July 5, 1989

Docket Nos. 50-327
and 50-328

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: CONTAINMENT PURGE SUPPLY AND EXHAUST ISOLATION VALVES (TAC R00518/R00519) (TS 88-06) - SEQUOYAH NUCLEAR PLANT,

The Commission has issued the enclosed Amendment No. 120 to Facility Operating License No. DPR-77 and Amendment No. 109 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 December 5, 1989.

The amendments revise section 3/4.6, Containment Systems, of the Sequoyah Nuclear Plant, Units 1 and 2, Technical Specifications (TS). The changes (1) delete Surveillance Requirement (SR) 4.6.3.4 on each containment purge isolation valve and (2) add SR 4.6.1.9.3 on each containment purge supply and exhaust isolation valve and Action statement "b" for these valves if they are not operable.

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. 120 to License No. DPR-77
2. Amendment No. 109 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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-327

SEQUOYAH NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 120
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 December 5, 1988, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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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. 120, 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: July 5, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 120

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 6-15	3/4 6-15
3/4 6-16	3/4 6-16*
3/4 6-18	3/4 6-18

LIMITING CONDITION FOR OPERATION

3.6.1.9 One pair (one purge supply line and one purge exhaust line) of containment purge system lines may be open; the containment purge supply and exhaust isolation valves in all other containment purge lines shall be closed. Operation with purge supply or exhaust isolation valves open for either purging or venting shall be limited to less than or equal to 1000 hours per 365 days. The 365 day cumulative time period will begin every April 15.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With a purge supply or exhaust isolation valve open in excess of the above cumulative limit, or with more than one pair of containment purge system lines open, close the isolation valve(s) in the purge line(s) within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With a containment purge supply and/or exhaust isolation valve having a measured leakage rate in excess of 0.05 L_a, restore the inoperable valve to OPERABLE status within 24 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.9.1 The position of the containment purge supply and exhaust isolation valves shall be determined at least once per 31 days.

4.6.1.9.2 The cumulative time that the purge supply and exhaust isolation valves are open over a 365 day period shall be determined at least once per 7 days.

4.6.1.9.3 At least once per 3 months, each containment purge supply and exhaust isolation valve shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than or equal to 0.05 L_a and by verifying that when the measured leakage rate is added to the leakage rates determined pursuant to Specification 4.6.1.2.d for all other type B and C penetrations, the combined leakage rate is less than or equal to 0.60 L_a.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent trains of both the containment spray and residual heat removal spray shall be OPERABLE with each train comprised of:

a. A Containment Spray train with:

1. One OPERABLE Containment Spray pump.

2. One OPERABLE Containment Spray heat exchanger.

3. An OPERABLE flow path capable of taking suction from the refueling water storage tank and transferring suction to the containment sump, and

b. A RHR Spray train with:

1. One OPERABLE residual heat removal pump,

2. One OPERABLE residual heat removal heat exchanger, and

3. An OPERABLE flow path capable of taking suction from the containment sump.

APPLICABILITY: MODES 1, 2, 3 and 4.*

ACTION:

With one train of containment spray or residual heat removal spray inoperable, restore the inoperable spray train to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the inoperable spray train to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the next 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1.1 Each Containment Spray train shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

*OPERABILITY of RHR Spray trains is not required in MODE 4.

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.2 Each isolation valve specified in Table 3.6-2 shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

a. Verifying that on a Phase A containment isolation test signal, each Phase A isolation valve actuates to its isolation position.

b. Verifying that on a Phase B containment isolation test signal, each Phase B isolation valve actuates to its isolation position.

c. Verifying that on a Containment Ventilation isolation test signal, each Containment Ventilation Isolation valve actuates to its isolation position.

d. Verifying that on a high containment pressure isolation test signal, each Containment Vacuum Relief Valve actuates to its isolation position.

e. Verifying that on a Safety Injection test signal that the Normal Charging Isolation valve actuates to its isolation position.

4.6.3.3 The isolation time of each power operated or automatic valve of Table 3.6-2 shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

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. 109
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 December 5, 1988, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-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. 109, 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: July 5, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 109

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 6-15	3/4 6-15
3/4 6-16	3/4 6-16*
3/4 6-18	3/4 6-18

CONTAINMENT VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.1.9 One pair (one purge supply line and one purge exhaust line) of containment purge system lines may be open; the containment purge supply and exhaust isolation valves in all other containment purge lines shall be closed. Operation with purge supply or exhaust isolation valves open for either purging or venting shall be limited to less than or equal to 1000 hours per 365 days The 365 day cumulative time period will begin every January 1.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

a. With a purge supply or exhaust isolation valve open in excess of the above cumulative limit, or with more than one pair of containment purge system lines open, close the isolation valve(s) in the purge line(s) within one hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With a containment purge supply and/or exhaust isolation valve having a measured leakage rate in excess of 0.05 L_a, restore the inoperable valve to OPERABLE status within 24 hours, otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4 6.1.9.1 The position of the containment purge supply and exhaust isolation valves shall be determined at least once per 31 days.

4.6.1.9.2 The cumulative time that the purge supply and exhaust isolation valves are open over a 365 day period shall be determined at least once per 7 days.

4.6.1.9.3 At least once per 3 months, each containment purge supply and exhaust isolation valve shall be demonstrated OPERABLE by verifying that the measured leakage rate is less than or equal to 0.05 L_a and by verifying that when the measured leakage rate is added to the leakage rates determined pursuant to Specification 4.6.1.2.d for all other type B and C penetrations, the combined leakage rate is less than or equal to 0.60 L_a.

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two independent trains of both the containment spray and residual heat removal spray shall be OPERABLE with each train comprised of:

a. A Containment Spray train with:

1. One OPERABLE Containment Spray pump.

2. One OPERABLE Containment Spray heat exchanger.

3. An OPERABLE flow path capable of taking suction from the refueling water storage tank and transferring suction to the containment sump, and

b. A RHR Spray train with:

1. One OPERABLE residual heat removal pump.

2. One OPERABLE residual heat removal heat exchanger, and

3. An OPERABLE flow path capable of taking suction from the containment sump.

APPLICABILITY: MODES 1, 2, 3 and 4.*

ACTION:

With one train of containment spray or residual heat removal spray inoperable, restore the inoperable spray train to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours, restore the inoperable spray train to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1.1 Each Containment Spray train shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked sealed, or otherwise secured in position, is in its correct position.

*OPERABILITY of RHR Spray trains is not required in MODE 4.

SURVEILLANCE REQUIREMENTS (Continued)

4.6.3.2 Each isolation valve specified in Table 3.6-2 shall be demonstrated OPERABLE during the COLD SHUTDOWN or REFUELING MODE at least once per 18 months by:

a. Verifying that on a Phase A containment isolation test signal, each Phase A isolation valve actuates to its isolation position.

b. Verifying that on a Phase B containment isolation test signal, each Phase B isolation valve actuates to its isolation position.

c. Verifying that on a Containment Ventilation isolation test signal, each Containment Ventilation Isolation valve actuates to its isolation position.

d. Verifying that on a high containment pressure isolation test signal, each Containment Vacuum Relief Valve actuates to its isolation position.

e. Verifying that on a Safety Injection test signal that the Normal Charging Isolation valve actuates to its isolation position.

4.6.3.3 The isolation time of each power operated or automatic valve of Table 3.6-2 shall be determined to be within its limit when tested pursuant to Specification 4.0.5.

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

ENCLOSURE

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 120 TO FACILITY OPERATING LICENSE NO. DPR-77

AND AMENDMENT NO. 109 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 letter dated December 5, 1988, the Tennessee Valley Authority (the licensee) requested a change to the Sequoyah Nuclear Plant, Units 1 and 2, Technical Specifications (TS). The changes (1) delete Surveillance Requirement (SR) 4.6.3.4 on each containment purge isolation valve and (2) add SR 4.6.1.9.3 on each containment purge supply and exhaust isolation valve and Action statement "b" for these valves if they are not operable.

The purpose of the TS change was to reduce the leak rate test frequency for the containment purge supply and exhaust isolation valves and define a specific maximum leakage rate of 5 percent of the total containment leakage rate (La) for each of these valves. The licensee's justifications for this TS change involves benefits and savings in the area of as low as reasonably achievable (ALARA) doses, plant safety, cost to the licensee and bringing the Sequoyah TS into agreement with the NRC Standard Technical Specification (STS). This is the licensee's TS change request 88-06.

2.0 EVALUATION

The current TS do not define the allowable leakage rate for an individual purge valve to be considered operable. The current TS only define purge valve operability in terms of the overall leakage contribution of all the purge valves to the combined leakage rate of the containment. If the measured leakage rate of these penetrations exceeds 0.6 La these valves are inoperable and the plant is subject to a limiting condition for operation (LCO). The proposed TS establishes a leakage limit of 0.05 La for an individual purge valve with a limiting condition for operation if this leakage limit is exceeded. The proposed TS also retains the restrictions of the current TS with regard to the overall contribution of all the purge valves to the combined leakage of the containment.

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The proposed TS also changes the current purge supply and exhaust isolation valves leakage test frequency. The current SR 4.6.3.4 states that each containment purge isolation valve be demonstrated operable (i.e., undergo an Appendix J Type C Leakage Test) within 24 hours after each closing of the valve except when the valve is being used for multiple cyclings. Any purge valve that has undergone multiple cyclings is required to be tested at least once every 72 hours. Operability is demonstrated by performance of a Type C leakage test to verify that the measured leakage rate from each purge valve, when added to the leakage rates for all other Type B and C penetrations, does not exceed 0.60 La. The proposed TS would change the 24/72 hour test requirement discussed above to a three month test interval.

Under the current TS, test personnel are required to enter the annulus at least three times each week for a minimum test duration of one hour. This places test personnel in areas of low to intermediate radiation for prolonged periods of time. Decreasing the test frequency reduces the number of times test personnel enter the annulus from 252 to 8 times over a 1 year time period. The annual savings in net exposure to personnel is estimated to be 3 person-rem Reducing the number of times test personnel enter the annulus also reduces the annual testing cost to the licensee by $290,000 for both units.

The proposed TS change also brings the SR into agreement with the requirements in the NRC STS. The STS recognize two leak-test frequencies for purge supply and exhaust isolation valves: a 6-month test frequency for 42-inch purge valves and a 3-month test frequency for 8-inch purge valves. The STS also states that the measured leakage rate be less than or equal to 0.05 La for both size valves. The test requirements for the 42-inch purge valves would not be applicable to the proposed change because Sequoyah, by design, does not have 42-inch purge valves. Sequoyah's purge valves range in size from 8 inches to 24 inches, and the licensee proposes to use the 3-month test frequency for these valves. The proposal is in agreement with the NRC STS.

During the Type C leak test of Sequoyah's purge system containment isolation valves, a test connection valve is opened between the inboard and outboard purge isolation valves creating a containment leak path. While the test valve is open, the plant must enter a 1-hour LCO (LCO 3.6.1.1). The frequent entering and exiting of a limiting condition for operation to perform surveillance places an unnecessary burden on the plant operations staff. Changing the test interval to once every three months would alleviate placing the plant into frequent LCOs and would provide more freedom to the operators for monitoring plant conditions, thereby improving overall plant safety.

Since the proposed TS would result in benefits and savings in the areas of ALARA, plant safety, and bring the Sequoyah TS into agreement with the NRC STS, we conclude that TS change request 88-06 is 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 and changes to the surveillance requirements. 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 Commission 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 to 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 (53 FR 53101) on December 30, 1988 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.

5.0 REFERENCE

Letter from M. J. Ray, Tennessee Valley Authority, to U.S. Nuclear Regulatory Commission, Subject: Sequoyah Nuclear Plant - Technical Specification Change 88-06, dated December 5, 1988.

Principal Contributor: P. Hearn

Dated: July 5, 1989