

Industry/TSTF Standard Technical Specification Change Traveler

Add an Action for an Adverse Condition for LHR and DNBR

Priority/Classification 1) Correct Specifications

NUREGs Affected: 1430 1431 1432 1433 1434

Description:

This change adds an Action for determining the trend in LHR and DNBR when COLSS is out of service. It also adds an Action when there is an adverse trend. The Actions replace SR 3.2.4.1.

Justification:

The application of SR 3.2.4.1 "Verify no adverse trend in DNBR" is confusing because of the Note. The SR has been eliminated and the SR and the Note have been rewritten as an Action. Appropriate Actions to follow when there is and when there is not an adverse trend have been added. A similar change to LCO 3.2.1 has been made.

Note that no change to the 3.2.4 surveillance Bases is needed as the Bases currently do not reflect SR 3.2.4.1.

Revision History

OG Revision 0

Revision Status: Active

Next Action:

Revision Proposed by: Palo Verde

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: 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:

4/2/98

NUREG Rev Incorporated:

Affected Technical Specifications

Action 3.2.1.B LHR (Digital)

Action 3.2.1.B Bases LHR (Digital)

Action 3.2.4.B DNBR (Digital)

Action 3.2.4.B Bases DNBR (Digital)

SR 3.2.4.1 DNBR (Digital)

Change Description: Delete

SR 3.2.4.2 DNBR (Digital)

Change Description: Renumber to 3.2.4.1

SR 3.2.4.3 DNBR (Digital)

Change Description: Renumber to 3.2.4.2

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LHR (Digital)
3.2.1

3.2 POWER DISTRIBUTION LIMITS

3.2.1 Linear Heat Rate (LHR) (Digital)

LCO 3.2.1 LHR shall not exceed the limits specified in the COLR.

APPLICABILITY: MODE 1 with THERMAL POWER > 20% RTP.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Core Operating Limit Supervisory System (COLSS) calculated core power exceeds the COLSS calculated core power operating limit based on LHR.	A.1 Restore LHR to within limits.	1 hour
<i>INSERT</i> → B. LHR not within region of acceptable operation when the COLSS is out of service.	B.1 B.2.2 Restore LHR to within limits. <i>With no adverse trend,</i>	4 hours
C. Required Action and associated Completion Time not met.	C.1 Reduce THERMAL POWER to ≤ 20% RTP.	6 hours

INSERT FOR ITS 3.2.1
ACTIONS

INSERT 1

B.1 Determine trend in LHR. Once per
15 minutes

AND

B.2.1 With an adverse trend, restore LHR to within limit. 1 hour

OR

INSERT PAGE 3.2-1

DNBR (Digital)
3.2.4

Determine trend
in DNBR.

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. DNBR outside the region of acceptable operation when COLSS is out of service.	B.1 Initiate SR 3.2.4.1.	15 minutes
	AND B.2 Restore DNBR to within limit. B.2.2	4 hours
C. Required Action and associated Completion Time not met.	C.1 Reduce THERMAL POWER to \leq 20% RTP.	6 hours

Once per

With no adverse trend,

INSERT 1

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.2.4.1 -----NOTE----- Only required with COLSS not in service and DNBR not within specified limits using any CPC channel. ----- Verify no adverse trend in DNBR.	15 minutes

(continued)

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INSERT FOR ITS 3.2.4
ACTIONS

INSERT 1

B.2.1 With an adverse trend, restore DNBR to within limit. 1 hour

OR

INSERT PAGE 3.2-9

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DNBR (Digital)
3.2.4

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE	FREQUENCY
<p>SR 3.2.4.¹7</p> <p>-----NOTE----- Only applicable when COLSS is out of service. With COLSS in service, this parameter is continuously monitored.</p> <p>Verify DNBR, as indicated on all OPERABLE DNBR channels, is within the limit of Figure 3.2.4-1 or 3.2.4-2 of the COLR, as applicable.</p>	<p>2 hours</p>
<p>SR 3.2.4.²7</p> <p>Verify COLSS margin alarm actuates at a THERMAL POWER level equal to or less than the core power operating limit based on DNBR.</p>	<p>31 days</p>

BASES

ACTIONS

A.1 (continued)

limit is exceeded without a trip due to events such as a dropped CEA or an axial xenon oscillation.

B.1, B.2.1, and B.2.2

If the COLSS is not available the OPERABLE LPD channels are monitored to ensure that the LHR limit is not exceeded. Operation within this limit ensures that in the event of a LOCA the fuel cladding temperature does not exceed 2200°F. Four hours is allowed for restoring the LHR limit to within the region of acceptable operation. This duration is reasonable because the COLSS allows the plant to operate with less LHR margin (closer to the LHR limit than when monitoring the CPCs).

When operating with the COLSS out of service there is a possibility of a slow undetectable transient that degrades the LHR slowly over the 4 hour period and is then followed by an AOD or an accident. To remedy this, the CPC calculated values of LHR are monitored every 15 minutes when the COLSS is out of service. Also, a maximum allowable change in the CPC calculated LHR ensures that further degradation requires the operators to take immediate action to reduce reactor power to comply with the Technical Specifications (TS). Implementation of this requirement ensures that reductions in core thermal margin are quickly detected, and if necessary, results in a decrease in reactor power and subsequent compliance with the existing COLSS out of service TS limits.

Four hours is allowed to restore the LHR to within limits if the COLSS is not restored to OPERABLE status. This duration is reasonable because the Frequency of the CPC determination of LHR is increased and if operation is maintained steady, the likelihood of exceeding the LHR limit during this period is not increased. The likelihood of induced reactor transients from an early power reduction is also decreased.

C.1

If the LHR cannot be returned to within its limit or the LHR cannot be determined because of the COLSS and CPC

(continued)

restore LHR to within limits or

with no adverse trend,

With an adverse trend, one hour is allowed for restoring LHR to within limits if the COLSS is not restored to OPERABLE status.

The 15 minute frequency is adequate to allow the operator to identify an adverse trend in conditions that could result in an approach to the LHR limit.

The 15 minute frequency is adequate to allow the operator to identify an adverse trend in conditions that could result in an approach to the DNBR limit.

DNBR (Digital)
B 3.2.4

BASES

ACTIONS

B.1V (continued) B.2.1, and B.2.2

with less DNBR margin (closer to the DNBR limit) than when monitoring with the CPCs.

When operating with the COLSS out of service there is a possibility of a slow undetectable transient that degrades the DNBR slowly over the 4 hour period and is then followed by an anticipated operational occurrence or an accident. To remedy this, the CPC calculated values of DNBR are monitored every 15 minutes when the COLSS is out of service. Also, a maximum allowable change in the CPC calculated DNBR ensures that further degradation requires the operators to take immediate action to reduce reactor power to comply with the Technical Specifications (TS). Implementation of this requirement ensures that reductions in core thermal margin are quickly detected and, if necessary, results in a decrease in reactor power and subsequent compliance with the existing COLSS out of service TS limits.

restore DNBR to within limits or

with no adverse trend, 4

With an adverse trend, 1 hour is allowed for restoring DNBR to within limits if the COLSS is not restored to OPERABLE status.

Four hours is allowed for restoring the DNBR to within limits if the COLSS is not restored to OPERABLE status. This duration is reasonable because the Frequency of the CPC determination of DNBR has been increased, and, if operation is maintained steady, the likelihood of exceeding the DNBR limit during this period is not increased. The likelihood of induced reactor transients from an early power reduction is also decreased.

C.1

If the DNBR cannot be restored or determined within the allowed times of Conditions A and B, core power must be reduced. Reduction of core power to $\leq 20\%$ RTP ensures that the core is operating within its thermal limits and places the core in a conservative condition based on trip setpoints generated by the CPCs, which assume a minimum core power of 20% RTP.

The allowed Completion Time of 6 hours is reasonable, based on operating experience, to reach 20% RTP from full power conditions in an orderly manner and without challenging plant systems.

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