



UNITED STATES
NUCLEAR REGULATORY COMMISSION
 WASHINGTON, D.C. 20555-0001

General Directions: This model SE provides the format for an SE of LARs to adopt traveler TSTF-554. TSTF-554 was approved as part of the CLIIP. This model SE can also be used as a template for LARs adopting TSTF-554 that have significant variations and are not using the CLIIP. The **bolded bracketed** information shows text that should be filled in for the specific amendment. The *italicized* wording provides guidance on what should be included in each section.

FINAL MODEL SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR
 REGULATION RELATED TO TSTF-554
 AMENDMENT NO. [XXX] TO FACILITY OPERATING LICENSE NO. [XXX-XX]
 AND AMENDMENT NO. [XXX] TO FACILITY OPERATING LICENSE NO. [XXX-XX]
[NAME OF LICENSEE]
[NAME OF FACILITY]
 DOCKET NOS. 50-[XXX] AND 50-[XXX]

<u>Application (i.e., initial and supplements)</u> <ul style="list-style-type: none"> • [Date], [ADAMS Accession No.] 	<u>Safety Evaluation Date</u> [Date]
	<u>Principal Contributors to Safety Evaluation</u> <ul style="list-style-type: none"> • [Ravinder Grover]

1.0 PROPOSED CHANGES

[Name of licensee] (the licensee) requested changes to the technical specifications (TSs) for **[name of facility]** by license amendment request (LAR, application). In its application, the licensee requested that the U.S. Nuclear Regulatory Commission (NRC, the Commission) process the proposed amendment under the Consolidated Line Item Improvement Process (CLIIP). The proposed changes would revise the TSs related to reactor coolant system (RCS) operational leakage and the definition of the term “LEAKAGE” based on Technical Specifications Task Force (TSTF) Traveler TSTF-554, Revision 1, “Revise Reactor Coolant Leakage Requirements,” (TSTF-554) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20016A233), and the associated NRC staff safety evaluation (SE) of TSTF-554 (ADAMS Accession No. ML20322A024).

Components that contain or transport the coolant to or from the reactor core make up the RCS. Materials can degrade as a result of the complex interaction of the materials, the stresses they encounter, and through operational wear or mechanical deterioration during normal and upset operating environments. Such material degradation could lead to leakage of reactor coolant into containment buildings.

RCS leakage falls under two main categories – identified leakage and unidentified leakage. Identifying the sources of leakage is necessary for prompt identification of potentially adverse conditions, assessment of safety significance of the leakage, and quick corrective action. A limited amount of leakage from the reactor coolant pressure boundary (RCPB) directly into the containment/drywell atmosphere is expected as the RCS and other connected systems cannot be made 100 percent leak tight. This leakage is detected, located, and isolated from the containment atmosphere so as to not interfere with measurement of unexpected RCS leakage detection.

The safety significance of RCS leakage varies widely depending on its source, rate, and duration. Therefore, detecting and monitoring RCS leakage into the containment area is necessary. Separation of identified leakage from unidentified leakage provides quantitative information to the operators, allowing them to take corrective action should leakage occur that is detrimental to the safety of the unit and the public.

1.1 Proposed TS Changes to Adopt TSTF-554

In accordance with NRC staff-approved TSTF-554, the licensee proposed changes that would revise the TSs related to RCS operational leakage and the definition of the term “LEAKAGE”. Specifically, the licensee proposed the following changes to adopt TSTF-554:

- The TS 1.1 identified LEAKAGE definition a.2 would be revised to remove the exclusion of pressure boundary leakage from identified leakage by deleting “either” and the phrase “not to be pressure boundary LEAKAGE.”
- The TS 1.1 pressure boundary LEAKAGE definition [c] would be revised to delete the word “nonisolable.” The sentence, “LEAKAGE past seals, packing, and gaskets is not pressure boundary LEAKAGE,” would be relocated from the STS Bases and added to the definition.
- Additionally, the LEAKAGE definition would be revised by other editorial and punctuation changes to reflect the deletion and listed definitions.
- The ACTIONS section of STS [3.4.13], “RCS Operational LEAKAGE,” would be revised to add a new Condition A to isolate the pressure boundary leakage within 4 hours.
- Existing Condition B would be revised to be applicable should any Action of LCO [3.4.13] not be met by deleting “of Condition A [or B].”
- *Use this for plant TSs that are based upon the STS in NUREGs-1430, -1431, -1432, or -2194: [Existing Conditions A and B would be renumbered as Conditions B and C to reflect the new Condition A. The existing Condition B would be revised to delete the condition for when pressure boundary leakage exists because pressure boundary leakage would be addressed by the new Condition A. Finally, the Required Actions associated with existing Conditions A and B would be renumbered accordingly.]*
- *Use this for plant TSs that are based upon the STS in NUREGs-1433 or -1434: [Existing Conditions A, B, and C would be renumbered to reflect the new Condition A. The existing Condition C would be revised to delete to the condition for when pressure boundary leakage exists because pressure boundary leakage*

would be addressed by the new Condition A. The Required Actions Associated with existing Conditions A and B would be renumbered accordingly.]

1.2 Additional Proposed TS Changes

{NOTE: Use this section if variations are proposed. Add additional subsections if needed. Editorial variations discussed below in Section 1.2.1 do not warrant removal from the CLIIP and do not require any additional technical branches to be on the review. Variations discussed in Section 1.2.2 may remove the LAR from the CLIIP and may require additional technical review depending on the significance of the variations.}

In addition to the changes proposed consistent with the traveler discussed in Section 1.1, the licensee proposed the following variations.

1.2.1 Editorial Variations

{NOTE: Use this section if the plant has different numbering/nomenclature or modify accordingly for other editorial changes made.}

The licensee noted that **[name of facility]** TSs have different numbering **[and nomenclature]** than standard technical specifications (STs).

1.2.2 Other Variations

{NOTE: Use this section if the plant has variations other editorial changes discussed in 1.2.1.}

2.0 REGULATORY EVALUATION

The regulation at 10 CFR 50.36(c)(2) requires that TSs include limiting conditions for operation (LCOs). Per 10 CFR 50.36(c)(2)(i), LCOs “are the lowest functional capability or performance levels of equipment required for safe operation of the facility.” The regulation also requires that when an LCO of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met. The regulation at 10 CFR 50.2 defines RCPB as “all those pressure-containing components of boiling and pressurized water-cooled nuclear power reactors, such as pressure vessels, piping, pumps, and valves...” Regulatory Guide (RG) 1.45, Revision 1, “Guidance on Monitoring and Responding to Reactor Coolant System Leakage,” dated May 2008 (ADAMS Accession No. ML073200271), Section B, Discussion “Leakage Separation,” provides information related to separation between identified and unidentified leakage.

The NRC staff’s guidance for the review of TSs is in Chapter 16.0, “Technical Specifications,” of NUREG-0800, Revision 3, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition” (SRP), March 2010 (ADAMS Accession No. ML100351425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared STs for each of the LWR nuclear designs. Accordingly, the NRC staff’s review includes consideration of whether the proposed changes are consistent with

the **[insert applicable NUREG from list in footnote]**¹, as modified by NRC-approved travelers. Traveler TSTF-554 revised the STSs related to RCS operational leakage and the definition of the term “LEAKAGE.” The NRC approved TSTF-554, under the CLIIP on December 18, 2020 (ADAMS Package Accession No. ML20324A083).

3.0 TECHNICAL EVALUATION

3.1 Proposed TS Changes to Adopt TSTF-554

The NRC staff compared the licensee’s proposed TS changes in Section 1.1 of this SE against the changes approved in TSTF-554. In accordance with the SRP Chapter 16.0, the NRC staff determined that the STS changes approved in TSTF-554 are applicable to **[name of facility]** TSs because the **[name of facility]** is a **[insert plant design]** and the NRC staff approved the TSTF-554 changes for **[insert plant design]** designs. The NRC finds that the licensee’s proposed changes to the **[name of facility]** TSs in Section 1.1 of this SE are consistent with those found acceptable in TSTF-554.

In the SE of TSTF-554, the NRC staff concluded that TSTF-554 changes to STS 1.1 definition of “LEAKAGE” and to STS **[3.4.13]**, the LCO addressing conditions and required actions when reactor coolant system pressure boundary leakage exists, are acceptable. The NRC staff found that removing the term “nonisolable” provides a clearer definition of pressure boundary leakage and that the source of the leakage is not relevant to this capability provided that separate, appropriate limits on pressure boundary leakage have been established. Therefore, the proposed change to the definition of identified leakage was acceptable as it did not conflict with 10 CFR 50.2 and was consistent with RG 1.45. The NRC staff further found that proposed new Condition A on boundary pressure leakage, including its associated Required Action A.1 and Completion Time, acceptable because the LCO revisions continue to specify the lowest functionable capability of equipment, identify remedial actions and require shutdown of the reactor if the remedial actions cannot be met.

¹ U.S. Nuclear Regulatory Commission, “Standard Technical Specifications, Babcock and Wilcox Plants,” NUREG 1430, Volume 1, “Specifications,” and Volume 2, “Bases,” Revision 4.0, dated April 2012 (ADAMS Accession Nos. ML12100A177 and ML12100A178, respectively).

U.S. Nuclear Regulatory Commission, “Standard Technical Specifications, Westinghouse Plants,” NUREG 1431, Volume 1, “Specifications,” and Volume 2, “Bases,” Revision 4.0, dated April 2012 (ADAMS Accession Nos. ML12100A222 and ML12100A228, respectively).

U.S. Nuclear Regulatory Commission, “Standard Technical Specifications, Combustion Engineering Plants,” NUREG 1432, Volume 1, “Specifications,” and Volume 2, “Bases,” Revision 4.0, dated April 2012 (ADAMS Accession Nos. ML12102A165 and ML12102A169, respectively).

U.S. Nuclear Regulatory Commission, “Standard Technical Specifications, General Electric BWR/4 Plants” NUREG 1433, Volume 1, “Specifications,” and Volume 2, “Bases,” Revision 4.0, dated April 2012 (ADAMS Accession Nos. ML12104A192 and ML12104A193, respectively).

U.S. Nuclear Regulatory Commission, “Standard Technical Specifications, General Electric BWR/6 Plants” NUREG 1434, Volume 1, “Specifications,” and Volume 2, “Bases,” Revision 4.0, dated April 2012 (ADAMS Accession Nos. ML12104A195 and ML12104A196, respectively).

U.S. Nuclear Regulatory Commission, “Standard Technical Specifications, Westinghouse Advanced Passive 1000 (AP1000) Plants,” NUREG 2194, Volume 1 “Specifications,” and Volume 2, “Bases,” Revision 0, dated April 2016 (ADAMS Accession Nos. ML16110A277 and ML16110A369, respectively).

The NRC staff finds that proposed changes to the TS 1.1 definition clarify what constitutes pressure boundary leakage and the source of leakage does not matter if the TSs have separate limits on pressure boundary leakage and LCO **[3.4.13]** correctly specify the lowest functional capability or performance levels of equipment required for safe operation of the facility. Also, the NRC staff finds that proposed changes to the Actions of LCO **[3.4.13]** are adequate remedial actions to be taken until each LCO can be met provide protection to the health and safety of the public. Thus, the proposed changes continue to meet the requirements of 10 CFR 50.36(c)(2)(i) as discussed in Section 3.0 of the NRC staff's SE of TSTF-554.

3.2 Additional Proposed TS Changes

{NOTE: Use this section if variations are proposed. Add additional subsections if needed. Variations evaluated in Section 3.2.2 may remove the LAR from the CLIP and may require additional technical review depending on the significance of the variations. Additionally, the variations may require additional regulations/guidance being included in the Regulatory Evaluation section.}

3.2.1 Editorial

{NOTE: Use this section if the plant has different numbering/nomenclature or modify accordingly for other editorial changes made.}

The licensee noted that **[name of facility]** TSs have different numbering **[and nomenclature]** than STS. The NRC staff finds that the different TS numbering **[and nomenclature]** changes are acceptable because they do not substantively alter TS requirements.

3.2.2 Other Variations

{NOTE: Use this section if the plant has variations other editorial changes discussed in 3.2.1.}

3.3 TS Change Consistency

The NRC staff reviewed the proposed TS changes for technical clarity and consistency with the existing requirements for customary terminology and formatting. The NRC staff finds that the proposed changes are consistent with Chapter 16.0 of the SRP and are therefore acceptable.

4.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment[s] will not be inimical to the common defense and security or to the health and safety of the public.

NOTICES AND ENVIRONMENTAL FINDINGS
 RELATED TO
 AMENDMENT NO. [XXX] TO FACILITY OPERATING LICENSE NO. [XXX-XX]
 AND AMENDMENT NO. [XXX] TO FACILITY OPERATING LICENSE NO. [XXX-XX]
[NAME OF LICENSEE]
[NAME OF FACILITY]
 DOCKET NOS. 50-[XXX] AND 50-[XXX]

<u>Application (i.e., initial and supplements)</u> • [Date], [ADAMS Accession No.]	<u>Safety Evaluation Date</u> [Date]
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1.0 INTRODUCTION

The PM should prepare this required section.

[Name of licensee] (the licensee) requested changes to the technical specifications (TSs) for **[name of facility]** by license amendment request (LAR, application). In its application, the licensee requested that the U.S. Nuclear Regulatory Commission (NRC, the Commission) process the proposed amendment under the Consolidated Line Item Improvement Process (CLIIP). The proposed changes would revise the TSs related to RCS operational leakage and the definition of the term “LEAKAGE” based on Technical Specifications Task Force (TSTF) Traveler TSTF-554, Revision 1, “Revise Reactor Coolant Leakage Requirements,” (TSTF-554) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20016A233), and the associated NRC staff safety evaluation (SE) of TSTF-554 (ADAMS Accession No. ML20322A024).

2.0 STATE CONSULTATION

The PM should prepare this required section.

In accordance with the Commission's regulations, the **[Name of State]** State official was notified of the proposed issuance of the amendment[s] on **[insert date]**. The State official had **[no]** comments. **[If comments were provided, they should be addressed here]**.

3.0 ENVIRONMENTAL CONSIDERATION

The PM should prepare this required section.

The amendment changes **[amendments change]** a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves **[amendments involve]** no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves **[amendments involve]** no significant hazards consideration, and there

has been no public comment on such finding **[enter Federal Register citation (XX FR XXXX) and date]**. Accordingly, the amendment meets **[amendments meet]** the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment**[s]**.