



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

July 24, 1991

Docket No. 50-327

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

Dear Mr. Nauman:

SUBJECT: ISSUANCE OF AMENDMENT (TAC NO. 80500) (TS 91-04) - SEQUOYAH NUCLEAR
PLANT, UNIT 1

The Commission has issued the enclosed Amendment No. 151 to Facility Operating License No. DPR-77 for the Sequoyah Nuclear Plant, Unit 1. The amendment is in response to your application dated May 24, 1991.

The amendment changes the steam generator water level low-low setpoints for the reactor trip system and the engineered safety feature actuation system to reflect replacement of the unmodified Barton level transmitters with modified Barton level transmitters during the 1991 refueling outage.

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

Sincerely,

David E. LaBarge, Project Manager
Project Directorate II-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 151 to License No. DPR-77
2. Safety Evaluation

cc w/enclosures:
See next page

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Mr. Dan A. Nauman

CC:

Mr. Marvin Runyon, Chairman
Tennessee Valley Authority
ET 12A
400 West Summit Hill Drive
Knoxville, Tennessee 37902

Mr. John B. Waters, Director
Tennessee Valley Authority
ET 12A
400 West Summit Hill Drive
Knoxville, Tennessee 37902

Mr. W. H. Kennoy, Director
Tennessee Valley Authority
ET 12A
400 West Summit Hill Drive
Knoxville, Tennessee 37902

Mr. W. F. Willis
Senior Executive Officer
ET 12B
400 West Summit Hill Drive
Knoxville, Tennessee 37902

General Counsel
Tennessee Valley Authority
ET 11H
400 West Summit Hill Drive
Knoxville, Tennessee 37902

Mr. Dwight Nunn
Vice President, Nuclear Projects
Tennessee Valley Authority
3B Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Dr. Mark O. Medford
Vice President, Nuclear Assurance,
Licensing and Fuels
Tennessee Valley Authority
3B Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Mr. Jack Wilson, Site Vice President
Sequoyah Nuclear Plant
Tennessee Valley Authority
P. O. Box 2000
Soddy Daisy, Tennessee 37379

Ms. Marci Cooper
Site Licensing Manager
Sequoyah Nuclear Plant
P. O. Box 2000
Soddy Daisy, Tennessee 37379

County Judge
Hamilton County Courthouse
Chattanooga, Tennessee 37402

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street, N.W.
Atlanta, Georgia 30323

Mr. Paul E. Harmon
Sequoyah Nuclear Plant
U.S. Nuclear Regulatory Commission
2600 Igou Ferry Road
Soddy Daisy, Tennessee 37379

Mr. Michael H. Mobley, Director
Division of Radiological Health
T.E.R.R.A Building 6th Floor
150 9th Avenue North
Nashville, Tennessee 37219-5404

Mr. Edward G. Wallace
Manager, Nuclear Licensing
and Regulatory Affairs
Tennessee Valley Authority
5B Lookout Place
Chattanooga, Tennessee 37402-2801

Tennessee Valley Authority
Rockville Office
11921 Rockville Pike
Suite 402
Rockville, Maryland 20852



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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-327

SEQUOYAH NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 151
License No. DPR-77

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Tennessee Valley Authority (the licensee) dated May 24, 1991, 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.

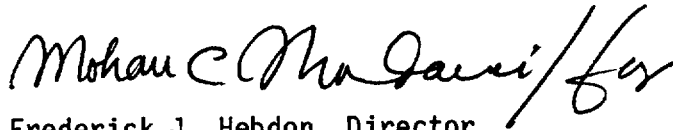
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-77 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 151, 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, to be implemented prior to startup from the Cycle 5 refueling outage.

FOR THE NUCLEAR REGULATORY COMMISSION



Frederick J. Hebdon, Director
Project Directorate II-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: July 24, 1991

ATTACHMENT TO LICENSE AMENDMENT NO.

FACILITY OPERATING LICENSE NO. DPR-77

DOCKET NO. 50-327

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

2-6

3/4 3-27

3/4 3-27a

INSERT

2-6

3/4 3-27

3/4 3-27a



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

ENCLOSURE 2

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO.151 TO FACILITY OPERATING LICENSE NO. DPR-77

TENNESSEE VALLEY AUTHORITY
SEQUOYAH NUCLEAR PLANT, UNIT 1

DOCKET NO. 50-327

1.0 INTRODUCTION

By letter dated May 24, 1991, the Tennessee Valley Authority (TVA or the licensee) submitted a request for changes to the Sequoyah Nuclear Plant (SQN), Unit 1 Technical Specifications (TS). The requested changes would revise the steam generator water level low-low trip setpoints in Table 2.2-1, Reactor Trip System Instrumentation Trip Setpoints, Items 13.a and b, and Table 3.3-4, Engineered Safety Feature Actuation System Instrumentation Trip Setpoints, Item 6.c. These proposed changes would reflect replacement of the present Barton unmodified steam generator level transmitters with modified Barton Model 764 level transmitters, a plant modification which will occur during the upcoming Unit 1 Cycle 5 refueling outage. The proposed amendment affects SQN Unit 1 only, since the changes were approved for SQN Unit 2 in Amendment 132, dated October 31, 1990.

2.0 EVALUATION

In 1990, TVA upgraded the Reactor Protection System at SQN Unit 1 by replacing the Foxboro H-line analog system with a new Eagle-21 digital microprocessor-based system. This modification did not result in replacement of the Barton steam generator level transmitters at SQN Unit 1. As a part of the modification, Westinghouse Electric Corporation supplied setpoints for the installed (unmodified) transmitters and for their replacement (modified) transmitters when the new transmitters were installed.

The new Barton Model 764 level transmitters to be installed during the 1991 refueling outage are more accurate due to a modification that is performed by the manufacturer. This modification eliminates errors associated with thermal non-repeatability (environmental heatup and subsequent cooling) of the transmitter reference leg. The new transmitters will perform the same function in the same manner as the transmitters they replace. The proposed change will result in agreement between the Unit 1 and Unit 2 steam generator low-low level setpoints.

The low-low level trips affected by the proposed change are associated with the reactor trip system and the engineered safety feature actuation system. They reflect actuation at a slightly lower steam generator water level made possible by the improved accuracy. Westinghouse Electric Corporation has

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determined that the new setpoints will continue to satisfy the requirements assumed in the SQN safety analysis. In addition, the reduced setpoint will potentially result in fewer trips and challenges to the safety systems during plant startups and feedwater transients. Therefore, based on this analysis, the staff has determined that the proposed changes 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 (56 FR 29281). 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.

Date: July 24, 1991

Principal Contributor: D. LaBarge

TABLE 2.2-1 (Continued)

REACTOR TRIP SYSTEM INSTRUMENTATION TRIP SETPOINTS

| <u>FUNCTIONAL UNIT</u> | <u>TRIP SETPOINT</u> | <u>ALLOWABLE VALUES</u> |
|--|---|--|
| 13. Steam Generator Water Level--Low-Low | | |
| a. RCS Loop ΔT Equivalent to Power \leq 50% RTP | RCS Loop ΔT variable input \leq 50% RTP | RCS Loop ΔT variable input \leq trip setpoint + 2.5% RTP |
| Coincident with Steam Generator Water Level -- Low-Low (Adverse) and Containment Pressure - EAM | \geq 15.0% of narrow range instrument span \leq 0.5 psig | \geq 14.4% of narrow range instrument span \leq 0.6 psig |
| or Steam Generator Water Level -- Low-Low (EAM) | \geq 10.7% of narrow range instrument span | \geq 10.1% of narrow range instrument span |
| with A time delay (T_s) if one Steam Generator is affected | $\leq T_s$ (Note 5) | $\leq (1.01) T_s$ (Note 5) |
| or A time delay (T_m) if two or more Steam Generators are affected | $\leq T_m$ (Note 5) | $\leq (1.01) T_m$ (Note 5) |
| b. RCS Loop ΔT Equivalent to Power $>$ 50% RTP | | |
| Coincident with Steam Generator Water Level -- Low-Low (Adverse) and Containment Pressure (EAM) | \geq 15.0% of narrow range instrument span \leq 0.5 psig | \geq 14.4% of narrow range instrument span \leq 0.6 psig |
| or Steam Generator Water Level -- Low-Low (EAM) | \geq 10.7% of narrow range instrument span | \geq 10.1% of narrow range instrument |

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

| <u>FUNCTIONAL UNIT</u> | <u>TRIP SETPOINT</u> | <u>ALLOWABLE VALUES</u> |
|---|---|---|
| 6. AUXILIARY FEEDWATER | | |
| a. Manual | Not Applicable | Not Applicable |
| b. Automatic Actuation Logic | Not Applicable | Not Applicable |
| c. Main Steam Generator Water Level--Low-Low | | |
| i. RCS Loop ΔT Equivalent to Power $\leq 50\%$ RTP | RCS Loop ΔT variable input $\leq 50\%$ RTP | RCS Loop ΔT variable input $<$ trip setpoint $+2.5\%$ RTP |
| Coincident with Steam Generator Water Level-- Low-Low (Adverse) and | $>15.0\%$ of narrow range instrument span | $>14.4\%$ of narrow range instrument span |
| Containment Pressure-EAM or Steam Generator Water Level--Low-Low (EAM) with | ≤ 0.5 psig | ≤ 0.6 psig |
| A time delay (T_S) if one Steam Generator is affected or | $>10.7\%$ of narrow range instrument span | $>10.1\%$ of narrow instrument span |
| A time delay (T_m) if two or more Steam Generators are affected | $\leq T_S$ (Note 5, Table 2.2-1) | $\leq (1.01) T_S$ (Note 5, Table 2.2-1) |
| | $\leq T_m$ (Note 5, Table 2.2-1) | $\leq (1.01) T_m$ (Note 5, Table 2.2-1) |

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

| <u>FUNCTIONAL UNIT</u> | <u>TRIP SETPOINT</u> | <u>ALLOWABLE VALUES</u> |
|---|--|---|
| ii. RCS Loop ΔT Equivalent to Power > 50% RTP | | |
| Coincident with Steam Generator Water Level--Low-Low (Adverse) and Containment Pressure (EAM) or Steam Generator Water Level--Low-Low (EAM) | >15.0% of narrow range Instrument span | >14.4% of narrow range instrument span |
| | ≤ 0.5 psig | ≤ 0.6 psig |
| | >10.7% of narrow range Instrument span | >10.1% of narrow range Instrument span |
| d. S.I. | See 1 above (all SI Setpoints) | |
| e. Station Blackout | 0 volts with a 5.0 second time delay | 0 volts with a 5.0 \pm 1.0 second time delay |
| f. Trip of Main Feedwater Pumps | N.A. | N.A. |
| g. Auxiliary Feedwater Suction Pressure-Low | > 2 psig (motor driven pump) ≥ 13.9 psig (turbine driven pump) | > 1 psig (motor driven pump) ≥ 12 psig (turbine driven pump) |
| h. Auxiliary Feedwater Suction Transfer Time Delays | 4 seconds (motor driven pump) 5.5 seconds (turbine driven pump) | 4 seconds ± 0.4 seconds (motor driven pump) 5.5 seconds ± 0.55 seconds (turbine driven pump) |