

Industry/TSTF Standard Technical Specification Change Traveler

Incorporate CE NPSD-994 recommendations into the SITs specification

Classification: 3) Improve Specifications

NUREGs Affected: 1430 1431 1432 1433 1434

Description:

This change extends the AOT when one SIT is inoperable for reasons other than (1) boron concentration not within limits or (2) inability to verify level or pressure, from 1 hour to 24 hours. This change also extends the AOT when one SIT is inoperable due to inability to verify level or pressure from 1 hour to 72 hours.

Justification:

This change is based on the analysis in CE NPSD-994, "Joint Application Report for Safety Injection Tank AOT/STI Extension", April 1995. CE NPSD-994 based the AOT extension on a series of deterministic and probabilistic findings that the 24 hour Completion Time has no affect on risk as compared to shorter periods for restoring the SIT to OPERABLE status.

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Revision History

OG Revision 0

Revision Status: Closed

Revision Proposed by: Calvert Cliffs

Revision Description:

Original Issue

Owners Group Review Information

Date Originated by OG: 17-Jan-96

Owners Group Comments

(No Comments)

Owners Group Resolution: Approved Date: 24-Jan-96

TSTF Review Information

TSTF Received Date: 05-Mar-96 Date Distributed for Review 07-Mar-96

OG Review Completed: BWOG WOG CEOG BWROG

TSTF Comments:

NA WOG, BWOG

TSTF Resolution: Approved Date: 16-Apr-96

NRC Review Information

NRC Received Date: 12-Jun-96

NRC Comments:

9/18/96 - Review on hold until referenced Topical review is complete.

3/18/97 - Review on hold while generic Topical issues are resolved.

6/16/99

OG Revision 0

Revision Status: Closed

4/17/97 - CEOG to revise after plant-specific approvals.

10/2/97 - Pending resolution of ANO02 plant-specific change.

4/22/99 - NRC to return with modifications. NRC wants changes to the Bases language. LPCI has a CRMP issue related to it.

5/12/99 - The staff takes exception to a statement made in the proposed Bases for Action B.I and in the justification for this TSTF. The industry stated that 'the best estimate analysis confirmed that during large break LOCA scenarios, core melt can be prevented by either operation of one LPSI pump or the operation of one HPSI pump and a single SIT.' This statement was taken directly from CE NPSD-994, which cited a reference for the subject best estimate analysis. The staff has reviewed the best estimate analysis from the cited reference and believes that the purpose of the reference was to show that the best estimate code analyses for the typical PWR do not meet the criterion for core damage used in the IPE for that typical PWR (Zion) for a large break LOCA with those combinations of equipment. The staff believes it is misleading to say that this best estimate analysis confirmed that during large break LOCA scenarios, core melt can be prevented by either operation of one LPSI pump or the operation of one HPSI pump and a single SIT. The staff did not rely on this statement in its approval of the plant-specific amendments granted under the RI-TS pilot program. The staff requests that this statement be deleted from the proposed Bases for Action B.I and from the justification for the TSTF.

Final Resolution: Superseded by Revision

Final Resolution Date: 12-May-99

TSTF Revision 1

Revision Status: Active

Next Action: NRC

Revision Proposed by: NRC

Revision Description:

Revised to address NRC comments. Added Bases Insert Action A to address SIT level and pressure and revised Bases Insert Action B to delete the sentence regarding best-estimate LOCA analysis.

TSTF Review Information

TSTF Received Date: 11-Jun-99

Date Distributed for Review 11-Jun-99

OG Review Completed: BWO WOG CEOG BWROG

TSTF Comments:

(No Comments)

TSTF Resolution: Approved Date: 15-Jun-99

NRC Review Information

NRC Received Date: 16-Jun-99

NRC Comments:

(No Comments)

Final Resolution: NRC Action Pending

Final Resolution Date:

CEOG-ED-52 revised this Traveler. The affected pages have been annotated.

Incorporation Into the NUREGs

File to BBS/LAN Date:

TSTF Informed Date:

TSTF Approved Date:

NUREG Rev Incorporated:

6/16/99

Affected Technical Specifications

Ref. 3.5.1 Bases Safety Injection Tanks

Action 3.5.1.B Safety Injection Tanks

Action 3.5.1.B Bases Safety Injection Tanks

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REV 1

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3.5.1 Safety Injection Tanks (SITs)

LCO 3.5.1 [Four] SITs shall be OPERABLE.

APPLICABILITY: MODES 1 and 2,
MODE 3 with pressurizer pressure \geq [700] psia.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SIT inoperable due to boron concentration not within limits.	A.1 Restore boron concentration to within limits. <i>SIT to OPERABLE status.</i>	72 hours
B. One SIT inoperable for reasons other than Condition A.	B.1 Restore SIT to OPERABLE status.	<i>24</i> hours <i>3</i>
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. <u>AND</u> C.2 Reduce pressurizer pressure to < [700] psia.	6 hours 12 hours
D. Two or more SITs inoperable.	D.1 Enter LCO 3.0.3.	Immediately

OR
One SIT inoperable due to the inability to verify level or pressure.

INSERT BASES Action A

The combination of redundant level and pressure instrumentation for any single SIT provides sufficient information so that it is not worthwhile to always attempt to correct drift associated with one instrument, with the resulting radiation exposures during entry into containment, as there is sufficient time to repair one in the event that a second one became inoperable. Because these instruments do not initiate a safety action, it is reasonable to extend the allowable outage time for them. While technically inoperable, the SIT will be available to fulfill its safety function during this time and, thus, this Completion Time results in a negligible increase in risk.

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INSERT BASES ACTION B

B.1

IF one SIT is inoperable, for reasons other than boron concentration or the inability to verify level or pressure, the SIT must be returned to OPERABLE status within 24 hours. In this Condition, the required contents of three SITs cannot be assumed to reach the core during a LOCA as is assumed in Appendix K (Ref. 6).

CE NPSD-994 (Ref. 7) provides a series of deterministic and probabilistic findings that support the 24 hour Completion Time as having no affect on risk as compared to shorter periods for restoring the SIT to OPERABLE status. The best-estimate analysis confirmed that, during large-break LOCA scenarios, core melt can be prevented by either operation of one LPSI pump or the operation of one HPSI pump and a single SIT.

BASES

ACTIONS

A.1 (continued)

injection. Thus, 72 hours is allowed to return the boron concentration to within limits.

INSERT
BASES Action A

B.1

INSERT
Bases Action B

If one SIT is inoperable, for a reason other than boron concentration, the SIT must be returned to OPERABLE status within 1 hour. In this Condition, the required contents of three SITs cannot be assumed to reach the core during a LOCA. Due to the severity of the consequences should a LOCA occur in these conditions, the 1 hour Completion Time to open the valve, remove power to the valve, or restore the proper water volume or nitrogen cover pressure ensures that prompt action will be taken to return the inoperable accumulator to OPERABLE status. The Completion Time minimizes the exposure of the plant to a LOCA in these conditions.

C.1 and C.2

If the SIT cannot be restored to OPERABLE status within the associated Completion Time, 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 pressurizer pressure reduced to < 700 psia 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.

D.1

If more than one SIT is inoperable, the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

(continued)

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BASES

SURVEILLANCE
REQUIREMENTS
(continued)

SR 3.5.1.5

Verification every 31 days that power is removed from each SIT isolation valve operator when the pressurizer pressure is ≥ 2000 psia ensures that an active failure could not result in the undetected closure of an SIT motor operated isolation valve. If this were to occur, only two SITs would be available for injection, given a single failure coincident with a LOCA. Since installation and removal of power to the SIT isolation valve operators is conducted under administrative control, the 31 day Frequency was chosen to provide additional assurance that power is removed.

This SR allows power to be supplied to the motor operated isolation valves when RCS pressure is < 2000 psia, thus allowing operational flexibility by avoiding unnecessary delays to manipulate the breakers during unit startups or shutdowns. Even with power supplied to the valves, inadvertent closure is prevented by the RCS pressure interlock associated with the valves. Should closure of a valve occur in spite of the interlock, the SI signal provided to the valves would open a closed valve in the event of a LOCA.

REFERENCES

1. IEEE Standard 279-1971.
2. FSAR, Section [6.3].
3. 10 CFR 50.46.
4. FSAR, Chapter [15].
5. Draft NUREG-1366, February 1990.

6. 10 CFR 50 Appendix K.

7. CE NPSD-994, "CEOG Joint Applications Report for Safety Injection Tank AOT/STI Extension, App. 1 1995.

CEOG-ED-52 revised the approval date to MAY, 1995.