
Industry/TSTF Standard Technical Specification Change Traveler

Provide separate condition entry for each PORV and block valve

Priority/Classification 3) Improve Specifications

NUREGs Affected: 1430 1431 1432 1433 1434

Description:

This change provides separate condition entry for each PORV and block valve. It also adds bracketed information to NUREG-1431 to accommodate plants with three PORVs and associated block valves. A Reviewer's Note is added to explain the bracketed information.

Justification:

The existing LCO 3.4.11 Conditions allow separate condition entry for each PORV. The Conditions and Required Actions provide appropriate compensatory measures for separate condition entry. The Conditions and Required Actions also provide appropriate compensatory actions for separate condition entry for each block valve. Therefore, the Actions Note is modified to allow separate condition entry for each block valve.

The proposed Condition F is modified to apply when all block valves are inoperable. The existing actions are modified to not require that the PORVs be placed in manual control because if the block valves are not restored within 2 hours a plant shutdown is required and the PORVs will be needed for Low Temperature OverPressure protection. Therefore, the PORVs should not be placed in manual control. In NUREG-1431, The bracketed Action F.3 is eliminated (Restore remaining block valve(s) to OPERABLE status) as with separate condition entry for each block valve it is not needed.

An editorial change is made to NUREG-1432 which moved the discussion of the Action Notes above the first action.

The applicability of this changes is based on Combustion Engineering reactors not having three PORVs and block valves and B&W plants having only one PORV and block valve.

Revision History

OG Revision 0

Revision Status: Active

Next Action: NRC

Revision Proposed by: Byron/Braidwood

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 14-Jan-97

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 14-Jan-97

2/20/98

TSTF Review Information

TSTF Received Date: 20-Jan-97 Date Distributed for Review 06-Jan-98

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

Originally distributed on 4/8/97

CEOG Comments from 4/24/97: Applicable, accepts.

B&W - NA, accepts

Note 1 of Actions and F.1 are applicable to CEOG. Other changes apply only to WOG.

TSTF Resolution: Approved Date: 05-Feb-98

Incorporation Into the NUREGs

File to BBS/LAN Date:

TSTF Informed Date:

TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

Action 3.4.11	Pressurizer PORVs	
	Change Description:	Action Note 1
Action 3.4.11 Bases	Pressurizer PORVs	
	Change Description:	Action Notes
Action 3.4.11.F	Pressurizer PORVs	
Action 3.4.11.F Bases	Pressurizer PORVs	
Action 3.4.11.C	Pressurizer PORVs	NUREG(s)- 1431 Only
Action 3.4.11.C Bases	Pressurizer PORVs	NUREG(s)- 1431 Only
Action 3.4.11.A Bases	Pressurizer PORVs	NUREG(s)- 1432 Only

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3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Pressurizer Power Operated Relief Valves (PORVs)

LCO 3.4.11 Each PORV and associated block valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

and each block valve

NOTES

- 1. Separate Condition entry is allowed for each PORV.
- 2. LCO 3.0.4 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more PORVs inoperable and capable of being manually cycled.	A.1 Close and maintain power to associated block valve.	1 hour
B. One [or two] PORV[s] inoperable and not capable of being manually cycled.	B.1 Close associated block valve[s].	1 hour
	<u>AND</u>	
	B.2 Remove power from associated block valve[s].	1 hour
	<u>AND</u>	
	B.3 Restore PORV[s] to OPERABLE status.	72 hours

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. One block valve^(S) inoperable. [or two]</p>	<p>C.1 Place associated PORV in manual control. <u>AND</u> C.2 Restore block valve^(S) to OPERABLE status.</p>	<p>1 hour 72 hours</p>
<p>D. Required Action and associated Completion Time of Condition A, B, or C not met.</p>	<p>D.1 Be in MODE 3. <u>AND</u> D.2 Be in MODE 4.</p>	<p>6 hours 12 hours</p>
<p>E. Two [or three] PORVs inoperable and not capable of being manually cycled.</p>	<p>E.1 Close associated block valves. <u>AND</u> E.2 Remove power from associated block valves. <u>AND</u> E.3 Be in MODE 3. <u>AND</u> E.4 Be in MODE 4.</p>	<p>1 hour 1 hour 6 hours 12 hours</p>
<p>F. More than one block valve inoperable. ^(S) Two [or three]</p>	<p>F.1 Place associated PORVs in manual control. <u>AND</u></p>	<p>1 hour (continued)</p>

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ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. (continued)	F.2 ^① Restore one block valve to OPERABLE status [if three block valves are inoperable].	2 hours
	AND F.3 Restore remaining block valve(s) to OPERABLE status.	72 hours
G. Required Action and associated Completion Time of Condition F not met.	G.1 Be in MODE 3.	6 hours
	AND	
	G.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.11.1 -----NOTE----- Not required to be met with block valve closed in accordance with the Required Action of Condition B or E. ----- Perform a complete cycle of each block valve.	92 days
SR 3.4.11.2 Perform a complete cycle of each PORV.	[18] months

(continued)

BASES (continued)

APPLICABILITY

In MODES 1, 2, and 3, the PORV and its block valve are required to be OPERABLE to limit the potential for a small break LOCA through the flow path. The most likely cause for a PORV small break LOCA is a result of a pressure increase transient that causes the PORV to open. Imbalances in the energy output of the core and heat removal by the secondary system can cause the RCS pressure to increase to the PORV opening setpoint. The most rapid increases will occur at the higher operating power and pressure conditions of MODES 1 and 2. The PORVs are also required to be OPERABLE in MODES 1, 2, and 3 to minimize challenges to the pressurizer safety valves.

Pressure increases are less prominent in MODE 3 because the core input energy is reduced, but the RCS pressure is high. Therefore, the LCO is applicable in MODES 1, 2, and 3. The LCO is not applicable in MODE 4 when both pressure and core energy are decreased and the pressure surges become much less significant. The PORV setpoint is reduced for LTOP in MODES 4, 5, and 6 with the reactor vessel head in place. LCO 3.4.12 addresses the PORV requirements in these MODES.

ACTIONS

Note 1 has been added to clarify that all pressurizer PORVs are treated as separate entities, each with separate Completion Times (i.e., the Completion Time is on a component basis). The exception for LCO 3.0.4, Note 2, permits entry into MODES 1, 2, and 3 to perform cycling of the PORVs or block valves to verify their OPERABLE status. Testing is not performed in lower MODES.

Insert 1

A.1

and block valves

With the PORVs inoperable and capable of being manually cycled, either the PORVs must be restored or the flow path isolated within 1 hour. The block valves should be closed but power must be maintained to the associated block valves, since removal of power would render the block valve inoperable. Although a PORV may be designated inoperable, it may be able to be manually opened and closed, and therefore, able to perform its function. PORV inoperability may be due to seat leakage, instrumentation problems, automatic control problems, or other causes that do not prevent manual use and do not create a possibility for a

(continued)

Insert 1

----- Reviewer's Note -----

The bracketed options in Conditions B, C, E, and F are to accommodate plants with three PORVS and associated block valves.

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BASES

ACTIONS

A.1 (continued)

small break LOCA. For these reasons, the block valve may be closed but the Action requires power be maintained to the valve. This Condition is only intended to permit operation of the plant for a limited period of time not to exceed the next refueling outage (MODE 6) so that maintenance can be performed on the PORVs to eliminate the problem condition. Normally, the PORVs should be available for automatic mitigation of overpressure events and should be returned to OPERABLE status prior to entering startup (MODE 2).

Quick access to the PORV for pressure control can be made when power remains on the closed block valve. The Completion Time of 1 hour is based on plant operating experience that has shown that minor problems can be corrected or closure accomplished in this time period.

B.1, B.2, and B.3

If one [or two] PORV[s] is inoperable and not capable of being manually cycled, it must be either restored or isolated by closing the associated block valve and removing the power to the associated block valve. The Completion Times of 1 hour are reasonable, based on challenges to the PORVs during this time period, and provide the operator adequate time to correct the situation. If the inoperable valve cannot be restored to OPERABLE status, it must be isolated within the specified time. Because there is at least one PORV that remains OPERABLE, an additional 72 hours is provided to restore the inoperable PORV to OPERABLE status. If the PORV cannot be restored within this additional time, the plant must be brought to a MODE in which the LCO does not apply, as required by Condition D.

C.1 and C.2

[or two] (s) are (s)

If one block valve is inoperable, then it is necessary to either restore the block valve to OPERABLE status within the Completion Time of 1 hour or place the associated PORV in manual control. The prime importance for the capability to close the block valve is to isolate a stuck open PORV. Therefore, if the block valve cannot be restored to OPERABLE

(s)

(continued)

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BASES

ACTIONS

E.1, E.2, E.3, and E.4 (continued)

to correct the situation. If one PORV is restored and one PORV remains inoperable, then the plant will be in Condition B with the time clock started at the original declaration of having two [or three] PORVs inoperable. If no PORVs are restored within the Completion Time, then the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. In MODES 4 and 5, maintaining PORV OPERABILITY may be required. See LCO 3.4.12.

F.1, F.2, and F.3

two [or three]

If ~~more than one~~ block valve ~~is~~ inoperable, it is necessary to either restore the block valves within the Completion Time of 1 hour, or place the associated PORVs in manual control and restore at least one block valve within 2 hours ~~(and restore the remaining block valve within 12 hours)~~. The Completion Times ~~are~~ reasonable, based on the small potential for challenges to the system during this time and provide the operator time to correct the situation.

is are

is

G.1 and G.2

If the Required Actions of Condition F are not met, then the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. In MODES 4 and 5, maintaining PORV OPERABILITY may be required. See LCO 3.4.12.

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3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.11 Pressurizer Power Operated Relief Valves (PORVs)

LCO 3.4.11 Each PORV and associated block valve shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTIONS

and each block valve

NOTES

1. Separate Condition entry is allowed for each PORV.
2. LCO 3.0.4 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more PORVs inoperable and capable of being manually cycled.	A.1 Close and maintain power to associated block valve.	1 hour
B. One PORV inoperable and not capable of being manually cycled.	B.1 Close associated block valve.	1 hour
	<u>AND</u>	
	B.2 Remove power from associated block valve.	1 hour
	<u>AND</u>	
	B.3 Restore PORV to OPERABLE status.	72 hours

(continued)

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ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. One block valve inoperable.</p>	<p>C.1 Place associated PORV in manual control.</p> <p><u>AND</u></p> <p>C.2 Restore block valve to OPERABLE status.</p>	<p>1 hour</p> <p>72 hours</p>
<p>D. Required Action and associated Completion Time of Condition A, B, or C not met.</p>	<p>D.1 Be in MODE 3.</p> <p><u>AND</u></p> <p>D.2 Be in MODE 4.</p>	<p>6 hours</p> <p>[12] hours</p>
<p>E. Two PORVs inoperable and not capable of being manually cycled.</p>	<p>E.1 Close associated block valves.</p> <p><u>AND</u></p> <p>E.2 Remove power from associated block valves.</p> <p><u>AND</u></p> <p>E.3 Be in MODE 3.</p> <p><u>AND</u></p> <p>E.4 Be in MODE 4.</p>	<p>1 hour</p> <p>1 hour</p> <p>6 hours</p> <p>[12] hours</p>
<p>F. More than one block valve inoperable.</p> <p>Two (S)</p>	<p>F.1 Place associated PORVs in manual control.</p> <p><u>AND</u></p>	<p>1 hour</p> <p>(continued)</p>

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. (continued)	F. ⁵⁰ Restore at least one block valve to OPERABLE status.	2 hours
G. Required Action and associated Completion Time of Condition F not met.	G.1 Be in MODE 3.	6 hours
	<u>AND</u> G.2 Be in MODE 4.	[12] hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.11.1 -----NOTE----- Not required to be performed with block valve closed in accordance with the Required Actions of this LCO. ----- Perform a complete cycle of each block valve.	[92 days]
SR 3.4.11.2 Perform a complete cycle of each PORV.	[18] months
[SR 3.4.11.3 Perform a complete cycle of each solenoid air control valve and check valve on the air accumulators in PORV control systems.]	[18] months]

(continued)

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BASES

APPLICABILITY (continued) MODES 4, 5, and 6 with the reactor vessel head in place.
LCO 3.4.12 addresses the PORV requirements in these MODES.

ACTIONS

A.1

and block valves

The ACTIONS are modified by two Notes. Note 1 clarifies that all pressurizer PORVs are treated as separate entities, each with separate Completion Times (i.e., the Completion Time is on a component basis). Note 2 is an exception to LCO 3.0.4. The exception for LCO 3.0.4 permits entry into MODES 1, 2, and 3 to perform cycling of the PORV or block valve to verify their OPERABLE status. Testing is typically not performed in lower MODES.

With the PORV inoperable and capable of being manually cycled, either the PORV must be restored or the flow path isolated within 1 hour. The block valve should be closed but power must be maintained to the associated block valve, since removal of power would render the block valve inoperable. Although the PORV may be designated inoperable, it may be able to be manually opened and closed and in this manner can be used to perform its function. PORV inoperability may be due to seat leakage, instrumentation problems, automatic control problems, or other causes that do not prevent manual use and do not create a possibility for a small break LOCA. For these reasons, the block valve may be closed but the Action requires power be maintained to the valve. This Condition is only intended to permit operation of the plant for a limited period of time not to exceed the next refueling outage (MODE 6) so that maintenance can be performed on the PORVs to eliminate the problem condition. The PORVs should normally be available for automatic mitigation of overpressure events and should be returned to OPERABLE status prior to entering startup (MODE 2).

Quick access to the PORV for pressure control can be made when power remains on the closed block valve. The Completion Time of 1 hour is based on plant operating experience that minor problems can be corrected or closure can be accomplished in this time period.

(continued)

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BASES

ACTIONS

D.1 and D.2 (continued)

status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

E.1, E.2, E.3, and E.4

If more than one PORV is inoperable and not capable of being manually cycled, it is necessary to either restore at least one valve within the Completion Time of 1 hour or isolate the flow path by closing and removing the power to the associated block valves. The Completion Time of 1 hour is reasonable based on the small potential for challenges to the system during this time and provides the operator time to correct the situation. If one PORV is restored and one PORV remains inoperable, then the plant will be in Condition B with the time clock started at the original declaration of having two PORVs inoperable. If no PORVs are restored within the Completion Time, then the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. The Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging plant systems. Similarly, the Completion Time of 12 hours to reach MODE 4 is reasonable, considering that a plant can cool down within that time frame on one safety system train. In MODES 4 and 5, maintaining PORV OPERABILITY may be required. See LCO 3.4.12.

F.1 ~~and F.2~~ two 5 are
If more than one block valve is inoperable, it is necessary to either restore the block valves within the Completion Time of 1 hour or place the associated PORVs in manual control and restore at least one block valve to OPERABLE status within 2 hours and the remaining block valve in 72 hours. The Completion time of 1 hour to either restore the block valves or place the associated PORVs in manual

(continued)

BASES

ACTIONS

F.1 and F.2 (continued)

control is reasonable based on the small potential for challenges to the system during this time and provides the operator time to correct the situation.

G.1 and G.2

If the Required Actions and associated Completion Times of Condition E or F are not met, then the plant must be brought to a MODE in which the LCO does not apply. The plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. The Completion Time of 6 hours is reasonable, based on operating experience, to reach MODE 3 from full power in an orderly manner and without challenging safety systems. Similarly, the Completion Time of 12 hours to reach MODE 4 is reasonable considering that a plant can cool down within that time frame on one safety system train. In MODES 4 and 5, maintaining PORV OPERABILITY may be required. See LCO 3.4.12.

SURVEILLANCE
REQUIREMENTS

SR 3.4.11.1

Block valve cycling verifies that it can be closed if necessary. The basis for the Frequency of [92 days] is ASME XI (Ref. 3). If the block valve is closed to isolate a PORV that is capable of being manually cycled, the OPERABILITY of the block valve is of importance because opening the block valve is necessary to permit the PORV to be used for manual control of reactor pressure. If the block valve is closed to isolate an otherwise inoperable PORV, the maximum Completion Time to restore the PORV and open the block valve is 72 hours, which is well within the allowable limits (25%) to extend the block valve surveillance interval of [92 days]. Furthermore, these test requirements would be completed by the reopening of a recently closed block valve upon restoration of the PORV to OPERABLE status (i.e., completion of the Required Action fulfills the SR).

The Note modifies this SR by stating that this SR is not required to be performed with the block valve closed in accordance with the Required Actions of this LCO.

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