

ENTERGY ARKANSAS, INC.  
ENTERGY OPERATIONS, INC.  
DOCKET NO. 50-368  
ARKANSAS NUCLEAR ONE, UNIT 2  
RENEWED FACILITY OPERATING LICENSE NO. NPF-6

1. The Nuclear Regulatory Commission (the Commission) having previously made the findings set forth in License NPF-6 issued on September 1, 1978 has now found that:
  - A. The application to renew License NPF-6 filed by Entergy Arkansas, Inc. and Entergy Operations, Inc. (EOI), 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 and all required notifications to other agencies or bodies have been duly made;
  - 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. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1); and (2) time-limited aging analyses that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by the renewed license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for Arkansas Nuclear One, Unit 2 (the facility), and that any changes made to the facility's current licensing basis in order to comply with 10 CFR 54.29(a) are in accord with the Act and the Commission's regulations;
  - D. 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, the facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission;
  - E. There is reasonable assurance: (i) that the activities authorized by this renewed 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;

- F. EOI is technically and financially qualified to engage in the activities authorized by this renewed operating license in accordance with the regulations of the Commission;
  - G. Entergy Arkansas, Inc. has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
  - H. The issuance of this renewed operating 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 Renewed Facility Operating License No. NPF-6 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
  - J. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this renewed 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, issued September 1, 1978, is superceded by Renewed Facility Operating License No. NPF-6, which is hereby issued to Entergy Arkansas, Inc. and Entergy Operations, Inc. to read as follows:
- A. This renewed license applies to Arkansas Nuclear One, Unit 2, a pressurized water reactor and associated equipment (the facility) owned by Entergy Arkansas, Inc. 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) Entergy Arkansas, Inc. pursuant to Section 103 of the Act and 10 CFR Part 50, to possess, but not operate, the facility at the designated location in Pope County, Arkansas in accordance with the procedures and limitations set forth in this renewed license.
    - (2) EOI, pursuant to Section 103 of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, use, and operate the

Renewed License No. NPF-6

facility at the designated location in Pope County, Arkansas in accordance with the procedures and limitations set forth in this renewed license;

- (3) EOI, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time at the facility site and as designated solely for the facility, 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) EOI, 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) EOI, 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) EOI, 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 renewed 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

EOI is authorized to operate the facility at steady state reactor core power levels not in excess of 3026 megawatts thermal. Prior to attaining this power level EOI shall comply with the conditions in Paragraph 2.C.(3).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 265 are hereby incorporated in the renewed

license. The licensee shall operate the facility in accordance with the Technical Specifications.

Exemptive 2nd paragraph of 2.C.2 deleted per Amendment 20, 3/3/81.

(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 issuance of the renewed license or within the operational restrictions indicated. The removal of these conditions shall be made by an amendment to the renewed license supported by a favorable evaluation by the Commission.

2.C.(3)(a) Deleted per Amendment 24, 6/19/81.

(b) Fire Protection

EOI shall implement and maintain in effect all provisions of the approved fire protection program as described in Amendment 9A to the Safety Analysis Report and as approved in the Safety Evaluation dated March 31, 1992, subject to the following provision:

The licensee may make changes to the approved fire protection program without prior approval of the Commission only if those changes would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire.

(c) Less Than Four Reactor Coolant Pump Operation

EOI 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.

2.C.(3)(d) Deleted per Amendment 24, 6/19/81.

- (e) Arkansas Power & Light (AP&L)<sup>1</sup> 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

<u>Applicable Section of NUREG-0223</u>		<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 Piping Penetration Room (2111-T)	September 30, 1978

---

<sup>1</sup> AP&L is the predecessor to Entergy Arkansas, Inc.

Applicable Section of <u>NUREG-0223</u>		<u>Date</u>
3.10	Protection of Safe Shutdown Cables in the Upper South Piping Penetration Room (2084-DD)	September 30, 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	Emergency 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.

2.C.(3)(f) Deleted per Amendment 24, 6/19/81.

2.C.(3)(g) Deleted per Amendment 93, 4/25/89.

2.C.(3)(h) Deleted per Amendment 29, (3/4/82) and its correction letter, (3/15/82).

(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.

2.C.(3)(j) Deleted per Amendment 7, 12/1/78.

2.C.(3)(k) Deleted per Amendment 12, 6/12/79 and Amendment 31, 5/12/82.

2.C.(3)(l) Deleted per Amendment 24, 6/19/81.

2.C.(3)(m) Deleted per Amendment 12, 6/12/79.

2.C.(3)(n) Deleted per Amendment 7, 12/1/78.

2.C.(3)(o) Deleted per Amendment 7, 12/1/78.

2.C.(3)(p) Deleted per Amendment 255, 9/28/04.

2.C.(4) (Number has never been used.)

2.C.(5) Deleted per Amendment 255, 9/28/04.

2.C.(6) Deleted per Amendment 255, 9/28/04.

2.C.(7) Deleted per Amendment 78, 7/22/86.

(8) Antitrust Conditions

EOI shall not market or broker power or energy from Arkansas Nuclear One, Unit 2. Entergy Arkansas, Inc. is responsible and accountable for the actions of its agents to the extent said agent's actions affect the marketing or brokering of power or energy from ANO, Unit 2.

(9) Rod Average Fuel Burnup

Entergy Operations is authorized to operate the facility with an individual rod average fuel burnup (burnup averaged over the

length of a fuel rod) not to exceed 60 megawatt-days/kilogram of uranium.

**D. Physical Protection**

EOI shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans, including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "Arkansas Nuclear One Physical Security, Safeguards Contingency and Training & Qualification Plan," as submitted on October 4, 2004.

**E. This renewed 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, EOI 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 addendum thereto, and other NRC environmental impact assessments, EOI shall provide a written evaluation of such activities and obtain prior approval from the Director, Office of Nuclear Reactor Regulation.

**F. Updated Final Safety Analysis Report Supplement**

The Final Safety Analysis Report supplement, as revised, shall be included in the next scheduled update to the Final Safety Analysis Report required by 10 CFR 50.71(e)(4) following issuance of this renewed license. Until that update is complete, ANO-2 may make changes to the programs and activities described in the supplement without prior Commission approval, provided that ANO-2 evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements of that section.

The ANO-2 Final Safety Analysis Report supplement, submitted pursuant to 10 CFR 54.21(d), describes certain future activities to be completed prior to the period of extended operation. ANO-2 shall complete these activities no later than July 17, 2018, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.



**G. Reactor Vessel Material Surveillance Capsules**

All capsules in the reactor vessel that are removed and tested must meet the test procedures and reporting requirements of American Society for Testing and Materials (ASTM) E 185-82 to the extent practicable for the configuration of the specimens in the capsule. Any changes to the capsule withdrawal schedule, including spare capsules, must be approved by the NRC prior to implementation. All capsules placed in storage must be maintained for future insertion.

**H. This renewed license is effective as of the date of issuance and shall expire at midnight, July 17, 2038.**

**FOR THE NUCLEAR REGULATORY COMMISSION**

***/RA/***

**J. E. Dyer, Director  
Office of Nuclear Reactor Regulation**

**Attachments:**

- 1. Appendix A - Technical Specifications**
- 2. Preoperational Tests, Startup Tests and other items which must be completed by the indicated Operational Mode**

**Date of Issuance: June 30, 2005**