SOUTHERN NUCLEAR OPERATING COMPANY

ALABAMA POWER COMPANY

DOCKET NO. 50-364

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2

RENEWED FACILITY OPERATING LICENSE NO. NPF-8

1. The Nuclear Regulatory Commission (NRC or the Commission) having previously made the findings set forth in Facility Operating License No. NPF-8 issued on March 31, 1981, has now found that:

   A. The application to renew License No. NPF-8 filed by Southern Nuclear Operating Company[1] (herein called Southern Nuclear) (the licensee) acting for itself and for Alabama Power Company, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I and all required notifications to other agencies or bodies have been duly made;

   B. Construction of the Joseph M. Farley Nuclear Plant, Unit 2 (the facility or Farley), has been 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. Actions have been identified and have been or will be taken with respect to (i) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1), and (ii) time-limited aging analyses that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by this renewed license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for Joseph M. Farley Nuclear Plant, Unit 2, and that any changes made to the plant's current licensing basis in order to comply with 10 CFR 54.29(a) are in accord with the Act and the Commission's regulations;

   D. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission;

   E. There is reasonable assurance: (i) that the activities authorized by this renewed 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;

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[1] Southern Nuclear succeeds Alabama Power Company as the operator of Joseph M. Farley Nuclear Plant, Unit 2. Southern Nuclear is authorized to act a agent for Alabama Power Company and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

F. Southern Nuclear is technically qualified and, together, Southern Nuclear and Alabama Power Company are financially qualified to engage in the activities authorized by this renewed license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;

G. Alabama Power Company has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;

H. The issuance of this renewed license will not be inimical to the common defense and security or to the health and safety of the public;

I. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of Renewed Facility Operating License No. NPF-8, subject to the conditions for protection of the environment set forth in the Environmental Protection Plan which is Appendix B to this renewed license, is in accordance with 10 CFR Part 51 (formerly Appendix D to 10 CFR Part 50), of the Commission's regulations and all applicable requirements have been satisfied; and

J. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this renewed license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40 and 70.

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 Renewed Facility Operating License NPF-8 which is hereby issued to Southern Nuclear and Alabama Power Company to read as follows:

A. This renewed license applies to the Joseph M. Farley Nuclear Plant, Unit 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 renewed license;

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

(3) Southern Nuclear, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;

(4) Southern Nuclear, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(5) Southern Nuclear, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(6) Southern Nuclear, pursuant to the Act and 10 CFR Parts 30, 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 renewed 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 2821 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 246, are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

(3) Deleted per Amendment 144
(4) Deleted per Amendment 149
(5) Deleted per Amendment 144

(6) Fire Protection

Southern Nuclear Operating Company shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee amendment requests dated September 25, 2012; April 25, 2016; December 14, 2018; and supplements dated December 20, 2012; September 16, 2013; October 30, 2013; November 12, 2013; April 23, 2014; May 23, 2014; July 3, 2014; August 11, 2014; August 29, 2014; October 13, 2014; January 16, 2015, and August 11, 2017, as approved in the safety evaluation reports dated March 10, 2015, October 17, 2016, November 1, 2017, and July 30, 2019. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

(a) Risk-Informed Changes that May Be Made Without Prior NRC Approval

A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at Farley. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed fire PRA model, methods that have been approved by NRC through a plant-specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

1. Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

2. Prior NRC review and approval is not required for individual changes that result in a risk increase less than 1×10^{-7}/year (yr) for CDF and less than 1×10^{-8}/yr for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

(b) Other Changes that May Be Made Without Prior NRC Approval

1. Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program

Prior NRC review and approval are not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to an NFPA 805, Chapter 3 element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement using a relevant technical requirement or standard.

The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3 elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are:

- "Fire Alarm and Detection Systems" (Section 3.8);
- "Automatic and Manual Water-Based Fire Suppression Systems" (Section 3.9);
- "Gaseous Fire Suppression Systems" (Section 3.10); and,
- "Passive Fire Protection Features" (Section 3.11).

This License condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

2. Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval are not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in NRC safety evaluation reports dated March 10, 2015, and October 17, 2016.

to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense- in-depth and safety margins are maintained when changes are made to the fire protection program.

(c) Transition License Conditions

1. Before achieving full compliance with 10 CFR 50.48(c), as specified by 2 below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in 2 above.

2. The licensee shall implement the modifications to its facility, as described in Attachment S, Table S-2, "Plant Modifications Committed," of SNC letter NL-15-2310, dated April 25, 2016, to complete the transition to full compliance with 10 CFR 50.48(c) before the conclusion of the 1R28 Spring 2018 Refueling Outage as provided in SNC letter dated August 11, 2017. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.

3. The licensee shall implement the items as listed in Attachment S, Table S-3, "Implementation Items," of SNC letter NL-14-1273, dated August 29, 2014, within 180 days after NRC approval, except for items 30 and 32. Items 30 and 32 shall be implemented by February 6, 2018.

(7) Upon implementation of Amendment No. 213 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by SR 3.7.10.4, in accordance with TS 5.5.18.c.(i), the assessment of CRE habitability as required by Specification 5.5.18.c.(ii), and the measurement of CRE pressure as required by Specification 5.5.18.d, shall be considered met. Following implementation:

(a) The first performance of SR 3.7.10.4, in accordance with Specification 5.5.18.c.(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from February 8, 2016, the date of the most recent successful tracer gas test, as stated in the August 25, 2004 letter response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.

(b) The first performance of the periodic assessment of CRE habitability, Specification 5.5.18.c.(ii), shall be within 3 years, plus the 9-month allowance of SR 3.0.2, as measured from February 8, 2016, the date of the most recent successful tracer gas test, as stated in the August 25, 2004 letter response to Generic Letter 2003-01, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.

(c) The first performance of the periodic measurement of CRE pressure, Specification 5.5.18.d, shall be within 24 months, plus the 180 days allowed by SR 3.0.2, as measured from July 11, 2015, the date of the most recent successful pressure measurement test, or within 180 days if not performed previously.

(8) Deleted per Amendment 144
(9) Deleted per Amendment 144
(10) Deleted per Amendment 144
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(20) Deleted per Amendment 144
(21) Deleted per Amendment 144

(22) Additional Conditions

The Additional conditions contained in Appendix C, as revised through Amendment No. 222, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the additional conditions.

(23) Updated Final Safety Analysis Report

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

The Southern Nuclear Updated Final Safety Analysis Report supplement, submitted pursuant to 10 CFR 54.21(d), describes certain future activities to be completed prior to the period of extended operation. Southern Nuclear shall complete these activities no later than March 31, 2021, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

(24) Reactor Vessel Material Surveillance Capsules

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

(25) 10 CFR 50.69 Risk-Informed Categorization

SNC is approved to implement 10 CFR 50.69 using the processes for categorization of Risk-Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 Structures, Systems, and Components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 and non-Class SSCs and their associated supports; the results of the non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009 for other external hazards except seismic; and the alternative seismic approach as described in SNC's submittal letter dated June 18, 2020, and all its subsequent associated supplements as specified in License Amendment No. 230 dated June 30, 2021.

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Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from a seismic margins approach to a seismic probabilistic risk assessment approach).

D. Southern Nuclear shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plan, which contain Safeguards Information protected under 10 CFR 73.21, is entitled: "Southern Nuclear Operating Company Security Plan, Training and Qualification Plan, and Safeguards Contingency Plan," and was submitted on May 15, 2006.

Southern Nuclear shall fully implement and maintain in effect all provisions of the Commission-approved cyber security (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The Southern Nuclear CSP was approved by License Amendment No. 181, as supplemented by a change approved by License Amendment No. 195.

E. Deleted per Amendment 144

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 AEC's electric system to AEC's off-system members; and (b) to AEC's electric system from electric systems other than Alabama Power Company's, and from AEC's electric system to electric systems other than Alabama Power Company's. The contractual arrangements covering such transmission services shall embrace rates and charges reflecting conventional accounting and ratemaking concepts followed by the Federal Energy Regulatory Commission (or its successor in function) in testing the reasonableness of rates and charges for transmission services. Such contractual arrangements shall contain provisions protecting Alabama Power Company against economic detriment resulting from transmission line or transmission losses associated therewith.

(4) Alabama Power Company shall furnish such other bulk power supply services as are reasonably available from its system.

(5) Alabama Power Company shall enter into appropriate contractual arrangements amending the 1972 Interconnection Agreement as last amended to provide for a reserve sharing arrangement between Alabama Power Company and AEC under which Alabama Power Company will provide reserve generating capacity in accordance with practices applicable to its responsibility to the operating companies of the Southern Company System. AEC shall maintain a minimum level expressed as a percentage of coincident peak one-hour kilowatt load equal to the percent reserve level similarly expressed for Alabama Power Company as determined by the Southern Company System under its minimum reserve criterion then in effect. Alabama Power Company shall provide to AEC such data as needed from time to time to demonstrate the basis for the need for such minimum reserve level.

(6) Alabama Power Company shall refrain from taking any steps, including but not limited, to the adoption of restrictive provisions in rate filings or negotiated contracts for the sale of wholesale power, that serve to prevent any entity or group of entities engaged in the retail sale of firm electric power from fulfilling all or part of their bulk power requirements through self-generation or through purchases from some other source other than Alabama Power Company.

Alabama Power Company shall further, upon request and subject to reasonable terms and conditions, sell partial requirements power to any such entity. Nothing in this paragraph shall be construed as preventing an applicant from taking reasonable steps, in accord with general practice in the industry, to ensure that the reliability of its system is not endangered by any action called for herein.

(7) Alabama Power Company shall engage in wheeling for and at the request of any municipally-owned distribution system:

a. of electric energy from delivery points of Alabama Power Company to said distribution system(s); and

b. of power generated by or available to a distribution system as a result of its ownership or entitlement[2] in generating facilities, to delivery points of Alabama Power Company designated by the distribution system.

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

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

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

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

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

G. 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 relief and exemptions, 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. Mitigation Strategy License Condition

The licensee shall develop and maintain strategies for addressing large fires and explosions that include the following key areas:

(a) Fire fighting response strategy with the following elements:
1. Pre-defined coordinated fire response strategy and guidance
2. Assessment of mutual aid fire fighting assets
3. Designated staging areas for equipment and materials
4. Command and control
5. Training of response personnel

(b) Operations to mitigate fuel damage considering the following:
1. Protection and use of personnel assets
2. Communications
3. Minimizing fire spread
4. Procedures for implementing integrated fire response strategy
5. Identification of readily-available pre-staged equipment
6. Training on integrated fire response strategy

(c) Actions to minimize release to include consideration of:
1. Water spray scrubbing
2. Dose to onsite responders

J. 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.

K. This renewed operating license is effective as of the date of issuance and shall expire at midnight on March 31, 2041.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:

1. Appendix A - Technical Specifications (NUREG-0697, as revised)
2. Appendix B - Environmental Protection Plan
3. Appendix C - Additional conditions

Date of Issuance: May 12, 2005

Appendix A: Technical Specifications

Farley 2 uses the same Appendix A as Farley 1. Please refer to Farley 1 for Appendix A (ML052780033).

APPENDIX B

TO FACILITY LICENSE NO. NPF-8

JOSEPH M. FARLEY NUCLEAR PLANT

UNIT 2

SOUTHERN NUCLEAR OPERATING COMPANY

DOCKET NO. 50-364

ENVIRONMENTAL PROTECTION PLAN

JOSEPH M. FARLEY NUCLEAR PLANT

UNIT 2

ENVIRONMENTAL PROTECTION PLAN

(NON-RADIOLOGICAL)

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1.0 Objectives of the Environmental Protection Plan

The Environmental Protection Plan (EPP) is to provide for protection of environmental values during construction and operation of the nuclear facility. The principal objectives of the EPP are as follows:

(1) Verify that the plant is operated in an environmentally acceptable manner, as established by the FES and other NRC environmental impact assessments.

(2) Coordinate NRC requirements and maintain consistency with other Federal, State and local requirements for environmental protection.

(3) Keep NRC informed of the environmental effects of facility construction and operation and of actions taken to control those effects.

Environmental concerns identified in the FES which relate to water quality matters are regulated by way of the NPDES permit.

Amendment No. 83

NOV 22 1991

2.0 Environmental Protection Issues

In the FES-OL dated December 1974, the staff considered the environmental impacts associated with the operation of the two-unit Farley Nuclear Plant. Certain environmental issues were identified which required study or license conditions to resolve environmental concerns and to assure adequate protection of the environment.

2.1 Aquatic Issues

1. The need for aquatic monitoring programs to confirm that thermal mixing occurs as predicted, that chlorine releases are controlled within those discharge concentrations evaluated, and that effects on aquatic biota and water quality due to plant operation are no greater than predicted.

2. The need for special studies to document levels of intake entrainment and impingement.

(FES-OL: Summary and Conclusions and Sections 6.2, 6.3, and 6.6)

Aquatic issues are addressed by the effluent limitations, monitoring requirements and the Section 316(b) demonstration requirement contained in the effective NPDES permit issued by EPA-Region IV and now implemented by the Alabama Water Improvement Commission. The NRC will rely on these agencies for regulation of matters involving water quality and aquatic biota.

2.2 Terrestrial Issues

1. Potential impacts on the terrestrial environment associated with drift from the mechanical draft cooling towers. (FES-OL Section 6.5)

2. Potential increase in fogging associated with operation of the mechanical draft cooling towers. (FES-OL Section 6.5). This issue is being resolved through studies required by the Farley Unit 1 Operating License.

3. Potential erosion and visual effects along transmission line corridors and at highway crossings, respectively. (FES-OL Sections 4.2, 5.4.4.1, 11.2). This issue is being resolved through studies required by the Farley Unit 1 Operating License.

4. The need for controlled used of herbicides on transmission rights-of-way. (FES-OL Sections 4.2, 5.4.4.2, 11.2)

5. The need for documentation of the licensee's commitment to conduct a land management program. (FES-OL Sections 5.2 and 6.5)

NRC requirements with regard to the terrestrial issues 1, 4, and 5 above are specified in Subsection 4.2 of this EPP.

3.0 Consistency Requirements

3.1 Plant Design and Operation

The licensee may make changes in station design or operation or perform tests or experiments affecting the environment provided such changes, tests or experiments do not involve an unreviewed environmental question, and do not involve a change in the Environmental Protection Plan. Changes in plant design or operation or performance of tests or experiments which do not affect the environment are not subject to the requirements of this EPP. Activities governed by Section 3.3 are not subject to the requirements of this section.

Before engaging in additional construction or operational activities which may affect the environment, the licensee shall prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity involves an unreviewed environmental question, the licensee shall provide a written evaluation of such activities and obtain prior approval from the Director, Office of Nuclear Reactor Regulation. When such activity involves a change in the Environmental Protection Plan, such activity and change to the Environmental Protection Plan may be implemented only in accordance with an appropriate license amendment as set forth in Section 5.3.

A proposed change, test or experiment shall be deemed to involve an unreviewed environmental question if it concerns (1) a matter which may result in a significant increase in any adverse environmental impact previously evaluated in the final environmental statement (FES) as modified by staff's testimony to the Atomic Safety and Licensing Board, supplements to the FES, environmental impact appraisals, or in any decisions of the Atomic Safety and Licensing

Board; or (2) a significant change in effluents or power level [in accordance with 10 CFR Part 51.5(b)(2)] or (3) a matter not previously reviewed and evaluated in the documents specified in (1) of this Subsection, which may have a significant adverse environmental impact.

The licensee shall maintain records of changes in facility design or operation and of tests and experiments carried out pursuant to this Subsection. These records shall include a written evaluation which provide bases for the determination that the change, test, or experiment does not involve an unreviewed environmental question nor constitute a decrease in the effectiveness of this EPP to meet the objectives specified in Section 1.0. The licensee shall include as part of his Annual Environmental Operating Report (per Subsection 5.4.1) brief descriptions, analyses, interpretations, and evaluations of such changes, tests and experiments.

3.2 Reporting Related to the NPDES Permits and State Certifications

Violations of the NPDES Permit or the State certification (pursuant to Section 401 of the Clean Water Act) shall be reported to the NRC by submittal of copies of the reports required by the NPDES Permit or certification. The licensee shall also provide the NRC with copies of the results of the following studies at the same time they are submitted to the permitting agency:

i) Section 316(b) Demonstration Study

ii) Chlorine Minimization Study

Changes and additions to the NPDES Permit or the State certification shall be reported to the NRC within 30 days following the date the change is approved. If a permit or certification, in part or in its entirety, is appealed and stayed, the NRC shall be notified within 30 days following the date the stay is granted.

The NRC shall be notified of changes to the effective NPDES Permit proposed by the permit holder by providing NRC with a copy of the proposed change at the same time it is submitted to the permitting agency. The notification of an initiated change shall include a copy of the requested revision submitted to the permitting agency. The licensee shall provide the NRC a copy of the application for renewal of the NPDES permit at the same time the application is submitted to the permitting agency.

3.3 Changes Required for Compliance with Other Environmental Regulations

Changes in plant design or operation and performance of tests or experiments which are required to achieve compliance with other Federal, State, or local environmental regulations are not subject to the requirements of Section 3.1.

4.0 Environmental Conditions

4.1 Unusual or Important Environmental Events

Any occurrence of an unusual or important event that indicates or could result in significant environmental impact causally related to plant operation shall be recorded and reported to the NRC in accordance with 10CFR50.72(b)(2)(vi) or by a written report per Subsection 5.4.2, as appropriate. The following are examples: excessive bird impaction events, onsite plant or animal disease outbreaks, mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973, fish kills, increase in nuisance organisms or conditions and unanticipated or emergency discharge of waste water or chemical substances.

No routine monitoring programs are required to implement this condition.

4.2 Environmental Monitoring

4.2.1 Aerial Remote Sensing

Vegetation communities of the site and vicinity within 1 kilometer of the cooling towers in all directions shall be aerially photographed to detect and assess the significance of damage, or lack thereof, as related to cooling tower drift dispersions. Photography shall be done by aerial overflight during May or June. Monitoring shall include a program of low altitude false color aerial photography (either color infrared photography or multispectral or multiband photography). The scale for full coverage shall be adequate to

enable identification of vegetative damage over relatively small areas of terrain. Some circumstances may warrant inspection of photographs discerning individual trees. Such scale should be in the interval between 1:1000 and 1:12,000 as appropriate to resolve impacted features.

Photographs shall be compared with baseline to ascertain changed vegetation. Photographic interpretations shall correlate data from ground truth from ground inspection surveys with areas of stress and non-stress as seen on the photographs for purposes of verification of results and interpretation. Ground truth surveys shall be performed during the aerial photographic monitoring for two-unit operation. This program shall require aerial photographic monitoring during the first May-June period after Unit 2 has been in operation for one year and the program shall be repeated once during the same period two years later. A report shall be submitted as part of the annual report following each aerial photographic monitoring period. The report shall contain a description of the program, results, and interpretative analyses of environmental impacts. Results reported shall contain information encompassing but not limited to the following: sampling date; time of day; film types; spectral bands; and one (1) set of resultant color transparencies encompassing an area within approximately a one kilometer (1 km) radius of the Unit 1 and 2 towers.

4.2.2 Herbicide Application

The use of herbicides within the following corridor rights-of-way shall conform to the approved use of selected herbicides as registered by the Environmental

Protection Agency and approved by State authorities and applied as directed by said authorities:

i) Farley to Pickard-South 230KV

ii) Farley to Webb to Pickard 230KV

iii) Farley to Snowdown 500KV

Records shall be maintained concerning herbicide use. Such records shall include the following information: commercial and chemical names of materials used; concentration of active material in formulations diluted for field use; diluting substances other than water; rates of application; method and frequency of application; location; and the date of application. Such records shall be maintained for a period of 5 years and be made readily available to the NRC upon request. There shall be no routine reporting requirement associated with this condition.

4.2.3 Land Management

There shall be a land management program instituted at the FNP to provide for revegetation of site areas impacted during construction as described in Section 5.2 of the FES-OL. This program requires landscaping of certain areas around the plant buildings and the revegetation and management of the remainder of the site as a wildlife refuge. There shall be no reporting requirement associated with this condition.

5.0 Administrative Procedures

5.1 Review and Audit

Review and audit of compliance with the Environmental Protection Plan shall be provided. The audits shall be conducted independently of the individual or groups responsible for performing the specific activity. A description of the organization structure utilized to achieve the independent review and audit function and results of the audit activities shall be maintained and made available for inspection.

5.2 Records Retention

Records and logs relative to the environmental aspects of plant operation shall be made and retained in a manner convenient for review and inspection. These records and logs shall be made available to NRC on request.

Records of modifications to plant structures, systems and components determined to potentially affect the continued protection of the environment shall be retained for the life of the plant. All other records, data and logs relating to this EPP shall be retained for five years or, where applicable, in accordance with the requirements of other agencies.

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5.3 Changes in Environmental Protection Plan

Request for change in the Environmental Protection Plan shall include an assessment of the environmental impact of the proposed change and a supporting justification. Implementation of such changes in the EPP shall not commence prior to NRC approval of the proposed changes in the form of a license amendment incorporating the appropriate revision to the Environmental Protection Plan.

5.4 Plant Reporting Requirements

5.4.1 Routine Reports

An Annual Environmental Operating Report describing implementation of this EPP for the previous year shall be submitted to the NRC prior to May 1 of each year. The initial report shall be submitted prior to May 1 of the year following issuance of the operating license. The period of the first report shall begin with the date of issuance of the operating license.

The report shall include summaries and analyses of the results of the environmental protection activities required by Subsection 4.2 of this Environmental Protection Plan for the report period, including a comparison with preoperational studies, operational controls (as appropriate), and previous non-radiological environmental monitoring reports, and an assessment of the observed impacts of the plant operation on the environment. If harmful effects or evidence of trends towards irreversible damage to the environment are observed, the licensee shall provide a detailed analysis of the data and a proposed course of action to alleviate the problem.

The Annual Environmental Operating Report shall also include:

(a) A list of EPP noncompliances and the corrective actions taken to remedy them.

(b) A list of all changes in station design or operation, tests, and experiments made in accordance with Subsection 3.1 which involved a potentially significant unreviewed environmental issue.

(c) A list of nonroutine reports submitted in accordance with Subsection 5.4.2.

In the event that some results are not available by the report due date, the report shall be submitted noting and explaining the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

5.4.2 Nonroutine Reports

A written report shall be submitted to the NRC within 30 days of occurrence of nonroutine event. The report shall (a) describe, analyze, and evaluate the event, including extent and magnitude of the impact and plant operating characteristics, (b) describe the probable cause of the event, (c) indicate the action taken to correct the reported event, (d) indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar components or systems, and (e) indicate the agencies notified and their preliminary responses.

Events reportable under this subsection which also require reports to other Federal, State or local agencies shall be reported in accordance with those reporting requirements in lieu of the requirements of this subsection. The NRC shall be provided a copy of such report at the same time it is submitted to the other agency.

APPENDIX C

ADDITIONAL CONDITIONS
OPERATING LICENSE NO. NPF-8

Southern Nuclear Operating Company, Inc. (SNC), shall comply with the following conditions on the schedules noted below:

Amendment Number	Additional Condition	Condition Completion Date
129	SNC shall complete classroom and simulator training for operations crews and temporary simulator modifications as described in SNC's letter dated September 22, 1997, and evaluated in the staff's Safety Evaluation dated April 29, 1998.	Prior to Unit 2 entering Mode 2 from the spring 1998 refueling outage.
129	SNC shall review the results of the Cycle 13 startup testing to determine any potential effects on operator training and incorporate these changes into licensed operator training as described in SNC's letter dated September 22, 1997, and evaluated in the staff's Safety Evaluation dated April 29, 1998.	Prior to Unit 1 startup from the fall 1998 refueling outage.
129	SNC shall provide a Steam Generator (SG) Tube Rupture radiological consequences analysis that incorporates a flashing fraction , which is appropriate for the Unit 2 design.	Prior to the Unit 2 SG replacement outage in spring 2001.
137	SNC shall relocate certain Technical Specification requirements to SNC-controlled documents. Implementation of the Improved Technical Specifications shall include relocating these certain technical specification requirements to the appropriate documents, as described in Table LA – Removal of Requirements from Retained Technical Specifications and Table R – Relocation of Technical Specifications, that are attached to the NRC staff's Safety Evaluation enclosed with this amendment.	Concurrent with the implementation of the Improved Technical Specifications.

APPENDIX C

ADDITIONAL CONDITIONS
FACILITY OPERATING LICENSE NO. NPF-8

Amendment Number	Additional Condition	Condition Completion Date
137	The schedule for performing new and revised Surveillance Requirements (SRs) shall be as follows: 1. For SRs that are new in this amendment the first performance is due at the end of the first surveillance interval that begins on the date of implementation of this amendment. 2. For SRs that existed prior to this amendment whose intervals of performance are being reduced, the first reduced surveillance interval begins upon completion of the first surveillance performed after implementation of this amendment. 3. For SRs that existed prior to this amendment that have modified acceptance criteria, the first performance is due at the end of the first surveillance interval that began on the date the surveillance was last performed prior to the implementation of this amendment. 4. For SRs that existed prior to this amendment whose intervals of performance are being extended, the first extended surveillance interval begins upon completion of the last surveillance performed prior to implementation of this amendment.	Concurrent with the implementation of the Improved Technical Specifications.
	SNC shall implement the Degraded Voltage modifications to eliminate the manual actions in lieu of automatic degraded voltage protection to assure adequate voltage to safety-related equipment during design basis events.	Unit 2 2017 Fall Outage, U2R25

APPENDIX C

ADDITIONAL CONDITIONS
RENEWED FACILITY OPERATING LICENSE NO. NPF-8

Amendment Number	Additional Condition	Condition Completion Date
222	Southern Nuclear Operating Company (SNC) is approved to implement the Risk Informed Completion Time (RICT) Program as specified in the license amendment request submittal dated July 27, 2018, as supplemented on the following dates: May 3, 2019, May 17, 2019, and June 27, 2019. Updates from the Findings and Observation resolutions of the Internal Events Internal Flooding Probabilistic Risk Assessment (PRA) model shall be incorporated into the Fire PRA per the internal SNC PRA configuration process, prior to implementation of the RICT program. The risk assessment approach and methods, shall be acceptable to the NRC, be based on the as-built, as-operated, and maintained plant, and reflect the operating experience of the plant as specified in RG 1.200. Methods to assess the risk from extending the completion times must be PRA methods accepted as part of this license amendment, or other methods approved by the NRC for generic use. If the licensee wishes to change its methods, and the change is outside the bounds of this license condition, the licensee will seek prior NRC approval, via a license amendment.	Concurrent with the implementation of the Risk Informed Completion Time Program