

November 15, 2016

Technical Specifications Task Force  
11921 Rockville Pike, Suite 100  
Rockville, MD 20852

SUBJECT: ISSUES WITH TECHNICAL SPECIFICATIONS TASK FORCE TRAVELER  
TSTF-505, REVISION 1, "PROVIDE RISK-INFORMED EXTENDED  
COMPLETION TIMES - RITSTF INITIATIVE 4B"

Dear Members of the Technical Specifications Task Force:

The purpose of this letter is to inform the Technical Specifications Task Force (TSTF) of concerns that the U.S. Nuclear Regulatory Commission (NRC) staff has identified during the review of plant-specific license amendments requesting adoption of the subject traveler.<sup>1</sup> The enclosure to this letter provides details on examples of some of the identified issues, which have led the staff to the decision to suspend NRC approval of TSTF-505, Revision 1. While we recognize that this decision will have short term ramifications for licensees who planned to submit applications that adopt the TSTF-505 traveler in the near future, we believe that improving the clarity and consistency of the guidance will result in more predictable and efficient licensing reviews in the future.

The issues discussed in the enclosure are the most significant issues, but not a comprehensive list of all issues identified by the staff. These issues have been communicated and discussed with the industry in public meetings and over the course of reviewing specific license amendments. Therefore, the NRC staff will no longer accept license amendment requests to adopt traveler TSTF-505. Any future license amendment requests for approval of a risk-informed completion time (RICT) program received prior to resolution of these issues will be reviewed as plant-specific licensing actions and would need to address the issues on a plant-specific basis and may not be accepted for NRC staff review if the issues are not addressed adequately.

Although the NRC staff has identified issues with TSTF-505, we continue to have the opinion that the overall concept of a RICT program is expected to reduce potential plant transients. Therefore, the NRC staff intends to continue its review of in-house applications requesting adoption of RICT programs as plant-specific licensing actions and will evaluate site-specific proposals to address the issues identified in the enclosure, including communicating with these applicants regarding schedule and resolution of plant-specific issues.

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<sup>1</sup> The NRC published in the *Federal Register* (FR) a notice of availability (NOA) of the Model Safety Evaluation (SE) for Plant-Specific Adoption of TSTF Traveler TSTF-505, Revision 1, "Provide Risk-Informed Extended Completion Times – RITSTF [Risk-Informed TSTF] Initiative 4B," on March 15, 2012 (77 FR 15399). TSTF-505, Revision 1, is available in the Agencywide Document Access and Management System (ADAMS) under Accession No. ML111650552; the model application is available in ADAMS under Accession No. ML12032A065. The NRC staff's model SE of TSTF-505 is available under ADAMS Accession No. ML120200401

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The NRC staff looks forward to meeting with the industry to discuss the issues identified in the enclosure as well as any additional issues. As an initial step, the NRC staff proposes to hold a public workshop with the industry in the near future to discuss staff issues in more detail and align on a path forward. The date of the workshop will be coordinated between staff's TSTF Project Manager and the TSTF. The NRC staff encourages the TSTF to solicit sufficient industry involvement to resolve these issues promptly to support future license amendment requests.

If you have any questions, please contact Michelle Honcharik at (301) 415-1774 or via e-mail to [Michelle.Honcharik@nrc.gov](mailto:Michelle.Honcharik@nrc.gov).

Sincerely,

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Anne T. Boland, Director  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Enclosure:  
As stated

cc: See next page

Project No. 753

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If you have any questions, please contact Michelle Honcharik at (301) 415-1774 or via e-mail to [Michelle.Honcharik@nrc.gov](mailto:Michelle.Honcharik@nrc.gov).

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**NRR-106**

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Technical Specifications Task Force

Project No. 753

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**ISSUES WITH APPROVED TECHNICAL SPECIFICATIONS TASK FORCE (TSTF)**  
**TRAVELER TSTF-505, REVISION 1, "PROVIDE RISK-INFORMED EXTENDED**  
**COMPLETION TIMES - RITSTF INITIATIVE 4B"**

Background

The Nuclear Energy Institute (NEI) submitted Topical Report (TR) NEI 06-09, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines" (Reference 1), in November 2006. The NRC staff final safety evaluation (SE) of NEI 06-09 (Reference 2) issued on May 17, 2007, provided the evaluation and approval for a methodology and framework for calculating a risk-informed completion time (RICT) to temporarily extend the technical specification (TS) completion time (CT) for some existing TS limiting conditions for operation (LCO). The traveler TSTF-505, Revision 1 (Reference 3), dated June 14, 2011, revised the Standard Technical Specifications (STS) to implement the methodology described in NEI 06-09.

Description of Issues with the Traveler

The NRC staff SE on NEI 06-09 contains a large number of staff positions, limitations and conditions on the methodology. It became evident during review of initial TSTF-505 License Amendment Requests (LAR) that the TSTF-505 description, model application, and many of the changes to the individual TS (References 3 and 4) do not reflect the NRC staff positions, limitations and conditions from the SE of NEI 06-09. In addition, the TSTF-505 model SE (Reference 5) uses language directly from the NRC staff SE of NEI 06-09 for defense-in-depth and safety margins without applying the staff positions, limitations and conditions. Therefore the model SE does not explain nor justify how the expanded scope of the proposed changes in TSTF-505 remains consistent with the philosophy on maintaining defense-in-depth and safety margins.

Specifically, the two issues below were identified by the NRC staff:

- Issue 1: Definition of Probabilistic Risk Assessment (PRA) Functional

The RICT program allows determination on whether inoperable structures, systems, and components (SSCs) can be considered PRA functional. NEI 06-09 defines PRA functionality in terms of the safety function modeled in the PRA. However, the NRC staff SE limited the use of PRA functionality by requiring that the remaining performance capability continue to meet the design basis analysis requirements (e.g., maintaining the functional capability to perform at the level of one operable train). The NRC staff positions, limitations and conditions in the SE of NEI 06-09 are not reflected in the TS changes proposed by the traveler. For example, the traveler proposed a new TS condition to apply a RICT when less than 100% of the emergency core cooling system (ECCS) flow is available.

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However, if operating with less than 100% ECCS flow available, the licensee would not meet the design basis analysis requirements (i.e., Title 10 of the *Code of Federal Regulations* Section 50.46) and, therefore, would not meet the intent of the NRC staff SE of NEI 06-09.

- Issue 2: TS Conditions Involving Mode Changes or Unit Shutdown

Section 3.1 of the NRC staff SE of NEI 06-09 states that a “A RICT can only apply to (restorative) TS Required Actions that are not Mode changes or unit shutdown (e.g., TS LCO 3.0.3 actions and CTs)”. However the traveler includes TS changes that would allow applying a RICT to new or existing LCOs that currently require mode changes or unit shutdown (either through explicit or default LCO 3.0.3 entry, or other required actions for mode changes). For example, the traveler added a new LCO that allows applying a RICT when three or more required AC sources are inoperable, which currently requires entering LCO 3.0.3 immediately.

#### Discussion of Safety Concern

TSTF-505 includes changes to the TS to permit extended operation when a TS safety function is lost under certain conditions, instead of prompt reactor shutdown. Currently TSTF-505, through the use of PRA functional, requires that only the PRA functions be met during the extended CT, which are less restrictive than design basis functions. The traveler directed that the LAR include a “description of PRA functionality for each associated specified safety function ... when all trains of equipment are inoperable.” For systems that require specific attributes (e.g., spatially dependent sensors) as part of their design basis function, additional analyses of their design bases function are also needed. The five license amendment requests currently under review did not provide this information.

Some issues have been encountered for specific TSs regarding interpretation of when a loss of safety function has occurred. For example, loss of both diesel generators may be identified as failing the safety function to provide onsite power following loss-of-offsite power, but not be identified as a loss of TS specified safety function condition because offsite power source(s) are capable of providing onsite power. Additionally, the STS allow 2 hours before shutdown must be commenced in this condition instead of the 1-hour generally provided after a loss of TS specified safety function. Such apparent discrepancies are not significant in the current TSs because the difference between one and two hours is small. However, under a RICT program developed according to the current TSTF-505, this distinction would allow for voluntary entry into the TS condition with both diesels inoperable for up to 30 days, depending on the estimated risk results.

The NRC staff is aware that this is a complex and extensive task. Without this information the NRC staff cannot review the acceptability of the reduction in defense-in-depth and safety margins during the application of a RICT to TS loss of function conditions.

#### Proposed Path Forward

The NRC staff is prepared to engage the industry to develop a technically supportable approach and guidance that permits RICT extensions for operating the plant in TS loss of function

conditions that will be consistent with the defense-in-depth philosophy and will maintain sufficient safety margins. Depending on the results, this approach might allow some extension (e.g., up to 24 hours) of the time permitted to operate in conditions that currently allow only a short time to prepare for mode changes or unit shutdown.

### References

1. NEI 06-09, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines," November 2006 (Agencywide Document Access and Management System (ADAMS) Accession No. ML063390639).
2. The NRC staff final safety evaluation (SE) of TR NEI 06-09, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines," May 17, 2007 (ADAMS Accession No. ML071200238).
3. TSTF-505, Revision 1, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b," June 14, 2011 (ADAMS Accession No. ML111650552).
4. Proposed Revision to the Model Application for TSTF-505, Revision 1, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b", January 31, 2012 (ADAMS Accession No. ML12032A065).
5. Model Safety Evaluation for Plant-Specific Adoption of Technical Specifications Task Force Traveler TSTF-505, Revision 1, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b," March 7, 2012 (ADAMS Accession No. ML120200401).
6. Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," May 2011 (ADAMS Accession No. ML100910006).