



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

March 23, 2017

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

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 2 – ISSUANCE OF AMENDMENT  
REGARDING STEAM GENERATOR MINIMUM NARROW RANGE LEVEL  
ADMINISTRATIVE ERROR (CAC NO. MF7735)

Dear Mr. Shea:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 8 to Facility Operating License No. NPF-96 for the Watts Bar Nuclear Plant (WBN), Unit 2. This amendment consists of changes to the license and the technical specifications (TSs) in response to your application dated May 16, 2016.

The amendment corrects an administrative error incorporated in the initial issuance of the TSs for WBN, Unit 2, regarding the steam generator narrow range level specified in Surveillance Requirement 3.4.6.3.

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

If you have any questions regarding this letter, please contact me at (301) 415-6020 or [Robert.Schaaf@nrc.gov](mailto:Robert.Schaaf@nrc.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Robert G. Schaaf".

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

Docket No. 50-391

Enclosures:

1. Amendment No. 8 to NPF-96
2. Safety Evaluation

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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. 8  
License No. NPF-96

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the Tennessee Valley Authority (TVA or the licensee) dated May 16, 2016, 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. 8 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 of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Benjamin G. Beasley, Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Facility Operating  
License and Technical Specifications

Date of Issuance: March 23, 2017

ATTACHMENT TO LICENSE AMENDMENT NO. 8

WATTS BAR NUCLEAR PLANT, UNIT 2

FACILITY OPERATING LICENSE NO. NPF-96

DOCKET NO. 50-391

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

Remove  
3

Insert  
3

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

REMOVE  
3.4-11

INSERT  
3.4-11

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. 8 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:

**SURVEILLANCE REQUIREMENTS**

SURVEILLANCE		FREQUENCY
SR 3.4.6.1	Verify two RCS loops are in operation when the rod control system is capable of rod withdrawal.	12 hours
SR 3.4.6.2	Verify one required RHR or RCS loop is in operation when the rod control system is not capable of rod withdrawal.	12 hours
SR 3.4.6.3	Verify SG secondary side water levels are greater than or equal to 6% narrow range for required RCS loops.	12 hours
SR 3.4.6.4	Verify correct breaker alignment and indicated power are available to the required pump that is not in operation.	7 days



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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 8 TO FACILITY OPERATING LICENSE NO. NPF-96

TENNESSEE VALLEY AUTHORITY  
WATTS BAR NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-391

1.0 INTRODUCTION

By application dated May 16, 2016 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML16137A572), Tennessee Valley Authority (the licensee) requested changes to the Technical Specifications (TSs) for the Watts Bar Nuclear Plant (WBN), Unit 2. The proposed change would correct an administrative error incorporated in the initial issuance of the WBN, Unit 2, TSs included in the WBN, Unit 2, Facility Operating License issued October 22, 2015 (ADAMS Accession No. ML15251A587).

2.0 REGULATORY EVALUATION

The NRC's regulatory requirements related to the content of the TSs are contained in Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.36, "Technical specifications." This regulation requires that the TSs include items in the following five specific categories: 1) safety limits, limiting safety system settings, and limiting control settings; 2) limiting conditions for operation (LCOs); 3) surveillance requirements (SRs); 4) design features; and 5) administrative controls. However, the regulation does not specify the particular requirements to be included in a plant's TSs.

3.0 TECHNICAL EVALUATION

3.1 System Description

As noted by the licensee in its application, both WBN units were originally constructed with the same Westinghouse Model D3 steam generators (SGs). The WBN, Unit 1, SGs were replaced in 2006 with Westinghouse Model 68AXP SGs. The licensee stated that the change in the SG model resulted in a change in the relative position of the SG narrow range (NR) level instrument tap to the top of the SG U-tubes. Due to the difference in the location of the lower instrument taps, the value for the required minimum NR level is different. For the Model D3 SGs, the minimum required NR level is 6 percent, while for the Model 68AXP SGs, the minimum required NR level is 32 percent. By Amendment No. 61 to the WBN, Unit 1, Facility Operating License, issued on May 5, 2006 (ADAMS Accession No. ML060960075), the NRC approved a change to the affected Unit 1 TS requirements to reflect the revised SG minimum required NR level.

### 3.2 Description of Administrative Error and Proposed Change

The licensee described the circumstances leading to the introduction of the administrative error in SR 3.4.6.3 in the WBN, Unit 2, TSs. The WBN, Unit 2, TSs were developed using the WBN, Unit 1, TSs as the starting basis. The licensee stated that replacement pages for the final revision of the WBN, Unit 2, TSs erroneously included a revision to SR 3.4.6.3 to change the SG minimum required NR value to the WBN, Unit 1, value of 32 percent. The licensee stated that the value of 6 percent is correctly specified in WBN, Unit 2, TS LCO 3.4.7, and SRs 3.4.5.2 and 3.4.7.2. The incorrect value in SR 3.4.6.3 was carried forward to the TSs issued with the WBN, Unit 2, Facility Operating License issued on October 22, 2015.

The licensee proposed to revise TS SR 3.4.6.3 to correct the administrative error incorporated into the WBN, Unit 2, TSs, as described below.

SR 3.4.6.3, currently reads:

Verify SG secondary side water levels are greater than or equal to 32% narrow range for required RCS [reactor coolant system] loops.

The proposed change revises SR 3.4.6.3 to read:

Verify SG secondary side water levels are greater than or equal to 6% narrow range for required RCS loops.

### 3.3 NRC Staff Evaluation of Proposed Change

The NRC staff finds that the incorrect SG required minimum NR level value in SR 3.4.6.3 is the result of an administrative error during the development of the WBN, Unit 2, TSs. The amendment does not constitute a change in the WBN, Unit 2, facility design or in the actual operation of the facility. The TSs, as revised, continue to meet the requirements of 10 CFR 50.36. Based on the considerations discussed above, the NRC staff concludes that the proposed change to SR 3.4.6.3 is 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 March 3, 2016. The State official had no comments.

### 5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding published in the Federal Register on September 13, 2016 (81 FR 62933). 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 Contributor: Robert Schaaf

Date: March 23, 2017

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 2 – ISSUANCE OF AMENDMENT REGARDING STEAM GENERATOR MINIMUM NARROW RANGE LEVEL ADMINISTRATIVE ERROR (CAC NO. MF7735) DATED MARCH 23, 2017

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