Industry/TSTF Standard Technical Specification Change Traveler

Provide Consistent Completion Time to Reach MODE 4

Classification: 2) Consistency/Standardization

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

Description:

Revise the Completion Times for Required Actions which direct entry into conditions below MODE 4 to allow sufficient time to safely perform the actions. The Specifications affected are Pressurizer Safety Valves, Atmospheric Dump Valves, and Condensate Storage Tank. In a different, but related, change, the time to go from LTOP conditions to having the RCS vented is revised to be consistent between NUREGs and to allow sufficient time to complete the activity.

Justification:

The following presents the allowed times for attaining various shutdown conditions from MODE 1 normal operating pressure and temperature (and assuming the required equipment is available):

MODE	Completion Time
1	...
3	6 hours
4	12 hours
5	36 hours

However, many Required Actions specify entry into conditions which take longer to achieve than MODE 4, but only allow the normal 12 hours to enter those conditions from MODE 3. This leaves insufficient time to enter MODE 4 and the required condition in a controlled manner. Some other specifications allow 18 hours for similar circumstances. Therefore, for those conditions, the Completion Time is revised to 24 hours (half way between the MODE 4 and MODE 5 Completion Times) to provide a consistent, adequate Completion Time. The affected Conditions are discussed individually below.

1. Specification 3.4.10, Pressurizer Safety Valves, Condition B, requires the plant to be in MODE 4 and cooled down to the LTOP enable temperature within [12] hours. Assuming the LTOP enable temperature is below the MODE 4 entry conditions, additional time should be provided beyond the normal 12 hours allowed to reach MODE 4.

2. Specification 3.7.4, Atmospheric Dump Valves, Condition C, requires the plant to be in MODE 4 without reliance on the SG for heat removal within [12] hours. This requires cooling to shutdown cooling entry conditions, which for many designs is below the MODE 4 entry temperature. In order to meet this Completion Time, many plants would have to start shutdown before the restoration period, allowed by conditions A or B, was up. Therefore, using the logic presented above, the Completion Time is revised to 24 hours for going from MODE 1 to MODE 4 without reliance on SG for heat removal. The additional time is needed for the cooldown and depressurization of the RCS to SDC entry conditions.

3. Specification 3.7.6, Condensate Storage Tank, Condition B, requires the plant to be in MODE 4 without reliance on the SG for heat removal within [18] hours. (Note that 3.7.4 allows 12 hours for the same Required Action.) In order to do this, many plants would have to start shutdown before the restoration period, allowed by Condition A , was expired. Based on the logic given above, the Completion Time is revised to [24] hours for going from MODE 1 to MODE 4 without reliance on SG for heat removal. The additional time is needed for the cooldown and depressurization of the RCS to SDC entry conditions.

4. NUREG-1431 and NUREG-1432, Specification 3.4.10, LTOP, Condition G, requires the plant to depressurize the RCS and establish a vent of [ ] inches within 8 hours. NUREG-1430 allows 12 hours for this same condition. The proposed change is to extend the 8 hours Completion Time in NUREGs 1431 and 1432 to 12 hours. Eight hours is insufficient time to plan a MODE change, cool down (following the plant cooldown rate limits), plan and execute the

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Description:

Revise the Completion Times for Required Actions which direct entry into conditions below MODE 4 to allow sufficient time to safely perform the actions. The Specifications affected are Pressurizer Safety Valves, Atmospheric Dump Valves, and Condensate Storage Tank. In a different, but related, change, the time to go from LTOP conditions to having the RCS vented is revised to be consistent between NUREGs and to allow sufficient time to complete the activity.

Justification:

The following presents the allowed times for attaining various shutdown conditions from MODE 1 normal operating pressure and temperature (and assuming the required equipment is available):

MODE	Completion Time
1	...
3	6 hours
4	12 hours
5	36 hours

However, many Required Actions specify entry into conditions which take longer to achieve than MODE 4, but only allow the normal 12 hours to enter those conditions from MODE 3. This leaves insufficient time to enter MODE 4 and the required condition in a controlled manner. Some other specifications allow 18 hours for similar circumstances. Therefore, for those conditions, the Completion Time is revised to 24 hours (half way between the MODE 4 and MODE 5 Completion Times) to provide a consistent, adequate Completion Time. The affected Conditions are discussed individually below.

1. Specification 3.4.10, Pressurizer Safety Valves, Condition B, requires the plant to be in MODE 4 and cooled down to the LTOP enable temperature within [12] hours. Assuming the LTOP enable temperature is below the MODE 4 entry conditions, additional time should be provided beyond the normal 12 hours allowed to reach MODE 4.

2. Specification 3.7.4, Atmospheric Dump Valves, Condition C, requires the plant to be in MODE 4 without reliance on the SG for heat removal within [12] hours. This requires cooling to shutdown cooling entry conditions, which for many designs is below the MODE 4 entry temperature. In order to meet this Completion Time, many plants would have to start shutdown before the restoration period, allowed by conditions A or B, was up. Therefore, using the logic presented above, the Completion Time is revised to 24 hours for going from MODE 1 to MODE 4 without reliance on SG for heat removal. The additional time is needed for the cooldown and depressurization of the RCS to SDC entry conditions.

3. Specification 3.7.6, Condensate Storage Tank, Condition B, requires the plant to be in MODE 4 without reliance on the SG for heat removal within [18] hours. (Note that 3.7.4 allows 12 hours for the same Required Action.) In order to do this, many plants would have to start shutdown before the restoration period, allowed by Condition A , was expired. Based on the logic given above, the Completion Time is revised to [24] hours for going from MODE 1 to MODE 4 without reliance on SG for heat removal. The additional time is needed for the cooldown and depressurization of the RCS to SDC entry conditions.

4. NUREG-1431 and NUREG-1432, Specification 3.4.10, LTOP, Condition G, requires the plant to depressurize the RCS and establish a vent of [ ] inches within 8 hours. NUREG-1430 allows 12 hours for this same condition. The proposed change is to extend the 8 hours Completion Time in NUREGs 1431 and 1432 to 12 hours. Eight hours is insufficient time to plan a MODE change, cool down (following the plant cooldown rate limits), plan and execute the

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maintenance activity of opening a vent, and cool the RCS sufficiently to safely open a vent. The 12 hours allowed by NUREG-1430 is more appropriate.

5. (NUREG-1430 only) Specification 3.4.9, Pressurizer, Condition B, requires the plant to be in MODE 4 with RCS temperature <= [275] F within 12 hours. This is below the MODE 4 entry temperature of [350]F, but only 12 hours is allowed, the same Completion Time allowed to enter MODE 4. In order to do this, many plants would have to start shutdown before the restoration period, allowed by Condition A , was expired. Based on the logic given above, the Completion Time is revised to [24] hours for going from MODE 1 to MODE 4 with RCS temperature <= [275] F. The additional time is needed for the cooldown of the RCS to the specified temperature.

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Revision History

OG Revision 0 Revision Status: Closed

Revision Proposed by: Palo Verde

Revision Description:
Original Issue

Owners Group Review Information

Date Originated by OG: 08-Mar-1999

Owners Group Comments
(No Comments)

Owners Group Resolution: Approved Date: 16-Mar-1999

TSTF Review Information

TSTF Received Date: 02-Jun-1999 Date Distributed for Revie 17-Jun-1999

OG Review Completed ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF Comments:

Applicable to PWR OGs.

TSTF Resolution: Approved Date: 07-Jul-1999

NRC Review Information

NRC Received Date: 04-Aug-1999

NRC Comments:

1/10/00 - forwarded to PRA branch of NRC.

2/10/00 - NRC provided comments. Change to 3.4.12 requires PRA evaluation.

Final Resolution: Superceded by Revision Final Resolution Date: 16-Feb-2000

TSTF Revision 1 Revision Status: Active Next Action: NRC

Revision Proposed by: TSTF

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

Revision Description:
The revision 0 change to extend the LCO 3.4.12, LTOP, Completion Time from 8 and 12 hours to [24] hours is eliminated and a change to NUREG-1431 and NUREG-1432 to extend the 8 hour Completion Time to 12 hours is proposed. Item 4 in the Justification is revised to describe the change.

TSTF Review Information

TSTF Received Date: 08-Mar-2000 Date Distributed for Revie 08-Mar-2000

OG Review Completed ☑ BWOG ☑ WOG ☑ CEOG ☑ BWROG

TSTF Comments:
(No Comments)

TSTF Resolution: Approved Date: 08-Mar-2000

NRC Review Information

NRC Received Date: 13-Mar-2000

NRC Comments:
(No Comments)

Final Resolution: NRC Action Pending Final Resolution Date:

Incorporation Into the NUREGs

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

NUREG Rev Incorporated:

Affected Technical Specifications

Action 3.4.10.B	Pressurizer Safety Valves	
Action 3.4.10.B Bases	Pressurizer Safety Valves	
Action 3.7.6.B	CST	
Action 3.7.6.B Bases	CST	
Action 3.4.9.B	Pressurizer	NUREG(s)- 1430 Only
Action 3.4.9.B Bases	Pressurizer	NUREG(s)- 1430 Only
Action 3.7.4.C	AVVs	NUREG(s)- 1430 Only
Action 3.7.4.C Bases	AVVs	NUREG(s)- 1430 Only
Action 3.4.12.G	LTOP System	NUREG(s)- 1431 1432 Only
Action 3.4.12.G Bases	LTOP System	NUREG(s)- 1431 1432 Only

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Action 3.7.4.C	ADVs	NUREG(s)- 1431 1432 Only
Action 3.7.4.C Bases	ADVs	NUREG(s)- 1431 1432 Only

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TSTF 3[illegible], Rev.1

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.9 Pressurizer

LCO 3.4.9 The pressurizer shall be OPERABLE with:

a. Pressurizer water level ≤ [290] inches; and

b. A minimum of [126] kW of pressurizer heaters OPERABLE [and capable of being powered from an emergency power supply].

---NOTE---
OPERABILITY requirements on pressurizer heaters do not apply in MODE 4.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 with RCS temperature ≥ [275]°F.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Pressurizer water level not within limit.	A.1 Restore level to within limit.	1 hour
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 4 with RCS temperature ≤ [275]°F.	6 hours [24] ~~12~~ hours

(continued)

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BASES

APPLICABILITY (continued)

System is in service, and therefore the LCO is not applicable.

ACTIONS

A.1

With pressurizer water level in excess of the maximum limit, action must be taken to restore pressurizer operation to within the bounds assumed in the analysis. This is done by restoring the pressurizer water level to within the limit. The 1 hour Completion Time is considered to be a reasonable time for draining excess liquid.

B.1 and B.2

If the water level cannot be restored, reducing core power constrains heat input effects that drive pressurizer insurge that could result from an anticipated transient. By shutting down the reactor and reducing reactor coolant temperature to at least MODE 3, the potential thermal energy of the reactor coolant mass for LOCA mass and energy releases is reduced.

Six hours is a reasonable time based upon operating experience to reach MODE 3 from full power without challenging plant systems and operators. Further pressure and temperature reduction to MODE 4 with RCS temperature ≤ [275]°F places the plant into a MODE where the LCO is not applicable. The 12 hour Completion Time to reach the nonapplicable MODE is reasonable based upon operating experience.

[24]

C.1

If the [emergency] power supplies to the heaters are not capable of providing [126] kW, or the pressurizer heaters are inoperable, restoration is required in 72 hours. The Completion Time of 72 hours is reasonable considering the anticipation that a demand caused by loss of offsite power will not occur in this period. Pressure control may be maintained during this time using normal station powered heaters.

(continued)

TSTF-31-, Rev. 1

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Pressurizer Safety Valves

LCO 3.4.10 Two pressurizer safety valves shall be OPERABLE with lift settings ≥ [2475] psig and ≤ [2525] psig.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 with all RCS cold leg temperatures > [283]°F.

----------NOTE----------
The lift settings are not required to be within the LCO limits for entry into MODES 3 and 4 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for [36] hours following entry into MODE 3 provided a preliminary cold setting was made prior to heatup.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One pressurizer safety valve inoperable.	A.1 Restore valve to OPERABLE status.	15 minutes
B. Required Action and associated Completion Time not met. OR Two pressurizer safety valves inoperable.	B.1 Be in MODE 3. AND B.2 Be in MODE 4 with any RCS cold leg temperature ≤ [283]°F.	6 hours [24] ~~12~~ hours

TSTF-372, Rev. 1

BASES

APPLICABILITY (continued)

certain accidents. MODE 3 and portions of MODE 4 are conservatively included, although the listed accidents may not require both safety valves for protection.

The LCO is not applicable in MODE 4 when any RCS cold leg temperature is ≤ [283]°F and MODE 5 because LTOP protection is provided. Overpressure protection is not required in MODE 6 with the reactor vessel head detensioned.

The Note allows entry into MODES 3 and 4 with the lift settings outside the LCO limits. This permits testing and examination of the safety valves at high pressure and temperature near their normal operating range, but only after the valves have had a preliminary cold setting. The cold setting gives assurance that the valves are OPERABLE near their design condition. Only one valve at a time will be removed from service for testing. The [36] hour exception is based on an 18 hour outage time for each of the two valves. The 18 hour period is derived from operating experience that hot testing can be performed in this timeframe.

ACTIONS

A.1

With one pressurizer safety valve inoperable, restoration must take place within 15 minutes. The Completion Time of 15 minutes reflects the importance of maintaining the RCS overpressure protection system. An inoperable safety valve coincident with an RCS overpressure event could challenge the integrity of the RCPB.

B.1 and B.2

If the Required Action cannot be met within the required Completion Time or if both pressurizer safety valves are inoperable, the plant must be brought to a MODE in which the requirement does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 with any RCS cold leg temperature ≤ [283]°F within 12 hours. The 6 hours allowed is reasonable, based on operating experience, to reach MODE 3 from full power conditions in an orderly manner and without challenging plant systems. Similarly, the ~~12~~ [24] hours allowed is

(continued)

3.7 PLANT SYSTEMS

TSTF-352, Rev. 1

3.7.4 Atmospheric Vent Valves (AVVs)

LCO 3.7.4 [Two] AVVs [lines per steam generator] shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required AVV [line] inoperable.	A.1	--------NOTE--------- LCO 3.0.4 is not applicable. ---------- Restore required AVV [line] to OPERABLE status.	[7 days]
[B. Two or more required AVV [lines] inoperable.]	B.1	Restore one AVV [line] to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 4 without reliance upon steam generator for heat removal.	18 hours [24]

TSTF-372, Rev 1

BASES (continued)

APPLICABILITY

In MODES 1, 2, and 3, and in MODE 4, when steam generator is being relied upon for heat removal, the AVVs are required to be OPERABLE.

In MODES 5 and 6, an SGTR is not a credible event.

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating that LCO 3.0.4 does not apply.

With one AVV [line] inoperable, action must be taken to restore the inoperable AVV to OPERABLE status. The 7 day Completion Time allows for redundant capability afforded by the remaining OPERABLE AVV and a nonsafety grade backup in the Steam Bypass System and MSSVs.

[B.1

With more than one AVV [line] inoperable, action must be taken to restore [all but one] AVV [lines] to OPERABLE status. As the block valve can be closed to isolate an AVV, some repairs may be possible with the unit at power. The 24 hour Completion Time is reasonable to repair inoperable AVV [lines], based on the availability of the Steam Bypass System and MSSVs, and the low probability of an event occurring during this period that would require the AVV [lines].]

C.1 and C.2

If the AVV [lines] cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4 within ~~18~~ hours, [24] without reliance upon the steam generator for heat removal. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

(continued)

TSTF-312, Rev.1

3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST)

LCO 3.7.6 The [two] CST level(s) shall be ≥ [250,000] gal.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. The [two] CST level(s) not within limits.	A.1	Verify by administrative means OPERABILITY of backup water supply.	4 hours AND Once per 12 hours thereafter
	AND		
	A.2	Restore CST level(s) to within limit.	7 days
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 4 without reliance on steam generator for heat removal.	~~[18 hours]~~ [24 hours]

BASES (continued)

ACTIONS

A.1 and A.2

As an alternative to unit shutdown, the OPERABILITY of the backup water supply should be verified within 4 hours and once every 24 hours thereafter. The OPERABILITY of the backup feedwater supply must include verification, by administrative means, of the OPERABILITY of flow paths from the backup supply to the EFW pumps and availability of the required volume of water in the backup supply. The CST must be restored to OPERABLE status within 7 days because the backup supply may be performing this function in addition to its normal functions. The 4 hour Completion Time is reasonable, based on operating experience, to verify the OPERABILITY of the backup water supply. The 7 day Completion Time is reasonable, based on an OPERABLE backup water supply being available, and the low probability of an event occurring during this time period, requiring the use of the water from the CST(s).

B.1 and B.2

If the CST cannot be restored to OPERABLE status in the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply, with the DHR System in operation. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance on steam generators for heat removal, within [24 hours] ~~[18 hours]~~. This allows an additional 6 hours for the DHR System to be placed in service after entering MODE 4.

The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.6.1

This SR verifies that the CST(s) contains the required volume of cooling water. The 12 hour Frequency is based on operating experience and the need for operator awareness of unit evolutions that may affect the CST inventory between checks. The 12 hour Frequency is considered adequate in view of other indications in the control room, including

(continued)

TSTF 352, Rev. 1

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Pressurizer Safety Valves

LCO 3.4.10 [Three] pressurizer safety valves shall be OPERABLE with lift settings ≥ [2460] psig and ≤ [2510] psig.

APPLICABILITY: MODES 1, 2, and 3.
MODE 4 with all RCS cold leg temperatures > [275]°F.

----------NOTE----------
The lift settings are not required to be within the LCO limits during MODES 3 and 4 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for [54] hours following entry into MODE 3 provided a preliminary cold setting was made prior to heatup.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One pressurizer safety valve inoperable.	A.1	Restore valve to OPERABLE status.	15 minutes
B. Required Action and associated Completion Time not met. OR Two or more pressurizer safety valves inoperable.	B.1 AND B.2	Be in MODE 3. Be in MODE 4 with any RCS cold leg temperatures ≤ [275]°F.	6 hours ~~12~~ [24] hours

BASES

ACTIONS

A.1 (continued)

coincident with an RCS overpressure event could challenge the integrity of the pressure boundary.

B.1 and B.2

If the Required Action of A.1 cannot be met within the required Completion Time or if two or more pressurizer safety valves are inoperable, the plant must be brought to a MODE in which the requirement does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 with any RCS cold leg temperatures ≤ [275]°F 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. With any RCS cold leg temperatures at or below [275]°F, overpressure protection is provided by the LTOP System. The change from MODE 1, 2, or 3 to MODE 4 reduces the RCS energy (core power and pressure), lowers the potential for large pressurizer insurges, and thereby removes the need for overpressure protection by [three] pressurizer safety valves.

[24]

SURVEILLANCE REQUIREMENTS

SR 3.4.10.1

SRs are specified in the Inservice Testing Program. Pressurizer safety valves are to be tested in accordance with the requirements of Section XI of the ASME Code (Ref. 4), which provides the activities and Frequencies necessary to satisfy the SRs. No additional requirements are specified.

The pressurizer safety valve setpoint is ± [3]% for OPERABILITY; however, the valves are reset to ± 1% during the Surveillance to allow for drift.

REFERENCES

1. ASME, Boiler and Pressure Vessel Code, Section III.

2. FSAR, Chapter [15].

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. Two required RCS relief valves inoperable. OR Required Action and associated Completion Time of Condition A, [B,] D, E, or F not met. OR LTOP System inoperable for any reason other than Condition A, [B,] C, D, E, or F.	G.1 Depressurize RCS and establish RCS vent of ≥ [2.07] square inches.	8 hours 12

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.12.1	Verify a maximum of [one] [HPI] pump is capable of injecting into the RCS.	12 hours
[SR 3.4.12.2	Verify a maximum of one charging pump is capable of injecting into the RCS.	12 hours]
SR 3.4.12.3	Verify each accumulator is isolated.	12 hours

(continued)

BASES

ACTIONS

E.1 (continued)

The Completion Time considers the facts that only one of the RCS relief valves is required to mitigate an overpressure transient and that the likelihood of an active failure of the remaining valve path during this time period is very low.

F.1

The consequences of operational events that will overpressurize the RCS are more severe at lower temperature (Ref. 7). Thus, with one of the two RCS relief valves inoperable in MODE 5 or in MODE 6 with the head on, the Completion Time to restore two valves to OPERABLE status is 24 hours.

The Completion Time represents a reasonable time to investigate and repair several types of relief valve failures without exposure to a lengthy period with only one OPERABLE RCS relief valve to protect against overpressure events.

G.1

12

The RCS must be depressurized and a vent must be established within 8 hours when:

a. Both required RCS relief valves are inoperable; or

b. A Required Action and associated Completion Time of Condition A, [B.] D, E, or F is not met; or

c. The LTOP System is inoperable for any reason other than Condition A, [B.] C, D, E, or F.

The vent must be sized ≥ [2.07] square inches to ensure that the flow capacity is greater than that required for the worst case mass input transient reasonable during the applicable MODES. This action is needed to protect the RCPB from a low temperature overpressure event and a possible brittle failure of the reactor vessel.

(continued)

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Dump Valves (ADVs)

LCO 3.7.4 [Three] ADV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required ADV line inoperable.	A.1	--------NOTE--------- LCO 3.0.4 is not applicable. ----------	
		Restore required ADV line to OPERABLE status.	7 days
B. Two or more required ADV lines inoperable.	B.1	Restore one ADV line to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 4 without reliance upon steam generator for heat removal.	~~[18]~~ [24] hours

BASES

ACTIONS

C.1 and C.2 (continued)

MODE 3 within 6 hours, and in MODE 4, without reliance upon steam generator for heat removal, within [18] hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

To perform a controlled cooldown of the RCS, the ADVs must be able to be opened either remotely or locally and throttled through their full range. This SR ensures that the ADVs are tested through a full control cycle at least once per fuel cycle. Performance of inservice testing or use of an ADV during a unit cooldown may satisfy this requirement. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. The Frequency is acceptable from a reliability standpoint.

[SR 3.7.4.2

The function of the block valve is to isolate a failed open ADV. Cycling the block valve both closed and open demonstrates its capability to perform this function. Performance of inservice testing or use of the block valve during unit cooldown may satisfy this requirement. Operating experience has shown that these components usually pass the Surveillance when performed at the [18] month Frequency. The Frequency is acceptable from a reliability standpoint.]

REFERENCES

1. FSAR, Section [10.3].

TSTF-222, Rev.1

3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST)

LCO 3.7.6 The CST level shall be ≥ [110,000 gal].

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 when steam generator is relied upon for heat removal.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. CST level not within limit.	A.1	Verify by administrative means OPERABILITY of backup water supply.	4 hours AND Once per 12 hours thereafter
	AND		
	A.2	Restore CST level to within limit.	7 days
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 4, without reliance on steam generator for heat removal.	[18] hours [24]

TSTF-372, Rev.1

BASES

LCO (continued)

The OPERABILITY of the CST is determined by maintaining the tank level at or above the minimum required level.

APPLICABILITY

In MODES 1, 2, and 3, and in MODE 4, when steam generator is being relied upon for heat removal, the CST is required to be OPERABLE.

In MODE 5 or 6, the CST is not required because the AFW System is not required.

ACTIONS

A.1 and A.2

If the CST level is not within limits, the OPERABILITY of the backup supply should be verified by administrative means within 4 hours and once every 12 hours thereafter. OPERABILITY of the backup feedwater supply must include verification that the flow paths from the backup water supply to the AFW pumps are OPERABLE, and that the backup supply has the required volume of water available. The CST must be restored to OPERABLE status within 7 days, because the backup supply may be performing this function in addition to its normal functions. The 4 hour Completion Time is reasonable, based on operating experience, to verify the OPERABILITY of the backup water supply. The 7 day Completion Time is reasonable, based on an OPERABLE backup water supply being available, and the low probability of an event occurring during this time period requiring the CST.

B.1 and B.2

If the CST cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance on the steam generator for heat removal, within [18] hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

[24]

(continued)

TSTF-352, Rev.1

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.10 Pressurizer Safety Valves

LCO 3.4.10 [Two] pressurizer safety valves shall be OPERABLE with lift settings ≥ [2475] psia and ≤ [2525] psia.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 with all RCS cold leg temperatures > [285]°F.

----------NOTE----------
The lift settings are not required to be within LCO limits during MODES 3 and 4 for the purpose of setting the pressurizer safety valves under ambient (hot) conditions. This exception is allowed for [36] hours following entry into MODE 3 provided a preliminary cold setting was made prior to heatup.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One pressurizer safety valve inoperable.	A.1	Restore valve to OPERABLE status.	15 minutes
B. Required Action and associated Completion Time not met. OR Two [or more] pressurizer safety valves inoperable.	B.1 AND B.2	Be in MODE 3. Be in MODE 4 with all RCS cold leg temperatures ≤ [285]°F.	6 hours ~~[12]~~ [24] hours

BASES

APPLICABILITY (continued)

included, although the listed accidents may not require both safety valves for protection.

The LCO is not applicable in MODE 4 when all RCS cold leg temperatures are ≤ [285]°F and MODE 5 because LTOP protection is provided. Overpressure protection is not required in MODE 6 with the reactor vessel head detensioned.

The Note allows entry into MODES 3 and 4 with the lift settings outside the LCO limits. This permits testing and examination of the safety valves at high pressure and temperature near their normal operating range, but only after the valves have had a preliminary cold setting. The cold setting gives assurance that the valves are OPERABLE near their design condition. Only one valve at a time will be removed from service for testing. The [36] hour exception is based on 18 hour outage time for each of the two valves. The 18 hour period is derived from operating experience that hot testing can be performed within this timeframe.

ACTIONS

A.1

With one pressurizer safety valve inoperable, restoration must take place within 15 minutes. The Completion Time of 15 minutes reflects the importance of maintaining the RCS overpressure protection system. An inoperable safety valve coincident with an RCS overpressure event could challenge the integrity of the RCPB.

B.1 and B.2

If the Required Action cannot be met within the required Completion Time or if two or more pressurizer safety valves are inoperable, the plant must be brought to a MODE in which the requirement does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 at or below [285]°F within [12] hours. The 6 hours allowed is reasonable, based on operating experience, to reach MODE 3 from full power without challenging plant systems. Similarly, the [12] hours allowed is reasonable, based on operating experience, to reach MODE 4 without challenging plant systems. At or below [24]

(continued)

TSTF-252, Rev. 1

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. One required PORV inoperable in MODE 5 or 6.	F.1 Restore required PORV to OPERABLE status.	24 hours
G. Two required PORVs inoperable. OR Required Action and associated Completion Time of Condition A, [B,] D, E, or F not met. OR LTOP System inoperable for any reason other than Condition A, [B,] C, D, E, or F.	G.1 Depressurize RCS and establish RCS vent of ≥ [1.3] square inches.	~~8~~ 12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.12.1	Verify a maximum of one HPSI pump is capable of injecting into the RCS.	12 hours
SR 3.4.12.2	Verify a maximum of one charging pump is capable of injecting into the RCS.	12 hours

(continued)

TSTF-312, Rev.1

BASES

ACTIONS (continued)

F.1

The consequences of operational events that will overpressure the RCS are more severe at lower temperature (Ref. 6). Thus, one required PORV inoperable in MODE 5 or in MODE 6 with the head on, the Completion Time to restore two valves to OPERABLE status is 24 hours.

The 24 hour Completion Time to restore two PORVs OPERABLE in MODE 5 or in MODE 6 when the vessel head is on is a reasonable amount of time to investigate and repair several types of PORV failures without exposure to a lengthy period with only one PORV OPERABLE to protect against overpressure events.

G.1

If two required PORVs are inoperable, or if a Required Action and the associated Completion Time of Condition A, B, D, E, or F are not met, or if the LTOP System is inoperable for any reason other than Condition A through Condition F, the RCS must be depressurized and a vent established within 12 ~~8~~ hours. The vent must be sized at least [1.3] square inches to ensure the flow capacity is greater than that required for the worst case mass input transient reasonable during the applicable MODES. This action protects the RCPB from a low temperature overpressure event and a possible brittle failure of the reactor vessel.

The Completion Time of 12 ~~8~~ hours to depressurize and vent the RCS is based on the time required to place the plant in this condition and the relatively low probability of an overpressure event during this time period due to increased operator awareness of administrative control requirements.

SURVEILLANCE REQUIREMENTS

SR 3.4.12.1, SR 3.4.12.2, and SR 3.4.12.3

To minimize the potential for a low temperature overpressure event by limiting the mass input capability, only one HPSI pump and all but [one] charging pump are verified OPERABLE with the other pumps locked out with power removed and the SIT discharge incapable of injecting into the RCS. The [HPI] pump[s] and charging pump[s] are rendered incapable

(continued)

TSTF-3[illegible], Rev.1

3.7 PLANT SYSTEMS

3.7.4 Atmospheric Dump Valves (ADVs)

LCO 3.7.4 [Two] ADV lines shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
[MODE 4 when steam generator is being relied upon for heat removal].

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One required ADV line inoperable.	A.1	--------NOTE--------- LCO 3.0.4 is not applicable. ----------	
		Restore ADV line to OPERABLE status.	7 days
B. [Two] or more [required] ADV lines inoperable.	B.1	Restore [one] ADV line to OPERABLE status.	24 hours
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours
	[AND		
	C.2	Be in MODE 4 without reliance upon steam generator for heat removal.]	[~~12~~ [24]] hours

BASES

ACTIONS

C.1 and C.2 (continued)

achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance upon the steam generator for heat removal, within [12] hours. [24] The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

SURVEILLANCE REQUIREMENTS

SR 3.7.4.1

To perform a controlled cooldown of the RCS, the ADVs must be able to be opened and throttled through their full range. This SR ensures the ADVs are tested through a full control cycle at least once per fuel cycle. Performance of inservice testing or use of an ADV during a unit cooldown may satisfy this requirement. Operating experience has shown that these components usually pass the SR when performed at the [18] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.

[SR 3.7.4.2

The function of the ADV block valve is to isolate a failed open ADV. Cycling the block valve closed and open demonstrates its capability to perform this function. Performance of inservice testing or use of the block valve during unit cooldown may satisfy this requirement. Operating experience has shown that these components usually pass the SR when performed at the [18] month Frequency. Therefore, the Frequency is acceptable from a reliability standpoint.]

REFERENCES

1. FSAR, Section [10.3].

3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST)

LCO 3.7.6 The CST level shall be ≥ [350,000] gal.

APPLICABILITY: MODES 1, 2, and 3,
[MODE 4 when steam generator is relied upon for heat removal].

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. CST level not within limit.	A.1	Verify OPERABILITY of backup water supply.	4 hours AND Once per 12 hours thereafter
	AND		
	A.2	Restore CST level to within limit.	7 days
B. Required Action and associated Completion Time not met.	B.1	Be in MODE 3.	6 hours
	AND		
	B.2	Be in MODE 4 without reliance on steam generator for heat removal.	[~~18~~] hours [24]

BASES

LCO (continued)

Systems Branch 5-1 (Ref. 4) and exceeds the volume required by the accident analysis.

OPERABILITY of the CST is determined by maintaining the tank level at or above the minimum required level.

APPLICABILITY

In MODES 1, 2, and 3, [and in MODE 4, when steam generator is being relied upon for heat removal,] the CST is required to be OPERABLE.

In MODES 5 and 6, the CST is not required because the AFW System is not required.

ACTIONS

A.1 and A.2

If the CST level is not within the limit, the OPERABILITY of the backup water supply must be verified by administrative means within 4 hours.

OPERABILITY of the backup feedwater supply must include verification of the OPERABILITY of flow paths from the backup supply to the AFW pumps, and availability of the required volume of water in the backup supply. The CST level must be returned to OPERABLE status within 7 days, as the backup supply may be performing this function in addition to its normal functions. The 4 hour Completion Time is reasonable, based on operating experience, to verify the OPERABILITY of the backup water supply. The 7 day Completion Time is reasonable, based on an OPERABLE backup water supply being available, and the low probability of an event requiring the use of the water from the CST occurring during this period.

B.1 and B.2

If the CST cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 4, without reliance on steam generator for heat removal, within [~~18~~] [24] hours. The allowed Completion

(continued)