Docket Nos. 50-327/328 March 28, 1989

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

Dear Mr. Kingsley:

SUBJECT: ROD CLUSTER CONTROL ASSEMBLY FULLY WITHDRAWN POSITION (TAC 71982, 71983) (TS 89-15) - SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

The Commission has issued the enclosed Amendment No. 108 to Facility Operating License No. DPR-77 and Amendment No. 98 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 31, 1989 as supplemented by letter dated March 9, 1989.

These amendments modify Section 3.1.3, Movable Control Assemblies, of the Sequoyah, Units 1 and 2 Technical Specifications (TS). The changes revise the limiting conditions for operation 3.1.3.4 and 3.1.3.5 and the Figure 3.1-1 to define the fully withdrawn condition for shutdown and control rod banks as a position within the interval of equal to or greater than 222 steps withdrawn and of equal to or less than 231 steps withdrawn. A section is added to the Bases of the TS to define the fully withdrawn condition for the shutdown and control rod banks.

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

Enclosures:
1. Amendment No. 108 to License No. DPR-77
2. Amendment No. 98 to License No. DPR-79
3. Safety Evaluation

cc w/enclosures:
See next page

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U.S. House of Representatives
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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. 108
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 31 and March 9, 1989, complies with the standards and requirements of the Atomic Energy Act of 1954, as 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. 108 , 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.

FOR THE NUCLEAR REGULATORY COMMISSION

Suzanne Black

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 28, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 108

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. Overleaf pages* are provided to maintain document completeness.

REMOVE	INSERT
3/4 1-19	3/4 1-19
3/4 1-20	3/4 1-20
3/4 1-21	3/4 1-21*
3/4 1-22	3/4 1-22
3/4 1-23	3/4 1-23
B3/4 1-3	B3/4 1-3*
B3/4 1-4	B3/4 1-4

ROD DROP TIME

LIMITING CONDITION FOR OPERATION

3.1.3.4 The individual full-length (shutdown and control) rod drop time from the fully withdrawn position# shall be less than or equal to 2.2 seconds from beginning of decay of stationary gripper coil voltage to dashpot entry with:

a. T_{avg} greater than or equal to 541°F, and

b. All reactor coolant pumps operating.

APPLICABILITY: MODES 1 and 2

ACTION:

a. With the drop time of any full length rod determined to exceed the above limit, restore the rod drop time to within the above limit prior to proceeding to MODE 1 or 2.

b. With the rod drop times within limits but determined with 3 reactor coolant pumps operating, operation may proceed provided THERMAL POWER is restricted to less than or equal to 71% of RATED THERMAL POWER

SURVEILLANCE REQUIREMENTS

4.1.3.4 The rod drop time of full length rods shall be demonstrated through measurement prior to reactor criticality:

a. For all rods following each removal of the reactor vessel head,

b. For specifically affected individual rods following any maintenance on or modification to the control rod drive system which could affect the drop time of those specific rods, and

c. At least once per 18 months.

#Fully withdrawn shall be the condition where shutdown and control banks are at a position within the interval of $\geq$ 222 and $\leq$ 231 steps withdrawn, inclusive.

SHUTDOWN ROD INSERTION LIMIT

LIMITING CONDITION FOR OPERATION

3.1.3.5 All shutdown rods shall be fully withdrawn.**

APPLICABILITY: MODES 1* and 2*#

ACTION:

With a maximum of one shutdown rod not fully withdrawn, except for surveillance testing pursuant to Specification 4.1.3.1.2, within one hour either:

a. Fully withdraw the rod, or

b. Declare the rod to be inoperable and apply Specification 3.1.3.1.

SURVEILLANCE REQUIREMENTS

4.1.3.5 Each shutdown rod shall be determined to be fully withdrawn:

a. Within 15 minutes prior to withdrawal of any rods in control banks A, B, C or D during an approach to reactor criticality, and

b. At least once per 12 hours thereafter.

*See Special Test Exceptions 3.10.2 and 3.10.3.

#With K_{eff} greater than or equal to 1.0.

**Fully withdrawn shall be the condition where shutdown and control banks are at a position within the interval of $\geq$ 222 and $\leq$ 231 steps withdrawn, inclusive.

CONTROL ROD INSERTION LIMITS

LIMITING CONDITION FOR OPERATION

3.1.3.6 The control banks shall be limited in physical insertion as shown in Figure 3.1-1.

APPLICABILITY: MODES 1* and 2*#.

ACTION:

With the control banks inserted beyond the above insertion limits, except for surveillance testing pursuant to Specification 4.1.3.1.2, either:

a. Restore the control banks to within the limits within two hours, or

b. Reduce THERMAL POWER within two hours to less than or equal to that fraction of RATED THERMAL POWER which is allowed by the group position using the above figures, or

c. Be in HOT STANDBY within 6 hours.

SURVEILLANCE REQUIREMENTS

4.1.3.6 The position of each control bank shall be determined to be within the insertion limits at least once per 12 hours except during time intervals when the Rod Insertion Limit Monitor is inoperable, then verify the individual rod positions at least once per 4 hours.

*See Special Test Exceptions 3.10.2 and 3.10.3.

#With K_{eff} greater than or equal to 1.0.

(Fully Withdrawn)*

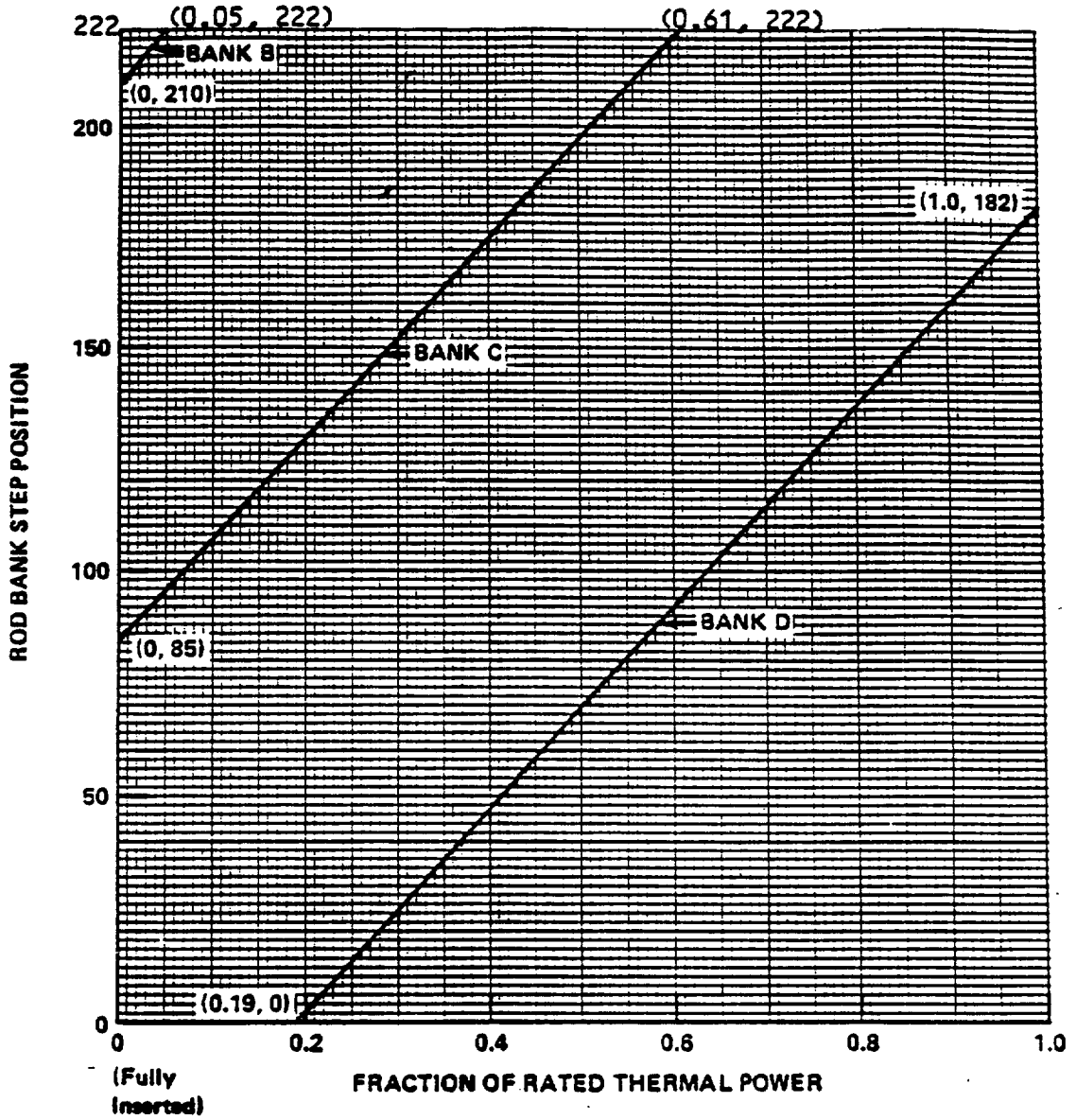

FIGURE 3.1-1

ROD BANK INSERTION LIMITS VERSUS THERMAL POWER
FOUR LOOP OPERATION

*See page 3/4 1-23

FIGURE 3.1-1 NOTATION

Fully withdrawn shall be the condition where shutdown and control banks are at a position within the interval of $\geq$ 222 and $\leq$ 231 steps withdrawn, inclusive.

There are no rod insertion limits when the shutdown and control banks are at a position within the interval $\geq$ 222 and $\leq$ 231 steps withdrawn, inclusive. The fully withdrawn position shall be specified in a reload safety evaluation for each cycle of operation and, once specified, shall not be changed unless such a change is specifically evaluated.

5408 gallons of 20,000 ppm borated water from the boric acid storage tanks or 64,160 gallons of 2000 ppm borated water from the refueling water storage tank.

With the RCS temperature below 200°F, one injection system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and positive reactivity change in the event the single injection system becomes inoperable.

The boron capability required below 200°F, is sufficient to provide a SHUTDOWN MARGIN of 1% delta k/k after xenon decay and cooldown from 200°F to 140°F. This condition requires either 835 gallons of 20,000 ppm borated water from the boric acid storage tanks or 9,690 gallons of 2000 ppm borated water from the refueling water storage tank.

The contained water volume limits include allowance for water not available because of discharge line location and other physical characteristics.

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 7.5 and 9.5 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

The OPERABILITY of one boron injection system during REFUELING ensures that this system is available for reactivity control while in MODE 6.

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) limit the potential effects of rod misalignment on associated accident analyses. OPERABILITY of the control rod position indicators is required to determine control rod positions and thereby ensure compliance with the control rod alignment and insertion limits.

The ACTION statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original design criteria are met. Misalignment of a rod requires measurement of peaking factors and a restriction in THERMAL POWER. These restrictions provide assurance of fuel rod integrity during continued operation. In addition, those accident analyses affected by a misalignment rod are reevaluated to confirm that the results remain valid during future operation.

The maximum rod drop time restriction is consistent with the assumed rod drop time used in the accident analyses. Measurement with T_{avg} greater than or equal to 541°F and with all reactor coolant pumps operating ensures that the measured drop times will be representative of insertion times experienced during a reactor trip at operating conditions.

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 verifications required if an automatic monitoring channel is inoperable. These verification frequencies are adequate for assuring that the applicable LCO's are satisfied.

3/4.1.3.4 ROD DROP TIME and 3/4.1.3.5 SHUTDOWN ROD INSERTION LIMIT

Fully withdrawn for shutdown and control rod banks is defined as a condition where the rod banks are positioned in a range of 222 to 231 steps fully withdrawn. This range is defined to permit axial repositioning of rod banks to mitigate rod wear on internal guide surfaces.

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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-328

SEQUOYAH NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 98
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 31 and March 9, 1989, complies with the standards and requirements of the Atomic Energy Act of 1954, as 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. 98 , 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.

FOR THE NUCLEAR REGULATORY COMMISSION

Suzanne Black

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 28, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 98

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. Overleaf pages* are provided to maintain document completeness.

REMOVE	INSERT
3/4 1-19	3/4 1-19
3/4 1-20	3/4 1-20
3/4 1-22	3/4 1-22
3/3 1-23	3/4 1-23
B3/4 1-3	B3/4 1-3*
B3/4 1-4	B3/4 1-4

ROD DROP TIME

LIMITING CONDITION FOR OPERATION

3.1.3.4 The individual full-length (shutdown and control) rod drop time from the fully withdrawn position# shall be less than or equal to 2.2 seconds from beginning of decay of stationary gripper coil voltage to dashpot entry with:

a. T_{avg} greater than or equal to 541°F, and

b. All reactor coolant pumps operating.

APPLICABILITY: Modes 1 and 2.

ACTION:

a. With the drop time of any full length rod determined to exceed the above limit, restore the rod drop time to within the above limit prior to proceeding to MODE 1 or 2.

b. With the rod drop times within limits but determined with 3 reactor coolant pumps operating, operation may proceed provided THERMAL POWER is restricted to less than or equal to 71% of RATED THERMAL POWER.

SURVEILLANCE REQUIREMENTS

4.1.3.4 The rod drop time of full length rods shall be demonstrated through measurement prior to reactor criticality:

a. For all rods following each removal of the reactor vessel head,

b. For specifically affected individual rods following any maintenance on or modification to the control rod drive system which could affect the drop time of those specific rods, and

c. At least once per 18 months.*

*For cycle 1, this surveillance is to be completed before the next cooldown or by August 5, 1983, whichever is earlier.

#Fully withdrawn shall be the condition where shutdown and control banks are at a position within the interval of $\geq$222 and $\leq$231 steps withdrawn, inclusive.

SHUTDOWN ROD INSERTION LIMIT

LIMITING CONDITION FOR OPERATION

3.1.3.5 All shutdown rods shall be fully withdrawn.**

APPLICABILITY: Modes 1* and 2*#.

ACTION:

With a maximum of one shutdown rod not fully withdrawn, except for surveillance testing pursuant to Specification 4.1.3.1.2, within one hour either:

a. Fully withdraw the rod, or

b. Declare the rod to be inoperable and apply Specification 3.1.3.1.

SURVEILLANCE REQUIREMENTS

4.1.3.5 Each shutdown rod shall be determined to be fully withdrawn:

a. Within 15 minutes prior to withdrawal of any rods in control banks A, B, C or D during an approach to reactor criticality, and

b. At least once per 12 hours thereafter.

*See Special Test Exceptions 3.10.2 and 3.10.3.
#With K_{eff} greater than or equal to 1.0

**Fully withdrawn shall be the condition where shutdown and control banks are at a position within the interval of $\geq$ 222 and $\leq$ 231 steps withdrawn, inclusive.

(Fully Withdrawn)*

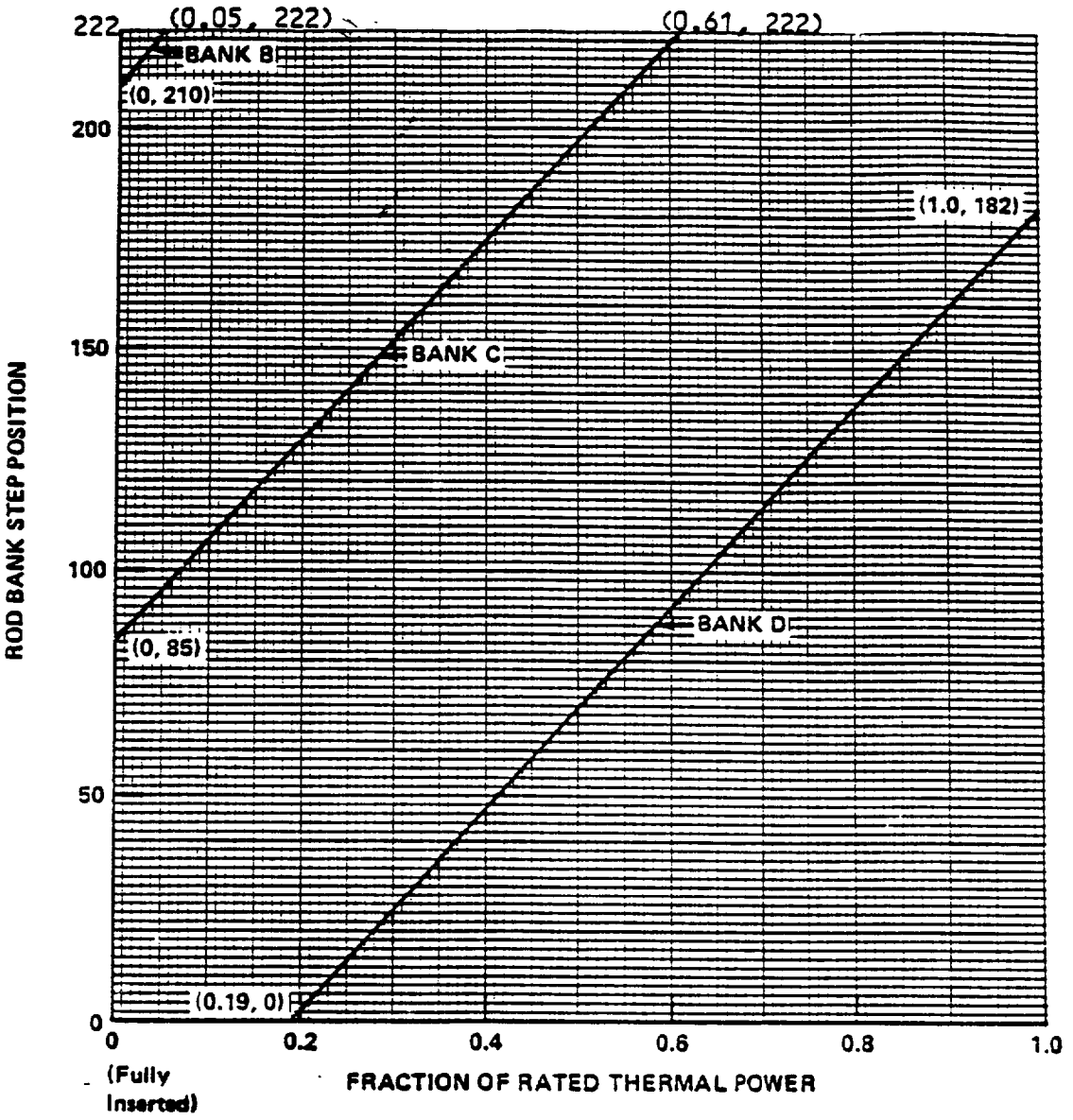

FIGURE 3.1-1

ROD BANK INSERTION LIMITS VERSUS THERMAL POWER
FOUR LOOP OPERATION

*See page 3/4 1-23.

FIGURE 3.1-1 NOTATION

Fully withdrawn shall be the condition where shutdown and control banks are at a position within the interval of $\geq$ 222 and $\leq$ 231 steps withdrawn, inclusive.

There are no rod insertion limits when the shutdown and control banks are at a position within the interval $\geq$ 222 and $\leq$ 231 steps withdrawn, inclusive. The fully withdrawn position shall be specified in a reload safety evaluation for each cycle of operation and, once specified, shall not be changed unless such a change is specifically evaluated.

BORATION SYSTEMS (Continued)

provide a SHUTDOWN MARGIN from expected operating conditions of 1.6% delta k/k after xenon decay and cooldown to 200°F. The maximum expected boration capability requirement occurs at EOL from full power equilibrium xenon conditions and requires 5408 gallons of 20,000 ppm borated water from the boric acid storage tanks or 64,160 gallons of 2000 ppm borated water from the refueling water storage tank.

With the RCS temperature below 200°F, one injection system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting CORE ALTERATIONS and positive reactivity changes in the event the single injection system becomes inoperable.

The boron capability required below 200°F is sufficient to provide a SHUTDOWN MARGIN of 1% delta k/k after xenon decay and cooldown from 200°F to 140°F. This condition requires either 835 gallons of 20,000 ppm borated water from the boric acid storage tanks or 9,690 gallons of 2000 ppm borated water from the refueling water storage tank.

The contained water volume limits include allowance for water not available because of discharge line location and other physical characteristics.

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 7.5 and 9.5 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

The OPERABILITY of one boron injection system during REFUELING ensures that this system is available for reactivity control while in MODE 6.

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum SHUTDOWN MARGIN is maintained, and (3) limit the potential effects of rod misalignment on associated accident analyses. OPERABILITY of the control rod position indicators is required to determine control rod positions and thereby ensure compliance with the control rod alignment and insertion limits.

MOVEABLE CONTROL ASSEMBLIES (Continued)

The ACTION statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original design criteria are met. Misalignment of a rod requires measurement of peaking factors and a restriction in THERMAL POWER. These restrictions provide assurance of fuel rod integrity during continued operation. In addition, those safety analyses affected by a misaligned rod are reevaluated to confirm that the results remain valid during future operation.

The maximum rod drop time restriction is consistent with the assumed rod drop time used in the safety analyses. Measurement with T_{avg} greater than or equal to 541°F and with all reactor coolant pumps operating ensures that the measured drop times will be representative of insertion times experienced during a reactor trip at operating conditions.

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 verifications required if an automatic monitoring channel is inoperable. These verification frequencies are adequate for assuring that the applicable LCO's are satisfied.

3/4.1.3.4 ROD DROP TIME and 3/4.1.3.5 SHUTDOWN ROD INSERTION LIMIT

Fully withdrawn for shutdown and control rod banks is defined as a condition where the rod banks are positioned in a range of 222 to 231 steps fully withdrawn. This range is defined to permit axial repositioning of rod banks to mitigate rod wear on internal guide surfaces.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 108 TO FACILITY OPERATING LICENSE NO. DPR-77

AND AMENDMENT NO. 98 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

By submittal dated January 31, 1989, the Tennessee Valley Authority (TVA) proposed to modify Section 3.1.3, Movable Control Assemblies, of the Sequoyah Nuclear Plant (SQN) Units 1 and 2 Technical Specification (TS). The proposed changes would revise the limiting conditions for operation (LCO) 3.1.3.4, Rod Drop Time, and 3.1.3.5, Shutdown Rod Insertion Limit, to define the fully withdrawn condition for shutdown and control rods as a position within the interval of equal to or greater than 222 steps withdrawn and equal to or less than 231 steps withdrawn. Fully withdrawn is currently 228 steps. Figure 3.1-1, "Rod Bank Insertion Limits Versus Thermal Power Loop Operation", is also proposed to be amended to reflect the fully withdrawn interval discussed above. TVA has also added the TS Bases with 3/4.1.3.4, "Rod Drop Time" and 3/4.1.3.5, "Shutdown Rod Insertion Limit," to provide the operators with an explanation for the fully withdrawn rod position range. This is TVA's TS change number 89-15.

By letter dated March 9, 1989, TVA provided supplemental information to its application. The information discussed the effect of the core neutron flux on the control rods being at the 222 steps as being fully withdrawn. This information did not change the substance of the proposed action which TVA submitted in its application dated January 31, 1989 and which was noticed in the Federal Register on February 22, 1989 (54 FR 7645). The information did not affect the staff's initial determination of no significant hazards consideration in that notice.

2.0 EVALUATION

NRC Inspection and Enforcement (IE) Information Notice (IN) 87-19, dated April 9, 1987, identified a potential problem for Westinghouse Electric Corporation (W) pressurized water reactors (PWR) rod cluster control assembly (RCCA) guides. A phenomenon known as fretting wear of the RCCA rodlets was noted at W PWRs. The fretting was determined to be caused by flow-induced vibratory contact between the rodlets and the guide blocks during long periods of steady state operation. W recommended that the RCCAs be axially repositioned during operation to slightly change the position of fully withdrawn RCCAs in order to distribute the wear. IE IN 87-19, referenced above, supported the W fix as a mitigating step for RCCA guide block wear. TVA has proposed to change the SQN, Units 1 and 2 TS to define the fully withdrawn position of RCCAs as a range of 222 and 231 steps.

The current fully withdrawn RCCA position is 228 steps. TVA has stated this action will improve RCCA reliability and extend the RCCA lifetime.

The term fully withdrawn is applied to shutdown and control banks in TS LCOs 3.1.3.4 and 3.1.3.5. Figure 3.1-1, "Rod Bank Insertion Limits Versus Thermal Power - Four Loop Operation," indicates fully withdrawn is 228 steps. The above proposed change will redefine the term fully withdrawn in LCOs 3.1.3.4 and 3.1.3.5 and modify Figure 3.1-1 to allow axial repositioning of shutdown and control banks within the interval of 222 to 231 steps.

TVA noted in their submittal that RCCA repositioning has the potential to reduce control rod worth and to increase control rod drop time. In the case of the fully withdrawn position of 222 steps, TVA has calculated that the control rod worth would be reduced by 0.12-percent delta rho. TVA states, however, this penalty would be accounted for in the TS shutdown margin requirements.

TVA has provided, as an enclosure to their January 31, 1989 submittal, a W Safety Evaluation supporting the proposed changes. The Safety Evaluation addresses both the hardware impact and the impact on Cycle 4 specific accident analyses.

The hardware portion of this evaluation addresses the operation of the Control Rod Drive Mechanism (CRDM) and the Solid State Rod Control System. W review of the RCCA design and performance requirements shows that the subject repositioning will be totally mechanically transparent to the operation of the installed L106A CRDMs at SQN and will not pose a challenge to CRDM operation. At step 231, the RCCAs are still engaged in the top of the fuel assembly thereby allowing for smooth rod drop. The changes required to the control system, solid state logic, and the bank overlap switches S1 through S6, do not apply to Class 1E equipment and will not challenge safety related equipment.

W review of the RCCA repositioning impact on the postulated loss-of-coolant and related accidents were assessed for increased control rod drop time. In the case of the fully withdrawn position of 231 steps, TVA has calculated an approximately 0.03 second increase in rod drop time. However, the .03 second increase is small relative to the existing margin (approximately 0.60 second). The rod drop time assumed in these analyses is consistent with the TS LCO 3.1.3.4 limit of 2.2 seconds from the beginning of the decay of the stationery gripper coil voltage to dashpot entry.

The W and TVA Safety Evaluation conclusions for the RCCA repositioning is that a change from the fully withdrawn position of 228 to a range of 222-231 steps does not represent an unreviewed safety question. A similar conclusion is reached with respect to all loss-of-coolant and non-loss-of-coolant accidents specific to Cycle 4 operation. For both loss-of-coolant and non-loss-of-coolant accidents, there is no effect on any existing safety analyses by the subject RCCA repositioning.

By telephone conference on February 27, 1989, TVA discussed the impact of increased neutron fluence on the RCCA tips since these tips would be below 228 steps for some period during each of the future fuel cycles. The only impact noted by TVA was that the RCCAs would experience slightly increased swelling at the tips. As justification for the acceptability of this increased swelling, TVA has stated that RCCA Control Bank "D" is normally more inserted into the core than 228 steps since its the controlling bank (particularly during beginning and middle of cycle operation) and that the remaining banks are of the same material and construction; therefore, all of the RCCA shutdown and control banks are bounded by the controlling bank D analyses in terms of rod life. TVA provided this supplemental information in its letter dated March 9, 1989.

Based on the above, the NRC staff has concluded that repositioning the RCCAs from a fully withdrawn position of 228 steps to a step within the range of 222-231, is acceptable. The proposed changes to TS LCO 3.1.3.4 and 3.1.3.5 to add the footnote, "fully withdrawn shall be the condition where shutdown and control banks are at a position within the interval of 222 and 231 steps withdrawn, inclusive" is found to be acceptable. The proposed changes to Figure 3.1-1 to add an identical footnote as just quoted above, with the additional footnote, "There are no Rod Insertion Limits when shutdown and control banks are at a position within the interval 222 and 231 steps withdrawn, inclusive. The fully withdrawn position shall be specified in a reload safety evaluation for each cycle of operation and; once specified, shall not be changed unless such change is specifically evaluated", is also found to be acceptable. Furthermore, the proposed addition of 3/4.1.3.4 Rod Drop Time and 3/4.1.3.5 Shutdown Rod Insertion Limit to the TS bases is found to be appropriate and acceptable.

Based on the above, the staff concludes that the proposed changes in its application for TS 89-15 are acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve 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. The staff has determined that the amendments involve 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 Commisssion has previously issued a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding. 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 nor environmental assessment need be prepared in connection with the issuance of these amendments.

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 7645) on February 22, 1989 and consulted with the State of Tennessee. No public comments were received and the State of Tennessee 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.

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