

June 26, 2003

Mr. Anthony Pietrangelo
Nuclear Energy Institute
1776 I Street, N. W.
Suite 400
Washington, DC 20006-3708

Dear Mr. Pietrangelo:

The Nuclear Regulatory Commission (NRC) has completed its review of the Nuclear Energy Institute Technical Specification Change Traveler, TSTF-427, "Allowance for Non Technical Specification Barrier Degradation on Supported System OPERABILITY," proposed changes to NUREGs-1430, -1431, -1432, -1433, and -1434, Revision 2, "Standard Technical Specifications."

TSTF-427 proposes to add a new LCO Applicability rule, LCO 3.0.9, to the Standard Technical Specifications for barriers which cannot perform their required support function for technical specification systems. The proposed LCO allows supported LCOs not to be declared not met for up to 30 days when barriers, which support one or more trains of a system, cannot provide their related support function(s). This allowance is provided as long as at least one train of the system is OPERABLE and supported by barriers capable of providing their related support function(s), and the risk is assessed and managed.

The staff has reviewed TSTF-427 and has identified some areas that require modifications. These proposed modifications are discussed in the attachment to this letter. As such, TSTF-427 will require revision. The staff is available to discuss these proposed changes with the TSTF at your earliest convenience.

Please contact me at (301) 415-1161 or e-mail wdb@nrc.gov if you have any questions or need further information on these proposed changes.

Sincerely,

/RA/

William D. Beckner, Program Director
Operating Reactor Improvements Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: T. Silko, BWROG
D. Bice, CEOG
P. Infanger, BWOOG
S. Wideman, WOG
D. Hoffman, EXCEL
B. Mann, EXCEL

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RORP R/F	SLMagruder	KKavanagh	WReckley
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NAME	KKavanagh	LHill	SLMagruder	WDBeckner
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Discussion of Modifications Needed for TSTF-427

1. The proposed LCO 3.0.9 would allow intentional removal of barriers to facilitate maintenance. Each barrier could be unavailable to perform its function (i.e., protect a system or systems from a number of specific internal or external events) for 30 days before declaring the impacted system or systems inoperable (assuming the removed barrier or barriers does not leave both trains of a two-train system unprotected). The reason for the proposed change needs to be stated. Guidance provided in Regulatory Guide (RG) 1.177 (see "Element 1" of regulatory position) requires applicants to state the reasons for requesting the TS change, along with information that demonstrates that the extent of the change is needed. Examples of acceptable reasons, stated in RG 1.177, are: (1) Improvement in operational safety; (2) Consistency of risk basis in regulatory requirements; and (3) Reduce unnecessary burdens. The applicant needs to provide this information.
2. On page 2, it is stated: *".....[a] simplified risk analysis is provided.....to demonstrate the risk impact of a single affected barrier..... for a single initiator..... Its purpose is to show that conditions created by an affected barrier produce small risk impacts within the range of other maintenance activities carried out under 10 CFR 50.65 (a)(4)....."* With respect to risk impact, the proposed TS change is equivalent to an AOT extension for the specified type of barriers. Therefore, the proposed change needs to be in accordance with guidance provided in RG 1.177. RG 1.177 uses a "three-tiered" evaluation approach to ensure that the implementation of the proposed TS change will not increase the plant risk unacceptably. The first tier of the evaluation involves the assessment of risk impact, independently of plant configuration (i.e., assuming average unavailability of systems and components). The second tier of the evaluation involves the identification of high-risk configurations which could exist if certain equipment, in addition to that associated with the change, were to be taken out of service. The objective of the second tier is to avoid the identified high-risk configurations by placing appropriate restrictions on plant operation in such configurations. These restrictions are included as "licensee commitments" in the approval of the proposed change. The third tier of the evaluation involves the establishment of an overall configuration risk management program (CRMP) to manage configuration-specific risk resulting from maintenance and other operational activities. The objective of the third tier is met by licensee programs to comply with the Maintenance Rule 10 CFR 50.65 (a)(4) requirement to assess and manage risk resulting from maintenance and other operational activities. The justification provided in TSTF-427 does not demonstrate that there are no high-risk configurations, for which appropriate operational restrictions may be necessary, and relies exclusively on the Maintenance Rule 10 CFR 50.65 (a)(4) requirement (i.e., the third tier of the three-tiered evaluation approach of RG 1.177) to assess and manage configuration risk. The staff believes that guidance from RGs 1.174 and 1.177 should be followed to determine whether the risk impact associated with the removal of a single barrier is acceptable. Then, risk assessments performed per 10 CFR 50.65 (a)(4) will be used to manage risk when more than one barriers, in addition to other equipment, are taken out of service simultaneously.

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3. On page 2 it is stated: *“Should the risk assessment and risk management actions for a specific plant configuration, or emergent condition, not support the 30 day allowed time, the (a)(4) risk management action must be implemented or the supported system LCO be considered not met.”* Given that several barriers can be removed for extensive periods of time and during such periods the plant configuration could change several times (e.g., due to new equipment outages, maintenance completions and emergent conditions), would it be safer to use the more rigorous integrated approach proposed for RITS Initiative 4b (flexible AOTs) to manage risk instead of using (a)(4)? Would not the integrated approach proposed for Initiative 4b have to consider the impact of removing barriers, anyway?
4. The staff review identified the following issues related to the risk impact assessment used to justify the 30-day “outage” allowance of barriers proposed in TSTF-427:
 - a. The incremental core damage and large release probabilities (ICDP and ILEPR, respectively) were calculated parametrically in terms of the risk achievement worth (RAW) of the protected TS equipment (train or component). This parametric study does not provide enough information about the risk impact of the proposed change. The assumed values for RAW in the parametric study are not linked to specific equipment at specific plants. In addition, no arguments are provided showing that the assumed RAW values can be viewed as “upper bound” values which lead to a conservative assessment of risk.
 - b. The removal of a barrier can affect more than one system (e.g., trains of different systems located in same flood area).
 - c. A TS system can be continuously exposed to an initiating event, such as internal flooding (e.g., by sequentially removing different barriers).
 - d. No attempt has been made to assess potential increases in CDF and LERF associated with the proposed TS change or discuss controls that would limit such increases to acceptable levels, except for (a)(4) requirements. However, some plants may not have adequate PRAs to perform quantitative risk assessments to calculate cumulative increases in CDF and LERF per (a)(4). As a result, frequent and lengthy barrier removal, to facilitate preventive maintenance, could occur resulting in a significant increase of the current baseline risk at some plants.
 - e. The parametric calculations of ICDP and ILERP assume no outage, other than one barrier. Since the guidance for implementing (a)(4) and establishing risk management actions refers to “configuration-specific” risk, the ICDP and ILERP values reported in the tables (in pages 8 and 9) could be much higher for a more realistic plant configuration involving several outages. Therefore, the conclusion stated in page 9 that *“The ICDP and ILERP values for the range of CDF and RAW values are still within the “normal work controls” range...”* may not be accurate for many cases.

5. On page 5, the initiating events (and their frequencies) that were considered in the risk assessment are listed. Many of these initiating events are LOCAs which, unless the containment fails to isolate, will be contained inside the containment. It is not clear why these initiating events are considered. Are there any barriers inside containment, protecting TS systems, that are removed for maintenance?
6. On page 7, it is stated: *“Containment bypass scenarios, such as interfacing system LOCA or steam generator tube rupture [SGTR] (which tends to be CDF independent) would not be uniquely affected by this application.”* However, it appears that SGTR scenarios can be affected if barriers protecting equipment needed to mitigate the accident are unavailable. In fact, a steam line break can induce a SGTR event and at the same time cause the failure of unprotected equipment (due to the removal of barriers) needed to mitigate the SGTR accident.
7. Insert 2 of the proposed Bases states that “this provision does not apply to barriers which support ventilation systems or to fire barriers.” The staff agrees with this statement. However, the proposed Bases is the only location in the TSTF that this is discussed. A similar discussion should be included in the technical analysis (section 4.0) of the TSTF. This statement should also be included in insert 1 (LCO 3.0.9).
8. The reviewer’s note in the proposed Bases insert 2 discusses the generic analysis provided in TSTF-421. TSTF-421 proposes changes to the RCP flywheel examination and not to barriers. Correct the reviewer’s note to reflect the correct TSTF.
9. TSTF-427 proposes to add the phrase “except as provided by [LCO 3.0.8 and LCO 3.0.9]” to the definition of OPERABLE - OPERABILITY. The staff does not believe that the proposed phrase is required. The definition of OPERABLE - OPERABILITY should not be changed.
10. Due to uncertainty of the final outcome of TSTF-372, “Addition of LCO 3.0.8, Inoperability of Snubbers,” the staff recommends that TSTF-427 be changed to the addition of LCO 3.0.8 and TSTF-372 become LCO 3.0.9.