
Industry/TSTF Standard Technical Specification Change Traveler

Correct Condensate Storage Tank LCO and Criteria

Priority/Classification 2) Consistency/Standardization

NUREGs Affected: 1430 1431 1432 1433 1434

Description:

LCO 3.7.6, "Condensate Storage Tank" is revised from requiring a CST volume to requiring that the CST be operable. The 10 CFR 50.36.(c).(2).(ii) criteria are also corrected to be consistent with the LCO.

Justification:

LCO 3.7.6 stated "The CST level shall be \geq [350,000] gal." This presentation is inconsistent with other ITS LCOs in that it does not address Operability. The LCO is revised to state, "The CST shall be OPERABLE." The details of what constitutes operability are given in the Bases. The level requirement remains unchanged in SR 3.7.6.1. and continues to be an Operability requirement through SR 3.0.1. Action A is revised from "CST level not within limit" to "CST inoperable". This presentation is consistent with similar Specifications, such as Specification 3.5.4, Refueling Water Tank.

The Applicable Safety Analysis section states that CST volume meets Criteria 3 (mitigation), when it also meets Criteria 2 (process variable assumed as an initial condition). This has also been corrected.

Both of these changes make the Specifications consistent with the ITS rules and presentation without making any change to the existing requirements.

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
Revised at 12/18/96 CEOG meeting.

Owners Group Resolution: Superceded Date: 18-Dec-96

TSTF Review Information

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

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

BWOG - Applicable, BWOG accepts
WOG - Applicable, WOG accepts
BWROG - Applicable, BWROG accepts

TSTF Resolution: Superceded Date: 20-Jan-97

4/2/98

OG Revision 1

Revision Status: Active

Next Action:

Revision Proposed by: CEOG

Revision Description:

This revision replaced the TSTF in total and contained new revisions to the CST specification.

Owners Group Review Information

Date Originated by OG: 18-Dec-96

Owners Group Comments

(No Comments)

Owners Group Resolution: Approved Date: 18-Dec-96

TSTF Review Information

TSTF Received Date: 20-Jan-97

Date Distributed for Review 20-Jan-97

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 06-Mar-97

NRC Review Information

NRC Received Date: 07-Apr-97

NRC Reviewer: Giardina, R.

NRC Comments:

4/15/97 - Reviewer recommended approval.

4/16/97 - Forwarded to C. Grimes for disposition.

Final Resolution: NRC Approves

Final Resolution Date: 02-May-97

Incorporation Into the NUREGs

File to BBS/LAN Date:

TSTF Informed Date:

TSTF Approved Date:

NUREG Rev Incorporated:

Affected Technical Specifications

S/A 3.7.6 Bases Condensate Storage Tank

LCO 3.7.6 Condensate Storage Tank

Action 3.7.6.A Condensate Storage Tank

Action 3.7.6.A Bases Condensate Storage Tank

NUREG(s)- 1431 1432 Only

4/2/98

3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST)

LCO 3.7.6

The [two] CST level(s) shall be \geq [250,000] gal.

OPERABLE

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

ACTIONS

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

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

power. Single failures that also affect this event include the following:

- a. Failure of the diesel generator powering the motor driven EFW pump to the unaffected steam generator (requiring additional steam to drive the remaining EFW pump turbine); and
- b. Failure of the steam driven EFW pump (requiring a longer time for cooldown using only one motor driven EFW pump).

These are not usually the limiting failures in terms of consequences for these events.

Criteria

The CST satisfies Criteria 2 and 3 of the NRC Policy Statement.

LCO

To satisfy accident analysis assumptions, the [two] CSTs must contain sufficient cooling water to remove decay heat for 13 hours following a reactor trip from 102% RTP and then to cool down the RCS to DHR System entry conditions, assuming a coincident loss of offsite power and most adverse single failure. While so doing, the CSTs must retain sufficient water to ensure adequate net positive suction head for the EFW pump(s) during the cooldown, to account for any losses from the steam driven EFW pump turbine, as well as losses incurred before isolating EFW to a broken line.

The level required is equivalent to a usable volume of [250,000] gallons, which is based on holding the unit in MODE 3 for 13 hours, followed by a cooldown to DHR System entry conditions.

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

APPLICABILITY

In MODES 1, 2, 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 EFW System is not required.

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3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST)

LCO 3.7.6

The CST ~~level~~ shall be \geq ~~[110,000 gal]~~.

OPERABLE

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

ACTIONS

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

BASES

APPLICABLE
SAFETY ANALYSES
(continued)

power. Single failures that also affect this event include the following:

- a. Failure of the diesel generator powering the motor driven AFW pump to the unaffected steam generator (requiring additional steam to drive the remaining AFW pump turbine); and
- b. Failure of the steam driven AFW pump (requiring a longer time for cooldown using only one motor driven AFW pump).

These are not usually the limiting failures in terms of consequences for these events.

A nonlimiting event considered in CST inventory determinations is a break in either the main feedwater or AFW line near where the two join. This break has the potential for dumping condensate until terminated by operator action, since the Emergency Feedwater Actuation System would not detect a difference in pressure between the steam generators for this break location. This loss of condensate inventory is partially compensated for by the retention of steam generator inventory.

Criteria

The CST satisfies Criterion ^{2 and} 3 of the NRC Policy Statement.

LCO

To satisfy accident analysis assumptions, the CST must contain sufficient cooling water to remove decay heat for [30 minutes] following a reactor trip from 102% RTP, and then to cool down the RCS to RHR entry conditions, assuming a coincident loss of offsite power and the most adverse single failure. In doing this, it must retain sufficient water to ensure adequate net positive suction head for the AFW pumps during cooldown, as well as account for any losses from the steam driven AFW pump turbine, or before isolating AFW to a broken line.

The CST level required is equivalent to a usable volume of \geq [110,000 gallons], which is based on holding the unit in MODE 3 for [2] hours, followed by a cooldown to RHR entry conditions at [75] $^{\circ}$ F/hour. This basis is established in Reference 4 and exceeds the volume required by the accident analysis.

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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

OPERABLE

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.

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3.7 PLANT SYSTEMS

3.7.6 Condensate Storage Tank (CST)

LCO 3.7.6 The CST ~~level~~ shall be \geq ~~[350,000] gal.~~

OPERABLE

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

ACTIONS

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

OPERABLE status.

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BASES

APPLICABLE
SAFETY ANALYSES
(continued)

power. Single failures that also affect this event include the following:

- a. The failure of the diesel generator powering the motor driven AFW pump to the unaffected steam generator (requiring additional steam to drive the remaining AFW pump turbine); and
- b. The failure of the steam driven AFW pump (requiring a longer time for cooldown using only one motor driven AFW pump).

These are not usually the limiting failures in terms of consequences for these events.

A nonlimiting event considered in CST inventory determinations is a break either in the main feedwater, or AFW line near where the two join. This break has the potential for dumping condensate until terminated by operator action, as the Emergency Feedwater Actuation System would not detect a difference in pressure between the steam generators for this break location. This loss of condensate inventory is partially compensated by the retaining of steam generator inventory.

The CST satisfies Criterion ^{1, 2 and} 3 of the NRC Policy Statement.

LCO

To satisfy accident analysis assumptions, the CST must contain sufficient cooling water to remove decay heat for [30 minutes] following a reactor trip from 102% RTP, and then cool down the RCS to SDC entry conditions, assuming a coincident loss of offsite power and the most adverse single failure. In doing this it must retain sufficient water to ensure adequate net positive suction head for the AFW pumps during the cooldown, as well as to account for any losses from the steam driven AFW pump turbine, or before isolating AFW to a broken line.

The CST level required is a usable volume of \leq [350,000] gallons, which is based on holding the unit in MODE 3 for [4] hours, followed by a cooldown to SDC entry conditions at 75°F per hour. This basis is established by the NRC Standard Review Plan Branch Technical Position, Reactor

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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

OPERABLE

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] hours. The allowed Completion

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