

November 3, 2006

Mr. Karl W. Singer  
Chief Nuclear Officer and  
Executive Vice President  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, Tennessee 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 1 — ISSUANCE OF AMENDMENT  
REGARDING STEAM GENERATOR TUBE INTEGRITY (TS-05-10)  
(TAC NO. MC9271)

Dear Mr. Singer:

The Commission has issued the enclosed Amendment No.65 to Facility Operating License No. NPF-90 for Watts Bar Nuclear Plant, Unit 1. This amendment is in response to your application dated December 15, 2005, as supplemented by letters dated June 12 and September 8, 2006 (TS-05-10).

The amendment revises the existing steam generator tube surveillance program and was modeled after the U.S. Nuclear Regulatory Commission's approved Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-449, "Steam Generator Tube Integrity," Revision 4. TSTF-449 is part of the consolidated line item improvement process.

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

Sincerely,

**/RA/**

Douglas V. Pickett, 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. 65 to NPF-90  
2. Safety Evaluation  
cc w/enclosures: See next page

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## **WATTS BAR NUCLEAR PLANT**

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TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-390

WATTS BAR NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 65  
License No. NPF-90

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by the Tennessee Valley Authority (the licensee) dated December 15, 2005, as supplemented by letters dated June 12 and September 8, 2006, 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 Appendices A and B, as revised through Amendment No. 65, 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 prior to entering Mode 4 during startup from the Unit 1 Cycle 7 refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION

***/RA/ Leonard N. Olshan for***

Evangelos C. Marinos, Branch Chief  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment: Change to the Technical  
Specifications

Date of Issuance: November 3, 2006

ATTACHMENT TO LICENSE AMENDMENT NO. 65

FACILITY OPERATING LICENSE NO. NPF-90

DOCKET NO. 50-390

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

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

<u>REMOVE</u>	<u>INSERT</u>
1.1-4	1.1-4
3.4-30	3.4-30
3.4-31	3.4-31
---	3.4.43
---	3.4-44
5.0-15	5.0-15
5.0-16	5.0-16
5.0-17	5.0-17
5.0-18	5.0-18
5.0-19	5.0-19
5.0-19a	---
5.0-19b	---
5.0-19c	---
5.0-20	5.0-20
5.0-20a	---
5.0-21	5.0-21
5.0-22	5.0-22
5.0-23	5.0-23
5.0-24	5.0-24
5.0-25	5.0-25
5.0-26	5.0-26
5.0-27	5.0-27
5.0-28	5.0-28
5.0-28a	---
5.0-29	5.0-29
5.0-30	5.0-30
5.0-31	5.0-31
5.0-32	5.0-32
5.0-33	5.0-33
5.0-34	5.0-34
5.0-35	5.0-35
5.0-35a	---
5.0-36	5.0-36
5.0-37	5.0-37

REMOVE (continued)

5.0-38  
5.0-39  
5.0-40  
5.0-41

INSERT (continued)

5.0-38  
---  
---  
---

- (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 Appendices A and B, as revised through Amendment No. 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.



SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 65 TO FACILITY OPERATING LICENSE NO. NPF-90

TENNESSEE VALLEY AUTHORITY  
WATTS BAR NUCLEAR PLANT, UNIT 1

DOCKET NO. 50-390

## 1.0 INTRODUCTION

By letter dated December 15, 2005 (ML053540067 [Agencywide Document Access and Management System Accession Number]), as supplemented by letters dated June 12, 2006 (ML061650267), and September 8, 2006 (ML062550371), Tennessee Valley Authority (the licensee) submitted a license amendment request regarding the Watts Bar Nuclear Plant (WBN), Unit 1, steam generator (SG) tube integrity technical specifications (TSs).

The proposed amendment would revise the existing SG tube surveillance program and was modeled after the U.S. Nuclear Regulatory Commission's approved Technical Specification Task Force (TSTF) Standard Technical Specification Change Traveler, TSTF-449, "Steam Generator Tube Integrity," Revision 4. TSTF-449 is part of the consolidated line item improvement process. The scope of the application includes changes to the definition of leakage, changes to the primary-to-secondary leakage requirements, changes to the SG tube surveillance program (SG tube integrity), changes to the SG reporting requirements and associated changes to the TS Bases. The licensee has proposed to implement these new TSs prior to entering Mode 4 (Hot Shutdown) during startup following the replacement of its steam generators which is scheduled for the Cycle 7 outage in the fall of 2006.

The supplemental letters provided clarifying information that did not change the initial proposed no significant hazards consideration determination as published in the *Federal Register* on March 28, 2006 (71 FR 15489).

## 2.0 REGULATORY EVALUATION

The background, description, and applicability of the proposed changes associated with the SG tube integrity issue and the applicable regulatory requirements were included in the NRC staff's model safety evaluation (SE) published in the *Federal Register* on March 2, 2005 (70 FR 10298). The "Notice of Availability of Model Application Concerning Technical Specification Improvement To Modify Requirements Regarding Steam Generator Tube Integrity Using the Consolidated Line Item Improvement Process," was published in the *Federal Register* on May 6, 2005 (70 FR 24126), and made the model SE available for licensees to reference in licensing applications.

### 3.0 TECHNICAL EVALUATION

#### 3.1 Overview

In its application dated December 15, 2005, and the supplemental letters dated June 12 and September 8, 2006, the licensee proposed changes to the TSs that are modeled after TSTF-449. There were minor differences between TSTF-449 and the licensee's application. These included differences in the facility licensing basis (than that discussed in TSTF-449) and differences in TS numbering and format, because the licensee has a different TS format than that assumed in TSTF-449.

With respect to the differences in the facility licensing basis, the differences did not invalidate the technical evaluation of TSTF-449; rather, they resulted in the licensee having to slightly deviate from some of the modifications discussed in TSTF-449. For example, in the Bases section for Reactor Coolant System (RCS) Operational Leakage, the licensee provided additional details regarding the assumptions in its accident analysis. These additional details reflect the assumptions in the licensee's accident analysis which was previously reviewed and approved by the NRC staff. Another example is that the licensee clarified in its Bases that the RCS Operational Leakage specification satisfies Criterion 2 of 10 CFR 50.36(c)(2)(ii) (rather than just indicating it satisfied Criterion 2 of the NRC Policy Statement). Since these differences were minor in nature, consistent with the plant's licensing basis (e.g., in the level of detail incorporated into the TS Bases) and consistent with the intent of TSTF-449, the NRC staff determined they were acceptable.

With respect to the differences in the numbering of the TSs, these differences were administrative in nature and did not affect the technical adequacy of the submittal. As a result, the NRC staff determined they were acceptable.

In addition to these minor changes, the licensee proposed to delete reference to previously approved alternate tube repair criteria and repair methods (e.g., sleeving) since these alternate repair criteria and repair methods would no longer be applicable to their replacement steam generators. Removal of the alternate repair criteria and methods is acceptable because the licensee will be required to plug tubes that exceed the standard 40-percent depth-based repair criteria and plugging is an acceptable method for removing tubes from service.

The remainder of the application was generally consistent with TSTF-449. As a result, the staff determined that the model SE is applicable to this review and finds the proposed changes acceptable.

Consistent with TSTF-449, the proposed TS changes include: (1) a revised definition of LEAKAGE, (2) a revised TS 3.4.13, "RCS Operational Leakage," (3) a new TS 3.4.17, "Steam Generator Tube Integrity," (4) a revised TS 5.7.2.12, "Steam Generator (SG) Tube Surveillance Program," (5) a revised TS 5.9.9, "SG Tube Inspection Report," and (6) a revised Table of Content pages to reflect the proposed changes.

### 3.2 Conclusion

The proposed TS changes establish a programmatic, largely performance-based regulatory framework for ensuring SG tube integrity is maintained. The NRC staff finds that it addresses key shortcomings of the current framework by ensuring that SG programs are focused on accomplishing the overall objective of maintaining tube integrity. It incorporates performance criteria for evaluating tube integrity that the NRC staff finds consistent with the structural margins and the degree of leak tightness assumed in the current plant licensing basis. The NRC staff finds that maintaining these performance criteria provides reasonable assurance that the SGs can be operated safely without increase in risk.

The revised TSs will contain limited specific details concerning how the SG Program is to achieve the required objective of maintaining tube integrity; the intent being that the licensee will have the flexibility to determine the specific strategy for meeting this objective. However, the NRC staff finds that the revised TSs include sufficient regulatory constraints on the establishment and implementation of the SG Program to provide reasonable assurance that tube integrity will be maintained.

Failure to meet the performance criteria will be reportable pursuant to the requirements in 10 CFR Parts 50.72 and 50.73. The NRC reactor oversight process provides a process by which the NRC staff can verify that the licensee has identified any SG Program deficiencies that may have contributed to such an occurrence and that appropriate corrective actions have been implemented.

In conclusion, the NRC staff finds that the TS changes proposed by the licensee in its application dated December 15, 2005, and the supplemental letters dated June 12 and September 8, 2006, conform to the requirements of 10 CFR 50.36 and establish a TS framework that will provide reasonable assurance that SG tube integrity is maintained without undue risk to public health and safety.

The licensee included in its application the revised TS Bases to be implemented with the TS change. The NRC staff finds that the TS Bases Control Program is the appropriate process for updating the affected TS Bases pages and has, therefore, not included the affected Bases pages with this amendment.

### 4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Tennessee State official was notified of the proposed issuance of the amendment. 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 changes 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 has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no

public comment on such finding (71 FR 15489). 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 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) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

## 7.0 REFERENCES

A complete list of references used to complete this review can be found in the NRC's model SE published in the *Federal Register* on March 2, 2005 (70 FR 10298).

Principal Contributor: Trent L. Wertz, NRR

Date: November 3, 2006