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

March 29, 1984

Docket Nos: 50-327
and 50-328

Mr. H. G. Parris
Manager of Power
Tennessee Valley Authority
500A Chestnut Street, Tower II
Chattanooga, Tennessee 37401

Dear Mr. Parris:

Subject: Issuance of Amendment No. 33 to Facility Operating License No. DPR-77 and Amendment No. 25 to Facility Operating License No. DPR-79 - Sequoyah Nuclear Plant, Units 1 and 2

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 33 to Facility Operating License No. DPR-77 and Amendment No. 25 to Facility Operating License No. DPR-79.

The amendments change the Technical Specifications related to containment air temperatures, operating limits for the pressurizer in the reactor coolant system, hydrogen igniters in containment, diesel generator start and load shed timers, and motor operated valve thermal overload protection. The amendments are in response to your letters dated July 1, July 21, October 24, and November 28, 1983. The other changes requested in those letters will be addressed in future amendments.

A copy of the related safety evaluation supporting Amendment No. 33 to Facility Operating License DPR-77 and Amendment No. 25 to Facility Operating License DPR-79 is enclosed.

Sincerely,

Elinor G. Adensam

Elinor G. Adensam, Chief
Licensing Branch No. 4
Division of Licensing

Enclosures:
1. Amendment No. 33 to DPR-77
2. Amendment No. 25 to DPR-79
3. Safety Evaluation

cc w/enclosures:
See next page

DESIGNATED ORIGINAL
Certified By

SEQUOYAH

Mr. H. G. Parris
Manager of Power
Tennessee Valley Authority
500A Chestnut Street, Tower II
Chattanooga, Tennessee 37401

cc: Herbert S. Sanger, Jr., Esq.
General Counsel
Tennessee Valley Authority
400 Commerce Avenue
E 11B 33
Knoxville, Tennessee 37902

Mr. H. N. Culver
Tennessee Valley Authority
400 Commerce Avenue, 249A HBB
Knoxville, Tennessee 37902

Mr. Bob Faas
Westinghouse Electric Corp.
P.O. Box 355
Pittsburgh, Pennsylvania 15230

Mr. Jerry Wills
Tennessee Valley Authority
400 Chestnut Street, Tower II
Chattanooga, Tennessee 37401

Mr. Donald L. Williams, Jr.
Tennessee Valley Authority
400 Commerce Avenue, W10C131C
Knoxville, Tennessee 37902

Resident Inspector/Sequoyah NPS
c/o U.S. Nuclear Regulatory
Commission
2600 Igou Ferry Road
Soddy Daisy, Tennessee 37379

Director, Office of Urban
& Federal Affairs
108 Parkway Towers
404 James Robertson Way
Nashville, Tennessee 37219

Attorney General
Supreme Court Building
Nashville, Tennessee 37219

U.S. Environmental Protection
Agency
ATTN: EIS Coordinator
345 Courtland Street
Atlanta, Georgia 30308

Honorable Don Moore, Jr.
County Judge
Hamilton County Courthouse
Chattanooga, Tennessee 37402

Regional Administrator
Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Michael H. Mobley, Director
Division of Radiological Health
T.E.R.R.A. Building
150 9th Avenue North
Nashville, Tennessee 37203

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. 33
License No. DPR-77

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The applications for amendment to the Sequoyah Nuclear Plant, Unit 1 (the facility) Facility Operating License No. DPR-77 filed by the Tennessee Valley Authority (licensee), dated July 1, July 21, October 24, and November 28, 1983, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the license, as amended, 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 hereby amended by page changes to the Appendix A 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 Appendix A, as revised through Amendment No. 33, are hereby incorporated into 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

Elinor G. Adensam

Elinor G. Adensam, Chief
Licensing Branch No. 4
Division of Licensing

Attachment:
Appendix A Technical
Specification Changes

Date of Issuance: March 29, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 33

FACILITY OPERATING LICENSE NO. DPR-77

DOCKET NO. 50-327

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change.

Amended Page
3/4 2-19
3/4 3-27a
3/4 6-25a
3/4 8-34
3/4 8-35
3/4 8-36
3/4 8-37
B3/4 8-2

TABLE 3.2-1

DNB PARAMETERS

PARAMETER		LIMITS 4 Loops In Operation	LIMITS 3 Loops in Operation**
Reactor Coolant System T_{avg}	F	583°F	
Pressurizer Pressure	J	2220 psia*	

* Limit not applicable during either a THERMAL POWER ramp in excess of 5% RATED THERMAL POWER per minute or a THERMAL POWER step in excess of 10% RATED THERMAL POWER, physics test, or performance of surveillance requirement 4.1.1.3.b.

**Limits pending NRC approval of 3 loop operation.

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
*b. 6.9 kv Shutdown Board-Degraded Voltage		
1. Voltage Sensors	6560 volts	6560 volts ± 33 volts
2. Diesel Generator Start and Load Shed Timer	300 seconds	300 seconds ± 30 seconds
3. SI/Degraded Voltage Logic Enable Timer	10 seconds	10 seconds ± 0.5 seconds
8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS		
a. Pressurizer Pressure Manual Block of Safety Injection P-11	≤ 1970 psig	≤ 1980 psig

*NOTE: This technical specification is to be implemented at the startup following the 2nd refueling outage or following completion of the modification, whichever is earlier.

HYDROGEN MITIGATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.4.3 The primary containment hydrogen mitigation system shall be operable.

APPLICABILITY: MODES 1 and 2.

ACTION:

With one train of hydrogen mitigation system inoperable, restore the inoperable train to OPERABLE status within 7 days or increase the surveillance interval of S.R. 4.6.4.3 from 92 days to 7 days on the operable train until the inoperable train is returned to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.6.4.3 The hydrogen mitigation system shall be demonstrated OPERABLE:

a. At least once per 92 days by energizing the supply breakers and verifying that at least 66 of 68 igniters are energized.*

b. At least once per 18 months by verifying the temperature of each igniter is a minimum of 1700°F.

*Inoperable igniters must not be on corresponding redundant circuits which provide coverage for the same region.

MOTOR OPERATED VALVES THERMAL OVERLOAD PROTECTION

LIMITING CONDITION FOR OPERATION

3.8.3.2 The thermal overload protection devices, integral with the motor starter, of each valve listed in Table 3.8-2 shall be OPERABLE.

APPLICABILITY: Whenever the motor operated valve is required to be OPERABLE.

ACTION:

With one or more of the thermal overload protection devices inoperable, declare the affected valve(s) inoperable and apply the ACTION Statement to the affected valve(s).

SURVEILLANCE REQUIREMENTS

4.8.3.2 The above required thermal overload protection devices shall be demonstrated OPERABLE:

a. At least once per 18 months by the performance of a CHANNEL CALIBRATION of a representative sample of at least 25% of all thermal overload devices which are not bypassed, such that each non-bypassed device is calibrated at least once per 6 years.

TABLE 3.8-2

MOTOR OPERATED VALVES THERMAL OVERLOAD PROTECTION

Valve No.	Function
1-FCV-62-63	Isolation for Seal Water Filter
1-FCV-62-138	Safe Shutdown Redundancy (CVCS)
1-FCV-62-98	ECCS Operation
1-FCV-62-99	ECCS Operation
1-FCV-62-90	ECCS Operation
1-FCV-62-91	ECCS Operation
1-FCV-62-61	Cont. Isolation
1-LCV-62-132	ECCS Operation
1-LCV-62-133	ECCS Operation
1-LCV-62-135	ECCS Operation
1-LCV-62-136	ECCS Operation
1-FCV-74-1	Open for Normal Plant Cooldown
1-FCV-74-2	Open for Normal Plant Cooldown
1-FCV-74-3	ECCS Operation
1-FCV-74-21	ECCS Operation
1-FCV-74-12	RHR Pump, Mini-flow Protects Pump
1-FCV-74-24	RHR Pump, Mini-flow Protects Pump
1-FCV-74-33	ECCS Operation
1-FCV-74-35	ECCS Operation
1-FCV-63-7	ECCS Operation
1-FCV-63-6	ECCS Operation
1-FCV-63-156	ECCS Flow Path
1-FCV-63-157	ECCS Flow Path
1-FCV-63-39	BIT Injection
1-FCV-63-40	BIT Injection
1-FCV-63-25	BIT Injection
1-FCV-63-26	BIT Injection
1-FCV-63-118	RCS Pressure Boundary
1-FCV-63-98	RCS Pressure Boundary
1-FCV-63-80	RCS Pressure Boundary
1-FCV-63-67	RCS Pressure Boundary
1-FCV-63-1	ECCS Operation
1-FCV-63-72	ECCS Flow Path from Cont. Sump
1-FCV-63-73	ECCS Flow Path from Cont. Sump
1-FCV-63-8	ECCS Flow Path
1-FCV-63-11	ECCS Flow Path
1-FCV-63-93	ECCS Cooldown Flow Path
1-FCV-63-94	ECCS Cooldown Flow Path
1-FCV-63-172	ECCS Flow Path
1-FCV-63-5	ECCS Flow Path
1-FCV-63-47	Train Isolation
1-FCV-63-48	Train Isolation
1-FCV-63-4	SI Pump Mini-flow
1-FCV-63-175	SI Pump Mini-flow

TABLE 3.8-2 (Continued)

MOTOR OPERATED VALVES THERMAL OVERLOAD PROTECTION

Valve No.	Function
1-FCV-63-3	SI Pump Mini-flow
1-FCV-63-152	ECCS Recirc
1-FCV-63-153	ECCS Recirc
1-FCV-63-22	ECCS Recirc
1-FCV-3-33	Quick Closing Isolation
1-FCV-3-47	Quick Closing Isolation
1-FCV-3-87	Quick Closing Isolation
1-FCV-3-100	Quick Closing Isolation
1-FCV-1-15	Stm Supply to Aux FWP turbine
1-FCV-1-16	Stm Supply to Aux FWP turbine
1-FCV-3-179A	ERCW Sys Supply to Pump
1-FCV-3-179B	ERCW Sys Supply to Pump
1-FCV-3-136A	ERCW Sys Supply to Pump
1-FCV-3-136B	ERCW Sys Supply to Pump
1-FCV-3-116A	ERCW Sys Supply to Pump
1-FCV-3-116B	ERCW Sys Supply to Pump
1-FCV-3-126A	ERCW Sys Supply to Pump
1-FCV-3-126B	ERCW Sys Supply to Pump
1-FCV-70-133	Isolation for RCP Oil Coolers & Therm B
1-FCV-70-139	Isolation for RCP Oil Coolers & Therm B
1-FCV-70-4	Isolation for Non-Essential Loads
1-FCV-70-143	Isolation for Excess Letdown Ht Xchngr
1-FCV-70-92	Isolation for RCP Oil Coolers & Therm B
1-FCV-70-90	Isolation for RCP Oil Coolers & Therm B
1-FCV-70-87	Isolation for RCP Oil Coolers & Therm B
1-FCV-70-89	Isolation for RCP Oil Coolers & Therm B
1-FCV-70-140	Isolation for RCP Oil Coolers & Therm B
1-FCV-70-134	Isolation for RCP Oil Coolers & Therm B
1-FCV-67-67*	DG Ht Ex
2-FCV-67-65*	DG Ht Ex
1-FCV-67-66*	DG Ht Ex
2-FCV-67-68*	DG Ht Ex
1-FCV-67-123	CSS Ht Ex Supply
1-FCV-67-125	CSS Ht Ex Supply
1-FCV-67-124	CSS Ht Ex Discharge
1-FCV-67-126	CSS Ht Ex Discharge
0-FCV-67-151*	CCW Ht Ex Throttling
0-FCV-67-152*	CCW Ht Ex Throttling
2-FCV-67-146	CCW Ht Ex Throttling
2-FCV-67-223	Isolation of 1B/2A HDR's
1-FCV-67-83	Cont. Isol. Lower
1-FCV-67-88	Cont. Isol. Lower
1-FCV-67-87	Cont. Isol. Lower
1-FCV-67-424*	CCW Ht Ex Isolation
1-FCV-67-478*	Isolation of IB ERCW HDR

*Common to Units 1 & 2

TABLE 3.8-2 (Continued)

MOTOR OPERATED VALVES THERMAL OVERLOAD PROTECTION

Valve No.	Function
1-FCV-67-95	Cont. Isol. Lower
1-FCV-67-96	Cont. Isol. Lower
1-FCV-67-91	Cont. Isol. Lower
1-FCV-67-103	Cont. Isol. Lower
1-FCV-67-104	Cont. Isol. Lower
1-FCV-67-99	Cont. Isol. Lower
1-FCV-67-111	Cont. Isol. Lower
1-FCV-67-112	Cont. Isol. Lower
1-FCV-67-107	Cont. Isol. Lower
1-FCV-67-130	Cont. Isol. Upper
1-FCV-67-131	Cont. Isol. Upper
1-FCV-67-295	Cont. Isol. Upper
1-FCV-67-134	Cont. Isol. Upper
1-FCV-67-296	Cont. Isol. Upper
1-FCV-67-133	Cont. Isol. Upper
1-FCV-67-139	Cont. Isol. Upper
1-FCV-67-297	Cont. Isol. Upper
1-FCV-67-138	Cont. Isol. Upper
1-FCV-67-142	Cont. Isol. Upper
1-FCV-67-298	Cont. Isol. Upper
1-FCV-67-141	Cont. Isol. Upper
1-FCV-72-21	Cont. Spray Pump Suction
1-FCV-72-22	Cont. Spray Pump Suction
1-FCV-72-20	Cont. Spray Pump Suction
1-FCV-72-23	Cont. Spray Pump Suction
1-FCV-72-2	Cont. Spray Isol.
1-FCV-72-39	Cont. Spray Isol.
1-FCV-72-40	RHR Cont. Spray Isol.
1-FCV-72-41	RHR Cont. Spray Isol.

BASES

A.C. SOURCES AND ONSITE POWER DISTRIBUTION SYSTEMS (Continued)

limits for each connected cell for float voltage and specific gravity, greater than 2.13 volts and not more than .020 below the manufacturer's full charge specific gravity with an average specific gravity of all the connected cells not more than .010 below the manufacture's full charge specific gravity, ensures the OPERABILITY and capability of the battery.

Operation with a battery cell's parameter outside the normal limit but within the allowable value specified in Table 4.8-2 is permitted for up to 7 days. During this 7 day period: (1) the allowable values for electrolyte level ensures no physical damage to the plates with an adequate electron transfer capability; (2) the allowable value for the average specific gravity of all the cells, not more than .020 below the manufacturer's recommended full charge specific gravity, ensures that the decrease in rating will be less than the safety margin provided in sizing; (3) the allowable value for an individual cell's specific gravity, ensures that an individual cell's specific gravity will not be more than .040 below the manufacturer's full charge specific gravity and that the overall capability of the battery will be maintained within an acceptable limit; and (4) the allowable value for an individual cell's float voltage, greater than 2.07 volts, ensures the battery's capability to perform its design function.

3/4.8.3 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES

Containment electrical penetrations and penetration conductors are protected by either de-energizing circuits not required during reactor operation or by demonstrating the OPERABILITY of primary and backup overcurrent protection circuit breakers during periodic surveillance.

The surveillance requirements applicable to lower voltage circuit breakers and fuses provides assurance of breaker and fuse reliability by testing at least one representative sample of each manufacturers brand of circuit breakers and/or fuse. Each manufacturer's molded case and metal case circuit breakers and/or fuses are grouped into representative samples which are then tested on a rotating basis to ensure that all breakers and/or fuses are tested. If a wide variety exists within any manufacturer's brand of circuit breakers and/or fuses, it is necessary to divide that manufacturer's breakers and/or fuses into groups and treat each group as a separate type of breaker of fuses for surveillance purposes.

The OPERABILITY of the motor operated valves thermal overload protection ensures that the thermal overload protection devices will not prevent safety related valves from performing their function. The Surveillance Requirements for demonstrating the OPERABILITY of these devices are in accordance with Regulatory Guide 1.106 "Thermal Overload Protection for Electric Motors on Motor Operated Valves", Revision 1, March 1977.

Circuit breakers actuated by fault currents are used as isolation devices in this plant. The OPERABILITY of these circuit breakers ensures that the 1E busses will be protected in the event of faults in nonqualified loads powered by the busses.

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. 25
License No. DPR-79

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The applications for amendment to the Sequoyah Nuclear Plant, Unit 2 (the facility) Facility Operating License No. DPR-79 filed by the Tennessee Valley Authority (licensee), dated July 1, July 21, October 24, and November 28, 1983, comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the license, as amended, 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 hereby amended by page changes to the Appendix A 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 Appendix A, as revised through Amendment No. 25 , are hereby incorporated into 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

Elinor G. Adensam

Elinor G. Adensam, Chief
Licensing Branch No. 4
Division of Licensing

Attachment:
Appendix A Technical
Specification Changes

Date of Issuance: March 29, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 25

FACILITY OPERATING LICENSE NO. DPR-79

DOCKET NO. 50-328

Replace the following pages of the Appendix "A" Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the areas of change.

Amended Page
3/4 2-17
3/4 3-27a
3/4 6-10
3/4 8-33
3/4 8-34
3/4 8-35
3/4 8-36
B3/4 8-3

TABLE 3.2-1

DNB PARAMETERS

PARAMETER	LIMITS	
	4 Loops In Operation	3 Loops In Operation
Reactor Coolant System T_{avg}	$\leq$ 583°F	**
Pressurizer Pressure	$\geq$ 2220 psia*	**

* Limit not applicable during either a THERMAL POWER ramp in excess of 5% of RATED THERMAL POWER per minute or a THERMAL POWER step in excess of 10% of RATED THERMAL POWER, physics test, or performance of surveillance requirement 4.1.1.3.b.

**Limits pending NRC approval of 3 loop operation.

TABLE 3.3-4 (Continued)

ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS

FUNCTIONAL UNIT	TRIP SETPOINT	ALLOWABLE VALUES
*b. 6.9 kv Shutdown Board-Degraded Voltage		
1. Voltage Sensors	6560 volts	6560 volts ± 33 volts
2. Diesel Generator Start and Load Shed Timer	300 seconds	300 seconds ± 30 seconds
3. SI/Degraded Voltage Logic Enable Timer	10 seconds	10 seconds ± 0.5 seconds
8. ENGINEERED SAFETY FEATURE ACTUATION SYSTEM INTERLOCKS		
a. Pressurizer Pressure Manual Block of Safety Injection P-11	≤ 1970 psig	≤ 1980 psig

*NOTE: This technical specification is to be implemented during the startup following the 1st refueling outage.

AIR TEMPERATURE

LIMITING CONDITION FOR OPERATION

3.6.1.5 Primary containment average air temperature shall be maintained:

a. between 85°F* and 105°F in the containment upper compartment, and

b. between 100°F* and 125°F in the containment lower compartment.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the containment average air temperature not conforming to the above limits, restore the air temperature to within the limits within 8 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.1.5.1 The primary containment upper compartment average air temperature shall be the weighted average** of all ambient air temperature monitoring stations located in the upper compartment. As a minimum, temperature readings will be obtained at least once per 24 hours from the following locations:

Location
a. Elev. 743 ft.
b. Elev. 786 ft.
c. Elev. 786 or 845 ft.

4.6.1.5.2 The primary containment lower compartment average air temperature shall be the weighted average** of all ambient air temperature monitoring stations located in the lower compartment. As a minimum, temperature readings will be obtained at least once per 24 hours from the following locations:

Location
a. Elev. 722 ft.
b. Elev. 700 ft.
c. Elev. 685 or 703 ft.

* Lower limit may be reduced to 60°F in MODES 2, 3 and 4.

** The weighted average is the sum of each temperature multiplied by its respective containment volume fraction. In the event of inoperable temperature sensor(s), the weighted average shall be taken as the reduced total divided by one minus the volume fraction represented by the sensor(s) out of service.

MOTOR OPERATED VALVES THERMAL OVERLOAD PROTECTION

LIMITING CONDITION FOR OPERATION

3.8.3.2 The thermal overload protection devices, integral with the motor starter, of each valve listed in Table 3.8-2 shall be OPERABLE.

APPLICABILITY: Whenever the motor operated valve is required to be OPERABLE.

ACTION:

With one or more of the thermal overload protection devices inoperable, declare the affected valve(s) inoperable and apply the ACTION Statement to the affected valve(s).

SURVEILLANCE REQUIREMENTS

4.8.3.2 The above required thermal overload protection devices shall be demonstrated OPERABLE:

a. At least once per 18 months by the performance of a CHANNEL CALIBRATION of a representative sample of at least 25% of all thermal overload devices which are not bypassed, such that each non-bypassed device is calibrated at least once per 6 years.

TABLE 3.8-2

MOTOR OPERATED VALVES THERMAL OVERLOAD PROTECTION

Valve No.	Function
2-FCV-62-63	Isolation for Seal Water Filter
2-FCV-62-138	Safe Shutdown Redundancy (CVCS)
2-FCV-62-98	ECCS Operation
2-FCV-62-99	ECCS Operation
2-FCV-62-90	ECCS Operation
2-FCV-62-91	ECCS Operation
2-FCV-62-61	Cont. Isolation
2-FCV-62-132	ECCS Operation
2-FCV-62-133	ECCS Operation
2-LCV-62-135	ECCS Operation
2-LCV-62-136	ECCS Operation
2-FCV-74-1	Open for Normal Plant Cooldown
2-FCV-74-2	Open for Normal Plant Cooldown
2-FCV-74-3	ECCS Operation
2-FCV-74-21	ECCS Operation
2-FCV-74-12	RHR Pump, Mini-flow Protects Pump
2-FCV-74-24	RHR Pump, Mini-flow Protects Pump
2-FCV-74-33	ECCS Operation
2-FCV-74-35	ECCS Operation
2-FCV-63-7	ECCS Operation
2-FCV-63-6	ECCS Operation
2-FCV-63-156	ECCS Flow Path
2-FCV-63-157	ECCS Flow Path
2-FCV-63-39	BIT Injection
2-FCV-63-40	BIT Injection
2-FCV-63-25	BIT Injection
2-FCV-63-26	BIT Injection
2-FCV-63-118	RCS Pressure Boundary
2-FCV-63-98	RCS Pressure Boundary
2-FCV-63-80	RCS Pressure Boundary
2-FCV-63-67	RCS Pressure Boundary
2-FCV-63-1	ECCS Operation
2-FCV-63-72	ECCS Flow Path from Cont. Sump
2-FCV-63-73	ECCS Flow Path from Cont. Sump
2-FCV-63-8	ECCS Flow Path
2-FCV-63-11	ECCS Flow Path
2-FCV-63-93	ECCS Cooldown Flow Path
2-FCV-63-94	ECCS Cooldown Flow Path
2-FCV-63-172	ECCS Flow Path
2-FCV-63-5	ECCS Flow Path
2-FCV-63-47	Train Isolation
2-FCV-63-48	Train Isolation
2-FCV-63-4	SI Pump Mini-flow
2-FCV-63-175	SI Pump Mini-flow

TABLE 3.8-2 (Continued)

MOTOR OPERATED VALVES THERMAL OVERLOAD PROTECTION

Valve No.	Function
2-FCV-63-3	SI Pump Mini-flow
2-FCV-63-152	ECCS Recirc
2-FCV-63-153	ECCS Recirc
2-FCV-63-22	ECCS Recirc
2-FCV-3-33	Quick Closing Isolation
2-FCV-3-47	Quick Closing Isolation
2-FCV-3-87	Quick Closing Isolation
2-FCV-3-100	Quick Closing Isolation
2-FCV-1-15	Stm Supply to Aux FWP turbine
2-FCV-1-16	Stm Supply to Aux FWP turbine
2-FCV-3-179A	ERCW Sys Supply to Pump
2-FCV-3-179B	ERCW Sys Supply to Pump
2-FCV-3-136A	ERCW Sys Supply to Pump
2-FCV-3-136B	ERCW Sys Supply to Pump
2-FCV-3-116A	ERCW Sys Supply to Pump
2-FCV-3-116B	ERCW Sys Supply to Pump
2-FCV-3-126A	ERCW Sys Supply to Pump
2-FCV-3-126B	ERCW Sys Supply to Pump
2-FCV-70-133	Isolation for RCP Oil Coolers & Therm B
2-FCV-70-139	Isolation for RCP Oil Coolers & Therm B
2-FCV-70-4	Isolation for Non-Essential Loads
2-FCV-70-143	Isolation for Excess Letdown Ht Xchngr
2-FCV-70-92	Isolation for RCP Oil Coolers & Therm B
2-FCV-70-90	Isolation for RCP Oil Coolers & Therm B
2-FCV-70-87	Isolation for RCP Oil Coolers & Therm B
2-FCV-70-89	Isolation for RCP Oil Coolers & Therm B
2-FCV-70-140	Isolation for RCP Oil Coolers & Therm B
2-FCV-70-134	Isolation for RCP Oil Coolers & Therm B
1-FCV-67-67*	DG Ht Ex
2-FCV-67-65*	DG Ht Ex
1-FCV-67-66*	DG Ht Ex
2-FCV-67-68*	DG Ht Ex
2-FCV-67-123	CS Ht Ex Supply
2-FCV-67-125	CS Ht Ex Supply
2-FCV-67-124	CS Ht Ex Discharge
2-FCV-67-126	CS Ht Ex Discharge
0-FCV-67-151*	CCW Ht Ex Throttling
0-FCV-67-152*	CCW Ht Ex Throttling
2-FCV-67-146	CCW Ht Ex Throttling
1-FCV-67-424*	CCW Ht Ex Isolation
1-FCV-67-478*	Isolation of 1B ERCW HDR
2-FCV-67-223	Isolation of 1B/2A HDR's
2-FCV-67-83	Cont. Isol. Lower
2-FCV-67-88	Cont. Isol. Lower
2-FCV-67-87	Cont. Isol. Lower

*Common to Units 1 & 2.

TABLE 3.8-2 (Continued)

MOTOR OPERATED VALVES THERMAL OVERLOAD PROTECTION

Valve No.	Function
2-FCV-67-95	Cont. Isol. Lower
2-FCV-67-96	Cont. Isol. Lower
2-FCV-67-91	Cont. Isol. Lower
2-FCV-67-103	Cont. Isol. Lower
2-FCV-67-104	Cont. Isol. Lower
2-FCV-67-99	Cont. Isol. Lower
2-FCV-67-111	Cont. Isol. Lower
2-FCV-67-112	Cont. Isol. Lower
2-FCV-67-107	Cont. Isol. Lower
2-FCV-67-130	Cont. Isol. Upper
2-FCV-67-131	Cont. Isol. Upper
2-FCV-67-295	Cont. Isol. Upper
2-FCV-67-134	Cont. Isol. Upper
2-FCV-67-296	Cont. Isol. Upper
2-FCV-67-133	Cont. Isol. Upper
2-FCV-67-139	Cont. Isol. Upper
2-FCV-67-297	Cont. Isol. Upper
2-FCV-67-138	Cont. Isol. Upper
2-FCV-67-142	Cont. Isol. Upper
2-FCV-67-298	Cont. Isol. Upper
2-FCV-67-141	Cont. Isol. Upper
2-FCV-72-21	Cont. Spray Pump Suction
2-FCV-72-22	Cont. Spray Pump Suction
2-FCV-72-20	Cont. Spray Pump Suction
2-FCV-72-23	Cont. Spray Pump Suction
2-FCV-72-2	Cont. Spray Isol.
2-FCV-72-39	Cont. Spray Isol.
2-FCV-72-40	RHR Cont. Spray Isol.
2-FCV-72-41	RHR Cont. Spray Isol.

ELECTRICAL EQUIPMENT PROTECTIVE DEVICES (Continued)

The OPERABILITY of the motor operated valves thermal overload protection ensures that the thermal overload protection devices will not prevent safety related valves from performing their function. The Surveillance Requirements for demonstrating the OPERABILITY of these devices are in accordance with Regulatory Guide 1.106 "Thermal Overload Protection for Electric Motors on Motor Operated Valves", Revision 1, March 1977.

Circuit breakers actuated by fault currents are used as isolation devices in this plant. The OPERABILITY of these circuit breakers ensures that the IE busses will be protected in the event of faults in non qualified loads powered by the busses.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 33 TO FACILITY OPERATING LICENSE DPR-77

AND AMENDMENT NO. 25 TO FACILITY OPERATING LICENSE DPR-79

TENNESSEE VALLEY AUTHORITY

INTRODUCTION

These amendments address five Technical Specification changes that were requested by the licensee for Sequoyah Units 1 and 2 which are as follows:

(1) A change in the containment air temperature limits was initially requested for Unit 1 on September 17, 1982, as part of the reload package. Supplementary information was provided on January 3, 1983. The same type of change for Unit 2 was proposed on July 1, 1983, for consideration during the reload review. Requests for changes associated with the purge lines that were identified in these letters have been delayed pending the results of an extensive review on the advisability of allowing more than one pair of purge lines to be opened concurrently.

(2)-(3) On July 21, 1983, the licensee requested four changes to the Technical Specifications. Revisions on the operability of containment isolation valves and pressurizer spray nozzles will be considered in a separate amendment. The two changes considered in this amendment and identified in this safety evaluation are:

(a) Revisions to the operating limits (DNB parameter) for the pressurizer in the reactor coolant system during the physics test or surveillance measurements on the moderator temperature coefficient.

(b) Revisions to the basic igniter surveillance test requirements and the number of igniters that is required for testing.

(4) On October 24, 1983, the licensee proposed a change to increase the tolerance in the allowable value specified in the Technical Specifications for the diesel generator start and load shed timers. Supplemental information was provided in letters dated December 7, 1983, and January 26, 1984.

(5) On November 28, 1983, the licensee requested the deletion of the requirement to test the motor operated valves thermal overload protection bypass devices.

EVALUATION

(1) Containment Air Temperature

The licensee requested raising of the maximum air temperature limit for the containment lower compartment from 120°F to 125°F while lowering the maximum air temperature limit for the containment upper compartment from 110°F to 105°F. The ECCS Appendix K (10 CFR 50.46) analysis was performed based on a containment back pressure transient which considered air temperatures in the containment lower and upper compartment of 120°F and 110°F, respectively. In order for this analysis to be valid due to containment air temperature changes, the total containment air mass must remain unchanged to achieve the same containment back pressure. Since the containment upper compartment volume is much larger than the containment lower compartment, the net effect of this air temperature change is to lower the average containment air temperature. The decrease in air temperature in the upper compartment will result in denser air, thus larger air mass to be maintained in this compartment. The increase in air temperature in the lower compartment will result in less dense air, thus less air mass to be maintained in the lower compartment. Overall, air mass in the containment will increase which is beneficial to the containment back pressure. The increase in the containment back pressure will result in a higher reflood rate and thus make the existing ECCS analysis more conservative.

The Class 1E equipment/instrumentation in the lower compartment may experience this temperature increase occasionally for a short duration. The end of qualified life (Thermal Aging) of this Class 1E equipment/instrumentation will not be affected during normal operating conditions. The containment air temperature changes will not have any impact on ECCS performance and Class 1E equipment/instrumentation. The temperature changes are acceptable.

(2) Revised Pressurizer Operating Parameters (DNB Parameter)

The licensee proposed changes that would remove the pressurizer pressure low limit of 2220 psia during tests or performing measurements related to the Moderator Temperature Coefficient (MTC). The current Technical Specification requires that pressurizer pressure be greater than or equal to 2220 psia, except for a thermal power ramp in excess of 5% of rated thermal power per minute or a thermal power step in excess of 10% of rated thermal power.

The licensee found that the pressurizer limit is difficult to maintain during physics tests and the performance of surveillance requirements for MTC. Measurement of the MTC has a high probability of causing a drop in pressure below the specified value. The reactor coolant system T_{av} must be dropped several degrees

(6°F) below T_{av} for an accurate measurement of MTC. This results in an associated drop in pressurizer level and in a downswing of pressurizer pressure which makes it difficult to maintain the 2220 psia. Allowing the pressure to fall during the MTC measurement will not compromise safety considerations because the overtemperature ΔT trip will still provide core protection for all combinations of pressure and coolant temperatures that may be experienced during the physics tests or MTC measurements. For these reasons the additional exceptions to the pressurizer pressure are acceptable.

(3) Hydrogen Igniters

The licensee requested a change in the Technical Specifications to reflect the actual number of igniters that are installed in containment and a reduction in the number of igniters that need to be tested during the 18-month surveillance period. Revisions to the igniter surveillance program are still being reviewed. This amendment only changes the number of igniters installed in containment. The revised total number of igniters for Sequoyah had been previously established during the review for full power operating license.

(4) Diesel Generator Start and Load Shed Timers

The licensee-proposed amendment deals with a change in the allowable value (tolerance) for the diesel generator (DG) start and load shed timer used during a sustained degraded voltage condition. This proposed change increases the allowable tolerance value from present ± 15 seconds to ± 30 seconds of the timer trip setpoint which is set at 300 seconds. Initially the licensee proposed a ± 60 second tolerance of the timers. The reason for this request is that the manufacturer can only certify a setting of ± 10 percent for the timer over 200 seconds which deviates from the original technical specification tolerance of ± 5 percent (± 15 seconds).

The licensee designed and installed a second level undervoltage protection system for the safety-related equipment which included DG timers. The second level of undervoltage protection along with this increased allowable value was accepted upon completion of the proposed modifications. The implementation of the associated technical specification inadvertently included a more restrictive DG tolerance than was specified in the analysis. The subject allowable tolerance value (± 30 seconds) is more conservative than the licensee proposed value of ± 60 seconds and is consistent with the design analysis for the undervoltage protection system. The new tolerance value of ± 30 seconds is now acceptable to the staff and licensee. The Federal Register Notice on this matter specified a ± 60 second tolerance. No new notice was issued since the acceptable value is more conservative than proposed by the licensee.

(5) Motor Operated Valve Thermal Overload Protection

The licensee requested an amendment to the Technical Specifications to delete the requirement to test the motor operated valves (MOV) thermal overload protection bypass devices. As a result, it requires deletion of the limiting condition for operation, the surveillance requirements and minor modifications to the tables and bases statement of the T/S. The standard requires verifying the operability of a list of valves by testing the bypass device. Since none of the MOVs at Sequoyah has bypass devices, the licensee states that the above requirement which deals with bypass devices is not applicable to Sequoyah. Although the primary application of the thermal overload protection devices is to protect the valve motors while they are running, operating experience has shown that indiscriminate application of thermal overload protection devices to these valve motors results in spurious trips thereby hindering successful completion of safety functions. According to Regulatory Guide (RG) 1.106, there are two acceptable methods to resolve this concern: one is that the thermal overload protection devices are continually bypassed and temporarily placed in force only when the valve motors are undergoing periodic or maintenance testing. The second method allows the thermal overload protection devices to be in place during normal operation. However, the trip setpoint must be established with all uncertainties resolved in favor of completing the safety related action. The licensee has adopted the second method and further assured us that the trip setpoints have been selected by giving all the considerations prescribed in the regulatory position C.2 of the RG 1.106.

In view of the fact that none of the MOVs at Sequoyah has bypass devices and the design has been previously approved without the bypass device, the change requested is acceptable.

ENVIRONMENTAL CONSIDERATION

We have determined that the amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendments involve an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of the amendments.

CONCLUSION

The Commission made proposed determinations that the amendments involve no significant hazards consideration (SHC) which were published in the Federal Register on October 12, 1983 (48 FR 46460), January 26, 1984 (49 FR 3357), and

February 24, 1984 (49 FR 7045), and consulted with the State of Tennessee. No public comments were received and the state of Tennessee did not have any comments.

We have 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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: March 29, 1984

Principal Contributors: Carl Stahle, Licensing Branch No. 4, DL
Peter Kang, Power Systems Branch, DSI

March 29, 1984

AMENDMENT NO. 33 TO FACILITY OPERATING LICENSE DPR-77 - SEQUOYAH UNIT 1
AMENDMENT NO. 25 TO FACILITY OPERATING LICENSE DPR-79 - SEQUOYAH UNIT 2

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