAs inserted and the reactor subcritical by less than the reactivity equivalent of the highest worth withdrawn CEA, restoration of the minimum SDM requirements must be accomplished by increasing the RCS boron concentration. The required Completion Time of 15 minutes

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B 3.4 REACTOR COOLANT SYSTEM (RCS)

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B 3.4.17 Special Test Exception (STE) RCS Loops

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BASES

BACKGROUND

This special test exception to LCO 3.4.4, "RCS Loops — MODES 1 and 2," and LCO 3.3.1, "RPS Instrumentation," permits reactor criticality under no flow conditions during PHYSICS TESTS (natural circulation demonstration, station blackout, and loss of offsite power) while at low THERMAL POWER levels. Section XI of 10 CFR Part 50, Appendix B (Ref. 1), requires that a test program be established to ensure that structures, systems, and components will perform satisfactorily in service. All functions necessary to ensure that the specified design conditions are not exceeded during normal operation and anticipated operational occurrences must be tested. This testing is an integral part of the design, construction, and operation of the power plant as specified in 10 CFR 50, Appendix A, GDC 1 (Ref. 2).

The key objectives of a test program are to provide assurance that the facility has been adequately designed to validate the analytical models used in the design and analysis, to verify the assumptions used to predict plant response, to provide assurance that installation of equipment at the facility has been accomplished in accordance with the design, and to verify that the operating and emergency procedures are adequate. Testing is performed prior to initial criticality, during startup, and following low power operations.

The tests will include verifying the ability to establish and maintain natural circulation following a plant trip between 10% and 20% RTP, performing natural circulation cooldown on emergency power, and during the cooldown, showing that adequate boron mixing occurs and that pressure can be controlled using auxiliary spray and pressurizer heaters powered from the emergency power sources.

APPLICABLE SAFETY ANALYSES

~~Special Test Exception (STE) RCS loops does not satisfy any criterion in the NRC Policy Statement, but is included as they support other LCOs that meet a criterion for inclusion.~~

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LCO 3.2.4, "QUADRANT POWER TILT RATIO (QPTR)"

are suspended for PHYSICS TESTS, the fuel design criteria are preserved as long as the requirements of LCO 3.2.1, "Heat Flux Hot Channel Factor ($F_Q(Z)$)," and LCO 3.2.2, "Nuclear Enthalpy Rise Hot Channel Factor ($F_{\Delta H}^N$)," are satisfied, power level is maintained $\leq 85\%$ RTP, and SDM is $\geq [1.6]\% \Delta k/k$. Therefore, LCO 3.1.9 requires surveillance of the hot channel factors and SDM to verify that their limits are not being exceeded.

PHYSICS TESTS include measurements of core nuclear parameters or the exercise of control components that affect process variables. Among the process variables involved are AFD and QPTR, which represent initial conditions of the unit safety analyses. Also involved are the movable control components (control and shutdown rods), which are required to shut down the reactor. The limits for these variables are specified for each fuel cycle in the COLR.

INSERT
3

PHYSICS TESTS meet the criteria for inclusion in the Technical Specifications, since the component and process variable LCOs suspended during PHYSICS TESTS meet criteria 1, 2, and 3 of the NRC Policy Statement.

Reference 7 allows special test exceptions to be included as part of the LCO that they affect. However, it was decided to retain this special test exception as a separate LCO because it was less cumbersome and provided additional clarity.

LCO

This LCO allows selected control rods and shutdown rods to be positioned outside their specified alignment limits and insertion limits to conduct PHYSICS TESTS in MODE 1, to verify certain core physics parameters. The power level is limited to $\leq 85\%$ RTP and the power range neutron flux trip setpoint is set at 10% RTP above the PHYSICS TESTS power level with a maximum setting of 90% RTP. Violation of LCO 3.1.5, LCO 3.1.6, LCO 3.1.7, LCO 3.2.3, or LCO 3.2.4, during the performance of PHYSICS TESTS does not pose any threat to the integrity of the fuel as long as the requirements of LCO 3.2.1 and LCO 3.2.2 are satisfied and provided:

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problems, may require the operating control or process variables to deviate from their LCO limitations.

The FSAR defines requirements for initial testing of the facility, including PHYSICS TESTS. Tables [14.1-1 and 14.1-2] summarize the zero, low power, and power tests. Requirements for reload fuel cycle PHYSICS TESTS are defined in ANSI/ANS-19.6.1-1985 (Ref. 4). Although these PHYSICS TESTS are generally accomplished within the limits for all LCOs, conditions may occur when one or more LCOs must be suspended to make completion of PHYSICS TESTS possible or practical. This is acceptable as long as the fuel design criteria are not violated. When one or more of the requirements specified in LCO 3.1.4, "Moderator Temperature Coefficient (MTC)," LCO 3.1.5, LCO 3.1.6, LCO 3.1.7, and LCO 3.4.2 are suspended for PHYSICS TESTS, the fuel design criteria are preserved as long as the power level is limited to $\leq 5\%$ RTP, the reactor coolant temperature is kept $\geq 531^\circ\text{F}$, and SDM is $\geq [1.6]\% \Delta k/k$.

The PHYSICS TESTS include measurement of core nuclear parameters or the exercise of control components that affect process variables. Among the process variables involved are AFD and QPTR, which represent initial conditions of the unit safety analyses. Also involved are the movable control components (control and shutdown rods), which are required to shut down the reactor. The limits for these variables are specified for each fuel cycle in the COLR. PHYSICS TESTS meet the criteria for inclusion in the Technical Specifications, since the components and process variable LCOs suspended during PHYSICS TESTS meet Criteria 1, 2, and 3 of the NRC Policy Statement.

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Reference 6 allows special test exceptions (STEs) to be included as part of the LCO that they affect. It was decided, however, to retain this STE as a separate LCO because it was less cumbersome and provided additional clarity.

LCO

This LCO allows the reactor parameters of MTC and minimum temperature for criticality to be outside their specified limits. In addition, it allows selected control and shutdown rods to be positioned outside of their specified alignment and insertion limits. Operation beyond specified

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all information necessary to permit a detailed execution of the testing required to ensure that the design intent is met. PHYSICS TESTS are performed in accordance with these procedures, and test results are approved prior to continued power escalation and long term power operation.

During the PHYSICS TESTS measurements of control rod worth, it may be necessary to align individual rods and banks in certain configurations and utilize boron concentrations that do not provide sufficient SDM to meet the normal requirements. In this situation, it is necessary to invoke special test exceptions (STEs) to allow the necessary PHYSICS TESTS to be completed.

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Special PHYSICS TESTS may require operating the core under controlled conditions for short periods of time with less than the normally required SDM. As such, these tests are not covered by any safety analysis calculations.

Under the acceptance criteria to allow suspension of certain LCOs for PHYSICS TESTS, fuel damage criteria are not to be exceeded. Even if an accident occurs during PHYSICS TESTS with one or more LCOs suspended, fuel damage criteria are preserved because adequate limits on power distribution and shutdown capability are maintained during PHYSICS TESTS.

Reference 5 defines the requirements for initial testing of the facility, including PHYSICS TESTS. Requirements for reload fuel cycle PHYSICS TESTS are defined in ANSI/ANS-19.6.1-1985 (Ref. 4). PHYSICS TESTS for reload fuel cycles are given in Table 1 of ANSI/ANS-19-6.1-1985. Although these PHYSICS TESTS are generally accomplished within the limits of all LCOs, Conditions may occur when one or more LCOs must be suspended to make completion of PHYSICS TESTS possible or practical. This is acceptable as long as the fuel design criteria are not violated. As long as the linear heat rate remains within its limit, fuel design criteria are preserved.

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3

PHYSICS TESTS meet the criteria for inclusion in the Technical Specifications, since the components and process variable LCOs suspended during PHYSICS TESTS meet Criteria 1, 2, and 3 of the NRC Policy Statement.

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demonstrated this exception to be safe under the present applicability.

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RCS loops—test exceptions satisfy Criterion 3 of the NRC Policy Statement

LCO

This LCO provides an exemption to the requirements of LCO 3.4.4.

The LCO is provided to allow for the performance of PHYSICS TESTS in MODE 2 (after a refueling), where the core cooling requirements are significantly different than after the core has been operating. Without the LCO, plant operations would be held bound to the normal operating LCOs for reactor coolant loops and circulation (MODES 1 and 2), and the appropriate tests could not be performed.

In MODE 2, where core power level is considerably lower and the associated PHYSICS TESTS must be performed, operation is allowed under no flow conditions provided THERMAL POWER is $\leq P-7$ and the reactor trip setpoints of the OPERABLE power level channels are set $\leq 25\%$ RTP. This ensures, if some problem caused the plant to enter MODE 1 and start increasing plant power, the Reactor Trip System (RTS) would automatically shut it down before power became too high, and thereby prevent violation of fuel design limits.

The exemption is allowed even though there are no bounding safety analyses. However, these tests are performed under close supervision during the test program and provide valuable information on the plant's capability to cool down without offsite power available to the reactor coolant pumps.

APPLICABILITY

This LCO is applicable when performing low power PHYSICS TESTS without any forced convection flow. This testing is performed to establish that heat input from nuclear heat does not exceed the natural circulation heat removal capabilities. Therefore, no safety or fuel design limits will be violated as a result of the associated tests.

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