

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 POTENTIAL MAIN STEAM OVERPRESSURIZATION CONDITION
(TAC NO. MA6045)

Dear Mr. Scalice:

The Commission has issued the enclosed Amendment No. to Facility Operating License No. NPF-90 for Watts Bar Nuclear Plant, Unit 1. This amendment is in response to your application dated June 25, as supplemented December 17, 1999. The amendment principally revises the Main Steam Safety Valve Technical Specifications (TS), section 3.7.1, to provide a new requirement to reduce the power range neutron flux-high reactor trip setpoints when two or more main steam safety valves per steam generator are inoperable.

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 E. Martin, Senior 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. 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.
License No. NPF-90

1. The Nuclear Regulator Commission (the Commission) has found that:
 - A. The application for amendment by Tennessee Valley Authority (the licensee) dated June 25, 1999, as supplemented December 17, 1999, 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 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. _____, 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, to be implemented no later than 30 days of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Richard Correia, 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:

ATTACHMENT TO AMENDMENT NO. _____

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

3.7-1
3.7-3
B 3.7-1
B 3.7-2
B 3.7-3
B 3.7-4
B 3.7-5
B 3.7-6

Insert Pages

3.7-1
3.7-3
B 3.7-1
B 3.7-2
B 3.7-3
B 3.7-4
B 3.7-5
B 3.7-6

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. _____ 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 June 25, 1999, as supplemented December 17, 1999, the Tennessee Valley Authority (TVA, the licensee) submitted a request for changes to the Watts Bar Nuclear Plant, Unit 1, Technical Specifications (TS). The requested changes revise the main steam safety valve TS Section 3.7.1 to provide a new requirement to reduce the power range neutron flux-high reactor trip setpoints when two or more main steam safety valves (MSSVs) per steam generator are inoperable. The letter dated December 17, 1999 provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

In Westinghouse Nuclear Safety Advisory Letter (NSAL) 94-001, "Operation at a Reduced Power Levels With Inoperable MSSVs," January 20, 1994, Westinghouse described a deficiency in the basis for Standard Technical Specification (STS) Table 3.7.1, "Operable Main Steam safety Valves Versus Applicable Power in Percent of Rated Power." The NSAL revised the previous assumption that the maximum allowable initial power level was a linear function of main steam safety valve capacity. The NSAL recommended the use of a more conservative equation to calculate the power range high neutron flux trip setpoint. The U.S. Nuclear Regulatory Commission (NRC) staff's Information Notice 94-60, "Potential Overpressurization of Main Steam System," dated August 22, 1994, provided this information to all holders of operating licenses or construction permits for pressurized water reactors. This issue was reflected in the development of the TS that were issued with the operating license for the Watts Bar Plant on February 7, 1996. Accordingly, the values in TS Table 3.7.1 to which power must be reduced to accommodate inoperable MSSVs have been previously determined pursuant to that guidance and are not the subject of this evaluation.

TVA's application of June 25, 1999 proposes further changes to provide a new requirement to reduce the power range neutron flux-high reactor trip setpoints when two or more MSSVs per steam generator are inoperable. The changes address a further potential main steam system overpressure condition recently identified by the Westinghouse Electric Corporation if the power level is controlled administratively under the current TS 3.7.1 requirements while operating with inoperable MSSVs, with no reduction in high flux reactor trip setpoint. Under this condition, if a reactivity insertion accident such as an inadvertent rod cluster control assembly bank

ENCLOSURE

withdrawal were to occur, the reduced available steam relief capacity may be insufficient to preclude overpressurization of the main steam system beyond the 110% design value (assuming no credit for the steam dumps and the atmospheric dump valves). TVA proposes to address this condition by making additions to TS 3.7.1 to reduce the power range neutron flux-high trip setpoints to a corresponding power level depending on the number of inoperable MSSVs.

Specifically, TVA proposes to revise current Condition A and Action A.1 to require a reduction in thermal power to less than or equal to 59% rated thermal power (RTP) for one or more steam generators (SGs) with one MSSV inoperable.

A new Condition B is added for the case of one or more SGs with two or more inoperable MSSVs. New Action B.1 requires a thermal power reduction to less than or equal to the percent RTP specified in Table 3.7.1-1 within 4 hours.

A new Action B.2 would require a reduction of the flux trip setpoint to less than or equal to the percent RTP specified in Table 3.7.1-1, when in Mode 1, within 36 hours. Table 3.7.1-1 is revised to be compatible with new Actions B.1 and B.2.

The values of the allowable power levels for inoperable MSSVs in Table 3.7.1-1 is not changed. Current Condition B and Actions B.1 and B.2 would be revised and reworded as new Condition C and Actions C.1 and C.2.

Associated changes to the TS 3.7.1 Bases were also made.

The staff has found that the licensee's provision of a reduced neutron flux trip within 36 hours of a condition of more than one inoperable MSSV per SG ensures a timely reactor trip, thus ensuring that the secondary system pressure will not exceed 110% of its design value. Therefore, the staff finds that the proposed changes to TS 3.7.1 are acceptable.

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. 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 (64 FR 43781 dated August 11, 1999). 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: Robert E. Martin, NRR

Date:

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SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 1 - ISSUANCE OF AMENDMENT
REGARDING POTENTIAL MAIN STEAM OVERPRESSURIZATION
CONDITION (TAC NO.MA6045)

ORIGINATOR: R. Martin

SECRETARY D. Turner

DATE:

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Can Document be Deleted after Dispatch? _____

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WATTS BAR NUCLEAR PLANT

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