

C.I.16. Technical Specifications

The NRC regulations specific to technical specifications (TS) are set forth in 10 CFR 50.36, “Technical Specifications.” Additional information regarding the NRC’s policies on TS is contained in the “NRC Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors” (58 FR 39132), dated July 22, 1993. These documents define the main elements of technical specifications and provide criteria for items to be included in the technical specifications. The final policy statement and the statement of considerations for 10 CFR 50.36 (60 FR 36953), dated July 19, 1995 (Ref. I 1), also discuss use of probabilistic approaches to improve technical specifications.

In accordance with 10 CFR 50.36(a), each operating license that the Commission issues for a nuclear power plant must contain TS that set forth all limits, operating conditions, and other requirements that the NRC imposes on operation of the facility to protect the health and safety of the public (among other purposes). Consequently, each applicant for a combined construction permit and conditional operating license (COL) for a nuclear power plant is required to submit the proposed TS for the facility.

Toward that end, Chapter 16 of the COL application and the associated final safety analysis report (FSAR) should include (explicitly or by reference) the proposed plant-specific TS; (and associated bases, as discussed later in this chapter). In so doing, the applicant should ensure that the proposed plant-specific TS meet the requirements of 10 CFR 50.36 and 50.36a for operating reactors. The plant-specific TS and bases should be consistent with the content and format of the referenced TS, whether an approved generic TS for a certified plant design or the current version of the standard TS in NUREG-1430 through NUREG-1434 for the selected nuclear steam supply system (NSSS) vendor. The proposed TS may include appropriate site-specific deviations when warranted. For applications referencing a certified design, these deviations should be justified in a separately submitted exemption request. Applicant-supplied information to fulfill COL information items for a certified design or, as discussed in Section C.IV.3.3.3, to replace bracketed information in the referenced generic TS, is not considered a deviation from the generic TS, and does not require an exemption; however, such information should be justified in the application. Applications referencing the standard TS should include justifications for any deviations, as well as justification for information to replace bracketed information.

As required by 10 CFR 50.36(a), the COL application shall include a summary statement of the bases or reasons for the proposed plant-specific specifications other than those contained in the TS administrative controls section. Consistent with the standard TS, bases are only required for TS sections related to safety limits, limiting conditions for operation (LCOs), and any associated action and surveillance requirements. No bases are required for the TS sections related to TS usage rules (definitions, logical connectors, required action completion times, and surveillance requirement frequencies) and the TS section for design features. However, the bases are not a part of the technical specifications.

Each specification provided in the COL application should be as complete as possible and should include the relevant numerical values, graphs, tables, and other data. The bases for each specification provided in the COL application should reference the applicable FSAR sections that provide clarifying details in support of the bases.

The proposed TS bases should provide justification that the specified variables, conditions, or other limitations are those that 10 CFR 50.36(c)(2)(ii) requires to be the subject of LCOs. Special attention should be given to those specifications that are influenced by the design in order to minimize subsequent facility modifications or license changes to harmonize the as-built plant and the final plant-

specific TS. In particular, the TS bases should contain sufficient information, consistent with the FSAR, to confirm the design suitability of features and specifications that affect the type, capacity, and number of LCO-required systems, as well as the capability for performance of surveillance activities involving those LCO-required systems.

The TS are part of the license and are to be treated as a standalone document (separate from the FSAR) for the purposes of updating, distribution, and control. Similarly, the TS bases are also to be treated as a standalone document (separate from both the FSAR and the TS) for the purposes of updating, distribution, and control.

Manuals, reports, and program documents identified in the administrative controls section of the TS or applicable governing regulations, are considered to be neither part of the FSAR, nor part of the TS or the associated bases. These documents (such as the Offsite Dose Calculation Manual and Core Operating Limits Report) are to be prepared and submitted to the NRC as required by the associated TS administrative control requirements and any applicable governing regulations.

The COL application should contain plant-specific TS that are derived from the analyses and evaluations included in the FSAR. The plant-specific TS should include the following categories of information as required by 10 CFR 50.36 and 50.36a for operating reactors:

- safety limits
- limiting safety system settings
- limiting conditions for operation (and associated remedial actions, if any)
- surveillance requirements
- design features
- administrative controls (includes requirements on effluents containing radioactive material)

The COL application should include LCOs for each item that meets one or more of the following criteria set forth in 10 CFR 50.36(c)(2)(ii) :

(A) *Criterion 1.* Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.

(B) *Criterion 2.* A process variable, design feature, or operating restriction that is an initial condition of a Design Basis Accident or Transient Analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

(C) *Criterion 3.* A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a Design Basis Accident or Transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

(D) *Criterion 4.* A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

The COL application should describe the processes and governing procedures that ensure (1) the proposed TS include a limiting condition for operation (LCO) for each structure, system or component (SSC) and parameter meeting one or more of the four criteria set forth in 10 CFR 50.36(c)(2)(ii); and (2) probabilistic risk assessment is appropriately included in the development of and revisions to the TS, consistent with existing NRC rules and regulations.

Regulatory Guide 1.177, “An Approach for Plant-Specific Risk Informed Decision-Making: Technical Specifications,” dated August 1998, contains guidance for proposing TS changes, such as relaxations of required action completion times and surveillance requirement frequencies. If any proposed TS requirements are based on risk insights, or risk insights are used to support relaxation of a referenced generic or standard TS requirement, the COL application should discuss how:

- the five key principles of the risk-informed decision making process (as specified in Section B, “Discussion,” of Regulatory Guide 1.177) are used to assess the nature and safety impact of such TS requirements and the controls used to prepare this risk information;
- the selected approaches and methods (whether quantitative or qualitative, and traditional or probabilistic), data, and criteria for considering risk are appropriate for the NRC’s decision regarding the proposed risk-informed TS requirements;
- the controls used to ensure that proposed risk-informed TS requirements meet current regulations, orders, and license conditions are consistent with the principles of risk-informed regulation;
- the regulations regarding application for and issuance of license amendments, as set forth in 10 CFR 50.90--50.92, are met;
- the controls used to ensure that any discrepancies between the proposed risk-informed TS requirements and applicant or licensee commitments are identified and considered in the evaluation; and
- the three-tiered approach is used in accordance with Regulatory Guide 1.177 to evaluate the risk associated with the proposed risk-informed TS requirements, in keeping with the fundamental principle that the proposed TS requirements are consistent with the defense-in-depth philosophy, thereby ensuring that defense-in-depth will not be significantly impacted by the proposed risk-informed TS requirements.

REFERENCES:

- (1) USNRC, “Use of Probabilistic Risk Assessment Methods in Nuclear Activities: Final Policy Statement,” *Federal Register*, 60 FR 42622, August 16, 1995.
- (2) USNRC, “Quarterly Status Update for the Probabilistic Risk Assessment Implementation Plan,” SECY-97-234, October 14, 1997.
- (3) USNRC, “Standard Technical Specifications: Babcock and Wilcox Plants,” NUREG-1430 (latest revision).
- (4) USNRC, “Standard Technical Specifications, Westinghouse Plants,” NUREG-1431 (latest revision).
- (5) USNRC, “Standard Technical Specifications, Combustion Engineering Plants,” NUREG-1432 (latest revision).
- (6) USNRC, “Standard Technical Specifications, General Electric Plants, BWRI/4,” NUREG-1433 (latest revision).
- (7) USNRC, “Standard Technical Specifications, General Electric Plants, BWR/6,” NUREG-1434 (latest revision).
- (8) USNRC, “An Approach for Plant-Specific Risk-Informed Decision-making: Technical

Specifications,” Regulatory Guide 1.177, August 1998.

(9) USNRC, “Statement of Considerations: Technical Specifications for Facility Licensees; Safety Analyses Reports,” *Federal Register*, 33 FR 18612, December 17, 1968.