

May 27, 1994

Docket Nos. 50-327  
and 50-328

Mr. Oliver D. Kingsley, Jr.  
President, TVA Nuclear and  
Chief Nuclear Officer  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, Tennessee 37402-2801

Dear Mr. Kingsley:

SUBJECT: ISSUANCE OF AMENDMENTS (TAC NOS. M88779 AND M88780) (TS 93-14)

The Commission has issued the enclosed Amendment No. 183 to Facility Operating License No. DPR-77 and Amendment No. 175 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 February 8, 1994.

The amendments increase the pressure setpoint for the motor driven auxiliary feedwater pumps switchover from the condensate storage tank to the essential raw cooling water supply.

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:  
David E. LaBarge, Sr. Project Manager  
Project Directorate II-4  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 183 to License No. DPR-77
- 2. Amendment No. 175 to License No. DPR-79
- 3. Safety Evaluation

cc w/enclosures:  
See next page

NAME:	PDII-4/LA <i>[Signature]</i>	PDII-4/PM <i>[Signature]</i>		OGC <i>[Signature]</i>	PDII-4/D
OFFICE:	BC <i>[Signature]</i>	DLaBarge		<i>[Signature]</i>	FHebbon
DATE:	5/13/94	5/13/94		5/20/94	5/27/94

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AMENDMENT NO. 183 FOR SEQUOYAH UNIT NO. 1 - DOCKET NO. 50-327 and  
AMENDMENT NO. 175 FOR SEQUOYAH UNIT NO. 2 - DOCKET NO. 50-328  
DATED: May 27, 1994

DISTRIBUTION:

Docket Files

NRC & Local PDRs

SQL Reading File

S. Varga	14-E-4
F. Hebdon	
B. Clayton	
D. LaBarge	
E. Merschoff	RII
M. Lesser	RII
OGC	15-B-18
D. Hagan	MNBB-3206
G. Hill	T5-C-3 (2 per docket)
C. Grimes	11-E-22
C. McCracken	
W. LeFave	
ACRS(10)	
OPA	2-G-5
OC/LFDCB	MNBB-9112

cc: Plant Service List



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. 183  
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 February 8, 1994, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

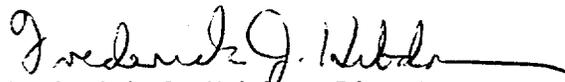
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-77 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 183, 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 within 45 days.

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: May 27, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 183

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 3-27a

INSERT

3/4 3-27a

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

<u>FUNCTIONAL UNIT</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUES</u>
ii. RCS Loop $\Delta T$ Equivalent to Power > 50% RTP		
Coincident with Steam Generator Water Level--Low-Low (Adverse) and Containment Pressure (EAM)	$\geq 15.0\%$ of narrow range instrument span	$\geq 14.4\%$ of narrow range instrument span
or Steam Generator Water Level--Low-Low (EAM)	$\leq 0.5$ psig	$\leq 0.6$ psig
	$\geq 10.7\%$ of narrow range instrument span	$\geq 10.1\%$ of narrow range instrument span
d. S.I.	See 1 above (all SI Setpoints)	
e. Loss of Power Start		
1. Voltage Sensors	$\geq 5520$ volts	$\geq 5472$ volts
2. Load Shed Timer	1.25 seconds	1.25 seconds $\pm 0.09$ seconds
f. Trip of Main Feedwater Pumps	N.A.	N.A.
g. Auxiliary Feedwater Suction Pressure--Low	$\geq 3.21$ psig (motor driven pump) $\geq 13.9$ psig (turbine driven pump)	$\geq 2.44$ psig (motor driven pump) $\geq 12$ psig (turbine driven pump)
h. Auxiliary Feedwater Suction Transfer Time Delays	4 seconds (motor driven pump)  5.5 seconds (turbine driven pump)	4 seconds $\pm 0.4$ seconds (motor driven pump)  5.5 seconds $\pm 0.55$ seconds (turbine driven pump)

SEQUOYAH - UNIT 1

3/4 3-27a

Amendment No. 29, 94, 129, 141, 151, 182, 183



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. 175  
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 February 8, 1994, 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.

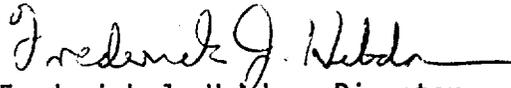
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-79 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No.175, 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 within 45 days.

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: May 27, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 175

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 3-27a

INSERT

3/4 3-27a

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

<u>FUNCTIONAL UNIT</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUES</u>
ii. RCS Loop $\Delta T$ Equivalent to Power > 50% RTP		
Coincident with Steam Generator Water Level--Low-Low (Adverse) and Containment Pressure (EAM)	$\geq 15.0\%$ of narrow range instrument span	$\geq 14.4\%$ of narrow range instrument span
or Steam Generator Water Level--Low-Low (EAM)	$\leq 0.5$ psig	$\leq 0.6$ psig
d. S.I.	See 1 above (all SI Setpoints)	
e. Loss of Power Start		
1. Voltage Sensors	$\geq 5520$ volts	$\geq 5472$ volts
2. Load Shed Timer	1.25 seconds	1.25 seconds $\pm 0.09$ seconds
f. Trip of Main Feedwater Pumps	N.A.	N.A.
g. Auxiliary Feedwater Suction Pressure--Low	$\geq 3.21$ psig (motor driven pump) $\geq 13.9$ psig (turbine driven pump)	$\geq 2.44$ psig (motor driven pump) $\geq 12$ psig (turbine driven pump)
h. Auxiliary Feedwater Suction Transfer Time Delays	4 seconds (motor driven pump)  5.5 seconds (turbine driven pump)	4 seconds $\pm 0.4$ seconds (motor driven pump)  5.5 seconds $\pm 0.55$ seconds (turbine driven pump)

SEQUOYAH - UNIT 2

3/4 3-27a

Amendment No. 18, 84, 116, 132, 174, 175



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

ENCLOSURE 3

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 183 TO FACILITY OPERATING LICENSE NO. DPR-77  
AND AMENDMENT NO. 175 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 February 8, 1994, the Tennessee Valley Authority (licensee or TVA) requested an amendment to change the technical specifications (TS) for the Sequoyah Nuclear Plant (SQN) Units 1 and 2. The proposed change would revise the switchover pressure setpoint of the motor driven auxiliary feedwater (AFW) pump to address vortexing in the condensate storage tank (CST). TS Table 3.3-4, "Engineered Safety Feature Actuation System Instrument Trip Setpoints," presently requires the trip setpoint be  $\geq 2.0$  pounds per square inch gauge (psig) with an allowable value of  $\geq 1.0$  psig. As proposed, the new values would be  $\geq 3.21$  and  $\geq 2.44$  for the setpoint and allowable value, respectively.

2.0 EVALUATION

The AFW system for each of the SQN units consists of two motor driven pumps and one turbine driven pump. The normal water supply to the suction of the pumps is the nonseismic Category I CST. In the event of the loss of the CST inventory, the pump suction will automatically shift to the seismic Category I essential raw cooling water (ERCW) system on low pressure detected at the pump suction header. This is referred to as the low-pressure "switchover" of the AFW pump suction.

New calculations performed by TVA have determined that with the present setpoint, vortexing could occur in the CST, resulting in air entrainment in the AFW pump suction piping prior to switchover to the ERCW. The previous calculations did not consider the effects of vortexing in the CST. To ensure switchover of the motor-driven pump suction headers prior to air entrainment, TVA has proposed raising the actuation setpoint from 2 psig to 3.21 psig, and the allowable value from 1 psig to 2.44 psig.

The staff agrees with the proposed new setpoint and allowable values because they are more conservative than those listed in Table 3.3-4 of the present TS. The revised setpoints provide added assurance that air entrainment will not occur upon reaching a low level in the CST prior to automatic switchover. The

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revised setpoints should also remain low enough to not significantly affect the likelihood of inadvertent switchover, i.e., inadvertent switchover during normal operation should not occur.

TVA did not propose a similar change to the low suction pressure setpoint for the turbine driven pump switchover because of the plant modifications that would be required to relocate and replace the associated instrumentation. The staff concurs with the licensee's conclusion that a similar setpoint change for the turbine driven AFW pump, while it would be an enhancement, is not required to meet any design basis events. The only postulated event which results in an automatic switchover of the AFW pumps' suction is a seismically induced failure of the CST. Given this scenario, even without the turbine driven AFW pump, the redundant seismic Category I motor driven AFW pumps satisfy the single failure criterion.

### 3.0 SUMMARY

Based on its review of the proposed changes to the trip setpoint and allowable value for the AFW low suction pressure switchover listed in TS Table 3.3-4, the staff concludes that they are conservative in nature because they tend to prevent air entrainment in the motor driven AFW pumps' suction, while at the same time, they do not significantly increase the probability of an inadvertent switchover. The proposed changes are also necessary to assure proper operation of the AFW system given the postulated switchover scenario. The staff, therefore, concludes that the proposed changes are 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 amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC 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 the amendments involve no significant hazards consideration, and there has been no public comment on such finding (59 FR 12368). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

### 6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the

public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: William T. LeFave

Dated: May 27, 1994

Mr. Oliver D. Kingsley, Jr.  
Tennessee Valley Authority

cc:

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## SEQUOYAH NUCLEAR PLANT

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