

November 2, 1990

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

Dear Mr. Kingsley:

SUBJECT: COLD LEG INJECTION ACCUMULATOR INSTRUMENTATION
(TAC NOS. 76776 AND 76777) (TS 90-13) - SEQUOYAH NUCLEAR
PLANT, UNITS 1 AND 2

The Commission has issued the enclosed Amendment No.147 to Facility
Operating License No. DPR-77 and Amendment No. 133 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 May 4, 1990 and the
supplementary letter to your application dated October 2, 1990.

The amendments modify Section 3/4.5.1, Accumulators, of the Sequoyah Nuclear
Plant, Units 1 and 2, Technical Specifications. The changes revise the
requirements in TS 3/4.5.1.1, Cold Leg Injection Accumulators, to (1) delete
Action Statements "c" and "d" and the associated footnote and (2) add a
footnote to Surveillance Requirement (SR) 4.5.1.1.2.

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

Sincerely,

Original signed by

Jack N. Donohew, Project Manager
Project Directorate II-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No.147 to License No. DPR-77
2. Amendment No.133 to License No. DPR-79
3. Safety Evaluation

cc w/enclosures:

See next page

*SEE PREVIOUS CONCURRENCE

OFC	: PD II-4/LA*	: PD II-4/PM	: OTSB:BC	: SICB/BC	OGC	: PDII-4/DD	PD II-4/D
NAME	: MKrebs	: JDonohew	: JGalvo	: SNewberry	: *	: SBlack	: FHeidon
DATE	: 7/31/90	: 10/19/90	: 10/21/90	: 10/21/90	: 10/21/90	: 11/02/90	: 11/21/90

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Document Name: SQN AMEND. TAC 76776/76777

* subject to change
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AMENDMENT NO.147 FOR SEQUOYAH UNIT NO. 1 - DOCKET NO. 50-327 and
AMENDMENT NO.133 FOR SEQUOYAH UNIT NO. 2 - DOCKET NO. 50-328
DATED: November 2, 1990

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Mr. Oliver D. Kingsley, Jr.

- 2 -

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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. 147
License No. DPR-77

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment by Tennessee Valley Authority (the licensee) dated May 4, 1990 and October 2, 1990, comply 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 applications, 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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P PNU

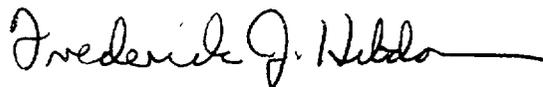
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-77 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 147, 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



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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 2, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 147

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

3/4 5-1
3/4 5-2

INSERT

3/4 5-1
3/4 5-2

3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

3/4.5.1 ACCUMULATORS

COLD LEG INJECTION ACCUMULATORS

LIMITING CONDITION FOR OPERATION

3.5.1.1 Each cold leg injection accumulator shall be OPERABLE with:

- a. The isolation valve open,
- b. A contained borated water volume of between 7615 and 8094 gallons of borated water,
- c. Between 2400 and 2700 ppm of boron, and
- d. A nitrogen cover-pressure of between 600 and 683 psig.

APPLICABILITY: MODES 1, 2 and 3.*

ACTION:

- a. With one cold leg injection accumulator inoperable, except as a result of a closed isolation valve, restore the inoperable accumulator to OPERABLE status within one hour or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. With one cold leg injection accumulator inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in HOT STANDBY within one hour and be in HOT SHUTDOWN within the next 12 hours.

*Pressurizer pressure above 1000 psig.

EMERGENCY CORE COOLING SYSTEMS (ECCS)

SURVEILLANCE REQUIREMENTS

4.5.1.1.1 Each cold leg injection accumulator shall be demonstrated OPERABLE:

- a. At least once per 12 hours by:
 1. Verifying, by the absence of alarms or by measurement of levels and pressures, the contained borated water volume and nitrogen cover-pressure in the tanks, and
 2. Verifying that each cold leg injection accumulator isolation valve is open.
- b. At least once per 31 days and within 6 hours after each solution volume increase of greater than or equal to 1% of tank volume by verifying the boron concentration of the cold leg injection accumulator solution.
- c. At least once per 31 days when the RCS pressure is above 2000 psig by verifying that power to the isolation valve operator is disconnected by removal of the breaker from the circuit.
- d. At least once per 18 months by verifying that each cold leg injection accumulator isolation valve opens automatically under each of the following conditions:
 1. When an actual or a simulated RCS pressure signal exceeds the P-11 (Pressurizer Pressure Block of Safety Injection) setpoint,
 2. Upon receipt of a safety injection test signal.

4.5.1.1.2 Each accumulator water level and pressure channel shall be demonstrated OPERABLE:*

- a. At least once per 31 days by the performance of a CHANNEL FUNCTIONAL TEST.
- b. At least once per 18 months by the performance of a CHANNEL CALIBRATION.

*With respect to SR 4.5.1.1.2, the cold leg injection accumulator is considered OPERABLE if one level channel and one pressure channel is OPERABLE in accordance with SR 4.5.1.1.2. SR 4.0.3 applies only to those channels relied upon for an operable cold leg injection accumulator.



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. 133
License No. DPR-79

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The applications for amendment by Tennessee Valley Authority (the licensee) dated May 4, 1990 and October 2, 1990, comply 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 applications, 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.

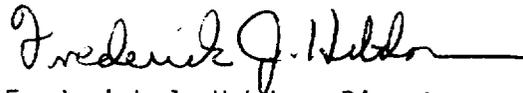
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-79 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 133, 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



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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 2, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 133

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

3/4 5-1
3/4 5-2

INSERT

3/4 5-1
3/4 5-2

3/4.5 EMERGENCY CORE COOLING SYSTEMS

3/4.5.1 ACCUMULATORS

COLD LEG INJECTION ACCUMULATORS

LIMITING CONDITION FOR OPERATION

3.5.1.1 Each cold leg injection accumulator shall be OPERABLE with:

- a. The isolation valve open,
- b. A contained borated water volume of between 7615 and 8094 gallons of borated water,
- c. Between 2400 and 2700 ppm of boron, and
- d. A nitrogen cover-pressure of between 600 and 683 psig.

APPLICABILITY: MODES 1, 2 and 3.*

ACTION:

- a. With one cold leg injection accumulator inoperable, except as a result of a closed isolation valve, restore the inoperable accumulator to OPERABLE status within one hour or be in at least HOT STANDBY within the next 6 hours and in HOT SHUTDOWN within the following 6 hours.
- b. With one cold leg injection accumulator inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in HOT STANDBY within one hour and be in HOT SHUTDOWN within the next 12 hours.

*Pressurizer pressure above 1000 psig.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS

4.5.1.1.1 Each cold leg injection accumulator shall be demonstrated OPERABLE:

- a. At least once per 12 hours by:
 1. Verifying, by the absence of alarms or by measurement of levels and pressures, the contained borated water volume and nitrogen cover-pressure in the tanks, and
 2. Verifying that each cold leg injection accumulator isolation valve is open.
- b. At least once per 31 days and within 6 hours after each solution volume increase of greater than or equal to 1% of tank volume by verifying the boron concentration of the cold leg injection accumulator solution.
- c. At least once per 31 days when the RCS pressure is above 2000 psig by verifying that power to the isolation valve operator is disconnected by removal of the breaker from the circuit.
- d. At least once per 18 months by verifying that each cold leg injection accumulator isolation valve opens automatically under each of the following conditions:
 1. When an actual or a simulated RCS pressure signal exceeds the P-11 (Pressurizer Pressure Block of Safety Injection) setpoint,
 2. Upon receipt of a safety injection test signal.

4.5.1.1.2 Each accumulator water level and pressure channel shall be demonstrated OPERABLE:*

- a. At least once per 31 days by the performance of a CHANNEL FUNCTIONAL TEST.
- b. At least once per 18 months by the performance of a CHANNEL CALIBRATION.

*With respect to SR 4.5.1.1.2, the cold leg injection accumulator is considered OPERABLE if one level channel and one pressure channel is OPERABLE in accordance with SR 4.5.1.1.2. SR 4.0.3 applies only to those channels relied upon for an operable cold leg injection accumulator.



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

ENCLOSURE 3

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 147 TO FACILITY OPERATING LICENSE NO. DPR-77
AND AMENDMENT NO. 133 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 letters dated May 4, 1990 and October 2, 1990, the Tennessee Valley Authority (TVA) proposed to modify Section 3/4.5.1, Accumulators, of the Sequoyah Nuclear Plant, Units 1 and 2, Technical Specifications (TSs). The proposed changes are to revise the requirements in TS 3/4.5.1.1, Cold Leg Injection Accumulators, to (1) delete Action Statements "c" and "d" for Limiting Condition for Operation (LCO) 3.5.1.1 and the associated footnote and (2) add a footnote to Surveillance Requirement (SR) 4.5.1.1.2.

In its letter dated August 11, 1989, the staff issued amendments which added Action Statements "c" and "d" to TS 3/4.5.1.1 for both units. The staff stated that these action statements would be effective until the restart of Unit 2 from the Unit 2 Cycle 4 refueling outage and requested TVA to propose changes to TS 3/4.5.1.1 before that date. This outage began in September 1990 and is scheduled to end in early November 1990. The purpose of TVA's letter is to propose changes to TS Section 3/4.5.1.1 to remove the need for Action Statements "c" and "d".

The proposed changes in the letter dated May 4, 1990 are the technical specifications proposed by Westinghouse Owner's Group (WOG) to the staff through the WOG MERITS Program for the cold leg injection accumulators. Because the Action Statements "c" and "d" for both units expire at the restart of Unit 2 Cycle 4 refueling outage, approximately November 4, 1990, TVA proposed to add a footnote to SR 4.5.1.1.2 to remove the need for Action Statements "c" and "d." This proposal in TVA's letter dated October 2, 1990 has the same effect on TS 3/4.5.1.1 as the proposed changes in the TVA's application dated May 4, 1990. The October 2, 1990 letter, therefore, does not affect the substance of the proposed action and the no significant hazards consideration finding published in the Federal Register Notice (55 FR 24005) on June 13, 1990 and does not change the staff's initial determination of no significant hazards consideration in that notice.

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P PNU

2.0 EVALUATION

TVA has proposed to add a footnote to SR 4.5.1.1.2 on the required demonstration of the operability of the two water level and two pressure instrumentation channels for each cold leg injection accumulator. There are four accumulators for each unit. These four instrument channels are the only instrument channels for the cold leg injection accumulators. The footnote states that each accumulator is operable if at least one level channel and one pressure channel are operable.

The purpose of the proposed footnote is to define the required number of instrumentation channels needed to be operable for the accumulators to be considered operable. With SR 4.5.1.1.2 requiring each channel to be demonstrated operable and LCO 3.5.1.1 not defining how many channels had to be operable, the assumption must be that all the channels had to be operable for the accumulators to be considered operable. The basis for the amendments for Units 1 and 2 which were issued on August 11, 1989 was that this was too strict an interpretation of TS 3/4.5.1.1. TVA has proposed that only one level channel and one pressure channel was required to be operable for each accumulator to be considered operable.

TVA stated the proposed footnote to SR 4.5.1.1.2 is justified because (1) the accumulator level and pressure instrumentation only perform control functions and do not perform a protection function and (2) LCO 3.5.1.1 does not address the instrumentation monitoring the accumulator level and pressure. The LCO ensures the operability of the cold leg injection accumulator; it does not ensure the operability of the accumulator instrumentation because the LCO does not include this instrumentation. The operability of the instrumentation is indirectly controlled by SR 4.5.1.1.1.a.1 by the required verification of accumulator level and pressure, which must be performed at least once per 12 hours to comply with the LCO. TVA stated that similar situations exist in the TSs for other parameters, such as the refueling water storage tank water level and temperature, where the parameters are required in the TSs to be verified within limits but the instrumentation is not subject to a specific SR on the operability of the instrumentation themselves. TVA further stated that the operability of the instrumentation is also ensured by the instrumentation calibration performed on the channels.

TVA also proposed to delete the Action Statement "c" and "d" for LCO 3.5.1.1 and the associated footnote which states that these action statements are in effect until the restart of Unit 2 from the Unit 2 Cycle 4 refueling outage. TVA stated that based on the proposed addition of a footnote to SR 4.5.1.1.2 for the level and pressure instrumentation, the Action Statements "c" and "d" of LCO 3.5.1.1 and the associated footnote should be deleted.

The proposed footnote for SR 4.5.1.1.2 would reduce requirements in TS 3/4.5.1.1 in that both pressure channels and level channels would not be required for the accumulators to meet LCO 3.5.1.1. SR 4.0.3 states that failure to perform a surveillance requirement (e.g., not meet the surveillance requirement)

constitutes non-compliance with the operability requirements of a limiting condition for operation; therefore, not meeting SR 4.5.1.1.2 on any of the accumulator pressure and level channels currently means the unit would be in noncompliance with LCO 3.5.1.1 on the operability of the accumulators and the accumulators would be considered inoperable. The proposed footnote would allow one pressure and one level channel to be inoperable without an accumulator being declared inoperable.

The staff agrees that only one pressure channel and one level channel needs to be operable for the accumulators to be considered operable. This is because these instrumentation channels only indicate the pressure and water level in an accumulator as a means to verify compliance with the LCO; the instrumentation does not take an action or perform a protective function. This situation exists in other specifications on safety-related equipment at Sequoyah in the TSs. Therefore, the staff concludes that adding the footnote to SR 4.5.1.1.2 is acceptable.

With the deletion of SR 4.5.1.1.2, the Action Statements "c" and "d" serve no purpose in TS 3/4.5.1.1 and should be deleted. Therefore, the staff concludes that deleting Action Statements "c" and "d" and the associated footnote 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 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 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 (55 FR 24005) on June 13, 1990 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 (3) the issuance of the amendments will not be inimical to the common defense and security nor to the health and safety of the public.

Principal Contributor: J. Donohew

Dated: November 2, 1990