

OCT 23 1980

Docket No. 50-364

Mr. F. L. Clayton, Jr.  
 Senior Vice President  
 Alabama Power Company  
 Post Office Box 2641  
 Birmingham, Alabama 35291

Dear Mr. Clayton:

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2 - ISSUANCE OF LICENSE NO. NPF-8

The Nuclear Regulatory Commission (the Commission) has issued the enclosed License No. NPF-8 to the Alabama Power Company for the Joseph M. Farley Nuclear Plant, Unit 2, located in Houston County, Alabama. License No. NPF-8 authorizes fuel loading and low power testing.

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

Two signed originals of Amendment No. 7 to Indemnity Agreement No. B-81 which covers the activities authorized under License No. NPF-8 are enclosed. Please sign and return one copy to this office.

Sincerely,

D. G. Eisenhut, Director  
 Division of Licensing  
 Office of Nuclear Reactor Regulation

## Enclosures:

1. License No. NPF-8
2. Federal Register Notice
3. Amendment 7 to Indemnity Agreement B-81

*(see tech specs)*

cc w/enclosures:  
 See next page

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OFFICE	LB #2/DL	LB #2/DL	OELD	LB #2/DL	A/DL	D:DL
SURNAME	MService/LLM	LKintner	DSWANSON	B. Youngblood ASchwencer	RL Tedesco	D. Eisenhut
DATE	9/ /80	9/24/80	10/2/80	9/25/80	10/23/80	10/23/80

ccs w/enclosures:

Mr. Alan R. Barton  
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Mr. Ruble A. Thomas  
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1800 M Street, N. W.  
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Ira L. Myers, M.D.  
State Health Officer  
State Dept of Public Health  
State Office Building  
Montgomery, Alabama 36104

Honorable A. A. Middleton  
Chairman  
Houston County Commission  
Dothan, Alabama 36301

U.S. Environmental Protection Agency  
Attn: EIS Coordinator  
Region IV Office  
345 Courtland Street, N.E.  
Atlanta, Georgia 30308

U.S. Environmental Protection Agency  
Attn: Ms. F. Munter  
Office of Federal Activities  
Room W-535, Waterside Mall  
401 M Street, S. W.  
Washington, D. C. 20460

Attorney General  
State Capitol  
Montgomery, Alabama 36104

Defense Mapping Agency  
Aerospace Center  
St. Louis Air Force Station  
Missouri 63118

Federal Energy Regulatory Commission  
825 North Capital Street, N.E.  
Washington, D. C. 20426

Mr. W. Bradford  
NRC Resident Inspector/Farley  
P. O. Box 1814  
Dothan, Alabama 36302

ALABAMA POWER COMPANY

DOCKET NO. 50-364

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2

LICENSE FOR FUEL LOADING AND LOW POWER TESTING

License No. NPF-8

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

- A. The application for licenses filed by the 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), 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. The Alabama Power Company is technically and 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;

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- 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 License No. NPF-8, subject to the conditions for protection of the environment set forth in the Environmental Protection Plan, 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 September 4, 1980, Facility License No. NPF-8 is hereby issued to the Alabama Power Company to read as follows:
- 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. The facility is located in Houston County, Alabama., and is described in Alabama Power Company's "Final Safety Analysis Report," as supplemented and amended, and in its Environmental Report, as supplemented and amended.
- B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses the Alabama Power Company:
- (1) Pursuant to Section 103 of the Act and 10 CFR Part 50, to possess, use, and operate the facility at the designated location in Houston County, Alabama, in accordance with the limitations set forth in this license;
  - (2) Pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
  - (3) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
  - (4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

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- (5) 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

Alabama Power Company is authorized to (a) load fuel, (b) proceed to initial criticality, (c) perform startup testing at zero power in Operational Mode 2, and (d) after prior written approval by the Director of Nuclear Reactor Regulation or the Director of Licensing, operate the facility for testing at reactor core power levels not in excess of 132 Megawatts thermal (five percent of rated power).

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B attached hereto are hereby incorporated in this license. The Alabama Power Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Initial Test Program

Alabama Power Company shall conduct the initial criticality and low power test program (set forth in Sections 14.1.4.2.1 and 14.1.4.2.2 of Alabama Power Company's Final Safety Analysis Report and its amendments) that has been reviewed and approved by the NRC at the time of issuance of this license. Alabama Power Company shall not make 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 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 Alabama Power Company's 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 Alabama Power Company's Final Safety Analysis Report, as amended;
- c. Performance of any test at a power level different from the power level in the described program; and

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- d. Failure to complete any tests included in the described program (planned or scheduled for power levels up to the authorized power level).
- (4) No later than 90 days following issuance of the pending Revision 2 of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident", which was issued for public comment in December 1979, Alabama Power Company shall provide a schedule acceptable to the NRC for bringing this facility in compliance with Regulatory Guide 1.97, as revised.
- (5) 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) No later than November 1, 1980, Alabama Power Company shall submit information to show compliance with the requirements of NUREG-0588, "Interim Staff Position on Environmental Qualification of Safety-Related Electrical Equipment," for safety-related equipment exposed to a harsh environment;
- (b) Pursuant to SECY-80-370 dated August 6, 1980, no later than December 1, 1980, complete and auditable records must 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. Thereafter, 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.
- (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.
- (6) Alabama Power Company shall not use the spent fuel cask crane for the purpose of moving spent fuel casks prior to submission to and approval by the NRC of the design of the lifting devices which attach the spent fuel cask to the crane.
- (7) 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. The Alabama Power Company shall provide additional information needed by the NRC to complete its detailed review of Alabama Power Company's inservice testing program for pumps and valves prior to the end of the first 120 month interval.
- (8) Alabama Power Company shall process solid waste at Farley Unit 2 on an interim basis using the Farley Unit 1 process control program

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pending approval in writing by the NRC of the final process control program. Further, no later than December 1, 1980, Alabama Power Company shall submit for NRC evaluation acceptable bases and justifications for the final process control program to assure that shipped solid wastes will conform to applicable burial ground requirements. Subsequent to final NRC approval, Alabama Power Company shall use equipment and process solid wastes in accordance with the approved program.

- (9) Prior to fuel loading Alabama Power Company will complete to the satisfaction of the Office of Inspection and Enforcement a verification that preservice inspection data reveals no rejectable indication.
- (10) Prior to initial criticality Alabama Power Company shall complete to the satisfaction of the Office of Inspection and Enforcement the preoperational testing on the following systems: liquid radiological waste, gaseous radiological waste, containment purge, auxiliary building ventilation, and the radiation monitoring systems associated with the above systems.
- (11) Fire Protection Program

Alabama Power Company 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, and amended by letter dated October 21, 1980.

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. All modifications shall be completed prior to fuel loading except (1) smoke detectors in the auxiliary building and (2) hose stations in the Unit 2 cable tunnels between the diesel generator building and the auxiliary building. These two items must be completed prior to November 1, 1980.

Alabama Power Company, as described in the letter dated October 23, 1980, will perform a program of quality document review and, where necessary, fire protection system installation inspections. The

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review and installation verification inspections are to be completed prior to initial criticality. Discrepancies, if found, will be resolved to the satisfaction of the Office of Inspection and Enforcement.

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

(12) Fuel Load and Zero Power Testing Conditions

The following conditions shall be completed to the satisfaction of the NRC. Unless otherwise noted, the conditions shall all be completed prior to fuel loading. The following conditions are related to matters specified in NUREG-0694 "TMI-Related Requirements for New Operating Licenses," June 1980 and applicable to fuel load and zero power testing. Each of the following conditions references the appropriate item in Section 22.2 of Supplement No. 4 to the Safety Evaluation Report (NUREG-0117) for the Joseph M. Farley Nuclear Plant Unit 2 and follows the numbering sequence utilized in NUREG-0694.

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

Alabama Power Company shall provide a Shift Technical Advisor (STA) whose principal duty shall be to act as an advisor to the shift supervisor in assessment of accident and transient occurrences.

During 1980, Shift Technical Advisors who have been previously approved for Farley Unit 1 will also serve as Shift Technical Advisors on Unit 2. The Shift Technical Advisor has the title Shift Foreman - Inspecting.

No later than January 1, 1981, all STAs shall be fully trained in accordance with the requirements stated in NRC's letter to Alabama Power Company dated October 30, 1979.

The training shall be taught at the college level and be equivalent to about 60 semester hours.

b. Shift Manning (I.A.1.3)

The shift manning shall be as shown in Table 6.2-1 of the Technical Specifications. This table shall be in effect until the licensee has additional licensed operators to fully meet the new requirements described in the NRC letter of July 31, 1980, but no later than May 1, 1981 without prior approval by the NRC.

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

Overtime shall not be routinely used to meet the shift crew staffing requirements of the Technical Specifications. When overtime is used, the limits described in Section 6.2.2 of the Technical Specifications shall apply. However, for those circumstances which arise requiring deviation from the overtime limits, such deviation may be authorized by the plant manager or higher levels of Alabama Power Company management in accordance with established procedures and with appropriate documentation of the cause.

c. Accident Analysis and Procedure Revision (I.C.1)

Alabama Power Company shall revise its emergency operating instructions for dealing with the small break LOCAs and inadequate core cooling based on its analysis of these events and the vendor guidelines derived from these analyses. These requirements supersede the requirements specified in Item 7(b) of IE Bulletin 79-06A.

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

Alabama Power Company shall implement shift and relief turnover procedures that provide the oncoming shift with adequate knowledge of critical plant status information and system availability. A checklist or similar hard copy will be completed by and signed by oncoming shifts at each shift turnover. These checklists will be periodically reviewed by the shift supervisor or his assistant and will be held in the plant files for one month following review. The Alabama Power Company shall establish a system to evaluate the effectiveness of the turnover procedures.

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

Alabama Power Company shall issue a corporate management directive that clearly establishes the command duties of the shift supervisor and emphasizes the primary management responsibilities for safe operation of the plant, and shall revise plant procedures to clearly define the duties, responsibilities and authority of the shift supervisor and control room operators.

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

Alabama Power Company shall revise plant procedures to limit access to the control room to those individuals responsible for the direct operation of the plant, technical advisors, specified NRC personnel, and to establish a clear line of authority, responsibility, and succession in the control room.

g. Procedures for feedback of Operating Experience to Plant Staff (I.C.5)

Alabama Power Company shall review and revise, as necessary, procedures to assure that operating experiences are fed back to operators and other personnel.

h. Training for Mitigating Core Damage (II.B.4)

Alabama Power Company shall develop a training program for the use of installed equipment and systems to control or mitigate accidents in which the core is severely damaged. The training program shall include the following topics:

Incore Instrumentation

- 1) Use of fixed or movable incore detectors to determine extent of core damage or geometry changes, and
- 2) Use of thermocouples in determining peak temperatures; methods for extended range readings; methods for direct readings at terminal junctions.

Excore Nuclear Instrumentation (NIS)

- 1) Use of NIS for determination of void formation; void location basis for NIS response as a function of core temperatures and density changes.

Vital Instrumentation

- 1) Instrumentation response in an accident environment; failure sequence (time to failure, method of failure); indication reliability (actual vs. indicated level); and
- 2) Alternative methods for measuring flows, pressures, levels, and temperatures:

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- a) Determination of pressurizer level if all level transmitters fail;
- b) Determination of letdown flow with a clogged filter (low flow); and
- c) Determination of other Reactor Coolant System parameters if the primary method of measurement has failed.

Primary Chemistry

- 1) Expected chemistry results with severe core damage; consequences of transferring small quantities of liquid outside containment; importance of using of leak tight systems;
- 2) Expected isotopic breakdown for core damage, for clad damage; and
- 3) Corrosion effects of extended immersion in primary water; time to failure.

Radiation Monitoring

- 1) Response of Process and Area Monitors to severe damage; behavior of detectors when saturated; method for detecting radiation readings by direct measurement at detector output (overanged detector); expected accuracy of detectors at different locations; use of detectors to determine extent of core damage; and
- 2) Methods of determining dose rate inside containment from measurements taken outside containment.

Gas Generation

- 1) Methods of hydrogen (H ) generation during an accident; other sources of gas (xenon, krypton); techniques for venting or disposal of noncondensibles; and
- 2) Hydrogen (H ) flammability and explosive limit; sources of oxygen (O ) in containment or Reactor Coolant System.

i. Relief and Safety Valve Test Requirement (II.D.1)

Alabama Power Company shall develop a test program and schedule for testing to qualify the relief and safety valves under expected operating conditions for design basis transients and accidents as provided in NUREG-0578, Section 2.1.2, as clarified in NRC letter to operating license applicants dated November 9, 1979.

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j. Relief and Safety Valve Position Indication (II.D.3)

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

k. Additional Accident Monitoring Instrumentation (II.F.1)

Alabama Power Company shall implement procedures for estimating noble gas, radiiodine and particulate release rates if the existing effluent instrumentation goes offscale during an accident.

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

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

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

Alabama Power Company shall provide a description of additional instruments to provide an unambiguous indication of inadequate core cooling. In fulfilling this requirement, Alabama Power Company shall comply with NUREG-0578, Section 2.1.3.b, as clarified in NRC letter to operating license applicants dated November 9, 1979.

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

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

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

Alabama Power Company shall review the operating procedures and training instructions requested by Item 7(a) of IE Bulletin 79-06A. This review should ensure that operators have been instructed not to override automatic operations of the engineered safety

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features, unless their continued operation would result in unsafe plant conditions, or until the plant is clearly in a stable, controlled state, and engineered safeguards are no longer required.

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

Alabama Power Company shall provide analyses and test data, as defined in Requirement C.3.10 of II.K.3 in NUREG-0694 prior to operation above zero power, to support its conclusion that with the anticipatory trips on the turbine stop valve bypassed below 50% power, the power operated relief valve will not be opened for load rejections from 50% power.

q. Upgrade Emergency Preparedness (III.A.1.1)

Alabama Power Company shall maintain in effect an emergency plan, during the period of this license that meets:

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

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

r. Upgrade Emergency Support Facilities (III.A.1.2)

Alabama Power Company shall establish an interim onsite technical support center separate from, but close to, the control room for engineering and management support of reactor operations during an accident. The center shall be large enough for the necessary utility personnel and five NRC personnel, have direct display or callup of plant parameters, and dedicated communications with the control room, the emergency operations center, and the NRC. Alabama Power Company shall also provide a description of the permanent technical support center.

Alabama Power Company shall establish an onsite operational support center, separate from but with communications to the control room for use by operations support personnel during an accident.

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Alabama Power Company shall designate a near-site emergency operations facility with communications with the plant to provide evaluation of radiation releases and coordination of all onsite and offsite activities during an accident.

s. In-Plant Radiation Monitoring (III.D.3.3)

Alabama Power Company shall provide equipment training and procedures for accurately determining the airborne iodine concentration throughout the plant under accident conditions.

(13) Conditions on Operations Beyond Zero Power Testing

The following conditions shall be completed to the satisfaction of the NRC prior to proceeding beyond zero power testing. The following conditions are related to matters specified in NUREG-0694 "TMI Related Requirements for New Operating Licenses" June 1980, and applicable to operation beyond zero power testing. Each of the following conditions references the appropriate item in Section 22.2 of Supplement No. 4 to the Safety Evaluation Report (NUREG-0117) for the Joseph M. Farley Nuclear Plant Unit 2 and follows the numbering sequence utilized in the NUREG-0694.

a. NSSS Vendor Review of Procedures (I.C.7)

Alabama Power Company's low power test procedures shall be reviewed by the nuclear steam supply system vendor, Westinghouse, and documentation of the review submitted to NRC.

b. Training During Low Power Testing (I.G.1)

Alabama Power Company shall obtain NRC approval of the augmented low power test program prior to initiation of the tests.

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

Prior to installation, Alabama Power Company shall submit a description of the design modifications to provide train separation of the power supply for the auxiliary feedwater flow control solenoid valves. Prior to operation above zero power, the revised power supply shall be installed and operable.

- D. Alabama Power Company shall maintain and fully implement the physical security plan entitled "Joseph M. Farley Nuclear Plant Modified Amended Security Plan" dated August 30, 1979, as supplemented by its letter dated August 18, 1980, and as amended in accordance with the provisions of 10 CFR §50.54(p).

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Prior to fuel loading, Alabama Power Company shall have fully implemented, to the satisfaction of the NRC, the additional measures forwarded with its letter of August 18, 1980.

In addition to all other commitments contained in the physical security plan, and Alabama Power Company's letter of August 18, 1980, all keys, locks, combinations, and related equipment used to control access to protected or vital areas shall be controlled to reduce the probability of compromise. Whenever there is evidence that any such key, lock combination, or related equipment may have been compromised, it shall be changed. Upon termination of employment of any employee, such keys, locks, combinations, and related equipment to which that employee had access, shall be changed.

Pursuant to 10 CFR Section 2.790(d), the security plan is being withheld from public disclosure because it is deemed to be commercial or financial information within the meaning of 10 CFR Section 9.5(a)(4) and subject to disclosure only in accordance with 10 CFR Section 9.12.

- E. Alabama Power Company shall report any violations of the requirements contained in Section 2, Items C.(3) through C.(13), and D of this license within 24 hours by telephone and confirm by telegram, mailgram, or facsimile transmission to the Director of the Regional Office, or his designate, no later than the first working day following the violation, with a written followup report within 14 days.
- F. Antitrust aspects are pending before the Atomic Safety and Licensing Appeal Panel and the following antitrust conditions may be modified as a result of this continued litigation. Alabama Power Company (the Licensee) shall meet the following antitrust conditions:
- (1) Licensee shall recognize and accord to Alabama Electric Cooperative, Inc. (AEC), the status of a competing electric utility in central and southern Alabama, and shall take no actions and engage in no course of conduct having the purpose and effect of treating AEC as a mere customer of Licensee for the sale of wholesale power.
  - (2) Licensee will sell to AEC unit power from Units 1 and 2 of Joseph M. Farley Nuclear Plant. The amount of capacity to be sold by Licensee from such units to AEC shall be an amount based on a ratio of (a) the aggregate coincident demand of all wholesale-for-resale members of AEC in Alabama during the hour of peak demand on the electric system of Licensee in 1976 to (b) the sum of such coincident demands of AEC and the territorial peak-hour demands of Licensee (excluding therefrom the peak-hour demands imposed by members of AEC upon the electric system of Licensee) during the hour of peak demand on Licensee's electric system in 1976. Contractual arrangements will be entered into between Licensee and AEC by the terms of which AEC will be entitled to purchase and receive the percentage of electrical

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output of the respective Farley units determined in accordance with the foregoing ratio. Such output from the respective units will be supplied by Licensee to AEC for the entire commercial service life of the particular units. Such contractual arrangements will also provide that AEC shall pay Licensee on a monthly basis for the capacity portion of such unit power, amounts representing the percentage of Licensee's fixed costs in such nuclear units based upon the ratio described above. Such contractual arrangements shall also provide that AEC shall pay Licensee on a monthly basis for the energy portion of such unit power, amounts representing the percentage of Licensee's variable costs incurred in the operation of such units based upon the ratio of energy generated for AEC's account to the total energy generated by such units during the billing month. The provisions of such contractual arrangements shall clearly provide that the net effect of such payments to be made by AEC shall be that AEC will pay its proportionate share of Licensee's total costs related to such nuclear units including, but not limited to, all costs of construction, installation, ownership, licensing and operation of such units, but no more than such proportionate share. The contracts covering such unit power shares shall embrace pricing and charges reflecting conventional accounting and rate-making concepts established and applied by the Federal Power Commission or its successor in function, and any disputes concerning the identification or application of such concepts shall be determined by and in accordance with procedures of the Federal Power Commission or its successor in function.

- (3) Licensee will provide transmission services to enable AEC to receive on its electric system such portion of its entitlement to the output of the Farley units as AEC requires in the operation of its integrated electric system, and, in addition, Licensee will provide transmission services to the existing members of AEC physically connected to Licensee to enable such members to utilize any of the allocation of AEC's portion of the output of the Farley units. Contractual arrangements will be entered into between Licensee and AEC or, at the option of AEC, between Licensee and such members by the terms of which Licensee will be paid for such transmission services on the basis of the ownership, maintenance and operation costs associated with such transmission services. The contractual arrangements covering such transmission services shall embrace rates and charges reflecting conventional accounting and rate-making concepts followed by the Federal Power Commission or its successor in function in testing the reasonableness of rates and charges for transmission services. Such contractual arrangements shall contain provisions protecting Licensee against any

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economic detriment resulting from transmission line or transformation losses associated with such transmission services.

- (4) Licensee will also provide AEC such other bulk power supply services as may be required by it or such members to cover situations where such unit power to which AEC shall become contractually entitled is unavailable because of forced outages, maintenance requirements or other unavailability of the Farley Nuclear Unit for any reason whatever. Such additional or supplemental services may be considered in the context of the 1972 Interconnection Agreement now in effect or as such agreement might be modified in accordance with paragraph four hereof. In addition, Licensee will supply the partial power requirements of the existing members of AEC physically connected to Licensee which may be reasonably necessary to cover their requirements over and above (a) the power available to them through their arrangements with SEPA and (b) the allocation of any unit power from AEC under the arrangements contemplated under paragraphs two and three above. The contractual arrangements covering the services described in this paragraph shall be on a basis reflecting Licensee's costs and at rates and charges reflecting conventional accounting and rate-making concepts followed by the Federal Power Commission or its successors in function.
- (5) Licensee will enter into appropriate contractual arrangements amending the 1972 Interconnection Agreement as last amended to provide for a reserve sharing arrangement between Licensee and AEC under which the reserve obligation of AEC is no greater than the reserve obligation undertaken by Licensee under the terms of the Southern Company Pool Interchange Agreement. It is the intent and purpose of such contract modification to eliminate from the 1972 Interconnection Agreement between Licensee and AEC a provision relating to protective capacity purchased by AEC.
- (6) 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.
- 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. 4. 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.

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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. The Alabama Power Company 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.
- J. This license is effective as of the date of issuance and shall expire one year after that date.

FOR THE NUCLEAR REGULATORY COMMISSION

Harold R. Denton, Director  
Office of Nuclear Reactor Regulation

Attachment:

- 1. Appendix A - Technical Specifications (NUREG-0697)
- 2. Appendix B - Environmental Protection Plan

Date of Issuance:  
October 23, 1980

*Handwritten notes:* AS14-100, 10/25/80, correction on p12, 10/27/80, 10/9/80, 10/23/80, 10/24/80, 10/26/80, 10/27/80, 10/28/80

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DATE	9/24/80	10/2/80	9/26/80	10/23/80	10/23/80	10/27/80

*Handwritten initials and signatures:* AS14, DSwanson, JRutberg, RLTedesco, DE:Robut, HRDenton, NMSS/SG, RBurnett, ATealston, BJGoughblood, ASchwenger, LB 2/2/80, OAL, 10/27/80, 10/9/80, 10/23/80, 10/24/80, 10/26/80, 10/27/80, 10/28/80

DOCKET NO. 50-364

ALABAMA POWER COMPANY

NOTICE OF ISSUANCE OF LICENSE NO. NPF-8

Notice is hereby given that the Nuclear Regulatory Commission (the Commission) has issued License No. NPF-8 to Alabama Power Company authorizing fuel loading and low power testing of the Joseph M. Farley Nuclear Plant, Unit 2. Joseph M. Farley Nuclear Plant, Unit 2, is a pressurized water reactor located in Houston County, Alabama. Prior public notice of the overall action involving the proposed issuance of a license for fuel loading and low power testing was issued in the FEDERAL REGISTER on November 29, 1973 (38 FR 29907).

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

The Commission has determined that the issuance of this license will not result in any environmental impacts other than those evaluated in the Final Environmental Statement since the activity authorized by the license is encompassed by the overall action evaluated in the Final Environmental Statement.

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

A copy of (1) License No. NPF-8, complete with Technical Specifications (NUREG-0697) and Environmental Protection Plan; (2) the report of the Advisory Committee on Reactor Safeguards dated June 12, 1975; (3) the Office of Nuclear Reactor Regulation's

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OFFICE	LB-2	LB-2	OELD	LB-2	LB-1	
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Safety Evaluation Report (NUREG-75/034) dated May 1975, Supplement 1 dated October 1975, Supplement 2 dated October 1976, Supplement 3 dated June 1977 and Supplement 4 dated September 1980 (supplements are NUREG-0117); (4) the Final Safety Analysis Report and amendments thereto; (5) the applicant's Environmental Report and supplements thereto; (6) the Draft Environmental Statement dated July 1974; (7) The Final Environmental Statement dated December 1974, the Environmental Assessment dated April 1977, and the Addendum dated September 1980 (NUREG-0727); and (8) the NRC Flood Plain Review of the Joseph M. Farley Nuclear Plant site dated September 17, 1980, are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C., and the G. S. Houston Memorial Library, 212 W. Burdeshaw Street, Dothan, Alabama 36303.

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

Copies of the Safety Evaluation Report and Supplements, and the Final Environmental Statement and addendums may be purchased at current rates, from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161, and through the NRC GPO sales program by writing to the U. S. Nuclear Regulatory Commission, Attention: Sales Manager, Washington, D. C. 20555. GPO deposit holders can call 301-492-9530.

Dated at Bethesda, Maryland, this ~~23~~<sup>15</sup>nd day of October 1980.

FOR THE NUCLEAR REGULATORY COMMISSION

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B. J. Youngblood, Chief  
Licensing Branch No. 1  
Division of Licensing

OFFICE						
SURNAME						
DATE						



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

ALABAMA POWER COMPANY

DOCKET NO. 50-364

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2

LICENSE FOR FUEL LOADING AND LOW POWER TESTING

License No. NPF-8

1. The Nuclear Regulatory Commission (the Commission) having found that:
  - A. The application for licenses filed by the 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), 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. The Alabama Power Company is technically and 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;

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- 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 License No. NPF-8, subject to the conditions for protection of the environment set forth in the Environmental Protection Plan, 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 September 4, 1980, Facility License No. NPF-8 is hereby issued to the Alabama Power Company to read as follows:
- 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. The facility is located in Houston County, Alabama., and is described in Alabama Power Company's "Final Safety Analysis Report," as supplemented and amended, and in its Environmental Report, as supplemented and amended.
  - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses the Alabama Power Company:
    - (1) Pursuant to Section 103 of the Act and 10 CFR Part 50, to possess, use, and operate the facility at the designated location in Houston County, Alabama, in accordance with the limitations set forth in this license;
    - (2) Pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
    - (3) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
    - (4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

- (5) Pursuant to the Act and 10 CFR Parts 30, 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

Alabama Power Company is authorized to (a) load fuel, (b) proceed to initial criticality, (c) perform startup testing at zero power in Operational Mode 2, and (d) after prior written approval by the Director of Nuclear Reactor Regulation or the Director of Licensing, operate the facility for testing at reactor core power levels not in excess of 132 Megawatts thermal (five percent of rated power).

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B attached hereto are hereby incorporated in this license. The Alabama Power Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Initial Test Program

Alabama Power Company shall conduct the initial criticality and low power test program (set forth in Sections 14.1.4.2.1 and 14.1.4.2.2 of Alabama Power Company's Final Safety Analysis Report and its amendments) that has been reviewed and approved by the NRC at the time of issuance of this license. Alabama Power Company shall not make 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 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 Alabama Power Company's 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 Alabama Power Company's Final Safety Analysis Report, as amended;
- c. Performance of any test at a power level different from the power level in the described program; and

review and installation verification inspections are to be completed prior to initial criticality. Discrepancies, if found, will be resolved to the satisfaction of the Office of Inspection and Enforcement.

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

(12) Fuel Load and Zero Power Testing Conditions

The following conditions shall be completed to the satisfaction of the NRC. Unless otherwise noted, the conditions shall all be completed prior to fuel loading. The following conditions are related to matters specified in NUREG-0694 "TMI-Related Requirements for New Operating Licenses," June 1980 and applicable to fuel load and zero power testing. Each of the following conditions references the appropriate item in Section 22.2 of Supplement No. 4 to the Safety Evaluation Report (NUREG-0117) for the Joseph M. Farley Nuclear Plant Unit 2 and follows the numbering sequence utilized in NUREG-0694.

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

Alabama Power Company shall provide a Shift Technical Advisor (STA) whose principal duty shall be to act as an advisor to the shift supervisor in assessment of accident and transient occurrences.

During 1980, Shift Technical Advisors who have been previously approved for Farley Unit 1 will also serve as Shift Technical Advisors on Unit 2. The Shift Technical Advisor has the title Shift Foreman - Inspecting.

No later than January 1, 1981, all STAs shall be fully trained in accordance with the requirements stated in NRC's letter to Alabama Power Company dated October 30, 1979.

The training shall be taught at the college level and be equivalent to about 60 semester hours.

b. Shift Manning (I.A.1.3)

The shift manning shall be as shown in Table 6.2-1 of the Technical Specifications. This table shall be in effect until the licensee has additional licensed operators to fully meet the new requirements described in the NRC letter of July 31, 1980, but no later than May 1, 1981 without prior approval by the NRC.



- d. Failure to complete any tests included in the described program (planned or scheduled for power levels up to the authorized power level).
- (4) No later than 90 days following issuance of the pending Revision 2 of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident", which was issued for public comment in December 1979, Alabama Power Company shall provide a schedule acceptable to the NRC for bringing this facility in compliance with Regulatory Guide 1.97, as revised.
- (5) 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) No later than November 1, 1980, Alabama Power Company shall submit information to show compliance with the requirements of NUREG-0588, "Interim Staff Position on Environmental Qualification of Safety-Related Electrical Equipment," for safety-related equipment exposed to a harsh environment;
  - (b) Pursuant to SECY-80-370 dated August 6, 1980, no later than December 1, 1980, complete and auditable records must 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. Thereafter, 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.
  - (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.
- (6) Alabama Power Company shall not use the spent fuel cask crane for the purpose of moving spent fuel casks prior to submission to and approval by the NRC of the design of the lifting devices which attach the spent fuel cask to the crane.
- (7) 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. The Alabama Power Company shall provide additional information needed by the NRC to complete its detailed review of Alabama Power Company's inservice testing program for pumps and valves prior to the end of the first 120 month interval.
- (8) Alabama Power Company shall process solid waste at Farley Unit 2 on an interim basis using the Farley Unit 1 process control program

pending approval in writing by the NRC of the final process control program. Further, no later than December 1, 1980, Alabama Power Company shall submit for NRC evaluation acceptable bases and justifications for the final process control program to assure that shipped solid wastes will conform to applicable burial ground requirements. Subsequent to final NRC approval, Alabama Power Company shall use equipment and process solid wastes in accordance with the approved program.

- (9) Prior to fuel loading Alabama Power Company will complete to the satisfaction of the Office of Inspection and Enforcement a verification that preservice inspection data reveals no rejectable indication.
- (10) Prior to initial criticality Alabama Power Company shall complete to the satisfaction of the Office of Inspection and Enforcement the preoperational testing on the following systems: liquid radiological waste, gaseous radiological waste, containment purge, auxiliary building ventilation, and the radiation monitoring systems associated with the above systems.

(11) Fire Protection Program

Alabama Power Company 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, and amended by letter dated October 21, 1980.

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. All modifications shall be completed prior to fuel loading except (1) smoke detectors in the auxiliary building and (2) hose stations in the Unit 2 cable tunnels between the diesel generator building and the auxiliary building. These two items must be completed prior to November 1, 1980.

Alabama Power Company, as described in the letter dated October 23, 1980, will perform a program of quality document review and, where necessary, fire protection system installation inspections. The

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

Overtime shall not be routinely used to meet the shift crew staffing requirements of the Technical Specifications. When overtime is used, the limits described in Section 6.2.2 of the Technical Specifications shall apply. However, for those circumstances which arise requiring deviation from the overtime limits, such deviation may be authorized by the plant manager or higher levels of Alabama Power Company management in accordance with established procedures and with appropriate documentation of the cause.

c. Accident Analysis and Procedure Revision (I.C.1)

Alabama Power Company shall revise its emergency operating instructions for dealing with the small break LOCAs and inadequate core cooling based on its analysis of these events and the vendor guidelines derived from these analyses. These requirements supersede the requirements specified in Item 7(b) of IE Bulletin 79-06A.

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

Alabama Power Company shall implement shift and relief turnover procedures that provide the oncoming shift with adequate knowledge of critical plant status information and system availability. A checklist or similar hard copy will be completed by and signed by oncoming shifts at each shift turnover. These checklists will be periodically reviewed by the shift supervisor or his assistant and will be held in the plant files for one month following review. The Alabama Power Company shall establish a system to evaluate the effectiveness of the turnover procedures.

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

Alabama Power Company shall issue a corporate management directive that clearly establishes the command duties of the shift supervisor and emphasizes the primary management responsibilities for safe operation of the plant, and shall revise plant procedures to clearly define the duties, responsibilities and authority of the shift supervisor and control room operators.

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

Alabama Power Company shall revise plant procedures to limit access to the control room to those individuals responsible for the direct operation of the plant, technical advisors, specified NRC personnel, and to establish a clear line of authority, responsibility, and succession in the control room.

g. Procedures for feedback of Operating Experience to Plant Staff (I.C.5)

Alabama Power Company shall review and revise, as necessary, procedures to assure that operating experiences are fed back to operators and other personnel.

h. Training for Mitigating Core Damage (II.B.4)

Alabama Power Company shall develop a training program for the use of installed equipment and systems to control or mitigate accidents in which the core is severely damaged. The training program shall include the following topics:

Incore Instrumentation

- 1) Use of fixed or movable incore detectors to determine extent of core damage or geometry changes, and
- 2) Use of thermocouples in determining peak temperatures; methods for extended range readings; methods for direct readings at terminal junctions.

Excore Nuclear Instrumentation (NIS)

- 1) Use of NIS for determination of void formation; void location basis for NIS response as a function of core temperatures and density changes.

Vital Instrumentation

- 1) Instrumentation response in an accident environment; failure sequence (time to failure, method of failure); indication reliability (actual vs. indicated level); and
- 2) Alternative methods for measuring flows, pressures, levels, and temperatures:

- a) Determination of pressurizer level if all level transmitters fail;
- b) Determination of letdown flow with a clogged filter (low flow); and
- c) Determination of other Reactor Coolant System parameters if the primary method of measurement has failed.

#### Primary Chemistry

- 1) Expected chemistry results with severe core damage; consequences of transferring small quantities of liquid outside containment; importance of using of leak tight systems;
- 2) Expected isotopic breakdown for core damage, for clad damage; and
- 3) Corrosion effects of extended immersion in primary water; time to failure.

#### Radiation Monitoring

- 1) Response of Process and Area Monitors to severe damage; behavior of detectors when saturated; method for detecting radiation readings by direct measurement at detector output (overanged detector); expected accuracy of detectors at different locations; use of detectors to determine extent of core damage; and
- 2) Methods of determining dose rate inside containment from measurements taken outside containment.

#### Gas Generation

- 1) Methods of hydrogen (H ) generation during an accident; other sources of gas (xenon, krypton); techniques for venting or disposal of noncondensibles; and
- 2) Hydrogen (H ) flammability and explosive limit; sources of oxygen (O ) in containment or Reactor Coolant System.

#### i. Relief and Safety Valve Test Requirement (II.D.1)

Alabama Power Company shall develop a test program and schedule for testing to qualify the relief and safety valves under expected operating conditions for design basis transients and accidents as provided in NUREG-0578, Section 2.1.2, as clarified in NRC letter to operating license applicants dated November 9, 1979.

j. Relief and Safety Valve Position Indication (II.D.3)

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

k. Additional Accident Monitoring Instrumentation (II.F.1)

Alabama Power Company shall implement procedures for estimating noble gas, radioiodine and particulate release rates if the existing effluent instrumentation goes offscale during an accident.

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

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

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

Alabama Power Company shall provide a description of additional instruments to provide an unambiguous indication of inadequate core cooling. In fulfilling this requirement, Alabama Power Company shall comply with NUREG-0578, Section 2.1.3.b, as clarified in NRC letter to operating license applicants dated November 9, 1979.

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

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

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

Alabama Power Company shall review the operating procedures and training instructions requested by Item 7(a) of IE Bulletin 79-06A. This review should ensure that operators have been instructed not to override automatic operations of the engineered safety

features, unless their continued operation would result in unsafe plant conditions, or until the plant is clearly in a stable, controlled state, and engineered safeguards are no longer required.

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

Alabama Power Company shall provide analyses and test data, as defined in Requirement C.3.10 of II.K.3 in NUREG-0694 prior to operation above zero power, to support its conclusion that with the anticipatory trips on the turbine stop valve bypassed below 50% power, the power operated relief valve will not be opened for load rejections from 50% power.

q. Upgrade Emergency Preparedness (III.A.1.1)

Alabama Power Company shall maintain in effect an emergency plan, during the period of this license that meets:

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

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

r. Upgrade Emergency Support Facilities (III.A.1.2)

Alabama Power Company shall establish an interim onsite technical support center separate from, but close to, the control room for engineering and management support of reactor operations during an accident. The center shall be large enough for the necessary utility personnel and five NRC personnel, have direct display or callup of plant parameters, and dedicated communications with the control room, the emergency operations center, and the NRC. Alabama Power Company shall also provide a description of the permanent technical support center.

Alabama Power Company shall establish an onsite operational support center, separate from but with communications to the control room for use by operations support personnel during an accident.

Alabama Power Company shall designate a near-site emergency operations facility with communications with the plant to provide evaluation of radiation releases and coordination of all onsite and offsite activities during an accident.

s. In-Plant Radiation Monitoring (III.D.3.3)

Alabama Power Company shall provide equipment training and procedures for accurately determining the airborne iodine concentration throughout the plant under accident conditions.

(13) Conditions on Operations Beyond Zero Power Testing

The following conditions shall be completed to the satisfaction of the NRC prior to proceeding beyond zero power testing. The following conditions are related to matters specified in NUREG-0694 "TMI Related Requirements for New Operating Licenses" June 1980, and applicable to operation beyond zero power testing. Each of the following conditions references the appropriate item in Section 22.2 of Supplement No. 4 to the Safety Evaluation Report (NUREG-0117) for the Joseph M. Farley Nuclear Plant Unit 2 and follows the numbering sequence utilized in the NUREG-0694.

a. NSSS Vendor Review of Procedures (I.C.7)

Alabama Power Company's low power test procedures shall be reviewed by the nuclear steam supply system vendor, Westinghouse, and documentation of the review submitted to NRC.

b. Training During Low Power Testing (I.G.1)

Alabama Power Company shall obtain NRC approval of the augmented low power test program prior to initiation of the tests.

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

Prior to installation, Alabama Power Company shall submit a description of the design modifications to provide train separation of the power supply for the auxiliary feedwater flow control solenoid valves. Prior to operation above zero power, the revised power supply shall be installed and operable.

- D. Alabama Power Company shall maintain and fully implement the physical security plan entitled "Joseph M. Farley Nuclear Plant Modified Amended Security Plan" dated August 30, 1979, as supplemented by its letter dated August 18, 1980, and as amended in accordance with the provisions of 10 CFR §50.54(p).



Prior to fuel loading, Alabama Power Company shall have fully implemented, to the satisfaction of the NRC, the additional measures forwarded with its letter of August 18, 1980.

In addition to all other commitments contained in the physical security plan, and Alabama Power Company's letter of August 18, 1980, all keys, locks, combinations, and related equipment used to control access to protected or vital areas shall be controlled to reduce the probability of compromise. Whenever there is evidence that any such key, lock combination, or related equipment may have been compromised, it shall be changed. Upon termination of employment of any employee, such keys, locks, combinations, and related equipment to which that employee had access, shall be changed.

Pursuant to 10 CFR Section 2.790(d), the security plan is being withheld from public disclosure because it is deemed to be commercial or financial information within the meaning of 10 CFR Section 9.5(a)(4) and subject to disclosure only in accordance with 10 CFR Section 9.12.

- E. Alabama Power Company shall report any violations of the requirements contained in Section 2, Items C.(3) through C.(13), and D of this license within 24 hours by telephone and confirm by telegram, mailgram, or facsimile transmission to the Director of the Regional Office, or his designate, no later than the first working day following the violation, with a written followup report within 14 days.
- F. Antitrust aspects are pending before the Atomic Safety and Licensing Appeal Panel and the following antitrust conditions may be modified as a result of this continued litigation. Alabama Power Company (the Licensee) shall meet the following antitrust conditions:
  - (1) Licensee shall recognize and accord to Alabama Electric Cooperative, Inc. (AEC), the status of a competing electric utility in central and southern Alabama, and shall take no actions and engage in no course of conduct having the purpose and effect of treating AEC as a mere customer of Licensee for the sale of wholesale power.
  - (2) Licensee will sell to AEC unit power from Units 1 and 2 of Joseph M. Farley Nuclear Plant. The amount of capacity to be sold by Licensee from such units to AEC shall be an amount based on a ratio of (a) the aggregate coincident demand of all wholesale-for-resale members of AEC in Alabama during the hour of peak demand on the electric system of Licensee in 1976 to (b) the sum of such coincident demands of AEC and the territorial peak-hour demands of Licensee (excluding therefrom the peak-hour demands imposed by members of AEC upon the electric system of Licensee) during the hour of peak demand on Licensee's electric system in 1976. Contractual arrangements will be entered into between Licensee and AEC by the terms of which AEC will be entitled to purchase and receive the percentage of electrical

output of the respective Farley units determined in accordance with the foregoing ratio. Such output from the respective units will be supplied by Licensee to AEC for the entire commercial service life of the particular units. Such contractual arrangements will also provide that AEC shall pay Licensee on a monthly basis for the capacity portion of such unit power, amounts representing the percentage of Licensee's fixed costs in such nuclear units based upon the ratio described above. Such contractual arrangements shall also provide that AEC shall pay Licensee on a monthly basis for the energy portion of such unit power, amounts representing the percentage of Licensee's variable costs incurred in the operation of such units based upon the ratio of energy generated for AEC's account to the total energy generated by such units during the billing month. The provisions of such contractual arrangements shall clearly provide that the net effect of such payments to be made by AEC shall be that AEC will pay its proportionate share of Licensee's total costs related to such nuclear units including, but not limited to, all costs of construction, installation, ownership, licensing and operation of such units, but no more than such proportionate share. The contracts covering such unit power shares shall embrace pricing and charges reflecting conventional accounting and rate-making concepts established and applied by the Federal Power Commission or its successor in function, and any disputes concerning the identification or application of such concepts shall be determined by and in accordance with procedures of the Federal Power Commission or its successor in function.

- (3) Licensee will provide transmission services to enable AEC to receive on its electric system such portion of its entitlement to the output of the Farley units as AEC requires in the operation of its integrated electric system, and, in addition, Licensee will provide transmission services to the existing members of AEC physically connected to Licensee to enable such members to utilize any of the allocation of AEC's portion of the output of the Farley units. Contractual arrangements will be entered into between Licensee and AEC or, at the option of AEC, between Licensee and such members by the terms of which Licensee will be paid for such transmission services on the basis of the ownership, maintenance and operation costs associated with such transmission services. The contractual arrangements covering such transmission services shall embrace rates and charges reflecting conventional accounting and rate-making concepts followed by the Federal Power Commission or its successor in function in testing the reasonableness of rates and charges for transmission services. Such contractual arrangements shall contain provisions protecting Licensee against any

economic detriment resulting from transmission line or transformation losses associated with such transmission services.

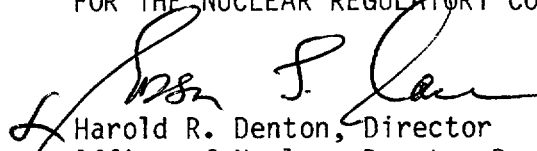
- (4) Licensee will also provide AEC such other bulk power supply services as may be required by it or such members to cover situations where such unit power to which AEC shall become contractually entitled is unavailable because of forced outages, maintenance requirements or other unavailability of the Farley Nuclear Unit for any reason whatever. Such additional or supplemental services may be considered in the context of the 1972 Interconnection Agreement now in effect or as such agreement might be modified in accordance with paragraph four hereof. In addition, Licensee will supply the partial power requirements of the existing members of AEC physically connected to Licensee which may be reasonably necessary to cover their requirements over and above (a) the power available to them through their arrangements with SEPA and (b) the allocation of any unit power from AEC under the arrangements contemplated under paragraphs two and three above. The contractual arrangements covering the services described in this paragraph shall be on a basis reflecting Licensee's costs and at rates and charges reflecting conventional accounting and rate-making concepts followed by the Federal Power Commission or its successors in function.
- (5) Licensee will enter into appropriate contractual arrangements amending the 1972 Interconnection Agreement as last amended to provide for a reserve sharing arrangement between Licensee and AEC under which the reserve obligation of AEC is no greater than the reserve obligation undertaken by Licensee under the terms of the Southern Company Pool Interchange Agreement. It is the intent and purpose of such contract modification to eliminate from the 1972 Interconnection Agreement between Licensee and AEC a provision relating to protective capacity purchased by AEC.
- (6) 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.

- 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. 4. 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. The Alabama Power Company 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.
- J. This license is effective as of the date of issuance and shall expire one year after that date.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Harold R. Denton, Director  
Office of Nuclear Reactor Regulation

Attachment:

- 1. Appendix A - Technical Specifications (NUREG-0697)
- 2. Appendix B - Environmental Protection Plan

Date of Issuance:  
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