

SOUTHERN NUCLEAR OPERATING COMPANY

ALABAMA POWER COMPANY

DOCKET NO. 50-348

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1

RENEWED FACILITY OPERATING LICENSE NO. NPF-2

1. The Nuclear Regulatory Commission (NRC or the Commission) having previously made the findings set forth in Facility Operating License No. NPF-2 issued on June 25, 1977, has now found that:
  - A. The application to renew Facility Operating License No. NPF-2 filed by Southern Nuclear Operating Company<sup>1</sup> (herein called Southern Nuclear) (the licensee) acting for itself and for Alabama Power Company, 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 Joseph M. Farley Nuclear Plant, Unit 1 (the facility or Farley) has been completed in conformity with Construction Permit No. CPPR-85 and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;
  - C. Actions have been identified and have been or will be taken with respect to (i) 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 (ii) 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 this renewed license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for Joseph M. Farley Nuclear Plant, Unit 1 (facility or plant), and that any changes made to the plant'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 will operate in conformity with the application, as amended, the provisions of the Act, and the rules and 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

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<sup>1</sup> Southern Nuclear succeeds Alabama Power Company as the operator of Joseph M. Farley Nuclear Plant, Unit 1. Southern Nuclear is authorized to act as agent for Alabama Power Company and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

rules and regulations of the Commission;

- F. Southern Nuclear is technically qualified and, together, Southern Nuclear and Alabama Power Company are financially qualified to engage in the activities authorized by this renewed operating license in accordance with the rules and regulations of the Commission;
  - G. Alabama Power Company 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-2 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-2, issued June 25, 1977, is superceded by Renewed Facility Operating License No. NPF-2, which is hereby issued to Southern Nuclear and Alabama Power Company to read as follows:
- A. This renewed license applies to the Joseph M. Farley Nuclear Plant, Unit 1, a pressurized water nuclear reactor and associated equipment (the facility), owned by the Alabama Power Company and operated by Southern Nuclear. The facility is located on the Chattahoochee River in Houston County near the city of Dothan, Alabama and is described in the "Final Safety Analysis Report," as supplemented and amended (Amendments 26 through 66) and the Environmental Report, as supplemented and amended (Amendments 1 through 6).
  - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:
    - (1) Southern Nuclear, pursuant to Section 103 of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, manage, use, maintain, and operate the facility at the designated location

in Houston County, Alabama in accordance with the procedures and limitations set forth in this renewed license;

- (2) Alabama Power Company, pursuant to Section 103 of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess but not operate the facility at the designated location in Houston County, Alabama in accordance with the procedures and limitations set forth in this renewed license;
- (3) Southern Nuclear, 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) Southern Nuclear, 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) Southern Nuclear, 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) Southern Nuclear, 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 operating 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

Southern Nuclear is authorized to operate the facility at steady state reactor core power levels not in excess of 2775 megawatts (thermal). Prior to attaining the power level, Alabama Power Company shall complete the preoperational tests, startup tests and other items identified in Attachment 2 to this renewed license in the sequence specified. Attachment 2 is an integral part of this renewed license.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 168, are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

(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 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.

- a. Southern Nuclear shall not operate the reactor in Operational Modes 1 and 2 with less than three reactor coolant pumps in operation.
- b. Deleted per Amendment 13
- c. Deleted per Amendment 2
- d. Deleted per Amendment 2
- e. Deleted per Amendment 152  
Deleted per Amendment 2
- f. Deleted per Amendment 158
- g. Southern Nuclear shall maintain a secondary water chemistry monitoring program to inhibit 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 quantify parameters that are critical to control points;
  - 3) Identification of process sampling points;
  - 4) A 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.
- h. The Additional Conditions contained in Appendix C, as revised through Amendment No. 146, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the additional conditions.
- i. Deleted per Amendment 152

(4) Fire Protection

Southern Nuclear shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report for the facility, which implements the fire protection requirements of 10 CFR 50.48 and 10 CFR 50 Appendix R. Southern Nuclear 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.

(5) Updated Final Safety Analysis Report Supplement

The Updated Final Safety Analysis Report supplement, as revised, shall be included in the next scheduled update to the Updated Final Safety Analysis Report required by 10 CFR 50.71(e)(4) following issuance of this renewed license. Until that update is complete, Southern Nuclear may make changes to the programs and activities described in the supplement without prior Commission approval, provided that Southern Nuclear 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 Southern Nuclear Updated 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. Southern Nuclear shall complete these activities no later than June 25, 2017, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

(6) 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.

- D. Southern Nuclear 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 plan, which contain Safeguards Information protected under 10 CFR 73.21, is entitled: "Southern Nuclear Operating Company Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan," and was submitted on October 13, 2004.
- E. This renewed license is subject to the following additional conditions for the protection of the environment:
  - (1) Southern Nuclear shall operate the facility within applicable Federal and State air and water quality standards and the Environmental Protection Plan (Appendix B).
  - (2) Before engaging in an operational activity not evaluated by the Commission, Southern Nuclear 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 evaluated in the Final Environmental Statement, Southern Nuclear shall provide a written evaluation of such activities and obtain prior approval of the Director, Office of Nuclear Reactor Regulation, for the activities.
- F. Alabama Power Company shall meet the following antitrust conditions:
  - (1) Alabama Power Company shall recognize and accord to Alabama Electric Cooperative (AEC) the status of a competing electric utility in central and southern Alabama.
  - (2) Alabama Power Company shall offer to sell to AEC an undivided ownership interest in Units 1 and 2 of the Farley Nuclear Plant. The percentage of ownership interest to be so offered shall be an amount based on the relative sizes of the respective peak loads of AEC and the Alabama Power Company (excluding from the Alabama Power Company's peak load that amount imposed by members of AEC upon the electric system of Alabama Power Company) occurring in 1976. The

price to be paid by AEC for its proportionate share of Units 1 and 2, determined in accordance with the foregoing formula, will be established by the parties through good faith negotiations. The price shall be sufficient to fairly reimburse Alabama Power Company for the proportionate share of its total costs related to the Units 1 and 2 including, but not limited to, all costs of construction, installation, ownership and licensing, as of a date, to be agreed to by the two parties, which fairly accommodates both their respective interests. The offer by Alabama Power Company to sell an undivided ownership interest in Units 1 and 2 may be conditioned, at Alabama Power Company's option, on the agreement by AEC to waive any right of partition of the Farley Plant and to avoid interference in the day-to-day operation of the plant.

- (3) Alabama Power Company will provide, under contractual arrangements between Alabama Power Company and AEC, transmission services via its electric system (a) from AEC's electric system to AEC's off-system members; and (b) to AEC's electric system from electric systems other than Alabama Power Company's and from AEC's electric system to electric systems other than Alabama Power Company's. The contractual arrangements covering such transmission services shall embrace rates and charges reflecting conventional accounting and ratemaking concepts followed by the Federal Energy Regulatory Commission (or its successor in function) in testing the reasonableness of rates and charges for transmission services. Such contractual arrangements shall contain provisions protecting Alabama Power Company against economic detriment resulting from transmission line or transmission losses associated therewith.
- (4) Alabama Power Company shall furnish such other bulk power supply services as are reasonably available from its system.
- (5) Alabama Power Company shall enter into appropriate contractual arrangements amending the 1972 Interconnection Agreement as last amended to provide for a reserve sharing arrangement between Alabama Power Company and AEC under which Alabama Power Company will provide reserve generating capacity in accordance with practices applicable to its responsibility to the operating companies of the Southern Company System. AEC shall maintain a minimum level expressed as a percentage of coincident peak one-hour kilowatt load equal to the percent reserve level similarly expressed for Alabama Power Company as determined by the Southern Company System under its minimum reserve criterion then in effect. Alabama Power Company shall provide to AEC such data as needed from time to time to demonstrate the basis for the need for such minimum reserve level.
- (6) Alabama Power Company shall refrain from taking any steps, including

but not limited to, the adoption of restrictive provisions in rate filings or negotiated contracts for the sale of wholesale power, that serve to prevent any entity or group of entities engaged in the retail sale of firm electric power from fulfilling all or part of their bulk power requirements through self-generation or through purchases from some other source other than Alabama Power Company. Alabama Power Company shall further, upon request and subject to reasonable terms and conditions, sell partial requirements power to any such entity. Nothing in this paragraph shall be construed as preventing an applicant from taking reasonable steps, in accord with general practice in the industry, to ensure that the reliability of its system is not endangered by any action called for herein.

- (7) Alabama Power Company shall engage in wheeling for and at the request of any municipally-owned distribution system:
- a. of electric energy from delivery points of Alabama Power Company to said distribution system(s); and
  - b. of power generated by or available to a distribution system as a result of its ownership or entitlement<sup>2</sup> in generating facilities, to delivery points of Alabama Power Company designated by the distribution system.

Such wheeling services shall be available with respect to any unused capacity on the transmission lines of Alabama Power Company, the use of which will not jeopardize Alabama Power Company's system. The contractual arrangements covering such wheeling services shall be determined in accordance with the principles set forth in Condition (3) herein.

Alabama Power Company shall make reasonable provisions for disclosed transmission requirements of any distribution system(s) in planning future transmission. "Disclosed" means the giving of reasonable advance notification of future requirements by said distribution system(s) utilizing wheeling services to be made available by Alabama Power Company.

- (8) The foregoing conditions shall be implemented in a manner consistent with the provisions of the Federal Power Act and the Alabama Public Utility laws and regulations thereunder and all rates, charges, services or practices in connection therewith are to be subject to the approval of regulatory agencies having jurisdiction over them.

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<sup>2</sup> "Entitlement" includes, but is not limited to, power made available to an entity pursuant to an exchange agreement.



Southern Nuclear shall not market or broker power or energy from Joseph M. Farley Nuclear Plant, Units 1 and 2. Alabama Power Company shall continue to be responsible for compliance with the obligations imposed on it by the antitrust conditions contained in this paragraph 2.F. of the renewed license. Alabama Power Company shall be responsible and accountable for the actions of its agent, Southern Nuclear, to the extent said agent's actions may, in any way, contravene the antitrust conditions of this paragraph 2.F.

- G. In accordance with the requirement imposed by the October 8, 1976 order of the United States Court of Appeals for the District of Columbia Circuit in Natural Resources Defense Council vs. Nuclear Regulatory Commission, No. 74-1385 and 74-1586, that the Nuclear Regulatory Commission "shall make any licenses granted between July 21, 1976 and such time when the mandate is issued subject to the outcome of such proceeding herein," this renewed license shall be subject to the outcome of such proceedings.
- H. This renewed operating license is effective as of the date of issuance and shall expire at midnight on June 25, 2037.

FOR THE NUCLEAR REGULATORY COMMISSION

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 Prior to Proceeding to Succeeding Operational Modes
3. Appendix B - Environmental Protection Plan
4. Appendix C - Additional conditions

Date of Issuance: May 12, 2005