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Alabama Power

*The southern electric system*

10CFR50.90

October 14, 1991

Docket Nos: 50-348  
50-364

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D. C. 20555

Joseph M. Farley Nuclear Plant  
Revisions to License Amendments Application to Allow  
Southern Nuclear Operating Company To Become the Licensed Operator

Gentlemen:

On May 6, 1991, Alabama Power Company submitted an application for an amendment of Facility Operating License Nos. NPF-2 and NPF-8 which would authorize Southern Nuclear Operating Company, Inc. (Southern Nuclear) to become the licensed operator and have exclusive responsibility and control over the physical construction, operation, and maintenance of Joseph M. Farley Nuclear Plant, Units 1 and 2. By letter of June 20, 1991, Alabama Power Company notified the NRC of an organizational change at Southern Nuclear which affected the application. In addition, at the request of the NRC, by letter of September 27, 1991, Alabama Power Company proposed a revision to the application to provide for a new process for the NRC to issue the amendment.

As a result of an NRC telephone request on October 10, 1991, Alabama Power Company is now proposing minor editorial and formatting changes to the Facility Operating Licenses Nos. NPF-2 and NPF-8. The most significant of these changes was to substitute either "Southern Nuclear" or "Southern Nuclear and Alabama Power Company" for those cases where the term "licensee" or "licensees" was used.

These changes, which are provided in the attachments, are not intended to and do not have any impact on the application or the significant hazards consideration evaluation provided in the May 6, 1991 submittal.

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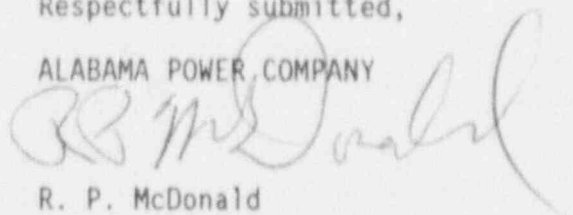
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Accordingly, Alabama Power Company hereby concurs with and transmits the requested changes. The revised operating licenses are provided in Attachment 1. To expedite NRC review, a copy of the markups of the changes to the proposed operating licenses from the May 6, 1991 submittal is provided in Attachment 2.

A copy of these proposed changes is also being sent to Dr. C. E. Fox, Alabama State Designee, in accordance with 10 CFR 50.91 (b)(1).

Respectfully submitted,

ALABAMA POWER COMPANY



R. P. McDonald

RPM/CRP

Attachments

Sworn to and subscribed before me  
this 14<sup>th</sup> day of October, 1991.

Notary Public



Debra J. Burnett

cc: Mr. S. D. Ebnetter  
Mr. S. T. Hoffman  
Mr. G. F. Maxwell  
Dr. C. E. Fox

Attachment 1  
Revised Operating Licenses

SOUTHERN NUCLEAR OPERATING COMPANY

ALABAMA POWER COMPANY

DOCKET NO. 50-348

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1

FACILITY OPERATING LICENSE

License No. NPF-2

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for license filed by 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 substantially 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. 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. Southern Nuclear Operating Company\* (herein called Southern Nuclear) is technically qualified and together, Southern Nuclear and Alabama Power Company are financially qualified to engage in the activities authorized by this operating license in accordance with the rules and regulations of the Commission;
  - F. Alabama Power Company 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 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-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
  - 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-2 is hereby issued to Southern Nuclear and Alabama Power Company to read as follows:

\* 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.

- A. This 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 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 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 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 2652 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 license in the sequence specified. Attachment 2 is an integral part of this license.

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. , are hereby incorporated in the 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 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) 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) Prior to startup following the first regularly scheduled refueling outage, Alabama Power Company shall replace instrumentation for measurement of the pressurizer level, the steam generator wide range level, the steam generator narrow range level, and the reactor coolant system pressure with the corresponding modified instrumentation identified in Amendment Number 65 to the Final Safety Analysis Report.  
  
Deleted per Amendment 2
- (f) Southern Nuclear shall not use the spent fuel cask crane for the purpose of moving spent fuel casks prior to submission to and approval by the Commission of the design of the lifting devices which attach the spent fuel cask to the crane. |
- (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.

(4) Fire Protection Program

Southern Nuclear shall maintain in effect and fully implement all provisions of the approved fire protection plan. The approved fire protection plan consists of the document entitled, "Farley Nuclear Plant Fire Protection Program Reevaluation" which includes:

Initial Issue, submitted with letter dated September 15, 1977;

Amendment 1, submitted with letter dated February 23, 1978;

Amendment 2, submitted with letter dated July 14, 1978;

Amendment 3, submitted with letter dated October 27, 1978;

Amendment 4, submitted with letter dated January 3, 1979.

Alabama Power Company may proceed with and is required to complete the modifications identified in Tables 1, 2 and 3 of the NRC's Joseph M. Farley Safety Evaluation Report, Fire Protection Review, Unit Nos. 1 and 2 dated February 12, 1979. Most of the modifications will be completed before the end of the second refueling outage for Unit No. 1. Exceptions are smoke detectors, penetration seals and barriers which will be completed by September 1, 1980. In the event that these modifications cannot be completed as identified in Tables 1, 2 and 3, Alabama Power Company shall submit a

report, explaining the circumstances, together with a revised schedule for NRC approval.

Administrative control changes and procedure revisions shall be implemented as described in NRC's Safety Evaluation Report dated February 12, 1979.

Further, by January 1, 1980, Alabama Power Company shall provide for Commission review and obtain Commission approval of the final design of the modifications prior to implementation which would allow the reactor to be taken to cold shutdown without reliance on the cable spreading room, or the control room.

The fire protection program modifications are described in the Commission-approved Farley Nuclear Plant Fire Protection Program. Southern Nuclear is authorized to make other changes to the program without prior Commission approval provided that such changes do not result in a decrease in the effectiveness of the program.

- D. Southern Nuclear shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard 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 plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Joseph M. Farley Nuclear Plant Physical Security Plan," with revisions submitted through November 17, 1987; "Joseph M. Farley Nuclear Plant Guard Training and Qualification Plan," with revisions submitted through April 12, 1982; and "Joseph M. Farley Nuclear Plant Safeguards Contingency Plan," with revisions submitted through March 28, 1980. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein.
- E. This 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 Technical Specifications which include nonradiological and radiological monitoring programs, limits on effluent releases, and appropriate comprehensive ecological surveillance study, and reporting requirements.
  - (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 charge 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 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:
- (1) of electric energy from delivery points of Alabama Power Company to said distribution system(s); and
  - (2) of power generated by or available to a distribution system as a result of its ownership or entitlement\* 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.

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\* "Entitlement" includes but is not limited to power made available to an entity pursuant to an exchange agreement.

Alabama Power Company shall make reasonable provisions for disclosed transmission requirements of any distribution system(s) in planning future transmission. By "disclosed" is meant 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.

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 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 v. 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 license shall be subject to the outcome of such proceedings.
- H. The following Orders\* are incorporated into this license by reference:
- (1) "Environmental Qualification of Electrical Equipment," dated August 29, 1980.

\* Prior to Southern Nuclear being authorized to operate Joseph M. Farley Nuclear Plant, Unit 1, the term "licensee" referred to Alabama Power Company. Hence, the term "licensee" applies to Alabama Power Company for those orders which were fully complied with by Alabama Power Company prior to Southern Nuclear being added to the operating license.

- (2) "Order for Modification of License Concerning Primary Coolant System Pressure Isolation Valves," dated April 20, 1981.
  - (3) "Order Modifying License Confirming Additional Licensee Commitments on Emergency Response Capability (Supplement 1 to NUREG-0737)," dated July 27, 1985.
- I. This license is effective as of the date of issuance and shall expire at midnight, June 25, 2017.

ATTACHMENT 2 TO LICENSE NPF-2

Preoperational Tests, Startup Tests, and  
Other Items Which Must be Completed Prior to Proceeding  
to Succeeding Operational Modes

This attachment identifies certain preoperational tests, startup tests, and other items which must be completed to the Commission's satisfaction prior to proceeding to certain specified Operational Modes. Alabama Power Company shall not proceed beyond the authorized Operational Modes without prior written authorization from the Commission.

- A. Alabama Power Company may at the license issue date proceed directly to Operational Mode 6 (initial fuel loading), and may subsequently proceed to Operational Mode 2 (startup), except as noted below.
- B. The following items must be completed prior to proceeding to Operational Mode 2 (startup):
  1. Satisfactory completion of the following tests:

a.	032-5-002	Heating and Ventilation (Radiation Areas)
b.	036-5-005	Turbine Driven Auxiliary Feedwater Pump
c.	037-4-005	Demineralizer Water System
d.	044-4-003	Condensate Systems
e.	045-5-003	Feedwater System
f.	052-5-012	Boron Injection System - Trace Heating
g.	060-5-008	Containment Purge and Exhaust
h.	061-5-005	Spray Additive Tank Flow Rate Verification
i.	063-5-005	Steam Generator Blowdown
j.	066-5-002	Reactor Cavity Cooling
k.	068-5-003	Solid Radioactive Waste System
l.	068-5-004	Drumming Station Heat Tracing
m.	069-5-023	Waste Evaporator
n.	069-5-026	Floor Drain Tank
o.	072-5-004	Gaseous Radioactive Waste
p.	094-4-003	Secondary System Chemical Addition System
q.	100-5-010	Pre-Critical Heatup Thermal Expansion
  2. Completion of modification of sample sink exhaust ventilation in the Auxiliary Building Sample Room.



3. Completion of installation of single point recorders for the six effluent radiation monitors.
4. Completion of installation of integrator and recorder for liquid effluent line and installation of integrator for dilution water line.
5. Completion of installation of flow rate measuring, recording and integrating instrumentation for the plant vent.
6. Resolution of the measures and modifications required to ensure the successful operation of the ITT Grinnel Hydraulic Shock Suppressors.

SOUTHERN NUCLEAR OPERATING COMPANY

ALABAMA POWER COMPANY

DOCKET NO. 50-364

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2

FACILITY OPERATING LICENSE

License No. NPF-8

1. The Nuclear Regulatory Commission (the Commission or the NRC) having found that:
  - A. The application for license filed by Alabama Power Company 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 the Joseph M. Farley Nuclear Plant, Unit 2 (the facility or Farley), has been substantially completed in conformity with Construction Permit No. CPPR-86 and the application, as amended, the provisions of the Act and the regulations of the Commission;
  - C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the 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 Commission's regulations set forth in 10 CFR Chapter I;

- E. Southern Nuclear Operating Company\* (herein called Southern Nuclear) is technically qualified and together, Southern Nuclear and Alabama Power Company are financially qualified to engage in the activities authorized by this license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;
  - F. Alabama Power Company 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 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-8, subject to the conditions for protection of the environment set forth in the Environmental Protection Plan which is Appendix B to this license, is in accordance with 10 CFR Part 50, Appendix D, 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.
2. Pursuant to approval by the Nuclear Regulatory Commission at a meeting on March 11, 1981, the License for Fuel Loading and Low Power Testing (NPF-8), issued on October 23, 1980, as amended, is superseded by Facility Operating License NPF-8 which is hereby issued to Southern Nuclear and Alabama Power Company to read as follows:

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\* Southern Nuclear succeeds Alabama Power Company as the operator of Joseph M. Farley Nuclear Plant, Unit 2. 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.

- A. This license applies to the Joseph M. Farley Nuclear Plant, Unit 2, 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 in Houston County, Alabama, and is described in the "Final Safety Analysis Report," as supplemented and amended, and in the Environmental Report, as supplemented and amended.
- 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 limitations set forth in this 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 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, 40 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 Commission's regulations set forth in 10 CFR Chapter I 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 reactor core power levels not in excess of 2652 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. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

(3) Initial Test Program

Alabama Power Company shall conduct the initial test program (set forth in Section 14 of the Final Safety Analysis Report as amended) without making any modifications to this program unless such modifications are in accordance with the provisions of 10 CFR Section 50.59. In addition, Alabama Power Company shall not make any major modifications to this program unless the modifications have been identified and have received prior NRC approval. Major modifications are defined as:

- a. Elimination of any test identified as essential in Section 14 of the Final Safety Analysis Report, as amended;
- b. Modification of test objectives, methods or acceptance criteria for any test identified as essential in Section 14 of the Final Safety Analysis Report, as amended;
- c. Performance of any test at a power level different from the level in the described program; and

- d. Failure to complete any tests included in the described program (planned or scheduled) for power levels up to the authorized power level.
- (4) Southern Nuclear shall not use the spent fuel cask crane for the purpose of moving spent fuel casks prior to approval by the NRC of the lifting devices which attach the spent fuel cask to the crane.
- (5) The interval for testing pumps and valves in accordance with 10 CFR 50.55 a(g)(2) is 120 months commencing with the start of commercial operation. Alabama Power Company shall provide additional information needed by the NRC to complete a detailed review of the Alabama Power Company's inservice testing program for pumps and valves no later than 6 months prior to the end of the first 120-month interval.

(6) Fire Protection Program

Southern Nuclear shall maintain in effect and fully implement all provisions of the approved fire protection plan except as modified by the NRC's Joseph M. Farley Safety Evaluation Report, Fire Protection Review, Units 1 and 2, transmitted to Alabama Power Company on April 13, 1979 (Fire Protection SER). The approved fire protection plan consists of the document entitled "Farley Nuclear Plant Fire Protection Program Reevaluation" which includes:

Initial Issue, submitted with letter dated September 15, 1977;

Amendment 1, submitted with letter dated February 23, 1978;

Amendment 2, submitted with letter dated July 14, 1978;

Amendment 3, submitted with letter dated October 27, 1978;

Amendment 4, submitted with letter dated January 3, 1979, and amended by letter dated October 21, 1980.

Administrative control changes and procedure revisions shall be implemented and maintained in effect as described in NRC's Fire Protection SER.

Southern Nuclear shall comply with the fire protection program set forth in Appendix R to 10 CFR Part 50 in accordance with the requirements of §50.48 of 10 CFR Part 50.

- (7) No later than 90 days from the date of original issuance of this license, Alabama Power Company shall report to the NRC the status of any items related to emergency preparedness identified by FEMA in its plan, evaluation, and exercise critique, or by the NRC in its SER and Supplements as requiring further action.

Alabama Power Company shall complete its plans for prompt notification, staffing for emergencies, upgrading the meteorological program, and upgrading emergency support facilities on the NRC approved schedule identified in the following sections of SER Supplement 5:

Section 22.5, Dated Requirements:

- Item III.A.1.2 Upgrade Emergency Support Facilities
- Item III.A.2 Long Term Emergency Preparedness

Appendix B Emergency Preparedness Evaluation Report:

- Section B Onsite Emergency Organization
- Section E Notification Methods and Procedures

- (8) On a one-time only basis, The Action Statement of Technical Specification 3.7.4. shall be replaced by the following:

Action:

With only one service water loop OPERABLE, restore at least two loops to OPERABLE status within 72\* hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

\*This 72-hour limit is extended on a one-time only basis to a maximum of 10 days for the recirculation portion of each service water loop to permit system modifications. Modifications, affecting operability, shall be made on only one of the two service water loops at a time. One loop shall remain OPERABLE until the other loop has been modified and returned to OPERABLE status. All other portions of the service water system are not covered by this one-time only

change. All modifications to both loops are scheduled for completion by May 15, 1981.

For record purposes, this license condition expires 90 days from date of original license issuance.

- (9) (a) Prior to exceeding 5-percent power, Alabama Power Company shall provide to the NRC the results of the following seven augmented low power tests:
- natural circulation
  - natural circulation with simulated loss of offsite power
  - natural circulation with loss of pressurized heaters
  - effect of steam generator secondary side isolation on natural circulation
  - natural circulation at reduced pressure
  - cooldown capability of the charging and let down system
  - simulated loss of all onsite and offsite ac power
- (b) After operation for 25,000 MW(e) days and at its next shutdown of sufficient time duration but in any case no later than prior to the startup following the first refueling outage, results of a test of natural circulation cooldown with boron mixing shall be submitted to the NRC. However, this license condition may be satisfied in the same time frame by the Alabama Power Company's providing analyses to show that test results of such test performance at other plants are applicable to Farley 2.
- (10) Prior to exceeding 5-percent power, Alabama Power Company shall make fully operational the post-accident sampling system.
- (11) Prior to exceeding 5-percent power, Alabama Power Company shall complete the training for mitigating core damage.
- (12) Alabama Power Company shall modify procedures and, if necessary, equipment used for natural circulation cooldown as follows:



- (a) Prior to exceeding 5-percent power, Alabama Power Company shall perform tests to demonstrate manual operation of an atmospheric steam dump valve.
  - (b) Prior to startup following the first refueling, Alabama Power Company shall make provisions (or modifications) as necessary to assure that the safety grade backup means of reactor coolant system depressurization is in accordance with the requirements of Table 1 in Branch Technical Position RSB 5-1, Rev. 1.
  - (c) Prior to startup following the first refueling, Alabama Power Company shall provide to the NRC natural circulation cooldown procedures, based on reactor natural circulation cooldown test results applicable to Farley Unit 2.
- (13) Prior to exceeding 5-percent power, Alabama Power Company shall (a) modify and test reset circuits for the containment air mixing fans, containment purge isolation valves, and auxiliary feedwater pump discharge valves to meet the requirements of IE Bulletin 80-06 "Engineered Safety Feature Reset Controls", and (b) revise procedures to be consistent with the modified designs required by (a).
- (14) Prior to exceeding 5-percent power, the following equipment which was not required to be operable by the Fuel Loading and Low Power Testing License is exempt from the Technical Specification (TS) that requires a demonstration of operability:
- All fire detectors listed in TS Table 3.3-12 except those in containment (Fire Zone 55)
  - Reactor coolant system isolation valves listed in TS Table 3.4-1.
- (15) Prior to May 31, 1981, Alabama Power Company shall complete modifications to the subcooling monitor system identified in Item II.F.2, Section 22.3 in SER Supplement 5, NUREG-0117.
- (16) Prior to startup following the second refueling, Alabama Power Company shall complete modifications for Masonry Wall 2 CBW-34 to meet the NRC staff criteria.

- (17) Prior to October 1, 1981, Alabama Power Company shall submit to the NRC the design of a modified containment vent and purge system to reduce the use of the 18-inch purge valves during power operation. Prior to startup following the first refueling, Alabama Power Company shall install the modified system.
- (18) Alabama Power Company shall take the following remedial actions, or alternative actions, acceptable to the NRC, with regard to the environmental qualification requirements for Class IE equipment:
- (a) Complete and auditable records shall be available and maintained at a central location which describe the environmental qualification method used for all safety-related electrical equipment in sufficient detail to document the degree of compliance with NUREG-0588, "Interim Staff Position on Environmental Qualification of Safety-Related Electrical Equipment," dated December 1979. Such records shall be updated and maintained current as equipment is replaced, further tested, or otherwise further qualified to document complete compliance no later than June 30, 1982.
  - (b) Within 90 days of receipt of the equipment qualification safety evaluation (Appendix B to SER Supplement 6, NUREG-0117), Alabama Power Company shall either (i) provide missing documentation identified in Sections 3.0, 4.2 and 4.3 of the equipment qualification safety evaluation which will demonstrate compliance of the applicable equipment with NUREG-0588, or (ii) commit to corrective actions which will result in documentation of compliance of applicable equipment with NUREG-0588 no later than June 30, 1982.
  - (c) No later than June 30, 1982, all safety-related electrical equipment in the facility shall be qualified in accordance with the provisions of NUREG-0588.
- (19) Prior to resuming power operation following the first refueling, Alabama Power Company shall:
- (a) Provide additional evaluations of the Westinghouse fuel performance code (PAD 3.3) to demonstrate its applicability to fuel burnups during successive fuel cycles.

- (b) Complete the remaining modifications to the primary and backup circuit protection devices in the containment penetration circuits (which are not completed during the first refueling outage) during the next extended cold shutdown after the first refueling outage, but no later than during the second refueling outage.
  - (c) Modify the lubrication system of the two Fairbanks-Morse opposed-piston diesel generators by installing a pre-lube pump arranged for automatic and manual start and powered from a reliable DC power supply or install an equivalent or better system which will prevent dry starting of the diesel generators on an automatic start signal. Alabama Power Company shall submit the system final design and implementation schedule to the NRC within six months after this license is issued.
  - (d) Inspect the main steam turbine for indications of low pressure rotor disc cracking, or replace the present low pressure rotors with refurbished rotors.
- (20) Prior to April 30, 1981, Alabama Power Company shall provide a schedule to the NRC for bringing the facility into compliance with Revision 2 of Regulatory Guide 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," dated December 1980.
- (21) Alabama Power Company shall complete each of the following conditions to the satisfaction of the NRC by the times indicated. Each of the following conditions references the appropriate item in Section 22.5, "Dated Requirements" in SER Supplement 5, NUREG-0117:
- (a) Guidance for the Evaluation and Development of Procedures for Transients and Accidents (I.C.1)  
  
Prior to startup following the first refueling after January 1, 1982, complete the upgrading of emergency procedures and associated operator training.

(b) Reactor Coolant System Vents (II.B.1)

Submit a design description and operating procedures for reactor coolant system vents prior to July 1, 1981 and complete installation prior to July 1, 1982.

(c) Plant Shielding (II.B.2)

At the next cold shutdown period of sufficient duration after material availability, but at the latest no later than prior to startup after the first refueling outage, the remaining modifications shall be completed. These modifications are as described in Alabama Power Company letter dated February 11, 1982. The modifications are to assure access to vital areas and protection of safety equipment following an accident resulting in a degraded core.

(d) Relief and Safety Valve Tests (II.D.1)

Provide information to the NRC based on tests to demonstrate qualification of relief valves, block valves, and associated piping as follows:

- (1) Report demonstrating qualification of relief valves, and associated piping prior to October 1, 1981.
- (2) Report demonstrating qualification of block valves prior to July 1, 1982.

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

Prior to startup following the first refueling, make modifications to the control and protection circuits for the auxiliary feedwater system to enhance the reliability and tolerance of the system to failures. Submit the design of these modifications to the NRC prior to July 1, 1981.

(f) Additional Accident Monitoring Instruments (II.F.1)

Install and provide information regarding accident monitoring instruments as follows:

- (1) Install noble gas effluent monitors prior to January 1, 1982.
- (2) Install capability for continuous sampling of plant gas effluents prior to exceeding 5-percent power.
- (3) Install high-range radioactivity monitors in the containment prior to January 1, 1982.
- (4) Provide a description of containment pressure instruments prior to June 1, 1981 and install pressure instruments prior to January 1, 1982.
- (5) Provide a description of a containment water level measurement system prior to June 1, 1981 and install water level system prior to January 1, 1982.
- (6) Provide a description of the use of the installed hydrogen indication monitors prior to June 1, 1981 and make modifications, if required, prior to January 1, 1982.

(g) Inadequate Core Cooling Instruments (II.F.2)

For the proposed reactor vessel water level instrument,

- (1) Provide detailed design information identified in Section 22.5 of SFR Supplement 5, Requirement A, Parts (1)(a), (3), (4), (7), (8), and (9) prior to July 1, 1981.
  - (2) Provide results of tests on Farley Unit 1 for consideration in this facility prior to July 1, 1981.
  - (3) Provide planned program to complete development, including any additional test data needed to determine feasibility, prior to January 1, 1982.
- (h) Commission Orders on Babcock & Wilcox Plants, Subsequently Applied to all PWR Plants (II.K.2)

Prior to January 1, 1982,

- (1) Submit a detailed analysis of the thermal mechanical conditions in the reactor vessel during recovery from small break LOCAs with an extended loss of all feedwater (II.K.2.13).
  - (2) Provide an analysis of the potential for voiding in the reactor coolant system during anticipated transients (II.K.2.17).
  - (3) Provide a bench mark analysis of sequential auxiliary feedwater flow to the steam generators following a loss of main feedwater (II.K.2.19).
- (i) Final Recommendations of B&O Task Force  
(II.K.3)
- (1) With respect to an automatic power-operated relief valve (PORV) isolation system (II.K.3.1 and II.K.3.2):
    - (i) Perform a safety examination of an automatic PORV isolation system (II.K.3.1) per the requirement of II.K.3.2.
    - (ii) If an automatic PORV isolation system is required per (i) above, provide the information identified under the "Documentation Required" section of II.K.3.1 of NUREG-0737 by July 1, 1981.
    - (iii) If required from (i) above, complete installation and testing of the modified automatic PORV isolation system prior to startup following the first refueling outage that is scheduled to occur more than 6 months after NRC approval of the design.
  - (2) With respect to tripping of reactor coolant pumps (RCPs) (II.K.3.5):
    - (i) Submit to the NRC for approval either (1) an evaluation which shows that sufficient time is available to the operator to manually trip the RCPs in the event of a small break LOCA, or (2) a description of design modifications

required to provide for an automatic pump trip. This submittal is required within three months after NRC determination of acceptability of the small break LOCA model based on comparisons with LOFT test L3-6.

- (ii) If required based on (i) above, complete plant modifications to provide for automatic tripping of reactor coolant pumps within 11 months after NRC determination of model acceptability, provided there is an appropriate outage during that time interval to complete installation or during the first such scheduled outage occurring thereafter.
- (3) With respect to reliability of reactor coolant pump seal cooling (II.K.3.75),
- (i) Prior to January 1, 1982, submit results of analyses or experiments to determine consequences of a loss of cooling water to the reactor coolant pump seal coolers and describe any modifications found necessary.
  - (ii) Prior to July 1, 1982, complete any necessary modifications.
- (4) With respect to a revised small break LOCA model,
- (i) Prior to January 1, 1982, submit to the NRC a revised model to account for recent experimental data (II.K.3.30).
  - (ii) Submit to the NRC the results of plant-specific calculations using the NRC-approved revised model prior to January 1, 1983.

- D. Southern Nuclear shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirement 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 plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Joseph M. Farley Nuclear Plant Physical Security Plan, "with revisions submitted through November 17, 1987; "Joseph M. Farley Nuclear Plant Guard Training and Qualification Plan," with revisions submitted through April 12, 1982; and "Joseph M. Farley Nuclear Plant Safeguards Contingency Plan," with revisions submitted through March 28, 1980. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein.
- E. Southern Nuclear shall report any violations of the requirements contained in Section 2, Items C.(3) through C.(21), and D of this license within 24 hours by telephone and confirm by telegram, mailgram, or facsimile transmission to the Director for Region II of the Office of Inspection and Enforcement, or the Director's designate, no later than the first working day following the violation, with a written followup report within 14 days.
- 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 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 AEP'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 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:
  - (1) of electric energy from delivery points of Alabama Power Company to said distribution system(s); and
  - (2) of power generated by or available to a distribution system as a result of its ownership or entitlement\* 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.

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\* "Entitlement" includes but is not limited to power made available to an entity pursuant to an exchange agreement.

Alabama Power Company shall make reasonable provisions for disclosed transmission requirements of any distribution system(s) in planning future transmission. By "disclosed" is meant 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.

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 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. The facility requires relief from certain requirements of 10 CFR 50.55a(g) and exemptions from Appendices G, H and J to 10 CFR Part 50. The relief and exemptions are described in the Office of Nuclear Reactor Regulation's Safety Evaluation Report, Supplement No. 5. They are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. Therefore, the relief and exemptions are hereby granted. With the granting of these 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.
- H. Southern Nuclear shall immediately notify the NRC of any accident at this facility which could result in an unplanned release of quantities of fission products in excess of allowable limits for normal operation established by the Commission.
- I. Alabama Power Company shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

J. The following Order\* is incorporated into this license by reference:

- (1) "Order Modifying License Confirming Additional Licensee Commitments on Emergency Response Capability (Supplement 1 to NUREG-0737)," dated July 27, 1985.

K. This license is effective as of the date of issuance and shall expire at midnight, March 31, 2021.

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\* Prior to Southern Nuclear being authorized to operate Joseph M. Farley Nuclear Plant, Unit 2, the term "licensee" referred to Alabama Power Company. Hence, the term "licensee" applies to Alabama Power Company for those orders which were fully complied with prior to Southern Nuclear being added to the operating license.

Attachment 2

Marked-Up Revisions of Operating Licenses  
Illustrating NRC Requested Changes from May 6, 1991 Submittal

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SOUTHERN NUCLEAR OPERATING COMPANY

ALABAMA POWER COMPANY

DOCKET NO. 50-348

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1

FACILITY OPERATING LICENSE

License No. NPF-2

1. The Nuclear Regulatory Commission (the Commission) having found that:

- A. ~~The application for license filed by Southern Nuclear Operating Company (herein called Southern Nuclear) and Alabama Power Company (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 <sup>or Farley</sup> the Joseph M. Farley Nuclear Plant, Unit 1 (the facility) has been substantially 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. 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;

use with asterisk on page 2

make asterisks larger

Southern Nuclear succeeds Alabama Power Company as the operator of Joseph M. Farley Nuclear Plant, Unit 1. ~~Consequently,~~ 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. ~~Hereinafter, the term "licensees" refers to both Southern Nuclear and Alabama Power Company.~~

Farley - Unit 1

7/1

Operating Company\* (herein called Southern Nuclear)

Together, Southern Nuclear and Alabama Power Company

- E. Southern Nuclear is technically qualified and ~~the~~ licensees are financially qualified to engage in the activities authorized by this operating license in accordance with the rules and regulations of the Commission;
- F. Alabama Power Company 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 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-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
- 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 Part 50, 40 and 70, including 10 CFR Sections 30.33, 40.32, 70.23 and 70.31.

2. Facility Operating License No. NPF-2 is hereby issued to ~~the~~ licensees to read as follows:

Southern Nuclear and Alabama Power Company

- A. This 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 created 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 license;

Farley-Unit 1

- (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 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 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:

Forby - Unit 1



(1) Maximum Power Level

~~The licensee~~ <sup>Southern Nuclear</sup> is authorized to operate the facility at steady state reactor core power levels not in excess of 2652 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 license in the sequence specified. Attachment 2 is an integral part of this license.

(2) Technical Specifications

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Southern Nuclear

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. ~~88~~ are hereby incorporated in the license. ~~The licensee~~ 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 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) 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

~~The term "licensee" (singular) shall refer to Southern Nuclear.~~

~~The original licensee authorized to possess, use, and operate the facility was Alabama Power Company. Consequently, certain historical references to Alabama Power Company remain in the license conditions.~~

Farley-Unit 1

(e) Prior to startup following the first regularly scheduled refueling outage, Alabama Power Company shall replace instrumentation for measurement of the pressurizer level, the steam generator wide range level, the steam generator narrow range level, and the reactor coolant system pressure with the corresponding modified instrumentation identified in Amendment Number 65 to the Final Safety Analysis Report.

Deleted per Amendment 2

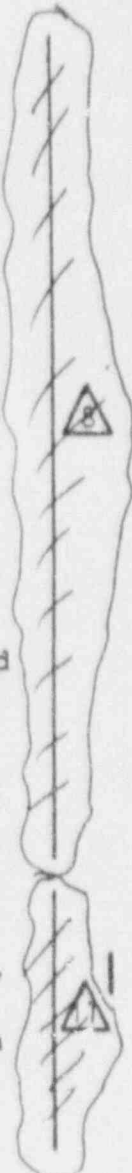
(f) Southern Nuclear shall not use the spent fuel cask crane for the purpose of moving spent fuel casks prior to submission to and approval by the Commission of the design of the lifting devices which attach the spent fuel cask to the crane.

(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. <sup>AP</sup> Procedure for the recording and maintenance 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) Fire Protection Program

Southern Nuclear shall maintain in effect and fully implement all provisions of the approved fire protection plan. The approved fire protection plan consists of the document entitled, "Farley Nuclear Plant Fire Protection Program Reevaluation" which includes:



Farley - Unit 1

Initial Issue, submitted with letter dated September 15, 1977;

Amendment 1, submitted with letter dated February 23, 1978;

Amendment 2, submitted with letter dated July 14, 1978;

Amendment 3, submitted with letter dated October 27, 1978;

Amendment 4, submitted with letter dated January 3, 1979.

Alabama Power Company may proceed with and is required to complete the modifications identified in Tables 1, 2 and 3 of the NRC's Joseph M. Farley Safety Evaluation Report, Fire Protection Review, Unit Nos. 1 and 2 dated February 12, 1979. Most of the modifications will be completed before the end of the second refueling outage for Unit No. 1. Exceptions are smoke detectors, penetration seals and barriers which will be completed by September 1, 1980. In the event that these modifications cannot be completed as identified in Tables 1, 2 and 3, Alabama Power Company shall submit a report, explaining the circumstances, together with a revised schedule for NRC approval.

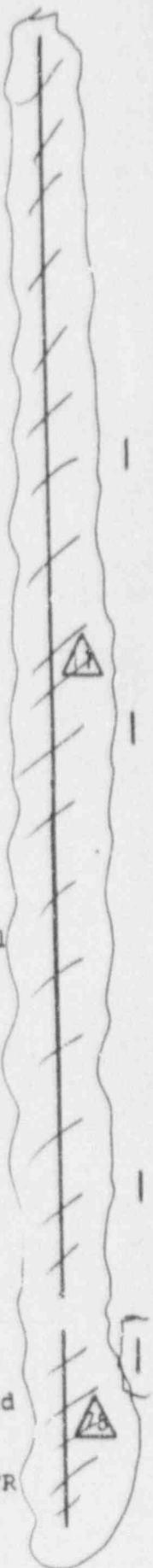
Administrative control changes and procedure revisions shall be implemented as described in NRC's Safety Evaluation Report dated February 12, 1979.

Further, by January 1, 1980, Alabama Power Company shall provide for Commission review and obtain Commission approval of the final design of the modifications prior to implementation which would allow the reactor to be taken to cold shutdown without reliance on the cable spreading room, or the control room.

The fire protection program modifications are described in the Commission-approved Farley Nuclear Plant Fire Protection Program. Southern Nuclear is authorized to make other changes to the program without prior Commission approval provided that such changes do not result in a decrease in the effectiveness of the

PROGRAM.

- D. Southern Nuclear The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard 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 50.60



Farley - Unit 1

and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Joseph M. Farley Nuclear Plant Physical Security Plan," with revisions submitted through November 17, 1987; "Joseph M. Farley Nuclear Plant Guard Training and Qualification Plan," with revisions submitted through April 12, 1982; and "Joseph M. Farley Nuclear Plant Safeguards Contingency Plan," with revisions submitted through March 28, 1980. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein.



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

(1) *Southern Nuclear* ~~The licensee~~ shall operate the facility within applicable Federal and State air and water quality standards and the Environmental Technical Specifications which include nonradiological and radiological monitoring programs, limits on effluent releases, and appropriate comprehensive ecological surveillance study, and reporting requirements.

(2) Before engaging in an operational activity not evaluated by the Commission, *Southern Nuclear* ~~the licensee~~ 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* ~~the licensee~~ 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 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



*Farley - Unit 1*

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



Farley - Unit 1

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 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:

- (1) of electric energy from delivery points of Alabama Power Company to said distribution system(s); and
- (2) of power generated by or available to a distribution system as a result of its ownership or entitlement 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.

"Entitlement" includes but is not limited to power made available to an entity pursuant to an exchange agreement.

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Sanley - Unit 1

Alabama Power Company shall make reasonable provisions for disclosed transmission requirements of any distribution system(s) in planning future transmission. By "disclosed" is meant 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.

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 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 v. 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 license shall be subject to the outcome of such proceedings.

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- H. The following Orders\* are incorporated into this license by reference:

- (1) "Environmental Qualification of Electrical Equipment," dated August 29, 1980.

Prior to Southern Nuclear being authorized to operate Joseph M. Farley Nuclear Plant, Unit 1, the term "licensee" referred to Alabama Power Company. Hence, the term "licensee" applies to Alabama Power Company for those orders which were fully complied with by Alabama Power Company prior to Southern Nuclear being added to the operating license.

Farley - Unit 1

- (2) "Order for Modification of License Concerning Primary Coolant System Pressure Isolation Valves," dated April 20, 1981.
- (3) "Order Modifying License Confirming Additional Licensee Commitments on Emergency Response Capability (Supplement 1 to NUREG-0737)," dated July 27, 1985.

I. This license is effective as of the date of issuance and shall expire at midnight, June 25, 2017.



Farley - Unit 1



ATTACHMENT 2 TO LICENSE NPF-2

Preoperational Tests, Startup Tests, and  
Other Items Which Must be Completed Prior to Proceeding  
to Succeeding Operational Modes

This attachment identifies certain preoperational tests, startup tests, and other items which must be completed to the Commission's satisfaction prior to proceeding to certain specified Operational Modes. Alabama Power Company shall not proceed beyond the authorized Operational Modes without prior written authorization from the Commission.

- A. Alabama Power Company may at the license issue date proceed directly to Operational Mode 6 (initial fuel loading), and may subsequently proceed to Operational Mode 2 (startup), except as noted below.
- B. The following items must be completed prior to proceeding to Operational Mode 2 (startup):
  1. Satisfactory completion of the following tests:
    - a. 032-5-002 Heating and Ventilation (Radiation Areas)
    - b. 036-5-005 Turbine Driven Auxiliary Feedwater Pump
    - c. 037-4-005 Demineralizer Water System
    - d. 044-4-003 Condensate Systems
    - e. 045-5-003 Feedwater System
    - f. 052-5-012 Boron Injection System - Trace Heating
    - g. 060-5-008 Containment Purge and Exhaust
    - h. 061-5-005 Spray Additive Tank Flow Rate Verification
    - i. 063-5-005 Steam Generator Blowdown
    - j. 066-5-002 Reactor Cavity Cooling
    - k. 068-5-003 Solid Radioactive Waste System
    - l. 068-5-004 Drumming Station Heat 'acing
    - m. 069-5-023 Waste Evaporator
    - n. 069-5-026 Floor Drain Tank
    - o. 072-5-004 Gaseous Radioactive Waste
    - p. 094-4-003 Secondary System Chemical Addition System
    - q. 100-5-010 Pre-Critical Heatup Thermal Expansion
  2. Completion of modification of sample sink exhaust ventilation in the Auxiliary Building Sample Room.

71-

Farley - Unit 1

3. Completion of installation of single point recorders for the six effluent radiation monitors.
4. Completion of installation of integrator and recorder for liquid effluent line and installation of integrator for dilution water line.
5. Completion of installation of flow rate measuring, recording and integrating instrumentation for the plant vent.
6. Resolution of the measures and modifications required to ensure the successful operation of the ITT Grinnel Hydraulic Shock Suppressors.

Forley - Unit 1

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SOUTHERN NUCLEAR OPERATING COMPANY  
ALABAMA POWER COMPANY  
DOCKET NO. 50-364  
JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2  
FACILITY OPERATING LICENSE

License No. NPF-8

1. The Nuclear Regulatory Commission (the Commission or the NRC) having found that:

A. The application for licenses filed by Southern Nuclear Operating Company (herein called Southern Nuclear) and the Alabama Power Company (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, and all required notifications to other agencies or bodies have been duly made;

B. Construction of the Joseph M. Farley Nuclear Plant, Unit 2 (the facility) has been substantially completed in conformity with Construction Permit No. CPPR-86 and the application, as amended, the provisions of the Act and the regulations of the Commission;

C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the 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 Commission's regulations set forth in 10 CFR Chapter I;

Southern Nuclear succeeds Alabama Power Company as the operator of Joseph M. Farley Nuclear Plant, Unit 2. Consequently, 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. Hereinafter, the term "licensees" refers to both Southern Nuclear and Alabama Power Company.

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Farley - Unit 2

Operating Company\* (herein called Southern Nuclear)

Together  
Southern Nuclear  
and Alabama  
Power Company

Southern Nuclear is technically qualified and the licensees are financially qualified to engage in the activities authorized by this license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;

- F. The Alabama Power Company 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 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-8, subject to the conditions for protection of the environment set forth in the Environmental Protection Plan which is Appendix B to this license, is in accordance with 10 CFR Part 50, Appendix D, 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.

2. Pursuant to approval by the Nuclear Regulatory Commission at a meeting on March 11, 1981, the License for Fuel Loading and Low Power Testing (NPF-8), issued on October 23, 1980, as amended, is superseded by Facility Operating License NPF-8 which is hereby issued to the licensees to read as follows:

Southern Nuclear and Alabama Power Company

- A. This license applies to the Joseph M. Farley Nuclear Plant, Unit 2, 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 in Houston County, Alabama, and is described in the "Final Safety Analysis Report," as supplemented and amended, and in the Environmental Report, as supplemented and amended.

Farley - Unit 2

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, to possess, manage, use, maintain, and operate the facility at the designated location in Houston County, Alabama, in accordance with the limitations set forth in this 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 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, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

"Licensing of Production and Utilization Facilities"

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I 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:

Stanley - Unit 21

(1) Maximum Power Level

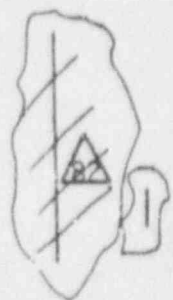
Southern Nuclear is authorized to operate the facility at reactor core power levels not in excess of 2652 megawatts thermal.

(2) Technical Specifications

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Southern Nuclear

The Technical specifications contained in Appendices A and B, as revised through Amendment No. 82 are hereby incorporated in the license. ~~The licensee~~ shall operate the facility in accordance with the Technical Specifications.



(3) Initial Test Program

Alabama Power Company shall conduct the initial test program (set forth in Section 14 of ~~the~~ the licensee's Final Safety Analysis Report as amended) without making any modifications to this program unless such modifications are in accordance with the provisions of 10 CFR Section 50.59. In addition, Alabama Power Company shall not make any major modifications to this program unless the modifications have been identified and have received prior NRC approval. Major modifications are defined as:

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

(4) ~~The licensee~~ <sup>Southern Nuclear</sup> shall not use the spent fuel cask crane for the purpose of moving spent fuel casks prior to approval by the NRC of the lifting devices which attach the spent fuel cask to the crane.

~~The term "licensee" shall refer to Southern Nuclear.~~

~~The original licensee authorized to possess, use, and operate the facility was Alabama Power Company. Consequently, certain historical references to Alabama Power Company remain in the license conditions.~~

Stanley - Unit 2

(5) The interval for testing pumps and valves in accordance with 10 CFR 50.55 a(g)(2) is 120 months commencing with the start of commercial operation. Alabama Power Company shall provide additional information needed by the NRC to complete its detailed review of the Alabama Power Company's inservice testing program for pumps and valves no later than 6 months prior to the end of the first 120-month interval.

(6) Fire Protection Program

Southern Nuclear shall maintain in effect and fully implement all provisions of the approved fire protection plan except as modified by the NRC's Joseph M. Farley Safety Evaluation Report, Fire Protection Review, Units 1 and 2, transmitted to Alabama Power Company on April 13, 1979 (Fire Protection SER). The approved fire protection plan consists of the document entitled "Farley Nuclear Plant Fire Protection Program Reevaluation" which includes:

Initial Issue, submitted with letter dated September 15, 1977;

Amendment 1, submitted with letter dated February 23, 1978;

Amendment 2, submitted with letter dated July 14, 1978;

Amendment 3, submitted with letter dated October 27, 1978;

Amendment 4, submitted with letter dated January 3, 1979, and amended by letter dated October 21, 1980.

Administrative control changes and procedure revisions shall be implemented and maintained in effect as described in NRC's Fire Protection SER.

Southern Nuclear shall comply with the fire protection program set forth in Appendix R to 10 CFR Part 50 in accordance with the requirements of §50.48 of 10 CFR Part 50.

(7) No later than 90 days from the date of original issuance of this license, Alabama Power Company shall report to the NRC the status of any items related to emergency preparedness identified by FEMA in its plan, evaluation, and exercise critique, or by the NRC in its SER and Supplements as requiring further action.

Farley - Unit 2

Alabama Power Company shall complete its plans for prompt notification, staffing for emergencies, upgrading the meteorological program, and upgrading emergency support facilities on the NRC approved schedule identified in the following sections of SER Supplement 5:

Section 22.5, Dated Requirements:

- Item III.A.1.2 Upgrade Emergency Support Facilities
- Item III.A.2 Long Term Emergency Preparedness

Appendix B Emergency Preparedness Evaluation Report:

- Section B Onsite Emergency Organization
- Section E Notification Methods and Procedures

- (8) On a one-time only basis, The Action Statement of Technical Specification 3.7.4. shall be replaced by the following:

Action:

With only one service water loop OPERABLE, restore at least two loops to OPERABLE status within 72\* hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

\*This 72-hour limit is extended on a one-time only basis to a maximum of 10 days for the recirculation portion of each service water loop to permit system modifications. Modifications, affecting operability, shall be made on only one of the two service water loops at a time. One loop shall remain OPERABLE until the other loop has been modified and returned to OPERABLE status. All other portions of the service water system are not covered by this one-time only change. All modifications to both loops are scheduled for completion by May 15, 1981.

For record purposes, this license condition expires 90 days from date of original license issuance.

- (9) (a) Prior to exceeding ~~5~~ percent power, Alabama Power Company shall provide to the NRC the results of the following seven augmented low power tests:
  - natural circulation
  - natural circulation with simulated loss of offsite power

Farley - Unit 2



- natural circulation with loss of pressurized heaters
- effect of steam generator secondary side isolation on natural circulation
- natural circulation at reduced pressure
- cooldown capability of the charging and let down system
- simulated loss of all onsite and offsite ac power

(b) After operation for 25,000 MW(e) days and at its next shutdown of sufficient time duration but in any case no later than prior to the startup following the first refueling outage, results of a test of natural circulation cooldown with boron mixing shall be submitted to the NRC. However, this license condition may be satisfied in the same time frame by the Alabama Power Company's providing analyses to show that test results of such test performance at other plants are applicable to Farley 2.



- (10) Prior to exceeding 9-percent power, Alabama Power Company shall make fully operational the post-accident sampling system.
- (11) Prior to exceeding 5-percent power, Alabama Power Company shall complete the training for mitigating core damage.
- (12) Alabama Power Company shall modify procedures and, if necessary, equipment used for natural circulation cooldown as follows:
- (a) Prior to exceeding 5-percent power, Alabama Power Company shall perform tests to demonstrate manual operation of an atmospheric steam dump valve.
  - (b) Prior to startup following the first refueling, Alabama Power Company shall make provisions (or modifications) as necessary to assure that the safety grade backup means of reactor coolant system depressurization is in accordance with the requirements of Table 1 in Branch Technical Position RSB 5-1, Rev. 1.
  - (c) Prior to startup following the first refueling, Alabama Power Company shall provide to the NRC natural circulation cooldown procedures, based on reactor natural circulation cooldown test results applicable to Farley Unit 2.

Farley - Unit 2

- (13) Prior to exceeding 5-percent power, Alabama Power Company shall (a) modify and test reset circuits for the containment air mixing fans, containment purge isolation valves, and auxiliary feedwater pump discharge valves to meet the requirements of IE Bulletin 80-06 "Engineered Safety Feature Reset Controls", and (b) revise procedures to be consistent with the modified designs required by (a).
- (14) Prior to exceeding 5-percent power, the following equipment which was not required to be operable by the Fuel Loading and Low Power Testing License is exempt from the Technical Specification (TS) that requires a demonstration of operability:
- All fire detectors listed in TS Table 3.3-12 except those in containment (Fire Zone 55)
  - Reactor coolant system isolation valves listed in TS Table 3.4-1.
- (15) Prior to May 31, 1981, Alabama Power Company shall complete modifications to the subcooling monitor system identified in Item II.F.2, Section 22.3 in SER Supplement 5, NUREG-0117.
- (16) Prior to startup following the second refueling, Alabama Power Company shall complete modifications for Masonry Wall 2 CBW-34 to meet the NRC staff criteria.
- (17) Prior to October 1, 1981, Alabama Power Company shall submit to the NRC the design of a modified containment vent and purge system to reduce the use of the 18-inch purge valves during power operation. Prior to startup following the first refueling, Alabama Power Company shall install the modified system.
- (18) Alabama Power Company shall take the following remedial actions, or alternative actions, acceptable to the NRC, with regard to the environmental qualification requirements for Class IE equipment:
- (a) Complete and auditable records shall be available and maintained at a central location which describe the environmental qualification method used for all safety-related electrical equipment in sufficient detail to document the degree of compliance with NUREG-0588, "Interim Staff Position on Environmental Qualification of Safety-Related Electrical Equipment," dated December 1979. Such records shall be updated and maintained current as equipment is



Stanley - Unit 2

replaced, further tested, or otherwise further qualified to document complete compliance no later than June 30, 1982.

- (b) Within 90 days of receipt of the equipment qualification safety evaluation (Appendix B to SER Supplement 6, NUREG-0117), Alabama Power Company shall either (i) provide missing documentation identified in Sections 3.0, 4.2 and 4.3 of the equipment qualification safety evaluation which will demonstrate compliance of the applicable equipment with NUREG-0588, or (ii) commit to corrective actions which will result in documentation of compliance of applicable equipment with NUREG-0588 no later than June 30, 1982.
  - (c) No later than June 30, 1982, all safety-related electrical equipment in the facility shall be qualified in accordance with the provisions of NUREG-0588.
- (19) Prior to resuming power operation following the first refueling, Alabama Power Company shall:
- (a) Provide additional evaluations of the Westinghouse fuel performance code (PAD 3.3) to demonstrate its applicability to fuel burnups during successive fuel cycles.
  - (b) Complete the remaining modifications to the primary and backup circuit protection devices in the containment penetration circuits (which are not completed during the first refueling outage) during the next extended cold shutdown after the first refueling outage, but no later than during the second refueling outage.
  - (c) Modify the lubrication system of the two Fairbanks-Morse opposed-piston diesel generators by installing a pre-lube pump arranged for automatic and manual start and powered from a reliable DC power supply or install an equivalent or better system which will prevent dry starting of the diesel generators on an automatic start signal. Alabama Power Company shall submit the system final design and implementation schedule to the NRC within six months after this license is issued.
  - (d) Inspect the main steam turbine for indications of low pressure rotor disc cracking, or replace the present low pressure rotors with refurbished rotors.



Larley - Unit 2

(20) Prior to April 30, 1981, Alabama Power Company shall provide a schedule to the NRC for bringing the facility into compliance with Revision 2 of Regulatory Guide 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," dated December 1980.

(21) Alabama Power Company shall complete each of the following conditions to the satisfaction of the NRC by the times indicated. Each of the following conditions references the appropriate item in Section 22.5, "Dated Requirements" in SER Supplement 5, NUREG-0117:

(a) Guidance for the Evaluation and Development of Procedures for Transients and Accidents (I.C.1)

Prior to startup following the first refueling after January 1, 1982, complete the upgrading of emergency procedures and associated operator training.

(b) Reactor Coolant System Vents (II.B.1)

Submit a design description and operating procedures for reactor coolant system vents prior to July 1, 1981 and complete installation prior to July 1, 1982.

(c) Plant Shielding (II.B.2)

At the next cold shutdown period of sufficient duration after material availability, but at the latest no later than prior to startup after the first refueling outage, the remaining modifications shall be completed. These modifications are as described in Alabama Power Company letter dated February 11, 1982. The modifications are to assure access to vital areas and protection of safety equipment following an accident resulting in a degraded core.



(d) Relief and Safety Valve Tests (II.D.1)

Provide information to the NRC based on tests to demonstrate qualification of relief valves, block valves, and associated piping as follows:

- (1) Report demonstrating qualification of relief valves, and associated piping prior to October 1, 1981.

Larley - Unit 2

(2) Report demonstrating qualification of block valves prior to July 1, 1982.

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

Prior to startup following the first refueling, make modifications to the control and protection circuits for the auxiliary feedwater system to enhance the reliability and tolerance of the system to failures. Submit the design of these modifications to the NRC prior to July 1, 1981.

(f) Additional Accident Monitoring Instruments  
(II.F.1)

Install and provide information regarding accident monitoring instruments as follows:

- (1) Install noble gas effluent monitors prior to January 1, 1982.
- (2) Install capability for continuous sampling of plant gas effluents prior to exceeding 5-percent power.
- (3) Install high-range radioactivity monitors in the containment prior to January 1, 1982.
- (4) Provide a description of containment pressure instruments prior to June 1, 1981 and install pressure instruments prior to January 1, 1982.
- (5) Provide a description of a containment water level measurement system prior to June 1, 1981 and install water level system prior to January 1, 1982.
- (6) Provide a description of the use of the installed hydrogen indication monitors prior to June 1, 1981 and make modifications, if required, prior to January 1, 1982.

(g) Inadequate Core Cooling Instruments (II.F.2)

For the proposed reactor vessel water level instrument,

Farley - Unit 2

- (1) Provide detailed design information identified in Section 22.5 of SER Supplement 5, Requirement A, Parts (1)(a), (3), (4), (7), (8), and (9) prior to July 1, 1981.
- (2) Provide results of tests on Farley Unit 1 for consideration in this facility prior to July 1, 1981.
- (3) Provide planned program to complete development, including any additional test data needed to determine feasibility, prior to January 1, 1982.

(h) Commission Orders on Babcock & Wilcox Plants, Subsequently Applied to all PWR Plants (II.K.2)

Prior to January 1, 1982,

*add space*

- (1) Submit a detailed analysis of the thermal mechanical conditions in the reactor vessel during recovery from small break LOCAs with an extended loss of all feedwater (II.K.2.13).
- (2) Provide an analysis of the potential for voiding in the reactor coolant system during anticipated transients (II.K.2.17).
- (3) Provide a bench mark analysis of sequential auxiliary feedwater flow to the steam generators following a loss of main feedwater (II.K.2.19).

(i) Final Recommendations of B&O Task Force (II.K.3)

- (1) With respect to an automatic power-operated relief valve (PORV) isolation system (II.K.3.1 and II.K.3.2):
  - (i) Perform a safety examination of an automatic PORV isolation system (II.K.3.1) per the requirement of II.K.3.2.
  - (ii) If an automatic PORV isolation system is required per (i) above, provide the information identified under the "Documentation Required" section of II.K.3.1 of NUREG-0737 by July 1, 1981.

*Farley - Unit 2*

- (iii) If required from (i) above, complete installation and testing of the modified automatic PORV isolation system prior to startup following the first refueling outage that is scheduled to occur more than 6 months after NRC approval of the design.
- (2) With respect to tripping of reactor coolant pumps (RCPs) (II.K.3.5):
- (i) Submit to the NRC for approval either (1) an evaluation which shows that sufficient time is available to the operator to manually trip the RCPs in the event of a small break LOCA, or (2) a description of design modifications required to provide for an automatic pump trip. This submittal is required within three months after NRC determination of acceptability of the small break LOCA model based on comparisons with LOFT test L3-6.
  - (ii) If required based on (i) above, complete plant modifications to provide for automatic tripping of reactor coolant pumps within 11 months after NRC determination of model acceptability, provided there is an appropriate outage during that time interval to complete installation or during the first such scheduled outage occurring thereafter.
- (3) With respect to reliability of reactor coolant pump seal cooling (II.K.3.25),
- (i) Prior to January 1, 1982, submit results of analyses or experiments to determine consequences of a loss of cooling water to the reactor coolant pump seal coolers and describe any modifications found necessary.
  - (ii) Prior to July 1, 1982, complete any necessary modifications.

- (4) With respect to a revised small break LOCA model,
  - (i) Prior to January 1, 1982, submit to the NRC a revised model to account for recent experimental data (II.K.3.30).
  - (ii) Submit to the NRC the results of plant-specific calculations using the NRC-approved revised model prior to January 1, 1983.

D. Southern Nuclear ~~The licensee~~ shall fully implement and maintain in effect all provisions of the Commission-approved physical security, guard 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 plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Joseph M. Farley Nuclear Plant Physical Security Plan," with revisions submitted through November 17, 1987; "Joseph M. Farley Nuclear Plant Guard Training and Qualification Plan," with revisions submitted through April 12, 1982; and "Joseph M. Farley Nuclear Plant Safeguards Contingency Plan," with revisions submitted through March 28, 1980. Changes made in accordance with 10 CFR 73.55 shall be implemented in accordance with the schedule set forth therein.



E. Southern Nuclear ~~The licensee~~ shall report any violations of the requirements contained in Section 2, Items C.(3) through C.(21), and D of this license within 24 hours by telephone and confirm by telegram, mailgram, or facsimile transmission to the Director for Region II of the Office of Inspection and Enforcement, or the Director's designate, no later than the first working day following the violation, with a written followup report within 14 days.

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



Farley - Unit 2



AEC and 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.

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

Farley - Unit 2

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 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:

- (1) of electric energy from delivery points of Alabama Power Company to said distribution system(s); and
- (2) of power generated by or available to a distribution system as a result of its ownership or entitlement 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.

"Entitlement" includes but is not limited to power made available to an entity pursuant to an exchange agreement.

Use larger asterisks



Larley - Unit 2

Alabama Power Company shall make reasonable provisions for disclosed transmission requirements of any distribution system(s) in planning future transmission. By "disclosed" is meant 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.

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 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. The facility requires relief from certain requirements of 10 CFR 50.55a(g) and exemptions from Appendices G, H and J to 10 CFR Part 50. The relief and exemptions are described in the Office of Nuclear Reactor Regulation's Safety Evaluation Report, Supplement No. 5. They are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. Therefore, the relief and exemptions are hereby granted. With the granting of these 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.

H. Southern Nuclear shall immediately notify the NRC of any accident at this facility which could result in an unplanned release of quantities of fission products in excess of allowable limits for normal operation established by the Commission.

I. The Alabama Power Company shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.



Farley - Unit 2

J. The following Order is incorporated into this license by reference:

- (1) "Order Modifying License Confirming Additional Licensee Commitments on Emergency Response Capability (Supplement 1 to NUREG-0737)," dated July 27, 1985.

K. This license is effective as of the date of issuance and shall expire at midnight, March 31, 2021.



Make asterisks larger

Prior to Southern Nuclear being authorized to operate Joseph M. Farley Nuclear Plant, Unit 2, the term "licensee" referred to Alabama Power Company. Hence, the term "licensee" applies to Alabama Power Company for those orders which were fully complied with prior to Southern Nuclear being added to the operating license.

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Farley - Unit 2