May 16, 1989

Docket No. 50-260

See Correction copy of Amendment 164 — 5/16/89

Mr. Oliver D. Kingsley, Jr.
Senior Vice President, Nuclear Power
Tennessee Valley Authority
6N 38A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Dear Mr. White:

SUBJECT: REACTOR PROTECTION SYSTEM POWER MONITORING SYSTEM TECHNICAL SPECIFICATION CHANGES (TAC 71621) (TS 264) - BROWNS FERRY NUCLEAR PLANT, UNIT 2

The Commission has issued the enclosed Amendment No.164 , to Facility Operating License No. DPR-52 for the Browns Ferry Nuclear Plant, Unit 2. This amendment is in response to your application dated December 22, 1988. This amendment modifies the reactor protection system by adding surveillance requirements and time delays as well as correcting setpoint equality signs for the overvoltage, undervoltage, and underfrequency values.

A copy of the Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's Bi-Weekly Federal Register Notice.

Sincerely,

Original signed by B. D. Liaw

for Suzanne Black, Assistant Director
for Projects
TVA Projects Division
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 164 to License No. DPR-52
2. Safety Evaluation

cc w/enclosures:
See next page

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OFFICIAL RECORD COPY

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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-260

BROWNS FERRY NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 164
License No. DPR-52

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

   A. The application for amendment by Tennessee Valley Authority (the licensee) dated December 22, 1988, 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-52 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 164, 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 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

For Suzanne Black, Assistant Director
for Projects
TVA Projects Division
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 16, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 164

FACILITY OPERATING LICENSE NO. DPR-52

DOCKET NO. 50-260

Revise the Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change.

| REMOVE | INSERT |
|---|---|
| 3.1/4.1-1 | 3.1/4.1-1* |
| 3.1/4.1-2 | 3.1/4.1-2 |

| LIMITING CONDITIONS FOR OPERATION | SURVEILLANCE REQUIREMENTS |
|---|---|
| 3.1 Reactor Protection System | 4.1 Reactor Protection System |
| Applicability | Applicability |
| Applies to the instrumentation and associated devices which initiate a reactor scram. | Applies to the surveillance of the instrumentation and associated devices which initiate reactor scram. |
| Objective | Objective |
| To assure the operability of the reactor protection system. | To specify the type and frequency of surveillance to be applied to the protection instrumentation. |
| Specification | Specification |
| A. When there is fuel in the vessel, the setpoints, minimum number of trip systems, and minimum number of instrument channels that must be OPERABLE for MODE OF OPERATION shall be as given in Table 3.1.A. | A. Instrumentation systems shall be functionally tested and calibrated as indicated in Tables 4.1.A and 4.1.B, respectively. |
| B. Two RPS power monitoring channels for each inservice RPS MG sets or alternate source shall be OPERABLE. | B. The RPS power monitoring system instrumentation shall be determined OPERABLE: |
| 1. With one RPS electric power monitoring channel for inservice RPS MG set or alternate power supply inoperable, restore the inoperable channel to OPERABLE status within 72 hours or remove the associated RPS MG set or alternate power supply from service. | 1. At least once per 6 months by performance of channel functional tests. |

| LIMITING CONDITIONS FOR OPERATION | SURVEILLANCE REQUIREMENTS |
|---|---|
| 3.1.B. (Cont'd) | 4.1.B. (Cont'd) |
| 2. With both RPS electric power monitoring channels for an inservice RPS MG set or alternate power supply inoperable, restore at least one to OPERABLE status within 30 minutes or remove the associated RPS MG set or alternate power supply from service. | 2. At least once per 18 months by demonstrating the OPERABILITY of overvoltage, undervoltage and underfrequency protective instrumentation by simulated automatic logic actuation and verification of the circuit protector trip level setting as follows.<br><br>(a) overvoltage (all device) $\leq$ 126.5 VAC<br>(b) undervoltage (MG Set) $\geq$ 113.4 VAC<br>(c) undervoltage (alt. supply) $\geq$ 111.8 VAC<br>(d) underfrequency (all devices) $\geq$ 57.0 Hz |

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

ENCLOSURE 2

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

TECHNICAL SPECIFICATION CHANGES REGARDING

REACTOR PROTECTION SYSTEM POWER MONITORING SYSTEM

BROWNS FERRY NUCLEAR POWER PLANT, UNIT 2

DOCKET NO. 50-260

## 1.0 INTRODUCTION

By letter dated August 7, 1978, the staff advised the Tennessee Valley Authority (TVA) of deficiencies regarding the Reactor Protection System (RPS) power monitoring system (PMS) identified in Hatch, Unit 2 and the potential for similar deficiencies at other BWRs. TVA was requested to evaluate the design of the Browns Ferry Nuclear Power Plant (BFN) RPS and promptly commence surveillance of the RPS power supply as described in Enclosure 1 of the letter. By letter dated December 13, 1978, TVA responded that the proposed RPS modifications were not necessary and that it did not plan to propose any additional Technical Specification (TS) changes. The letter also advised the staff that the surveillance requirement imposed by NRC in its letter of August 7, 1978 would be discontinued after January 1, 1979. The staff's letter of September 24, 1980 advised TVA that based on the staff's evaluation, BFN could experience the same adverse conditions as were found at Hatch, Unit 2 and that the modifications should be implemented at BFN with specified TS.

By letter dated July 1, 1981, TVA provided the general outline of the design approach for the requested modifications. Also, proposed TS limits were submitted as part of the Unit 1 reload (TS-190, July 13, 1983). However, these submittals from TVA did not provide sufficient information to substantiate design conformance to General Design Criteria (GDC) 2 and 21, and IEEE 279-1971. Also, the proposed trip setpoints of the protective relays were not based on analysis and test verification. By letter dated October 12, 1983, the staff transmitted these concerns to TVA. TVA responded by letter dated August 9, 1984 which resolved some issues. A request for additional information was sent to TVA by the staff's letter of October 31, 1984, to which TVA responded by letter dated March 1, 1985. The staff prepared its safety evaluation (SE) on these modifications and issued it by letter dated July 27, 1985. In that SE, the staff accepted the modifications and required TVA submit the revised TS after completion of the testing of design modifications and include the test-verified relay setpoint and time delays in the TS. TVA, by their letter of December 22, 1988, submitted this information to the staff.

## 2.0 EVALUATION

In accordance with the staff's SE and TVA's commitment as stated in their letter of August 9, 1984, TVA has submitted the TS surveillance requirements for the

RPS power monitoring system. TVA has also corrected the equality sign for the overvoltage, undervoltage and underfrequency values. The proposed trip level settings are based on the calculations using current plant configuration and post-modification data. TVA has committed to perform a voltage verification test with the unit in normal operation and RPS components in their normal operating configuration. The staff had reviewed the setpoint and test procedure previously and found it acceptable. Hence, the proposed TS and commitment to perform a voltage verification test are acceptable to the staff.

However, TVA has not included the time delays associated with the trip setpoints in the TS, although these time delays are incorporated in the power monitoring system (PMS) for the RPS. According to TVA these devices are handled in normal plant calibration procedures. Since Standard TS (Page 3/4 8-22) and Hope Creek TS (Page 3/4 8-40) do not include these time delays in the TS, the staff agrees with TVA that these time delays may be excluded from the TS as they are included in the normal plant calibration procedures. Based on our review we conclude that the proposed TS changes are acceptable as they are in accordance with the Standard Technical Specifications.

## 3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to 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 and changes to the surveillance requirements. The 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding. 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 nor environmental assessment need be prepared in connection with the issuance of the amendment.

## 4.0 CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration which was published in the Federal Register (54 FR 5176) on February 1, 1989 and consulted with the State of Alabama. No public comments were received and the State of Alabama did not have any comments.

The staff 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendments will not be inimical to the common defense and security nor to the health and safety of the public.

Principal Contributor: H. Garg

Dated: May 16, 1989