

Presubmittal Meeting for TSTF Traveler
TSTF-567, Rev. 0, "Add Containment Sump TS to
Address GSI-191 Issues"

Jamie Coleman
Southern Nuclear Operating Company

Overview

- Discuss the draft traveler TSTF-567, "Add Containment Sump TS to Address GSI-191 Issues."
- Discuss whether the draft provides technical information in sufficient detail to enable the staff to conduct a detailed technical review and make an independent assessment regarding its acceptability.
- Discuss the schedule for submitting the traveler, the fee waiver request, and the NRC's expected review schedule.

Purpose of the Traveler

- The potential impact of post-accident debris and chemical effects on the Emergency Core Cooling System (ECCS) and Containment Spray System (CSS) have been evaluated.
- Limits have been established on the allowable quantities of containment accident generated debris that could be transported to the containment sump.
- However, new debris sources, analysis errors, or new phenomenon could result in declaring the ECCS and CSS trains inoperable, and an immediate plant shutdown. The TS provides no time to evaluate or correct the issue.
- The traveler provides time to evaluate such conditions and take action.

Purpose of the Traveler

- The principle change in TSTF-567 is to provide a new TS Action for a containment sump inoperable due to the potential for containment accident generated and transported debris exceeding the analyzed limits, with a Completion Time sufficiently long to evaluate the new condition.
- The current Actions for a containment sump inoperable for any other reason are not changed.
- The traveler is applicable to PWR plants with improved TS, regardless of the GSI-191 closure option.

Containment Accident Generated and Transported Debris

- The description of containment accident generated and transported debris is taken from RG 1.82, Revision 4, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident," March 2012.
 - Accident generated debris created by the HELB (e.g., insulation, coatings, and other materials near the break) and subject to transport by the HELB blowdown forces;
 - Pre-existing debris or debris created by adverse environmental conditions following the accident (e.g., latent debris, dirt, and unqualified coatings not generated by the HELB) that may be transported to the containment sump; and
 - Chemical reaction products generated within containment following the accident and transported to the containment sump.
- Use of this description does not incorporate RG 1.82, Rev. 4, into a plant's licensing basis.

Design Decisions

- Post-accident containment debris affects the containment sump and the sump supports the ECCS and CSS.
- Consistent with the philosophy of the Improved Standard Technical Specifications, a new specification was created on the containment sump.
 - Prevents unnecessary duplication of requirements
 - Consistent with other TS support systems, including the RWST
 - Simpler for operators to apply
- The TSTF created guidance for non-ISTTS plants on how to adopt the proposed change without using the traveler

New Specification

- A new "Containment Sump," specification is placed at the end of Section 3.6, "Containment Systems."
 - TS 3.6.8 in NUREG-1430 (Babcock and Wilcox plants),
 - TS 3.6.19 in NUREG-1431 (Westinghouse plants),
 - TS 3.6.13 in NUREG-1432 (Combustion Engineering plants).

LCO and Applicability

3.6 CONTAINMENT SYSTEMS

3.6.8 Containment Sump

LCO 3.6.8 [The][Two] containment sump[s] shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

LCO and Applicability

- The LCO Bases states:
 - [The][Two] containment sump is required to ensure a source of borated water to support ECCS and CSS OPERABILITY. A containment sump consists of the containment drainage flow paths, [design features upstream of the containment sump that are credited in the containment debris analysis,] the containment sump strainers, the pump suction trash racks, and the inlet to the ECCS and CSS piping. An OPERABLE containment sump will not be restricted by accident generated and transported debris and has no structural damage or abnormal corrosion that could prevent recirculation of coolant.

Surveillance Requirement

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.8.1	Verify, by visual inspection, the containment sump[s] does not show structural damage, abnormal corrosion, or debris blockage.	[[18] months <u>OR</u> In accordance with the Surveillance Frequency Control Program]

Surveillance Requirement

- The SR Bases state:
 - Periodic inspections are performed to verify the containment sump and strainers do not show *current or potential* debris blockage, structural damage, or abnormal corrosion to ensure the operability and structural integrity of the containment sump, strainers, and associated structures.

Actions

ACTIONS		
CONDITION	REQUIRED ACTION	COMPLETION TIME
A. [One or more] containment sump[s] inoperable due to potential for containment accident generated and transported debris exceeding the analyzed limits.	A.1 Initiate action to mitigate containment accident generated and transported debris.	Immediately
	<u>AND</u>	
	A.2 Perform SR 3.4.13.1.	Once per 24 hours
	<u>AND</u>	
	A.3 Restore the containment sump[s] to OPERABLE status.	90 days

LCO 3.0.6

- When the containment sump is inoperable and the plant is in Action A, the supported ECCS and CSS trains are also inoperable.
- Improved TS plants can invoke LCO 3.0.6:
 - "When a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered. Only the support system LCO ACTIONS are required to be entered."
- Therefore, while in Action A, the ECCS and CSS are inoperable but only the containment sump Action is followed.

LCO 3.0.6

- LCO 3.0.6 also requires an evaluation to determine if there is a loss of safety function. It states:
 - In this event, an evaluation shall be performed in accordance with Specification 5.5.15, "Safety Function Determination Program (SFDP)."

LCO 3.0.6

- The SFDP states:
 - The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. When a loss of safety function is caused by the inoperability of a single Technical Specification support system, the appropriate Conditions and Required Actions to enter are those of the support system.
- When both trains of ECCS and CSS are made inoperable by a single inoperable containment sump, the containment sump TS Actions should be followed.

LCO 3.0.6

- The last sentence in the SFPD was a clarification added by TSTF-273, Revision 2, "SFDP Clarifications," approved by the NRC on August 16, 1999.
- It should be in the TS of most plants. If not, the sentence may be added as part of TSTF-567, which includes the justification from TSTF-273.

Actions

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. [One or more] containment sump[s] inoperable for reasons other than Condition A.	<p>B.1</p> <p>-----NOTES-----</p> <p>1. Enter applicable Conditions and Required Actions of LCO 3.5.2, "ECCS - Operating," and LCO 3.5.3, "ECCS - Shutdown," for emergency core cooling trains made inoperable by the containment sump[s].</p> <p>2. Enter applicable Conditions and Required Actions of LCO 3.6.6, "Containment Spray and Cooling Systems," for containment spray trains made inoperable by the containment sump[s].</p> <p>-----</p> <p>Restore the containment sump[s] to OPERABLE status.</p>	<p>[7 days]</p>

Actions

C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours
	<u>AND</u>		
	C.2	Be in MODE 5.	36 hours

Other Changes

- Conforming changes are also made to:
 - The ISTS Table of Contents
 - Removal of the existing TS 3.5.2 SR
 - TS Bases

Model Application

- The traveler includes a model application for licensee adoption of TSTF-567.
- The model application does not require the submittal of any plant-specific information other than the description of any variations from the traveler, such as:
 - TS numbering and titles,
 - Any TS differences (Actions, SRs, etc.)
 - Plant design differences
 - General Design Criteria differences
- With any variation, the licensee must explain why the traveler and the NRC's model safety evaluation are still applicable.
- Therefore, the TSTF recommends that this traveler be processed as a CLIP change.

DISCUSSION

Review Fee Waiver

- When TSTF-567 is submitted for NRC review, a separate letter to the CFO will request a fee waiver for the traveler under 10 CFR 170.11(a)(1).

Schedule

- The TSTF intends to submit TSTF-567 for NRC review by the end of February.
- Given the number of plants that are interested in using this traveler, we request that the NRC complete their review as soon as possible, but no later than the end of 2017.