



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

May 14, 2021

Mr. James Barstow
Vice President, Nuclear Regulatory
Affairs and Support Services
Tennessee Valley Authority
1101 Market Street, LP 4A-C
Chattanooga, TN 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2 - ISSUANCE OF
AMENDMENT NOS. 146 AND 52 TO ADOPT TSTF-490, "DELETION OF E BAR
DEFINITION AND REVISION TO RCS SPECIFIC ACTIVITY TECH SPEC"
(EPID L-2020-LLA-0191)

Dear Mr. Barstow:

The U.S. Nuclear Regulatory Commission (NRC, Commission) has issued the enclosed Amendment No. 146 to Facility Operating License No. NPF-90 and Amendment No. 52 to Facility Operating License No. NPF-96 for the Watts Bar Nuclear Plant (Watts Bar), Units 1 and 2, respectively. These amendments are in response to your application dated August 18, 2020, as supplemented by letter dated January 22, 2021.

The amendments revise Watts Bar, Units 1 and 2, Technical Specification (TS) 3.4.16, "RCS Specific Activity," to replace the current limit on reactor coolant system (RCS) gross specific activity with a new limit on RCS noble gas specific activity. The requested changes are consistent with NRC-approved Technical Specification Task Force (TSTF) Improved Standard TS Change Traveler TSTF-490, "Deletion of E Bar Definition and Revision to RCS Specific Activity Tech Spec," Revision 0.

J. Barstow

- 2 -

A copy of our related safety evaluation is also enclosed. Notice of issuance will be included in the Commission's monthly *Federal Register* notice.

Sincerely,

/RA/

Kimberly J. Green, Senior Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-390 and 50-391

Enclosures:

1. Amendment No. 146 to NPF-90
2. Amendment No. 52 to NPF-96
3. Safety Evaluation

cc: Listserv



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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-390

WATTS BAR NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 146
License No. NPF-90

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Tennessee Valley Authority (TVA, the licensee) dated August 18, 2020, as supplemented by letter dated January 22, 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 Facility Operating License No. NPF-90 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. 146 and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. TVA shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION

David J. Wrona, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Operating License
and Technical Specifications

Date of Issuance: May 14, 2021

ATTACHMENT TO AMENDMENT NO. 146

WATTS BAR NUCLEAR PLANT, UNIT 1

FACILITY OPERATING LICENSE NO. NPF-90

DOCKET NO. 50-390

Replace page 3 of Facility Operating License No. NPF-90 with the attached revised page 3.

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change.

Remove Pages

1.1-2
1.1-3
3.4-39
3.4-40
3.4-41

Insert Pages

1.1-2
1.1-3
3.4-39
3.4-40
3.4-41

- (4) TVA, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required, any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis, instrument calibration, or other activity associated with radioactive apparatus or components; and
- (5) TVA, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This 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

TVA is authorized to operate the facility at reactor core power levels not in excess of 3459 megawatts thermal.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A as revised through Amendment No. 146 and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. TVA shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Safety Parameter Display System (SPDS) (Section 18.2 of SER Supplements 5 and 15)

Prior to startup following the first refueling outage, TVA shall accomplish the necessary activities, provide acceptable responses, and implement all proposed corrective actions related to having the Watts Bar Unit 1 SPDS operational.

(4) Vehicle Bomb Control Program (Section 13.6.9 of SSER 20)

During the period of the exemption granted in paragraph 2.D.(3) of this license, in implementing the power ascension phase of the approved initial test program, TVA shall not exceed 50% power until the requirements of 10 CFR 73.55(c)(7) and (8) are fully implemented. TVA shall submit a letter under oath or affirmation when the requirements of 73.55(c)(7) and (8) have been fully implemented.

1.1 Definitions (continued)

CHANNEL CHECK	A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.
CHANNEL OPERATIONAL TEST (COT)	A COT shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify the OPERABILITY of required alarm, interlock, display, and trip functions. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints so that the setpoints are within the required range and accuracy.
CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or other reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the initial and current reload cycle. These cycle specific parameter limits shall be determined for the initial and each reload cycle in accordance with Specification 5.9.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose when inhaled as the combined activities of iodine isotopes I-131, I-132, I-133, I-134, and I-135 actually present. The determination of DOSE EQUIVALENT I-131 shall be performed using thyroid dose conversion factors from Table E-7 of Regulatory Guide 1.109, Rev. 1, NRC, 1977.
DOSE EQUIVALENT XE-133	DOSE EQUIVALENT XE-133 shall be that concentration of Xe-133 (microcuries per gram) that alone would produce the same acute dose to the whole body as the combined activities of noble gas nuclides Kr-85m, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138 actually present. If a specific noble gas nuclide is not detected, it should be assumed to be present at the minimum detectable activity. The determination of DOSE EQUIVALENT XE-133 shall be performed using effective dose conversion factors for air submersion listed in Table III.1 of EPA Federal Guidance Report No. 12, 1993, "External Exposure to Radionuclides in Air, Water, and Soil."

(continued)

1.1 Definitions (continued)

ENGINEERED SAFETY
FEATURE (ESF) RESPONSE
TIME

The ESF RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and the methodology for verification have been previously reviewed and approved by the NRC, or the components have been evaluated in accordance with an NRC approved methodology.

L_a

The maximum allowable primary containment leakage rate, L_a , shall be .25% of primary containment air weight per day at the calculated peak containment pressure (P_a).

LEAKAGE

LEAKAGE shall be:

- a. Identified LEAKAGE
 - 1. LEAKAGE, such as that from pump seals or valve packing (except reactor coolant pump (RCP) seal water injection or leakoff), that is captured and conducted to collection systems or a sump or collecting tank;
 - 2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be pressure boundary LEAKAGE; or

(continued)

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 RCS Specific Activity

LCO 3.4.16 RCS DOSE EQUIVALENT I-131 and DOSE EQUIVALENT XE-133 specific activity shall be within limits.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. DOSE EQUIVALENT I-131 > 0.265 μCi/gm.</p>	<p>-----NOTE----- LCO 3.0.4.c is applicable. -----</p> <p>A.1 Verify DOSE EQUIVALENT I-131 \leq 14 μCi/gm</p> <p><u>AND</u></p> <p>A.2 Restore DOSE EQUIVALENT I-131 to within limit.</p>	<p>Once per 4 hours</p> <p>48 hours</p>
<p>B. DOSE EQUIVALENT XE-133 > 1200 μCi/gm.</p>	<p>-----NOTE----- LCO 3.0.4.c is applicable. -----</p> <p>B.1 Restore DOSE EQUIVALENT XE-133 to within limit.</p>	<p>48 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met. <u>OR</u> DOSE EQUIVALENT I-131 > 14 µCi/gm.	C.1 Be in MODE 3.	6 hours
	<u>AND</u> C.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.16.1 -----NOTE----- Only required to be performed in MODES 1, 2, and 3 with $T_{avg} \geq 500^{\circ}\text{F}$. ----- Verify reactor coolant DOSE EQUIVALENT XE-133 specific activity $\leq 1200 \mu\text{Ci/gm}$.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.16.2	Verify reactor coolant DOSE EQUIVALENT I-131 specific activity $\leq 0.265 \mu\text{Ci/gm}$.	<p>In accordance with the Surveillance Frequency Control Program</p> <p><u>AND</u></p> <p>Between 2 and 6 hours after a THERMAL POWER change of $\geq 15\%$ RTP within a 1 hour period</p>



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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-391

WATTS BAR NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 52
License No. NPF-96

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Tennessee Valley Authority (TVA, the licensee) dated August 18, 2020, as supplemented by letter dated January 22, 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 Facility Operating License No. NPF-96 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. 52 and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. TVA shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

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

FOR THE NUCLEAR REGULATORY COMMISSION

David J. Wrona, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Operating License
and Technical Specifications

Date of Issuance: May 14, 2021

ATTACHMENT TO AMENDMENT NO. 52
WATTS BAR NUCLEAR PLANT, UNIT 2
FACILITY OPERATING LICENSE NO. NPF-96
DOCKET NO. 50-391

Replace page 3 of Facility Operating License No. NPF-96 with the attached revised page 3.

Replace the following pages of the Appendix A Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change.

Remove Pages

1.1-2
1.1-3
3.4-35
3.4-36
3.4-37

Insert Pages

1.1-2
1.1-3
3.4-35
3.4-36
3.4-37

C. The 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

TVA is authorized to operate the facility at reactor core power levels not in excess of 3459 megawatts thermal.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A as revised through Amendment No. 52 and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. TVA shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) TVA shall implement permanent modifications to prevent overtopping of the embankments of the Fort Loudon Dam due to the Probable Maximum Flood by June 30, 2018.

(4) PAD4TCD may be used to establish core operating limits until the WBN Unit 2 steam generators are replaced with steam generators equivalent to the existing steam generators at WBN Unit 1. FULL SPECTRUM LOCA Methodology shall be implemented when the WBN Unit 2 steam generators are replaced with steam generators equivalent to the existing steam generators at WBN Unit 1.

(5) By December 31, 2019, the licensee shall report to the NRC that the actions to resolve the issues identified in Bulletin 2012-01, "Design Vulnerability in Electrical Power System," have been implemented.

(6) The licensee shall maintain in effect the provisions of the physical security plan, security personnel training and qualification plan, and safeguards contingency plan, and all amendments made pursuant to the authority of 10 CFR 50.90 and 50.54(p).

(7) TVA shall fully implement and maintain in effect all provisions of the Commission approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The TVA approved CSP was discussed in NUREG-0847, Supplement 28, as amended by changes approved in License Amendment No. 7.

(8) TVA shall implement and maintain in effect all provisions of the approved fire protection program as described in the Fire Protection Report for the facility, as described in NUREG-0847, Supplement 29, subject to the following provision:

1.1 Definitions (continued)

CHANNEL CHECK	A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.
CHANNEL OPERATIONAL TEST (COT)	A COT shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify the OPERABILITY of required alarm, interlock, display, and trip functions. The COT shall include adjustments, as necessary, of the required alarm, interlock, and trip setpoints so that the setpoints are within the required range and accuracy.
CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or other reactivity control components, within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the initial and current reload cycle. These cycle specific parameter limits shall be determined for the initial and each reload cycle in accordance with Specification 5.9.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose when inhaled as the combined activities of iodine isotopes I-131, I-132, I-133, I-134, and I-135 actually present. The determination of DOSE EQUIVALENT I-131 shall be performed using thyroid dose conversion factors from Table E-7 of Regulatory Guide 1.109, Rev. 1, NRC, 1977.

1.1 Definitions (continued)

DOSE EQUIVALENT XE-133	DOSE EQUIVALENT XE-133 shall be that concentration of Xe-133 (microcuries per gram) that alone would produce the same acute dose to the whole body as the combined activities of noble gas nuclides Kr-85m, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138 actually present. If a specific noble gas nuclide is not detected, it should be assumed to be present at the minimum detectable activity. The determination of DOSE EQUIVALENT XE-133 shall be performed using effective dose conversion factors for air submersion listed in Table III.1 of EPA Federal Guidance Report No. 12, 1993, "External Exposure to Radionuclides in Air, Water, and Soil."
ENGINEERED SAFETY FEATURE (ESF) RESPONSE TIME	The ESF RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF actuation setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays, where applicable. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured. In lieu of measurement, response time may be verified for selected components provided that the components and the methodology for verification have been previously reviewed and approved by the NRC, or the components have been evaluated in accordance with an NRC approved methodology.
L_a	The maximum allowable primary containment leakage rate, L_a , shall be .25% of primary containment air weight per day at the calculated peak containment pressure (P_a).

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.16 RCS Specific Activity

LCO 3.4.16 RCS DOSE EQUIVALENT I-131 and DOSE EQUIVALENT XE-133 specific activity shall be within limits.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. DOSE EQUIVALENT I-131 > 0.265 $\mu\text{Ci/gm}$.</p>	<p>-----NOTE----- LCO 3.0.4.c is applicable. -----</p> <p>A.1 Verify DOSE EQUIVALENT I-131 $\leq 14 \mu\text{Ci/gm}$.</p> <p><u>AND</u></p> <p>A.2 Restore DOSE EQUIVALENT I-131 to within limit.</p>	<p>Once per 4 hours</p> <p>48 hours</p>
<p>B. DOSE EQUIVALENT XE-133 > 1200 $\mu\text{Ci/gm}$.</p>	<p>-----NOTE----- LCO 3.0.4.c is applicable. -----</p> <p>B.1 Restore DOSE EQUIVALENT XE-133 to within limit.</p>	<p>48 hours</p>

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition A or B not met. <u>OR</u> DOSE EQUIVALENT I-131 > 14 $\mu\text{Ci/gm}$.	C.1 Be in MODE 3. <u>AND</u>	6 hours
	C.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.16.1 -----NOTE----- Only required to be performed in MODES 1, 2, and 3 with $T_{\text{avg}} \geq 500^\circ\text{F}$. ----- Verify reactor coolant DOSE EQUIVALENT XE-133 specific activity $\leq 1200 \mu\text{Ci/gm}$.	In accordance with the Surveillance Frequency Control Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.4.16.2	Verify reactor coolant DOSE EQUIVALENT I-131 specific activity $\leq 0.265 \mu\text{Ci/gm}$.	In accordance with the Surveillance Frequency Control Program <u>AND</u> Between 2 hours and 6 hours after a THERMAL POWER change of $\geq 15\%$ RTP within a 1 hour period



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 146 AND 52

TO FACILITY OPERATING LICENSE NOS. NPF-90 AND NPF-96

TENNESSEE VALLEY AUTHORITY

WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-390 AND 50-391

1.0 INTRODUCTION

By letter dated August 18, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20234A241), as supplemented by letter dated January 22, 2021 (ADAMS Accession No. ML21022A436), the Tennessee Valley Authority (TVA, the licensee), submitted a license amendment request (LAR) to revise the Watts Bar Nuclear Plant (Watts Bar), Units 1 and 2, Technical Specifications (TSs). The requested changes would replace the current TS limit for reactor coolant system (RCS) gross specific activity with a new limit for RCS noble gas specific activity. The noble gas specific activity limit would be based on a new dose equivalent Xenon (Xe)-133 definition that would replace the current E-Bar (\bar{E}) average disintegration energy definition. The proposed changes are consistent with Technical Specification Task Force (TSTF) Improved Standard Technical Specifications Change Traveler TSTF-490, "Deletion of E Bar Definition and Revision to RCS Specific Activity Tech Spec," Revision 0, (ADAMS Accession No. ML052630462).

The supplement dated January 22, 2021, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the U.S. Nuclear Regulatory Commission (NRC, the Commission) staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on October 6, 2020 (85 FR 63150).

2.0 REGULATORY EVALUATION

The NRC staff evaluated the impact of the proposed changes as they relate to the radiological consequences of affected design-basis accidents (DBAs) that use the RCS inventory as the source term. The source term assumed in radiological analyses should be based on the activity associated with the projected fuel damage or the maximum RCS TS values, whichever maximizes the radiological consequences. The TS limits on RCS specific activity ensure that the offsite doses are appropriately limited for accidents that are based on releases from the RCS with no significant amount of fuel damage.

The steam generator tube rupture (SGTR) accident and the main steam line break (MSLB) accident typically do not result in fuel damage and, therefore, the radiological consequence analyses are generally based on the release of primary coolant activity at maximum TS limits. For accidents that result in fuel damage, the additional dose contribution from the initial activity in the RCS is not normally evaluated, as it is insignificant in relation to the dose consequence resulting from the release of fission products from the damaged fuel.

The NRC staff's evaluation is based upon the following regulations, regulatory guides, and standards:

- Section 50.36(a)(1) of Title 10 of the *Code of Federal Regulations* (10 CFR) requires an applicant for an operating license to include in the application proposed TSs in accordance with the requirements of 10 CFR 50.36 and include a "summary statement of the bases or reasons for such specifications, other than those covering administrative controls." However, per 10 CFR 50.36(a)(1), these TS bases "shall not become part of the technical specifications."
- Section 50.36(b) of 10 CFR requires that each license authorizing reactor operation include TSs derived from the analyses and evaluation included in the safety analysis report and amendments thereto.
- Section 50.36(c) of 10 CFR requires that TSs include certain items. Per 10 CFR 50.36(c)(2)(i), the TSs must include limiting conditions for operation (LCOs), which are the lowest functional capability or performance levels of equipment required for safe operation of the facility. That provision also requires that when an LCO of a nuclear reactor is not met, the licensee must shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met.
- Section 50.36(c)(3) of 10 CFR requires that TSs include surveillance requirements (SRs), which are 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 LCOs will be met.
- NUREG-0800, "Standard Review Plan [SRP] for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition," Section 16, "Technical Specifications," Revision 3, provides guidance for the review of TSs.

The NRC staff also considered relevant information in NUREG-0847, "Safety Evaluation Report Related to the Operation of Watts Bar Nuclear Plant Units 1 and 2" (<https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr0847/index.html>), and Chapter 15 of the Watts Bar Dual Unit Updated Final Safety Analysis Report (UFSAR) (ADAMS Accession No. ML19176A135), which describe the DBAs and evaluation of their radiological consequences.

3.0 TECHNICAL EVALUATION

3.1 Background

The primary coolant specific activity level is used in DBA analyses to determine the radiological consequences of accidents that involve the release of primary coolant activity with no

substantial amount of fuel damage. For events that also include significant amounts of fuel damage, the contribution from the initial activity in the primary coolant is considered insignificant and is not normally evaluated.

The maximum allowable primary coolant specific activity is governed by TSs. Due to the importance of iodine in the dose consequence analyses, a separate limit is specified for the iodine isotopes. This limit is specified in units of dose equivalent iodine (DEI), which is the normalized quantity of iodine-131 that would result in the same dose consequence as the combination of the major isotopes of iodine present in the primary coolant. The TS for DEI includes both an equilibrium long-term limit, as well as a higher maximum allowable short-term limit to account for iodine spiking.

The Watts Bar TS definition of DEI is based on thyroid dose conversion factors (DCFs). The numerical determination of DEI is dependent on the relative quantities of the isotopes of iodine present in the RCS and on the DCFs used in the calculation. The TS definition of DEI lists the acceptable source for the thyroid DCFs to be used in the determination of DEI. The DCFs used in the determination of DEI are consistent with the DCFs used in the dose consequence analyses.

A second limit is used to govern the non-iodine radioisotopes in the RCS. This limit has traditionally been based on an evaluation of the average beta and gamma disintegration energy of the total non-iodine activity in the RCS, which is referred to as \bar{E} . The Watts Bar TSs define \bar{E} as the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration for isotopes, other than iodines, with half-lives greater than 15 minutes, making up at least 95 percent of the total non-iodine activity in the coolant. The RCS non-iodine specific activity limit is then expressed as the quantity 100 divided by \bar{E} in units of microcuries per gram ($\mu\text{Ci/gm}$). In DBA dose consequence analyses based on releases from the RCS with no significant fuel damage, the concentration of noble gas activity in the coolant is assumed to be that level associated with 1 percent fuel clad defects. Operating experience has indicated that depending on the isotopes used to calculate \bar{E} and the actual degree of fuel clad defects, the routinely calculated value of \bar{E} may not be an effective indicator of the level of noble gas activity relative to the levels used in the DBA dose consequence analyses on which the limit is based.

3.2 Technical Evaluation of Proposed TSTF-490 TS Changes

3.2.1 Deletion of the Definition of \bar{E} – AVERAGE DISINTEGRATION ENERGY and the Addition of a New Definition for DOSE EQUIVALENT XE-133 (DEX)

The licensee proposed to delete the following TS Definition of \bar{E} - Average Disintegration Energy in the Watts Bar TSs:

\bar{E} shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies (in MeV) per disintegration for isotopes, other than iodines, with half lives > 15 minutes, making up at least 95% of the total non-iodine activity in the coolant.

The licensee proposed to add the following definition for DEX to the Watts Bar TSs:

DOSE EQUIVALENT XE-133 shall be that concentration of Xe-133 (microcuries per gram) that alone would produce the same acute dose to the whole body as the combined activities of noble gas nuclides Kr-85m, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138 actually present. If a specific noble gas nuclide is not detected, it should be assumed to be present at the minimum detectable activity. The determination of DOSE EQUIVALENT XE-133 shall be performed using effective dose conversion factors for air submersion listed in Table III.1 of EPA Federal Guidance Report No. 12, 1993, "External Exposure to Radionuclides in Air, Water, and Soil."

The new definition for DEX proposed in TSTF-490, and adopted by Watts Bar, will be performed in a similar manner to that currently used in determining DEI, except that the calculation of DEX is based on the acute dose to the whole body and considers the noble gases Kr-85m, Kr-85, Kr-87, Kr-88, Xe-131m, Xe-133m, Xe-133, Xe-135m, Xe-135, and Xe-138, which are significant in terms of contribution to whole body dose. Some noble gas isotopes are not included due to low concentration, short half-life, or small DCF. The calculation of DEX would use either the average gamma disintegration energies for the nuclides or the effective DCFs from Table III.1 of U.S. Environmental Protection Agency (EPA) Federal Guidance Report No. 12. Using this approach, the limit on the amount of noble gas activity in the primary coolant would not fluctuate with variations in the calculated values of \bar{E} . If a specified noble gas nuclide is not detected, the new definition states that it should be assumed that the nuclide is present at the minimum detectable activity. This will result in a conservative calculation of DEX.

When \bar{E} is determined using a design-basis approach, in which it is assumed that 1.0 percent of the power is being generated by fuel rods having cladding defects, and it is also assumed that there is no removal of fission gases from the letdown flow, the value of \bar{E} is dominated by Xe-133. The other nuclides have relatively small contributions. However, during normal plant operation, there are typically only a small amount of fuel clad defects, and the radioactive nuclide inventory can become dominated by tritium and corrosion and/or activation products, resulting in the determination of a value of \bar{E} that is very different than would be calculated using the design-basis approach. Because of this difference, the accident dose analyses become disconnected from plant operation and the LCOs become essentially meaningless. It also results in a TS limit that can vary during operation, as different values for \bar{E} are determined.

This proposed change will implement an LCO that is consistent with the whole body radiological consequence analyses, which is sensitive to the noble gas activity in the primary coolant but not to other non-gaseous activity currently captured in the \bar{E} definition. TS LCO 3.4.16 specifies the limit for reactor coolant gross specific activity as $100/\bar{E}$ $\mu\text{Ci}/\text{gm}$. The current \bar{E} definition includes radioisotopes that decay by the emission of both gamma and beta radiation. Condition C of TS LCO 3.4.16 would rarely, if ever, be entered for exceeding $100/\bar{E}$, since the calculated value is very high (the denominator is very low) if beta emitters such as tritium are included in the determination, as required by the \bar{E} definition.

The NRC finds the licensee's proposed deletion of the above-stated definition for \bar{E} and addition of a new definition for DEX in TS Section 1.1, "Definitions," acceptable from a radiological dose perspective, since it will result in an LCO that more closely relates the non-iodine RCS activity limits to the dose consequence analyses which form their bases.

3.2.2 Revision of TS 3.4.16, "RCS Specific Activity"

The licensee proposed to modify TS LCO 3.4.16 to specify noble gas specific activity in terms of DEX, similar to how iodine is expressed in terms of DEI. Currently, the limiting indicators are not explicitly identified in the LCOs but are instead defined in current Condition C and SR 3.4.16.1 for gross specific activity, and in current Condition A, and SR 3.4.16.2 for DEI.

The proposed change to the LCO states, "RCS DOSE EQUIVALENT I-131 and DOSE EQUIVALENT XE-133 specific activity shall be within limits." The proposed change incorporates the new DEX criteria and ensures that the specific limits for both DEI and DEX are consistent with the current SGTR and MSLB radiological consequence analyses; therefore, the NRC staff finds this change acceptable from a dose consequence perspective.

The NRC staff notes that the licensee did not change Condition A of TS 3.4.16. The licensee's existing (and proposed) Condition A is "DOSE EQUIVALENT I-131 > 0.265 $\mu\text{Ci/gm}$." TSTF-490 suggests that the condition read "DOSE EQUIVALENT I-131 not within limit," and deletes the numerical limit. The licensee's proposal is a variation to TSTF-490. The NRC staff reviewed this variation and finds it acceptable because it provides more clarity for Condition A than the TSTF while retaining the necessary requirement.

3.2.3 TS 3.4.16 Applicability Revision

The applicability of TS 3.4.16, "RCS Specific Activity," is currently limited to MODES 1, 2 and in MODE 3 when the RCS average temperature (T_{avg}) exceeds 500 °F. The licensee proposed to extend the applicability of TS 3.4.16 to include all portions of MODES 3 and 4. The NRC staff considers it appropriate for the LCO to apply during all portions of MODES 1 through 4 to limit the potential radiological consequences of an SGTR and MSLB that may occur during these modes.

The licensee did not propose to extend the applicability of TS 3.4.16 to MODES 5 and 6. During MODES 5 and 6, T_{avg} is ≤ 200 °F and the steam generators are not used for decay heat removal because steam cannot be produced. The RCS and steam generators are depressurized and primary to secondary leakage is minimal. Since steam will not be produced when T_{avg} is ≤ 200 °F, the potential to release significant quantities of RCS inventory is greatly reduced. During MODES 5 and 6, doses from either a postulated SGTR or MSLB would not be significant and the monitoring of RCS specific activity during MODES 5 and 6 is not necessary. Therefore, the NRC staff concludes that the applicability of TS 3.4.16 to MODES 1 through 4, as proposed by the licensee, is acceptable from a dose consequence perspective.

3.2.4 TS 3.4.16, Condition B Revision to Include Required Action for DEX Limit

The licensee proposed to replace the current TS 3.4.16, Condition B, "Gross specific activity of the reactor coolant not within limit," with proposed Condition B, "DOSE EQUIVALENT XE-133 > 1200 $\mu\text{Ci/gm}$." This change is consistent with the change to the TS 3.4.16 LCO, which requires the DEX specific activity to be within limits as discussed above. The site-specific limit of 1200 $\mu\text{Ci/gm}$ DEX is established based on the maximum accident analysis RCS activity corresponding to 1 percent fuel clad defects with sufficient margin to accommodate the exclusion of those isotopes based on low concentration, short half-life, or small DCFs. The primary purpose of the TS 3.4.16 LCO on RCS specific activity and its associated conditions is to support the radiological dose consequence analyses for DBAs. The whole body dose is

primarily dependent on the noble gas activity, not the non-gaseous activity currently captured in the E-Bar definition.

The proposed change to Condition B is a variation to TSTF-490, similar to the one discussed above in Section 3.2.2 for Condition A. Instead of using the existing Condition B wording, "Gross specific activity of the reactor coolant not within limit," or the TSTF-490 wording, "DOSE EQUIVALENT XE-133 not within limit," the licensee proposed an alternative, "DOSE EQUIVALENT XE-133 > 1200 $\mu\text{Ci/gm}$." The NRC staff reviewed this variation and finds it acceptable because it provides more clarity for Condition B than the TSTF while retaining the necessary requirement.

The proposed completion time for revised TS 3.4.16 Required Action B will require restoration of DEX to within limit in 48 hours, which is consistent with TSTF-490.

Watts Bar's design-basis reactor coolant inventory corresponds to equilibrium operation with 1 percent failed fuel, consistent with the TSTF-490. DCFs for air submersion are based on EPA Federal Guidance Report No. 12. The licensee provides these values in LAR Table 1, "Calculation of DEX Limit for WBN." The NRC staff reviewed the DEX information provided in Table 1 and finds the approach to be in accordance with that provided in TSTF-490. The staff notes that while following the methodology results in a DEX limit of 1211 $\mu\text{Ci/gm}$, the licensee proposed a slightly lower (more restrictive) DEX limit of 1200 $\mu\text{Ci/gm}$. The total dose consequences for the SGTR and MSLB accidents are determined using the DEX values provided in Table 1, along with the appropriate pre-incident iodine spike and coincident iodine spike values.

In performing independent calculations to confirm that the dose criteria specified in the UFSAR continue to be met, as a result of the proposed TS changes, the NRC staff identified a large discrepancy between the flashed mass released from the steam generators during a SGTR analysis between Units 1 and 2, in UFSAR Table 15.5-18, "Parameters Used in Steam Generator Tube Rupture Analysis." Table 15.5-18 indicated that while Unit 1 has a total primary coolant mass release of 166,200 pound-mass (lbm) and of that total a flashed mass release of 9,189 lbm, Unit 2 has a total primary coolant mass release of 191,400 lbm and a flashed mass release of 190,772 lbm. The percentage of mass that flashed to steam in Unit 2, was significantly larger than Unit 1 and much larger than had been identified in other reactors. In addition, it appeared to result in dose results much larger than were identified in UFSAR Table 15.5-19, "Doses from Steam Generator Tube Ruptures." It was unclear to staff that the large flashed value for Unit 2 was correct. As a result, the staff was uncertain that dose criteria would continue to be met with the revised source terms based on the LAR. Therefore, the NRC staff requested that the licensee explain the large flashed mass in Table 15.5-18. In the response to staff requests for additional information (RAI) (ADAMS Accession No. ML21022A436), the licensee clarified that the correct value was 10,077.2 lbm and that the UFSAR will be revised. The revised value is consistent with other reactors and appears consistent with the value assumed in the original SGTR analysis. As a result, the staff found the response to be acceptable. In the RAI, the staff also requested that the licensee clarify its intent based on differences identified between the TS and TS bases markups. As part of the RAI responses, the licensee made several clarifications and addressed several editorial errors in the TS bases to address the staff questions. No errors in the TS markups were identified and the licensee stated that the bases would be corrected.

With the revised flash value for Unit 2, the NRC staff performed independent calculations of the dose consequences of the MSLB and SGTR accidents using the licensee's assumptions for

input to the RADTRAD computer code, and found results to be comparable to the values provided in the UFSAR and within the established limits. As a result, the staff finds the 1200 $\mu\text{Ci/gm}$ limit and the proposed revised TS 3.4.16, Condition B, to be acceptable.

The licensee proposed to include in the required action for new TS 3.4.16, Condition B, a NOTE that permits the use of the provisions of LCO 3.0.4.c. This allowance permits entry into the applicable mode(s) while relying on the required actions. The NRC staff finds this allowance acceptable due to the low probability of an event and the ability to restore transient specific activity excursions while the plant changes modes or power level during power operation.

The licensee proposed to eliminate Required Action B.2 from Condition B. Required Action B.2 requires the unit be in MODE 3 with $T_{\text{avg}} < 500$ °F if Condition B is not met. As discussed below in Section 3.2.5, the licensee proposed to revise TS 3.4.16, Condition C to include required action when failure to meet the required actions of Condition B. The NRC staff concluded that the proposed Required Actions and Completion Times of Condition C are consistent with the proposed applicability and will provide adequate assurance of safe plant operation. Therefore, the elimination of Condition B.2 is acceptable.

3.2.5 TS 3.4.16, Condition C Revision

The licensee proposed to revise TS 3.4.16, Condition C, such that the new Condition C will state, "Required Action and associated Completion Time of Condition A or B not met." This is consistent with the changes made to Condition B. The proposed change to TS 3.4.16, Required Action C requires the plant to be in MODE 3 within 6 hours and adds a new Required Action C.2, which requires the plant to be in MODE 5 within 36 hours. These changes are consistent with the changes made to the TS 3.4.16 applicability. The revised TS 3.4.16 LCO is applicable throughout all of MODES 1 through 4 to limit the potential radiological consequences of an SGTR or MSLB that may occur during these modes. In MODES 5 and 6, the steam generators are not used for decay heat removal, the RCS and steam generators are depressurized, and primary to secondary leakage is minimal. Therefore, the NRC staff finds that monitoring RCS specific activity during MODES 5 and 6 is not required.

The licensee proposed a Completion Time (CT) of 36 hours for the plant to reach MODE 5. The NRC staff finds that the CT is reasonable, based on operating experience, to reach MODE 5 from full power conditions in an orderly manner and without challenging plant systems. The value of 36 hours is consistent with other TSs, which have a CT to reach MODE 5. These required actions require an orderly plant shutdown when DEI or DEX exceeds the short-term spiking limit and, therefore, the NRC staff finds the proposed CT of 36 hours to be acceptable from a dose consequence perspective.

3.2.6 SR 3.4.16.1 Revision to Include Surveillance for DEX

The proposed change revises the current SR 3.4.16.1 for RCS gross specific activity to verify that the site-specific reactor coolant DEX specific activity is less than or equal to 1200 $\mu\text{Ci/gm}$. This change provides an SR for the new LCO limit added to TS 3.4.16 for DEX. The proposed SR 3.4.16.1 requires performing a gamma isotopic analysis as a measure of the noble gas specific activity in accordance with the Surveillance Frequency Control Program (SFCP). The current SR 3.4.16.1 for RCS gross non-iodine specific activity also referred to the SFCP. The SFCP is required under TS 5.7.2.23, which has not changed as part of this LAR. The licensee noted that the application of the SFCP is a variation from TSTF-490 which specifies a frequency of 7 days for this SR. The use of the SFCP for both SR 3.4.16.1 and 3.4.16.2 was evaluated

when the SFCP was adopted by the licensee and the NRC staff finds that it is appropriate for continued use for these SRs. The SR provides an indication of any increase in the noble gas specific activity. The results of the SR on DEX allow proper remedial action to be taken before reaching the LCO limit under normal operating conditions. The NRC staff finds that this change is acceptable from a dose consequence perspective.

The licensee proposed a variation to the Note associated with SR 3.4.16.1. TSTF-490 proposes that the applicability of the SR only be in MODE 1. However, the licensee proposed that the SR be applicable in MODES 1, 2, and 3 with T_{avg} greater than 500 °F. The NRC staff reviewed this variation and finds it acceptable because the proposal is more conservative than the TSTF, and RCS pressure outside these modes may be insufficient to ensure the collection of representative, homogeneous samples for analysis of gaseous isotopes. This is consistent with previous license amendment approvals (e.g., ADAMS Accession No. ML120760079).

3.2.7 Deletion of NOTE to SR 3.4.16.2

Surveillance Requirement 3.4.16.2 requires periodic verification that the RCS DOSE EQUIVALENT I-131 specific activity remains within limits (i.e., $\leq 0.265 \mu\text{C/gm}$). The frequency for this surveillance has not changed and is in accordance with the SFCP, and between 2 hours and 6 hours after a reactor thermal power change of ≥ 15 percent within a 1 hour period. The RCS DOSE EQUIVALENT I-131 specific activity is monitored following fast power changes when RCS iodine activities are likely to peak. As discussed in Section 3.2.6 above, use of the SFCP is a variation from TSTF-490. The use of the SFCP to establish surveillance frequencies for SR 3.4.16.2, in addition to those required following fast power changes, was previously approved and continues to be acceptable.

Surveillance Requirement 3.4.16.2 currently has a NOTE stating that the surveillance is "Only required to be performed in MODE 1." TSTF-490 maintained the NOTE to the SR. As a variation to TSTF-490, and a change from the existing Watts Bar TS, the licensee proposed to delete the NOTE which will make the surveillance applicable during MODES 1 through 4. As previously discussed in this safety evaluation, RCS T_{avg} during plant operations in MODES 1 through 4 is high enough so that steam can be produced and doses from a SGTR and MSLB accident need to be considered. The NRC staff finds that removal of the NOTE in the SR enables monitoring of RCS DOSE EQUIVALENT I-131 during all MODES when SGTR and MSLB accidents need to be considered. This proposed change is more conservative than the existing Watts Bar TS and more conservative than the TSTF-490 recommended change. Therefore, the staff finds removal of the NOTE from SR 3.4.16.2 acceptable.

3.2.8 Deletion of SR 3.4.16.3

The licensee proposed to delete the current SR 3.4.16.3, which requires the determination of \bar{E} . The proposed TS 3.4.16 LCO on RCS specific activity supports the dose analyses for DBAs in which the whole body dose is primarily dependent on the noble gas concentration, not the non-gaseous activity currently captured in the \bar{E} definition. With the elimination of the limit for RCS gross specific activity and the addition of the new LCO limit for noble gas specific activity, this SR to determine \bar{E} is no longer required. The NRC staff finds that this change is acceptable from a dose consequence perspective.

3.3 Summary and Conclusion

The NRC staff has reviewed the proposed changes to delete the definition of \bar{E} , add a new definition for DEX, add a new LCO limit to TS 3.4.16 for DEX, and revise the TS 3.4.16 conditions, required actions, and completion times accordingly. In addition, the NRC staff has reviewed the change in the applicability of TS LCO 3.4.16 to reflect the modes during which the SGTR and MSLB accidents are postulated to occur, the revision of SR 3.4.16.1 to verify DEX is within the prescribed limit, elimination of the NOTE limiting the applicability of SR 3.4.16.2, and the deletion of SR 3.4.16.3.

The NRC staff has determined that the proposed changes will not impact the dose consequences of the applicable DBAs because the proposed changes will limit the RCS noble gas specific activity to ensure consistency with the values assumed in the site-specific DBA radiological consequence analyses. The proposed changes will also limit the potential RCS iodine concentration excursion to the value currently associated with full power operation, which is more restrictive on plant operation than the existing allowable RCS iodine specific activity at lower power levels. Therefore, the NRC staff finds that the proposed TS changes are acceptable from a radiological dose perspective and that the TSs, as revised, will continue to meet the requirements of 10 CFR 50.36.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Tennessee State official was notified of the proposed issuance of the amendment on March 22, 2021. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change SRs. The NRC staff has determined that the amendments involve 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 previously issued a proposed finding that the amendment involves no significant hazards consideration published in the *Federal Register* on October 6, 2020 (85 FR 63150), and there has been no public comment on such finding. Accordingly, the amendments meet 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 amendments.

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.

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Date of Issuance: May 14, 2021

SUBJECT: WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2 - ISSUANCE OF AMENDMENT NOS. 146 AND 52 TO ADOPT TSTF-490, "DELETION OF E BAR DEFINITION AND REVISION TO RCS SPECIFIC ACTIVITY TECH SPEC" (EPID L-2020-LLA-0191) DATED MAY 14, 2021

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