

SYSTEM ENERGY RESOURCES, INC.
ARKANSAS POWER AND LIGHT COMPANY
DOCKET NO. 50-313
(ARKANSAS NUCLEAR ONE, UNIT 1)
FACILITY OPERATING LICENSE

Amendment No. 1
License No. DPR-51

1. The Atomic Energy Commission (the Commission) having found that:
 - a. The issuance of this license, as amended, to the Arkansas Power and Light Company ("AP&L") and System Energy Resources, Inc. ("SERI") (the licensees*) 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 Arkansas Nuclear One, Unit 1 (the facility) has been substantially completed in conformity with Construction Permit No. CPPR-57, and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;
 - c. The facility will operate 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. SERI is technically qualified and AP&L is financially qualified to engage in the activities authorized by this operating license in accordance with the rules and regulations of the Commission;
 - f. AP&L has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;

*After a transfer of AP&L nuclear personnel to SERI, SERI has succeeded AP&L as the operator of Arkansas Nuclear One, Unit 1 (the facility). Consequently, SERI is authorized to act for itself and for AP&L and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility. Hereinafter, the term licensees refers to both AP&L and SERI.

- (5) SERI, pursuant to the Act and 10CFR 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;
 - (6) SERI, 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; 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

SERI is authorized to operate the facility at steady state reactor core power levels not in excess of 2568 megawatts thermal.

(2) Technical Specifications

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

- (3) AP&L* may proceed with and is required to complete the modifications identified in Paragraphs 3.1 through 3.19 of the NRC's Fire Protection Safety Evaluation (SE) on the facility dated August 22, 1978 and supplements thereto. These modifications shall be completed as specified in Table 3.1 of the Safety Evaluation Report or supplements thereto. In addition, the licensee may proceed with and is required to complete the modifications identified in Supplement 1 to the Fire Protection Safety Evaluation Report, and any future supplements. These modifications shall be completed by the dates identified in the supplement.

*The original licensee authorized to possess, use, and operate the facility was AP&L. Consequently, certain historical references to AP&L remain in the license conditions.

(4) Physical Protection

SERI shall fully implement and maintain in effect provisions of the following Commission approved documents, including amendments and changes made pursuant to the authority of 10 CFR 50.54(p). These approved documents consist of information withheld from public disclosure pursuant to 10 CFR 2.790(d):

- (a) "Arkansas Nuclear One Industrial Security Plan" dated January 11, 1979, as revised by submittals dated January 2, 1981 (Enclosure 2), and April 30, 1981.
- (b) "Arkansas Nuclear Station Safeguards Contingency Plan," Revision 1 dated February 26, 1980, revised by Revision 2 page changes dated April 30, 1980, and submitted pursuant to 10 CFR 73.40. The Contingency Plan shall be fully implemented in accordance with 10 CFR 73.40(b).
- (c) "Arkansas Nuclear One Security Force Training and Qualification Plan" as submitted by letter dated September 9, 1980, as revised by pages dated February 5, 1981, and April 27, 1981. This Plan shall be followed in accordance with 10 CFR 73.55(b)(4), 60 days after approval by the Commission. All security personnel, as required in the above plans, shall be qualified within two years of this approval. SERI may make changes to this plan without prior Commission approval if the changes do not decrease the safeguards effectiveness of the plan. SERI shall maintain records of and submit reports concerning such changes in the same manner as required for changes made to the Security Plan and Safeguards Contingency Plan pursuant to 10 CFR 50.54(p).

(5) Systems Integrity

SERI shall implement a program to reduce leakage from systems outside containment that would or could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. This program shall include the following:

- 1. Provisions establishing preventive maintenance and periodic visual inspection requirements, and
- 2. Integrated leak test requirements for each system at a frequency not to exceed refueling cycle intervals.

(6) Iodine Monitoring

SERI shall implement a program which will ensure the capability to accurately determine the airborne iodine

concentration in vital areas under accident conditions. The program shall include the following:

1. Training of personnel,
2. Procedures for monitoring, and
3. Provisions for maintenance of sampling and analysis equipment.

(7) Secondary Water Chemistry Monitoring

A secondary water chemistry monitoring program shall be implemented to minimize steam generator tube degradation. This program shall include:

1. Identification of a sampling schedule for the critical parameters and control points for these parameters;
2. Identification of the procedures used to measure the values of the critical parameters;
3. Identification of process sampling points;
4. Procedures for the recording and management of data;
5. Procedures defining corrective actions for off-control point chemistry conditions; and
6. A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events required to initiate a corrective action.

- d. This license is effective as of the date of issuance and shall expire at midnight, December 6, 2008.

FOR THE ATOMIC ENERGY COMMISSION

A. Giambusso, Deputy Director

Date of Issuance: May 21 1974

SYSTEM ENERGY RESOURCES, INC.
ARKANSAS POWER AND LIGHT COMPANY
DOCKET NO. 50-368
ARKANSAS NUCLEAR ONE, UNIT 2
FACILITY OPERATING LICENSE

Amendment No. 2
License No. NPF-6

1. The Nuclear Regulatory Commission (the Commission) having found that:
 - A. The issuance of this license, as amended, to the Arkansas Power and Light Company ("AP&L") and System Energy Resources, Inc. ("SERI") (the licensees*) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
 - B. Construction of Arkansas Nuclear One, Unit 2 (the facility) has been substantially completed in conformity with Construction Permit No. CPPR-89, and the application, as amended, the provisions of the Act and the regulations of the Commission;
 - C. The facility requires exemptions from certain requirements of (1) Sections 50.55a(g)(2) and 50.55a(g)(4) of 10 CFR Part 50, (2) Appendices G and H to 10 CFR Part 50 and (3) Appendix J to 10 CFR Part 50 for a period of three years. These exemptions are described in the Office of Nuclear Reactor Regulation's safety evaluations supporting the granting of these exemptions which are enclosed in the letter transmitting this license amendment. 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, as amended, the provisions of the Act, and the regulations of the Commission;

*After a transfer of AP&L nuclear personnel to SERI, SERI has succeeded AP&L as the operator of Arkansas Nuclear One, Unit 2 (the facility). Consequently, SERI is authorized to act for itself and for AP&L and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility. Hereinafter, the term licensees refers to both AP&L and SERI.

- 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 regulations of the Commission;
 - E. SERI is technically qualified and AP&L is financially qualified to engage in the activities authorized by this operating license in accordance with the regulations of the Commission;
 - F. AP&L has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - G. The issuance of this amended operating license will not be inimical to the common defense and security or to the health and safety of the public;
 - H. After weighing the environmental, economic, technical and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of Facility Operating License No. NPF-6, as amended, subject to the conditions for protection of the environment set forth herein, is in accordance with 10 CFR Part 51 (formerly Appendix D to 10 CFR Part 50) of the Commission's regulations and all applicable requirements have been satisfied; and
 - I. 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. Facility Operating License No NPF-6, as amended, is hereby issued to AP&L and SERI to read as follows:
- A. This amended license applies to Arkansas Nuclear One, Unit 2, a pressurized water reactor and associated equipment (the facility) owned by AP&L and operated by SERI. The facility is located in Pope County, Arkansas, and is described in the Final Safety Analysis Report as supplemented and amended (Amendments 20 through 47) and the Environmental Report as supplemented and amended (Amendments 1 through 7).
 - B. Subject to the Conditions and requirements incorporated herein, the Commission hereby licenses:
 - (1) SERI, pursuant to Section 103 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 Pope County, Arkansas in accordance with the procedures and limitations set forth in this amended license;

- (2) AP&L, pursuant to the Act and 10 CFR Part 50, to possess the facility at the designated location in Pope County, Arkansas, in accordance with the limitations set forth in this license;
- (3) SERI, 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;
- (4) SERI, 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;
- (5) SERI 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
- (6) SERI, 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 amended license shall be deemed to contain and is subject to 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

SERI is authorized to operate the facility at steady state reactor core power levels not in excess of 2815 megawatts thermal. Prior to attaining this power level SERI shall comply with the conditions in Paragraph 2.C.(3).

(2) Technical Specifications

The Technical Specifications contained in Appendices A & B, as revised through Amendment No. ___ are hereby incorporated in the license. SERI shall operate the facility in accordance with the Technical Specifications, except where otherwise stated in specific license conditions.

(3) Additional Conditions

The matters specified in the following conditions shall be completed to the satisfaction of the Commission within the stated time periods following the issuance of the license or within the operational restrictions indicated. The removal of these conditions shall be made by an amendment to the license supported by a favorable evaluation by the Commission.

(a) "Fuel Performance" was deleted.

(b) Fire Protection

SERI shall maintain in effect and fully implement all provisions of the approved fire protection program. The approved fire protection program consists of the following licensee's documents:

<u>Date</u>	<u>Document</u>
-	Final Safety Analysis Report section 9.5.1 through Amendment 47 dated June 16, 1978
May 17, 1977	AP&L* Letter submitting a comparison of the ANO-2 Fire Protection Program to Branch Technical Position 9.5-1.
August 30, 1977	AP&L Letter transmitting the Fire Hazards Analysis and responses to staff questions.
September 21, 1977	AP&L Letter transmitting responses to staff questions and positions.
October 26, 1977	AP&L Letter transmitting Fire Hazards Analysis Information and responses to staff questions and positions.
February 3, 1978	AP&L Letter transmitting Fire Hazards Analysis Information
February 28, 1978	AP&L Letter transmitting Administrative Controls information.
March 31, 1978	AP&L Letter transmitting responses to staff questions.
April 12, 1978	AP&L Letter transmitting responses to staff questions and positions.

*The original licensee authorized to possess, use, and operate the facility was AP&L. Consequently, certain historical references to AP&L remain in the license conditions.

April 17, 1978	AP&L Letter transmitting responses to staff questions and positions.
April 26, 1978	AP&L Letter transmitting responses to staff questions and positions.
June 8, 1978	AP&L Letter transmitting affidavit for previously docketed letters.
June 13, 1978	AP&L Letter transmitting Administrative Controls information.
June 15, 1978	AP&L Letter transmitting Administrative Controls information.
June 29, 1978	AP&L Letter transmitting Administrative Control information.
July 7, 1978	AP&L Letter transmitting affidavit for previously docketed letters.
July 7, 1978	AP&L Letter transmitting Administrative Controls information.
July 13, 1978	AP&L Letter transmitting affidavit for previously docketed letters.

(c) Less Than Four Reactor Coolant Pump Operation

SERI shall not operate the reactor in operational Modes 1 and 2 with fewer than four reactor coolant pumps in operation, except as allowed by Special Test Exception 3.10.3 of the facility Technical Specifications.

(d) "Instrument Trip Setpoints Drift Allowance" was deleted.

(e) Fire Protection

AP&L shall complete the following modifications by the indicated dates in accordance with the staff's findings as set forth in the fire protection evaluation report, NUREG-0223 "Fire Protection Safety Evaluation Report."

Implementation Dates for Proposed Modifications

Applicable
Section of
NUREG-0223

		<u>Date</u>
3.1	Portable Radio Communication Equipment	March 31, 1979
3.2	Separation of Power Cables in Manholes	*
3.3	Protection from Water Spray	*
3.4	Protection of Redundant Cables in the MCC Room (2096-M)	December 30, 1978
3.5	Protection of Redundant Cables in the Hallway - Elevation 372 (2109-U)	*,**
3.6	Protection of Redundant Cables in the Cable Spreading Room (2098-L)	*
3.7	Protection of Redundant Cables in the Switchgear Room (2100-Z)	*
3.8	Protection of Redundant Cables in the Electrical Equipment Room (2091-BB)	September 30, 1978
3.9	Protection of Redundant Cables in the Lower South Electrical Penetration Room (2111-T)	September 30, 1978
3.10	Protection of Safe Shutdown Cables in the Upper South Piping Penetration Room (2084-DD)	September 10, 1978
3.11	Protection of Redundant Reactor Protection System Cables (2136-I)	*,**
3.12	Fire Dampers	September 30, 1978
3.13	Portable Extinguisher for the Control Room (2199-J)	November 15, 1978
3.14	Smoke Detectors	*,**
3.15	Manual Hose Stations (2055-JJ, 2084-DD, Containment, Elev. 317' of Auxiliary Building)	*,**
3.16	Portable Smoke Exhaust Equipment	December 1, 1978

3.17	Emerg. Lighting	December 1, 1978
3.18	Reactor Coolant Pump Oil Collection System	*
3.19	Control of Fire Doors	March 31, 1979
3.20	Administrative Control Changes	December 1, 1978

 (Numbers in parentheses refer to fire zone designations in the AP&L fire hazards analysis.)

*Prior to startup following the first regularly scheduled refueling outage.

**Technical Specifications covering these items should be proposed not later than 90 days prior to implementation.

(f) "Overpressure Mitigating System" was deleted.

(g) Verification of Transient Analysis Code

AP&L shall complete tests to verify the use of the CESEC Code during the initial startup and power ascension testing program and submit the results for Commission review and approval.

The CESEC verification test results shall include an analysis of the uncertainties associated with the test instrumentation and a demonstration that the test instrumentation was adequate for the intended purpose.

(h) "Main Feedwater System Modification" was deleted.

(i) Containment Radiation Monitor

AP&L shall, prior to July 31, 1980 submit for Commission review and approval documentation which establishes the adequacy of the qualifications of the containment radiation monitors located inside the containment and shall complete the installation and testing of these instruments to demonstrate that they meet the operability requirements of Technical Specification No. 3.3.3.6.

(j) "Environmental Qualifications of Safety Related Instrumentation" was deleted.

(k) "Core Protection Calculator System (CPCS)" was deleted.

(l) "CEA Guide Tube Surveillance Program" was deleted.

(m) "Redundant Valve Position Indication" was deleted.

(n) "Fire Barrier Testing" was deleted.

(o) "Offsite Power System" was deleted.

(p) Secondary Water Chemistry Monitoring

SERI shall implement a secondary water chemistry monitoring program using the overall plant administrative procedure "Steam Generator Water Chemistry Monitoring, Unit II", to minimize steam generator tube degradation. The program shall be defined in specific plant procedures and shall include:

1. Identification of sampling schedule for the critical parameters and control points for these parameters;
2. Identification of the procedures used to measure the values of the critical parameters;
3. Identification of process sampling points;
4. Procedure for the recording and management of data;
5. Procedures defining corrective actions for off control point chemistry conditions; and
6. A procedure identifying the authority responsible for the interpretation of the data, and the sequence and timing of administrative events required to initiate corrective action.

(4) SERI shall implement a program to reduce leakage from systems outside containment that would or could contain highly radioactive fluids during a serious transient or accident to as low as practical levels. This program shall include the following:

1. Provisions establishing preventive maintenance and periodic visual inspection requirements, and
2. Integrated leak test requirements for each system at a frequency not to exceed refueling cycle intervals.

(5) SERI shall implement a program which will ensure the capability to accurately determine the airborne iodine concentration in vital areas under accident conditions. This program shall include the following:

1. Training of personnel,
2. Procedures for monitoring, and
3. Provisions for maintenance of sampling and analysis equipment.

D. Physical Protection

SERI shall fully implement and maintain in effect provisions of the following Commission approved documents, including amendments and changes made pursuant to the authority of 10 CFR 50.54(p). These approved documents consist of information withheld from public disclosure pursuant to 10 CFR 2.790(d):

- (1) "Arkansas Nuclear One Industrial Security Plan" dated January 11, 1979, as revised by submittals dated January 2, 1981 (Enclosure 2), and April 30, 1981.
- (2) "Arkansas Nuclear Station Safeguards Contingency Plan," Revision 1 dated February 26, 1980, revised by Revision 2 page changes dated April 30, 1980, and submitted pursuant to 10 CFR 73.40. The Contingency Plan shall be fully implemented in accordance with 10 CFR 73.40(b).
- (3) "Arkansas Nuclear One Security Force Training and Qualification Plan" as submitted by letter dated September 9, 1980, as revised by pages dated February 5, 1981, and April 27, 1981. This Plan shall be followed in accordance with 10 CFR 73.55(b)(4), 60 days after approval by the Commission. All security personnel, as required in the above plans, shall be qualified within two years of this approval. SERI may make changes to this plan without prior Commission approval if the changes do not decrease the safeguards effectiveness of the plan. SERI shall maintain records of and submit reports concerning such changes in the same manner as required for changes made to the Security Plan and Safeguards Contingency Plan pursuant to 10 CFR 50.54(p).

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

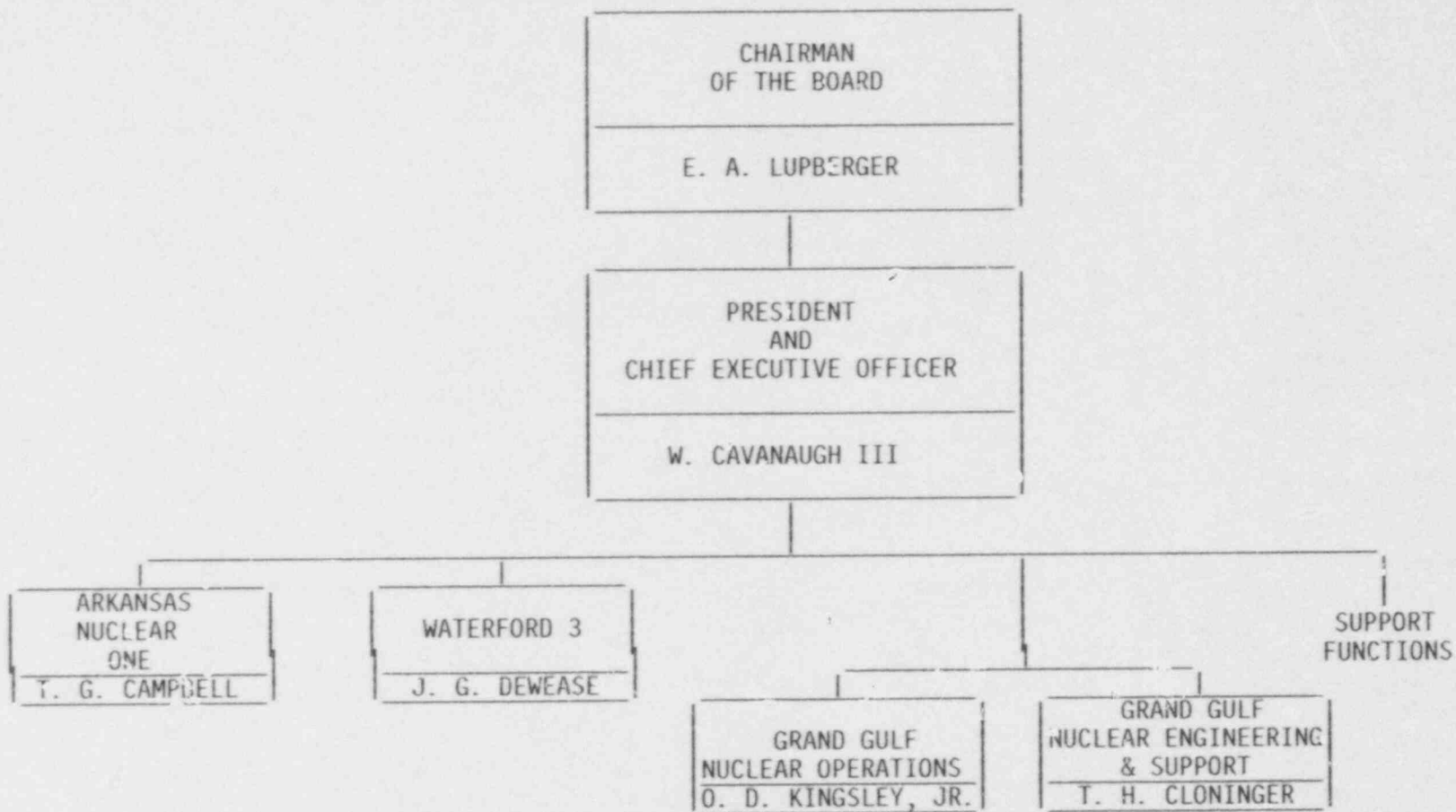
Before engaging in additional construction or operational activities which may result in an environmental impact that was not evaluated by the Commission, SERI will prepare and record an environmental evaluation for such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not evaluated, or that is significantly greater than that evaluated, in the Final Environmental Statement (NUREG-0254) or any addenda thereto, SERI 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 at midnight, December 6, 2012.

Roger S. Boyd, Director

Date of Issuance: September 1, 1978

PROPOSED SERI ORGANIZATION CHART



NOTE: QUALITY ORGANIZATIONS FOR EACH PLANT HAVE ACCESS TO PRESIDENT & CEO ON MATTERS RELATED TO QUALITY