

NEI 15-03, Revision 1

**Licensee Actions to
Address
Nonconservative
Technical Specifications**

October 2016

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Nuclear Energy Institute

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Revision 1 Changes:

- Removed revision numbers and dates from the report references.
- Revised the document to discuss the TS Bases as well as the UFSAR, consistent with the definition of a nonconservative TS. Added an example of an NCTS with respect to the TS Bases.
- Section 3.2 is clarified by replacing "operating license" with "TS".
- Section 3.3 is clarified that final resolution is an approved license amendment or licensing basis change.

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FOREWORD

This guidance describes actions that may be used by the nuclear utility industry to address an operating license technical specification that is determined to be insufficient to protect the assumptions or conclusions of the safety analysis or technical specification bases (i.e., a nonconservative technical specification or "NCTS"). In 1998, the Nuclear Regulatory Commission issued Administrative Letter 98-10 (AL 98-10), "Dispositioning of Technical Specifications that are Insufficient to Assure Plant Safety." Since issuance of AL 98-10, industry operating and regulatory experience has indicated the need to provide additional guidance to licensees. This guidance does not establish any new regulatory requirements, but suggests a process to ensure appropriate steps are taken when an NCTS is identified.

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LICENSEE ACTIONS TO ADDRESS NONCONSERVATIVE TECHNICAL SPECIFICATIONS

1 INTRODUCTION

Title 10 of the *Code of Federal Regulations* (10 CFR), section 50.36(b), requires each license authorizing operation of a power plant to include technical specifications (TS). Because they are included in the facility operating license issued by the Nuclear Regulatory Commission (NRC), TS are not licensee-controlled documents; however, upon identification of a TS that is insufficient to ensure plant safety, licensees must take prompt action to verify and maintain acceptable plant conditions, comply with license and regulatory requirements, and communicate the details of the condition appropriately. Following prompt completion of these actions, licensee action is necessary to initiate the license amendment process as necessary to permanently address the nonconservatism.

In 1998, the NRC issued Administrative Letter 98-10 (AL 98-10), “Dispositioning of Technical Specifications that are Insufficient to Assure Plant Safety” (Reference 1). Since issuance of AL 98-10, industry operating and regulatory experience has indicated the need to provide additional guidance to licensees. This document provides an approach that licensees may use to meet the objectives discussed above. This guidance does not establish any new regulatory requirements, but suggests a process to ensure the appropriate steps are taken.

This guidance was created for application to nuclear power plant TS, but the concepts may also be applied to Independent Spent Fuel Storage Installation (ISFSI) TS.

2 DEFINITION OF NONCONSERVATIVE TECHNICAL SPECIFICATION

As used in this document, a nonconservative technical specification (NCTS) is defined as:

An existing technical specification requirement that does not protect the assumptions or conclusions in either Updated Final Safety Analysis Report (UFSAR) or the Technical Specification Bases.

This definition is derived from 10 CFR 50.36(b), which requires an applicant for an operating license to propose technical specifications and provide a summary statement of the bases or reasons for such specifications, and further requires the inclusion of technical specifications in the license issued by the NRC. Such technical specifications are to be “...derived from the analyses and evaluations included in the safety analysis report, and amendments thereto...”

The definition refers to “an existing technical specification requirement”; therefore, the simple absence of a TS is not by itself an NCTS. Additionally, specific licensee TSs that are less restrictive than standard technical specifications or technical specifications of other licensees do not meet the definition on that basis alone. Such issues require further analysis before application of these guidelines or any other action to address a perceived TS inadequacy. Finally, the TS do not address beyond-design-basis events.

The definition is intended to fully encompass the subject of AL 98-10, which addresses "specific values or required actions in TS (that) may not assure safety," and may further include other nonconservative TS requirements such as surveillance requirements, applicability statements, design features, and administrative controls.

3 CONSIDERATIONS FOR NCTS RESOLUTION

The following sections address the most significant considerations for the resolution of nonconservative technical specifications. The order of presentation is not meant to imply chronological treatment of these activities, although some actions will necessarily follow others. Plant operators and management should place the highest priority on the immediate verification of plant safety, conformance to the safety analysis, and compliance with regulatory requirements. Management of interim and final corrective actions, documentation and communication recommendations should be given the appropriate priority as the situation develops.

3.1 IDENTIFICATION OF AN NCTS

Over the life of the plant, identification of a potentially inadequate TS can occur during NRC inspections, licensee response to generic communications, design or licensing basis reconstitution, design change processes, configuration management, or other activities involving re-evaluation of the licensing basis. It is the responsibility of the licensee to determine if such an inadequacy presents an NCTS.

Most often, an NCTS is the result of previously unidentified inconsistency with the existing analysis. In such cases, the requirements of the TS, as approved, are inadequate. For example, a TS allowable value for actuation of an instrument channel that would fail to protect an assumption in the analysis in the UFSAR may have been in effect since the issuance of the original license, or may have been the result of analysis supporting a previous licensing action.

A TS can also become nonconservative due to a correction of an error in the analysis described in the UFSAR or TS bases. For example, revision of a fuel consumption calculation to correct an error can result in the TS required volume of fuel oil being insufficient for a diesel generator to perform its specified safety function.

A TS action can be nonconservative if it is discovered that the action will not provide the intended compensatory action described in the TS bases. For example, the TS bases states that a TS action to reduce reactor power to a specified level ensures that, in the case of an event, the Reactor Coolant System is not over pressurized. If it is discovered that the reactor power level in the Action is insufficient to prevent over pressurization, the TS action is nonconservative, even if the supporting analysis does not appear in the UFSAR.

Although the circumstances and evaluations leading up to discovery of an NCTS may differ as described above, the result is the same – a technical specification that is nonconservative with respect to the licensing basis.

A difference between the TS, the analyses in the UFSAR, or the description in the Bases in which the TS is more conservative than necessary (i.e., plant safety is protected, with excess

margin, when following the TS) is not treated with the same flexibility as a NCTS. The TS must be followed and a less conservative TS limit may not be administratively applied.

3.2 VERIFICATION OF SPECIFIED SAFETY FUNCTIONS

Because an NCTS contains limits or requirements that do not adequately protect the assumptions in the safety analysis, full compliance with the operating license as issued may result in unacceptable plant conditions or operation. Therefore, upon identification of an NCTS, immediate verification of plant safety and conformance with appropriate limits is necessary to ensure that the protection intended by the TS is provided.

For TSs that require operability of structures, systems, or components (SSCs), compliance with the requirements of an NCTS would not by itself constitute failure to meet a limiting condition for operation (LCO). However, because the restrictions of the NCTS are not adequate, such a condition may result in the inability of the SSC to perform its intended safety function. SSC operability should be evaluated in accordance with licensee programs and procedures. If it is determined that the affected SSC is inoperable, even though otherwise in full compliance with existing provisions of the TS, the LCO is not met and the applicable required action(s) must be followed.

If the affected TS does not involve SSC operability requirements, but specifies limits or parameters, plant conditions should be evaluated to determine if the new analytical requirements necessary to protect the safety analysis or TS bases are satisfied. If not, the actions should be initiated to place the plant in a condition in which the proposed limits are satisfied. In the interim, the TS Action requirements can be applied to ensure the intent of the TS is met.

In either of the above situations, prompt action may be required to ensure plant safety and regulatory compliance. Actions should be immediately taken to restore affected parameters or conditions to within acceptable limits. More restrictive operating requirements, such as increased monitoring or surveillance performance, or direction to take action at conditions more conservative than current procedural requirements, can be implemented on a temporary basis to ensure the initial actions are maintained. All such actions must be implemented while maintaining full compliance with the TS and approved plant procedures.

3.3 NCTS ENTRY INTO THE CORRECTIVE ACTION PROCESS

Licensee activity management processes need to be effectively applied to ensure that actions taken to address an identified NCTS provide visibility, traceability and review for continued effectiveness. While there are wide variations in the definition of a condition adverse to quality and what licensee corrective action programs (CAP) may require, the typical licensee CAP would provide an effective means of achieving these goals. Therefore, it is recommended that licensees utilize the CAP to document identification of an NCTS, along with both short-term treatment (initial corrective measures, implementation of administrative controls, and evaluation of reporting requirements) and final resolution (approved license amendment or licensing basis change).

Entry of the condition into the CAP typically will provide visibility to internal stakeholders, as well as the management attention necessary to ensure plant safety and timely resolution of the

discrepancy. Additionally, because CAP activities are closely monitored by NRC resident inspectors, CAP documentation can provide the basis for initial and follow-up communication with the NRC staff.

Initial actions taken to address the NCTS, which include verification of SSC operability, compliance with proposed or revised limits, and determination of notification requirements, should be appropriately documented. The establishment of administrative controls to preserve these initial actions can be driven by CAP processes. The determination of the cause and extent of condition of the NCTS, and the implementation of both interim and final corrective action should be completed and documented in accordance with licensee-specific processes.

Licensee specific quality assurance programs may be structured to more effectively implement follow-up activities related to an NCTS using activity management processes other than the corrective action program. Use of such alternative processes is acceptable as long as the above discussed objectives are satisfied, and activities are implemented in accordance with appropriate administrative procedures.

3.4 EVALUATION OF 10 CFR 50.72 AND 50.73 REPORTING REQUIREMENTS

In and of itself, identification of an NCTS is not subject to the notification and reporting requirements of 10 CFR 50.72 and 10 CFR 50.73, respectively. However, plant operation in compliance with an NCTS may have resulted in current or past operational conditions subject to these requirements. Examples include the following:

- A review of plant operation prompted by identification of an NCTS indicates operational conditions that are insufficient to support operability of an SSC required to be operable by a TS LCO. If an SSC was inoperable and the associated actions were not met, the plant condition or operation may have been a condition prohibited by the plant's TS, and therefore reportable under 10 CFR 50.73(a)(2)(i)(B). If the TS LCO requires an SSC to be operable, compliance with nonconservative surveillance requirements is not sufficient to consider the SSC operable and the LCO to have been met.
- A review of plant operation prompted by identification of an NCTS indicates that the plant has operated outside of the conditions required to ensure consistency with the safety analyses. Such a condition may be an unanalyzed condition that significantly degrades plant safety, requiring NRC notification under 10 CFR 50.72(b)(3)(ii)(B) and a follow-up written report under 10 CFR 50.73 (a)(2)(ii)(B).
- A review of plant operation prompted by identification of an NCTS indicates that SSC inoperability could have prevented the fulfillment of a safety function, requiring NRC notification under 10 CFR 50.72(b)(3)(v) and a follow-up written report under 10 CFR 50.73 (a)(2)(v).

These examples are provided for illustrative purposes only, and the guidance is not intended to replace that provided in NUREG-1022, *Event Reporting Guidelines*, 10 CFR 50.72 and 50.73 (Reference 2).

Note that in all cases it is the actual plant condition that is subject to notification and reporting considerations, not the deficiency in the TS. If a 50.72 or 50.73 report is made for a condition directly caused by compliance with an NCTS, the licensee should include that information in the resulting notification or report.

3.5 IMPLEMENTATION OF ADMINISTRATIVE CONTROLS

Because an NCTS establishes limits or requirements that do not protect the assumptions in the safety analysis and may not adequately ensure safety, full compliance with the operating license as issued may result in unacceptable plant condition or operation. As discussed in Section 3.2, on discovery of an NCTS, immediate verification of plant safety and conformance with appropriate limits must be accomplished to ensure that the protection intended by the TS is provided.

Administrative controls, in the context of addressing an NCTS, are those follow-up measures taken by the licensee to ensure that the conditions established by initial compensatory actions are preserved. Most often, the administrative controls will consist of procedure changes that are more restrictive than the approved TS, relying on procedural compliance rather than compliance with the TS to ensure plant safety. Design activities (such as setpoint changes or licensing basis modifications, including UFSAR, TS Bases, or Technical Requirement Manual changes) may also be necessary to supplement administrative controls until final resolution of the NCTS issue.

Regardless of the approach taken, administrative control measures and other compensatory actions must be implemented in accordance with regulatory requirements. For example, design modifications and procedure changes must be accomplished in accordance with procedural requirements that satisfy 10 CFR 50, Appendix B, Criterion III and V, respectively. Regulatory requirements for evaluation of changes to determine the need for NRC approval, such as 10 CFR 50.59, must also be satisfied. The fact that the changes are being implemented to appropriately address an NCTS does not relieve the licensee of other regulatory obligations.

Although not required, it may also be advisable to establish measures to ensure that NCTS are identified as such by document control processes until they are resolved. Various licensee practices have been established, such as insertion of a colored page in the TS to identify the NCTS and the associated administrative controls.

If a TS is identified to be nonconservative with the plant in a condition or mode for which the TS is not applicable (for example, an NCTS is applicable in Mode 1 and the plant is currently in Mode 5), administrative controls should be implemented prior to entering conditions in which the NCTS is applicable

Once the administrative control measures are implemented, the safety concern has been resolved, but the NCTS remains to be corrected. Until final corrective action is in place, licensees should periodically review administrative controls to ensure they remain implemented and effective.

3.6 IMPLEMENTATION OF FINAL CORRECTIVE ACTION

Continued plant operation prior to final corrective action is predicated on implementation of administrative controls adequate to ensure safe plant operation; however, final resolution of the

NCTS cannot rely on administrative controls as a permanent solution. Final resolution of an NCTS typically requires a license amendment, revising the TS to reflect the safety analysis.¹ Revision of the safety analysis to be consistent with the current TS may be an alternative resolution, provided that the requirements of 10 CFR 50.59 are satisfied. Other cases may require a combination of both approaches.

In addressing an NCTS, a licensee must take timely corrective action consistent with its quality assurance program. There is no definition of "timely" in the regulations or other binding requirements. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," refers to prompt identification and correction of conditions adverse to quality, but does not further define "prompt." Because these terms are undefined, an appropriate timeline for correction must be commensurate with the safety significance of the issue. In determining priority, consideration should be given to the fact that compliance with the operating license would not necessarily assure plant safety. Based on evaluation of licensee efforts to resolve such issues, the NRC has issued non-cited violations to licensees for failure to promptly correct an NCTS.

For example, a licensee received a green finding and associated noncited violation for failure to meet Appendix B, Criterion XVI, "Corrective Action", related to failure to promptly correct an NCTS. In October 2009, the licensee had determined that TS 3.4.11, "RCS Pressure and Temperature (P/T) Limits," was nonconservative. Plant staff implemented administrative controls requiring operation at higher reactor pressure vessel temperatures than specified in the P/T limits at certain pressures. Planned corrective actions included updates to the calculations supporting the P/T curves and a license amendment request to revise the TS. The corrective actions were delayed several times. As of November 2013, the calculation had not been performed, and the licensee had not submitted the license amendment request.

The above example illustrates that the extent of the effort to develop and review an acceptable license amendment application, such as the performance of supporting calculations or analyses, necessarily affects the timing of the amendment request. It is the licensee's responsibility, however, to ensure these activities are given the priority and resources necessary to ensure final resolution without unnecessary delay.

Identification of an NCTS may have generic implications, in that the nonconservatism affects the applicable technical specification for multiple licensees. Accordingly, final resolution of the NCTS may involve a generic solution. The enforcement history includes the following examples.

In 2011, a licensee received a green finding and associated noncited violation for failure to meet Appendix B, Criterion XVI, "Corrective Action," related to failure to promptly correct an NCTS. The NCTS was the acceptance criteria for a surveillance requirement (SR) on the emergency diesel generator (EDG) steady state frequency. EDG loading calculations used a frequency range that was more restrictive than the SR acceptance criteria. The licensee identified the NCTS in 2006 and determined a change to the

¹ Licensees preparing license amendment requests to correct an NCTS should review NEI 06-02, *License Amendment Guidelines* (Reference 3), Appendix G, "Voluntary versus Non-Voluntary License Amendments," for relevant guidance on such submittals.

technical specifications was required. The licensee considered the NCTS a generic industry issue and pursued resolution with the Pressurized Water Reactor Owners Group (PWROG). The licensee implemented administrative controls to restrict EDG operation consistent with the accident analyses assumptions, but the licensee postponed submittal of a change to the technical specifications awaiting the generic resolution. The NRC concluded that the NCTS should be resolved on a plant-specific basis, since no approved generic resolution existed.

In 2009, the PWROG identified an NCTS related to Westinghouse Nuclear Safety Advisory Letter 09-5 (NSAL-09-5), "Relaxed Axial Offset Control F_Q Technical Specification Actions." Following two public meetings with the NRC, on October 12, 2010, the PWROG sent a letter to the NRC describing the administrative controls implemented at affected plants to address the NCTS and the plans for a generic resolution to the issue (ADAMS Accession No. ML103140568). On January 21, 2011, the NRC responded to the PWROG letter and acknowledged that the plans were consistent with timely resolution of the issue (ADAMS Accession No. ML103210497).²

These contrasting examples illustrate that while licensees may consider generic industry approaches (e.g., topical reports, Technical Specification Task Force travelers) to support final corrective actions, such activities may not be possible in a timeframe commensurate with safety significance. Industry generic resolution involves the cooperative efforts of both the licensees and the NRC; however, pursuit of a generic approach does not change the fact that individual licensee's TS are deficient. Licensees should closely monitor generic resolution activities to ensure timely and effective resolution of the issue as it applies to their facility. Additionally, it should be recognized that as generic solutions evolve they may no longer satisfy the licensee-specific final corrective action. Resolution on a plant-specific basis should also be considered.

As with other planned licensing activities that will require NRC staff review, it is essential to inform the NRC Project Manager when an NCTS is identified and to keep the PM informed of the schedule for license amendment request submittal. Effective communication as to the status of resolution efforts can help avoid a perception that the licensee has not taken timely corrective action.

4 REFERENCES

1. Administrative Letter 98-10, *Dispositioning of Technical Specifications that are Insufficient to Assure Plant Safety*, December 29, 1998, ADAMS Accession No. ML031110108.
2. NRC NUREG-1022, *Event Reporting Guidelines*, 10 CFR 50.72 and 50.73.
3. NEI 06-02, *License Amendment Guidelines*.

² In January 2014, Topical Report WCAP-17661 was submitted to the NRC for review. As of the publication of this document, no plants have received findings related to untimely correction of this NCTS.