

February 29, 1980

Docket No: 50-327

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

Dear Mr. Parris:

SUBJECT: SEQUOYAH NUCLEAR PLANT, UNIT 1 - ISSUANCE OF LICENSE NO. DPR-77

The Nuclear Regulatory Commission (the Commission) has issued the enclosed License No. DPR-77 to the Tennessee Valley Authority for the Sequoyah Nuclear Plant, Unit 1, located in Hamilton County, Tennessee. License No. DPR-77 authorizes fuel loading and low power testing.

Also enclosed is a copy of the Notice which has been forwarded to the Office of the Federal Register for publication.

Two signed originals of Amendment No. 6 to Indemnity Agreement No. B-82 which covers the activities authorized under License No. DPR-77 are enclosed. Please sign and return one copy to this office.

Sincerely,

D. F. Ross, Jr., Acting Director
Division of Project Management
Office of Nuclear Reactor Regulation

Enclosures:

- 1. License No. DPR-77
 - 2. Federal Register Notice
 - 3. Amendment 6 to Indemnity Agreement B-82
(see insurance file 8003240166 for #3)
- ccs: See next page

(see reports)

App. A Tech Specs 8003170012

App. B Tech Specs 8003170009

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OFFICE	PM: LWR-4	DPM	DPM		
SURNAME	MSERVICE	DVassallo	DRoss		
DATE	2/28/80	2/29/80	2/29/80		8003170002

Docket No: 50-327

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

Dear Mr. Parris:

SUBJECT: SEQUOYAH NUCLEAR PLANT, UNIT 1 - ISSUANCE OF AUTHORIZATION

The Nuclear Regulatory Commission (the Commission) has issued the enclosed Authorization No. DPR-77 to the Tennessee Valley Authority for the Sequoyah Nuclear Plant, Unit 1, located in Hamilton County, Tennessee. Authorization No. DPR-77 authorizes fuel loading and zero power testing.

Also enclosed is a copy of the Notice which has been forwarded to the Office of the Federal Register for publication.

Two signed originals of Amendment No. 6 to Indemnity Agreement No. B-82 which covers the activities authorized under Authorization No. DPR-77 are enclosed. Please sign and return one copy to this office.

Sincerely,

D. F. Ross, Jr., Acting Director
Division of Project Management
Office of Nuclear Reactor Regulation

Enclosures:

1. Authorization No. DPR-77
2. Federal Register Notice
3. Amendment 6 to Indemnity Agreement B-82

ccs: See next page

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OFFICE	PM:LWR-4	LWR-4	LWR-4	AD:LWR	DD:PM	DPM
SURNAME	MSERVICE	CStahle	Rubenstein	SVarga	DVassallo	DRoss
DATE	2/27/80	2/27/80	2/28/80	2/28/80	2/28/80	2/ /80

DISTRIBUTION

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

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-327

SEQUOYAH NUCLEAR PLANT, UNIT 1

LICENSE FOR FUEL LOADING AND LOW POWER TESTING

License No. DPR-77

1. The Nuclear Regulatory Commission (the Commission) having found that:
 - A. The application for licenses filed by the Tennessee Valley Authority 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, and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of the Sequoyah Nuclear Plant, Unit 1 (the facility), has been substantially completed in conformity with Provisional Construction Permit No. CPPR-72 and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;
 - C. The facility requires exemptions from certain requirements of Appendices G and J to 10 CFR Part 50. These exemptions are described in the Office of Nuclear Reactor Regulation's Safety Evaluation Report, Supplement No. 1. These exemptions are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. The exemptions are, therefore, hereby granted. With the granting of these exemptions, the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
 - D. There is reasonable assurance: (i) that the activities authorized by this license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
 - E. The Tennessee Valley Authority is technically qualified to engage in the activities authorized herein in accordance with the rules and regulations of the Commission;
 - F. The Tennessee Valley Authority is financially qualified to engage in the activities authorized herein in accordance with the rules and regulations of the Commission;
 - G. The Tennessee Valley Authority has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements", of the Commission's regulations;

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- H. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
 - I. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of license No. DPR-77, subject to the conditions for protection of the environment set forth herein, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied; and
 - J. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40 and 70, including 10 CFR Sections 30.33, 40.32, 70.23 and 70.31.
2. Pursuant to approval by the Nuclear Regulatory Commission at a meeting on February 28, 1980, license No. DPR-77 is hereby issued to the Tennessee Valley Authority to read as follows:
- A. This license applies to the Sequoyah Nuclear Plant, Unit 1, a pressurized water nuclear reactor and associated equipment (the facility), owned by the Tennessee Valley Authority. The facility is located in Hamilton County, Tennessee, about 9.5 miles northeast of Chattanooga, and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendments 14 through 63), and the Final Environmental Statement prepared by the Tennessee Valley Authority.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses the Tennessee Valley Authority:
 - (1) Pursuant to Section 104(b) of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities", to possess, use, and operate the facility at the designated location in Hamilton County, Tennessee, in accordance with the procedures and limitations set forth in this license;
 - (2) Pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
 - (3) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

- (4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The Tennessee Valley Authority is authorized to (a) load fuel, (b) proceed to initial criticality, (c) perform startup testing at zero power in Operational Mode 2, and (d) after prior written approval by the Director of Nuclear Reactor Regulation, operate the facility for testing at reactor core power levels not in excess of 170 Megawatts thermal (five percent of rated power). Prior to attaining that five percent power level, the Tennessee Valley Authority shall complete the items identified in Paragraph C(5) below to the satisfaction of the Director of Nuclear Reactor Regulation.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B attached hereto are hereby incorporated in this license. The Tennessee Valley Authority shall operate the facility in accordance with the Technical Specifications.

(3) Initial Test Program

The Tennessee Valley Authority shall conduct the post-fuel-loading initial test program that has been reviewed and approved by the Commission at the time of issuance of this license without making any major modification of this program. Major modifications are deemed to involve unreviewed safety questions under 10 CFR §50.59 and are defined as:

- a. Elimination of any test identified in Section 14 of the Final Safety Analysis Report as essential.
- b. Modification of test objectives, methods or acceptance criteria for any test identified in Section 14 of the Final Safety Analysis Report as essential.
- c. Performance of any test at a power level different from there described.
- d. Failure to complete any tests included in the described program (planned or scheduled for power levels up to the authorized power level).

(4) Fuel Load and Zero Power Testing Conditions

The following conditions shall be completed to the satisfaction of the Commission prior to fuel loading. The following conditions are related to matters specified in the TMI Action Plan, Near Term Operating License (NTOL) Requirements dated February 6, 1980, and applicable to fuel load and zero power testing. Each of the following conditions references the appropriate section of Part II of Supplement No. 1 to the Safety Evaluation Report (NUREG-0011) for the Sequoyah Nuclear Plant and follows the numbering sequence utilized in the February 6, 1980 NTOL Requirements list. The below designated sections of Part II of Supplement No. 1 to the Safety Evaluation Report (NUREG-0011) are hereby incorporated by reference. In case of any inconsistency between the license and the Supplement to the Safety Evaluation Report, the terms of the license shall govern.

a. Shift Technical Advisor (I.A.1.1)

As defined and clarified in Section I.A.1.1, the Tennessee Valley Authority shall provide a Shift Technical Advisor on each shift with the duties and training set out therein.

b. Shift Supervisor Duties (I.A.1.2)

As defined in Section I.A.1.2: (1) the senior Tennessee Valley Authority officer responsible for plant operations shall review the administrative duties of the Shift Supervisor, and (2) administrative duties that detract from or are subordinate to the management responsibility for assuring the safe operation of the plant shall be delegated to other operations personnel not on duty in the control room.

c. Shift Manning (I.A.1.3)

- In addition to the minimum plant staff shown in Table 6.2.1 of the Technical Specifications, Tennessee Valley Authority shall provide an additional senior reactor operator on shift at all times during reactor operation in Modes 1, 2, 3 and 4. The normal work station for this individual shall be in the control room.
- Tennessee Valley Authority shall have administrative procedures to assure that qualified individuals to man the operational shifts are readily available in the event of an abnormal or emergency situation. These administrative procedures shall include provisions which limit the amount of overtime worked by licensed operators.

The need for a licensed operator to exceed the limits on overtime shall be infrequent. The limits on overtime work hours are:

- . An individual should not be permitted to work more than 12 hours straight.
- . There should be at least a 12-hour break between all work periods.
- . An individual should not work more than 72 hours in any 7-day period.
- . An individual should not work more than 14 consecutive days without having 2 consecutive days off.

However, for those circumstances which arise requiring deviation from the above, such deviation may be authorized by the plant superintendent or high levels of Tennessee Valley Authority management in accordance with established procedures and with appropriate documentation of the cause.

d. Revised Scope and Criteria for Licensing Examinations (I.A.3.1)

As further defined in Section 13.2 of Part I of Supplement 1 to NUREG-0011, the Tennessee Valley Authority shall conduct a substantially augmented operations training program during the Sequoyah test program.

The Tennessee Valley Authority shall have additional contractor support to provide operational experience on each shift. These individuals shall have at least one year of operating experience in large pressurized water reactors and a previous NRC license as a reactor operator.

At least one licensee's contractor startup engineer shall be on duty each shift as needed whenever the reactor is not in cold shutdown condition. The contractor startup engineer shall have previously participated in the startup of at least three pressurized water reactors.

e. Organization and Management Criteria (I.B.1.1)

In addition to the shift staff requirements indicated in Section 6.2.2.d of the Technical Specifications, Tennessee Valley Authority shall provide one health physics technician on shift at all times during reactor operation in Modes 1, 2, 3 and 4.

f. Safety Engineering Group (I.B.1.2)

The Tennessee Valley Authority shall establish an onsite Safety Engineering Group composed of a minimum of four engineering personnel who are not part of the plant staff and who shall be present on each day shift to act as independent observers. The duties and responsibilities of this group are as follows:

- Be cognizant of the scope and intent of the test program.
- Be cognizant of the tests being conducted.
- Be familiar with the operation of a pressurized water type reactor.
- Provide daily status reports to the Assistant Director of Nuclear Power (Operations, TVA).

g. Licensee Onsite Operating Experience Evaluation Capability (I.B.1.4)

The Tennessee Valley Authority shall establish an onsite capability to evaluate the operating history of the plant and plants of similar design.

- The corporate Nuclear Experience Review Panel (NERP) shall be a multidiscipline review group and shall review nuclear industry operational experience.

- The NERP shall inform the Sequoyah shift technical advisor of all matters so discovered applicable to Sequoyah.
- The shift technical advisor shall be the Sequoyah plant focal point for disseminating this information.
- This information shall be made a part of the reactor operational staff's routine upgrade training and shall be presented to operational personnel during initial training and retraining at the Tennessee Valley Authority Power Operations training center.

h. Shift Relief and Turnover Procedures (I.C.2)

The Tennessee Valley Authority shall develop and implement shift and relief turnover procedures that will provide assurance that the oncoming shift possesses adequate knowledge of critical plant status information and system availability. A checklist or similar hard copy will be completed by and signed by offgoing and oncoming shifts at each shift turnover. These checklists will be periodically reviewed by the operations supervisor or his assistant and will be held in the operations supervisor's office files for one month following review. The Tennessee Valley Authority shall establish a system to evaluate the effectiveness of the turnover procedures.

i. Shift Personnel Responsibilities (I.C.3)

The Tennessee Valley Authority shall implement procedures which properly define the duties, responsibilities and authority of the shift supervisor and control room operators.

j. Control Room Access (I.C.4)

The Tennessee Valley Authority shall implement procedures that establish the authority and responsibility of the person in charge of access to the control room and that establish a clear line of authority and responsibility in the control room in the event of an emergency.

k. Degraded Core - Training (II.B.4)

The Tennessee Valley Authority shall establish a training program for the use of installed equipment and systems to control or mitigate accidents in which the core is severely damaged.

l. Relief and Safety Valve Test (II.D.2)

The Tennessee Valley Authority shall carry out a testing program to qualify the relief and safety valves under expected operating conditions for design basis transients and accidents as provided in NUREG-0578, Section 2.1.2, as clarified in NRC letter to operating license applicants dated November 9, 1979.

m. Relief and Safety Valve Position (II.D.5)

The Tennessee Valley Authority shall provide reactor system relief and safety valves with a positive indication in the control room derived from a reliable valve position detection device or a reliable indication of flow in the discharge pipe. The indication shall comply with the requirements contained in NUREG-0578, Section 2.1.3.a, as clarified in NRC letter to operating license applicants dated November 9, 1979.

n. Auxiliary Feedwater Initiation and Indication (II.E.1.2)

The Tennessee Valley Authority shall provide for automatic initiation of the auxiliary feedwater system and shall provide for indication, in the control room, of auxiliary feedwater flow to each steam generator. These requirements shall comply with NUREG-0578, Sections 2.1.7.a and 2.1.7.b, as clarified in NRC letter to operating license applicants dated November 9, 1979.

o. Inadequate Core Cooling - Subcooling Meter (II.F.2)

The Tennessee Valley Authority shall provide a subcooling meter to provide on-line indication of coolant saturation condition. The meter shall comply with the requirements of NUREG-0578, Section 2.1.3.b, as clarified in NRC letter to operating license applicants dated November 9, 1979.

p. Inadequate Core Cooling - Additional Instrumentation (II.F.2)

The Tennessee Valley Authority shall provide a design of additional instruments to provide an unambiguous indication of inadequate core cooling. This requirement shall comply with NUREG-0578, Section 2.1.3.b, as clarified in NRC letter to operating license applicants dated November 9, 1979.

q. Emergency Power for Pressurizer Equipment (II.E)

The Tennessee Valley Authority shall provide emergency power for the power-operated relief valves (PORV's), the PCRV block valves and pressurizer level instrument channels. This requirement shall comply with NUREG-0578, Section 2.1.1, sub-section 3.2, as clarified in NRC letter to operating license applicants dated November 9, 1979.

r. IE Bulletins on Measures to Mitigate Small Break LOCAs and Loss of Feedwater Accidents (II.K.1)

The Tennessee Valley Authority shall:

- Review the operating procedures and training instructions requested by Item 7(a) of IE Bulletin 79-06A. This review should ensure that operators have been instructed not to override automatic operations of the engineered safety features, unless their continued operation would result in unsafe plant conditions, or until the plant is clearly in a stable, controlled state, and engineered safeguards are no longer required.
- Revise the Sequoyah plant procedures to include instructions to the operator for dealing with non-condensable gases in the primary system.

s. Improve Licensee Facilities for Responding to Emergencies - Onsite Technical Support Center (III.A.1.2)

The Tennessee Valley Authority shall establish a technical support center to meet the January 1, 1980 requirements of NUREG-0578, Section 2.2.2.b, as clarified by NRC letter to operating license applicants dated November 9, 1979.

t. Improve Licensee Facilities for Responding to Emergencies - Onsite Operational Support Center (III.A.1.2)

The Tennessee Valley Authority shall provide an onsite operational support center to meet the requirements of NUREG-0578, Section 2.2.2.c, as clarified by NRC letter to operating license applicants dated November 9, 1979.

u. Upgrade Licensee Emergency Preparedness (III.A.3)

During the period of this license, the Tennessee Valley Authority shall maintain in effect an emergency plan that meets:

- Regulatory requirements of 10 CFR Part 50, Appendix E.
- Regulatory Position Statement in Regulatory Guide 1.101

(March 1977)

- The Essential Planning Elements in NUREG-75/111 and Supplement 1 thereto defined by NRR as significant for fuel load and low power testing.

This plan shall provide an emergency operations facility as a base for coordinating onsite and offsite activities and interface with State, local, and Federal agencies.

v. In-Plant Radiation Monitoring - Partial (III.D.3.3)

The Tennessee Valley Authority shall provide equipment and associated training and procedures for accurately determining the airborne iodine concentration throughout the plant under accident conditions.

w. Communications (III.A.3.3)

The Tennessee Valley Authority shall install and maintain direct dedicated telephone lines between the Sequoyah plant control room, the Tennessee Valley Authority Emergency Operations Facility and the NRC Incidence Response Center in Bethesda, Maryland.

(5) Conditions on Operations Beyond Zero Power Testing

The following conditions shall be completed to the satisfaction of the Commission prior to proceeding beyond zero power testing. The following conditions are related to matters specified in the TMI Action Plan, Near Term Operating License (NTOL) Requirements dated February 6, 1980, and applicable to operation beyond zero power testing. Each of the following conditions references the appropriate section of Part II of Supplement No. 1 to the Safety Evaluation Report (NUREG-0011) for the Sequoyah Nuclear Plant and follows the numbering sequence utilized in the February 6, 1980 NTOL Requirements list. The below designated sections of Part II of Supplement No. 1 to the Safety Evaluation Report (NUREG-0011) are hereby incorporated by reference. In case of any inconsistency between the license and the Supplement to the Safety Evaluation Report, the terms of the license shall govern.

a. Short-term Accident Analysis and Procedure Revision
Small Break LOCAs to Inadequate Core Cooling (I.C.1)

The Tennessee Valley Authority shall revise its emergency operating instructions for dealing with small break LOCAs and inadequate core cooling based on its analysis of these events and the vendor guidelines derived from these analyses.

b. Vendor Review of Procedures: Low Power Test (I.C.7)

The Tennessee Valley Authority's low power test procedures shall be reviewed by the nuclear steam supply system vendor, Westinghouse, and documentation of the review submitted to NRC.

c. Low Power Test Program (I.G.1)

As set forth in Section I.G.1, the Tennessee Valley Authority shall obtain staff approval of a low power test program.

- D. The Tennessee Valley Authority shall maintain and fully implement the physical security plan entitled "Physical Security Plan for the Sequoyah Nuclear Plant" dated August 25, 1978, as revised on April 2, 1979, June 29, 1979, September 19, 1979, and as amended in accordance with the provisions of 10 CFR §50.54(p).

In addition to all other commitments contained in the physical security plan, all keys, locks, combinations, and related equipment used to control access to protected and vital areas shall be controlled to reduce the probability of compromise. Whenever there is evidence that any key, lock combination, or related equipment may have been compromised it shall be changed. Upon termination of employment of any employee, keys, locks, combinations, and related equipment to which that employee had access, shall be changed.

- E. This license is subject to the following additional condition for the protection of the environment:

Before engaging in additional construction or operational activities which may result in an environmental impact that was not evaluated by the Commission, Tennessee Valley Authority will prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not evaluated, or that is significantly greater than that evaluated in the Final Environmental Statement prepared

by the Tennessee Valley Authority and the Environmental Impact Appraisal prepared by the NRC staff in May 1979, the Tennessee Valley Authority shall provide a written evaluation of such activities and obtain prior approval from the Director, Office of Nuclear Reactor Regulation.

- F. This license is effective as of the date of issuance and shall expire one year after that date.

FOR THE NUCLEAR REGULATORY COMMISSION



Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Attachment:
Appendices A and B Technical Specifications

Date of Issuance:
February 29, 1980

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-327

SEQUOYAH NUCLEAR PLANT, UNIT 1

LICENSE FOR FUEL LOADING AND LOW POWER TESTING

License No. DPR-77

1. The Nuclear Regulatory Commission (the Commission) having found that:
- A. The application for licenses filed by the Tennessee Valley Authority 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, and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of the Sequoyah Nuclear Plant, Unit 1 (the facility), has been substantially completed in conformity with Provisional Construction Permit No. CPPR-72 and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;
 - C. The facility requires exemptions from certain requirements of Appendices G and J to 10 CFR Part 50. These exemptions are described in the Office of Nuclear Reactor Regulation's Safety Evaluation Report, Supplement No. 1. These exemptions are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. The exemptions are, therefore, hereby granted. With the granting of these exemptions, the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
 - D. There is reasonable assurance: (i) that the activities authorized by this license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
 - E. The Tennessee Valley Authority is technically qualified to engage in the activities authorized herein in accordance with the rules and regulations of the Commission;
 - F. The Tennessee Valley Authority is financially qualified to engage in the activities authorized herein in accordance with the rules and regulations of the Commission;
 - G. The Tennessee Valley Authority has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements", of the Commission's regulations;

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- H. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;
 - I. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of license No. DPR-77, subject to the conditions for protection of the environment set forth herein, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied; and
 - J. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40 and 70, including 10 CFR Sections 30.33, 40.32, 70.23 and 70.31.
2. Pursuant to approval by the Nuclear Regulatory Commission at a meeting on February 28, 1980, license No. DPR-77 is hereby issued to the Tennessee Valley Authority to read as follows:
- A. This license applies to the Sequoyah Nuclear Plant, Unit 1, a pressurized water nuclear reactor and associated equipment (the facility), owned by the Tennessee Valley Authority. The facility is located in Hamilton County, Tennessee, about 9.5 miles northeast of Chattanooga, and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendments 14 through 63), and the Final Environmental Statement prepared by the Tennessee Valley Authority.
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses the Tennessee Valley Authority:
 - (1) Pursuant to Section 104(b) of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities", to possess, use, and operate the facility at the designated location in Hamilton County, Tennessee, in accordance with the procedures and limitations set forth in this license;
 - (2) Pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
 - (3) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

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- (4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The Tennessee Valley Authority is authorized to (a) load fuel, (b) proceed to initial criticality, (c) perform startup testing at zero power in Operational Mode 2, and (d) after prior written approval by the Director of Nuclear Reactor Regulation, operate the facility for testing at reactor core power levels not in excess of 170 Megawatts thermal (five percent of rated power). Prior to attaining that five percent power level, the Tennessee Valley Authority shall complete the items identified in Paragraph C(5) below to the satisfaction of the Director of Nuclear Reactor Regulation.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B attached hereto are hereby incorporated in this license. The Tennessee Valley Authority shall operate the facility in accordance with the Technical Specifications.

(3) Initial Test Program

The Tennessee Valley Authority shall conduct the post-fuel-loading initial test program that has been reviewed and approved by the Commission at the time of issuance of this license without making any major modification of this program. Major modifications are deemed to involve unreviewed safety questions under 10 CFR §50.59 and are defined as:

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SURNAME						
DATE						

- a. Elimination of any test identified in Section 14 of the Final Safety Analysis Report as essential.
- b. Modification of test objectives, methods or acceptance criteria for any test identified in Section 14 of the Final Safety Analysis Report as essential.
- c. Performance of any test at a power level different from there described.
- d. Failure to complete any tests included in the described program (planned or scheduled for power levels up to the authorized power level).

(4) Fuel Load and Zero Power Testing Conditions

The following conditions shall be completed to the satisfaction of the Commission prior to fuel loading. The following conditions are related to matters specified in the TMI Action Plan, Near Term Operating License (NTOL) Requirements dated February 6, 1980, and applicable to fuel load and zero power testing. Each of the following conditions references the appropriate section of Part II of Supplement No. 1 to the Safety Evaluation Report (NUREG-0011) for the Sequoyah Nuclear Plant and follows the numbering sequence utilized in the February 6, 1980 NTOL Requirements list. The below designated sections of Part II of Supplement No. 1 to the Safety Evaluation Report (NUREG-0011) are hereby incorporated by reference. In case of any inconsistency between the license and the Supplement to the Safety Evaluation Report, the terms of the license shall govern.

a. Shift Technical Advisor (I.A.1.1)

As defined and clarified in Section I.A.1.1, the Tennessee Valley Authority shall provide a Shift Technical Advisor on each shift with the duties and training set out therein.

b. Shift Supervisor Duties (I.A.1.2)

As defined in Section I.A.1.2: (1) the senior Tennessee Valley Authority officer responsible for plant operations shall review the administrative duties of the Shift Supervisor, and (2) administrative duties that detract from or are subordinate to the management responsibility for assuring the safe operation of the plant shall be delegated to other operations personnel not on duty in the control room.

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DATE ▶

c. Shift Manning (I.A.1.3)

- In addition to the minimum plant staff shown in Table 6.2.1 of the Technical Specifications, Tennessee Valley Authority shall provide an additional senior reactor operator on shift at all times during reactor operation in Modes 1, 2, 3 and 4. The normal work station for this individual shall be in the control room.
- Tennessee Valley Authority shall have administrative procedures to assure that qualified individuals to man the operational shifts are readily available in the event of an abnormal or emergency situation. These administrative procedures shall include provisions which limit the amount of overtime worked by licensed operators.

The need for a licensed operator to exceed the limits on overtime shall be infrequent. The limits on overtime work hours are:

- . An individual should not be permitted to work more than 12 hours straight.
- . There should be at least a 12-hour break between all work periods.
- . An individual should not work more than 72 hours in any 7-day period.
- . An individual should not work more than 14 consecutive days without having 2 consecutive days off.

However, for those circumstances which arise requiring deviation from the above, such deviation may be authorized by the plant superintendent or high levels of Tennessee Valley Authority management in accordance with established procedures and with appropriate documentation of the cause.

d. Revised Scope and Criteria for Licensing Examinations (I.A.3.1)

As further defined in Section 13.2 of Part I of Supplement 1 to NUREG-0011, the Tennessee Valley Authority shall conduct a substantially augmented operations training program during the Sequoyah test program.

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The Tennessee Valley Authority shall have additional contractor support to provide operational experience on each shift. These individuals shall have at least one year of operating experience in large pressurized water reactors and a previous NRC license as a reactor operator.

At least one licensee's contractor startup engineer shall be on duty each shift as needed whenever the reactor is not in cold shutdown condition. The contractor startup engineer shall have previously participated in the startup of at least three pressurized water reactors.

e. Organization and Management Criteria (I.B.1.1)

In addition to the shift staff requirements indicated in Section 6.2.2.d of the Technical Specifications, Tennessee Valley Authority shall provide one health physics technician on shift at all times during reactor operation in Modes 1, 2, 3 and 4.

f. Safety Engineering Group (I.B.1.2)

The Tennessee Valley Authority shall establish an onsite Safety Engineering Group composed of a minimum of four engineering personnel who are not part of the plant staff and who shall be present on each day shift to act as independent observers. The duties and responsibilities of this group are as follows:

- Be cognizant of the scope and intent of the test program.
- Be cognizant of the tests being conducted.
- Be familiar with the operation of a pressurized water type reactor.
- Provide daily status reports to the Assistant Director of Nuclear Power (Operations, TVA).

g. Licensee Onsite Operating Experience Evaluation Capability (I.B.1.4)

The Tennessee Valley Authority shall establish an onsite capability to evaluate the operating history of the plant and plants of similar design.

- The corporate Nuclear Experience Review Panel (NERP) shall be a multidiscipline review group and shall review nuclear industry operational experience.

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- The NERP shall inform the Sequoyah shift technical advisor of all matters so discovered applicable to Sequoyah.
- The shift technical advisor shall be the Sequoyah plant focal point for disseminating this information.
- This information shall be made a part of the reactor operational staff's routine upgrade training and shall be presented to operational personnel during initial training and retraining at the Tennessee Valley Authority Power Operations training center.

h. Shift Relief and Turnover Procedures (I.C.2)

The Tennessee Valley Authority shall develop and implement shift and relief turnover procedures that will provide assurance that the oncoming shift possesses adequate knowledge of critical plant status information and system availability. A checklist or similar hard copy will be completed by and signed by offgoing and oncoming shifts at each shift turnover. These checklists will be periodically reviewed by the operations supervisor or his assistant and will be held in the operations supervisor's office files for one month following review. The Tennessee Valley Authority shall establish a system to evaluate the effectiveness of the turnover procedures.

i. Shift Personnel Responsibilities (I.C.3)

The Tennessee Valley Authority shall implement procedures which properly define the duties, responsibilities and authority of the shift supervisor and control room operators.

j. Control Room Access (I.C.4)

The Tennessee Valley Authority shall implement procedures that establish the authority and responsibility of the person in charge of access to the control room and that establish a clear line of authority and responsibility in the control room in the event of an emergency.

k. Degraded Core - Training (II.B.4)

The Tennessee Valley Authority shall establish a training program for the use of installed equipment and systems to control or mitigate accidents in which the core is severely damaged.

OFFICE						
SURNAME						
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l. Relief and Safety Valve Test (II.D.2)

The Tennessee Valley Authority shall carry out a testing program to qualify the relief and safety valves under expected operating conditions for design basis transients and accidents as provided in NUREG-0578, Section 2.1.2, as clarified in NRC letter to operating license applicants dated November 9, 1979.

m. Relief and Safety Valve Position (II.D.5)

The Tennessee Valley Authority shall provide reactor system relief and safety valves with a positive indication in the control room derived from a reliable valve position detection device or a reliable indication of flow in the discharge pipe. The indication shall comply with the requirements contained in NUREG-0578, Section 2.1.3.a, as clarified in NRC letter to operating license applicants dated November 9, 1979.

n. Auxiliary Feedwater Initiation and Indication (II.E.1.2)

The Tennessee Valley Authority shall provide for automatic initiation of the auxiliary feedwater system and shall provide for indication, in the control room, of auxiliary feedwater flow to each steam generator. These requirements shall comply with NUREG-0578, Sections 2.1.7.a and 2.1.7.b, as clarified in NRC letter to operating license applicants dated November 9, 1979.

o. Inadequate Core Cooling - Subcooling Meter (II.F.2)

The Tennessee Valley Authority shall provide a subcooling meter to provide on-line indication of coolant saturation condition. The meter shall comply with the requirements of NUREG-0578, Section 2.1.3.b, as clarified in NRC letter to operating license applicants dated November 9, 1979.

p. Inadequate Core Cooling - Additional Instrumentation (II.F.2)

The Tennessee Valley Authority shall provide a design of additional instruments to provide an unambiguous indication of inadequate core cooling. This requirement shall comply with NUREG-0578, Section 2.1.3.b, as clarified in NRC letter to operating license applicants dated November 9, 1979.

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q. Emergency Power for Pressurizer Equipment (II.G)

The Tennessee Valley Authority shall provide emergency power for the power-operated relief valves (PORV's), the PORV block valves and pressurizer level instrument channels. This requirement shall comply with NUREG-0578, Section 2.1.1, sub-section 3.2, as clarified in NRC letter to operating license applicants dated November 9, 1979.

r. IE Bulletins on Measures to Mitigate Small Break LOCAs and Loss of Feedwater Accidents (II.K.1)

The Tennessee Valley Authority shall:

- Review the operating procedures and training instructions requested by Item 7(a) of IE Bulletin 79-06A. This review should ensure that operators have been instructed not to override automatic operations of the engineered safety features, unless their continued operation would result in unsafe plant conditions, or until the plant is clearly in a stable, controlled state, and engineered safeguards are no longer required.
- Revise the Sequoyah plant procedures to include instructions to the operator for dealing with non-condensable gases in the primary system.

s. Improve Licensee Facilities for Responding to Emergencies - Onsite Technical Support Center (III.A.1.2)

The Tennessee Valley Authority shall establish a technical support center to meet the January 1, 1980 requirements of NUREG-0578, Section 2.2.2.b, as clarified by NRC letter to operating license applicants dated November 9, 1979.

t. Improve Licensee Facilities for Responding to Emergencies - Onsite Operational Support Center (III.A.1.2)

The Tennessee Valley Authority shall provide an onsite operational support center to meet the requirements of NUREG-0578, Section 2.2.2.c, as clarified by NRC letter to operating license applicants dated November 9, 1979.

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u. Upgrade Licensee Emergency Preparedness (III.A.3)

During the period of this license, the Tennessee Valley Authority shall maintain in effect an emergency plan that meets:

- Regulatory requirements of 10 CFR Part 50, Appendix E.
- Regulatory Position Statement in Regulatory Guide 1.101

(March 1977)

- The Essential Planning Elements in NUREG-75/111 and Supplement 1 thereto defined by NRR as significant for fuel load and low power testing.

This plan shall provide an emergency operations facility as a base for coordinating onsite and offsite activities and interface with State, local, and Federal agencies.

v. In-Plant Radiation Monitoring - Partial (III.D.3.3)

The Tennessee Valley Authority shall provide equipment and associated training and procedures for accurately determining the airborne iodine concentration throughout the plant under accident conditions.

w. Communications (III.A.3.3)

The Tennessee Valley Authority shall install and maintain direct dedicated telephone lines between the Sequoyah plant control room, the Tennessee Valley Authority Emergency Operations Facility and the NRC Incidence Response Center in Bethesda, Maryland.

(5) Conditions on Operations Beyond Zero Power Testing

The following conditions shall be completed to the satisfaction of the Commission prior to proceeding beyond zero power testing. The following conditions are related to matters specified in the TMI Action Plan, Near Term Operating License (NTOL) Requirements dated February 6, 1980, and applicable to operation beyond zero power testing. Each of the following conditions references the appropriate section of Part II of Supplement No. 1 to the Safety Evaluation Report (NUREG-0011) for the Sequoyah Nuclear Plant and follows the numbering sequence utilized in the February 6, 1980 NTOL Requirements list. The below designated sections of Part II of Supplement No. 1 to the Safety Evaluation Report (NUREG-0011) are hereby incorporated by reference. In case of any inconsistency between the license and the Supplement to the Safety Evaluation Report, the terms of the license shall govern.

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a. Short-term Accident Analysis and Procedure Revision
Small Break LOCAs to Inadequate Core Cooling (I.C.1)

The Tennessee Valley Authority shall revise its emergency operating instructions for dealing with small break LOCAs and inadequate core cooling based on its analysis of these events and the vendor guidelines derived from these analyses.

b. Vendor Review of Procedures: Low Power Test (I.C.7)

The Tennessee Valley Authority's low power test procedures shall be reviewed by the nuclear steam supply system vendor, Westinghouse, and documentation of the review submitted to NRC.

c. Low Power Test Program (I.G.1)

As set forth in Section I.G.1, the Tennessee Valley Authority shall obtain staff approval of a low power test program.

D. The Tennessee Valley Authority shall maintain and fully implement the physical security plan entitled "Physical Security Plan for the Sequoyah Nuclear Plant" dated August 25, 1978, as revised on April 2, 1979, June 29, 1979, September 19, 1979, and as amended in accordance with the provisions of 10 CFR §50.54(p).

In addition to all other commitments contained in the physical security plan, all keys, locks, combinations, and related equipment used to control access to protected and vital areas shall be controlled to reduce the probability of compromise. Whenever there is evidence that any key, lock combination, or related equipment may have been compromised it shall be changed. Upon termination of employment of any employee, keys, locks, combinations, and related equipment to which that employee had access, shall be changed.

E. This license is subject to the following additional condition for the protection of the environment:

Before engaging in additional construction or operational activities which may result in an environmental impact that was not evaluated by the Commission, Tennessee Valley Authority will prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not evaluated, or that is significantly greater than that evaluated in the Final Environmental Statement prepared

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by the Tennessee Valley Authority and the Environmental Impact Appraisal prepared by the NRC staff in May 1979, the Tennessee Valley Authority shall provide a written evaluation of such activities and obtain prior approval from the Director, Office of Nuclear Reactor Regulation.

F. This license is effective as of the date of issuance and shall expire one year after that date.

FOR THE NUCLEAR REGULATORY COMMISSION

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Attachment:
Appendices A and B Technical Specifications

Date of Issuance:
February 29, 1980

OFFICE	PM:LWR-4	DPM	DPM	ORR	NRR	NRR
SURNAME	MService	DVassallo	DRoss	EReis	ECase	HDenton
DATE	2/29/80	2/29/80	2/29/80	2/29/80	2/29/80	2/29/80

DRB

Concurred in by phone - per DRB

TENNESSEE VALLEY AUTHORITY

DOCKET NO. 50-327

SEQUOYAH NUCLEAR PLANT, UNIT 1

AUTHORIZATION FOR FUEL LOADING AND ZERO POWER TESTING

Authorization No. DPR-77

1. The Nuclear Regulatory Commission (the Commission) having found that:
 - A. An application filed by the Tennessee Valley Authority 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, and all required notifications to other agencies or bodies have been duly made;
 - B. Construction of the Sequoyah Nuclear Plant, Unit 1 (the facility), has been substantially completed in conformity with Provisional Construction Permit No. CPPR-72 and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;
 - C. The facility requires exemptions from certain requirements of Appendices G and J to 10 CFR Part 50. These exemptions are described in the Office of Nuclear Reactor Regulation's Safety Evaluation Report, Supplement No. 1. These exemptions are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. The exemptions are, therefore, hereby granted. With the granting of these exemptions, the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;
 - D. There is reasonable assurance: (i) that the activities authorized by this operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;
 - E. The Tennessee Valley Authority is technically qualified to engage in the activities authorized herein in accordance with the rules and regulations of the Commission;
 - F. The Tennessee Valley Authority is financially qualified to engage in the activities authorized herein in accordance with the rules and regulations of the Commission;
 - G. The Tennessee Valley Authority has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements" of the Commission's regulations;

NRR
E. Case
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NRR
H. Denton
2/ /80

AT 2/27/80
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OFFICE	PM: LWR-4	LWR-4	AD: LWR	EP	ELD	DD: DPM	DPM
SURNAME	MSEWICE	Robenstein	Svarga	WRegan	Reis	Vasallo	DRoss
DATE	2/27/80	2/28/80	2/28/80	2/27/80	2/28/80	2/28/80	2/ /80

- H. The issuance of this Authorization will not be inimical to the common defense and security or to the health and safety of the public;
- I. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of Authorization No. DPR-77, subject to the conditions for protection of the environment set forth herein, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied; and
- J. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this Authorization will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40 and 70, including 10 CFR Sections 30.33, 40.32, 70.23 and 70.31.

2. Pursuant to approval by the Nuclear Regulatory Commission at a meeting on February , 1980, Authorization No. DPR-77 is hereby issued to the Tennessee Valley Authority to read as follows:

A. This Authorization applies to the Sequoyah Nuclear Plant, Unit 1, a pressurized water nuclear reactor and associated equipment (the facility), owned by the Tennessee Valley Authority. The facility is located in Hamilton County, Tennessee, about 9.5 miles northeast of Chattanooga, and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendments 14 through 63), and the Final Environmental Statement prepared by the Tennessee Valley Authority.

B. Subject to the conditions and requirements incorporated herein, the Commission hereby authorizes the Tennessee Valley Authority:

- (1) Pursuant to Section 104(b) of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities", to possess, use, and operate the facility at the designated location in Hamilton County, Tennessee, in accordance with the procedures and limitations set forth in this Authorization;
- (2) Pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
- (3) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

OFFICE						
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- (4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and
- (5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This Authorization shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The Tennessee Valley Authority is authorized to load fuel, proceed to initial criticality, and perform zero power testing. Operation may not exceed that set out for Operational Mode 2 (startup) at zero power.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B attached hereto are hereby incorporated in this Authorization. The Tennessee Valley Authority shall operate the facility in accordance with the Technical Specifications.

(3) Initial Test Program

The Tennessee Valley Authority shall conduct the post-fuel-loading initial test program that has been reviewed and approved by the Commission at the time of issuance of this Authorization without making any major modification of this program. Major modifications are deemed to involve unreviewed safety questions under 10 CFR §50.59 and are defined as:

- a. Elimination of any test identified in Section 14 of the Final Safety Analysis Report as essential.
- b. Modification of test objectives, methods or acceptance criteria for any test identified in Section 14 of the Final Safety Analysis Report as essential.

OFFICE ▶
SURNAME ▶
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- c. Performance of any test at a power level different from there described.
- d. Failure to complete any tests included in the described program (planned or scheduled for power levels up to the authorized power level).

(4) Fuel Load and Zero Power Testing Conditions

The following conditions shall be completed to the satisfaction of the Commission prior to fuel loading. The following conditions are related to matters specified in the TMI Action Plan, Near Term Operating License (NTOL) Requirements dated February 6, 1980, and applicable to fuel load and zero power testing. Each of the following conditions references the appropriate section of Part II of Supplement No. 1 to the Safety Evaluation Report (NUREG-0011) for the Sequoyah Nuclear Plant and follows the numbering sequence utilized in the February 6, 1980 NTOL Requirements list.

a. Shift Technical Advisor (I.A.1.1)

As defined and clarified in Section I.A.1.1, the Tennessee Valley Authority shall provide a Shift Technical Advisor on each shift with the duties and training set out therein.

b. Shift Supervisor Duties (I.A.1.2)

As defined in Section I.A.1.2: (1) the senior Tennessee Valley Authority officer responsible for plant operations shall review the administrative duties of the Shift Supervisor, and (2) administrative duties that detract from or are subordinate to the management responsibility for assuring the safe operation of the plant shall be delegated to other operations personnel not on duty in the control room.

c. Shift Manning (I.A.1.3)

- In addition to the minimum plant staff shown in Table 6.2.1 of the Technical Specifications, Tennessee Valley Authority shall provide an additional senior reactor operator on shift at all times during reactor operation in Modes 1, 2, 3 and 4. The normal work station for this individual shall be in the control room.

OFFICE						
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- Tennessee Valley Authority shall have administrative procedures to assure that qualified individuals to man the operational shifts are readily available in the event of an abnormal or emergency situation. These administrative procedures shall include provisions which limit the amount of overtime worked by licensed operators.

The need for a licensed operator to exceed the limits on overtime shall be infrequent. The limits on overtime work hours are:

- . An individual should not be permitted to work more than 12 hours straight.
- . There should be at least a 12-hour break between all work periods.
- . An individual should not work more than 72 hours in any 7-day period.
- . An individual should not work more than 14 consecutive days without having 2 consecutive days off.

However, for those circumstances which arise requiring deviation from the above, such deviation may be authorized by the plant superintendent or high levels of Tennessee Valley Authority management in accordance with established procedures and with appropriate documentation of the cause.

d. Revised Scope and Criteria for Licensing Examinations (I.A.3.1)

As further defined in Section 13.2 of Part I of Supplement 1 to NUREG-0011, the Tennessee Valley Authority shall conduct a substantially augmented operations training program during the Sequoyah test program.

The Tennessee Valley Authority shall have additional contractor support to provide operational experience on each shift. These individuals shall have at least one year of operating experience in large pressurized water reactors and a previous NRC license as a reactor operator.

At least one licensee's contractor startup engineer shall be on duty each shift whenever the reactor is not in cold shut-down condition. The contractor startup engineer shall have previously participated in the startup of at least three pressurized water reactors.

e. Organization and Management Criteria (I.B.1.1)

In addition to the shift staff requirements indicated in Section 6.2.2.d of the Technical Specifications, Tennessee Valley Authority shall provide one health physics technician on shift at all times during reactor operation in Modes 1, 2, 3 and 4.

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f. Safety Engineering Group (I.B.1.2)

The Tennessee Valley Authority shall establish an onsite Safety Engineering Group composed of a minimum of four engineering personnel who are not part of the plant staff and who shall be present on each day shift to act as independent observers. The duties and responsibilities of this group are as follows:

- Be cognizant of the scope and intent of the test program.
- Be cognizant of the tests being conducted.
- Be familiar with the operation of a pressurized water type reactor.
- Provide daily status reports to the Assistant Director of Nuclear Power (Operations, TVA).

g. Licensee Onsite Operating Experience Evaluation Capability (I.B.1.4)

The Tennessee Valley Authority shall establish an onsite capability to evaluate the operating history of the plant and plants of similar design.

- The corporate Nuclear Experience Review Panel (NERP) shall be a multidiscipline review group and shall review nuclear industry operational experience.
- The NERP shall inform the Sequoyah shift technical advisor of all matters so discovered applicable to Sequoyah.
- The shift technical advisor shall be the Sequoyah plant focal point for disseminating this information.
- This information shall be made a part of the reactor operational staff's routine upgrade training and shall be presented to operational personnel during initial training and retraining at the Tennessee Valley Authority Power Operations training center.

h. Shift Relief and Turnover Procedures (I.C.2)

The Tennessee Valley Authority shall develop and implement shift and relief turnover procedures that will provide assurance that the oncoming shift possesses adequate knowledge of critical plant status information and system availability. A checklist or similar hard copy will be completed by and signed by offgoing and oncoming shifts at each shift turnover. These checklists will be periodically reviewed by the operations supervisor or his assistant and will be held in the operations supervisor's office files for one month following review. The Tennessee Valley Authority shall establish a system to evaluate the effectiveness of the turnover procedures.

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i. Shift Personnel Responsibilities (I.C.3)

The Tennessee Valley Authority shall implement procedures which properly define the duties, responsibilities and authority of the shift supervisor and control room operators.

j. Control Room Access (I.C.4)

The Tennessee Valley Authority shall implement procedures that establish the authority and responsibility of the person in charge of access to the control room and that establish a clear line of authority and responsibility in the control room in the event of an emergency.

k. Degraded Core - Training (II.B.4)

The Tennessee Valley Authority shall establish a training program for the use of installed equipment and systems to control or mitigate accidents in which the core is severely damaged.

l. Relief and Safety Valve Test (II.D.2)

The Tennessee Valley Authority shall commit to carry out a testing program to qualify the relief and safety valves under expected operating conditions for design basis transients and accidents. The program shall be based on requirements contained in NUREG-0578, Section 2.1.2, as clarified in NRC letter to operating license applicants dated November 9, 1979.

m. Relief and Safety Valve Position (II.D.5)

The Tennessee Valley Authority shall provide reactor system relief and safety valves with a positive indication in the control room derived from a reliable valve position detection device or a reliable indication of flow in the discharge pipe. The indication shall comply with the requirements contained in NUREG-0578, Section 2.1.3.a, as clarified in NRC letter to operating license applicants dated November 9, 1979.

n. Auxiliary Feedwater Initiation and Indication (II.E.1.2)

The Tennessee Valley Authority shall provide for automatic initiation of the auxiliary feedwater system and shall provide for indication, in the control room, of auxiliary feedwater flow to each steam generator. These requirements shall comply with NUREG-0578, Sections 2.1.7.a and 2.1.7.b, as clarified in NRC letter to operating license applicants dated November 9, 1979.

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o. Inadequate Core Cooling - Subcooling Meter (II.F.2)

The Tennessee Valley Authority shall provide a subcooling meter to provide on-line indication of coolant saturation condition. The meter shall comply with the requirements of NUREG-0578, Section 2.1.3.b, as clarified in NRC letter to operating license applicants dated November 9, 1979.

p. Inadequate Core Cooling - Additional Instrumentation (II.F.2)

The Tennessee Valley Authority shall provide a design of additional instruments to provide an unambiguous indication of inadequate core cooling. This requirement shall comply with NUREG-0578, Section 2.1.3.b, as clarified in NRC letter to operating license applicants dated November 9, 1979.

q. Emergency Power for Pressurizer Equipment (II.G)

The Tennessee Valley Authority shall provide emergency power for the power-operated relief valves (PORV's), the PORV block valves and pressurizer level instrument channels. This requirement shall comply with NUREG-0578, Section 2.1.1, sub-section 3.2, as clarified in NRC letter to operating license applicants dated November 9, 1979.

r. IE Bulletins on Measures to Mitigate Small Break LOCAs and Loss of Feedwater Accidents (II.K.1)

The Tennessee Valley Authority shall:

- Review the operating procedures and training instructions requested by Item 7(a) of IE Bulletin 79-06A. This review should ensure that operators have been instructed not to override automatic operations of the engineered safety features, unless their continued operation would result in unsafe plant conditions, or until the plant is clearly in a stable, controlled state, and engineered safeguards are no longer required.
- Revise the Sequoyah plant procedures to include instructions to the operator for dealing with non-condensable gases in the primary system.

s. Improve Licensee Facilities for Responding to Emergencies - Onsite Technical Support Center (III.A.1.2)

The Tennessee Valley Authority shall establish a technical support center to meet the January 1, 1980 requirements of NUREG-0578, Section 2.2.2.b, as clarified by NRC letter to operating license applicants dated November 9, 1979.

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t. Improve Licensee Facilities for Responding to Emergencies - Onsite Operational Support Center (III.A.1.2)

The Tennessee Valley Authority shall provide an onsite operational support center to meet the requirements of NUREG-0578, Section 2.2.2.c, as clarified by NRC letter to operating license applicants dated November 9, 1979.

u. Upgrade Licensee Emergency Preparedness (III.A.3)

During the period of fuel load and zero power testing, the Tennessee Valley Authority shall maintain in effect an emergency plan that meets:

- Regulatory requirements of 10 CFR Part 50, Appendix E.
- Regulatory Position Statement in Regulatory Guide 1.101 (March 1977)
- The Essential Planning Elements in NUREG-75/111 and Supplement 1 thereto defined by NRR as significant for fuel load and low power testing.

This plan shall provide an emergency operations facility as a base for coordinating onsite and offsite activities and interface with State, local, and Federal agencies.

v. In-Plant Radiation Monitoring - Partial (III.D.3.3)

The Tennessee Valley Authority shall provide equipment and associated training and procedures for accurately determining the airborne iodine concentration throughout the plant under accident conditions.

w. Communications (III.A.3.3)

The Tennessee Valley Authority shall install and maintain direct dedicated telephone lines between the Sequoyah plant control room, the Tennessee Valley Authority Emergency Operations Facility and the NRC Incidence Response Center in Bethesda, Maryland.

D. The Tennessee Valley Authority shall maintain and fully implement the physical security plan entitled "Physical Security Plan for the Sequoyah Nuclear Plant" dated August 25, 1978, as revised on April 2, 1979, June 29, 1979, September 19, 1979, and as amended in accordance with the provisions of 10 CFR §50.54(p).

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In addition to all other commitments contained in the physical security plan, all keys, locks, combinations, and related equipment used to control access to protected and vital areas shall be controlled to reduce the probability of compromise. Whenever there is evidence that any key, lock combination, or related equipment may have been compromised it shall be changed. Upon termination of employment of any employee, keys, locks, combinations, and related equipment to which that employee had access, shall be changed.

- E. This Authorization is subject to the following additional condition for the protection of the environment:

Before engaging in additional construction or operational activities which may result in an environmental impact that was not evaluated by the Commission, Tennessee Valley Authority will prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not evaluated, or that is significantly greater than that evaluated in the Final Environmental Statement prepared by the Tennessee Valley Authority and the Environmental Impact Appraisal prepared by the NRC staff in May 1979, the Tennessee Valley Authority shall provide a written evaluation of such activities and obtain prior approval from the Director, Office of Nuclear Reactor Regulation.

- F. This Authorization is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Attachment:
Appendices A and B Technical Specifications

Date of Issuance:

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DATE ▶

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-327

TENNESSEE VALLEY AUTHORITY

NOTICE OF ISSUANCE OF LICENSE NO. DPR-77

Notice is hereby given that the Nuclear Regulatory Commission (the Commission) has issued License No. DPR-77 to Tennessee Valley Authority authorizing fuel loading and low power testing of the Sequoyah Nuclear Plant, Unit 1. Sequoyah Nuclear Plant, Unit 1, is a pressurized water reactor located in Hamilton County, Tennessee, about 9.5 miles northeast of Chattanooga.

The Commission has made appropriate findings as required by the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license. The application complies with the standards and requirements of the Act and the Commission's rules and regulations.

The license is effective as of its date of issuance and shall expire one year after that date, unless extended for good cause shown, or upon earlier issuance or denial of a subsequent licensing action.

A copy of (1) Authorization No. DPR-77, complete with Technical Specifications; (2) the report of the Advisory Committee on Reactor Safeguards dated December 11, 1979; (3) the Office of Nuclear Reactor Regulation's Safety Evaluation Report dated March 1979, and Supplement 1; (4) the Final Safety Analysis Report and amendments thereto; (5) the Final Environmental Statement prepared by Tennessee Valley Authority in July 1974; and (6) the Office of Nuclear Reactor Regulation's

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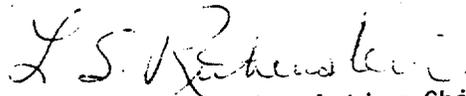
Environmental Impact Appraisal dated May 1979, are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C., and the Chattanooga Hamilton County Bicentennial Library, 1001 Broad Street, Chattanooga, Tennessee 37402.

A copy of the license may be obtained upon request addressed to the United States Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Project Management.

Copies of the Safety Evaluation Report (NUREG-0011) and Supplement 1, may be purchased at current rates, from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161.

-Dated at Bethesda, Maryland, this 29th day of February 1980.

FOR THE NUCLEAR REGULATORY COMMISSION



L. S. Rubenstein, Acting Chief
Light Water Reactors Branch No. 4
Division of Project Management

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-327

TENNESSEE VALLEY AUTHORITY

NOTICE OF ISSUANCE OF LICENSE NO. DPR-77

Notice is hereby given that the Nuclear Regulatory Commission (the Commission) has issued License No. DPR-77 to Tennessee Valley Authority authorizing fuel loading and low power testing of the Sequoyah Nuclear Plant, Unit 1. Sequoyah Nuclear Plant, Unit 1, is a pressurized water reactor located in Hamilton County, Tennessee, about 9.5 miles northeast of Chattanooga.

The Commission has made appropriate findings as required by the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license. The application complies with the standards and requirements of the Act and the Commission's rules and regulations.

The license is effective as of its date of issuance and shall expire one year after that date, unless extended for good cause shown, or upon earlier issuance or denial of a subsequent licensing action.

A copy of (1) Authorization No. DPR-77, complete with Technical Specifications; (2) the report of the Advisory Committee on Reactor Safeguards dated December 11, 1979; (3) the Office of Nuclear Reactor Regulation's Safety Evaluation Report dated March 1979, and Supplement 1; (4) the Final Safety Analysis Report and amendments thereto; (5) the Final Environmental Statement prepared by Tennessee Valley Authority in July 1974; and (6) the Office of Nuclear Reactor Regulation's

SEE PREVIOUS YELLOW

*Concerned in
by phone for
FBI Vassallo*

OFFICE	PM: LWR-4	LWR-4	OELD			
SURNAME	MSEWICE	LRubenstein	EREis			
DATE	2/29/80	2/29/80	2/29/80		8003170	006

Environmental Impact Appraisal dated May 1979, are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C., and the Chattanooga Hamilton County Bicentennial Library, 1001 Broad Street, Chattanooga, Tennessee 37402.

A copy of the license may be obtained upon request addressed to the United States Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Project Management.

Copies of the Safety Evaluation Report (NUREG-0011) and Supplement 1, may be purchased at current rates, from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161.

Dated at Bethesda, Maryland, this 29th day of February 1980.

FOR THE NUCLEAR REGULATORY COMMISSION

L. S. Rubenstein, Acting Chief
Light Water Reactors Branch No. 4
Division of Project Management

OFFICE						
SURNAME						
DATE						

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-327

TENNESSEE VALLEY AUTHORITY

NOTICE OF ISSUANCE OF AUTHORIZATION NO. DPR-77

Notice is hereby given that the Nuclear Regulatory Commission (the Commission) has issued Authorization No. DPR-77 to Tennessee Valley Authority authorizing fuel loading and zero power testing of the Sequoyah Nuclear Plant, Unit 1. Sequoyah Nuclear Plant, Unit 1, is a pressurized water reactor located in Hamilton County, Tennessee, about 9.5 miles northeast of Chattanooga.

The Commission has made appropriate findings as required by the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the Authorization. The application complies with the standards and requirements of the Act and the Commission's rules and regulations.

The Authorization is effective as of its date of issuance.

A copy of (1) Authorization No. DPR-77, complete with Technical Specifications; (2) the report of the Advisory Committee on Reactor Safeguards dated December 11, 1979; (3) the Office of Nuclear Reactor Regulation's Safety Evaluation Report dated March 1979, and Supplement 1; (4) the Final Safety Analysis Report and amendments thereto; (5) the Final Environmental Statement prepared by Tennessee Valley Authority in July 1974; and (6) the Office of Nuclear Reactor Regulation's Environmental Impact Appraisal dated May 1979, are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C., and the Chattanooga Hamilton County Bicentennial Library, 1001 Broad Street, Chattanooga, Tennessee 37402.

OFFICE	PM: LWR-4	LWR-4	OELD	EP	LWR-4
SURNAME	MSERVICE	CSchale	EReis	WRegan	LEAnstein
DATE	27 / 80	2/27 / 80	2/28 / 80	2/27 / 80	2/25 / 80

A copy of the Authorization may be obtained upon request addressed to the United States Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Project Management.

Copies of the Safety Evaluation Report (NUREG-0011) and Supplement 1, may be purchased at current rates, from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161.

Dated at Bethesda, Maryland, this day of

FOR THE NUCLEAR REGULATORY COMMISSION

L. S. Rubenstein, Acting Chief
Light Water Reactors Branch No. 4
Division of Project Management

OFFICE ▶						
SURNAME ▶						
DATE ▶						

Docket files

Docket No. 50-327

AMENDMENT TO INDEMNITY AGREEMENT NO. B-82

AMENDMENT NO. 6

Effective **FEB 29 1980**, Indemnity Agreement No. B-82, between Tennessee Valley Authority and the Nuclear Regulatory Commission, dated as amended, is hereby further amended as follows:

Item 2a. of the Attachment to the indemnity agreement is deleted in its entirety and the following substituted therefor:

Item 2 - Amount of financial protection

a. \$1,000,000 (From 12:01 a.m., March 25, 1977, to 12 midnight, **FEB 28 1980**, inclusive)

\$160,000,000* (From 12:01 a.m., **FEB 29 1980**)

Item 3 of the Attachment to the indemnity agreement is deleted in its entirety and the following substituted therefor:

Item 3- License number or numbers

SNM-1716 (From 12:01 a.m., March 25, 1977, to 12 midnight, **FEB 28 1980**, inclusive)

SNM-1863 (From 12:01 a.m., October 2, 1979)

DPR-77 (From 12:01 a.m., **FEB 29 1980**)

Item 5 of the Attachment to the indemnity agreement is amended by adding the following:

* and, as of August 1, 1977, the amount available as secondary financial protection.

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OFFICE >						
SURNAME >						
DATE >						

Nuclear Energy Liability Policy (Facility Form) MF-102
issued by Mutual Atomic Energy Liability Underwriters.

FOR THE UNITED STATES NUCLEAR REGULATORY COMMISSION

Jerome Saltzman, Chief
Antitrust and Indemnity Group
Office of Nuclear Reactor Regulation

Accepted _____, 1980

By _____
TENNESSEE VALLEY AUTHORITY

- Distribution:
- Licensee (2 originals)
- LPDR
- PDR
- Docket Files
- TERA
- ELD
- Desk
- Indemnity File
- IDinitz Reading
- AIG R/F

OFFICE	NRR:AIG	NRR:AIG				
SURNAME	IDinitz:na	JSaltzman				
DATE	2/ /80	2/ /80				