September 13, 2001

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

SUBJECT: BROWNS FERRY NUCLEAR PLANT UNIT 3 — ISSUANCE OF AMENDMENT TO DELETE THE 120-DAY REQUIRED ACTION FOR RESTORING THE OSCILLATION POWER RANGE MONITOR FUNCTION (TAC NO. MB2496) (TS-415)

Dear Mr. Scalice:

The Commission has issued the enclosed Amendment No. 231 to Facility Operating License No. DPR-68 for the Browns Ferry Nuclear Plant (BFN), Unit 3. This amendment is in response to your application dated July 25, 2001. Your application proposed changes for both BFN Units 2 and 3, and requested that the proposed changes for BFN Unit 2 only be considered on an emergency basis. Accordingly, the amendment for BFN Unit 2 was issued on July 26, 2001. This amendment is being issued for BFN Unit 3 which was reviewed as part of our normal amendment process.

The proposed amendment deletes Technical Specification Action Statement 3.3.1.1.I.2, which limits plant operation to 120 days in the event of the inoperability of the Oscillation Power Range Monitor trip system. For this situation, the proposed change would allow plant operation to continue if the compensatory measures required by existing TS Action Statement 3.3.1.1.I.1, to implement an alternate means to detect and suppress thermal hydraulic instability oscillations, were taken.

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

Sincerely,

/RA/
Kahtan N. Jabbour, Senior Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-296

Enclosures: 1. Amendment No. 231
License No. DPR-68
2. Safety Evaluation

cc w/enclosures: See next page

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TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-296

BROWNS FERRY NUCLEAR PLANT, UNIT 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 231
License No. DPR-68

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

   A. The application for amendment by Tennessee Valley Authority (the licensee) dated July 25, 2001, 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. DPR-68 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 231 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days from date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/
Richard P. Correia, Chief, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: September 13, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 231

FACILITY OPERATING LICENSE NO. DPR-68

DOCKET NO. 50-296

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	INSERT
3.3-3	3.3-3
B 3.3-35	B 3.3-35
B 3.3-35a	B 3.3-35a

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 231 TO FACILITY OPERATING LICENSE NO. DPR-68

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNIT 3

DOCKET NO. 50-296

1.0 INTRODUCTION

By letter dated July 25, 2001, Tennessee Valley Authority (TVA, the licensee) submitted a request for the U.S. Nuclear Regulatory Commission (NRC) review and approval of a license amendment request to modify the Browns Ferry Nuclear Plant (BFN), Unit 3, Technical Specifications (TS) to delete the 120-day required action of TS 3.3.1.1.I.2, which limits plant operation to 120 days in the event of the inoperability of the Oscillation Power Range Monitor (OPRM) trip system. For this situation, the proposed change would allow plant operation to continue if existing TS Required Action 3.3.1.1.I.1 is taken to implement an alternate means to detect and suppress thermal hydraulic instability oscillations.

In its July 25, 2001, application, TVA proposed changes for both BFN Units 2 and 3, and requested that the proposed changes for BFN Unit 2 only be considered on an emergency basis. Accordingly, this amendment for BFN Unit 2 was issued on July 26, 2001. The NRC staff's review of the proposed change for BFN Unit 3 has been completed and is discussed below.

2.0 BACKGROUND

The OPRM trip system is designed to detect and suppress possible reactor thermal hydraulic instabilities and implement the long-term solution known as the Boiling Water Reactor Owners Group "Stability Option III" alternative. Prior to the installation and arming of the OPRM, monitoring for potential thermal hydraulic instability oscillations and suppression thereof was performed exclusively by operating procedures. These operator stability monitoring functions are commonly referred to as interim corrective actions (ICAs) and are the same actions referenced in existing TS Required Action 3.3.1.1.I.1 for the situation in which the OPRM trip capability is lost. In summary, the ICAs, which are implemented in plant procedures, prescribe that reactor stability be monitored through instrumentation whenever the plant is operating in the power/flow map regions associated with potential stability concerns and that specific actions be taken in the event an instability condition is observed.

This proposed change would also be beneficial in allowing use of the TS 3.3.1.1.I.1 alternate actions to continue reactor operation, thus avoiding inherent risks associated with a reactor shutdown and start-up should the 120-day time restriction be exceeded under the current TS.

ENCLOSURE

Also, the current TS would not allow restart of the reactor if the unit should trip or be shut down with the OPRM function inoperable.

3.0 EVALUATION

The required TS Action 3.3.1.1.I.2 and its associated 120-day Completion Time are deleted. Condition I. addresses situations in which the OPRM trip capability is not maintained. At the time the NRC staff evaluated this issue in NEDC-32410P-A, "Nuclear Measurement Analysis and Control Power Range Neutron Monitor (NUMAC PRNM) Retrofit Plus Option III Stability Trip Function," October 1995, the TS Action was on the 120-day completion time. The 120-day period was intended to be an outside limit to allow for the case where design changes or extensive analysis might be required to understand or correct some unanticipated characteristic of the instability detection algorithms or equipment. The evaluation was based on engineering judgment, and concluded that the likelihood of an instability event that could not be adequately handled by the alternate methods during this 120-day period was negligibly small.

The current TS 3.3.1.1.I. specifies two required Actions in the event the OPRM trip becomes inoperable. The first action requires initiation of an alternate method to detect and suppress thermal-hydraulics (T-H) instability oscillations with a completion time of 12 hours; the second action requires restoration of the OPRM trip capability within 120 days. The proposed amendment revises the second action by removing the specific time requirement of 120 days for restoring the inoperable OPRM trip. In its submittal the licensee stated that the proposed change would allow plant operation to continue.

In a justification for removing the 120-day limit, the licensee in its submittal stated that the 120-day completion time specified in the TS action statement is not adequate to restore the system, considering troubleshooting and fixing the hardware and software defects and/or removing the problems described in a recent General Electric Part 21 report. Also, because the OPRM system is a safety system, requirements of Section XVI, “Corrective Action,” of Title 10, *Code of Federal Regulations* (10 CFR) Part 50 Appendix B for timely corrective action to ensure operability of a failed, malfunctioning, deficient, defective or non-confirming equipment, are applicable to it. Explicit specification of a required action to restore the inoperable OPRM trip capability is appropriate only if such action within a specific completion time is required to ensure detection and suppression of a T-H instability event. Because the current ICAs, which are designated as alternate methods at Browns Ferry for detecting and suppressing T-H instability oscillations and have been in place for more than 10 years, would adequately ensure detection and suppression of T-H instability, the specification of an additional action to restore OPRM trip capability within a specific completion time is not necessary. The staff finds that the current ICAs are equivalent to the OPRM trip (considering its sensitivity, response time and setpoint) for performing the intended design function(s) of the OPRM trip. Therefore, the staff agrees with the licensee that a specific time limit to restore the inoperable OPRM trip system is not necessary and Action Statement I.2 of TS 3.3.1.1 can be removed. The staff concurs with the licensee's conclusion that operation under the ICAs beyond 120 days does not create a safety concern because plants have operated under this ICA for the last 10 years without risk to the public. Therefore, the staff finds the proposed amendment acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Alabama State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to the 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 (66 FR 41627). 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) 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. Athavale, NRR

Date: September 13, 2001

Mr. J. A. Scalice
Tennessee Valley Authority

BROWNS FERRY NUCLEAR PLANT

cc:

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