



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

May 27, 2022

Site Vice President
Entergy Operations, Inc.
Waterford Steam Electric Station, Unit 3
17265 River Road
Killona, LA 70057-3093

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 - ISSUANCE OF AMENDMENT NO. 266 TO REVISE TECHNICAL SPECIFICATIONS TO ADOPT TSTF-563, "REVISE INSTRUMENT TESTING DEFINITIONS TO INCORPORATE THE SURVEILLANCE FREQUENCY CONTROL PROGRAM" (EPID L-2021-LLA-0093)

Dear Sir or Madam:

The U.S. Nuclear Regulatory Commission (NRC, the Commission) has issued the enclosed Amendment No. 266 to Renewed Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3. This amendment consists of changes to the Technical Specifications in response to your application dated May 28, 2021 (Agencywide Documents Accession and Management System (ADAMS) Accession No. ML21148A104).

The amendment revises the current instrumentation testing definitions of channel calibration and channel functional test to permit determination of the appropriate frequency to perform the surveillance requirement based on the devices being tested in each step. The proposed changes are based on Technical Specifications Task Force (TSTF) Traveler TSTF-563, Revision 0, "Revise Instrument Testing Definitions to Incorporate the Surveillance Frequency Control Program," dated May 10, 2017 (ML17130A819). The NRC issued a final safety evaluation approving TSTF-563, Revision 0, on December 4, 2018 (ML18333A152).

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's monthly *Federal Register* notice.

Sincerely,

/RA/

Jason J. Drake, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-382

Enclosures:

1. Amendment No. 266 to NPF-38
2. Safety Evaluation

cc: Listserv



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

ENERGY OPERATIONS, INC.

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 266
Renewed License No. NPF-38

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Operations, Inc. (EOI), dated May 28, 2021, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.2 of Renewed Facility Operating License No. NPF-38 is hereby amended to read as follows:

2. Technical Specifications and Environmental Protection Plan

- The Technical Specifications contained in Appendix A, as revised through Amendment No. 266, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the renewed license. EOI shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Jennifer L. Dixon-Herrity, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Renewed Facility
Operating License No. NPF-38 and
the Technical Specifications

Date of Issuance: May 27, 2022

ATTACHMENT TO LICENSE AMENDMENT NO. 266

RENEWED FACILITY OPERATING LICENSE NO. NPF-38

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

Replace the following pages of Renewed Facility Operating License No. NPF-38 and the Appendix A, Technical Specifications, with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Renewed Facility Operating License

REMOVE

-4-

INSERT

-4-

Technical Specifications

REMOVE

1-1

1-2

INSERT

1-1

1-2

the NRC of any action by equity investors or successors in interest to Entergy Louisiana, LLC that may have an effect on the operation of the facility.

- C. This renewed license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

1. Maximum Power Level

EOI is authorized to operate the facility at reactor core power levels not in excess of 3716 megawatts thermal (100% power) in accordance with the conditions specified herein.

2. Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 266, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the renewed license. EOI shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. Antitrust Conditions

- (a) Entergy Louisiana, LLC shall comply with the antitrust license conditions in Appendix C to this renewed license.
- (b) Entergy Louisiana, LLC is responsible and accountable for the actions of its agents to the extent said agent's actions contravene the antitrust license conditions in Appendix C to this renewed license.

1.0 DEFINITIONS

The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications.

ACTION

1.1 ACTION shall be that part of a specification which prescribes remedial measures required under designated conditions.

AXIAL SHAPE INDEX

1.2 The AXIAL SHAPE INDEX shall be the power generated in the lower half of the core less the power generated in the upper half of the core divided by the sum of these powers.

AZIMUTHAL POWER TILT - T_q

1.3 AZIMUTHAL POWER TILT shall be the power asymmetry between azimuthally symmetric fuel assemblies.

CHANNEL CALIBRATION

1.4 A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY and the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

CHANNEL CHECK

1.5 A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

DEFINITIONS

CHANNEL FUNCTIONAL TEST

1.6 A CHANNEL FUNCTIONAL TEST shall be:

- a. Analog channels - the injection of a simulated signal into channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY.
- b. Bistable channels - the injection of a simulated signal into the sensor to verify OPERABILITY of all devices in the channel required for channel OPERABILITY.
- c. Digital computer channels - the exercising of the digital computer hardware using diagnostic programs and the injection of simulated process data into the channel to verify OPERABILITY of all devices in the channel required for channel OPERABILITY.

The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

CONTAINMENT INTEGRITY

1.7 CONTAINMENT INTEGRITY shall exist when:

- a. All penetrations required to be closed during accident conditions are either:
 1. Capable of being closed by an OPERABLE containment automatic isolation valve system, or
 2. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.3.
- b. All equipment hatches are closed and sealed,
- c. Each air lock is in compliance with the requirements of Specification 3.6.1.3,
- d. The containment leakage rates are within the limits of Specification 3.6.1.2, and
- e. The sealing mechanism associated with each penetration (e.g., welds, bellows, or O-rings) is OPERABLE.

CONTROLLED LEAKAGE

1.8 CONTROLLED LEAKAGE shall be the seal water flow supplied from the reactor coolant pump seals.



UNITED STATES
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WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 266 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-38

ENTERGY OPERATIONS, INC.

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO: 50-382

1.0 INTRODUCTION

By application dated May 28, 2021 (Reference 1), Entergy Operations, Inc (Entergy), (the licensee) submitted a license amendment request (LAR) to revise the technical specifications (TSs) for Waterford Steam Electric Station, Unit 3 (Waterford 3).

The amendment would revise the current instrumentation testing definitions of channel calibration and channel functional test to permit determination of the appropriate frequency to perform the surveillance requirement (SR) based on the devices being tested in each step. The proposed changes are based on Technical Specifications Task Force (TSTF) Traveler TSTF-563, Revision 0, "Revise Instrument Testing Definitions to Incorporate the Surveillance Frequency Control Program," dated May 10, 2017 (Reference 2). The U.S. Nuclear Regulatory Commission (NRC, the Commission) issued a final safety evaluation (SE) approving TSTF-563, Revision 0, on December 4, 2018 (Reference 3).

A surveillance frequency control program (SFCP) was incorporated into the Waterford 3 TSs by Amendment No. 249 by letter dated July 26, 2016 (Reference 4).

The licensee has proposed variations from the TS changes described in TSTF-563. The variations are described in section 2.2.1 of this SE and evaluated in section 3.1.

2.0 REGULATORY EVALUATION

2.1 Description of Surveillance Frequency Control Program and Instrument Testing

The TSs require the surveillances for instrumentation channels be performed within the specified frequency, using any series of sequential, overlapping, or total channel steps. A prior amendment approved by the NRC on July 26, 2016, revised the TSs to relocate all periodic surveillance frequencies to licensee control. Changes to the relocated surveillance frequencies are made in accordance with the TS program referred to as the SFCP. The SFCP allows a new

surveillance frequency to be determined for the channel, but that frequency must consider all components in the channel and applies to the entire channel.

A typical instrument channel consists of many different components, such as sensors, rack modules, and indicators. These components have different short-term and long-term performance (drift) characteristics, resulting in the potential for different calibration frequency requirements. Under the current TSs, the most limiting component calibration frequency for the channel must be chosen when a revised frequency is considered under the SFCP. As a result, all components that make up a channel must be calibrated at a frequency equal to the channel component with the shortest (i.e., most frequent) surveillance frequency.

Some channel components, such as pressure transmitters, are very stable with respect to drift and could support a substantially longer calibration frequency than the other components in the channel. Currently, the SRs in many plants are performed in steps (e.g., a pressure sensor or transmitter is calibrated during a refueling outage and the rack signal conditioning modules are calibrated while operating at power). The proposed change extends this concept to permit the surveillance frequency of each step to be determined under the SFCP based on the component(s) surveilled in the step instead of all components in the channel. This will allow each component to be tested at the appropriate frequency based on the component's long-term performance characteristics.

Allowing an appropriate surveillance frequency for performing a channel calibration on each component or group of components could reduce radiation dose associated with in place calibration of sensors, reduce wear on equipment, reduce unnecessary burden on plant staff, and reduce opportunities for calibration errors.

2.2 Proposed Changes to the Technical Specifications

Currently, the channel calibration and channel functional test may be performed by any series of sequential, overlapping or total channel steps. The proposed changes to the TSs would revise the definitions of channel calibration and channel functional test to indicate that the step must be performed within the most limiting frequency for the components included in that step by adding the phrase “, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step” at the end of the last sentence of each definition.

The following paragraph denotes the changes to the channel calibration definition. Changes are shown in ***bold italics***:

A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass ***all devices in the channel required for channel OPERABILITY*** and the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by ***means of*** any series of sequential, overlapping, or total channel steps, ***and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.***

The following paragraph denotes the changes to the channel functional test definition. Changes are shown in ***bold italics***:

A CHANNEL FUNCTIONAL TEST shall be:

- a. Analog channels - the injection of a simulated signal into channel as close to the sensor as practicable to verify OPERABILITY ***of all devices in the channel required for channel OPERABILITY.***
- b. Bistable channels - the injection of a simulated signal into the sensor to verify OPERABILITY ***of all devices in the channel required for channel OPERABILITY.***
- c. Digital computer channels - the exercising of the digital computer hardware using diagnostic programs and the injection of simulated process data into the channel to verify OPERABILITY ***of all devices in the channel required for channel OPERABILITY.***

The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

The various instrumentation functions in the TSs require surveillances to verify the correct functioning of the instrument channel. The proposed change would extend the definition of instrumentation channel components to permit the surveillance frequency of each step to be determined under the SFCP based on the component(s) surveilled in the step instead of all components in the channel. This will allow each component to be tested at the appropriate frequency based on the component's long-term performance characteristics.

The proposed changes in the definition for instrument testing would also allow the licensee to control the frequency of associated components being tested in each step. The SR for the overall instrumentation channel remains unchanged. The proposed change has no effect on the design, fabrication, use, or methods of testing the instrumentation channels, and will not affect the ability of the instrumentation to perform the functions assumed in the safety analysis.

These instrumentation testing definitions state that, "[t]he [test type] may be performed by means of any series of sequential, overlapping, or total channel steps." The surveillance frequency of these subsets would be established based on the characteristics of the components in the step rather than the most limiting component characteristics in the entire channel. Each of these steps would be evaluated in accordance with the SFCP.

2.2.1 Variations from TSTF-563

The licensee is proposing the following variations from the TS changes described in TSTF-563 or the applicable parts of the NRC staff's SE of TSTF-563.

- a) The Waterford 3 TSs are different from Revision 4 of the Combustion Engineering (CE) Standard Technical Specifications (STS) in NUREG-1432, "Standard Technical Specifications, Combustion Engineering Plants," Volume 1, "Specifications," and Volume 2, "Bases," Revision 4.0, dated April 2012 (Reference 5), on which TSTF-563 is

based. The Waterford 3 TS Channel Calibration definition states, in part: "The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by any series of sequential, overlapping, or total channel steps such that the entire channel is calibrated." The STS definition states, in part: "The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY and the CHANNEL FUNCTIONAL TEST. . . . The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps." The change will add the words "means of," which is editorial, and eliminate the phrase, "such that the entire channel is calibrated."

- b) The Waterford TS definition of Channel Functional Test does not include the CE STS requirement for the test to verify operability of all devices in the channel required for channel operability. This requirement is proposed to be added to the Channel Functional Test Analog channel, Bistable channel, and Digital computer channel definitions.

2.3 Applicable Regulatory Requirements and Guidance

Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36(a)(1) requires each applicant for a license authorizing operation of a utilization facility to include the proposed TSs in the application.

The regulation at 10 CFR 50.36(b) requires:

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 provided in 10 CFR 50.36(c). One such category is SRs. SRs are defined in 10 CFR 50.36(c)(3) as "requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met."

A prior Waterford 3 amendment approved by the NRC on July 26, 2016, replaced specific surveillance frequencies with references to an SFCP required by TS 6.5.18. TS 6.5.18 requires the licensee to establish, implement, and maintain an SFCP to ensure that TS SRs are performed at intervals listed in, and controlled by, the SFCP. TS 6.5.18 also requires that changes to the surveillance frequencies listed in the SFCP be made in accordance with NRC staff-approved Topical Report (TR) Nuclear Energy Institute (NEI) 04-10, Revision 1, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies, Industry Guidance Document" April 2007 (Reference 6).

TR NEI 04-10, Revision 1, describes an evaluation process and a multi-disciplinary plant decision-making panel that considers the detailed evaluation of proposed surveillance frequency revisions. The evaluations are based on operating experience, test history, manufacturers' recommendations, codes and standards, and other deterministic factors, in conjunction with risk insights. The evaluation considers all components being tested by the SR. Process elements

are included for determining the cumulative risk impact of the changes, updating the licensee's probabilistic risk assessment (PRA) models, and for imposing corrective actions, if necessary, following implementation of a revised frequency.

The NRC staff's guidance for the review of TSs is in chapter 16.0, "Technical Specifications," of NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition" (SRP), dated March 2010 (Reference 7). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared STS for each of the LWR nuclear designs. Accordingly, the NRC staff's review includes consideration of whether the proposed changes are consistent with the applicable reference STS (i.e., the current STS), as modified by NRC-approved TSTF travelers. In addition, the guidance states that comparing the change to previous STS can help clarify the intent of the TSs.

Regulatory Guide (RG) 1.174, Revision 2, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," dated May 2011 (Reference 8), describes an acceptable risk-informed approach for assessing the nature and impact of proposed permanent licensing basis changes by considering engineering issues and applying risk insights. This RG also provides risk acceptance guidelines for evaluating the results of such evaluations.

RG 1.177, Revision 1, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," dated May 2011 (Reference 9), describes an acceptable risk-informed approach specifically for assessing proposed TS changes.

RG 1.200, Revision 2, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," dated March 2009 (Reference 10), describes an acceptable approach for determining the technical adequacy of PRAs.

The NRC staff's guidance for evaluating the technical basis for proposed risk-informed changes is provided in SRP, section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," dated June 2007 (Reference 11). The NRC staff's guidance for evaluating PRA technical adequacy is provided in SRP, section 19.1, Revision 3, "Determining the Technical Adequacy of Probabilistic Risk Assessment for Risk-Informed License Amendment Requests After Initial Fuel Load," dated September 2012 (Reference 12). More specific guidance related to risk-informed TS changes is provided in SRP, section 16.1, Revision 1, "Risk-Informed Decision Making: Technical Specifications," dated March 2007 (Reference 13), which includes changes to surveillance test intervals (STIs) (i.e., surveillance frequencies) as part of risk-informed decision-making. Section 19.2 of the SRP references the same criteria as RG 1.177, Revision 1, and RG 1.174, Revision 2, and states that a risk-informed application should be evaluated to ensure that the proposed changes meet the following key principles:

- The proposed change meets the current regulations unless it explicitly related to a requested exemption [or rule change].
- The proposed change is consistent with the defense-in-depth philosophy.
- The proposed change maintains sufficient safety margins.

- When proposed changes result in an increase in risk associated with core damage frequency or large early release frequency, the increase(s) should be small and consistent with the intent of the Commission's Safety Goal Policy Statement.
- The impact of the proposed change should be monitored using performance measurement strategies.

The STS applicable to the proposed changes are provided in NUREG-1432, Volumes 1 and 2, Revision 4.0.

3.0 TECHNICAL EVALUATION

Revising the frequency of a channel calibration and channel functional test instrument channel under the SFCP requires assurance that component performance characteristics, such as drift between each test, will not result in undetected instrument errors that exceed the assumptions of the safety analysis and supporting instrument loop uncertainty calculations. These requirements are consistent with the methodology described in TR NEI 04-10, which is required by the SFCP. The SFCP does not permit changes to the TS allowable values or nominal trip setpoints; but allows only the surveillance frequency to be changed when determined permissible by TR NEI 04-10. Therefore, prior to extending the test intervals for an instrument channel component or components associated with a given calibration step, the component performance characteristics must be evaluated to verify the allowable value or nominal trip setpoint will still be valid and to establish a firm technical basis supporting the extension. In addition, each change must be reviewed by the licensee to ensure the applicable uncertainty allowances are conservative (bounding) (e.g., sensor drift, rack drift, indicator drift). Documentation to support the changes shall be retained per the guidance in TR NEI 04-10.

Five key safety principles that must be evaluated before changing any surveillance frequency are identified in section 3.0 of NEI 04-10. Principle 3 requires confirmation of the maintenance of safety margins, which, in this case, includes performance of deterministic evaluations to verify preservation of instrumentation trip setpoint and indication safety margins.

The evaluation methodology specified in TR NEI 04-10 also requires consideration of common-cause failure effects and monitoring of the instrument channel component performance following the frequency change to ensure channel performance is consistent with the analysis to support an extended frequency.

The method of evaluating a proposed surveillance frequency change is not dependent on the number of components in the channel. Each step needs to be evaluated to determine the acceptable surveillance frequency for that step. The proposed change to permit changing the surveillance frequency of channel component(s) does not affect the test method or evaluation method. The requirement to perform a channel calibration or channel functional test on the entire channel is not changed.

For example, an evaluation in accordance with TR NEI 04-10 may determine that a field sensor (e.g., a transmitter) should be calibrated every 48 months, that the rack modules should be calibrated every 30 months, and the indicators should be calibrated every 24 months. Under the current TS requirements, all devices in the channel must be calibrated every 24 months. However, under the proposed change, sensors, rack modules, and indicators would be calibrated at the appropriate frequency for the tested devices. As required by the channel

calibration definition, the test would still encompass all devices in the channel required for channel operability.

Per TS 6.5.18, the NEI 04-10 methodology must be used to evaluate surveillance frequency changes to determine if such SR extensions could be applied. Process elements are used to determine the cumulative risk impact of changes, update the PRA, and impose corrective actions, if needed, following implementation. Several steps are required by TR NEI 04-10, section 4.0, step 7, to be evaluated prior to determining the acceptability of changes. These steps include history of surveillance tests, industry and plant specific history, impact on defense-in-depth, vendor recommendations, required test frequencies for the applicable codes and standards, ensuring that plant licensing basis would not be invalidated and other factors. The NRC staff finds these measures acceptable in determining the SR extensions.

In addition, TR NEI 04-10, section 4.0, step 16, requires an independent decision-making panel (IDP) to review the cumulative impact of all STI changes over a period of time. This is also required by RGs 1.174 and 1.177. The IDP is composed of the site Maintenance Rule expert panel, surveillance test coordinator, and subject matter expert, who is a cognizant system manager or component engineer. Based on the above information, the NRC staff finds that the setpoint changes will be tracked in an acceptable manner.

Licensees with an SFCP may currently revise the surveillance frequency of instrumentation channels. The testing of these channels may be performed by means of any series, sequential, overlapping, or total channel steps. However, all required components in the instrumentation channel must be tested for the entire channel to be considered operable.

The NRC staff notes that industry practice is to perform instrument channel surveillances, such as channel calibrations and channel functional tests, using separate procedures based on the location of the components. Each of these procedures may be considered a "step." The results of all these procedures are used to satisfy the SRs using the existing allowance to perform it "by means of any series of sequential, overlapping, or total channel steps." The proposed changes would allow for determining an acceptable surveillance frequency for each step.

The NRC staff notes that the NEI 04-10 methodology includes the determination of whether the structure, system, and components (SSCs) affected by a proposed change to a surveillance frequency are modeled in the PRA. Where the SSC is directly or implicitly modeled, a quantitative evaluation of the risk impact may be carried out. The methodology adjusts the failure probability of the impacted SSCs based on the proposed change to the surveillance frequency. Where the SSC is not modeled in the PRA, bounding analyses are performed to characterize the impact of the proposed change to the surveillance frequency. Potential impacts on the risk analyses due to screening criteria and truncation levels are addressed by the requirements for PRA technical adequacy, consistent with the guidance contained in RG 1.200, and by sensitivity studies identified in TR NEI 04-10. The licensee is not proposing to change the methodology, or the acceptance criteria for extending STIs, and the licensee will need to evaluate changes in the frequency for performing each of the steps in the instrumentation surveillance test per the methodology in TR NEI 04-10.

Therefore, the NRC staff concludes that the proposed change to determine test frequency for individual steps within instrumentation channel surveillance tests is acceptable because any extended STIs will be developed within the established constraints of the SFCP and TR NEI 04-10.

The regulatory requirements in 10 CFR 50.36 are not specific regarding the frequency of performing surveillance tests. The proposed change only affects the frequency of performance and does not affect the surveillance testing method or acceptance criteria. Therefore, the proposed change is consistent with the surveillance testing requirements of 10 CFR 50.36.

PRA Acceptability

The guidance in RG 1.200 states that the quality of a licensee's PRA should be commensurate with the safety significance of the proposed TS change and the role the PRA plays in justifying the change. That is, the greater the change in risk or the greater the uncertainty in that risk as a result of the requested TS change, or both, the more rigor that should go into ensuring the quality of the PRA.

The NRC staff has performed an assessment of the PRA models used to support the approved SFCP that uses TR NEI 04-10, using the guidance of RG 1.200 to assure that the PRA models are capable of determining the change in risk due to changes to surveillance frequencies of SSCs, using plant-specific data and models. Capability Category II of the NRC-endorsed PRA standard is the target capability level for supporting requirements for the internal events PRA for this application. Any identified deficiencies to those requirements are assessed further to determine any impacts to proposed decreases to surveillance frequencies, including the use of sensitivity studies, where appropriate, in accordance with TR NEI 04-10.

The SFCP permits revising of the surveillance frequency for instrumentation channels. The NRC staff evaluated whether TR NEI 04-10 can be applied to subsets in an instrument channel when the SFCP currently specifies a surveillance interval that is applied to the entire channel. The NRC staff notes that the current channel surveillance may be performed by means of any series of sequential, overlapping, or total channel steps. In practice, this means that a channel is divided into subsets and each subset is tested separately. Therefore, the current instrument channel testing is already composed of a sequence of individual tests.

The instrument function may be modeled in the PRA differently depending on the site and the function (e.g., channel may be modeled individually, subsets may be modeled, or the channel function may be modeled as a single entity). There are different steps through the evaluation methodology in NEI 04-10 that could be used based on the different PRA modeling approaches. The appropriate modeling of these different approaches is included in the NRC staff's review of the PRA modeling during the review of the application to implement an SFCP that uses TR NEI 04-10.

The PRA in use at Waterford 3 is the same as that was used to support the license amendment that authorized the SFCP and follows TR NEI 04-10. Currently, the TSs allow the licensee to change the surveillance frequency of an entire channel under the SFCP. The amendment will allow the licensee to change the surveillance frequency of each subset of the channel. The NRC staff finds that changes to the surveillance frequency caused by defining and using individual, testable component subsets can be appropriately evaluated with the current SFCP and the current PRAs. The NRC staff finds that the risk-informed methodology review and the PRA acceptability review that were performed during the review of the application for an amendment authorizing the SFCP that uses TR NEI 04-10 are adequate.

The NRC staff determined that the proposed changes to the TS meet the standards for TS in 10 CFR 50.36(b). The regulations at 10 CFR 50.36 require that TS include items in specified categories, including SRs. The proposed changes modify the definitions applicable to

instrumentation channel components but do not alter the technical approach that was approved by the NRC in TR NEI 04-10, and the TSs, as revised, continue to specify the appropriate SRs for tests and inspections to ensure the necessary quality of affected SSCs is maintained.

Additionally, the NRC staff finds the proposed TS changes to be technically clear and consistent with customary terminology and format in accordance with SRP Chapter 16.0. The NRC staff reviewed the proposed changes against the regulations and concludes that the changes continue to meet the requirements of sections 50.36(b), 50.36(c)(3), and 50.36(c)(5) of 10 CFR, for the reasons discussed above, and thus provide reasonable assurance that the revised TSs provide the requisite requirements and controls for the facility to operate safely. Therefore, the NRC staff concludes that the proposed TS changes are acceptable.

3.1 Variations from TSTF-563

The licensee described variations from TSTF-563 in section 2.2 of the LAR. The NRC staff reviewed the proposed variations to the CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST definitions and determined that they are acceptable because the changes are consistent with the NUREG-1432 wording, TSTF-205-A (Reference 14), and continue to meet the intent of TSTF-563. This change clarifies the components that are required to be tested or calibrated are those that are necessary for the channel to perform its safety function. Also, the proposed change to add the wordings to allow the Channel Functional Test to be performed by means of any series of sequential, overlapping, or total channel steps is necessary to adopt TSTF-563.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Louisiana State official was notified on May 24, 2022, of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes requirements with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes SRs. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, published in the *Federal Register* on September 7, 2021 (86 FR 50190), and there has been no public comment on such finding. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

1. Gaston, R., Entergy Operations, Inc., letter to U.S. Nuclear Regulatory Commission, "Application to Revise Technical Specifications to Adopt TSTF-563, 'Revise Instrument Testing Definitions to Incorporate the Surveillance Frequency Control Program,' Waterford Steam Electric Station, Unit 3, NRC Docket No. 50-382, Renewed Facility Operating License No. NPF-38," dated May 28, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21148A104).
2. Technical Specifications Task Force, letter to U.S. Nuclear Regulatory Commission, "Transmittal of TSTF-563, 'Revise Instrument Testing Definitions to Incorporate the Surveillance Frequency Control Program,'" dated May 10, 2017 (ML17130A819).
3. Cusumano, V. G., U.S. Nuclear Regulatory Commission, letter to Technical Specifications Task Force, "Final Safety Evaluations of Technical Specifications Task Force Traveler TSTF-563, Revision 0, 'Revise Instrument Testing Definitions to Incorporate the Surveillance Frequency Control Program' (EPID L-2017-PMP-0006)," dated December 4, 2018 (ML18333A152).
4. Pulvirenti, A. L., U.S. Nuclear Regulatory Commission, letter to Entergy Operations, LLC., "Waterford Steam Electric Station, Unit 3 – Issuance of Amendment Re: Adoption of TSTF-425, Revision 3, 'Relocate Surveillance Frequencies to Licensee Control – RITSTF Initiative 5b' (CAC No. MF6366)," dated July 26, 2016 (ML16159A419).
5. U.S. Nuclear Regulatory Commission, "Standard Technical Specifications, Combustion Engineering Plants," NUREG-1432, Revision 4.0, Volume 1, "Specifications," and Volume 2, "Bases," dated April 2012 (ML12102A165 and ML12102A169, respectively).
6. Nuclear Energy Institute, "Risk-Informed Technical Specifications Initiative 5b; Risk-Informed Method for Control of Surveillance Frequencies Industry Guidance Document," NEI 04-10 Revision 1, dated April 2007 (ML071360456).
7. U.S. Nuclear Regulatory Commission, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," NUREG-0800, Section 16.0, Revision 3, "Technical Specifications," dated March 2010 (ML100351425).
8. U.S. Nuclear Regulatory Commission, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," Regulatory Guide 1.174, Revision 2, dated May 2011 (ML100910006).
9. U.S. Nuclear Regulatory Commission, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," Regulatory Guide 1.177, Revision 1, dated May 2011 (ML100910008).
10. U.S. Nuclear Regulatory Commission, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," Regulatory Guide 1.200, Revision 2, dated March 2009 (ML090410014).

11. U.S. Nuclear Regulatory Commission, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," NUREG-0800, Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance," dated June 2007 (ML071700658).
12. U.S. Nuclear Regulatory Commission, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," NUREG-0800, Section 19.1, Revision 3, "Determining the Technical Adequacy of Probabilistic Risk Assessment for Risk-Informed License Amendment Requests After Initial Fuel Load," dated September 2012 (ML12193A107).
13. U.S. Nuclear Regulatory Commission, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," NUREG-0800, Section 16.1, Revision 1, "Risk-Informed Decision Making: Technical Specifications," dated March 2007 (ML070380228).
14. Technical Specification Task Force, "Revision of Channel Calibration, Channel Functional Test, and Related Definitions," TSTF-205-A, Revision 3.

Principal Contributor: T. Sweat

Date: May 27, 2022

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 - ISSUANCE OF AMENDMENT NO. 266 TO REVISE TECHNICAL SPECIFICATIONS TO ADOPT TSTF-563, "REVISE INSTRUMENT TESTING DEFINITIONS TO INCORPORATE THE SURVEILLANCE FREQUENCY CONTROL PROGRAM" (EPID L-2021-LLA-0093) DATED MAY 27, 2022

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NRR-106

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