

NEI 14-XX, Revision 0

**Licensee Actions to
Address
Nonconservative
Technical Specifications**

month 2014

NEI 14-XX, Revision 0

Nuclear Energy Institute

**Licensee Actions to
Address
Nonconservative
Technical Specifications**

month 2014

ACKNOWLEDGEMENTS

This guidance was developed by the Pressurized Water Reactor Owners Group (PWROG) Licensing Committee, the Boiling Water Reactors Owners' Group (BWROG) Licensing Committee, the joint Owners Group Technical Specifications Task Force (TSTF), and the NEI Licensing Actions Task Force (LATF). The dedicated and timely effort of the many participants, including management support of the effort, is greatly appreciated. Finally, we would like to thank the U.S. Nuclear Regulatory Commission for providing feedback during several public meetings.

NOTICE

Neither NEI, nor any of its employees, members, supporting organizations, contractors, or consultants make any warranty, expressed or implied, or assume any legal responsibility for the accuracy or completeness of, or assume any liability for damages resulting from any use of, any information apparatus, methods, or process disclosed in this report or that such may not infringe privately owned rights.

FOREWORD

This guidance describes actions that may be used by the industry to address a Technical Specification that is determined to be insufficient to assure plant safety (e.g., a nonconservative Technical Specification or "NCTS"). In 1998, the NRC issued Administrative Letter (AL) 98-10, "Dispositioning of Technical Specifications that are Insufficient to Assure Plant Safety." Since issuance of the AL, industry operating and regulatory experience has indicated the need to provide additional guidance to licensees. This updated guidance was developed for industry use and for NRC review and possible endorsement. This guidance does not establish any new regulatory requirements, but suggests a process to ensure appropriate steps are taken when an NCTS is identified.

TABLE OF CONTENTS

1	INTRODUCTION.....	1
2	DEFINITION OF NONCONSERVATIVE TECHNICAL SPECIFICATION.....	1
3	FLOWCHART DESCRIPTION	2
3.1	STEP 1, "LICENSEE IDENTIFIES AN NCTS"	2
3.2	STEP 2, "ENTER NCTS CONDITION INTO THE CORRECTIVE ACTION PROCESS"	2
3.3	STEP 3, "EVALUATE CONDITION FOR 10 CFR 50.72 AND 50.73 NOTIFICATION"	3
3.4	STEP 4, "DETERMINE IF SPECIFIED SAFETY FUNCTIONS ARE CURRENTLY MET"	4
3.5	STEP 5, "ESTABLISH ADMINISTRATIVE CONTROLS TO ENSURE COMPLIANCE WITH REVISED LIMIT OR REQUIREMENT"	5
3.6	STEP 6, "IMPLEMENT TIMELY FINAL CORRECTIVE ACTIONS"	6
4	REFERENCES.....	8
	FIGURE 1: FLOWCHART OF LICENSEE ACTIONS.....	A-1

LICENSEE ACTIONS TO ADDRESS NONCONSERVATIVE TECHNICAL SPECIFICATIONS

1 INTRODUCTION

Title 10 of the Code of Federal Regulations (10 CFR), section 50.36, requires each license authorizing operation of a power plant to have Technical Specifications (TS). The TS are derived from the analyses and evaluations included in the safety analysis report, as stated in 10 CFR 50.36(b).

Over the life of the plant, the licensee may identify TS that are not sufficiently conservative to assure plant safety. This identification can occur during many activities, such as Nuclear Regulatory Commission (NRC) inspections, design or licensing basis reconstitution, verification and validation, design change processes, configuration management, or other activities.

In December 1998, the NRC issued Administrative Letter (AL) 98-10, "Dispositioning of Technical Specifications that are Insufficient to Assure Plant Safety," (Reference 1). The AL stated that when a TS inadequate to assure plant safety is discovered, most licensees conduct an evaluation and, if necessary, institute administrative controls that assure plant safety. Most licensees properly consider reporting under 10 CFR 50.72 and 10 CFR 50.73, and promptly submit a license amendment request to correct the TS. However, some licensees failed to comply with NRC reporting requirements and either significantly delayed submitting a license amendment request or concluded that, with administrative controls in place, a license amendment request was unnecessary. AL 98-10 stated that, while imposing administrative controls in response to an improper or inadequate TS is considered an acceptable short-term corrective action, the NRC staff expects that an amendment to the TS will be submitted in a "timely fashion".

In 2014, the NRC staff had continuing concerns that licensees are not properly considering required reporting when a TS inadequate to assure plant safety is discovered, and are not correcting the inadequate TS in a timely manner. This subject was a topic of NRC and industry discussion at the 2014 NRC Regulatory Information Conference (Reference 2). Rather than the NRC issuing a new generic communication to replace AL 98-10, the industry volunteered to create guidance for the industry which the NRC could subsequently review and endorse.

This guideline describes an approach that licensees may use to evaluate and disposition a TS that is not sufficiently conservative to assure plant safety. This guidance does not establish any new regulatory requirements, but suggests a process to ensure the appropriate steps are taken.

2 DEFINITION OF NONCONSERVATIVE TECHNICAL SPECIFICATION

The following definition is used in this document:

A nonconservative Technical Specification (NCTS) is an existing TS requirement that does not protect the assumptions in the Updated Final Safety Analysis Report (UFSAR) safety analysis, or that may not assure safety.

This definition is based on the requirement for TS in 10 CFR 50.36(b), "The technical specifications will be derived from the analyses and evaluation included in the safety analysis report."

The definition differs from AL 98-10, which states, "specific values or required actions in TS may not assure safety," to include any TS requirement, such as Surveillance Requirements, Applicability statements, Design Features, and Administrative Controls.

The definition refers to "an existing Technical Specification requirement." The lack of a TS cannot be an NCTS. If a licensee determines the TS are incomplete or inadequate, a license amendment request may be submitted. If the NRC is concerned that a licensee's TS are incomplete or inadequate, there are other existing regulatory processes to pursue that issue, such as a request for information in accordance with 10 CFR 50.54(f).

3 FLOWCHART DESCRIPTION

The following text describes the steps in Figure 1.

3.1 STEP 1, "LICENSEE IDENTIFIES AN NCTS"

Most NCTS fall into two categories:

- A TS that is nonconservative with respect to the analysis described in the UFSAR. For example, discovery that a TS Allowable Value for actuation of an instrument channel that would fail to protect an assumption in the analysis in the UFSAR is an NCTS; or
- A TS that becomes nonconservative due to a change or discovered error in the analysis described in the UFSAR. For example, discovery that the diesel generator fuel consumption calculation is incorrect and, as a result, the TS required volume of fuel oil is insufficient for the diesel generator to perform its specified safety function(s).

NRC actions (inspection findings, generic communication, etc.) may result in the licensee determining that the TS are inconsistent with the analysis described in the UFSAR. For example, an NRC inspection finding may result in a change to the manner in which a licensee performs or evaluates the results of a Surveillance Requirement (SR) such that it is no longer conservative with respect to the accident analyses.

A difference between the TS and the analyses in the UFSAR that is more conservative than necessary (e.g., plant safety is protected when following the TS) is not a NCTS. The TS must be followed and a less conservative TS limit may not be administratively applied.

3.2 STEP 2, "ENTER NCTS CONDITION 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 the licensee's Corrective Action Programs (CAP) may require, the typical licensee's 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 long-term resolution (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 system, structure, or component (SSC) operability, compliance with proposed or revised limits, and determination of notification requirements, should be appropriately documented. These initial actions to establish administrative controls can be driven by CAP processes. The determination of the cause and extent of condition of the NCTS, and the implementation of long-term 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.

3.3 STEP 3, "EVALUATE CONDITION FOR 10 CFR 50.72 AND 50.73 NOTIFICATION"

An NCTS is not, in and of itself, a reportable condition under 10 CFR 50.72 or 50.73. If plant operation has been consistent with the Technical Specifications, it is not reportable as an operation or condition prohibited by the plant's Technical Specifications.

The NRC considers it a good practice to inform the NRC Project Manager when an NCTS is found and to keep the PM informed of the schedule for correcting the NCTS. The NRC has stated that keeping the PM informed could avoid an NRC finding that the licensee has not taken timely corrective action.

Plant operation in compliance with the NCTS may have resulted in operational conditions (currently or in the past) that may be reportable. For example, if a review of past operation determines that the plant has operated outside of the conditions required to assure plant safety and consistency with the safety analyses, the condition may be reportable as an unanalyzed condition that significantly degrades plant safety under 10 CFR 50.72(b)(3)(ii)(B) or a loss of safety function under 10 CFR 50.72(b)(3)(v).

It is not necessary for plant operation in accordance with the NCTS, but outside of the conditions required to assure plant safety, to have affected multiple system trains or to have existed longer than the applicable Required Action's Completion Time for the condition to be reportable. NUREG 1022, "Event Report Guidelines, 10 CFR 50.72 and 50.73," (Reference 3), states:

There are a limited number of single-train systems that perform safety functions (e.g., the HPCI system in BWRs). For such systems, inoperability of the single train is reportable even though the plant TS may allow such a condition to exist for a limited time.

This condition would also require reporting under 10 CFR 50.73.

For example:

A plant has a common Ultimate Heat Sink (UHS) licensed to a 30 day mission time without any additional makeup to the water inventory. The UHS supports two redundant emergency cooling water trains. The TS SR for the UHS specifies a minimum level of 78% to support the 30 day mission time water inventory.

It is discovered that the heat load calculation for the UHS contained incorrect assumptions and that the plant could not meet the 30 day mission time at the 78% SR acceptance criteria value. A UHS minimum water level of 82% is needed.

If the current UHS water level at time of discovery is 80%, both trains of the emergency cooling water system may be incapable of performing their safety functions until the water level in the UHS can be raised to 82%. In this example, the condition would be reportable under multiple provisions of 10 CFR 50.72 and 50.73.

However, if the UHS water level is greater than 82%, the emergency cooling water system is currently operable. If a review of operating data determines the water level has been maintained greater than 82% when the UHS is required to be operable for at least the past 3 years, the condition would not be reportable.

Note that 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.

3.4 STEP 4, "DETERMINE IF SPECIFIED SAFETY FUNCTIONS ARE CURRENTLY MET"

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 not result in acceptable plant conditions or operation that adequately ensures safety. Therefore, verification of plant safety and conformance with appropriate limits must be accomplished to ensure that the protection intended by the TS is provided.

The affected SSC should be evaluated in accordance with licensee programs and procedures to determine if it is operable.

NRC Inspection Manual Chapter IMC-0326, "Operability Determinations & Functionality Assessments for Conditions Adverse to Quality or Safety" (Reference 4), Section 06.02, states that the discovery of an improper or inadequate TS value or required action is considered a degraded or nonconforming condition. The industry disagrees with this statement. Per the IMC-

0326 definitions, the terms "degraded" and "nonconforming" apply to SSCs. However, with an NCTS, the SSC is not degraded or nonconforming; the Technical Specifications are the problem. Therefore, the terms "degraded" or "nonconforming" are not applicable to an NCTS. However, IMC-0326 is applicable to current and past Operability determinations prompted by an NCTS.

If it is determined that the affected SSC is inoperable, the applicable TS Required Action(s) must be followed.

If the NCTS does not require SSC Operability but specifies a value or parameter, the plant condition should be evaluated to determine if the revised requirement necessary to assure plant safety is met. If not, the Actions should be entered until the revised requirement is met.

3.5 STEP 5, "ESTABLISH ADMINISTRATIVE CONTROLS TO ENSURE COMPLIANCE WITH REVISED LIMIT OR REQUIREMENT"

Because an NCTS establishes limits or requirements that do not adequately ensure safety or protect the assumptions in the safety analysis, full compliance with the operating license as issued may result in unacceptable plant condition or operation. As discussed in Step 4, upon 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 measures that need to be taken by the licensee to ensure that the conditions established by the compensatory actions are preserved. (These administrative controls should not be confused with the Administrative Controls section of the TS.) Most often, the administrative controls will consist of procedure changes that are more restrictive than the NCTS, 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 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 10CFR50, Appendix B, Criterion III and V, respectively. Regulatory requirements for evaluation of changes to determine the need for NRC approval, such as 10CFR 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 it is determined that the affected SSC is not capable of performing a credited safety function under plant conditions that are NOT currently applicable but which could become applicable in the future (for example, an NCTS is applicable in Mode 1 exists and the plant is currently in

Mode 5), then administrative controls should be implemented prior to entering the Applicability of the NCTS.

3.6 STEP 6, "IMPLEMENT TIMELY FINAL CORRECTIVE ACTIONS"

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. Disposition of the NCTS may consist of revising the TS to reflect the safety analysis, revising the safety analysis to be consistent with the current TS, or revising the safety analysis and the TS.

Licensees must take timely corrective action consistent with their Quality Assurance Program and 10 CFR 50, Appendix B. There is no definition of "timely" in the regulations or other binding requirements. Previous guidance with respect to addressing NCTS (Reference 1) simply stated "The staff expects that, following the imposition of administrative controls, an amendment to the TS, with appropriate justification and schedule, will be submitted in a timely fashion," but did not define "timely." 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." The NRC has issued non-cited violations to licensees for failure to correct an NCTS in a timely manner. For example:

- In 2014, 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. Inspectors noted that the licensee's procedure did not specify a time requirement for submitting the license amendment request and did not clearly identify the organization responsible to initiate the correction to the Technical Specifications.
- 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 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 plant Heat Channel Hot Channel Factor (F₀) Required Actions (Nuclear Safety Advisory Letter (NSAL)-09-5). On following two public meetings with the NRC, October 12, 2010, the PWROG sent a letter to the NRC describing the administrative controls that had been implemented at all 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). The letter stated:

It is the NRC staff's expectation that sufficient progress be made on the development of the generic solution, and that the NRC staff be kept apprised via periodic updates. If progress on the development of the generic solution were significantly or unreasonably delayed, the NRC staff would question the timeliness of the activities in accordance with AL 98-10.

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.

A licensee's Corrective Action Program is subject to routine inspection. Inspection Procedure 71152, "Problem Identification and Resolution," (Reference 5) provides the following guidance on evaluating performance attributes:

Completion of corrective actions in a timely manner commensurate with the safety significance of the issue. Included within this attribute would be justifications for extending corrective action due dates. If permanent corrective actions require significant time to implement, then inspectors should verify that interim corrective actions and/or compensatory actions have been identified and implemented to minimize the problem and/or mitigate its effects until the permanent action could be implemented.

IMC-0326 (Reference 4), Section 07.02, "Timing of Corrective Actions," discusses circumstances to be considered when determining whether an action is timely.

In determining whether the licensee is making reasonable efforts to complete corrective actions promptly, the NRC will consider safety significance, the effects on operability, the significance of the degradation, and what is necessary to implement the corrective action. The NRC may also consider the time needed for design, review, approval, or procurement of the repair or modification; the availability of specialized equipment to perform the repair or modification; and whether the plant must be in hot or cold shutdown to implement the actions. If the licensee does not resolve the degraded or nonconforming condition at the first available opportunity or does not appropriately justify a longer completion schedule, the staff would conclude that corrective action has not been timely and would consider taking enforcement action. Factors that should be considered are (1) the identified cause, including contributing factors and proposed corrective actions, (2) existing conditions and compensatory measures, including the acceptability of the schedule for repair and replacement activities, (3) the basis for why the repair or replacement activities will not be accomplished prior to restart after a planned outage (e.g., additional time is needed to prepare a design/modification package

or to procure necessary components), and (4) review and approval of the schedule by appropriate site management and/or oversight organizations.

Licenseses may base final corrective actions on industry generic activities (e.g. Topical Reports, TSTF Travelers, etc.). This is acceptable provided the administrative controls continue to ensure plant safety. However, industry generic resolution requires the cooperative involvement of both the licenseses and the NRC, and pursuit of a generic approach does not change the fact that the licensee's TS are deficient. Licenseses 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. Licenseses should schedule periodic reviews of corrective actions to ensure they will address the issue and that the administrative controls continue to ensure plant safety.

Licenseses preparing License Amendment Requests to correct an NCTS should review NEI 06-02, "License Amendment Guidelines" (Reference 6), Appendix G, "Voluntary versus Non-Voluntary License Amendments," for relevant guidance on such submittals.

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 Website: <http://www.nrc.gov/public-involve/conference-symposia/ric/past/2014/docs/abstracts/sessionabstract22.html>
3. NRC NUREG-1022, "Event Reporting Guidelines, 10 CFR 50.72 and 50.73," Revision 3, January 2013, ADAMS Accession No. ML13032A220.
4. NRC Inspection Manual Chapter IMC 0326, "Operability Determinations & Functionality Assessments for Conditions Adverse to Quality or Safety," January 2014, ADAMS Accession No. ML13274A578.
5. NRC Inspection Procedure 71152, "Problem Identification and Resolution," January 31, 2013, ADAMS Accession No. ML13179A365.
6. NEI 06-02, "License Amendment Guidelines," Revision 4, September 2013.

FIGURE 1: FLOWCHART OF LICENSEE ACTIONS

Step numbers shown in circles correspond to the discussion in Section 3 of the text.

