1997

June 10, 1

Mr. Oliver D. Kingsley, Jr.
President, TVA Nuclear and
Chief Nuclear Officer
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. M96592 AND M96593) (TS 96-02)

Dear Mr. Kingsley:

The Commission has issued the enclosed Amendment No. 224 to Facility Operating License No. DPR-77 and Amendment No. 215 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 August 22, 1996, as supplemented March 28, 1997.

The amendments revise Technical Specifications (TS) 3.6.5 and associated Bases to lower the minimum TS ice basket weight of 1,155 pounds to 1,071 pounds. This would reduce the overall weight of ice required in the ice condenser from 2,245,320 pounds to 2,082,024 pounds. The TVA license amendment request also proposed to extend the chemical analysis surveillance interval for the ice condenser ice bed from 12 months to 18 months based on the provisions of Generic Letter 93-05. The staff has reviewed the submittal for these changes and, based on our review, we find the proposed changes acceptable.

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

Sincerely,

DF01

Original signed by

Ronald W. Hernan, Senior Project Manager
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket Nos. 50-327 and 50-328

Enclosures: 1. Amendment No. 224 to License No. DPR-77
2. Amendment No. 215 to License No. DPR-79
120078 3. Safety Evaluation

cc w/enclosures: See next page

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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. 224
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 August 22, 1996 as supplemented March 28, 1997, 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. 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. 224 , 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 of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Frederick J. Hebdon, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: 1. Changes to the Technical Specifications

Date of Issuance: June 10, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 224

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	INSERT
3/4 6-26	3/4 6-26
3/4 6-27	3/4 6-27
B 3/4 6-4	B 3/4 6-4

3/4.6.5 ICE CONDENSER

ICE BED

LIMITING CONDITION FOR OPERATION

3.6.5.1. The ice bed shall be OPERABLE with:

a. The stored ice having a boron concentration of at least 1800 ppm boron as sodium tetraborate and a pH of 9.0 to 9.5,

b. Flow channels through the ice condenser,

c. A maximum ice bed temperature of less than or equal 27°F,

d. A total ice weight of at least 2,082,024 pounds at a 95% level of confidence, and

e. 1944 ice baskets.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the ice bed inoperable, restore the ice bed to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.1 The ice condenser shall be determined OPERABLE:

a. At least once per 12 hours by using the ice bed temperature monitoring system to verify that the maximum ice bed temperature is less than or equal to 27°F.

b. At least once per 12 months by:

Verifying, by visual inspection of a representative random sample of at least 54 flow passages (33 percent) per ice condenser bay, that the accumulation of frost or ice on flow passages between ice baskets, past lattice frames, through the intermediate and top deck floor grating, or past the lower inlet plenum support structures and turning vanes is less than or equal to 15-percent blockage of the total flow area in each bay, with a 95-percent level of confidence.

If the summation of blockage from the sample fails to meet the acceptance criteria, then 100 percent of the passages of that bay shall be inspected. If the 100-percent inspection fails to meet the acceptance criteria, then the flow passages shall be cleaned to meet the acceptance criteria. Each flow passage that is cleaned will be reinspected. Any inaccessible flow passage that is not inspected will be considered blocked.

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 40 months by lifting and visually inspecting the accessible portions of at least two ice baskets from each 1/3 of the ice condenser and verifying that the ice baskets are free of detrimental structural wear, cracks, corrosion or other damage. The ice baskets shall be raised at least 10 feet for this inspection.

d. At least once per 18 months by:

1. Chemical analyses which verify that at least 9 representative samples of stored ice have a boron concentration of at least 1800 ppm as sodium tetraborate and a pH of 9.0 to 9.5.

2. Weighing a representative sample of at least 144 ice baskets and verifying that each basket contains at least 1071 lbs of ice. The representative sample shall include 6 baskets from each of the 24 ice condenser bays and shall be constituted of one basket each from Radial Rows 1, 2, 4, 6, 8 and 9 (or from the same row of an adjacent bay if a basket from a designated row cannot be obtained for weighing) within each bay. If any basket is found to contain less than 1071 pounds of ice, a representative sample of 20 additional baskets from the same bay shall be weighed. The minimum average weight of ice from the 20 additional baskets and the discrepant basket shall not be less than 1071 pounds/basket at a 95% level of confidence.

The ice condenser shall also be subdivided into 3 groups of baskets, as follows: Group 1 - bays 1 through 8, Group 2 - bays 9 through 16, and Group 3 - bays 17 through 24. The minimum average ice weight of the sample baskets from Radial Rows 1, 2, 4, 6, 8 and 9 in each group shall not be less than 1071 pounds/basket at a 95% level of confidence.

The minimum total ice condenser ice weight at a 95% level of confidence shall be calculated using all ice basket weights determined during this weighing program and shall not be less than 2,082,024 pounds.

3/4.6.4 COMBUSTIBLE GAS CONTROL

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombiner unit or the hydrogen mitigation system, consisting of 68 hydrogen ignitions per unit, is capable of controlling the expected hydrogen generation associated with 1) zirconium-water reactions, 2) radiolytic decomposition of water and 3) corrosion of metals within containment. These hydrogen control systems are designed to mitigate the effects of an accident as described in Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA", Revision 2 dated November 1978. The hydrogen monitors of Specification 3.6.4.1 are part of the accident monitoring instrumentation in Specification 3.3.3.7 and are designated as Type A, Category 1 in accordance with Regulatory Guide 1.97, Revision 2, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," December 1980.

The hydrogen mixing systems are provided to ensure adequate mixing of the containment atmosphere following a LOCA. This mixing action will prevent localized accumulations of hydrogen from exceeding the flammable limit.

The operability of at least 66 of 68 ignitors in the hydrogen mitigation system will maintain an effective coverage throughout the containment. This system of ignitors will initiate combustion of any significant amount of hydrogen released after a degraded core accident. This system is to ensure burning in a controlled manner as the hydrogen is released instead of allowing it to be ignited at high concentrations by a random ignition source.

3/4.6.5 ICE CONDENSER

The requirements asscciated with each of the components of the ice condenser ensure that the overall system will be available to provide sufficient pressure suppression capability to limit the containment peak pressure transient to less than 12 psig during LOCA conditions.

3/4.6.5.1 ICE BED

The OPERABILITY of the ice bed ensures that the required ice inventory will 1) be distributed evenly through the containment bays, 2) contain sufficient boron to preclude dilution of the containment sump following the LOCA and 3) contain sufficient heat removal capability to condense the reactor system volume released during a LOCA. These conditions are consistent with the assumptions used in the accident analyses.

The minimum weight figure of 1071 pounds of ice per basket contains a 15% conservative allowance for ice loss through sublimation which is a factor of 15 higher than assumed for the ice condenser design. The minimum weight figure of 2,082,024 pounds of ice also contains an additional 1% conservative allowance to account for systematic error in weighing instruments. In the

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.215
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 August 22, 1996 as supplemented March 28, 1997, 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. 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. 215, 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 of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Frederick J. Hebdon, Director
Project Directorate II-3
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment: 1. Changes to the Technical Specifications

Date of Issuance: June 10, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 215

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 6-27	3/4 6-27
3/4 6-28	3/4 6-28
B 3/4 6-4	B 3/4 6-4

3/4.6.5 ICE CONDENSER

ICE BED

LIMITING CONDITION FOR OPERATION

3.6.5.1 The ice bed shall be OPERABLE with:

a. The stored ice having a boron concentration of at least 1800 ppm boron as sodium tetraborate and a pH of 9.0 to 9.5,

b. Flow channels through the ice condenser,

c. A maximum ice bed temperature of less than or equal to 27°F,

d. A total ice weight of at least 2,082,024 pounds at a 95% level of confidence, and

e. 1944 ice baskets.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the ice bed inoperable, restore the ice bed to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.1 The ice condenser shall be determined OPERABLE:

a. At least once per 12 hours by using the ice bed temperature monitoring system to verify that the maximum ice bed temperature is less than or equal to 27°F.

b. At least once per 12 months by:

Verifying, by visual inspection of a representative random sample of at least 54 flow passages (33 percent) per ice condenser bay, that the accumulation of frost or ice on flow passages between ice baskets, past lattice frames, through the intermediate and top deck floor grating, or past the lower inlet plenum support structures and turning vanes is less than or equal to 15-percent blockage of the total flow area in each bay, with a 95-percent level of confidence.

If the summation of blockage from the sample fails to meet the acceptance criteria, then 100 percent of the passages of that bay shall be inspected. If the 100-percent inspection fails to meet the acceptance criteria, then the flow passages shall be cleaned to meet the acceptance criteria. Each flow passage that is cleaned will be reinspected. Any inaccessible flow passage that is not inspected will be considered blocked.

SURVEILLANCE REQUIREMENTS (Continued)

c. At least once per 40 months by lifting and visually inspecting the accessible portions of at least two ice baskets from each 1/3 of the ice condenser and verifying that the ice baskets are free of detrimental structural wear, cracks, corrosion or other damage. The ice baskets shall be raised at least 10 feet for this inspection.

d. At least once per 18 months by:

1. Chemical analyses which verify that at least 9 representative samples of stored ice have a boron concentration of at least 1800 ppm as sodium tetraborate and a pH of 9.0 to 9.5.

2. Weighing a representative sample of at least 144 ice baskets and verifying that each basket contains at least 1071 lbs of ice. The representative sample shall include 6 baskets from each of the 24 ice condenser bays and shall be constituted of one basket each from Radial Rows 1, 2, 4, 6, 8 and 9 (or from the same row of an adjacent bay if a basket from a designated row cannot be obtained for weighing) within each bay. If any basket is found to contain less than 1071 pounds of ice, a representative sample of 20 additional baskets from the same bay shall be weighed. The minimum average weight of ice from the 20 additional baskets and the discrepant basket shall not be less than 1071 pounds/basket at a 95% level of confidence.

   The ice condenser shall also be subdivided into 3 groups of baskets, as follows: Group 1 - bays 1 through 8, Group 2 -bays 9 through 16, and Group 3 - bays 17 through 24. The minimum average ice weight of the sample baskets from Radial Rows 1, 2, 4, 6, 8 and 9 in each group shall not be less than 1071 pounds/basket at a 95% level of confidence.

   The minimum total ice condenser ice weight at a 95% level of confidence shall be calculated using all ice basket weights determined during this weighing program and shall not be less than 2,082,024 pounds.

3/4.6.4 COMBUSTIBLE GAS CONTROL

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombiner unit or the hydrogen mitigation system, consisting of 68 hydrogen igniters per unit, is capable of controlling the expected hydrogen generation associated with 1) zirconium-water reactions, 2) radiolytic decomposition of water and 3) corrosion of metals within containment. These hydrogen control systems are designed to mitigate the effects of an accident as described in Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA," Revision 2, dated November 1978. The hydrogen monitors of Specification 3.6.4.1 are part of the accident monitoring instrumentation in Specification 3.3.3.7 and are designated as Type A, Category 1 in accordance with Regulatory Guide 1.97, Revision 2, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," December 1980.

The hydrogen mixing systems are provided to ensure adequate mixing of the containment atmosphere following a LOCA. This mixing action will prevent localized accumulations of hydrogen from exceeding the flammable limit.

The operability of at least 66 of 68 igniters in the hydrogen control distributed ignition system will maintain an effective coverage throughout the containment. This system of ignitors will initiate combustion of any significant amount of hydrogen released after a degraded core accident. This system is to ensure burning in a controlled manner as the hydrogen is released instead of allowing it to be ignited at high concentrations by a random ignition source.

3/4.6.5 ICE CONDENSER

The requirements associated with each of the components of the ice condenser ensure that the overall system will be available to provide sufficient pressure suppression capability to limit the containment peak pressure transient to less than 12 psig during LOCA conditions.

3/4.6.5.1 ICE BED

The OPERABILITY of the ice bed ensures that the required ice inventory will 1) be distributed evenly through the containment bays, 2) contain sufficient boron to preclude dilution of the containment sump following the LOCA and 3) contain sufficient heat removal capability to condense the reactor system volume released during a LOCA. These conditions are consistent with the assumptions used in the accident analyses.

The minimum weight figure of 1071 pounds of ice per basket contains a 15% conservative allowance for ice loss through sublimation which is a factor of 15 higher than assumed for the ice condenser design. The minimum weight figure of 2,082,024 pounds of ice also contains an additional 1% conservative allowance to account for systematic error in weighing instruments. In the

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 224 TO FACILITY OPERATING LICENSE NO. DPR-77

AND AMENDMENT NO. 215 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

In a submittal dated August 22, 1996, and supplemented on March 28, 1997, the Tennessee Valley Authority (TVA), the licensee for Sequoyah Nuclear Plant (SQN), Units 1 and 2, proposed to change Section 3.6.5 of the SQN Technical Specifications (TS) to lower the minimum required weight of ice in each containment ice basket from 1,155 pounds to 1,071 pounds, thus reducing the overall ice condenser ice weight from 2,245,320 pounds to 2,082,024 pounds. The licensee also proposed to extend the chemical analysis surveillance interval for the ice bed from 12 months to 18 months, based on guidance provided in Generic Letter (GL) 93-05. Also, the TS "20°C" test requirement at which the pH of the ice is determined is being deleted in favor of current testing criteria recommended by the appropriate code.

2.0 EVALUATION

The operability of the ice beds in the ice condenser requires that the ice inventory be distributed evenly throughout the ice condenser bays in containment and contain sufficient heat removal capability to condense the reactor coolant system volume released during a loss-of-coolant accident (LOCA). Sufficient pressure suppression capability from the ice in the ice condenser is necessary to limit the containment peak pressure transient during a LOCA. The ice inventory is contained in 1,944 ice baskets throughout the ice condenser.

TS Surveillance Requirement (SR) 4.6.5.1.d currently requires sampling every 18 months to ensure that each basket contains at least 1,155 pounds of ice and that the average ice weight for each bay and each group-row combination not be less than 1,155 pounds per basket at a 95 percent level of confidence at the start of the surveillance interval. Sequoyah's current 1,155 pounds TS limit is based on a containment analysis that assumes an even distribution of 993 pounds per basket throughout the ice condenser at the time of LOCA. The 1,155 pounds per basket TS limit contains a conservative allowance for ice loss through sublimation during the surveillance interval and a conservative allowance for ice-weighing instrument error. These values are currently 15 percent and 1 percent, respectively. The above limits ensure, at a 95 percent level of confidence, a minimum total ice weight of 2,245,320 pounds is present in the ice condenser at the start of surveillance interval which is

required by the Limiting Condition for Operation (LCO) 3.6.5.1. The current containment analysis using the 993 pounds ice weight per basket yields a peak containment pressure of 10.9 psi following a design basis LOCA.

The licensee indicated that the revised containment analysis, utilizing the revised mass and energy model and an ice weight of 922 pounds per basket, calculated a peak design basis LOCA containment pressure of 11.45 psi which remains below the containment design pressure of 12.0 psi. Allowing a 15 percent margin to bound expected sublimation over one cycle with an additional 1 percent margin to account for instrument error, the minimum basket weight at the time of weight measurement will be 1,071 pounds. This value translates into a total ice weight of 2,082,024 pounds at the current value of 95 percent level of confidence.

Both the current and the new 1996 analyses utilized "Westinghouse LOCA Mass and Energy Release Model for Containment Design - March 1979 Version," WCAP-10325-P-A, May 1983, for mass and energy releases and "Long Term Condenser Containment Code - LOTIC Code," WCAP-8354-P-A, April 1976, for calculation of the containment response to the mass and energy release. The licensee indicated that the new analysis utilized revised input assumptions using current Sequoyah specific information and more realistic models to support ice weight reduction. The new analysis considered (1) assumed core stored energy, (2) decay heat release, (3) steam flow to turbine, (4) steam generator metal heat, and (5) steam generator depressurization and equilibrium.

The licensee stated that the current analysis used a core stored energy based on full core (193 fresh fuel assemblies) of fresh fuel. The revised analysis used a core stored energy based on full core with 88 fresh fuel assemblies. The 88 fresh fuel assemblies is a conservative maximum core design limit. The fuel cycle management at Sequoyah requires only approximately one-third (64) fuel assemblies of each core reload. Both the current analysis and the revised analysis used the ANSI/ANS-5.1 1979 Decay Heat Standard (including the two sigma uncertainty). The revised analysis used more realistic fuel modeling. In the present analysis no credit for removal of steam from the steam generators at the start of the accident was taken. In the revised analysis, a steam generator isolation time of 1.19 seconds (which represents a conservatively calculated minimum time for main steam turbine stop valve closure) was used. The current analysis considers all steam generator metal energy to be available for transfer to the primary loop. Metal heat from those portions of the steam generator that have no potential for heat transfer to the reactor coolant system during the effective time period (i.e, elliptical head, upper shell and miscellaneous internals) was not included in the revised analysis. The current analysis assumed a bounding condition for steam generator equilibrium and depressurization based upon assumed containment pressures that were lower than the final containment response. The revised analysis iterated on the depressurization and equilibrium to ensure that the pressure was close to, but not less than, the final containment response. The staff finds the revised assumptions as discussed above acceptable.

The analysis was completed to provide the analytical basis for a reduction in the present SQN design basis ice mass of 993 pounds per basket but retain the current time interval (approximately 156 seconds) relationship between ice bed meltout time and containment spray switchover time and provide for peak pressure margin to design pressure. The results of the analysis support the design basis ice mass of 922 pounds per basket, a calculated containment peak pressure of 11.45 psig, and containment spray switchover icemelt relationship of 149 seconds. Although the current margin between the design operating pressure and the peak LOCA pressure will be slightly reduced, the margin of safety provided by the containment design is not reduced. The margin of safety is stated to be the structural (or ultimate) design pressure (16 psig) less the design operating pressure (12 psig). Both the current and the new analyses were performed by the Westinghouse Electric Coporation. The new containment integrity analysis is presented in WCAP-12455, Rev. 1.

Based on the above review, the staff finds the proposed reduction in the ice weight reduction acceptable as the new analyses performed are consistent with current licensed methodology and the calculated containment peak pressure of 11.45 psig remains below the containment design pressure of 12.0 psig.

With regard to the request to change the interval for SR 4.6.5.1.b (chemical analyses) from 12 months to 18 months, the licensee stated that past chemical analyses at 12-month intervals have not indicated problems meeting the boron concentration or pH requirements at SQN. Because the current SR interval is every 12 months, it will not always coincide with a refueling outage since SQN operates on an 18-month cycle. Therefore, the present requirement requires a person to enter containment during power operation to perform this testing and receive a significantly higher radiation dose than if performed with the reactor shut down. This change in SR interval is recommended by GL 93-05 and is consistent with NUREG-1431, Revision 1, "Standard Technical Specifications, Westinghouse Plants." Based on SQN's ice condenser operating experience, reduced radiation dose, and outside industry experience as indicated in NUREG-1366, TVA is justified in extending the surveillance interval to 18 months as it applies to ice bed chemical analysis requirements. The staff agrees with the licensee and finds the proposed change in SR interval for chemical analysis to 18 months acceptable.

The licensee stated that the normal recommended temperature to test liquids established in the Annual Book of American Society for Testing and Materials Standard is 25°C. Eliminating the temperature at which the pH is determined from the TS allows testing to be performed at the current recommended testing criteria. The elimination of this excessive criteria also provides consistency with NUREG-1431, Revision 1. Based on above, NRC the staff finds the deletion of the "20°C" testing requirement in the present SR acceptable to allow testing in accordance with the recommended testing criteria.

3.0 CONCLUSION

Based on the above evaluation, the NRC staff finds the licensee's three proposed changes (i.e., lowering the minimum TS ice weight of each ice basket from 1,155 pounds to 1,071 pounds, changing the SR interval for chemical analysis from 12 months to 18 months, and deletion of "at 20°C" from the testing requirements) to be 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 (62 FR 19835 dated April 23, 1997). 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.

7.0 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: Raj Goel

Dated: June 10, 1997