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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

DRAFT SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

TECHNICAL SPECIFICATIONS TASK FORCE TRAVELER

TSTF-591, REVISION 0, "REVISE RISK-INFORMED COMPLETION TIME (RICT) PROGRAM"

USING THE CONSOLIDATED LINE ITEM IMPROVEMENT PROCESS

(EPID L-2022-PMP-0003)

1.0 INTRODUCTION

By letter dated March 22, 2022 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML22081A224), the Technical Specifications Task Force (TSTF) submitted Traveler TSTF-591, Revision 0, "Revise Risk-Informed Completion Time (RICT) Program," to the U.S. Nuclear Regulatory Commission (NRC); hereafter referred to as TSTF-591. TSTF-591 proposes changes to the Standard Technical Specifications (STSS) for pressurized-water reactor (PWR) and boiling-water reactor (BWR) plant designs. Upon approval this traveler will be made available for adoption and the changes will be incorporated into future revisions of:

- NRC NUREG-1430, "Standard Technical Specifications, Babcock and Wilcox Plants," Volume 1, "Specifications," and Volume 2, "Bases," Revision 5, September 2021 (ML21272A363 and ML21272A370, respectively).
- NRC NUREG-1431, "Standard Technical Specifications, Westinghouse Plants," Volume 1, "Specifications," and Volume 2, "Bases," Revision 5, September 2021 (ML21259A155 and ML21259A159, respectively).
- NRC NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants," Volume 1, "Specifications," and Volume 2, "Bases," Revision 5, September 2021 (ML21258A421 and ML21258A424, respectively).
- NRC NUREG-1433, "Standard Technical Specifications, General Electric Plants, BWR/4" Volume 1, "Specifications," and Volume 2, "Bases," Revision 5, September 2021 (ML21272A357 and ML21272A358, respectively).
- NRC NUREG-1434, "Standard Technical Specifications, General Electric Plants, BWR/6" Volume 1, "Specifications," and Volume 2, "Bases," Revision 5, September 2021 (ML21271A582 and ML21271A596, respectively).

1 2.0 REGULATORY EVALUATION

2 2.1 Applicable Regulatory Requirements and Guidance

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The regulation under Title 10 of the *Code of Federal Regulations* (10 CFR) 50.36(b) requires that:

Each license authorizing operation of a ... utilization facility ... will include technical specifications. The technical specifications will be derived from the analyses and evaluation included in the safety analysis report, and amendments thereto, submitted pursuant to [10 CFR] 50.34 ["Contents of applications; technical information"]. The Commission may include such additional technical specifications as the Commission finds appropriate.

The categories of items required to be in the TSs are listed in 10 CFR 50.36(c).

The regulation at 10 CFR 50.36(c)(5), states that administrative controls are the provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner.

NRC Regulatory Guides (RGs) provide one way to ensure that the regulations continue to be met. The NRC staff considered the following guidance, along with industry guidance endorsed by the NRC, during its review of the proposed changes:

• RG 1.200, Revision 3, "Acceptability of Probabilistic Risk Assessment Results for Risk-Informed Activities," December 2020 (ML20238B871).

• NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [light-water reactor] Edition" (SRP):

- Chapter 19, Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," dated June 2007 (ML071700658).
- Section 16.0, "Technical Specifications," March 2010 (ML100351425).
- Section 16.1, "Risk-Informed Decision Making: Technical Specifications," March 2007 (ML070380228).

• NEI 06-09-A, Revision 0, "Risk-Informed Technical Specifications Initiative 4b, Risk-Managed Technical Specifications (RMTS) Guidelines" (ML063390639), provides guidance for risk-informed TS. The NRC staff issued a final model safety evaluation (SE) approving NEI 06-09 on May 17, 2007 (ML071200238).

• NEI 17-07, Revision 2, "Performance of PRA Peer Reviews Using the ASME/ANS PRA Standard," provides guidance material for conducting and documenting a probabilistic risk assessment (PRA) peer review using the American Society of Mechanical Engineers (ASME)/American Nuclear Society (ANS) PRA Standard, issued August 2019 (ML19231A182).

• PWR Owners' Group (PWROG) topical report PWROG-19027-NP, Revision 2, "Newly Developed Method Requirements and Peer Review," establishes the definitions, processes, and technical requirements necessary to implement newly developed methods (NDMs), issued

1 July 2020 (ML20213C660). RG 1.200, Revision 3, endorsed only specified portions of  
2 PWROG-19027-NP.

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#### 4 2.2 Proposed Changes to Standard Technical Specifications

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6 The proposed change revises the STS Section 5.5 Program, "Risk Informed Completion Time  
7 Program," by referencing RG 1.200, Revision 3, instead of Revision 2. It also adds a  
8 requirement in TS Section 5.6, "Reporting Requirements" for the licensee to submit a report to  
9 the NRC before calculating a RICT using an NDM.

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##### 11 2.2.1 STS 5.5.20<sup>1</sup> Risk Informed Completion Time Program

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13 STS 5.5.20, which describes the RICT program, is revised as shown below. Existing  
14 paragraph e would be replaced with the paragraph e below. Paragraphs f and g would be  
15 added.

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17 e. A RICT calculation must include the following hazard groups: [list specific  
18 hazards and the associated PRA models or alternate means of assessing  
19 the hazard for each applicable hazard group approved by NRC. For  
20 example, internal flood and internal events PRA model, internal fire PRA  
21 model, and seismic penalty factor]. Changes to these means of assessing  
22 the hazard groups require prior NRC approval.

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24 f. The PRA models used to calculate a RICT shall be maintained and  
25 upgraded in accordance with the processes endorsed in the regulatory  
26 positions of Regulatory Guide 1.200, Revision 3, "Acceptability of  
27 Probabilistic Risk Assessment Results for Risk-Informed Activities."

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29 g. A report shall be submitted in accordance with Specification 5.6.[X] before  
30 a newly developed method is used to calculate a RICT.]

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##### 32 2.2.2 STS 5.6.8<sup>2</sup>, Risk Informed Completion Time Program Upgrade Report

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34 The following would be added as STS 5.6.8:

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#### 36 Risk Informed Completion Time (RICT) Program Upgrade Report

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38 A report describing newly developed methods and their implementation must be  
39 submitted following a probabilistic risk assessment (PRA) upgrade associated  
40 with newly developed methods and prior to the first use of those methods to  
41 calculate a RICT. The report shall include:

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43 a. The PRA models upgraded to include newly developed methods;

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<sup>1</sup> STS 5.5.20 is the specification number for NUREGs-1430, -1431, and -1432. The number is STS 5.5.17 in NUREGs-1433 and -1434. STS 5.5.20 is used throughout this SE for simplicity.

<sup>2</sup> STS 5.6.8 is the specification number for NUREGs-1430, -1431, and -1432. The number is STS 5.6.6 and STS 5.6.7 in NUREGs-1433 and -1434, respectively. STS 5.6.8 is used throughout this SE for simplicity.

- 1           b.     A description of the acceptability of the newly developed methods  
2                 consistent with Section 5.2 of PWROG-19027-NP, Revision 2, "Newly  
3                 Developed Method Requirements and Peer Review;"
- 4
- 5           c.     Any open findings from the peer-review of the implementation of the  
6                 newly developed methods and how those findings were dispositioned;  
7                 and
- 8
- 9           d.     All changes to key assumptions related to newly developed methods or  
10                their implementation.

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## 12   3.0   TECHNICAL EVALUATION

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### 14   Historical Background

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16   In the final model SE for traveler TSTF-505 (ML18269A041), the NRC staff found the guidance  
17   in NEI 06-09, to be acceptable, with clarification from the NRC staff positions, limitations, and  
18   conditions. TSTF-505, Revision 2, incorporates the RICT program into the Administrative  
19   Controls section of the TS and modifies selected CTs to permit extension provided risk is  
20   assessed and managed as described in NEI 06-09-A.

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22   The NRC staff's SE of TSTF-505, considers determining the acceptability of the licensee's PRA  
23   models for use in the RICT program, consistent with the guidance provided in RG 1.200,  
24   Revisions 2, dated March 1, 2009 (ML090410014).

25

26   PRA acceptability considers the peer review history and results of a licensee's PRA model(s).  
27   Peer reviews are independent reviews performed by qualified subject matter experts (SMEs)  
28   using the requirements established in the ASME/ANS PRA Standards. Office of Management  
29   and Budget (OMB), Circular No. A-119 Revised, "Federal Participation in the Development and  
30   Use of Voluntary Consensus Standards and in Conformity Assessment Activities," establishes  
31   policies on federal use and development of voluntary consensus standards on conformity  
32   assessment activities. Section 6 of the OMB Circular specifically provides direction on the policy  
33   for federal use of standards.

34

35   The ASME/ANS PRA Standard establishes two primary peer reviews that are performed to  
36   assess the technical adequacy of the PRA models: (1) full scope and (2) focused scope. The  
37   results of a peer review are considered facts and observations (F&Os). An independent  
38   assessment review may be performed by qualified SME(s) to assess the licensee's satisfactory  
39   closure of F&Os. PRA models are a snapshot in time and are continually updated to reflect the  
40   as-built, as-operated plant using the technical requirements established in the ASME/ANS PRA  
41   Standards along with RG 1.200 guidance to ensure configuration and control is maintained. NEI  
42   17-07, as endorsed in RG 1.200, Revision 3, provides industry guidance to perform these peer  
43   reviews.

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45   As the NRC moves forward to make greater use of risk information in decision making, the NRC  
46   staff identified enhancements to its risk-informed regulatory framework. One enhancement was  
47   the need for a streamlined process to facilitate the acceptance by the NRC and PRA community  
48   of NDMs to be used in support of risk-informed applications. The industry developed guidance  
49   published in PWROG-19027-NP that addresses, amongst other things, the technical adequacy  
50   of NDMs. The NRC staff subsequently endorsed specified portions of PWROG-19027-NP in  
51   RG 1.200, Revision 3.

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2 Evaluation of TSTF-591  
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4 RG 1.200, Revision 3, was issued after the approval of TSTF-505, Revision 2. Traveler  
5 TSTF-591 proposes to replace the STS requirement to maintain and upgrade<sup>3</sup> the PRA in  
6 accordance with RG 1.200, Revision 2, with a requirement to follow RG 1.200, Revision 3.  
7 RG 1.200, Revision 3, does not change the factors used to assess PRA technical adequacy and  
8 acceptability. Revision 3 of RG 1.200 continues to include guidance to maintain and upgrade  
9 the PRA while adding a glossary of key terms, a list of hazards to be considered in the  
10 development and use of the PRA, and enhanced guidance related to key assumptions and  
11 sources of uncertainty. Furthermore, RG 1.200, Revision 3, does the following:

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- 13 • Endorses, with NRC staff exceptions and clarifications, the ASME/ANS RA-S Case 1,  
14 “Case for ASME/ANS RA-Sb-2013 Standard for Level 1/Large Early Release Frequency  
15 Probabilistic Risk Assessment of Nuclear Power Plant Applications,” dated  
16 November 22, 2017.
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  - 18 • Endorses NEI 17-07, Revision 2, “Performance of PRA Peer Reviews Using the  
19 ASME/ANS PRA Standard,” issued August 2019.
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  - 21 • Endorses the following portions of PWROG-19027-NP:
    - 22 ○ Process for the peer review of NDMs,
    - 23 ○ Process for determining whether a change to a PRA is classified as PRA  
24 maintenance or a PRA upgrade, and
    - 25 ○ Key definitions related to NDMs, PRA maintenance, and PRA upgrade.
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27 The proposed language for paragraph e in this traveler incorporates defined terms provided in  
28 the glossary of RG 1.200, Revision 3. The NRC staff concludes that the proposed changes  
29 using the defined terms provided in RG 1.200, Revision 3, do not introduce any technical  
30 discrepancies for the implementation of the RICT program.

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32 The proposed change to add paragraph f of STS 5.5.20 incorporates a TS requirement that  
33 PRA models used to calculate a RICT be maintained and upgraded in accordance with the  
34 processes endorsed in the regulatory positions of RG 1.200, Revision 3. RG 1.200 Regulatory  
35 Position C.2.2.2.2, states, in part:

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37 [a]n acceptable approach to performing a peer review for an NDM is the  
38 guidance in NEI 17-07, Revision 2. NEI 17-07, Revision 2, [as endorsed by RG  
39 1.200, Revision 3,] states, in part, that if an NDM is deemed not technically  
40 acceptable in the NDM peer review report, or if at least one finding-level F&O on  
41 the NDM remain open, a licensee or applicant may not use it in a PRA supporting  
42 risk-informed licensing applications.

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44 The report that will be submitted to the NRC staff for NDM use in the RICT program can only be  
45 used to describe NDMs that are technically acceptable with all the open F&Os resulting from the

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<sup>3</sup> Per RG 1.200, Revision 3, PRA upgrade is defined as: A change in the PRA that results in the applicability of one or more supporting requirements that were not previously included within the PRA (e.g., performing qualitative screening for Part 4 of ASME/ANS Level 1/LERF PRA Standard when the related high-level requirement was previously not applicable, or adding a new hazard model), an implementation of a PRA method in a different context, or the incorporation of a PRA method not previously used.

1 technical review of the NDM closed using an NRC-endorsed peer review process. Furthermore,  
2 in response to Request for Additional Information (RAI) 1.c and 1.d, dated February 1, 2023  
3 (ML23032A485), the TSTF confirmed the report cannot be used to satisfy Regulatory  
4 Position C.2.2.2.2 and that NDMs with open finding-level F&Os may not be used by a licensee  
5 without prior NRC approval. The NRC staff notes that some F&Os may not establish technical  
6 inadequacy applicable to the NDM, whereas the F&Os can be plant-specific (e.g., involving  
7 implementation). For these open F&Os determined to be plant-specific, consistent with  
8 RG 1.200, Revision 3, the licensee can either close the F&O using NRC-endorsed processes or  
9 disposition the F&O on a case-by-case basis. The disposition of an F&O involves qualitative or  
10 quantitative assessment for impact on the specific risk-informed application. The disposition of  
11 F&Os may consider: (1) incorporating appropriate changes into the PRA model prior to use,  
12 (2) identifying appropriate sensitivity studies to address the issue identified, or (3) providing  
13 adequate justification for the original model, including the applicability of key assumptions to the  
14 risk-informed application. The disposition of an F&O does not constitute the F&O to be closed.  
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16 For paragraph g of STS 5.5.20, the traveler proposes to add a TS requirement for a licensee to  
17 submit a report before an NDM is used to calculate a RICT. RG 1.200, Revision 3, defines a  
18 consensus method/model as follows:  
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20 **Consensus method/model:** In the context of risk-informed regulatory decisions,  
21 a method or model approach that the NRC has used or accepted for the specific  
22 risk-informed application for which it is proposed. A consensus method or model  
23 may also have a publicly available, published basis and may have been peer  
24 reviewed and widely adopted by an appropriate stakeholder group.  
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26 In response to RAI 2.a, example (c) provided, the TSTF stated, “[t]he appendix can be made  
27 available to the NRC to be loaded on ADAMS (no formal request of review or endorsement  
28 would be needed).” The use of consensus method(s) by licensees is governed within the  
29 guidance of RG 1.200, Revision 3. Consistent with the definition per RG 1.200, Revision 3, and  
30 provided above, a consensus method/model is one that has been used or accepted by the NRC  
31 for the specific risk-informed application for which it is proposed. Specifically, reporting of an  
32 NDM by a licensee under the requirements stipulated in TS 5.6.8 does not justify the NDM to  
33 meet the definition of consensus/method/model for future use. Therefore, the NRC staff  
34 concludes that for an NDM reported to the NRC under the requirements stipulated in TS 5.6.8  
35 for general use of the NDM a licensee must demonstrate the method/model to be consistent  
36 with the definition provided in RG 1.200, Revision 3.  
37

38 Consistent with RG 1.200, Revision 3, if the NDM has been determined to be acceptable using  
39 NRC-endorsed processes, NRC staff action is not needed prior to the licensee’s use of an NDM  
40 in a RICT calculation. The NRC staff finds that the proposed changes to STS 5.5.20 and the  
41 addition of STS 5.6.8 remains consistent with the guidance in RG 1.200, Revision 3, that also  
42 endorses NEI 17-07, Revision 2, and specific portions of PWROG-19027-NP. Section 4,  
43 Tables 1-7.2-1 through 1-7.2-7 of PWROG-19027-NP, as endorsed by the NRC staff, stipulates  
44 a list of technical supporting requirements that must be met to determine an NDM acceptable.  
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46 Furthermore, the RICT program is incorporated as a program into the Administrative Controls  
47 section of the TS. As described in 10 CFR 50.36(c)(5), administrative controls are the provisions  
48 relating to, among other things, recordkeeping and reporting necessary to assure operation of  
49 the facility in a safe manner, and each licensee shall submit any reports to the Commission  
50 pursuant to approved technical specifications as specified in 10 CFR 50.4.  
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1 4.0 TSTF-591 CONDITION

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The NRC staff has identified one condition for the adoption of TSTF-591, Revision 0, applicable to licensee's whose plant-specific TS 5.4.1, Procedures, does not include paragraph e that states, in part, "TS 5.4.1.e: All programs specified in Specification 5.5." For the adoption of TSTF-591, licensees must ensure for the RICT program that the plant-specific TS includes the requirement for TS 5.4.1 that written procedures shall be established, implemented, and maintained covering the RICT program.

10 5.0 CONCLUSION

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The NRC staff concludes the proposed changes to STS 5.5.20 and the addition of STS 5.6.8 continue to ensure the PRA models used to calculate a RICT are maintained and upgraded by the licensee's appropriate use of endorsed guidance (i.e., the ASME/ANS PRA Standard requirements, and specific industry guidance that the NRC staff has determined are sufficient for determining the acceptability of PRA models and NDMs for use in the RICT program). Furthermore, the NRC staff concludes that the addition of STS 5.6.8 that describes the contents of a RICT program upgrade report to the NRC staff does not preclude any staff oversight of PRA changes performed to ensure the PRA model(s) continues to be maintained and upgraded consistent with RG 1.200, Revision 3.

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The NRC staff finds that the proposed changes are acceptable because they continue to ensure operation of the facility in a safe manner in accordance with 10 CFR 50.36(c)(5). Accordingly, the NRC staff finds TSTF-591 acceptable. Additionally, the NRC staff determined that the proposed TS changes are technically clear and consistent with customary terminology and format in STSs.

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Principle Contributors: Adrienne Brown  
Andrea Russell  
Edward Miller