June 27, 2008

Mr. J. Randy Johnson
Vice President - Farley
Joseph M. Farley Nuclear Plant
7388 North State Highway 95
Columbia, AL 36319

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2 RE: ISSUANCE OF AMENDMENTS – ADDITION OF ENGINEERED SAFETY FEATURES ROOM COOLER TECHNICAL SPECIFICATION (TAC NOS. MD5778 AND MD5779)

Dear Mr. Johnson:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 176 to Renewed Facility Operating License No. NPF-2 and Amendment No. 169 to Renewed Facility Operating License No. NPF-8 for the Joseph M. Farley Nuclear Plant, Units 1 and 2. The amendments consist of changes to the Technical Specifications (TS) in response to your application dated June 5, 2007, as supplemented by letter dated June 20, 2008. The requested changes add a new TS requirement to control Engineered Safety Features (ESF) room coolers which are currently considered during operability assessments for the supported ESF equipment.

The amendments revise the TS to add a new 3.7.19, *Engineered Safety Features (ESF) Room Coolers* requirements. This amendment also includes a minor editorial change on the TS Table of Contents page.

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next biweekly *Federal Register* notice.

Sincerely,

/RA/

R. A. Jervey, Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-348 and 50-364

Enclosures:
1. Amendment No. 176 to NPF-2
2. Amendment No. 169 to NPF-8
3. Safety Evaluation

cc w/encl: See next page

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SOUTHERN NUCLEAR OPERATING COMPANY, INC.

ALABAMA POWER COMPANY

DOCKET NO. 50-348

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 176
Renewed License No. NPF-2

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

   A. The application for amendment by Southern Nuclear Operating Company, Inc. (Southern Nuclear), dated June 5, 2007, as supplemented by letter dated June 20, 2008, 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;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment 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;

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

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-2 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 176, are hereby incorporated in the license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA by LOlshan for/

Melanie C. Wong, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 27, 2008

ATTACHMENT TO LICENSE AMENDMENT NO. 176

TO RENEWED FACILITY OPERATING LICENSE NO. NPF-2

DOCKET NO. 50-348

AND LICENSE AMENDMENT NO. 169

TO RENEWED FACILITY OPERATING LICENSE NO. NPF-8

DOCKET NO. 50-364

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove License Pages	Insert License Pages
License No. NPF-2, Page 4	License No. NPF-2, Page 4
License No. NPF-8, Page 3	License No. NPF-8, Page 3

Remove TS Pages	Insert TS Pages
Table of Contents iii	Table of Contents iii
	3.7.19-1
	3.7.19-2

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

ALABAMA POWER COMPANY

DOCKET NO. 50-364

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 169
Renewed License No. NPF-8

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

   A. The application for amendment by Southern Nuclear Operating Company, Inc. (Southern Nuclear), dated June 5, 2007, as supplemented by letter dated June 20, 2008, 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;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment 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;

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

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Renewed Facility Operating License No. NPF-8 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 169, are hereby incorporated in the license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA by LOlshan for/

Melanie C. Wong, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 27, 2008

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 176 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-2

AND AMENDMENT NO. 169 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-8

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-348 AND 50-364

1.0 INTRODUCTION

By letter dated June 5, 2007, (Agencywide Documents and Management System (ADAMS) Accession No. ML071560605) and supplemented with additional information in a letter dated June 20, 2008, ADAMS Accession No. ML081720349 the Southern Nuclear Operating Company, Inc. (SNC, the licensee) submitted a request for changes to the Joseph M. Farley Nuclear Plant (Farley), Units 1 and 2, Technical Specifications (TS). The requested changes would add a new TS to address the operation of Engineered Safety Feature (ESF) Room Coolers as a subsystem required to support ESF TS equipment.

The proposed amendment includes surveillance requirements (SRs) and will establish a Completion Time of 72 hours to allow adequate time to complete maintenance activities on the ESF Room Coolers and thus reduce the need for unnecessary plant shutdowns. The amendment also includes an editorial change to the TS Table of Contents (TOC).

Room cooling for TS ESF equipment is provided by the ESF Room Coolers. The Room Coolers are divided into subsystems and each subsystem has two 100 percent capacity trains. The ESF Room Cooler subsystems support areas housing mechanical systems: 1) Motor Driven Auxiliary Feedwater (MDAFW) Pump Rooms, 2) Charging Pump Rooms, 3) Containment Spray (CS) Pump Rooms, 4) Residual Heat Removal (RHR) Pump Rooms, and 5) Component Cooling Water Pumps Room. Additionally, the ESF room coolers support electrical areas, 6) Auxiliary Building Direct Current (DC) Switchgear/Battery Charger Rooms, and 7) Load Control Center (LCC) Rooms (LCC D and E Rooms).

The ESF Room Coolers supplement the normal Heating/Ventilation and Air Conditioning (HVAC) system in cooling these rooms during normal operations. The Service Water system supplies water to the cooling coils for ESF Room Coolers.

2.0 REGULATORY EVALUATION

The ESF Room Cooler system is designed to maintain the ambient air temperature within the continuous duty rating of the ESF equipment served by the system. The ESF Room Coolers supplement the normal HVAC system in cooling certain rooms during normal operations. The Service Water system supplies water to the cooling coils for ESF Room Coolers. ESF are structures and equipment required to mitigate design-basis accidents (DBAs) including the Loss-of-coolant accident (LOCA) and high energy pipe breaks such as a steam pipe break and a main feed water pipe break. They are designed to perform their safety function with complete loss of offsite power. Such equipment is provided with sufficient redundancy that failure of a single component will not result in the loss of the safety function.

Title 10 of *Code of Federal Regulations* (10 CFR), Part 50, Section 50.36(d)(2)(ii) sets forth four criteria to be used in determining whether a limiting condition for operation (LCO) is required to be included in the TS.

The regulatory basis for proposed TS 3.7.19, "ESF Room Coolers," is to maintain air temperatures as required in rooms containing safety related equipment during and after a design-basis LOCA with a loss of offsite power. Thus, General Design Criteria 4: Environmental and dynamic effects design basis is applicable. Structures, systems, and components important to safety shall be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including LOCAs.

The Farley UFSAR, section 9.4.2, provides additional detail regarding the Auxiliary Building Ventilation System and ESF room coolers.

> The room coolers for the Engineered Safety Feature (ESF) pump rooms…provide cooling to the ESF equipment located in these rooms. Equipment cooled by these Room Coolers is included in the Technical Specifications [with action requirements applicable to the safety significance of the system]. Acceptability of the design of these Room Coolers is based on the ability to maintain the ambient air temperature at or below the continuous-duty rating of the ESF equipment in the room. A single failure to one cooling system train will not prevent the cooling of the redundant ESF equipment in the opposite train. The ESF Room Coolers are seismic category I and remain operational during and after a safe shutdown earthquake. Additional information pertinent to the Battery Charger Room, Motor Control Center, and 600-V Load Center Cooling Systems Includes…coolers are designed to maintain the ambient temperature in each respective room at or below 104°F during normal operation.

3.0 TECHNICAL EVALUATION

The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the proposed changes for compliance with 10 CFR 50.36 and the licensee's current TS. The review found that the justification for creating the new TS was consistent with the requirements of 10 CFR 50.36(d)(2)(ii)

in that the equipment is a structure, system or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

Licensees may revise the technical specifications provided that plant-specific review supports a finding of continued adequate safety because the change is less restrictive than the licensee's current requirement, but nonetheless still affords adequate assurance of safety when judged against current regulatory standards.

The licensee stated that the 8 hour completion time for Auxiliary Building AC electrical power distribution subsystem and the 2 hour completion time for Auxiliary Building DC Switchgear/Battery Charger Room Subsystems do not allow sufficient time to complete required maintenance or repairs on the room coolers. The proposed TS would allow a completion time of 72 hours for situations rendering one train of ESF room cooler equipment inoperable. The proposed TS are therefore less restrictive than the licensee's current requirements. The Auxiliary Building AC electrical power distribution subsystems and Auxiliary Building DC Switchgear/Battery Charger Room subsystems must be able to perform their specified safety functions without room cooling for 72 hours

The current LCO requirements are within the TS for electrical power sources, based on the requirements for electrical system operability found in Regulatory Guide (RG) 1.93. *Availability of Electrical Power Sources*. The basis for electrical equipment availability is consistent with RG 1.93 and will not change from the proposed amendment. Currently when maintenance is performed on the room coolers, the completion time for the maintenance is the TS LCO completion time of the supported equipment. Completion times for the supported equipment range from 72 hours for MDAFW, Charging, Core Spray and Residual Heat Removal Pump Room Subsystems to 2 hours for Auxiliary Building DC Switchgear/Battery Charger Room Subsystems. The completion time for Auxiliary Building AC electrical power distribution subsystem is 8 hours. Thus the impact of this change is limited to these electrical equipment areas only.

The staff finds that that the increased LCO time for the ESF room coolers in the electrical areas is acceptable, for several reasons. The design of the system is to act as a supplemental source to normal building air conditioning, and to provide cooling during a design basis accident (DBA). Although there is a small chance for a DBA during the 72 hour period, the licensee has presented in its UFSAR, section 9.4.2, a statement that analysis demonstrates that the equipment in MCC 1A, 2A, 1B and 2B are capable of performing their specified function, during the temporary unavailability of the room cooler with the plant encountering a DBA. In the licensee's supplemental letter dated June 20, 2008, the licensee described the ability of a single train of room coolers to provide sufficient cooling for the associated electrical equipment. The licensee modeled the room temperatures using the PROTO-HX air coil module, Version 4.10 for the DC switchgear/battery charger rooms and the load control center D and E rooms showing that the room temperatures reached during a DBA are below the acceptable operating temperature for the electrical equipment. Thus, conditions are bounded while the Limiting condition for operation (LCO) is in effect and a DBA were to occur. In battery charger room A, B, or C, the analysis indicates that the room with the room cooler temporarily out of service must have the room door open to the adjoining room with a room cooler in service for the equipment to be capable of performing its specified function, with the plant encountering a DBA. In the June 20, 2008 letter, the licensee described the procedural actions taken upon entry to the LCO to assure this compensatory measure takes place.

The LCO conditions and SR as proposed are consistent with existing operational controls at Farley. The licensee's justification for the proposed actions and surveillances is acceptable for maintaining availability of the room coolers. These requirements are in addition to what existed prior to this proposal. The staff finds that the conditions established for the ESF room cooler TS are consistent with the bases provided. The proposed TS is also consistent with the LCO 3.0.6 for the treatment of support systems, in that a supported system is not declared inoperable solely due to a support system being inoperable.

The licensee provided several industry licensing basis examples to support the request. The proposed TS is consistent with the approved staff position as shown in the current TS for Vogtle Electric Generating Plant, TS 3.7.14 "*Engineered Safety Feature (ESF) Room Cooler and Safety Related Chiller System*," and Palo Verde Nuclear Generating Station TS 3.7.10 "*Essential Chilled Water (ECW) System*". Both of which contain extended completion time for inoperable Room Coolers. In the case of the Palo Verde TS, the specification is based on the generic TS for Combustion Engineering plants. NUREG-1432, *Standard Technical Specifications Combustion Engineering Plants,* includes the TS 3.7.10 ECW system specification and basis. The staff has found that the basis for ECW is similar to the proposed application at Farley and that the equipment purpose is the same at all three plants although configured differently at each plant. This generic specification allows LCO completion times of 72 hours for ECW equipment. The Vogtle room cooler specification allows up to 7 days for LCO completion time. Both plants allow an individual room cooler to be considered inoperable, without causing the system to be considered inoperable.

The existing Farley TS also include TS 5.5.1 5 *Safety Function Determination Program (SFDP).* The SFDP is invoked by LCO 3.0.6 and TS 5.5.15. LCO 3.0.6 states that, "when a supported system LCO is not met solely due to a support system LCO not being met, the Conditions and Required Actions associated with this supported system are not required to be entered." However, additional evaluations and limitations may be required in accordance with Specification 5.5.15. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. According to Specification 5.5.1 5, the SFDP shall contain the following:

a. Provisions for cross train checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis do not go undetected;
b. Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists;
c. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities; and
d. Other appropriate limitations and remedial or compensatory actions.
   A loss of safety function exists when; assuming no concurrent single failure, a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:
a. A required system redundant to the system supported by the inoperable support system is also inoperable; or
b. A required system redundant to the system in turn supported by the inoperable supported system is also inoperable; or
c. A required system redundant to the support system for the supported systems (a) and

(b) above are also inoperable.

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. For example, LCC D contains the motor breakers for the A-Train CS pump. Consider the case where the unit is in Mode 1 which requires two Trains of CS to meet LCO 3.6.6, "Containment Spray and Containment Cooling." If LCC D Room Cooler becomes inoperable, the new LCO for Room Coolers will be entered with a 72 hour Completion Time. Subsequently, 24 hours later, the B-Train CS Pump is declared inoperable due to an oil leak. The SFDP would identify that condition as a potential loss of safety function and the required actions of TS 3.6.6, Condition F, "Two containment spray trains inoperable," would be entered thus requiring the immediate entry into LCO 3.0.3.

The NRC staff finds that the plants operational controls as described in the SFDP are sufficient to maintain the existing level of reliability for the supported systems and clarify the requirements that the room coolers need to meet to maintain operability of the supported equipment. Additionally, the current Farley TS bases identify electrical support systems but do not discuss room coolers and are not required to be changed with this proposed amendment.

The NRC staff has evaluated the change and determined that the proposed requirements are less restrictive than the licensee's current requirement. However, because the Farley TS SR 3.0.6 requirements still exist, the equipment areas are still monitored for temperature, and 72 hour period is reasonable short in that a LOCA is unlikely to occur, the equipment will be maintained as it is currently maintained, therefore still assures adequate assurance of safety.

The request also includes an editorial change to the TS table of contents (TOC). The TOC includes the new TS page heading. In order to fit this additional line item on the existing TS page, the licensee adjusted the heading at the top of the same page to account for the added line. There is no impact to the License or TS from this editorial change, and is therefore acceptable to be included with this amendment.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of Alabama official was notified of the proposed issuance of the amendments. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments change a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and change the surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts and no significant change in the types of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (FR Volume 72 page 54480, published September 25, 2007). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

7.0 REFERENCES

1. Vogtle Electric Generating Plant, TS 3.7.14 "Engineered Safety Feature (ESF) Room Cooler and Safety Related Chiller System,"

2. Palo Verde Nuclear Generating Station TS 3.7.10 "Essential Chilled Water (ECW) System"

3. NUREG 1432 Standard Technical Specifications Combustion Engineering Plants, USNRC, June 2004

Principal Contributors: M. Hamm
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Date: June 27, 2008

Joseph M. Farley Nuclear Plant, Units 1 & 2

cc:

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