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

June 28, 2017

Mr. J. W. Shea
Vice President, Nuclear Licensing
Tennessee Valley Authority
1101 Market Street, LP 3R-C
Chattanooga, TN 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2 – ISSUANCE OF AMENDMENTS REGARDING ONE-TIME EXTENSION OF TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENTS FOR ALTERNATING CURRENT SOURCES (CAC NOS. MF8481 AND MF8482)

Dear Mr. Shea:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 114 to Facility Operating License No. NPF-90 for Watts Bar Nuclear Plant (Watts Bar), Unit 1, and Amendment No. 12 to Facility Operating License No. NPF-96 for Watts Bar, Unit 2. This amendment is in response to your application dated October 17, 2016, as supplemented by letter dated March 6, 2017.

These amendments revise selected Technical Specification (TS) Surveillance Requirements (SRs) for alternating current electrical sources because of delays in the startup of Watts Bar Unit 2. Specifically, the amendments revise the TSs to permit a one-time extension of the specified 18-month interval for performing the required SRs.

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

Sincerely,

Robert G. Schaaf, Senior Project Manager
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-390

Enclosures:
1. Amendment No. 114 to NPF-90
2. Amendment No. 12 to NPF-96
3. Safety Evaluation

cc w/enclosures: Distribution via 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. 114
License No. NPF-90

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Tennessee Valley Authority (TVA, the licensee) dated October 17, 2016, as supplemented March 6, 2017, 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. 114 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 no later than 30 days from the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Undine Shoop, 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: June 28, 2017

ATTACHMENT TO AMENDMENT NO. 114

WATTS BAR NUCLEAR PLANT, UNIT 1

FACILITY OPERATING LICENSE NO. NPF-90

DOCKET NO. 50-390

Replace Page 3 of Operating License NPF-90 with the attached revised Page 3. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Replace the following page of the Appendix A Technical Specifications with the attached revised page and insert the attached new pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE	INSERT
3.0-4	3.0-4
--	3.0-6
--	3.0-7

(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. 114 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.

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

SR 3.0.1

SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

SR 3.0.2

The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met. In addition, for each of the SRs listed in Table SR 3.0.2-1 the specified Frequency is met if the Surveillance is performed on or before the date listed on Table SR 3.0.2-1. This extension of the test intervals for these SRs is permitted on a one-time basis to be completed no later than November 30, 2017.

For Frequencies specified as "once," the above interval extension does not apply.

If a Completion Time requires periodic performance on a "once per . . ." basis, the above Frequency extension applies to each performance after the initial performance.

Exceptions to this Specification are stated in the individual Specifications.

SR 3.0.3

If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is greater. This delay period is permitted to allow performance of the Surveillance. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

(continued)

Table SR 3.0.2-1		
Surveillance Requirement (SR)	Description of SR Requirement	Frequency Extension Limit
3.8.1.9	Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ 66.75 Hz; b. Within 3 seconds following load rejection, the voltage is ≥ 6555 V and ≤ 7260 V; and c. Within 4 seconds following load rejection, the frequency is ≥ 59.8 Hz and ≤ 60.1 Hz.	11/30/17
3.8.1.10	Verify each DG operating at a power factor ≥ 0.8 and ≤ 0.9 does not trip and voltage is maintained ≤ 8880 V during and following a load rejection of ≥ 3960 kW and ≤ 4400 kW and ≥ 2970 kVAR and ≤ 3300 kVAR	11/30/17
3.8.1.11	Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected shutdown loads through automatic load sequencer, 3. maintains steady state voltage ≥ 6800 V and ≤ 7260 V, 4. maintains steady state frequency ≥ 59.8 Hz and ≤ 60.1 Hz, and 5. supplies permanently connected and auto-connected shutdown loads for ≥ 5 minutes	11/30/17
3.8.1.13	Verify each DG's automatic trips are bypassed on automatic or emergency start signal except: a. Engine overspeed; and b. Generator differential current	11/30/17
3.8.1.16	Verify each DG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power; b. Transfers loads to offsite power source; and c. Returns to ready-to-load operation	11/30/17
3.8.1.18	Verify the time delay setting for each sequenced load block is within limits for each accident condition and non-accident condition load sequence.	11/30/17

Table SR 3.0.2-1		
Surveillance Requirement (SR)	Description of SR Requirement	Frequency Extension Limit
3.8.1.19	Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected emergency loads through load sequencer, 3. achieves steady state voltage: ≥ 6800 V and ≤ 7260 V, 4. achieves steady state frequency ≥ 59.8 Hz and ≤ 60.1 Hz, and 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes.	11/30/17

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. 12
License No. NPF-96

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Tennessee Valley Authority (TVA, the licensee) dated October 17, 2016, as supplemented March 6, 2017, 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. 12 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 no later than 30 days from the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Undine Shoop, 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: June 28, 2017

ATTACHMENT TO AMENDMENT NO. 12

WATTS BAR NUCLEAR PLANT, UNIT 2

FACILITY OPERATING LICENSE NO. NPF-96

DOCKET NO. 50-391

Replace Page 3 of Operating License NPF-96 with the attached revised Page 3. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Replace the following page of the Appendix A Technical Specifications with the attached revised page and insert the attached new pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

REMOVE	INSERT
3.0-4	3.0-4
--	3.0-8
--	3.0-9

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 3411 megawatts thermal.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A as revised through Amendment No. 12 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 for Cycles 1 and 2 only. PAD4TCD may not be used to establish core operating limits for subsequent reload cycles.

(5) By December 31, 2017, 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:

3.0 SURVEILLANCE REQUIREMENT (SR) APPLICABILITY

SR 3.0.1

SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO. Failure to perform a Surveillance within the specified Frequency shall be failure to meet the LCO except as provided in SR 3.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

SR 3.0.2

The specified Frequency for each SR is met if the Surveillance is performed within 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met. In addition, for each of the SRs listed in Table SR 3.0.2-1 the specified Frequency is met if the Surveillance is performed on or before the date listed on Table SR 3.0.2-1. This extension of the test intervals for these SRs is permitted on a one-time basis to be completed no later than November 30, 2017.

For Frequencies specified as "once," the above interval extension does not apply.

If a Completion Time requires periodic performance on a "once per . . ." basis, the above Frequency extension applies to each performance after the initial performance.

Exceptions to this Specification are stated in the individual Specifications.

SR 3.0.3

If it is discovered that a Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the LCO not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified Frequency, whichever is greater. This delay period is permitted to allow performance of the Surveillance. A risk evaluation shall be performed for any Surveillance delayed greater than 24 hours and the risk impact shall be managed.

If the Surveillance is not performed within the delay period, the LCO must immediately be declared not met, and the applicable Condition(s) must be entered.

(continued)

3.0 SR APPLICABILITY (continued)

Table SR 3.0.2-1		
Surveillance Requirement (SR)	Description of SR Requirement	Frequency Extension Limit
3.8.1.9	Verify each DG rejects a load greater than or equal to its associated single largest post-accident load, and: a. Following load rejection, the frequency is ≤ 66.75 Hz; b. Within 3 seconds following load rejection, the voltage is ≥ 6555 V and ≤ 7260 V; and c. Within 4 seconds following load rejection, the frequency is ≥ 59.8 Hz and ≤ 60.1 Hz.	11/30/17
3.8.1.10	Verify each DG operating at a power factor ≥ 0.8 and ≤ 0.9 does not trip and voltage is maintained ≤ 8880 V during and following a load rejection of ≥ 3960 kW and ≤ 4400 kW and ≥ 2970 kVAR and ≤ 3300 kVAR	11/30/17
3.8.1.11	Verify on an actual or simulated loss of offsite power signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected shutdown loads through automatic load sequencer, 3. maintains steady state voltage ≥ 6800 V and ≤ 7260 V, 4. maintains steady state frequency ≥ 59.8 Hz and ≤ 60.1 Hz, and 5. supplies permanently connected and auto-connected shutdown loads for ≥ 5 minutes	11/30/17
3.8.1.12	Verify on an actual or simulated Engineered Safety Feature (ESF) actuation signal each Unit 2 DG auto-starts from standby condition and: a. In ≤ 10 seconds after auto-start and during tests, achieves voltage ≥ 6800 V and frequency ≥ 58.8 Hz; b. After DG fast start from standby conditions the DG achieves steady state voltage ≥ 6800 V and ≤ 7260 V, and frequency ≥ 59.8 Hz and ≤ 60.1 Hz. c. Operates for ≥ 5 minutes; d. Permanently connected loads remain energized from the offsite power system; and e. Emergency loads are energized from the offsite power system.	11/30/17
3.8.1.13	Verify each DG's automatic trips are bypassed on automatic or emergency start signal except: a. Engine overspeed; and b. Generator differential current	11/30/17

3.0 SR APPLICABILITY (continued)

Table SR 3.0.2-1		
Surveillance Requirement (SR)	Description of SR Requirement	Frequency Extension Limit
3.8.1.16	Verify each DG: a. Synchronizes with offsite power source while loaded with emergency loads upon a simulated restoration of offsite power; b. Transfers loads to offsite power source; and c. Returns to ready-to-load operation	11/30/17
3.8.1.17	Verify, DG 2A-A and 2B-B operating in test mode and connected to its bus, an actual or simulated ESF actuation signal overrides the test mode by: a. Returning DG to ready-to-load operation; and b. Automatically energizing the emergency load from offsite power.	11/30/17
3.8.1.18	Verify the time delay setting for each sequenced load block is within limits for each accident condition and non-accident condition load sequence.	11/30/17
3.8.1.19	Verify on an actual or simulated loss of offsite power signal in conjunction with an actual or simulated ESF actuation signal: a. De-energization of emergency buses; b. Load shedding from emergency buses; and c. DG auto-starts from standby condition and: 1. energizes permanently connected loads in ≤ 10 seconds, 2. energizes auto-connected emergency loads through load sequencer, 3. achieves steady state voltage: ≥ 6800 V and ≤ 7260 V, 4. achieves steady state frequency ≥ 59.8 Hz and ≤ 60.1 Hz, and 5. supplies permanently connected and auto-connected emergency loads for ≥ 5 minutes.	11/30/17

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NOS. 114 AND 12

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 October 17, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16291A543), and supplemented by letter dated March 6, 2017 (ADAMS Accession No. ML17065A309), the Tennessee Valley Authority (the licensee) requested changes to the Technical Specifications (TSs) for Watts Bar Nuclear Plant (Watts Bar), Units 1 and 2. The requested changes would revise the TSs to permit a one-time extension of the 18-month interval for performing certain surveillance requirements (SRs) related to alternating current (AC) electrical sources.

The supplement dated March 6, 2017, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on February 28, 2017 (82 FR 12138).

2.0 REGULATORY EVALUATION

System Description

The offsite sources are two independent 161 kiloVolt (kV) transmission lines terminating at the 161 kV switchyard, providing power to the plant via the common station service transformers to the onsite Class 1E distribution system.

The onsite Class 1E AC distribution system supplies electrical power to four power trains, shared between the two units, with each train powered by an independent Class 1E 6.9 kV shutdown board. Power trains 1A and 2A comprise load group A, and power trains 1B and 2B comprise load group B. Two diesel generators (DGs) associated with one load group can provide all safety-related functions to mitigate a loss-of-coolant accident in one unit and safely shut down the opposite unit. Each 6.9 kV shutdown board has two separate and independent offsite sources of power as well as a dedicated onsite DG source. Each A and B train engineered safety feature (ESF) system provides for the minimum safety functions necessary to shut down the plant and maintain it in a safe shutdown condition. Each DG consists of two 16-cylinder engines directly connected to a 6.9 kV generator. The continuous rating of each DG is 4400 kilowatt (kW) at

0.8 power factor, 6.9 kV, 3-phase, and 60 hertz. Each DG also has an additional rating of 4840 kW for 2 hours out of 24 hours.

Applicable Regulatory Requirements

The staff applied the below listed regulatory requirements in its review of this license amendment request (LAR).

The Watts Bar units were designed to meet the intent of the "Proposed General Design Criteria for Nuclear Power Plant Construction Permits" published in July 1967. The Watts Bar construction permit was issued in January 1973. However, in its Updated Final Safety Analysis Report (UFSAR), Section 3.1, the licensee addresses the U. S. Nuclear Regulatory Commission (NRC) General Design Criteria (GDC) published as Appendix A to Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50 in July 1971, including Criterion 4 as amended October 27, 1987.

In UFSAR Section 3.1.2.2, "Protection by Multiple Fission Product Barriers," the licensee describes how the plants meet Criterion 17, "Electric power systems." Criterion 17 states, in part, that nuclear power plants have onsite and offsite electric power systems to permit the functioning of structures, systems, and components that are important to safety. The onsite system is required to have sufficient independence, redundancy, and testability to perform its safety function, assuming a single failure. The offsite power system is required to be supplied by two physically independent circuits that are designed and located to minimize, to the extent practical, the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions.

In UFSAR Section 3.1.2.2, the licensee describes how the plants meet Criterion 18, "Inspection and Testing of Electric Power Systems," which requires, in part, that electric power systems important to safety shall be designed to permit appropriate periodic inspection and testing of important areas and features, such as wiring, insulation, connections, and switchboards, to assess the continuity of the systems and the condition of their components.

The regulations at 10 CFR 50.36(c)(2)(i), "Limiting conditions for operation," state, in part, that limiting conditions for operation (LCOs) are the lowest functional capability performance levels of equipment required for safe operation of the facility. When a limiting condition for operation is not met, the licensee shall shut down the reactor or follow any remedial action permitted by the TSs until the condition can be met.

The regulations at 10 CFR 50.36(c)(3), "Surveillance requirements," states that SRs 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.

Applicable Regulatory Guidance

The staff also considered the below listed guidance documents in its review of this LAR.

Generic Letter (GL) 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle." In general, GL 91-04 states that the effect of an increase in the surveillance interval on the plant safety should be small. The historic plant maintenance and surveillance data should support this conclusion.

Nuclear Energy Institute (NEI) 04-10, Revision 1, Industry guidance for risk-informed method for control of surveillance frequencies (ADAMS Accession No. ML071360456), approved by the NRC in a Safety Evaluation dated September 19, 2007 (ADAMS Accession No. ML072570267), provides guidance for extending surveillance intervals. In particular, the staff considered the guidance provided in Section 4.0 of NEI 04-10, which states, as follows:

> [T]he minimum number of surveillance intervals required to establish an adequate database for further extending the STI [surveillance test interval] shall be as follows:
>
> (1) [A] minimum of three successive satisfactory performances of the surveillance where the STI is less than or equal to six months, or
>
> (2) [A] minimum of two successive satisfactory performances of the surveillance where the STI is greater than six months.

3.0 TECHNICAL EVALUATION

3.1 Proposed TS Changes

The licensee is proposing a one-time change to Watts Bar, Units 1 and 2, TS SR 3.0.2, to permit extending the test intervals for the SRs identified below to expire on November 30, 2017, so they may be accomplished during the rescheduled first refueling outage. This will be accomplished by including the affected SRs in TS SR Table 3.0.2-1 with an SR due date of November 30, 2017. Text in SR 3.0.2 states that the specified frequency of the SRs shown in TS SR Table 3.0.2-1 is met if the SRs are performed prior to the dates listed in SR Table 3.0.2-1.

LCO 3.8.1, "AC Sources - Operating," in part, requires four DGs to be operable in Modes 1, 2, 3, and 4. LCO 3.8.2, in part, requires two DGs (Train A or Train B) to be operable in Modes 5 and 6, and during the movement of irradiated fuel assemblies.

In the LAR, the licensee requested a one-time extension of the test intervals for Watts Bar Unit 1 for SRs 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.13, 3.8.1.16, 3.8.1.18, and 3.8.1.19, that are normally performed in Modes 5, 6, or when defueled.

The licensee also requested a one-time extension of the test intervals for Watts Bar Unit 2 for SRs 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.12, 3.8.1.13, 3.8.1.16, 3.8.1.17, 3.8.1.18, and 3.8.1.19, that are normally performed in Modes 5, 6, or when defueled.

The requested extension in the due date for SRs 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.12, 3.8.1.13, 3.8.1.16, 3.8.1.17, and 3.8.1.19 (as applicable for each unit) is from July 25, 2017 (i.e., 18 months from the last performance of the surveillance plus the allowable 25 percent extension in SR 3.0.2) to November 30, 2017; and the extension in the due date for SR 3.8.1.18 is from October 12, 2017 to November 30, 2017. In the LAR, the licensee stated that an extension of the due dates is being requested for DGs 2A-A and 2B-B for both Watts Bar Unit 1 and Unit 2, with the exception of SRs 3.8.1.12 and 3.8.1.17 for Watts Bar Unit 1. An extension of the due dates for SRs 3.8.1.12 and 3.8.1.17 on Watts Bar Unit 1 is not required, because DGs 2A-A and 2B-B do not receive an ESF actual signal from Watts Bar Unit 1.

The licensee in its letter dated March 6, 2017, confirmed that SRs 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.13, 3.8.1.16, 3.8.1.18, and 3.8.1.19 would be performed on DGs 1A-A and 1B-B during the spring 2017 Unit 1 refueling outage. The licensee also confirmed that the extension in test

intervals for these SRs for Watts Bar Unit 1 is being requested because similar SRs on DGs 2A-A and 2B-B cannot be performed until the first refueling outage for Watts Bar Unit 2, and because these SRs cannot be performed during power operations. Also, in order to meet the requirements of LCO 3.8.1, the completion of SRs 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.13, 3.8.1.16, 3.8.1.18, and 3.8.1.19 for all four DGs needs to be current within 18 months plus the allowable 25-percent extension from the last performance of these surveillances.

3.2 Evaluation of SR Interval Extensions

GL 91-04 states that the effect of an increase in the surveillance interval on plant safety should be small. The historic plant maintenance and surveillance data should support this conclusion. NEI 04-10, industry guidance for risk-informed method for control of surveillance frequencies, approved by NRC, recommends that the minimum number of surveillance intervals required for extending the STIs should be as follows:

(1) A minimum of three successive satisfactory performances of the surveillance where the STI is less than or equal to six months, or

(2) A minimum of two successive satisfactory performances of the surveillance where the STI is greater than six months.

The NRC staff considered the above guidance for extending SR intervals for Watts Bar, Units 1 and 2, for this LAR.

In its letter dated March 6, 2017, the licensee provided information regarding the three previous SR performances in Table 1 of the letter. In particular, the table provided dates for the previous three successful performances of the SRs for each DG for which the extensions in surveillance intervals are requested.

The staff reviewed the information provided in the March 6, 2017, letter and finds that all DGs successfully passed the previous three surveillances, and therefore meet the guidance provided in GL 91-04, and NEI 04-10. Therefore, the staff has reasonable assurance that extending the SRs to November 30, 2017, will continue to ensure that all DGs will continue to remain operable to perform their safety function during the extended period requested in the LAR. The changes would have minimal effect on the safety of the plant.

Technical Conclusion

The staff finds that the proposed changes to allow one-time extension of the test intervals for SRs 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.13, 3.8.1.16, 3.8.1.18, and 3.8.1.19 for Watts Bar Unit 1, and SRs 3.8.1.9, 3.8.1.10, 3.8.1.11, 3.8.1.12, 3.8.1.13, 3.8.1.16, 3.8.1.17, 3.8.1.18, and 3.8.1.19 for Watts Bar Unit 2 are consistent with guidance provided in GL 91-04, and industry guidance of NEI 04-10. Also, the staff finds that the changes would not impact the licensee's continued compliance with the regulatory requirements of GDC 17, GDC 18, and 10 CFR 50.36(c)(3) discussed in the regulatory evaluation section. Therefore, the staff finds these one-time changes acceptable.

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 May 18, 2017. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change surveillance requirements. 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 previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on this finding published in the *Federal Register* on February 28, 2017 (82 FR 12138). 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.

Principal Contributors: Robert Fitzpatrick
Vijay Goel

Date: June 28, 2017

SUBJECT: WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2 – ISSUANCE OF AMENDMENTS REGARDING ONE-TIME EXTENSION OF TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENTS FOR ALTERNATING CURRENT SOURCES (CAC NOS. MF8481 AND MF8482) DATED JUNE 28, 2017

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