

November 18, 2002

Mr. J. A. Scalice  
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 REACTOR COOLANT SYSTEM SPECIFIC ACTIVITY  
(TAC NO. MB3831)

Dear Mr. Scalice:

The Commission has issued the enclosed Amendment No. 41 to Facility Operating License No. NPF-90 for Watts Bar Nuclear Plant, Unit 1. This amendment is in response to your application of January 14, 2002, concerning lowering the steady-state specific activity of the primary coolant. The amendment also changes the allowable value for the main control room air intake radiation monitor made necessary by reducing the specific activity.

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 by Ronald Hernan for/**

L. Mark Padovan, Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-390

Enclosures: 1. Amendment No. 41 to NPF-90  
2. Safety Evaluation

cc w/enclosures: See next page

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TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-390

WATTS BAR NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 41  
License No. NPF-90

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Tennessee Valley Authority (the licensee) dated January 14, 2002, 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. 41, 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 45 days from the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

\RA by Ronald Hernan for\

Allen G. Howe, Chief, Section 2  
Project Directorate II  
Division of Project Licensing Management  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: November 18, 2002

ATTACHMENT TO AMENDMENT NO. 41  
FACILITY OPERATING LICENSE NO. NPF-90  
DOCKET NO. 50-390

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

3.3-60  
3.4-39  
3.4-40  
3.4-42  
B 3.4-93  
B 3.4-94  
B 3.4-95  
B 3.4-96  
B 3.4-97

Insert Pages

3.3-60  
3.4-39  
3.4-40  
3.4-42  
B 3.4-93  
B 3.4-94  
B 3.4-95  
B 3.4-96  
B 3.4-97

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 41 TO FACILITY OPERATING LICENSE NO. NPF-90

TENNESSEE VALLEY AUTHORITY  
WATTS BAR NUCLEAR PLANT, UNIT 1

DOCKET NO. 50-390

1.0 INTRODUCTION

Tennessee Valley Authority's (TVA's) letter of January 14, 2002, submitted a request for changes to the Watts Bar Nuclear Plant, Unit 1, Technical Specifications (TS). The requested changes would reduce the steady-state and accident-specific activity of the primary coolant as specified in Watts Bar TS 3.4.16, "Reactor Coolant System (RCS) Specific Activity." TVA also proposes to revise TS 3.3.7, "CREVS [control room emergency ventilation system] Actuation Instrumentation," to reflect a change in radiation monitor setpoints made necessary by the reduction in the specific activity.

TVA's proposed TS changes are as follows:

- Revise TS 3.4.16, "Reactor Coolant System (RCS) Specific Activity," Action Condition A and Surveillance Requirement (SR) 3.4.16.2 to reduce the steady-state dose equivalent iodine 131 (d.e. I-131) from the current 1.0  $\mu\text{Ci/gm}$  to 0.265  $\mu\text{Ci/gm}$ .
- Delete TS Figure 3.4.16-1, "Reactor Coolant Dose Equivalent I-131 Specific Activity Limit Versus Percent of Rated Thermal Power," and add a fixed 21  $\mu\text{Ci/gm}$  d.e. I-131 value to required actions 3.4.16.A and 3.4.16.C.
- Revise TS Table 3.3.7, "CREVS Actuation Instrumentation," to change the allowable value for control room radiation and control room air Intakes for SR 3.3.7.1, 3.3.7.2, and 3.3.7.4 from 5.77E-04  $\mu\text{Ci/cc}$  to 9.45E-05  $\mu\text{Ci/cc}$ .
- Update affected sections of the TS bases.

The proposed changes are required as a result of TVA's re-analyses of the dose calculations for the main steam line break (MSLB) and steam generator tube rupture (SGTR) accidents. TVA revised these analyses due to comments made by the staff in its review of an earlier steam generator alternative repair criteria amendment request. As stated in the January 14, 2002, submittal, TVA is administratively controlling RCS specific activity levels at the proposed values pending issuance of this amendment request.

## 2.0 EVALUATION

TVA requested a related license amendment for Watts Bar Unit 1 on August 20, 2001, to allow use of tritium-producing burnable absorber rods (TPBARs) at Watts Bar. In support of that amendment request, TVA performed radiological consequence analyses of a design basis MSLB and SGTR. The staff requested additional information in its letter of May 8, 2002, regarding analysis assumptions, inputs, and methodology. TVA's response of May 21, 2002, referenced TVA's January 14, 2002, amendment request as a source of these data. As such, these analyses are relevant and apply to both the TPBAR amendment and the January 14 amendment request. These analyses were based, in part, on the revised RCS specific activity TS proposed in the January 14 amendment request, and other proposed analysis changes. The staff reviewed TVA's description of the MSLB and SGTR analyses as part of its review of the TPBAR amendment and documented that review in the safety evaluation for that amendment. The staff found the analyses to be acceptable. The staff approved the TPBAR amendment request on September 23, 2002, as Amendment No. 40 to License NPF-90.

Since those analyses apply to the January 14 amendment request, the staff relied upon its earlier review and finding of acceptability in approving the January 14 amendment request. As stated in its January 14 submittal, TVA is administratively controlling RCS specific activity levels at the proposed values pending issuance of this amendment.

TVA also proposed changes in certain radiation monitor alarm setpoints to reflect the revised TS limits and other changes made in the analysis assumptions and inputs. These radiation monitors actuate the CREVS when the monitored concentration exceeds the setpoint. The CREVS is also actuated by a safety injection signal that is expected in the event of an MSLB or SGTR, and other design-basis events. Based on the relative magnitudes in the change in the RCS specific activity and the change in the alarm setpoint, and on staff engineering judgment, the staff finds reasonable assurance that the decreased alarm setpoint will not result in post-accident conditions in the control room that impairs operator actions needed for public health and safety.

The staff reviewed the assumptions, inputs, and methods used by TVA to assess the radiological impacts of the proposed TS. The staff finds that TVA used analysis methods and assumptions that are adequately conservative and consistent with regulatory guidance, where applicable. The staff also finds, with reasonable assurance, that TVA's estimates of the exclusion area boundary, low-population zone, and control room doses will continue to comply with Part 100 and Part 50, Appendix A, General Design Criterion-19, and that the proposed changes are acceptable from a radiological consequence standpoint.

## 3.0 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.

#### 4.0 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 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding (67 FR 15629). 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.

#### 5.0 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 the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: S. LaVie, NRR

Date: November 18, 2002

Mr. J. A. Scalice  
Tennessee Valley Authority

**WATTS BAR NUCLEAR PLANT**

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