

**NRC Revised TSTF-505,
Revision 2
Model Application**

**MODEL APPLICATION FOR PLANT-SPECIFIC ADOPTION OF TSTF-505,
REVISION x, "PROVIDE RISK-INFORMED EXTENDED COMPLETION TIMES –
RITSTF INITIATIVE 4B"**

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

SUBJECT: [PLANT]
DOCKET NO. 50-[XXX]
LICENSE AMENDMENT REQUEST TO REVISE TECHNICAL
SPECIFICATIONS TO ADOPT RISK INFORMED COMPLETION TIMES
TSTF-505, REVISION x, "PROVIDE RISK-INFORMED EXTENDED
COMPLETION TIMES - RITSTF INITIATIVE 4B."

In accordance with the provisions of Section 50.90 of Title 10 of the *Code of Federal Regulations* (10 CFR), [LICENSEE] is submitting a request for an amendment to the Technical Specifications (TS) for [PLANT.]

The proposed amendment would modify TS requirements to permit the use of Risk Informed Completion Times in accordance with TSTF-505, Revision x, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b. The availability of this TS improvement was announced in the Federal Register on March 15, 2012 (77 FR 15399). A model safety evaluation was provided by the NRC to the TSTF on [DATE] (ADAMS Accession No. XXXXXXXX).

- Attachment 1 provides a description and assessment of the proposed change, the requested confirmation of applicability, and plant-specific verifications.
- Attachment 2 provides the existing TS pages marked up to show the proposed changes.
- Attachment 3 provides revised (clean) TS pages.
- Attachment 4 provides existing TS Bases pages marked up to show the proposed changes.

[LICENSEE] requests approval of the proposed license amendment by [DATE], with the amendment being implemented [BY DATE OR WITHIN X DAYS].

In accordance with 10 CFR 50.91(a)(1), "Notice for Public Comment," the analysis about the issue of no significant hazards consideration using the standards in 10 CFR 50.92 is being provided to the Commission.

In accordance with 10 CFR 50.91(b)(1), "Notice for Public Comment; State Consultation," a copy of this application, with attachments, is being provided to the designated [STATE] Official.

I declare [or certify, verify, state] under penalty of perjury that the foregoing is true and correct.

Executed on [date][Signature]

If you should have any questions regarding this submittal, please contact [NAME, TELEPHONE NUMBER].

Sincerely,

[Name, Title]

Attachments: 1. Description and Assessment
2. Proposed Technical Specification Changes (Mark-Up)
3. Revised Technical Specification Pages
4. Proposed Technical Specification Bases Changes (Mark-Up)

Enclosures: 1. List of Revised Required Actions to Corresponding PRA Functions
2. Information Supporting Consistency with Regulatory Guide 1.200, Revision 2.
3. Information Supporting Technical Adequacy of PRA Models Without PRA Standards Endorsed by Regulatory Guide 1.200, Revision 2.
4. Information Supporting Justification of Excluding Sources of Risk Not Addressed by the PRA Models.
5. Baseline CDF and LERF.
6. Justification of Application Of At-Power PRA Models to Shutdown Modes.
7. PRA Model Update Process.
8. Attributes of the CRMP Model.
9. Key Assumptions and Sources of Uncertainty.
10. Program Implementation
11. Monitoring Program
12. Risk Management Action Examples

cc: NRC Project Manager
NRC Regional Office
NRC Resident Inspector
State Contact

ATTACHMENT 1

DESCRIPTION AND ASSESSMENT OF THE PROPOSED CHANGE

License Amendment Request for Adoption of TSTF-505, Revision **x**, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b"

1.0 DESCRIPTION

The proposed amendment would modify the Technical Specification (TS) requirements related to Completion Times (CTs) for Required Actions to provide the option to calculate a longer, risk-informed CT (RICT). A new program, the Risk-Informed Completion Time Program, is added to TS Section 5 Administrative Controls.

The methodology for using the RICT Program is described in NEI 06-09-A, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines," Revision 0, which was approved by the NRC on May 17, 2007. Adherence to NEI 06-09-A is required by the RICT Program.

The proposed amendment is consistent with TSTF-505, Revision **x**, "Provide Risk-Informed Extended Completion Times - RITSTF Initiative 4b."

2.1 ASSESSMENT

2.2 Applicability of Published Safety Evaluation

[LICENSEE] has reviewed the revised TSTF-505 safety evaluation and model safety evaluation dated [DATE] (ADAMS Accession No. XXXXXXXX). This review included the supporting information provided to support TSTF-505 and the safety evaluation for NEI 06-09. [As described in the subsequent paragraphs,][LICENSEE] has concluded that the technical basis is applicable to [PLANT, UNIT NOS.] and support incorporation of this amendment in the [PLANT] TS.]

2.3 Verifications and Regulatory Commitments

In accordance with Section 4.0, Limitations and Conditions, of the safety evaluation for NEI 06-09-A, the following is provided:

1. Enclosure 1 identifies each of the TS Required Actions to which the RICT Program will apply, with a comparison of the TS functions to the functions modeled in the probabilistic risk assessment (PRA) of the structures, systems and components (SSCs) subject to those actions.
2. Enclosure 2 provides a discussion of the results of peer reviews and self-assessments conducted for the plant-specific PRA models which support the RICT Program, as required by Regulatory Guide (RG) 1.200 Section 4.2.
3. [Enclosure 3 provides a description of all PRA models used to support the RICT Program for which Nuclear Regulatory Commission endorsed standards are not available.]
[Enclosure 3 is not applicable since each PRA model used for the RICT Program is addressed using a standard endorsed by the Nuclear Regulatory Commission.]
4. Enclosure 4 provides appropriate justification for excluding sources of risk not addressed by the PRA models.
5. Enclosure 5 provides the plant-specific baseline CDF and LERF to confirm that the potential risk increases allowed under the RICT Program are acceptable.
6. [Enclosure 6 provides appropriate plant-specific justification for using at power PRA models in shutdown modes to which the RICT Program applies (modes 3 [and 4]).]
[Enclosure 6 is not applicable since the RICT Program is not being applied to shutdown modes.]
7. Enclosure 7 provides a discussion of the licensee's programs and procedures that assure the PRA models that support the RICT Program are maintained consistent with the as-built, as-operated plant.
8. Enclosure 8 provides a description of how the baseline PRA model, which calculates average annual risk, is evaluated and modified for use in the Configuration Risk Management Program (CRMP) to assess real-time configuration risk, and describes the scope of, and quality controls applied to, the CRMP
9. Enclosure 9 provides a discussion of how the key assumptions and sources of uncertainty in the PRA models were identified, and how their impact on the RICT Program was assessed and dispositioned.
10. Enclosure 10 provides a description of the implementing programs and procedures regarding the plant staff responsibilities for the RICT Program implementation, including risk management action (RMA) implementation.

11. Enclosure 11 provides a description of the implementation and monitoring program as described in NEI 06-09, Section 2.3.2, Step 7.

12. Enclosure 12 provides a description of the process to identify and provide RMAs.

2.4 Optional Changes and Variations

[LICENSEE is not proposing any changes, variations, or deviations from the TS changes described in the TSTF-505, Revision x, or the applicable parts of the NRC staff's model safety evaluation dated [DATE]. [LICENSEE is proposing the following changes or variations from the TS changes described in the TSTF-505, Revision x, or the applicable parts of the NRC staff's model safety evaluation dated [DATE]. These options were recognized as acceptable changes or variations in TSTF-505 and the NRC staff's model safety evaluation.]

{NOTE: If a change or variation is not identified in TSTF-505, the NRC staff's model safety evaluation, or NEI 06-09, then provide the description and justification.}

[The [PLANT] TS utilize different [numbering][and][titles] than the Standard Technical Specifications on which TSTF-505 was based. Specifically, [describe differences between the plant-specific TS numbering and/or titles (including Required Actions and programs) and the TSTF-505 numbering and titles.] These differences are administrative and do not affect the applicability of TSTF-505 to the [PLANT] TS.]

3.1 REGULATORY SAFETY ANALYSIS

3.2 No Significant Hazards Consideration Determination

[LICENSEE] has evaluated the proposed change to the TS using the criteria in 10 CFR 50.92 and has determined that the proposed change does not involve a significant hazards consideration.

[PLANT, UNIT NOS.] requests adoption of an approved change to the standard technical specifications (STS) and plant-specific technical specifications (TS), to modify the TS requirements related to Completion Times for Required Actions to provide the option to calculate a longer, risk-informed Completion Time. The allowance is described in a new

program in Chapter 5, "Administrative Controls," entitled the "Risk-Informed Completion Time Program."

As required by 10 CFR 50.91(a), an analysis of the issue of no significant hazards consideration is presented below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed change permits the extension of Completion Times provided the associated risk is assessed and managed in accordance with the NRC approved Risk-Informed Completion Time Program. The proposed change does not involve a significant increase in the probability of an accident previously evaluated because the change involves no change to the plant or its modes of operation. The proposed change does not increase the consequences of an accident because the design-basis mitigation function of the affected systems is not changed and the consequences of an accident during the extended Completion Time are no different from those during the existing Completion Time.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed change does not change the design, configuration, or method of operation of the plant. The proposed change does not involve a physical alteration of the plant (no new or different kind of equipment will be installed).

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The proposed change permit the extension of Completion Times provided risk is assessed and managed in accordance with the NRC approved Risk-Informed Completion Time Program. The proposed change implements a risk-informed configuration management program to assure that adequate margins of safety are maintained. Application of these new specifications and the configuration management program considers cumulative

effects of multiple systems or components being out of service and does so more effectively than the current TS.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, [LICENSEE] concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

4.1 ENVIRONMENTAL CONSIDERATION

[LICENSEE] has reviewed the environmental evaluation included in the model safety evaluation published on [DATE] ([] FR []) as part of the Notice of Availability. [LICENSEE] has concluded that the NRC staff findings presented in that evaluation are applicable to [PLANT, NO.].

The proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meet the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

ATTACHMENT 2
PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

{provided by the licensee}

ATTACHMENT 3
REVISED TECHNICAL SPECIFICATION PAGES

{provided by the licensee}

ATTACHMENT 4
PROPOSED CHANGES TO TECHNICAL SPECIFICATION BASES CHANGES
(MARK-UP) PAGES

{provided by the licensee}

ENCLOSURE 1

LIST OF REVISED REQUIRED ACTIONS TO CORRESPONDING PRA FUNCTIONS

{NOTE: This enclosure provides confirmation that the PRA models include the necessary scope of structures, systems, and components (SSCs) and their functions to address each proposed application of the RICT Program to the TS Required Actions.

TS conditions with insufficient TS operable equipment to meet the specified safety function of the system, are not to be included in the application.

List each TS Required Action to which the RICT Program may be applied and, for each Required Action, describe the following:

- The TS Required Action;
- The corresponding SSC;
- Each design basis function of the SSC;
- How each design basis function is modeled in the PRA. If one of the design basis functions of an SSC or the SSC is not modeled in the PRA, describe any proposed surrogates and why the proposed surrogate adequately captures the configuration risk; and
- The success criteria used in the PRA model compared to the licensing basis criteria. The success criteria should include both train-level and component/parameter level.

Note that the above description should be at the level of the TS condition/TS Required Action (not at the LCO level only). If the TS condition/ TS Required action covers multiple SSCs or multiple design basis functions, such as in the case ESFAS Instrumentation or Containment Sprays, describe each one individually.

The enclosure should also include clear definitions of any used terms, such as “train,” “division,” “loop,” “subsystem,” etc.

The enclosure should provide a detailed system description of TS 3.8, "Electrical Power Systems," Required Actions if the loading scheme is not uniform (e.g., Train A and B have similar loading, except Train B supplies power to additional SSCs.) Also, provide a description in Enclosure 12 of representative RMAs for non-uniform trains to demonstrate that the system's safety function is maintained with either train or subsystem operable.

The description of proposed changes to the protective instrumentation and control features in TS Section 3.3, "Instrumentation," should confirm that at least one redundancy or diverse means (other automatic features or manual action) to accomplish the safety functions (for example, reactor trip, SI, containment isolation, etc.) remains available during use of the RICT, consistent with the defense-in-depth philosophy as specified in RG 1.174. (Note that for each application, the staff may selectively audit the licensing basis of the most risk-significant functions with proposed RICTs to verify that such diverse means exist.)}

ENCLOSURE 2
INFORMATION SUPPORTING CONSISTENCY WITH REGULATORY GUIDE 1.200,
REVISION 2

{NOTE: This enclosure provides information supporting the licensee evaluation of the technical adequacy of the PRA models supporting the RICT Program based on peer reviews and self-assessments against the relevant PRA standards as endorsed in the current applicable revision of RG 1.200, including consideration of staff clarifications of the standards.

Per NEI 06-09 Rev. 0, capability category II of the standards is applicable; therefore, the licensee identifies those parts of the PRAs that conform to capability categories lower than II, and provides a disposition for the RICT Program. Consistent with RG 1.200 Section 4.2, the licensee identifies and provides a discussion of the resolution of any findings and observations from the peer reviews or self-assessments.

The licensee assessment must also address the clarifications and qualifications found in RG 1.200, either by a separate discussion provided by the licensee, or by confirmation that the peer reviews or self-assessments included consideration of the clarifications and qualifications of the current applicable RG 1.200 revision.

Licensees are strongly encouraged to apply the guidance in Appendix X, "Close out of Facts and Observations," of NEI 05-04, "Process for Performing Internal Events PRA Peer Reviews Using the ASME/ANS PRA Standard, Rev 3, November 2009," NEI 07-12, "Fire Probabilistic Risk Assessment Peer Review Process Guidelines, Rev 1, June 2010," and NEI 12-13, "External Hazards PRA Peer Review Process Guidelines, Rev 0, August 2012," to close PRA peer review findings, as this will make more efficient use of the NRC and industry resources needed to develop and review of the application. This will potentially obviate the need for a more in-depth review. The licensee should describe the F&O closure review, including the date, scope, number of F&Os closed.}

ENCLOSURE 3
INFORMATION SUPPORTING TECHNICAL ADEQUACY OF PRA MODELS
WITHOUT PRA STANDARDS ENDORSED BY REGULATORY GUIDE 1.200,
REVISION 2

{NOTE: This enclosure provides information supporting the licensee evaluation of the PRA models supporting the RICT Program for which the relevant PRA standards are not yet endorsed in the current applicable revision of RG 1.200.

RG 1.200 Rev. 2 endorses standards for internal and external events including internal floods and fires, seismic events, and other external hazards for full power conditions. This scope includes the relevant hazard groups applicable to a RICT Program unless the program is to apply to lower modes of operation. In this case, shutdown and transition risk PRA models may apply but are not be covered by an endorsed standard. If applicable, the licensee should provide a detailed description of these PRA models and the basis for its determination of their technical adequacy to support the RICT Program.}

ENCLOSURE 4

INFORMATION SUPPORTING JUSTIFICATION OF EXCLUDING SOURCES OF RISK NOT ADDRESSED BY THE PRA MODELS

{NOTE: This enclosure identifies and provides a justification for excluding sources of risk which are not in the scope of the PRA models applied to the RICT Program.

Exclusion of risk sources determined to be insignificant to the calculation of configuration specific risk, or the use of conservative or bounding analyses for the calculation of RICTs in lieu of realistic PRA models, are described. A qualitative treatment may be sufficient if the licensee demonstrates that those risk contributions would not affect decisions in a RICT Program. The use of conservative bounding calculations in a RICT Program may also be acceptable. However, when the risk associated with a particular hazard group would affect decisions, it is the Commission's policy that risk be assessed using a PRA that meets the staff-endorsed PRA standard.

External hazards screened out from inclusion in RICT calculations should be clearly identified as such, and should be done in a manner consistent with Part 6 of the ASME ANS PRA Standard. The justification should address baseline and configuration-specific risk.

For external hazards that are not screened out from inclusion in RICT calculations, the licensee may propose a bounding approach to address the hazard. If the bounding approach involves assuming a uniform increase in baseline risk to address the hazard, the licensee will need to address potential RICT-specific impacts by doing one of the following:

- Demonstrate in the LAR that this approach is bounding for all TS actions included in the LAR, or
- Establish a procedure to evaluate the validity of the bounding approach when calculating an RICT that is not demonstrated to be bounded in the LAR, or
- For RICTs not demonstrated to be bounded in the LAR, establish a procedure to qualitatively evaluate the impact of the specific external hazard for each RICT when calculated and apply risk management actions as appropriate. }

ENCLOSURE 5
BASELINE CDF AND LERF

{NOTE: This enclosure provides the plant-specific total CDF and total LERF to confirm that these are less than 10^{-4} /year and 10^{-5} /year, respectively. This assures that the potential risk increases allowed under the RICT Program are consistent with RG 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," Revision 2.

The licensee should provide the totals and the contributions from each hazard group (internal events, fires, floods, seismic, other external).

If the baseline CDF/LERF is based on the completion of modifications or a "future" risk value, the licensee should either demonstrate the risk is currently below the acceptance criteria or put a license condition in place to not implement the program until the risk is below the acceptance criteria.}

ENCLOSURE 6
JUSTIFICATION OF APPLICATION OF AT-POWER PRA MODELS TO SHUTDOWN
MODES

{NOTE: This enclosure provides a justification for the use of existing PRA models during shutdown conditions if the RICT Program is applicable in these shutdown conditions.

The at-power PRA models may potentially be applied to lower modes of operation (hot standby for PWRs, and hot shutdown for PWRs and BWRs) for some Required Actions. If the licensee is not proposing to use the RICT Program in these modes, then this information is not required and this Enclosure should be marked "Not applicable." Otherwise, the licensee provides a detailed justification for those Required Actions proposed to apply the RICT Program in lower modes of operation using the at-power PRA models.}

ENCLOSURE 7
PRA MODEL UPDATE PROCESS

{NOTE: This enclosure describes how the PRA models used in the calculation of completion times is maintained consistent with the as-built, as-operated plant.

The licensee provides a discussion of its programs and procedures to assure the PRA models that support the RICT Program are maintained consistent with the as-built, as-operated plant. This should include a discussion of the timing of significant PRA model changes as described in NEI 06-09, Section 2.3.4, Step 7.}

ENCLOSURE 8

ATTRIBUTES OF THE CRMP MODEL

{NOTE: This enclosure describes how the baseline PRA model, which calculates average annual risk, is evaluated and modified for use in the Configuration Risk Management Program (CRMP) to assess real-time configuration risk, and describes the scope of, and quality controls applied to, the CRMP.

The licensee provides a description of the PRA models and CRMP used to support the RICT Program. The following specific attributes must also be addressed:

- The baseline PRA models assess the average annual risk. However, some risk is not consistent throughout the year or the operating cycle, and the PRA models used for the CRMP need to properly assess the change in risk for the existing plant conditions. For example, success criteria may be different at core beginning of life compared to end of life, or at different times of the year for room cooling systems. The licensee describes these issues and how they are addressed in the CRMP.
- The baseline PRA models may assume some configurations are not allowable, but these assumptions may not be applicable to a CRMP. The licensee describes these issues and how they are addressed in the CRMP.
- The scope of SSCs within the CRMP is provided, along with confirmation that the CRMP tools can be readily applied for each TS Required Action within the scope of the Risk-Informed Completion Time Program. The licensee should also identify and justify SSCs that are not included in the CRMP that could provide accident mitigation functions.
- The licensee describes how consistency of calculated results from the baseline PRA model and the CRMP are verified to assure the CRMP PRA models are consistent with the baseline model and updated when the baseline PRA model is updated.
- The licensee describes the quality requirements applied to the CRMP PRA models.
- The licensee describes the training and qualification programs applicable to personnel responsible for development and use of the CRMP.}

ENCLOSURE 9

KEY ASSUMPTIONS AND SOURCES OF UNCERTAINTY

{NOTE: This enclosure describes the key assumptions and sources of uncertainty in the PRA models, and how their impact on the RICT Program was assessed and dispositioned. Sensitivity analyses for various plant configuration cases under different assumptions should be provided to justify conclusions.}

ENCLOSURE 10
PROGRAM IMPLEMENTATION

{NOTE: This enclosure provides a description of the implementing programs and procedures regarding the plant staff responsibilities for the RICT Program implementation including training of plant personnel, and specifically discusses the decision process for risk management action (RMA) implementation during extended CTs.}

ENCLOSURE 11
MONITORING PROGRAM

{NOTE: This enclosure describes the monitoring program for cumulative risk impacts as described in NEI 06-09, Revision 0, Section 2.3.2, Step 7. This should include a description of how the calculations are made and what actions and thresholds are applied when corrective measures are necessary due to excessive risk increases.}

ENCLOSURE 12

RISK MANAGEMENT ACTION EXAMPLES

{NOTE: This enclosure describes the process for identification of RMAs applicable during extended CTs, and provides examples of RMAs.

Provide example RMAs for TS 3.8 Required Actions. These should be representative examples, such as a long and short RICTs. See the Plant Vogtle April 14, 2017 RAI response (ADAMS Accession No. ML17108A253) for an example.

If the TS-required electrical power loading scheme is not uniform (e.g., Train A and B have similar loading, except Train B supplies power to additional SSCs,) provide a description of representative RMAs for non-uniform trains to ensure that the system's safety function is maintained with either train or subsystem inoperable. }