

Docket Nos. 50-327
and 50-328

March 31, 1994

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. M88371 AND M88372) (TS 93-16)

The Commission has issued the enclosed Amendment No. 178 to Facility Operating License No. DPR-77 and Amendment No. 169 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 7, 1993.

The amendments incorporate various changes to the Sequoyah Operating License and the Administrative Controls section of the technical specifications. These changes include overtime approval authority, titles for the Plant Operations Review Committee, Radiological Assessment Review Committee requirements, Offsite Dose Calculation Manual implementation, Quality Assurance Program procedures, condenser in-leakage monitoring requirements, and changes to position titles and references.

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:
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. 178 to License No. DPR-77
2. Amendment No. 169 to License No. DPR-79
3. Safety Evaluation

cc w/enclosures:
See next page

*subject to 3 incorporated
changes noted Det
3/29*

NAME:	PDII-4/LA <i>[Signature]</i>	PDII-4/PM <i>[Signature]</i>	PRPB <i>[Signature]</i>	OTSB ^{*94-54} <i>[Signature]</i>	OGC	PDII-4/D <i>[Signature]</i>
OFFICE:	BCayton	DLaBarge	LCunningham	CGrimes	<i>[Signature]</i>	FHebdon
DATE:	3/8/94	3/8/94	3/16/94	3/18/94	3/21/94	3/31/94

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AMENDMENT NO. 178 FOR SEQUOYAH UNIT NO. 1 - DOCKET NO. 50-327 and
AMENDMENT NO. 169 FOR SEQUOYAH UNIT NO. 2 - DOCKET NO. 50-328
DATED: March 31, 1994

DISTRIBUTION:

Docket Files

NRC & Local PDRs

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S. Varga 14-E-4

F. Hebdon

B. Clayton

D. LaBarge

J. Johnson, Acting RII

M. Lesser RII

J. Jaudon RII

OGC 15-B-18

D. Hagan MNBB-3206

G. Hill P1-37 (2 per docket)

C. Grimes 11-E-22

L. Cunningham

ACRS(10)

OPA 2-G-5

OC/LFDCB MNBB-9112

cc: Plant Service List

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

cc:

Mr. Craven Crowell, Chairman
Tennessee Valley Authority
ET 12A
400 West Summit Hill Drive
Knoxville, TN 37902

Mr. W. H. Kennoy, Director
Tennessee Valley Authority
ET 12A
400 West Summit Hill Drive
Knoxville, TN 37902

Mr. Johnny H. Hayes, Director
Tennessee Valley Authority
ET 12A
400 West Summit Hill Drive
Knoxville, TN 37902

Mr. O. J. Zeringue, Sr. Vice President
Nuclear Operations
Tennessee Valley Authority
3B Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Dr. Mark O. Medford, Vice President
Technical Support
Tennessee Valley Authority
3B Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. D. E. Nunn, Vice President
Nuclear Projects
Tennessee Valley Authority
3B Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Site Vice President
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy, Daisy, TN 37379

General Counsel
Tennessee Valley Authority
ET 11H
400 West Summit Hill Drive
Knoxville, TN 37902

SEQUOYAH NUCLEAR PLANT

Mr. B. S. Schofield, Manager
Nuclear Licensing and
Regulatory Affairs
Tennessee Valley Authority
4G Blue Ridge
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Ralph H. Shell
Site Licensing Manager
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, TN 37379

Mr. Roger W. Huston
Tennessee Valley Authority
11921 Rockville Pike
Suite 402
Rockville, MD 20852

Regional Administrator
U.S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW., Suite 2900
Atlanta, GA 30323

Mr. William E. Holland
Senior Resident Inspector
Sequoyah Nuclear Plant
U.S. Nuclear Regulatory Commission
2600 Igou Ferry Road
Soddy Daisy, TN 37379

Mr. Michael H. Mobley, Director
Division of Radiological Health
3rd Floor, L and C Annex
401 Church Street
Nashville, TN 37243-1532

County Judge
Hamilton County Courthouse
Chattanooga, TN 37402



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. 178
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 7, 1993, 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 first paragraph of License Condition 2.C.(23)A. of Facility Operating License No. 77 is hereby amended to read as follows:

TVA shall continue to provide an on-shift technical advisor to the shift operations supervisor.

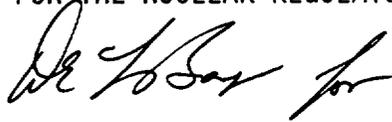
3. Also, the license is amended by changes to the Technical Specifications as indicated in Attachment 2 to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-77 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 178, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

4. 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:

1. Page 10 of License*
2. Changes to the Technical Specifications

Date of Issuance: March 31, 1994

* Page 10 is attached for convenience, for the composite license to reflect this change.

(23) TMI Action Plan Dated Conditions

Each of the following conditions shall be completed to the satisfaction of the NRC by the times indicated:

A. Shift Technical Advisor (Section 22.3, I.A.1.1)

TVA shall continue to provide an on-shift technical advisor to the shift operations supervisor.

All STAs shall be fully trained no later than by January 1, 1981. STAs shall complete eight weeks of mathematics, physics, thermodynamics, fluid flow, heat transfer, instrumentation and control, chemistry, materials and structural analysis. Following this, STAs shall receive two weeks of design review and five weeks of systems dynamic behavior including transient analysis and techniques for transient identification. The training program for engineers designated as STAs shall consist of three portions: academic training in thermodynamics, fluid flow, heat transfer and reactor theory; specific instruction in plant systems and Technical Specifications; and finally, simulator training.

The training shall be taught at the college level and be equivalent to about 60 semester hours.

Items for completion by January 1, 1981:

B. Plant Shielding (Section 22.3, II.B.2)

TVA shall complete modification to assure adequate access to vital areas and protection of safety equipment following an accident resulting in a degraded core.

C. Auxiliary Feedwater Initiation and Indication (Section 22.3, II.E.1.2)

(a) TVA shall upgrade, as necessary, automatic initiation of the auxiliary feedwater system to safety-grade quality.

(b) TVA shall upgrade, as necessary, the indication of auxiliary feedwater flow to each steam generator to safety grade quality.

D. Additional Accident Monitoring Instrumentation (Section 22.3, II.F.1)

(1) TVA shall install interim noble gas monitors at the first outage of sufficient duration.

ATTACHMENT 2 TO LICENSE AMENDMENT NO. 178

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.

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- b. Leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be PRESSURE BOUNDARY LEAKAGE, or
- c. Reactor coolant system leakage through a steam generator to the secondary system.

MEMBER(S) OF THE PUBLIC

1.17 MEMBER OF THE PUBLIC means an individual in a controlled or unrestricted area. However, an individual is not a member of the public during any period in which the individual receives an occupational dose.

OFFSITE DOSE CALCULATION MANUAL (ODCM)

1.18 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm/trip setpoints, and in the conduct of the Radiological Environmental Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Annual Radioactive Effluent Release Reports required by Specifications 6.9.1.6 and 6.9.1.8.

OPERABLE - OPERABILITY

1.19 A system, subsystem, train, or component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s), and when all necessary attendant instrumentation, controls, a normal and an emergency electrical power source, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

OPERATIONAL MODE - MODE

1.20 An OPERATIONAL MODE (i.e., MODE) shall correspond to any one inclusive combination of core reactivity condition, power level and average reactor coolant temperature specified in Table 1.1.

PHYSICS TESTS

1.21 PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation and 1) described in Chapter 14.0 of the FSAR, 2) authorized under the provisions of 10 CFR 50.59, or 3) otherwise approved by the Commission.

6.0 ADMINISTRATIVE CONTROLS

6.1 RESPONSIBILITY

6.1.1 The Plant Manager shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

6.1.2 The Shift Operations Supervisor (or during his absence from the Control Room, a designated individual) shall be responsible for the Control Room command function. A management directive to this effect, signed by the Site Vice President, shall be reissued to all station personnel on an annual basis.

6.2 ORGANIZATION

6.2.1 OFFSITE AND ONSITE ORGANIZATIONS

An onsite and an offsite organization shall be established for unit operation and corporate management. The onsite and offsite organization shall include the positions for activities affecting the safety of the nuclear power plant.

- a. Lines of authority, responsibility, and communication shall be established and defined from the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organizational charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the FSAR and will be updated in accordance with 10 CFR 50.71(e).
- b. The Senior Vice President, Nuclear Power shall have corporate responsibility for overall plant nuclear safety. This individual shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support in the plant so that continued nuclear safety is assured.
- c. The Plant Manager shall be responsible for overall unit safe operation and shall have control over those onsite resources necessary for safe operation and maintenance of the plant.
- d. The individuals who train the operating staff and those who carry out health physics and quality assurance functions may report to the appropriate onsite manager; however, they shall have sufficient organizational freedom to ensure their independence from operating pressures.

6.2.2 FACILITY STAFF

- a. Each on-duty unit shift shall be composed of at least the minimum shift crew composition shown in Table 6.2-1.
- b. At least one licensed Reactor Operator shall be in the unit Control Room when fuel is in the reactor. In addition, while the unit is in MODE 1, 2, 3 or 4, at least one licensed Senior Reactor Operator shall be in the Control Room.

ADMINISTRATIVE CONTROLS

- c. A Radiological Control technician# shall be onsite when fuel is in the reactor.
- d. All CORE ALTERATIONS shall be observed and directly supervised by either a licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation.
- e. A Fire Brigade of at least 5 members shall be maintained onsite at all times.# The Fire Brigade shall not include the Shift Operations Supervisor and 2 other members of the minimum shift crew necessary for safe shutdown of the unit or any personnel required for other essential functions during a fire emergency.
- f. The Operations Superintendent shall hold a Senior Reactor Operator license.
- g. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety-related functions (i.e., senior reactor operators, reactor operators, assistant unit operators, Radiological Control, and key maintenance personnel).

Adequate shift coverage shall be maintained without routine heavy use of overtime. The objective shall be to have operating personnel work a normal 8-hour day, 40-hour week while the unit is operating. However, in the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance, or major plant modification, on a temporary basis the following guidelines shall be followed:

- 1. An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time.
- 2. An individual should not be permitted to work more than 16 hours in any 24-hour period, nor more than 24 hours in any 48-hour period, nor more than 72 hours in any 7-day period, all excluding shift turnover time.
- 3. A break of at least 8 hours should be allowed between work periods, including shift turnover time.
- 4. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

Any deviation from the above guidelines shall be authorized in advance by the Plant Manager or his designee, in accordance with approved administrative procedures, or by higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation.

Controls shall be included in the procedures such that individual overtime shall be reviewed monthly by the Plant Manager or his designee to assure that excessive hours have not been assigned. Routine deviation from the above guidelines is not authorized.

#The Radiological Control technician and fire brigade composition may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence provided immediate action is taken to fill the required positions.

Table 6.2-1
 MINIMUM SHIFT CREW COMPOSITION
 WITH UNIT 2 IN MODE 5 OR 6 OR DE-FUELED

Position	Number of individuals required to fill position	
	Modes 1, 2, 3, & 4	Modes 5 & 6
SOS	1 ^a	1 ^a
SRO	1	None
RO	2	1
AO	2	2 ^b
STA	1	None

WITH UNIT 2 IN MODES 1, 2, 3, or 4

Position	Number of individuals required to fill position	
	Modes 1, 2, 3, & 4	Modes 5 & 6
SOS	1 ^a	1 ^a
SRO	1 ^a	None
RO	2 ^b	1
AO	2 ^b	1
STA	1 ^a	None

^aIndividual may fill the same position on Unit 2.

^bOne of the two required individuals may fill the same position on Unit 2.

TABLE 6.2-1 (Continued)

TABLE NOTATION

SOS - Shift Operations Supervisor with a Senior Reactor Operators License on Unit 1
SRO - Individual with a Senior Reactor Operators License on Unit 1
RO - Individual with a Reactor Operators License on Unit 1
AO - Auxiliary Operator
STA - Shift Technical Advisor

Except for the Shift Operations Supervisor, the Shift Crew Composition may be one less than the minimum requirements of Table 6.2-1 for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the Shift Crew Composition to within the minimum requirements of Table 6.2-1. This provision does not permit any shift crew position to be unmanned upon shift change due to an oncoming shift crewman being late or absent.

During any absence of the Shift Operations Supervisor from the Control Room while the unit is in MODE 1, 2, 3 or 4, an individual (other than the Shift Technical Advisor) with a valid SRO license shall be designated to assume the Control Room command function. During any absence of the Shift Operations Supervisor from the Control Room while the Unit is in Mode 5 or 6, an individual with a valid SRO or RO license (other than the Shift Technical Advisor) shall be designated to assume the Control Room command function.

ADMINISTRATIVE CONTROLS

6.2.3 INDEPENDENT SAFETY ENGINEERING (ISE)

FUNCTION

6.2.3.1 The ISE shall function to examine plant operating characteristics, NRC issuances, industry advisories, Licensee Event Reports and other sources which may indicate areas for improving plant safety.

COMPOSITION

6.2.3.2 The ISE shall be composed of at least 3 dedicated full-time engineers located onsite. These engineers will be supplemented as necessary by full-time engineers shared among all TVA nuclear sites to achieve an equivalent staffing of 5 full-time engineers performing the ISE functions applicable to Sequoyah.

RESPONSIBILITIES

6.2.3.3 The ISE shall be responsible for maintaining surveillance of plant activities to provide independent verification* that these activities are performed correctly and that human errors are reduced as much as practical.

AUTHORITY

6.2.3.4 The ISE shall make detailed recommendations for revised procedures, equipment modifications, or other means of improving plant safety to the Manager, Nuclear Experience Review/Independent Safety Engineering.

6.2.4 SHIFT TECHNICAL ADVISOR (STA)

6.2.4.1 The STA shall serve in an advisory capacity to the Shift Operations Supervisor on matters pertaining to the engineering aspects of assuring safe operation of the unit.

6.3 FACILITY STAFF QUALIFICATIONS

6.3.1 Each member of the facility staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions except for the Site Radiological Control Manager who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.

*Not responsible for sign-off function.

ADMINISTRATIVE CONTROLS

6.4 TRAINING

6.4.1 A retraining and replacement training program for the facility staff shall be maintained under the direction of the Plant Manager and shall meet or exceed the requirements and recommendations of Section 5.5 of ANSI N18.1-1971 and 10 CFR Part 55 and shall include familiarization with relevant industry operational experience.

6.5 REVIEW AND AUDIT

6.5.0 The Senior Vice President, Nuclear Power is responsible for the safe operation of all TVA power plants.

6.5.1 PLANT OPERATIONS REVIEW COMMITTEE (PORC)

FUNCTION

6.5.1.1 The PORC shall function to advise the Plant Manager on all matters related to nuclear safety.

COMPOSITION

6.5.1.2 The PORC shall be composed of the:

Chairman:	Plant Manager
Member:	Operations Manager
Member:	Radiological and Chemistry Manager
Member:	Maintenance Manager
Member:	Technical Support Manager
Member:	Quality Audit and Assessment Manager
Member:	Site Engineering Representative

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- h. Performance of special reviews, investigations or analyses and reports thereon as requested by the Plant Manager or the Nuclear Safety Review Board.
- i. Review of every unplanned onsite release of radioactive material to the environs including the preparation and forwarding of reports covering evaluation, recommendations and disposition of the corrective action to prevent recurrence to the Site Vice President and to the Nuclear Safety Review Board.
- j. Review of all proposed changes to the OFFSITE DOSE CALCULATION MANUAL.

AUTHORITY

6.5.1.7 The PORC shall:

- a. Recommend in writing to the Plant Manager approval or disapproval of items considered under 6.5.1.6(a), (b) and (c) above.
- b. Require a determination in writing with regard to whether or not each item considered under 6.5.1.6(b), (c), and (e) above constitutes an unreviewed safety question.
- c. Provide written notification within 24 hours to the Site Vice President and the Nuclear Safety Review Board of disagreement between the PORC and the Plant Manager; however, the Plant Manager shall have responsibility for resolution of such disagreements pursuant to 6.1.1 above.

RECORDS

6.5.1.8 The PORC shall maintain written minutes of each PORC meeting that, at a minimum, document the results of all PORC activities performed under the responsibility and authority provisions of these technical specifications. Copies shall be provided to the Site Vice President and the Nuclear Safety Review Board.

6.5.1A TECHNICAL REVIEW AND CONTROL

ACTIVITIES

6.5.1A.1. Activities which affect nuclear safety shall be conducted as follows:

- a. Procedures required by Specification 6.8.1 and other procedures which affect plant nuclear safety, and changes thereto, shall be prepared, reviewed and approved. Each such procedure or procedure change shall be reviewed by a qualified individual other than the individual who prepared the procedure or procedure change, but who may be from the same organization as the individual who prepared the procedure or procedure change. Procedures shall be approved by the appropriate responsible manager as designated in writing by the Plant Manager. The Plant Manager, or Duty Plant Manager shall approve designated Administrative Procedures.

ADMINISTRATIVE CONTROLS

- f. Significant operating abnormalities or deviations from normal and expected performance of unit equipment that affect nuclear safety.
- g. ALL REPORTABLE EVENTS.
- h. All recognized indications of an unanticipated deficiency in some aspect of design or operation of structures, systems, or components that could affect nuclear safety.
- i. Reports and meetings minutes of the PORC.

AUDITS

6.5.2.8 Audits of unit activities shall be performed under the cognizance of the NSRB. These audits shall encompass:

- a. The conformance of unit operation to provisions contained within the Technical Specifications and applicable license conditions at least once per 12 months.
- b. The performance, training and qualifications of the entire facility staff at least once per 12 months.
- c. The results of actions taken to correct deficiencies occurring in unit equipment, structures, systems or method of operation that affect nuclear safety at least once per 6 months.
- d. The performance of activities required by the Nuclear Quality Assurance Program to meet the criteria of Appendix "B", 10 CFR 50, at least once per 24 months.
- e. The Site Radiological Emergency Plan and implementing procedures at least once per 12 months.
- f. The Plant Physical Security Plan, the Safeguards Contingency Plan, and implementing procedures at least once per 12 months.
- g. Any other area of unit operation considered appropriate by the NSRB or the Senior Vice President, Nuclear Power.
- h. The Facility Fire Protection Program and implementing procedures at least once per 24 months.
- i. An independent fire protection and loss prevention program inspection and audit shall be performed annually utilizing either qualified offsite licensee personnel or an outside fire protection firm.
- j. An inspection and audit of the fire protection and loss prevention program shall be performed by an outside qualified fire consultant at intervals no greater than 3 years.

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- k. The radiological environmental monitoring program and the results thereof at least once per 12 months.
- l. The OFFSITE DOSE CALCULATION MANUAL and implementing procedures at least once per 24 months.
- m. The PROCESS CONTROL PROGRAM and implementing procedures for SOLIDIFICATION of radioactive wastes at least once per 24 months.
- n. The performance of activities required by the Quality Assurance Program to meet the criteria of Regulatory Guide 4.15, December 1977 or Regulatory Guide 1.21, Rev. 1, 1974 and Regulatory Guide 4.1, Rev. 1, 1975, at least once per 12 months.

AUTHORITY

6.5.2.9 The NSRB shall report to and advise the Senior Vice President, Nuclear Power those areas of responsibility specified in Sections 6.5.2.7 and 6.5.2.8.

RECORDS

6.5.2.10 Records of NSRB activities shall be prepared, approved and distributed as indicated below:

- a. Minutes of each NSRB meeting shall be prepared, approved and forwarded to the Senior Vice President, Nuclear Power within 14 days following each meeting.
- b. Reports of reviews encompassed by Section 6.5.2.7 above, shall be prepared, approved and forwarded to the Senior Vice President, Nuclear Power within 14 days following completion of the review.
- c. Audit reports encompassed by Section 6.5.2.8 above, shall be forwarded to the Senior Vice President, Nuclear Power and to the management positions responsible for the areas audited within 30 days after completion of the audit.

6.5.3 THIS SPECIFICATION IS DELETED

ADMINISTRATIVE CONTROLS

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ADMINISTRATIVE CONTROLS

6.6 REPORTABLE EVENT ACTION

6.6.1 The following actions shall be taken for REPORTABLE EVENTS:

- a. The Commission shall be notified and a report submitted pursuant to the requirements of Section 50.73 to 10 CFR Part 50, and
- b. Each REPORTABLE EVENT shall be reviewed by the PORC and the results of this review shall be submitted to the NSRB and the Site Vice President.

6.7 SAFETY LIMIT VIOLATION

6.7.1 The following actions shall be taken in the event a Safety Limit is violated:

- a. The unit shall be placed in at least HOT STANDBY within one hour.
- b. The NRC Operations Center shall be notified by telephone as soon as possible and in all cases within one hour. The Site Vice President and the NSRB shall be notified within 24 hours.
- c. A Safety Limit Violation Report shall be prepared. The report shall be reviewed by the PORC. This report shall describe (1) applicable circumstances preceding the violation, (2) effects of the violation upon facility components, systems or structures, and (3) corrective action taken to prevent recurrence.
- d. The Safety Limit Violation Report shall be submitted to the Commission, the NSRB and the Site Vice President within 14 days of the violation.

6.8 PROCEDURES & PROGRAMS

6.8.1 Written procedures shall be established, implemented and maintained covering the activities referenced below:

- a. The applicable procedures recommended in Appendix "A" of Regulatory Guide 1.33, Revision 2, February 1978.

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- b. Refueling operations.
- c. Surveillance and test activities of safety-related equipment.
- d. Plant Physical Security Plan implementation.
- e. Site Radiological Emergency Plan implementation.
- f. Fire Protection Program implementation.
- g. PROCESS CONTROL PROGRAM implementation.
- h. Quality Assurance Program for effluent and environmental monitoring, using the guidance contained in Regulatory Guide 4.15, December 1977, or Regulatory Guide 1.21, Rev. 1, 1974 and Regulatory Guide 4.1, Rev. 1, 1975.
- i. OFFSITE DOSE CALCULATION MANUAL implementation.

6.8.2 Each procedure of 6.8.1 above, and changes thereto, shall be reviewed and approved prior to implementation as set forth in Specification 6.5.1A above.

6.8.3 Temporary changes to procedures of 6.8.1 above may be made provided:

- a. The intent of the original procedure is not altered.
- b. The change is approved by two members of the plant management staff, at least one of whom holds a Senior Reactor Operator's License on the unit affected.
- c. The change is approved in accordance with Specification 6.5.1A above within 14 days of implementation.

6.8.4 The following programs shall be established, implemented, maintained, and changes thereto made in accordance with Section 6.5.1A:

- a. Primary Coolant Sources Outside Containment

A program to reduce leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. The

ADMINISTRATIVE CONTROLS

systems include the safety injection system, residual heat removal system, chemical and volume control system, containment spray system, and RCS sampling system. The program shall include the following:

- (i) Preventive maintenance and periodic visual inspection requirements, and
- (ii) Integrated leak test requirements for each system at refueling cycle intervals or less.

b. In-Plant Radiation Monitoring

A program which will ensure the capability to accurately determine the airborne iodine concentrations in vital areas under accident conditions. This program shall include the following:

- (i) Training of personnel,
- (ii) Procedures for monitoring, and
- (iii) Provisions for maintenance of sampling and analysis equipment.

c. Secondary Water Chemistry

A program for monitoring of secondary water chemistry to inhibit steam generator tube degradation. This program shall include:

- (i) Identification of a sampling schedule for the critical variables and control points for these variables,
- (ii) Identification of the procedures used to measure the values of the critical variables,
- (iii) Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser in-leakage,
- (iv) Procedures for the recording and management of data,
- (v) Procedures defining corrective actions for off-control point chemistry conditions,
- (vi) Procedures identifying (a) the authority responsible for the interpretation of the data; and (b) the sequence and timing of administrative events required to initiate corrective action.

ADMINISTRATIVE CONTROLS

A supplemental report shall be prepared within 30 days after each subsequent failure during a valid demand for so long as the affected diesel generator unit continues to violate the criteria (3/20 or 6/100) for the reliability improvement program remedial action. The supplemental report need only update the failure/demand history for the affected diesel generator unit since the last report for that diesel generator. The supplemental report shall also present an analysis of the failure(s) with a root cause determination, if possible, and shall delineate any further procedural, hardware or operational changes to be incorporated into the diesel generator improvement program and the schedule for implementation of those changes.

In addition to the above, submit a yearly data report on the diesel generator reliability.

6.10 RECORD RETENTION

In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

6.10.1 The following records shall be retained for at least five years:

- a. Records and logs of unit operation covering time interval at each power level.
- b. Records and logs of principal maintenance activities, inspections, repair and replacement of principal items of equipment related to nuclear safety.
- c. All REPORTABLE EVENTS submitted to the Commission.
- d. Records of surveillance activities, inspections and calibrations required by these Technical Specifications.
- e. Records of changes made to the procedures required by Specification 6.8.1.
- f. Records of radioactive shipments.
- g. Records of sealed source and fission detector leak tests and results.
- h. Records of annual physical inventory of all sealed source material of record.

ADMINISTRATIVE CONTROLS

6.10.2 The following records shall be retained for the duration of the Unit Operating License:

- a. Records and drawing changes reflecting unit design modifications made to systems and equipment described in the Final Safety Analysis Report.
- b. Records of new and irradiated fuel inventory, fuel transfers and assembly burnup histories.
- c. Records of radiation exposure for all individuals entering radiation control areas.
- d. Records of gaseous and liquid radioactive material released to the environs and the resulting calculated dose to an individual member of the public.
- e. Records of transient or operational cycles for those unit components identified in Table 5.7-1.
- f. Records of reactor tests and experiments.
- g. Records of training and qualification for current members of the facility staff.
- h. Records of in-service inspections performed pursuant to these Technical Specifications.
- i. Records of Quality Assurance activities required for lifetime retention by the Nuclear Quality Assurance Plan.
- j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.
- k. Records of meetings of the PORC and the NSRB.
- l. Records of analyses required by the radiological environmental monitoring program.
- m. Records of secondary water sampling and water quality.
- n. Records of the service life monitoring of all safety-related hydraulic and mechanical snubbers, required by T/S 3.7.9, including the maintenance performed to renew the service life.
- o. Records for Environmental Qualification which are covered under the provisions of Paragraph 2.c.(12)(b) of License No. DPR-77.
- p. Records of reviews performed for changes made to the OFFSITE DOSE CALCULATION MANUAL and the PROCESS CONTROL PROGRAM.

ADMINISTRATIVE CONTROLS

6.11 RADIATION PROTECTION PROGRAM

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

6.12 HIGH RADIATION AREA

6.12.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.1601(a) of 10 CFR 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit* (RWP). Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device which continuously indicates the radiation dose rate in the area.
- b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them.
- c. An individual qualified in radiation protection procedures who is equipped with a radiation dose rate monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the facility Site Radiological Control Manager in the RWP.

6.12.2 The requirements of 6.12.1, above, shall also apply to each high radiation area in which the intensity of radiation is greater than 1000 mrem/hr. In addition, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the Shift Operations Supervisor on duty and/or the Site Radiological Control Manager.

*Radiological Control personnel or personnel escorted by Radiological Control personnel in accordance with approved emergency procedures, shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.

ADMINISTRATIVE CONTROLS

6.13 PROCESS CONTROL PROGRAM (PCP)

6.13.1 Changes to the PCP:

1. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.2.p. This documentation shall contain:
 - a. sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
 - b. a determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.
2. Shall become effective after review and approval in accordance with Section 6.5.1A.

6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)

6.14.1 Changes to the ODCM:

1. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.2.p. This documentation shall contain:
 - a. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
 - b. A determination that the change will maintain the level of radioactive effluent control pursuant to 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.
2. Shall become effective after review and acceptance by the process in Specification 6.5.1A and the SQN PORC.
3. Shall be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Annual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.



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. 169
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 7, 1993, 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. Also, License Condition 2.C.(16)a. of Facility Operating License 79 is hereby amended to read as follows:

TVA shall provide a fully-trained on-shift technical advisor to the shift operations supervisor.

3. Also, the license is amended by changes to the Technical Specifications as indicated in Attachment 2 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. 169, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

4. 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:

1. Page 6 of License*
2. Changes to the Technical Specifications

Date of Issuance: March 31, 1994

* Page 6 is attached for convenience, for the composite license to reflect this change.

(13) Fire Protection system (Section 9.5)

- a. TVA shall maintain in effect and fully implement all provisions of the approved fire protection plan and the NRC staff's Fire Protection Review in the Sequoyah Safety Evaluation Report and Supplements.
- b. TVA shall replace the control room ceiling panels with panels acceptable to NRC by September 30, 1981.
- c. TVA shall comply with Section III.G, III.J, III.L and III.O of Appendix R of 10 CFR 50, except where NRC has approved deviations, on a schedule consistent with that required for other operating reactors. By October 1, 1981, TVA shall submit a report that identifies and justifies differences between existing or proposed fire protection features and those features specified in Section III.G, III.J, III.L and III.O of Appendix R to 10 CFR Part 50.

(14) Compliance With Regulatory Guide 1.97

TVA shall implement modifications necessary to comply with Revision 2 of Regulatory Guide 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," dated December 1980 by startup from the Unit 2 Cycle 4 refueling outage.

(15) Corrosion of Carbon Steel Piping

TVA shall carry out a surveillance program on corrosion of carbon steel piping in accordance with TVA document SQRD-50-328/81-10 dated August 25, 1981, and procedures for implementation are to be submitted for NRC concurrence by October 15, 1981.

(16) NUREG-0737 Conditions (Section 22.2)

Each of the following conditions shall also be performed to the satisfaction of the NRC:

a. Shift Technical Advisor (Section 22.2, I.A.1.1)

TVA shall provide a fully-trained on-shift technical advisor to the shift operations supervisor.

b. Independent Safety Engineering Group (Section 22.2, I.B.1.2)

TVA shall have an onsite Independent Safety Engineering Group.

ATTACHMENT 2 TO LICENSE AMENDMENT NO. 169

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.

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DEFINITIONS

IDENTIFIED LEAKAGE

1.16 IDENTIFIED LEAKAGE shall be:

- a. Leakage (except CONTROLLED LEAKAGE) into closed systems, such as pump seal or valve packing leaks that are captured and conducted to a sump or collecting tank, or
- b. Leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of leakage detection systems or not to be PRESSURE BOUNDARY LEAKAGE, or
- c. Reactor coolant system leakage through a steam generator to the secondary system.

MEMBER(S) OF THE PUBLIC

1.17 MEMBER OF THE PUBLIC means an individual in a controlled or unrestricted area. However, an individual is not a member of the public during any period in which the individual receives an occupational dose.

OFFSITE DOSE CALCULATION MANUAL

1.18 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm/trip setpoints, and in the conduct of the Radiological Environmental Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Annual Radioactive Effluent Release Reports required by Specifications 6.9.1.6 and 6.9.1.8.

OPERABLE - OPERABILITY

1.19 A system, subsystem, train, or component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s), and when all necessary attendant instrumentation, controls, a normal and an emergency electrical power source, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

6.0 ADMINISTRATIVE CONTROLS

6.1 RESPONSIBILITY

6.1.1 The Plant Manager shall be responsible for overall unit operation and shall delegate in writing the succession to this responsibility during his absence.

6.1.2 The Shift Operations Supervisor (or during his absence from the Control Room, a designated individual) shall be responsible for the Control Room command function. A management directive to this effect, signed by the Site Vice President shall be reissued to all station personnel on an annual basis.

6.2 ORGANIZATION

6.2.1 OFFSITE AND ONSITE ORGANIZATIONS

An onsite and an offsite organization shall be established for unit operation and corporate management. The onsite and offsite organization shall include the positions for activities affecting the safety of the nuclear power plant.

- a. Lines of authority, responsibility, and communication shall be established and defined from the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organizational charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the FSAR and will be updated in accordance with 10 CFR 50.71(e).
- b. The Senior Vice President, Nuclear Power shall have corporate responsibility for overall plant nuclear safety. This individual shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support in the plant so that continued nuclear safety is assured.
- c. The Plant Manager shall be responsible for overall unit safe operation, and shall have control over those onsite resources necessary for safe operation and maintenance of the plant.
- d. The individuals who train the operating staff and those who carry out health physics and quality assurance functions may report to the appropriate onsite manager; however, they shall have sufficient organizational freedom to ensure their independence from operating pressures.

6.2.2 FACILITY STAFF

- a. Each on duty unit shift shall be composed of at least the minimum shift crew composition shown in Table 6.2-1.
- b. At least one licensed Reactor Operator shall be in the unit Control Room when fuel is in the reactor. In addition, while the unit is in MODE 1, 2, 3 or 4, at least one licensed Senior Reactor Operator shall be in the Control Room.

ADMINISTRATIVE CONTROL

- c. A Radiological Control technician# shall be onsite when fuel is in the reactor.
- d. All CORE ALTERATIONS shall be observed and directly supervised by either a licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling who has no other concurrent responsibilities during this operation.
- e. A Fire Brigade of at least 5 members shall be maintained onsite at all times#. The Fire Brigade shall not include the Shift Operations Supervisor and 2 other members of the minimum shift crew necessary for safe shutdown of the unit or any personnel required for other essential functions during a fire emergency.
- f. The Operations Superintendent shall hold a Senior Reactor Operator license.
- g. Administrative procedures shall be developed and implemented to limit the working hours of unit staff who perform safety-related functions (i.e., senior reactor operators, reactor operators, assistant unit operators, Radiological Control, and key maintenance personnel).

Adequate shift coverage shall be maintained without routine heavy use of overtime. The objective shall be to have operating personnel work a normal 8-hour day, 40-hour week while the unit is operating. However, in the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance, or major plant modification, on a temporary basis the following guidelines shall be followed:

- 1. An individual should not be permitted to work more than 16 hours straight, excluding shift turnover time.
- 2. An individual should not be permitted to work more than 16 hours in any 24-hour period, nor more than 24 hours in any 48-hour period, nor more than 72 hours in any 7-day period, all excluding shift turnover time.
- 3. A break of at least 8 hours should be allowed between work periods, including shift turnover time.
- 4. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

Any deviation from the above guidelines shall be authorized in advance by the Plant Manager or his designee, in accordance with approved administrative procedures, or by higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation.

Controls shall be included in the procedures such that individual overtime shall be reviewed monthly by the Plant Manager or his designee to assure that excessive hours have not been assigned. Routine deviation from the above guidelines is not authorized.

#The Radiological Control technician and fire brigade composition may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence provided immediate action is taken to fill the required positions.

TABLE 6.2-1

MINIMUM SHIFT CREW COMPOSITION

WITH UNIT 1 IN MODE 5 OR 6 OR DE-FUELED

Position	Number of individuals required to fill position	
	Modes 1, 2, 3, & 4	Modes 5 & 6
SOS	1 ^a	1 ^a
SRO	1	None
RO	2	1
AO	2	2 ^b
STA	1	None

WITH UNIT 1 IN MODES 1, 2, 3, or 4

Position	Number of individuals required to fill position	
	Modes 1, 2, 3, & 4	Modes 5 & 6
SOS	1 ^a	1 ^a
SRO	1 ^a	None
RO	2 ^b	1
AO	2 ^b	1
STA	1 ^a	None

a/ Individual may fill the same position on Unit 1.

b/ One of the two required individuals may fill the same position on Unit 1.

TABLE 6.2-1 (Continued)

TABLE NOTATION

- SOS - Shift Operations Supervisor with a Senior Reactor Operators License on Unit 2
- SRO - Individual with a Senior Reactor Operators License on Unit 2
- RO - Individual with a Reactor Operators License on Unit 2
- AO - Auxiliary Operator
- STA - Shift Technical Advisor

Except for the Shift Operations Supervisor, the Shift Crew Composition may be one less than the minimum requirements of Table 6.2-1 for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the Shift Crew Composition to within the minimum requirements of Table 6.2-1. This provision does not permit any shift crew position to be unmanned upon shift change due to an oncoming shift crewman being late or absent.

During any absence of the Shift Operations Supervisor from the Control Room while the unit is in MODES 1, 2, 3 or 4, an individual (other than the Shift Technical Advisor) with a valid SRO license shall be designated to assume the Control Room command function. During an absence of the Shift Operations Supervisor from the Control Room while the unit is in MODE 5 or 6, an individual with a valid SRO or RO license (other than the Shift Technical Advisor) shall be designated to assume the Control Room command function.

ADMINISTRATIVE CONTROLS

6.2.3 INDEPENDENT SAFETY ENGINEERING (ISE)

FUNCTION

6.2.3.1 The ISE shall function to examine plant operating characteristics, NRC issuances, industry advisories, Licensee Event Reports and other sources which may indicate areas for improving plant safety.

COMPOSITION

6.2.3.2 The ISE shall be composed of at least 3 dedicated full-time engineers located onsite. These engineers will be supplemented as necessary by full-time engineers shared among all TVA nuclear sites to achieve an equivalent staffing of 5 full-time engineers performing the ISE functions applicable to Sequoyah.

RESPONSIBILITIES

6.2.3.3 The ISE shall be responsible for maintaining surveillance of plant activities to provide independent verification* that these activities are performed correctly and that human errors are reduced as much as practical.

AUTHORITY

6.2.3.4 The ISE shall make detailed recommendations for revised procedures, equipment modifications, or other means of improving plant safety to the Manager, Nuclear Experience Review/Independent Safety Engineering.

6.2.4 SHIFT TECHNICAL ADVISOR (STA)

6.2.4.1 The STA shall serve in an advisory capacity to the Shift Operations Supervisor on matters pertaining to the engineering aspects of assuring safe operation of the unit.

6.3 FACILITY STAFF QUALIFICATIONS

6.3.1 Each member of the facility staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions except for the Site Radiological Control Manager who shall meet or exceed the qualifications of Regulatory Guide 1.8, September 1975.

*Not responsible for sign-off function.

ADMINISTRATIVE CONTROLS

6.4 TRAINING

6.4.1 A retraining and replacement training program for the facility staff shall be maintained under the direction of the Plant Manager and shall meet or exceed the requirements and recommendations of Section 5.5 of ANSI N18.1-1971 and 10 CFR Part 55 and shall include familiarization with relevant industry operational experience.

6.5 REVIEW AND AUDIT

6.5.0 Senior Vice President, Nuclear Power is responsible for the safe operation of all TVA power plants.

6.5.1 PLANT OPERATIONS REVIEW COMMITTEE (PORC)

FUNCTION

6.5.1.1 The PORC shall function to advise the Plant Manager on all matters related to nuclear safety.

COMPOSITION

6.5.1.2 The PORC shall be composed of the:

Chairman:	Plant Manager
Member:	Operations Manager
Member:	Radiological and Chemistry Manager
Member:	Maintenance Manager
Member:	Technical Support Manager
Member:	Quality Audit and Assessment Manager
Member:	Site Engineering Representative

ADMINISTRATIVE CONTROLS

- i. Review of every unplanned onsite release of radioactive material to the environs including the preparation and forwarding of reports covering evaluation, recommendations and disposition of the corrective action to prevent recurrence to the Site Vice President and to the Nuclear Safety Review Board.
- j. Review of all proposed changes to the OFFSITE DOSE CALCULATION MANUAL.

AUTHORITY

6.5.1.7 The PORC shall:

- a. Recommend in writing to the Plant Manager approval or disapproval of items considered under 6.5.1.6(a), (b) and (c) above.
- b. Require a determination in writing with regard to whether or not each item considered under 6.5.1.6(b), (c), and (e) above constitutes an unreviewed safety question.
- c. Provide written notification within 24 hours to the Site Vice President and the Nuclear Safety Review Board of disagreement between the PORC and the Plant Manager; however, the Plant Manager shall have responsibility for resolution of such disagreements pursuant to 6.1.1 above.

RECORDS

6.5.1.8 The PORC shall maintain written minutes of each PORC meeting that, at a minimum, document the results of all PORC activities performed under the responsibility and authority provisions of these technical specifications. Copies shall be provided to the Site Vice President and the Nuclear Safety Review Board.

6.5.1A TECHNICAL REVIEW AND CONTROL

ACTIVITIES

6.5.1A.1. Activities which affect nuclear safety shall be conducted as follows:

- a. Procedures required by Specification 6.8.1 and other procedures which affect plant nuclear safety, and changes thereto, shall be prepared, reviewed and approved. Each such procedure or procedure change shall be reviewed by a qualified individual other than the individual who prepared the procedure or procedure change, but who may be from the same organization as the individual who prepared the procedure or procedure change. Procedures shall be approved by the appropriate responsible manager as designated in writing by the Plant Manager. The Plant Manager, or Duty Plant Manager shall approve designated Administrative Procedures.
- b. Proposed changes or modifications to structures, systems, and components that affect plant nuclear safety shall be reviewed by a qualified individual/group other than the individual/group which designed the modification, but who may be from the same organization

ADMINISTRATIVE CONTROLS

CONSULTANTS

6.5.2.4 Consultants shall be utilized as determined by the NSRB Chairman to provide expert advice to the NSRB.

MEETING FREQUENCY

6.5.2.5 The NSRB shall meet at least once per calendar quarter during the initial year of unit operation following fuel loading and at least once per six months thereafter.

QUORUM

6.5.2.6 The minimum quorum of the NSRB necessary for the performance of the NSRB review and audit functions of these technical specifications shall consist of more than half the NSRB membership or at least 5 members, whichever is greater. This quorum shall include the Chairman or his appointed alternate and the NSRB members, including appointed alternate members, meeting the requirements of Specification 6.5.2.3. No more than a minority of the quorum shall have line responsibility for operation of the unit.

REVIEW

6.5.2.7 The NSRB shall be cognizant of review of:

- a. The safety evaluations for 1) changes to procedures, equipment or systems and 2) tests or experiments completed under the provision of Section 50.59, 10 CFR, to verify that such actions did not constitute an unreviewed safety question.
- b. Proposed changes to procedures, equipment or systems which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.
- c. Proposed tests or experiments which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.
- d. Proposed changes to Technical Specifications or this Operating License.
- e. Violations of codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance.
- f. Significant operating abnormalities or deviations from normal and expected performance of unit equipment that affect nuclear safety.
- g. ALL REPORTABLE EVENTS.
- h. All recognized indications of an unanticipated deficiency in some aspect of design or operation of structures, systems, or components that could affect nuclear safety.
- i. Reports and meetings minutes of the PORC.

ADMINISTRATIVE CONTROLS

AUDITS

6.5.2.8 Audits of unit activities shall be performed under the cognizance of the NSRB. These audits shall encompass:

- a. The conformance of unit operation to provisions contained within the Technical Specifications and applicable license conditions at least once per 12 months.
- b. The performance, training and qualifications of the entire facility staff at least once per 12 months.
- c. The results of actions taken to correct deficiencies occurring in unit equipment, structures, systems or method of operation that affect nuclear safety at least once per 6 months.
- d. The performance of activities required by the Nuclear Quality Assurance Program to meet the criteria of Appendix "B", 10 CFR 50, at least once per 24 months.
- e. The Site Radiological Emergency Plan and implementing procedures at least once per 12 months.
- f. The Plant Physical Security Plan, the Safeguards Contingency Plan, and implementing procedures at least once per 12 months.
- g. Any other area of unit operation considered appropriate by the NSRB or the Senior Vice President, Nuclear Power.
- h. The Facility Fire Protection Program and implementing procedures at least once per 24 months.
- i. An independent fire protection and loss prevention program inspection and audit shall be performed annually utilizing either qualified offsite licensee personnel or an outside fire protection firm.
- j. An inspection and audit of the fire protection and loss prevention program shall be performed by an outside qualified fire consultant at intervals no greater than 3 years.
- k. The radiological environmental monitoring program and the results thereof at least once per 12 months.
- l. The OFFSITE DOSE CALCULATION MANUAL and implementing procedures at least once per 24 months.
- m. The PROCESS CONTROL PROGRAM and implementing procedures for SOLIDIFICATION of radioactive wastes at least once per 24 months.
- n. The performance of activities required by the Quality Assurance Program to meet the criteria of Regulatory Guide 4.15, December 1977 or Regulatory Guide 1.21, Rev. 1, 1974 and Regulatory Guide 4.1, Rev. 1, 1975, at least once per 12 months.

ADMINISTRATIVE CONTROLS

AUTHORITY

6.5.2.9 The NSRB shall report to and advise the Senior Vice President, Nuclear Power on those areas of responsibility specified in Sections 6.5.2.7 and 6.5.2.8.

RECORDS

6.5.2.10 Records of NSRB activities shall be prepared, approved and distributed as indicated below:

- a. Minutes of each NSRB meeting shall be prepared, approved and forwarded to the Senior Vice President, Nuclear Power within 14 days following each meeting.
- b. Reports of reviews encompassed by Section 6.5.2.7 above, shall be prepared, approved and forwarded to the Senior Vice President, Nuclear Power within 14 days following completion of the review.
- c. Audit reports encompassed by Section 6.5.2.8 above, shall be forwarded to the Senior Vice President, Nuclear Power and to the management positions responsible for the areas audited within 30 days after completion of the audit.

6.5.3 THIS SPECIFICATION IS DELETED

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ADMINISTRATIVE CONTROLS

- h. Quality Assurance Program for effluent and environmental monitoring, using the guidance contained in Regulatory Guide 4.15, December 1977 or Regulatory Guide 1.21, Rev. 1, 1974 and Regulatory Guide 4.1, Rev. 1, 1975.
- i. OFFSITE DOSE CALCULATION MANUAL implementation.

6.8.2 Each procedure of 6.8.1 above, and changes thereto, shall be reviewed and approved prior to implementation as set forth in Specification 6.5.1A above.

6.8.3 Temporary changes to procedures of 6.8.1 above may be made provided:

- a. The intent of the original procedure is not altered.
- b. The change is approved by two members of the plant management staff, at least one of whom holds a Senior Reactor Operator's License on the unit affected.
- c. The change is approved in accordance with Specification 6.5.1A above within 14 days of implementation.

6.8.4 The following programs shall be established, implemented, maintained, and changes thereto made in accordance with Section 6.5.1A:

a. Primary Coolant Sources Outside Containment

A program to reduce leakage from those portions of systems outside containment that could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. The systems include the safety injection system, residual heat removal system, chemical and volume control system, containment spray system, and RCS sampling system. The program shall include the following:

- (i) Preventive maintenance and periodic visual inspection requirements, and
- (ii) Integrated leak test requirements for each system at refueling cycle intervals or less.

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b. In-Plant Radiation Monitoring

A program which will ensure the capability to accurately determine the airborne iodine concentrations in vital areas under accident conditions. This program shall include the following:

- (i) Training of personnel,
- (ii) Procedures for monitoring, and
- (iii) Provisions for maintenance of sampling and analysis equipment.

c. Secondary Water Chemistry

A program for monitoring of secondary water chemistry to inhibit steam generator tube degradation. This program shall include:

- (i) Identification of a sampling schedule for the critical variables and control points for these variables,
- (ii) Identification of the procedures used to measure the values of the critical variables,
- (iii) Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser in-leakage,
- (iv) Procedures for the recording and management of data,
- (v) Procedures defining corrective actions for off-control point chemistry conditions,
- (vi) Procedures identifying (a) the authority responsible for the interpretation of the data; and (b) the sequence and timing of administrative events required to initiate corrective action.

d. Deleted

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Diesel Generator Reliability Improvement Program (Continued)

A supplemental report shall be prepared within 30 days after each subsequent failure during a valid demand for so long as the affected diesel generator unit continues to violate the criteria (3/20 or 6/100) for the reliability improvement program remedial action. The supplemental report need only update the failure/demand history for the affected diesel generator unit since the last report for that diesel generator. The supplemental report shall also present an analysis of the failure(s) with a root cause determination, if possible, and shall delineate any further procedural, hardware or operational changes to be incorporated into the diesel generator improvement program and the schedule for implementation of those changes.

In addition to the above, submit a yearly data report on the diesel generator reliability.

6.10 RECORD RETENTION

In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

6.10.1 The following records shall be retained for at least five years:

- a. Records and logs of unit operation covering time interval at each power level.
- b. Records and logs of principal maintenance activities, inspections, repair and replacement of principal items of equipment related to nuclear safety.
- c. ALL REPORTABLE EVENTS submitted to the Commission.
- d. Records of surveillance activities, inspections and calibrations required by these Technical Specifications.
- e. Records of changes made to the procedures required by Specification 6.8.1.
- f. Records of radioactive shipments.
- g. Records of sealed source and fission detector leak tests and results.
- h. Records of annual physical inventory of all sealed source material of record.

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6.10.2 The following records shall be retained for the duration of the Unit Operating License:

- a. Records and drawing changes reflecting unit design modifications made to systems and equipment described in the Final Safety Analysis Report.
- b. Records of new and irradiated fuel inventory, fuel transfers and assembly burnup histories.
- c. Records of radiation exposure for all individuals entering radiation control areas.
- d. Records of gaseous and liquid radioactive material released to the environs and the resulting calculated dose to an individual member of the public.
- e. Records of transient or operational cycles for those unit components identified in Table 5.7-1.
- f. Records of reactor tests and experiments.
- g. Records of training and qualification for current members of the facility staff.
- h. Records of in-service inspections performed pursuant to these Technical Specifications.
- i. Records of Quality Assurance activities required for lifetime retention by the Nuclear Quality Assurance Plan.
- j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.
- k. Records of meetings of the PORC and the NSRB.
- l. Records of analyses required by the radiological environmental monitoring program.
- m. Records of secondary water sampling and water quality.
- n. Records of the service life monitoring of all safety-related hydraulic and mechanical snubbers, required by T/S 3.7.9, including the maintenance performed to renew the service life.
- o. Records for environmental qualification which are covered under the provisions of paragraph 2.C.(10)(b) of license No. DPR-79.
- p. Records of reviews performed for changes made to the OFFSITE DOSE CALCULATION MANUAL and the PROCESS CONTROL PROGRAM.

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6.11 RADIATION PROTECTION PROGRAM

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

6.12 HIGH RADIATION AREA

6.12.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.1601(a) of 10 CFR 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit* (RWP). Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device which continuously indicates the radiation dose rate in the area.
- b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them.
- c. An individual qualified in radiation protection procedures who is equipped with a radiation dose rate monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the facility Site Radiological Control Manager in the RWP.

6.12.2 The requirements of 6.12.1, above, shall also apply to each high radiation area in which the intensity of radiation is greater than 1000 mrem/hr. In addition, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the Shift Operations Supervisor on duty and/or the Site Radiological Control Manager. |

*Radiological Control personnel or personnel escorted by Radiological Control personnel in accordance with approved emergency procedures, shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.

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6.13 PROCESS CONTROL PROGRAM (PCP)

6.13.1 Changes to the PCP:

1. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.2p. This documentation shall contain:
 - a. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
 - b. A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.
2. Shall become effective after review and approval in accordance with Section 6.5.1A.

6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)

6.14.1 Changes to the ODCM:

1. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.2p. This documentation shall contain:
 - a. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
 - b. A determination that the change will maintain the level of radioactive effluent control pursuant to 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.
2. Shall become effective after review and acceptance by the process in Specification 6.5.1A and the SQN PORC.
3. Shall be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Annual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.



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. 178 TO FACILITY OPERATING LICENSE NO. DPR-77
AND AMENDMENT NO. 169 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 application dated December 7, 1993, the Tennessee Valley Authority (the licensee) proposed amendments to the Technical Specifications (TS) for Sequoyah Nuclear Plant (SQN) Units 1 and 2. The requested changes would incorporate the following changes to Section 6.0, "Administrative Controls," of the Technical Specifications (TS): (1) delete Section 6.1.2 that indicates the Corporate Manager of Radiological Control has the responsibility for the radiological environmental program, dose calculations, and projections; (2) add a requirement in Section 6.5.1.6 for review of the Offsite Dose Calculations Manual (ODCM) by the Plant Operations Review Committee (PORC); (3) add implementation of the ODCM to Section 6.8.1 as an activity requiring written procedures and delete the requirement that they be maintained by the Radiological Control Group; (4) delete the requirement in Section 6.8.4.a for Radiological Control to implement and control the ODCM; (5) change the review authority for changes to the ODCM from the Radiological Assessment Review Committee (RARC) to the PORC and added a reference to Specification 6.5.1A in Section 6.14.1.2; (6) change the approval authority for deviations from the overtime guidelines in Section 6.2.2.g to show that Plant Manager designee also has the authority in accordance with procedures and documentation; (7) change PORC member titles to the reflect current organizational structure; (8) delete the requirements for the RARC from Sections 6.5.2.7.i, 6.5.3, 6.10.2.k and the index; (9) move the condenser in-leakage monitoring requirement from Section 6.8.5.c.(vii) to 6.8.5.c.(iii) and delete the requirement to repair, plug, or isolate leaks; (10) change the title "Shift Supervisor" (SS) to "Shift Operations Supervisor" (SOS) in various locations in Section 6 and in Operating License Items 2.C.(23).A and 2.C.(16).a for Units 1 and 2 respectively; (11) change the title of the Senior Vice President, Nuclear Group, in Section 6.2.1 to Senior Vice President, Nuclear Power; (12) change the title of the Operational Quality Assurance Program in Section 6.5.2.8.d to Nuclear Quality Assurance Program; and (13) move the requirement for implementation of the Quality Assurance Program for environmental monitoring from Section 6.8.4.b to Section 6.8.1.h. Other TS Section 6.0 administrative changes related to these changes would also be incorporated that affect the index and definitions.

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2.0 EVALUATION

Responsibility for the Offsite Dose Calculation Manual (ODCM) was given to the Corporate Manager of Radiological Control and the Radiological Assessment Review Committee (RARC) when the program was established in previous Sequoyah amendments. The RARC was originally created to review and approve all matters relating to the ODCM in accordance with the TVA organizational structure existing at the time. This structure placed development and maintenance of dose calculation methods, as well as the design and operation of the Radiological Environmental Monitoring Program, with an offsite organization that was not within TVA's Nuclear Power organization. The RARC, with offsite and plant representatives on the committee, reviewed and approved all changes to the ODCM, all TS changes related to ODCM issues, procedures that implement the ODCM, and the results of and quality assurance audits of the ODCM implementation programs.

Due to recent TVA organizational changes, all responsibility for the contents of the ODCM will be shifted from the offsite organization to the TVA Nuclear Power organization. To reflect this transfer of responsibility in the TS, several changes have been proposed by the licensee. These changes would delete ODCM-related TS Sections that refer to the Corporate Manager of Radiological Control, assign responsibility for review of the ODCM to the Plant Operations Review Committee (PORC), indicate that written procedures are necessary for the implementation of the ODCM, delete the requirement that the procedures be maintained by the Radiological Control Group, delete the requirement that the Radiological Control Group implement and control the ODCM, change the review authority for changes to the ODCM from the RARC to the PORC, and remove various requirements related to the RARC from the TS.

The licensee has indicated that these proposed changes will cause the review, approval, and implementation of the ODCM to be at the same level as other activities such as surveillance testing and the Radiological Emergency Plan. Also, the existing responsibilities and authorities of the Corporate Manager of Radiological Control and the RARC involved with implementation of the ODCM will be retained, but within the onsite Nuclear Power organization. Changes to the ODCM will continue to receive adequate review and approval through the independent qualified reviewer program and the PORC. Thus, the appropriate level of administrative control is maintained. In addition, the proposed changes are consistent with the standard TS. Based on this information, the staff finds the changes acceptable.

The licensee has also proposed a change to the TS to clarify the administrative control needed for approval of deviations from the overtime requirements specified in the TS. The change would allow the Plant Manager to use administrative procedures to designate the appropriate individuals that will have the authority to review and approve overtime deviations. The present TS requires authorization by the Plant Manager, Duty Plant Manager, or higher levels of plant management. In addition, the proposed change would specify that any deviation from the TS overtime guidance must be authorized in advance, and continue to require that the basis for granting the deviation be

documented. The Plant Manager will continue to have control of overtime usage through monthly reviews of individual overtime and the designation of approval authorities. This change will enhance the ability of the licensee to comply with the TS overtime requirements on backshift, weekends, and holiday periods. Also, the proposed change is consistent with the standard TS. Based on this information, the staff finds this change acceptable.

The licensee has also proposed changes to the titles of various PORC members designated in the TS in order to be consistent with the current Sequoyah organizational titles. The Site Radiological Control Manager would become the Radiological and Chemistry Manager, the Quality Audit and Monitoring Manager would become the Quality Audit and Assessment Manager, and the Nuclear Engineering Representative would become the Site Engineering Representative. These changes do not alter the position responsibilities, nor do they change the composition of the PORC. The staff has determined that these changes are acceptable.

The licensee proposed changes to the Secondary Water Chemistry section of the TS that would move the requirement to monitor the discharge of the condensate pumps for evidence of condenser in-leakage, Section 6.8.5.c.(vii), into the existing requirement for identification of process sample points in Section 6.8.5.c.(iii), and deletion of extraneous verbiage. Thus, the proposed change would result in specifying that the condensate pump discharge be included in the list of process sample points used in the secondary water chemistry program to inhibit steam generator tube degradation, rather than specifying the requirement in a separate section. In addition, the licensee proposed deletion of the requirement to repair, plug or isolate a leak within 96 hours when condenser in-leakage is confirmed. The licensee has determined that this requirement was part of the initial version of the TS issued for startup, and appears to have been based on Branch Technical Position METB 5-3 and the Standard Review Plan, NUREG 0800. However, plant procedures implement action levels and time-frames that are consistent with industry guidance and Electric Power Research Institute recommendations, which provide better control of secondary water chemistry. The standard TS do not contain a requirement related to leakage levels and time-frames. Based on this information, the staff has determined that the proposed change is satisfactory.

The licensee proposed changing the organization title of "Shift Supervisor" (SS) to "Shift Operations Supervisor" (SOS) in various locations in the TS, and in Operating License Items 2.C.(23).A and 2.C.(16).a. for Units 1 and 2 respectively. This change would reflect the current title for the individual that is responsible for control room command as shown in the Sequoyah organization chart and the Updated Final Safety Analysis Report. In addition, the licensee proposed changing the title of the Senior Vice President, Nuclear Group, in Section 6.2.1.b, to Senior Vice President, Nuclear Power, to be consistent with the TVA organization chart and other locations in the TS. The licensee also proposed changing the title of "Operational Quality Assurance Program" to "Nuclear Quality Assurance Program" to provide consistency with the program title in the TVA Nuclear Quality Assurance Manual. The staff

finds these changes acceptable since they do not result in a change to the structure of the organization or responsibilities of the individuals.

The proposed change to move the requirement for implementation of the Quality Assurance Program for environmental monitoring from Section 6.8.4.b to Section 6.8.1.h moves the responsibility for maintaining a Quality Assurance Program for environmental monitoring from Radiological Control to organizations within the TVA Nuclear Power organization at the site. In this way the program is controlled in a similar manner as other Sequoyah site activities using the independent qualified reviewer process. According to the licensee, these procedures no longer require specific Radiological Control responsibilities because the coordination with organizations outside of Nuclear Power is not required for the implementation of the Quality Assurance Program procedures on environmental monitoring. Also, the review process for changes to these procedures by organizations outside of TVA Nuclear Power does not need to be coordinated through the offsite Radiological Control organization. The staff finds this change acceptable since the procedural requirements will continue to be adequately controlled to ensure the quality assurance attributes and maintain plant nuclear safety.

Other related TS changes have been proposed, such as changes to the index and wording changes, that are necessary to implement the changes described above. They are administrative in nature and, therefore, acceptable.

The changes described above do not result in any changes to plant equipment, design, setpoints, or operating practices. The administrative controls implemented by the proposed changes continue to provide adequate requirements to ensure plant nuclear safety. Therefore, the staff finds the changes acceptable.

3.0 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.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments involve changes with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and in administrative procedures or requirements. 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 4948). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (10). 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.

5.0 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: David E. LaBarge

Dated: March 31, 1994