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

September 15, 2021

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. 261 REGARDING REMOVAL AND RELOCATION OF BORATION SYSTEM TECHNICAL SPECIFICATIONS (EPID L-2019-LLA-0203)

Dear Sir or Madam:

The U.S. Nuclear Regulatory Commission (the Commission) has issued the enclosed Amendment No. 261 to Renewed Facility Operating License No. NPF-38 for the Waterford Steam Electric Station, Unit 3 (Waterford 3). This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated September 20, 2019, as supplemented by letters dated July 6, 2020, April 26, 2021, and August 20, 2021.

The amendment relocates Waterford 3 boration systems TS equipment that is required to support the operability of the auxiliary pressurizer spray system from TSs 3.1.2.2, 3.1.2.4, 3.1.2.6 and 3.1.2.8 to Waterford 3 TS 3/4.4.3.2, “Auxiliary Spray,” and relocates the remaining information from these TSs as well as the remaining boration systems in TSs 3.1.2.1, 3.1.2.3, 3.1.2.5 and 3.1.2.7 to the licensee-controlled Technical Requirements Manual. The licensee can change its Technical Requirements Manual subject to the requirements in Title 10 of the *Code of Federal Regulations* Section 50.59, “Changes, tests, and experiments.”

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. 261 to NPF-38
2. Safety Evaluation

cc: Listserv

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

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-382

WATERFORD STEAM ELECTRIC STATION, UNIT 3

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 261
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 September 20, 2019, as supplemented by letters dated July 6, 2020, April 26, 2021, and August 20, 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. 261, 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

Digitally signed by Jennifer L. Dixon-Herrity
Date: 2021.09.15 20:16:20 -04'00'

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: September 15, 2021

ATTACHMENT TO LICENSE AMENDMENT NO. 261

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 NPF-38

Remove Page	Insert Page
-4-	-4-

Technical Specifications

Remove Page	Insert Page
3/4 1-6	3/4 1-6
3/4 1-7	---
3/4 1-8	---
3/4 1-9	---
3/4 1-10	---
3/4 1-11	---
3/4 1-12	---
3/4 1-13	---
3/4 1-14	---
3/4 1-14a	---
3/4 4-9a	3/4 4-9a
---	3/4 4-9b

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. 261, 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.

PAGES
3/4 1-6 THRU 3/4 1-14a
ARE NOT USED

REACTOR COOLANT SYSTEM

AUXILIARY PRESSURIZER SPRAY

LIMITING CONDITION FOR OPERATION

3.4.3.2 Two auxiliary pressurizer spray trains shall be OPERABLE consisting of the following:

a. Both auxiliary pressurizer spray valves,

b. One flow path from an acceptable boric acid makeup tank via its boric acid makeup pump,

c. One flow path from an acceptable boric acid makeup tank via its gravity feed valve,

d. At least two independent charging pumps, and

e. One boric acid makeup tank with a minimum water volume of 58% indicated level.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With only one of the above required auxiliary pressurizer spray trains OPERABLE, restore both trains to OPERABLE status within 30 days or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With none of the above required auxiliary pressurizer spray trains OPERABLE, restore at least one train to OPERABLE status within the next 6 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.4.3.2.1 The auxiliary pressurizer spray valves shall be verified to have power available to each valve in accordance with the Surveillance Frequency Control Program.

4.4.3.2.2 The auxiliary pressurizer spray valves shall be cycled in accordance with the Surveillance Frequency Control Program.

4.4.3.2.3 Verify each auxiliary pressurizer spray manual, power-operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position in accordance with the Surveillance Frequency Control Program.

4.4.3.2.4 Verify each auxiliary pressurizer spray automatic valve in the flow path actuates to its correct position on an SIAS test signal in accordance with the Surveillance Frequency Control Program.

4.4.3.2.5 Verify each required charging pump starts in response to an SIAS test signal in accordance with the Surveillance Frequency Control Program.

4.4.3.2.6 Verify each required boric acid makeup pump starts in response to an SIAS test signal in accordance with the Surveillance Frequency Control Program.

4.4.3.2.7 Verify boric acid makeup tank water volume is greater than or equal to 58% indicated level in accordance with the Surveillance Frequency Control Program.

SURVEILLANCE REQUIREMENTS (Continued)

4.4.3.2.8 Verify boric acid makeup tank solution temperature is greater than or equal to 60 °F when the Reactor Auxiliary Building air temperature is less than 55 °F in accordance with the Surveillance Frequency Control Program.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 261 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-38

ENTERGY LOUISIANA, LLC

ENTERGY OPERATIONS, INC.

WATERFORD STEAM ELECTRIC STATION, UNIT 3

DOCKET NO. 50-382

1.0 INTRODUCTION

By letter W3F1-2019-0062 dated September 20, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19263F129), as supplemented by letter W3F1-2020-0043 dated July 6, 2020, letter W3F1-2021-0017 dated April 26, 2021 and letter W3F1-2021-0055 dated August 20, 2021 (ADAMS Accession Nos. ML20188A364, ML21116A143 and ML21232A599, respectively), Entergy Operations, Inc. (the licensee) requested changes to the Technical Specifications (TSs) for Waterford Steam Electric Station, Unit 3 (Waterford 3).

The licensee originally requested to remove Waterford 3 TSs 3.1.2.1 through 3.1.2.8, "Boration Systems," and relocate the information to the licensee-controlled Technical Requirements Manual (TRM).

On June 5, 2020, the U.S. Nuclear Regulatory Commission (NRC, the Commission) e-mailed the licensee a request for additional information (RAI) (ADAMS Accession No. ML20168A395). By letter dated July 6, 2020, the licensee responded to the request. Subsequent to submittal of the RAI response, the licensee determined that the TS 3/4.1.2 equipment, which provides a support function for the auxiliary pressurizer spray system should be retained in the TSs and relocated to TS 3/4.4.3.2, "Auxiliary Spray." In the April 26, 2021, supplement, the licensee proposed to relocate the boration systems TS equipment that is required to support the operability of the auxiliary pressurizer spray system to Waterford 3 TS 3/4.4.3.2, and to relocate the remaining boration systems TSs to the TRM.

The amendment relocates Waterford 3 boration systems TS equipment, which is required to support the operability of the auxiliary pressurizer spray system, from TSs 3.1.2.2, 3.1.2.4, 3.1.2.6 and 3.1.2.8 to Waterford 3 TS 3/4.4.3.2, "Auxiliary Spray," and relocates the remaining information from these TSs as well as boration systems TSs 3.1.2.1, 3.1.2.3, 3.1.2.5 and 3.1.2.7 to the licensee-controlled TRM.

On December 17, 2019, the NRC staff published a proposed no significant hazards consideration (NSHC) determination in the *Federal Register* (FR) (84 FR 68952) for the proposed amendment. The supplemental letter dated July 6, 2020, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff's original proposed NSHC determination as published in the *Federal Register* on December 17, 2019. Subsequently, by letter dated April 26, 2021, the licensee provided information that expanded the scope of the amendment request as originally noticed in the *Federal Register*. Accordingly, the NRC published a second proposed NSHC determination in the *Federal Register* on May 18, 2021 (86 FR 26954), which superseded the original notice in its entirety. The supplemental letter dated August 20, 2021, provided editorial corrections to the clean TS pages provided in the April 26, 2021 supplement, did not expand the scope of the application or change the NRC staff's proposed NSHC determination as published in the *Federal Register* on May 18, 2021.

2.0 REGULATORY EVALUATION

2.1 Description of Boration Systems and Current TS Requirements

In general, the power output of the reactor and the outlet temperature of the coolant from the reactor core are controlled by manipulating several factors that affect the core's reactivity (i.e., a measure of neutron population change). The position of neutron absorbing control rods, the concentration of boric acid in the reactor coolant system (RCS), and the steam flow rate can be changed to affect reactor power and the coolant outlet temperature. Reactivity control is accomplished by positioning control rods and by adjusting the concentration of the soluble neutron absorber (i.e., boric acid) in the moderator or coolant. The boric acid concentration is varied to control long-term reactivity changes.

Chapter 1.2.2.3.1, "Controls," of the Waterford 3 Updated Final Safety Analysis Report (UFSAR) (ADAMS Accession No. ML20258A071) states, in part, that:

> The reactor is controlled by a combination of CEAs [control element assemblies] and dissolved boric acid in the reactor coolant. Boric acid is used for reactivity changes associated with large but gradual changes in average coolant temperature, xenon concentration, and fuel burnup.
>
> Additions of boric acid also provide an increased shutdown margin during the initial fuel loading and subsequent refuelings.

Chapter 7.7.1.1.2, "Boron Control," of the Waterford 3 UFSAR (ADAMS Accession No. ML19268A128) states, in part, that "The boron concentration, in conjunction with CEAs, ensure that adequate shutdown margin is maintained for the reactor."

In its application dated September 19, 2019, the licensee stated that the "Boration Systems ensure that negative reactivity control is available during each mode of operation." The components required to perform this function include borated water sources (e.g., the boric acid makeup tanks (BAMTs)), charging pumps, separate flow paths, boric acid makeup pumps (BAMPs), and an emergency power supply from operable diesel generators. The licensee further stated that:

> The BAMTs, BAMPs, and Charging Pumps are part of the Chemical and Volume Control System (CVCS). The CVCS functions to maintain RCS inventory and

> control Reactor Coolant System (RCS) chemistry. The BAMTs and the Refueling Water Storage Pool (RWSP) provide sources of boric acid solution for injection into the RCS. The BAMTs also supply a source of boric acid makeup to the Spent Fuel Pool (SFP) and the RWSP. The combination of the BAMTs and the RWSP contain sufficient boric acid to bring the plant to a cold shutdown condition as well as ensure that negative reactivity control is available during each mode of operation.
>
> There are two BAMTs, each with a separate BAMP and gravity feed valve. The flow path from the BAMT to the RCS may be through either the BAMP to the suction of the Charging [P]umps or through the gravity feed valve to the suction of the Charging Pumps. The two separate flow paths from the discharge of the BAMPs or gravity feed valves combine into a common header at the suction of the Charging [P]umps. The boric acid is discharged to the RCS via the Charging Pumps. The BAMPs, gravity feed valves, and Charging Pumps receive a Safety Injection Actuation Signal (SIAS) and Containment Isolation Actuation Signal (CIAS) when RCS pressure drops or Containment Building pressure increases to their specified TS values. This aligns the system components such that boric acid can be injected into the RCS. Although the Boration Systems provide a means of reactivity control through boron injection, none of these systems are required to mitigate any design bases accidents or transients.

Section 3.1.2, "Boration Systems," of the Waterford 3 TSs currently has the following subsections:

- 3.1.2.1, "Flow Paths – Shutdown,"
- 3.1.2.2, "Flow Paths – Operating,"
- 3.1.2.3, "Charging Pumps – Shutdown,"
- 3.1.2.4, "Charging Pumps – Operating,"
- 3.1.2.5, "Boric Acid Makeup Pumps – Shutdown,"
- 3.1.2.6, "Boric Acid Makeup Pumps – Operating,"
- 3.1.2.7, "Borated Water Sources – Shutdown,"
- 3.1.2.8, "Borated Water Sources – Operating," and
- 3.1.2.9, "Boron Dilution."

Waterford 3 TSs 3.1.2.1 through 3.1.2.8 ensure availability of the boration systems that are required for negative reactivity control, including the BAMTs, BAMPs, charging pumps, and flow paths.

2.2 Proposed Changes

In its application dated September 20, 2019, the licensee proposed to remove TSs 3.1.2.1 through 3.1.2.8, including their associated limiting conditions for operation (LCOs), actions, surveillance requirements (SRs), and figures, and relocate the information to the licensee-controlled TRM. The licensee also explained how it would modify the TS Bases if the NRC approved its application. As its basis for the proposed changes, the licensee stated, in part, in its application:

> These proposed TS changes are consistent with the NRC's "Final Policy Statement on Technical Specifications Improvements," (58 FR 39132), which was issued in July 1993. This Policy Statement established that licensees may

> propose the removal of TS Limiting Conditions for Operation (LCOs) which do not meet any of the four criteria specified in the Policy Statement and relocate these LCOs to a licensee-controlled document. The NRC codified the four criteria in 10 CFR [Title 10 of the *Code of Federal Regulations* Section] 50.36(c)(2)(ii) in July 1995 (60 FR 36959).

The licensee further stated in its application that the TRM is part of the UFSAR, and that any changes to the TRM are subject to the criteria of 10 CFR 50.59, "Changes, tests, and experiments." However, the licensee also stated that the design and functions of the BAMTs, BAMPs, charging pumps, and associated flow paths will not be changed by the relocation of their associated TSs to the TRM. The licensee did not propose any physical alterations to the plant configuration, newly added structures, systems, or components (SSCs), modifications to SSC interfaces, nor any changes to any design function of an SSC or the methods of SSC operation.

Subsequent to submittal of the RAI response dated July 6, 2020, and discussions with NRC staff, the licensee determined that the TS 3/4.1.2 equipment that provides a support function for the auxiliary pressurizer spray system should be retained in the TSs and relocated to TS 3/4.4.3.2. Therefore, in the April 26, 2021, and August 20, 2021, supplements, the licensee proposed to revise the original license amendment request (LAR) to relocate, in TS 3/4.4.3.2, the boration systems equipment that is required to support the operability of the auxiliary pressurizer spray system, and relocate the remaining boration systems TSs to the TRM, as originally proposed. The specific changes proposed by the licensee are below.

Replace TS page 3/4 1-6 with a new TS page 3/4 1-6, which states, "PAGES 3/4 1-6 THRU *[sic]* 3/4 1-14a ARE NOT USED."

The title of TS LCO 3.4.3.2 is revised from "AUXILIARY SPRAY" to "AUXILIARY PRESSURIZER SPRAY."

LCO 3.4.3.2 is updated as follows (underlined text is added to existing text; strikeout of existing text is deleted):

> 3.4.3.2 ~~Both~~ Two auxiliary pressurizer spray ~~valves~~trains shall be OPERABLE~~.~~ consisting of the following:
>
> a. Both auxiliary pressurizer spray valves
>
> b. One flow path from an acceptable boric acid makeup tank via its boric acid makeup pump
>
> c. One flow path from an acceptable boric acid makeup tank via its gravity feed valve
>
> d. At least two independent charging pumps
>
> e. One boric acid makeup tank with a minimum water volume of 58% indicated level.

Action statements for LCO 3.4.3.2 are updated as follows (underlined text is added to existing text; strikeout of existing text is deleted):

a. With only one of the above required auxiliary pressurizer spray ~~valves~~trains OPERABLE, restore both ~~valves~~trains to OPERABLE status within 30 days or be in HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

b. With none of the above required auxiliary pressurizer spray ~~valves~~trains OPERABLE, restore at least one ~~valve~~train to OPERABLE status within the next 6 hours or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.

Surveillance requirements are revised as follows (underlined text is added to existing text; strikeout of existing text is deleted):

4.4.3.2.1 The auxiliary spray valves shall be verified to have power available to each valve in accordance with the Surveillance Frequency Control Program.

4.4.3.2.2 The auxiliary spray valves shall be cycled in accordance with the Surveillance Frequency Control Program.

4.4.3.2.3 Verify that each valve (manual, power-operated, or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position in accordance with the Surveillance Frequency Control Program.

4.4.3.2.4 Verify that each automatic valve in the flow path actuates to its correct position on an SIAS test signal in accordance with the Surveillance Frequency Control Program.

4.4.3.2.5 Each required charging pump shall be demonstrated OPERABLE by verifying that each charging pump starts in response to an SIAS test signal in accordance with the Surveillance Frequency Control Program.

4.4.3.2.6 Each required boric acid makeup pump shall be demonstrated OPERABLE by verifying that each boric acid makeup pump starts in response to an SIAS test signal in accordance with the Surveillance Frequency Control Program.

4.4.3.2.7 Verify boric acid makeup tank water volume in accordance with the Surveillance Frequency Control Program.

4.4.3.2.8 Verify the boric acid makeup tank solution temperature is greater than or equal to 60 °F [degrees Fahrenheit] when the Reactor Auxiliary Building air temperature is less than 55 °F in accordance with the Surveillance Frequency Control Program.

2.3 Regulatory Review

The NRC staff considered the following regulatory requirements, licensing and design basis information, and guidance during its review of the proposed changes.

Regulatory Requirements

The regulations in 10 CFR 50.36, "Technical specifications," establish the regulatory requirements for items that must be in the TSs, which include LCOs. The regulations in 10 CFR 50.36(a)(1) states that an application for an operating license include proposed TSs. It further states that "A summary statement of the bases or reasons for such specifications, other than those covering administrative controls, shall also be included in the application, but shall not become part of the technical specifications."

The regulations in 10 CFR 50.36(c)(2)(ii) of 10 CFR state that:

> A technical specification limiting condition for operation of a nuclear reactor must be established for each item meeting one or more of the following criteria:
>
> (A) Criterion 1. Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.
>
> (B) Criterion 2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
>
> (C) Criterion 3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
>
> (D) Criterion 4. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

In the *Federal Register* notice that announced the final rulemaking that added these four criteria to 10 CFR 50.36 (60 FR 36953; July 19, 1995), the NRC staff stated that the rule codifies criteria for determining the content of TSs, and that each licensee covered by these regulations may voluntarily use the criteria as a basis to propose the relocation of existing TSs that do not meet any of the criteria from the facility license to licensee-controlled documents. The NRC staff also stated in this *Federal Register* notice that related SRs and actions would be retained for each LCO that remains in the TSs.

The regulations in 10 CFR 50.34(b), "Final safety analysis report [FSAR]," state, in part, that "The final safety analysis report shall include information that describes the facility, presents the design bases and the limits on its operation, and presents a safety analysis of the structures, systems, and components and of the facility as a whole. . . . ." The regulation in 10 CFR 50.34(b)(2) states that the FSAR shall include a "description and analysis of the structures, systems, and components of the facility, with emphasis upon performance requirements, the bases, with technical justification therefore, upon which such requirements have been established, and the evaluations required to show that safety functions will be accomplished." Such items as fuel handling systems shall be discussed insofar as they are pertinent.

The regulation in 10 CFR 50.59(c)(1) states that a licensee can make changes in the facility or procedures as described in the UFSAR and conduct tests or experiments not described in the UFSAR without obtaining a license amendment pursuant to 10 CFR 50.90 if none of the criteria in 10 CFR 50.59(c)(2) are met. The regulation in 10 CFR 50.59(c)(3) states that the UFSAR is considered to include FSAR changes resulting from evaluations performed pursuant to 10 CFR 50.59, and analyses performed pursuant to 10 CFR 50.90 since submittal of the last UFSAR pursuant to 10 CFR 50.71, "Maintenance of records, making of reports."

Licensing and Design Bases

Section 9.3.4, "Chemical and Volume Control System," of the Waterford 3 UFSAR (ADAMS Accession No. ML19268A130) describes the system's purpose, design, and operation, including its instrumentation requirements.

Section 13.8, "Technical Requirements," of the Waterford 3 UFSAR (ADAMS Accession No. ML19268A134) states, in part, that:

> In an effort to centralize the requirements relocated from Technical Specifications and to ensure the necessary administrative controls are applied to these requirements, the Waterford 3 Technical Requirements Manual (TRM) has been developed. The TRM is intended for use as an operator aid that provides one location for all relocated items in a familiar format.

Section 13.8.1, "Regulatory Status/Requirements," of the Waterford 3 UFSAR states, in part, that:

> Although the TRM itself is not legally binding (e.g., Technical Specifications), the requirements in the TRM are part of the licensing bases and treated as if they are still Technical Specifications. For example, The LCO, Action, and Surveillance Requirements will be applied to TRM requirements. Violations of TRM requirements are documented by the Waterford 3 Corrective Action Program.
>
> These controls are necessary because the purpose of relocating the requirements from TS is not to reduce the level of control on the items but to provide flexibility, if necessary. Any deviation from the TRM will be screened for reportability in accordance with the applicable administrative procedures and regulatory requirements.

Section 13.8.1.2, "Changes to the Technical Requirements Manual (TRM)," states, in part, that:

> The TRM is part of the FSAR and any changes to the TRM are subject to the criteria of 10 CFR 50.59. Specific administrative controls describing the necessary requirements to process a TRM change are included in Waterford 3 Site Procedures.

Chapter 15, "Accident Analyses," of the Waterford 3 UFSAR (ADAMS Accession No. ML19268A136) describes the analytical evaluation of the response of the plant to postulated disturbances in process variables and to postulated malfunctions or failures of equipment (i.e., transients and accidents).

Guidance

In its letter dated May 9, 1988 (ADAMS Accession No. ML11264A057; also known as the "Split Report"), from the Director of the Office of Nuclear Reactor Regulation, Thomas E. Murley, to Walter S. Wilgus of the Babcock and Wilcox Owners Group, the NRC staff documented its conclusions as to which specifications must be retained in the Standard Technical Specifications (STSs) and which specifications could be relocated to other licensee-controlled documents, based on the staff's review of the Commission's Interim Policy Statement, "Proposed Policy Statement on Technical Specification Improvements for Nuclear Power Reactors," dated February 6, 1987 (52 FR 3788). Appendix C, "Results of the NRC Staff Review Combustion Engineering Owners Group's Submittal Retention and Relocation of Specific Technical Specifications," in the letter dated May 9, 1988, lists the following Combustion Engineering STS LCOs, among others, in Table 2, which may be relocated to licensee-controlled documents:

- 3.1.2.1, "Flow Paths – Shutdown"
- 3.1.2.2, "Flow Paths – Operating"
- 3.1.2.3, "Charging Pumps – Shutdown"
- 3.1.2.4, "Charging Pumps – Operating"
- 3.1.2.5, "Boric Acid Makeup Pumps – Shutdown"
- 3.1.2.6, "Boric Acid Makeup Pumps – Operating"
- 3.1.2.7, "Borated Water Source – Shutdown"
- 3.1.2.8, "Borated Water Sources – Operating"

NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition," Section 16.0, Revision 3, "Technical Specifications," dated March 2010 (ADAMS Accession No. ML100351425), contains guidance for reviews of TSs. The NRC staff prepared STSs for each of the LWR nuclear steam supply systems and associated balance-of-plant equipment systems. The NRC staff applies this guidance in its reviews to help it determine if the content and format of proposed changes are consistent with the applicable STSs.

The NRC staff reviewed the licensee's application against the STSs in NUREG-1432, "Standard Technical Specifications Combustion Engineering Plants," Revision 4, Volume 1, "Specifications," and Volume 2, "Bases" (ADAMS Accession Nos. ML12102A165 and ML12102A169, respectively). NUREG-1432, Revision 4, contains the improved STSs and Bases for Combustion Engineering plants and was developed based on the criteria in the Final Commission Policy Statement on Technical Specifications Improvements for Nuclear Power Reactors, dated July 22, 1993 (58 FR 39132), which was subsequently codified by changes to 10 CFR 50.36 (dated July 19, 1995, 60 FR 36953).

3.0 TECHNICAL EVALUATION

In determining whether an amendment to a license will be issued, the Commission is guided by the considerations that govern the issuance of initial licenses to the extent applicable and appropriate. The NRC staff evaluated the licensee's application to determine if the proposed changes are consistent with the regulations and licensing and design basis information discussed in Section 2.0 of this safety evaluation. The NRC staff reviewed the acceptability of the proposed changes for compliance with 10 CFR 50.36. To determine whether the proposed removal of TSs 3.1.2.1 through TS 3.1.2.8 complies with 10 CFR 50.36, the NRC staff reviewed

the purpose, design, and operation of subject boration systems to determine whether they meet the four criteria in 10 CFR 50.36(c)(2)(ii) for having to establish an LCO in the TSs. If none of the four criteria are met, then an LCO may be removed from the TSs.

3.1 Removal of TSs 3.1.2.1 through 3.1.2.8

TSs 3.1.2.1 through 3.1.2.8 address the boration subsystem of the CVCS. These TSs consist of requirements for maintaining shutdown margin by boration. The requirements of TSs 3.1.2.1 through 3.1.2.8 define the minimum operable boron injection path and the minimum operable borated water sources. The NRC staff evaluated TS 3.1.2.1 through TS 3.1.2.8 against the four criteria set forth in 10 CFR 50.36(c)(2)(ii) and compared the proposed changes to the NRC letter dated May 9, 1988 (referenced in Section 2.0 of this safety evaluation) and the STSs in NUREG-1432, Revision 4.

Criterion 1 of 10 CFR 50.36(c)(2)(ii)

The NRC staff evaluated the proposed removal of TSs 3.1.2.1 through 3.1.2.8 against Criterion 1 of 10 CFR 50.36(c)(2)(ii). The NRC staff reviewed the application, as supplemented, and Section 9.3.4 of the Waterford 3 UFSAR and has confirmed that the boration systems related to TSs 3.1.2.1 through 3.1.2.8 do not provide installed instrumentation that is used to detect, and indicate in the control room, a significant degradation of the reactor coolant pressure boundary and, therefore, do not meet Criterion 1 of 10 CFR 50.36(c)(2)(ii).

Criterion 2 of 10 CFR 50.36(c)(2)(ii)

The NRC staff evaluated the proposed removal of TSs 3.1.2.1 through 3.1.2.8 against Criterion 2 of 10 CFR 50.36(c)(2)(ii). The NRC staff reviewed the application, as supplemented, and Sections 9.3.4 and Chapter 15 of the Waterford 3 UFSAR and has confirmed that the boration systems related to TS 3.1.2.1 through TS 3.1.2.8 do not establish a variable, design feature, or operating restriction that is an initial condition of a design-basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier and, therefore, do not meet Criterion 2 of 10 CFR 50.36(c)(2)(ii).

Criterion 3 of 10 CFR 50.36(c)(2)(ii)

The NRC staff evaluated the proposed removal of TSs 3.1.2.1 through 3.1.2.8 against Criterion 3 of 10 CFR 50.36(c)(2)(ii). In its application dated September 20, 2019, the licensee stated that “Although the boration systems provide a means of reactivity control through boron injection, none of these systems are required to mitigate any design basis accidents or transients.” However, in various locations throughout Chapter 15 of the Waterford 3 UFSAR, the charging pumps are discussed with regards to accident and transient mitigation. For example, in Section 15.6.3.1, “Primary Sample or Instrument Line Break,” of the UFSAR, it states “Operation of the HPSI [high-pressure safety injection] pumps as well as the charging pumps ensures that the core will not uncover and prevents any significant increase in clad temperatures,” which implies that the charging pumps are required to mitigate the event. In its supplement dated July 6, 2020, the licensee responded to the NRC staff’s RAI dated June 5, 2020, by providing a table summarizing the events which assume charging is active along with an associated evaluation with respect to 10 CFR 50.36(c)(2)(ii) Criterion 3 for each event. In some events, such as a loss of normal feedwater flow, the charging pumps make the event worse as they add mass to the RCS and increase the pressure transient, thus making the event more adverse. In these cases, the NRC staff agrees with the licensee that the charging system

is not part of the primary success path to mitigate the event. In the cases where the charging pumps aid in the mitigation, such as a primary sample or instrument line break or a steam generator tube rupture (SGTR), the licensee states that the use of the charging system is an option for the operations staff but is not required from a mitigation standpoint due to safety injection being available. While NRC staff found this acceptable for the primary sample or instrument line break, the staff determined that certain portions of the boration systems are part of the primary success path for the response to an SGTR. Specifically, the auxiliary pressurizer spray system is credited in response to the SGTR event; however, the existing TS 3.4.3.2, "Auxiliary Spray," considers only the two spray valves.

Note that the auxiliary pressurizer spray system safety function is to depressurize the RCS during an SGTR. In its April 26, 2021, supplement, the licensee stated that in order to ensure the operability of the auxiliary pressurizer spray system, and thus the safety function of the system, the following equipment, in addition to the two auxiliary spray valves, are required: boric acid flow paths, charging pumps, BAMPs, and BAMTs. Given that these components are required as part of the primary success path, the NRC staff finds that these do meet the requirements of 10 CFR 50.36(c)(2)(ii) Criterion 3 and cannot be removed from the TSs as originally proposed. Therefore, in its supplement dated April 26, 2021, the licensee proposed moving certain portions of the boration system TSs to the auxiliary spray TS and renaming TS 3.4.3.2 from "Auxiliary Spray" to "Auxiliary Pressurizer Spray." These specific relocations are discussed below in Section 3.2 of this SE.

The NRC staff reviewed the application, as supplemented, and Section 9.3.4 and Chapter 15 of the Waterford 3 UFSAR and has confirmed that the boration systems related to TSs 3.1.2.1 through 3.1.2.8 that are not used as part of the auxiliary pressurizer spray system, are not required to mitigate any design-basis accidents or transients. Rather, the boration systems TSs ensure the ability to regain the required shutdown margin, which is beyond the scope of a primary success path action. These proposed relocated TSs do not establish an SSC that is part of the primary success path, which functions or actuates to mitigate a design-basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier and, therefore, do not meet Criterion 3 of 10 CFR 50.36(c)(2)(ii).

The NRC staff finds that the licensee has relocated the appropriate LCOs, actions, and SRs from TSs 3.1.2.1 through 3.1.2.8 to TS 3/4.4.3.2 to include the equipment necessary to support the operability of the auxiliary pressurizer spray system.

Criterion 4 of 10 CFR 50.36(c)(2)(ii)

The NRC staff evaluated the proposed removal of TSs 3.1.2.1 through 3.1.2.8 against Criterion 4 of 10 CFR 50.36(c)(2)(ii). In its application, the licensee stated that the boration system components that function to inject borated water to establish and maintain shutdown margin are not risk significant in the current Waterford Probabilistic Safety Assessment for the modes for which the respective TSs are applicable. The licensee stated that it has performed a review of industry operating experience that did not identify any examples where the boration system has had a significant adverse effect on public health and safety. The NRC staff determined that because the boration systems related to TSs 3.1.2.1 through 3.1.2.8 are not SSCs for which operating experience or probabilistic risk assessment has shown to be significant to public health and safety, TSs 3.1.2.1 through 3.1.2.8 do not meet Criterion 4 of 10 CFR 50.36(c)(2)(ii).

Comparison to the Split Report and STSs

In addition to the above evaluation, the NRC staff compared the licensee's proposed changes to the NRC's letter dated May 9, 1988 (i.e., the "Split Report"), which identified LCOs that must be retained in STS and LCOs that could be removed from the TSs. The NRC staff confirmed that the LCOs identified in the licensee's proposed change are consistent with the LCOs identified in the split report for no longer meriting inclusion in TSs and that they could be relocated to a licensee-controlled program, such as the TRM. The NRC staff also notes that the TSs that the licensee proposed to be relocated are not included in NUREG-1432, Volume 1, Revision 4.

3.2 Revised TS 3/4.4.3.2, "Auxiliary Spray"

In the supplement dated April 26, 2021, the licensee determined that the TS 3/4.1.2 equipment, which provides a support function for the auxiliary pressurizer spray system, should be retained in the TSs, and relocated to TS 3/4.4.3.2. The specific changes to this TS are reviewed as follows:

The licensee proposed changing the title from "AUXILIARY SPRAY" to "AUXILIARY PRESSURIZER SPRAY," in order to better describe the safety function. The NRC staff finds that this change is editorial in nature and acceptable.

The existing TS LCO 3.4.3.2 requires that both auxiliary spray valves shall be Operable. However, in addition to the spray valves, other equipment is necessary for the system to perform its safety function. The proposed LCO, included in Section 2.2 of this safety evaluation, lists the required equipment.

Item a. would be retained from the existing LCO 3.4.3.2. Items b. and c., would be relocated from LCO 3.1.2.2. Item d. would be relocated from LCO 3.1.2.4 and Item e. would be relocated from LCO 3.1.2.8. For Item e., the original LCO stated that the tank contents be in accordance with Figure 3.1-1; however, this figure would be removed as it is based on the reactivity control function of the BAMT. As stated by the licensee, from an accident mitigation perspective, the BAMT is needed at the immediate start of an SGTR event, in order to ensure there is no delay in starting depressurization, and that once the BAMT is depleted, the charging suction may be manually realigned from the control room to the refueling water storage pool, which is covered under current TS 3/4.5.4, "Refueling Water Storage Pool." The licensee stated that the proposed volume requirement for the BAMT of 58 percent (i.e., 6,875 gallons, which corresponds to the minimum volume requirement in TS Table 3.1-1) bounds the required volume of 2,612 gallons that is necessary to support the auxiliary pressurizer spray system following a SGTR event.

The NRC staff finds that the proposed LCO 3.4.3.2 is acceptable because it includes the appropriate equipment (water source, flow paths, pumps, and spray valves) necessary for the auxiliary pressurizer spray system to perform its safety function.

The original Actions associated with LCO 3.4.3.2 are based on one or no spray valves being Operable. The proposed Actions would replace "valves" with "trains." The NRC staff finds this acceptable as it is more appropriate to consider a train being OPERABLE versus a valve.

The first two existing SRs (i.e., SRs 4.4.3.2.1 and 4.4.3.2.2), would be retained with a minor editorial change to SR 4.4.3.2.1 to make "valve" plural. The existing SRs 4.1.2.2.a and 4.1.2.2.b, related to flow paths, would be relocated verbatim to new SRs 4.4.3.2.3 and 4.4.3.2.4.

The existing SR 4.1.2.4, related to the charging pumps, would be relocated verbatim to new SR 4.4.3.2.5. The existing SR 4.1.2.6, related to the BAMPs, would be relocated verbatim to new SR 4.4.3.2.6. The existing SR 4.1.2.8.b.2 would be relocated to new SR 4.4.3.2.7. For this SR, the wording would be changed from "In accordance with the Surveillance Frequency Control Program by: Verifying the contained borated water volume of the water source" to "Verify boric acid makeup tank water volume in accordance with the Surveillance Frequency Control Program." The existing SR 4.1.2.8.a, related to the water source, would be relocated to new SR 4.4.3.2.8. The wording on this would be changed to move "in accordance with the Surveillance Frequency Control Program" from the beginning to the end of the sentence and is considered an editorial change.

The NRC staff finds that the licensee relocated the appropriate SRs associated with the revised TS 3/4.4.3.2, "Auxiliary Pressurizer Spray."

3.3 Relocation of TSs to the TRM

In its application dated September 20, 2019, the licensee requested that TS 3.1.2.1 through TS 3.1.2.8, with their LCOs, associated actions, SRs, figures, and associated TS Bases be relocated to the TRM. The licensee stated that it was not proposing any other change to these specifications, other than the relocation. The licensee stated that the TRM is part of the UFSAR and that any change to these systems will be reviewed in accordance with 10 CFR 50.59 to determine if the change requires prior NRC review and approval. In its April 26, 2021, supplement, the licensee revised the original LAR and proposed to relocate, in TS 3/4.4.3.2, the boration systems equipment that is required to support the operability of the auxiliary pressurizer spray system, and relocate the remaining boration systems TSs to the TRM, as originally proposed.

The regulations in 10 CFR 50.59 require the licensee to determine whether any changes to the requirements relocated in the UFSAR will need prior NRC approval by a license amendment. An NRC-approved license amendment is required if the changes to the UFSAR may result in an increase in occurrence or frequency of accidents, or a failure or malfunction of an SSC. This provides reasonable assurance that information necessary to the operators will not be inadvertently removed from the UFSAR and related procedures without required analyses. The NRC staff determined that the proposed changes are adequate to ensure the affected equipment of the removed TSs is adequately controlled to reliably perform its intended functions.

3.4 Technical Evaluation Conclusion

Based on the evaluation above, the NRC staff concluded that the items being proposed for relocation to the TRM do not satisfy the four criteria in 10 CFR 50.36(c)(2)(ii). Therefore, the proposed change to relocate these TSs to the TRM is acceptable. All changes to the TRM are evaluated pursuant to 10 CFR 50.59 and, therefore, any changes to the relocated TSs would still be appropriately evaluated pursuant to NRC regulatory controls.

The NRC staff has found that the proposed changes to TS 3/4.4.3.2 include the appropriate LCOs, actions and SRs to ensure the continued ability of the auxiliary pressurizer spray system to mitigate a design-basis accident.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Louisiana State official was notified of the proposed issuance of the amendment on August 27, 2021. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes requirements with respect to installation or use of facility components 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 NSHC, published in the *Federal Register* on May 18, 2021 (86 FR 26954), 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.

Principal Contributors: J. Wilson
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Date: September 15, 2021

SUBJECT: WATERFORD STEAM ELECTRIC STATION, UNIT 3 - ISSUANCE OF AMENDMENT NO. 261 REGARDING REMOVAL AND RELOCATION OF BORATION SYSTEM TECHNICAL SPECIFICATIONS (EPID L-2019-LLA-0203) DATED SEPTEMBER 15, 2021

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