May 4, 1999

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: ISSUANCE OF TECHNICAL SPECIFICATION AMENDMENTS FOR THE SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2 (TAC NOS. MA4630 AND MA4631) (TS 98-07)

Dear Mr. Scalice:

The Commission has issued the enclosed Amendment No. 244 to Facility Operating License No. DPR-77 and Amendment No. 235 to Facility Operating License No. DPR-79 for the Sequoyah Nuclear Plant (SQN), Units 1 and 2, respectively. These amendments are in response to your application dated January 15, 1999. The proposed change adds a new action statement to Technical Specification (TS) 3.1.3.2, "Position Indicating Systems - Operating," that eliminates the need to enter TS 3.0.3 whenever two or more individual rod position indications per bank may be inoperable, while maintaining the appropriate overall level of protection. It also allows additional time to determine the position of the nonindicating rod(s). The U.S. Nuclear Regulatory Commission staff has found the proposed changes to be acceptable.

A copy of the Safety Evaluation is also enclosed. A Notice of Issuance will be included in the next Commission's biweekly Federal Register notice. Please direct any questions you or your staff should have to me at (301) 415-2010.

Sincerely,

NRC FILE CENTER COPY

Original signed by:

Ronald W. Hernan, Senior Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-327 and 50-328

Enclosures: 1. Amendment No. 244 to License No. DPR-77
2. Amendment No. 235 to License No. DPR-79
3. Safety Evaluation

cc w/enclosures: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 4, 1999

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Chief Nuclear Officer and
Executive Vice President
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SUBJECT: ISSUANCE OF TECHNICAL SPECIFICATION AMENDMENTS FOR THE SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2 (TAC NOS. MA4630 AND MA4631)(TS 98-07)

Dear Mr. Scalice:

The Commission has issued the enclosed Amendment No. 244 to Facility Operating License No. DPR-77 and Amendment No. 235 to Facility Operating License No. DPR-79 for the Sequoyah Nuclear Plant, Units 1 and 2, respectively. These amendments are in response to your application dated January 15, 1999. The proposed change adds a new action statement to Technical Specification (TS) 3.1.3.2, "Position Indicating Systems - Operating," that eliminates the need to enter TS 3.0.3 whenever two or more individual rod position indications per bank may be inoperable, while maintaining the appropriate overall level of protection. It also allows additional time to determine the position of the nonindicating rod(s). The U.S. Nuclear Regulatory Commission staff has found the proposed changes to be acceptable.

A copy of the Safety Evaluation is also enclosed. A Notice of Issuance will be included in the next Commission's biweekly Federal Register notice. Please direct any questions you or your staff should have to me at (301) 415-2010.

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Ronald W. Hernan, Senior Project Manager, Section 2
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Office of Nuclear Reactor Regulation

Docket Nos. 50-327 and 50-328

Enclosures: 1. Amendment No. 244 to License No. DPR-77
2. Amendment No. 235 to License No. DPR-79
3. Safety Evaluation

cc w/enclosures: See next page

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-327

SEQUOYAH NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 244
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 January 15, 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 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. 244 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 no later than 45 days after issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Sheri R. Peterson, 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: May 4, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 244

FACILITY OPERATING LICENSE NO. DPR-77

DOCKET NO. 50-327

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

REMOVE	INSERT
3/4 1-17	3/4 1-17

POSITION INDICATION SYSTEMS - OPERATING

LIMITING CONDITION FOR OPERATION

3.1.3.2 The shutdown and control rod position indication system and the demand position indication system shall be OPERABLE and capable of determining the control rod positions within ± 12 steps.

APPLICABILITY: MODES 1 and 2.

ACTION:

a. With a maximum of one rod position indicator per bank inoperable either:

   1. Determine the position of the non-indicating rod(s) indirectly by the movable incore detectors at least once per 12 hours and immediately after any motion of the non-indicating rod which exceeds 24 steps in one direction since the last determination of the rod's position, or | R217

   2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours.

b. With more than one rod position indicator per bank inoperable either:

   1. Determine the position of the non-indicating rod(s) indirectly by the movable incore detectors at least once per 12 hours, and immediately after any motion of the non-indicating rod which exceeds 24 steps in one direction since the last determination of the rod's position, and

   2. Place the control rods under manual control, and monitor and record Reactor Coolant System average temperature (Tavg) at least once per hour, and

   3. Restore the rod position indicators to OPERABLE status within 24 hours such that a maximum of one rod position indicator per bank is inoperable, or

   4. Be in HOT STANDBY within the next 6 hours.

c. With a maximum of one demand position indicator per bank inoperable either:

   1. Verify that all rod position indicators for the affected bank are OPERABLE and that the most withdrawn rod and the least withdrawn rod of the bank are within a maximum of 12 steps of each other at least once per 12 hours, or

   2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours.

| R217

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-328

SEQUOYAH NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 235
License No. DPR-79

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

   A. The application for amendment by Tennessee Valley Authority (the licensee) dated January 15, 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 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-79 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 235 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 no later than 45 days after issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Sheri R. Peterson

Sheri R. Peterson, 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: May 4, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 235

FACILITY OPERATING LICENSE NO. DPR-79

DOCKET NO. 50-328

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
3/4 1-17	3/4 1-17
--	3/4 1-17a

POSITION INDICATION SYSTEMS-OPERATING

LIMITING CONDITION FOR OPERATION

3.1.3.2 The shutdown and control rod position indication system and the demand position indication system shall be OPERABLE and capable of determining the control rod positions within ± 12 steps.

APPLICABILITY: Modes 1 and 2.

ACTION:

a. With a maximum of one rod position indicator per bank inoperable either:

1. Determine the position of the non-indicating rod(s) indirectly by the movable incore detectors at least once per 12 hours and immediately after any motion of the non-indicating rod which exceeds 24 steps in one direction since the last determination of the rod's position, or

2. Reduce THERMAL POWER TO less than 50% of RATED THERMAL POWER within 8 hours.

b. With more than one rod position indicator per bank inoperable either:

1. Determine the position of the non-indicating rod(s) indirectly by the movable incore detectors at least once per 12 hours, and immediately after any motion of the non-indicating rod which exceeds 24 steps in one direction since the last determination of the rod's position, and

2. Place the control rods under manual control, and monitor and record Reactor Coolant System average temperature (Tavg) at least once per hour, and

3. Restore the rod position indicators to OPERABLE status within 24 hours such that a maximum of one rod position indicator per bank is inoperable, or

4. Be in HOT STANDBY within the next 6 hours.

c. With a maximum of one demand position indicator per bank inoperable either:

1. Verify that all rod position indicators for the affected bank are OPERABLE and that the most withdrawn rod and the least withdrawn rod of the bank are within a maximum of 12 steps of each other at least once per 12 hours, or

2. Reduce THERMAL POWER to less than 50% of RATED THERMAL POWER within 8 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.2 Each rod position indicator shall be determined to be OPERABLE by verifying that the demand position indication system and the rod position indication system agree within 12 steps at least once per 12 hours except during time intervals when the Rod Position Deviation Monitor is inoperable, then compare the demand position indication system and the rod position indication system at least once per 4 hours.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 244 TO FACILITY OPERATING LICENSE NO. DPR-77

AND AMENDMENT NO. 235 TO FACILITY OPERATING LICENSE NO. DPR-79

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

1.0 INTRODUCTION

The Tennessee Valley Authority (TVA, the licensee) requested amendments to Operating Licenses DPR-77 and DPR-79 for Sequoyah Nuclear Plant (SQN), Units 1 and 2, respectively, in a letter to the U.S. Nuclear Regulatory Commission (NRC) dated January 15,1999. The amendments would revise the SQN Units 1 and 2 Technical Specifications (TSs) for the reactor individual control rod position indication (RPI) systems. Specifically, the proposed change adds a new action statement to TS 3.1.3.2, "Position Indicating Systems - Operating," that eliminates the need to enter TS 3.0.3 whenever two or more individual RPIs per bank may be inoperable, while maintaining the appropriate overall level of protection. It would also allow additional time to determine the position of the nonindicating rod(s).

2.0 BACKGROUND

SQN has 53 full-length rod control cluster assemblies (RCCAs) or control rod assemblies. The RCCAs are designated by function as the control banks and shutdown banks. The shutdown RCCAs provide a large negative shutdown reactivity insertion on a reactor trip. They ensure the reactor remains subcritical and that shutdown margin is maintained immediately following the trip. The control RCCAs are used to change reactivity in the core, thereby changing fuel temperature and subsequently moderator temperature to maintain average temperature (Tavg) on program during power operation. There are four control banks and four shutdown banks. Each set of banks are labeled A, B, C, and D. With the exception of Shutdown Banks C and D, each bank is comprised of two groups, although the banks are normally operated and controlled as a unit. The axial position of the RCCAs may be controlled manually or automatically. The RCCAs drop into the core following actuation of reactor trip signals. The shutdown banks are always in the fully withdrawn position during normal operation, and are moved to this position at a constant speed by manual control prior to criticality. A reactor trip signal causes them to fall by gravity into the core. The control banks are the only RCCAs that can be manipulated under automatic control. Each control bank is divided into two groups to obtain smaller incremental

reactivity changes per step. All RCCAs in a group are electrically paralleled to move simultaneously. The two groups within the same bank are stepped so that the relative position of the groups will not differ by more than one step. The control banks are programmed so that withdrawal of the banks is sequenced and overlapped in the following order: Control Banks A, B, C, then D. The programmed insertion sequence is the opposite of the withdrawal sequence, i.e., the last control bank withdrawn (Bank D) is the first control bank inserted.

The indication of RCCA position is a Regulatory Guide 1.97 Category 3 variable (i.e., non-Class 1E performance grade). Two separate systems are provided to sense and display control RCCA positions as described below.

Demand Position Indicating System (DPIS)

The bank DPIS counts the pulses from the rod control system that moves the RCCAs. There is one step counter for each group of RCCAs. Individual rods in a group receive the same signal to move; therefore, they should all be at the same position indicated by the group step counter for that group. The DPIS is considered highly precise (± 1 step or ± 5/8 inch). If an RCCA does not move one step for each demand pulse, the step counter will still count the pulse and incorrectly reflect the position of the RCCA.

Rod Position Indication System (RPIS)

The RPIS provides an indication of actual control rod position, but at a lower precision than the step counters. This system is based on inductive analog signals from a series of primary and secondary coil stacks spaced along the rod drive pressure housing in which the rod drive shaft acts as the core. The higher the shaft (and RCCA) is out of the reactor, the stronger the coupling between the transformer coil stacks. This produces an analog secondary voltage, which is directly proportional to the position of the drive rod. The maximum uncertainty is ± 12 steps.

The DPIS and the RPIS are separate and independent systems as a result of operational requirements. Operating procedures require the reactor operator to compare the demand and indicated (actual) readings from the RPIS so as to verify the operation of the rod control system. In addition, the RPIS system provides an input to the control rod deviation alarm circuit. A rod position deviation alarm would be generated if an individual rod position deviated by more than 12 steps from its RCCA bank position. Also, RPIS provides warning of misalignment of any two RCCAs within the same bank by ± 12 steps, and "rod-at-bottom" (rod drop).

TVA proposes to modify the SQN Units 1 and 2 TSs by adding a new action statement to TS 3.1.3.2, "Position Indicating Systems - Operating," that would eliminate the need to enter TS 3.0.3 (which would require a plant shutdown) whenever two or more individual RPIs may be inoperable per bank, while maintaining the appropriate overall level of protection and would add flexibility to the initial determination of the position of the non-indicating rod(s).

RCCAs (or control rods) are considered operable when they are mechanically free to drop into the reactor core, their control system will perform its required function to free them to drop, and when they are in their required position as assumed in the accident analyses. Operating

experience has demonstrated that when the control rod RPI system indicates the control rods to be out of position, alternate measurement techniques typically demonstrate that the rods are indeed in the correct position, but the RPIS itself has problems. Operating experience has shown that failure of an individual RPI to properly indicate control rod position typically does not result in control rods being out of position. RPIS inoperability is normally the result of a difference of more than 12 steps (the current limit specified in the TSs) occurring between the analog RPIS and the associated DPIS or "step counter." Such discrepancies have occurred several times in the past during reactor startups (see, for example, TVA Licensee Event Report No. 50-327/96011, dated December 18, 1996.) The proposed change is similar to one being proposed by the nuclear industry as a change to the Westinghouse Standard TSs (NUREG-1431).

Specifically, the proposed changes to TS 3.1.3.2 would revise Action Statements (a) and (b) that currently require the initial determination of position of the non-indicating rod(s) indirectly by the movable incore detectors from "at least once per 8 hours" to "at least once per 12 hours." The proposed changes to TS 3.1.3.2 would also add a new Action Statement (b) that would read:

> With more than one rod position indicator per bank inoperable either:
>
> Determine the position of the non-indicating rod(s) indirectly by the movable incore detectors at least once per 12 hours, and immediately after any motion of the non-indicating rod which exceeds 24 steps in one direction since the last determination of the rod's position, and
>
> Place the control rods under manual control, and monitor and record reactor coolant system (RCS) average temperature (Tavg) at least once per hour, and
>
> Restore the rod position indicators to OPERABLE status within 24 hours such that a maximum of one rod position indicator per bank is inoperable, or
>
> Be in HOT STANDBY within the next 6 hours.

As a result of the above proposed change, the current existing Action Statement (b) would become Action Statement (c).

3.0 EVALUATION

TS Bases Section 3/4.1.3, "Movable Control Assemblies," states that the specifications of this section ensure that:

> a. Acceptable power distribution limits are maintained,
> b. the minimum shutdown margin is maintained, and
> c. the potential effects of rod alignment on associated accident analyses are limited.

The proposed TS changes provide compensatory measures to assure that the Bases are maintained. The compensatory actions require that rod position be determined indirectly via the movable incore flux detectors and that the RCS temperature be monitored and recorded, since

temperature is a function of control rod positions. These actions address Items a and b above. Also, rod control is placed in manual, which limits automatic rod motion. This addresses Item c above.

The TVA request addresses the condition wherein the RPIS is inoperable with several compensatory actions being taken during a 24-hour allowed outage time (AOT). However, if, during this period of time, an actual misalignment or rod control operability problem were to occur, then additional limiting conditions of operation (LCO's) would apply (e.g., LCO 3.1.3.1.b or c). The additional time to determine the position of the nonindicating rod(s) is requested to remove the interference between reducing power and determination of rod position while trying to troubleshoot the problem, since reducing power changes the neutron flux profile.

The proposed action statement has an AOT of 24 hours, as well as compensatory measures to use the movable incore detectors to ascertain rod position, to monitor and record RCS temperature, to place rod control in the manual mode (which limits automatic rod motion), and to allow the use of other reactivity control mechanisms such as boration and dilution. The 24-hour AOT provides sufficient time to troubleshoot and restore the RPIS to operation while avoiding plant challenges associated with an unnecessary plant shutdown. Monitoring and recording the RCS temperature would allow early detection of actual mispositioned or dropped rods. Overall plant safety would be enhanced by maintaining steady-state operation, as compared with the large rod movements and potential challenges required during an unnecessary plant shutdown in conjunction with the loss (inaccuracy) of a small number of RPI signals. The new action would avoid unnecessary plant shutdowns per TS 3.0.3, when operators would be challenged to use the rod control system with degraded rod indication capabilities.

Because no design changes are involved with this amendment request, the impact on the plant safety analysis design basis would be one involving a reactivity transient induced by operator error associated with the loss of position indication. The analysis results for these events in Final Safety Analysis Report (FSAR) Sections 15.2.1 through 15.2.3 are not dependent upon operator action. The assumed reactivity insertion rates are based on conservative, worst-case scenarios independent of whether they are due to equipment malfunction or human error. Loss of RCCA position indication would not affect the assumed reactivity insertion rates. Further, the protection systems assumed in the analysis of these events (power range neutron flux high and low settings and Overtemperature-Delta T) are unaffected since no design changes are involved.

The worst-case reactivity transient of this nature, the withdrawal of a single RCCA, has been analyzed in FSAR Section 15.3.6 assuming that operators ignore RCCA position indication. Whether indication is lost, as is the case covered by this new action statement, or disregarded, does not change the method of analysis or the outcome of this event. Warning of rod bank insertion limits would be available to the operator from the rod bank demand position system.

There is a 5 percent uncertainty margin between the power peaking factor measured by the incore detector system and the design power peaking factor assumed in the analysis of American Nuclear Society Condition I and II transients. The movable incore detectors are capable of revealing any situation that causes power shapes to be peaked in excess of the design value. Asymmetric power distributions can also be detected by the excore neutron flux detectors and core exit thermocouples. FSAR Sections 7.7.1.9 and 7.7.2 provide further discussions on the capabilities of these systems.

TS Bases Section 3/4.1.3 states that control rod positions and operability of the rod position indicators are required to be verified on a nominal basis of once per 12 hours with more frequent verification if an automatic monitoring channel is inoperable. Standard TS (NUREG1431) Bases Section B 3.1.8 (equivalent to Section 3/4.1.3) states the period of 8 hours for verification of RCCA position is reasonable based upon experience, normal power operation not requiring excessive movement of banks, and the small probability of simultaneously having a rod significantly out of position and an event sensitive to rod position. The 12-hour period for verification (not applicable to the rod position deviation monitor being inoperable) is reasonable in that:

- It is consistent with shift frequency (shift durations are now 12 hours), a period typically used as the basis of the 8 hours, and
- It is consistent with the rod position surveillance frequency currently in the TS.
- It removes the interference between TS 3.1.3.2 Actions a.1 and a.2 or b.1 and b.2. If power is going to be reduced, control rod position determination cannot be made during the power reduction. This change would provide more time for troubleshooting the problem and/or, allow the determination to be made after the power is reduced, and
- It is consistent with the 12-hour timeframe allowed to verify shutdown margin when a rod is misaligned from its group step counter height by more than ± 12 steps in TS 3.1.3.1.
- SQN's operating experience has been that RCCAs have not actually been found misaligned when movable flux detectors have been utilized to indirectly determine their position. Rather, the RPIS itself has had problems due to signal variations as a result of nonlinear circuit resistance in one of the RPIS loops, also referred to as the rod bow phenomenon.

The NRC staff has reviewed TVA's proposed changes and agrees that the changes are justified given the compensatory actions that will be taken and conclude that the proposed changes have minor safety significance. The proposed changes to TS 3.1.3.2 for SQN Units 1 and 2 are, therefore, acceptable.

4.0 STATE CONSULTATION

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

5.0 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 (64 FR 9201, dated February 24, 1999). Accordingly, the amendments meet 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 amendments.

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: Ronald W. Hernan

Dated: May 4, 1999

Mr. J. A. Scalice
Tennessee Valley Authority

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SEQUOYAH NUCLEAR PLANT

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