



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

December 5, 2012

Mr. M. J. Ajluni
Nuclear Licensing Director
Southern Nuclear Operating Company, Inc.
40 Inverness Center Parkway, Bin 038
Birmingham, AL 35201-1295

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2, AND VOGTLE
ELECTRIC GENERATING PLANT, UNITS 1 AND 2, ISSUANCE OF
AMENDMENTS ON REACTOR COOLANT PUMP FLYWHEEL SURVEILLANCE
INTERVAL (TAC NOS. ME7846, ME7847, ME7839, AND ME7840)

Dear Mr. Ajluni:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 190 to Renewed Facility Operating License No. NPF-2 and Amendment No. 185 to Renewed Facility Operating License No. NPF-8 for the Joseph M. Farley Nuclear Plant, Units 1 and 2 and Amendment No. 168 to Renewed Facility Operating License No. NPF-68 and Amendment No. 150 to Renewed Facility Operating License No. NPF-81 for the Vogtle Electric Generating Plant, Units 1 and 2, respectively, in response to your letters dated January 12, August 15 and September 7, 2012.

The amendments revise the Technical Specifications to extend the reactor coolant pump motor flywheel examination frequency from a 10-year interval to an interval not to exceed 20 years. The reactor coolant pump flywheel inspection program in the TS is also revised to reflect consistency with Regulatory Guide 1.14, Revision 1. The amendments reflect utilization of Technical Specification Task Force (TSTF) Traveler TSTF 421-A, "Revision to RCP Flywheel Inspection Program (WCAP-15666)."

M. Ajluni

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

Sincerely,



Robert E. Martin, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-348, 50-364, 50-424 and 50-425

Enclosures:

1. Amendment No. 190 to NPF-2
2. Amendment No. 185 to NPF-8
3. Amendment No. 168 to NPF-68
4. Amendment No. 150 to NPF-81
5. Safety Evaluation

cc w/encls: Distribution via Listserv



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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. 190
Renewed License No. NPF-2

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Southern Nuclear Operating Company, Inc. (Southern Nuclear), dated January 12, 2012, as supplemented on August 15 and September 7, 2012, 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 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 and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 190 , are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

3. This amendment is effective as of its date of issuance and shall be implemented within 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert J. Pascarelli, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Renewed Facility
Operating License No. NPF-2
and the Technical Specifications

Date of Issuance: December 5, 2012



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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. 185
Renewed License No. NPF-8

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Southern Nuclear Operating Company, Inc. (Southern Nuclear), dated January 12, 2012, as supplemented on August 15 and September 7, 2012, 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 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 and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 185 , are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

3. This amendment is effective as of its date of issuance and shall be implemented within 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert J. Pascarelli, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Renewed Facility
Operating License No. NPF-8
and the Technical Specifications

Date of Issuance: December 5, 2012

ATTACHMENT

TO LICENSE AMENDMENT NO. 190

RENEWED FACILITY OPERATING LICENSE NO. NPF-2

DOCKET NO. 50-348

TO LICENSE AMENDMENT NO. 185

RENEWED FACILITY OPERATING LICENSE NO. NPF-8

DOCKET NO. 50-364

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

Remove Pages

License

License No. NPF-2, page 4
License No. NPF-8, page 3

TS

5.5-4
5.5-5

Insert Pages

License

License No. NPF-2, page 4
License No. NPF-8, page 3

TS

5.5-4
5.5-5

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 190 are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

(3) Additional Conditions

The matters specified in the following conditions shall be completed to the satisfaction of the Commission within the stated time periods following the issuance of the renewed license or within the operational restrictions indicated. The removal of these conditions shall be made by an amendment to the renewed license supported by a favorable evaluation by the Commission.

- a. Southern Nuclear shall not operate the reactor in Operational Modes 1 and 2 with less than three reactor coolant pumps in operation.
- b. Deleted per Amendment 13
- c. Deleted per Amendment 2
- d. Deleted per Amendment 2
- e. Deleted per Amendment 152
Deleted per Amendment 2
- f. Deleted per Amendment 158
- g. Southern Nuclear shall maintain a secondary water chemistry monitoring program to inhibit steam generator tube degradation. This program shall include:
 - 1) Identification of a sampling schedule for the critical parameters and control points for these parameters;
 - 2) Identification of the procedures used to quantify parameters that are critical to control points;
 - 3) Identification of process sampling points;
 - 4) A procedure for the recording and management of data;

- (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 2775 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 185 are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

5.5 Programs and Manuals

5.5.4 Radioactive Effluent Controls Program (continued)

- i. Limitations on the annual and quarterly doses to a member of the public from iodine-131, iodine-133, tritium, and all radionuclides in particulate form with half lives > 8 days in gaseous effluents released from each unit to areas beyond the site boundary, conforming to 10 CFR 50, Appendix I; and
- j. Limitations on the annual dose or dose commitment to any member of the public due to releases of radioactivity and to radiation from uranium fuel cycle sources, conforming to 40 CFR 190.

5.5.5 Component Cyclic or Transient Limit

This program provides controls to track the FSAR, Table 5.2-2a, cyclic and transient occurrences to ensure that components are maintained within the design limits.

5.5.6 Pre-Stressed Concrete Containment Tendon Surveillance Program

This program provides controls for monitoring any tendon degradation in pre-stressed concrete containments, including effectiveness of its corrosion protection medium, to ensure containment structural integrity. The program shall include baseline measurements prior to initial operations. The Tendon Surveillance Program, inspection frequencies, and acceptance criteria shall be in accordance with Section XI, Subsection IWL of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10 CFR 50.55a, except where an alternative, exemption or relief has been authorized by the NRC. The first performance of the IWL requirements for containment sample tendon force measurements and tendon wire and strand sample examinations will be performed by the end of 2006.

The provisions of SR 3.0.3 are applicable to the Tendon Surveillance Program inspection frequencies.

5.5.7 Reactor Coolant Pump Flywheel Inspection Program

This program shall provide for the inspection of each reactor coolant pump flywheel per the recommendations of Regulatory Position C.4.b of Regulatory Guide 1.14, Revision 1, August 1975. In lieu of Position C.4b(1) and C.4b(2), the following may be conducted at least once per 20 year intervals:

- a. A qualified in-place ultrasonic examination over the volume from the inner bore of the flywheel to the circle of one-half the outer radius: or

(continued)

5.5 Programs and Manuals

5.5.7 Reactor Coolant Pump Flywheel Inspection Program (continued)

- b. A surface examination (magnetic particle and/or liquid penetrant) of exposed surfaces of the disassembled flywheel.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Reactor Coolant Pump Flywheel Inspection Program.

5.5.8 Inservice Testing Program

This program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components. The program shall include the following:

- a. Testing frequencies specified in Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as follows:

<u>ASME Boiler and Pressure Vessel Code and applicable Addenda terminology for inservice testing activities</u>	<u>Required Frequencies for performing inservice testing activities</u>
Weekly	At least once per 7 days
Monthly	At least once per 31 days
Quarterly or every 3 months	At least once per 92 days
Semiannually or every 6 months	At least once per 184 days
Every 9 months	At least once per 276 days
Yearly or annually	At least once per 366 days
Biennially or every 2 years	At least once per 731 days

- b. The provisions of SR 3.0.2 are applicable to the above required frequencies for performing inservice testing activities;
- c. The provisions of SR 3.0.3 are applicable to inservice testing activities; and
- d. Nothing in the ASME Boiler and Pressure Vessel Code shall be construed to supersede the requirements of any TS.

5.5.9 Steam Generator (SG) Program

A Steam Generator Program shall be established and implemented to ensure that SG tube integrity is maintained. In addition, the Steam Generator Program shall include the following provisions:

- a. Provisions for condition monitoring assessments. Condition monitoring

(continued)



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WASHINGTON, D.C. 20555-0001

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

DOCKET NO. 50-424

VOGTLE ELECTRIC GENERATING PLANT, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 168
Renewed License No. NPF-68

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Vogtle Electric Generating Plant, Unit 1 (the facility) Renewed Facility Operating License No. NPF-68 filed by the Southern Nuclear Operating Company, Inc. (the licensee), acting for itself, Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the owners), dated January 12, 2012, as supplemented on August 15 and September 7, 2012, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as 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 set forth in 10 CFR Chapter I;
 - D. The issuance of this 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 hereby amended by page 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-68 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 168, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert J. Pascarelli, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to License No. NPF-68
and the Technical Specifications

Date of Issuance: December 5, 2012



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

GEORGIA POWER COMPANY

OGLETHORPE POWER CORPORATION

MUNICIPAL ELECTRIC AUTHORITY OF GEORGIA

CITY OF DALTON, GEORGIA

DOCKET NO. 50-425

VOGTLE ELECTRIC GENERATING PLANT, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 150
Renewed License No. NPF-81

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Vogtle Electric Generating Plant, Unit 2 (the facility) Renewed Facility Operating License No. NPF-81 filed by the Southern Nuclear Operating Company, Inc. (the licensee), acting for itself, Georgia Power Company Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia (the owners), dated January 12, 2012, as supplemented on August 15 and September 7, 2012, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as 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 set forth in 10 CFR Chapter I;
 - D. The issuance of this 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 hereby amended by page 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-81 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 150 , and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance and shall be implemented within 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert J. Pascarelli, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to License No. NPF-81
and the Technical Specifications

Date of Issuance: December 5, 2012

ATTACHMENT

TO LICENSE AMENDMENT NO. 168

RENEWED FACILITY OPERATING LICENSE NO. NPF-68

DOCKET NO. 50-424

AND

TO LICENSE AMENDMENT NO. 150

RENEWED FACILITY OPERATING LICENSE NO. NPF-81

DOCKET NO. 50-425

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

Remove Pages

License

License No. NPF-68, page 4

License No. NPF-81, page 3

TSs

5.5-5

Insert Pages

License

License No. NPF-68, page 4

License No. NPF-81, page 3

TSs

5.5-5

(1) Maximum Power Level

Southern Nuclear is authorized to operate the facility at reactor core power levels not in excess of 3625.6 megawatts thermal (100 percent power) in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 168 and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

(3) Southern Nuclear Operating Company shall be capable of establishing containment hydrogen monitoring within 80 minutes of initiating safety injection following a loss of coolant accident.

(4) Deleted

(5) Deleted

(6) Deleted

(7) Deleted

(8) Deleted

(9) Deleted

(10) Mitigation Strategy License Condition

The licensee shall develop and maintain strategies for addressing large fires and explosions and 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

- (2) Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, and City of Dalton, Georgia, pursuant to the Act and 10 CFR Part 50, to possess but not operate the facility at the designated location in Burke County, Georgia, in accordance with the procedures and limitations set forth in this license;
 - (3) Southern Nuclear, pursuant to the Act and 10 CFR Part 70, to receive, possess, and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;
 - (4) Southern Nuclear, pursuant to the Act and 10 CFR Parts 30, 40, and 70 to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
 - (5) Southern Nuclear, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;
 - (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 authorized herein.
- C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect, and is subject to the additional conditions specified or incorporated below.

(1) Maximum Power Level

Southern Nuclear is authorized to operate the facility at reactor core power levels not in excess of 3625.6 megawatts thermal (100 percent power) in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 150 and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into this license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

The Surveillance Requirements (SRs) contained in the Appendix A Technical Specifications and listed below are not required to be performed immediately upon implementation of Amendment No. 74. The SRs listed below shall be

5.5 Programs and Manuals

5.5.6 Prestressed Concrete Containment Tendon Surveillance Program

This program provides controls for monitoring any tendon degradation in prestressed concrete containments, including effectiveness of its corrosion protection medium, to ensure containment structural integrity. The program shall include baseline measurements prior to initial operations. The Tendon Surveillance Program, inspection frequencies, and acceptance criteria shall be in accordance with ASME Boiler and Pressure Vessel Code Section XI, Subsection IWL and applicable addenda as required by 10 CFR 50.55a except where an exemption, relief, or alternative has been authorized by the NRC.

The provisions of SR 3.0.3 are applicable to the Tendon Surveillance Program inspection frequencies.

5.5.7 Reactor Coolant Pump Flywheel Inspection Program

This program shall provide for the inspection of each reactor coolant pump flywheel per the recommendations of Regulatory Position C.4.b of Regulatory Guide 1.14, Revision 1, August 1975. In lieu of Position C.4b(1) and C.4b(2), the following may be conducted at least once per 20 year intervals:

- a. A qualified in-place ultrasonic examination over the volume from the inner bore of the flywheel to the circle of one-half the outer radius; or
- b. A surface examination (magnetic particle and/or liquid penetrant) of exposed surfaces of the disassembled flywheel.

The provisions of SR 3.0.3 are applicable to the Reactor Coolant Pump Flywheel Inspection Program.

(continued)



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 190 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-2 AND

AMENDMENT NO. 185 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-8

JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2

AMENDMENT NO. 168 TO RENEWED FACILITY OPERATING LICENSE NO. NPF- 68 AND

AMENDMENT NO. 150 TO RENEWED FACILITY OPERATING LICENSE NO. NPF- 81

VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

1.0 INTRODUCTION

By license amendment request (LAR) dated January 12, 2012, as supplemented by letters dated August 15 and September 7, 2012, (References 1, 2, and 3, respectively), Southern Nuclear Operating Company (SNC, the licensee), proposed changes to the Technical Specifications (TSs) for Joseph M. Farley Nuclear Plant (FNP), Units 1 and 2 and Alvin W. Vogtle Electric Generating Plant (VEGP), Units 1 and 2.

The proposed changes would extend the reactor coolant pump (RCP) motor flywheel examination frequency from the currently approved 10-year inspection interval to an interval not to exceed 20 years. SNC states that these changes are consistent with TS Task Force (TSTF) traveler TSTF-421-A, "Revision to RCP Flywheel Inspection Program (WCAP-15666)" that has been approved generically for the Westinghouse Standard Technical Specifications (STS), NUREG-1431.

A proposed justification for extending the RCP flywheel inspections from a 10-year inspection interval to an interval not to exceed 20 years was provided by the Westinghouse Owners Group (WOG) in topical report (TR) WCAP-15666, "Extension of Reactor Coolant Pump Motor Flywheel Examination," transmitted by letter dated August 24, 2001. The TR addressed the proposed extension for all domestic WOG plants. The NRC accepted the TR for referencing in license applications in a letter and safety evaluation dated May 5, 2003 (ADAMS Accession No. ML031250595). A notice announcing the availability of this proposed TS change using the Consolidated Line Item Improvement Process (CLIIP) was published in the *Federal Register* on October 22, 2003, (68 FR 60422).

SNC's Reference 1 LAR submittal stated that: "SNC has reviewed the proposed No Significant Hazards Consideration [NSHC] determination published on June 24, 2003 (68 FR 37590), as part of the CLIIP. SNC has concluded that the proposed determination presented in the notice is

applicable to FNP and VEGP and the determination is hereby incorporated by reference to satisfy the requirements of 10 CFR 50.91(a).” The plant-specific NSHC notices for FNP and the VEGP, as referenced in Section 5 of this report, are based on applicability of TSTF-421, as announced in the *Federal Register* on October 22, 2003 (68 FR 60422), as part of the CLIP. The TSTF is based on a licensee’s Reactor Coolant Pump Flywheel Inspection Program, as defined in the Administrative Controls section of the TS, already including alternatives to the inspections described in RG 1.14. In response to NRC staff requests for additional information, those provisions were added to the TS RCP Flywheel Inspection Program by Reference 3. Therefore, the staff concludes that the scope of the LAR in References 1, 2 and 3, is consistent with that noticed for the TSTF in References 6 and 7 and the plant-specific NSHCs noted in Section 5 of this report. Accordingly, the staff finds that the LAR supplements dated August 15 and September 7, 2012, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the NRC staff’s original proposed no significant hazards consideration determination as published in the *Federal Register* on February 21, 2012 (77 FR 10000) for the FNP and March 6, 2012 (77 FR 13373) for the VEGP.

2.0 REGULATORY EVALUATION

The function of the RCP in the reactor coolant system (RCS) of a pressurized water reactor plant is to maintain an adequate cooling flow rate by circulating a large volume of primary coolant water at high temperature and pressure through the RCS. Following an assumed loss of power to the RCP motor, the flywheel, in conjunction with the impeller and motor assembly, provides sufficient rotational inertia to assure adequate primary coolant flow during RCP coastdown, thus resulting in adequate core cooling.

A concern regarding the overspeed of the RCP and its potential for failure led to the issuance of Regulatory Guide (RG) 1.14, “Reactor Coolant Pump Flywheel Integrity,” Revision 1, dated August 1975. RG 1.14 describes a method acceptable to the NRC Staff of addressing concerns related to RCP vibration and the possible effects of missiles that might result from the failure of the RCP flywheel. The need to protect components important to safety from such missiles are included in General Design Criterion 4, “Environmental and Dynamic Effects Design Bases,” of Appendix A, “General Design Criteria for Nuclear Power Plants,” to 10 CFR Part 50, “Domestic Licensing of Production and Utilization Facilities,” which is applicable to plants that obtained their construction permits after May 21, 1971.

The purpose of the testing and inspection programs defined in the TSs is to ensure that the probability of a flywheel failure is sufficiently small such that additional safety features are not needed to protect against a flywheel failure. The RG provides criteria in terms of critical speeds that could result in the failure of a RCP flywheel during normal or accident conditions. In addition to the guidance in RG 1.14, the NRC has more recently issued RG 1.174, “An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,” which provides guidance and criteria for evaluating proposed changes that use risk-informed justifications.

SNC’s letter states, “SNC has concluded that the justifications presented in the TSTF proposal and the model SE prepared by the NRC Staff are applicable to Farley Nuclear Plant (FNP), Units 1 and 2, and Vogtle Electric Generating Plant (VEGP), Units 1 and 2, and justify this amendment for the incorporation of the changes to the FNP and VEGP TS.”

3.0 TECHNICAL EVALUATION

The amendment proposes the following change for the FNP and VEGP TS 5.5.7, "Reactor Coolant Pump Flywheel Inspection Program":

"The examination frequency for the RCP flywheels is changed from at least once per 10 years to 20 year intervals."

The Staff's review of the amendment identified a need for additional information from the licensee, and as a result, a request for additional information (RAI) was issued to SNC by letter ML12165A107, dated June 14, 2012. The letter stated the following concern:

"Regulatory Guide (RG) 1.14, "Reactor Coolant Pump Flywheel Integrity," Revision 1, Position C.4.b includes five parts. Regarding Parts C.4.b(1) and C.4.b(2), the NRC staff finds that the current FNP and VEGP TS are consistent with the provisions of the second STS paragraph above for an inspection interval of 10 years.

However, since the current FNP and VEGP TS do not include the provisions of the first STS paragraph above, there would be no requirements in the proposed revised FNP and VEGP TS for the actions required by RG 1.14, positions C.4.b(3), C.4.b(4), and C.4.b(5).

Please provide either (a) a justification for the extension of the inspection interval from 10 to 20 years absent the inclusion of the provisions of RG 1.14, positions C.4.b(3), C.4.b(4) and C.4.b(5) in the FNP and VEGP TS, or (b) propose a revision to the LAR of January 12, 2012, to include a paragraph comparable to the first STS paragraph, as noted above."

On June 14, 2012, via ML12228A601, SNC responded to the Staff's RAI by supplementing its application with an enclosure and revised TS marked-up changes. The licensee's letter states, "Southern Nuclear Operating Company (SNC) elects to respond by addressing option (a). Although not specifically stated in the Technical Specifications (TSs) of either the Farley Nuclear Plant (FNP) or Vogtle Electric Generating Plant (VEGP), both plants comply with provisions C.4.b(3), C.4b(4), and C.4.b(5) of RG 1.14." The enclosure to the letter provided details on the licensee's approach to the RG 1.14 C.4.b's provisions, specifically, 3, 4 and 5.

The Staff's assessment:

The justification for the proposed change was provided in TR WCAP-15666, which the Staff accepted for referencing in license applications by a letter and safety evaluation dated May 5, 2003 (ML031250595). The TR addresses the three critical speeds defined in RG 1.14: (a) the critical speed for ductile failure, (b) the critical speed for non-ductile failure, and (c) the critical speed for excessive deformation of the flywheel. The Staff' SE determined that the TR adequately addressed these issues and demonstrated that acceptance criteria, for normal and accident conditions defined in RG 1.14, would continue to be met for all domestic WOG plants following an extension of the inspection interval. The TR also provided a risk assessment for extending the RCP flywheel inspection interval. The Staff's review, documented in the SE for the

TR, determined that the analysis methods and risk estimates are acceptable when compared to the guidance in RG 1.174.

The Staff has also reviewed the August 15, 2012, response from SNC (as stated above) and determined that the position regarding meeting RG 1.14 C.4.b(4) and RG 1.14 C.4.b(5) is acceptable. However, the Staff questioned that the licensee's response regarding RG 1.14 C.4.b(3). After a follow-up conversation between the Staff and the licensee, the SNC informed the staff via letter ML12251A280, dated September 7, 2012, of their decision to amend its January 12, 2012 request to make the requirements stated in Section 5.5.7 of the VEGP and FNP TS consistent with the requirements stated in Section 5.5.7 of the Westinghouse Standard TS (NUREG-1431). An enclosure to the letter provided revised FNP and VEGP TS marked-up changes. The Staff reviewed the licensee's revised TS changes and found to be consistent with the RG 1.14 guidance as well as TSTF-421's approved changes.

The Staff finds that the regulatory positions in RG 1.14 concerning the three critical speeds are satisfied, and that the evaluation indicating that critical crack sizes are not expected to be attained during a 20-year inspection interval is reasonable and acceptable. The potential for failure of the RCP flywheel is, and will continue to be, negligible during normal and accident conditions. The Staff concurs that the basis for TSTF 421 applies to the flywheels cited, and the change proposed to the FNP and VEGP TS 5.5.7 extending the inspection frequencies for the flywheels cited, is therefore acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Alabama State official was notified of the proposed issuance of the amendment for the FNP and the Georgia State official was notified of the proposed issuance of the amendment for the VEGP. The State officials had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendments 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 February 21, 2012 (77 FR 10000 for the FNP) and March 6, 2012 (77 FR 13373 for the VEGP). 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. License Amendment Request (LAR) dated January 12, 2012, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML120130175).
2. Supplement to LAR, August 15, 2012, ADAMS Accession No. ML12228A601.
3. Supplement to LAR, September 7, 2012, ADAMS Accession No. ML12251A280.
4. Letter from Robert H. Bryan, Westinghouse Owners Group, to Chief, Information Management Branch, USNRC, August 24, 2001, enclosing Westinghouse Electric Company report WCAP-15666, "Extension of Reactor Coolant Pump Motor Flywheel Examination," Non-Proprietary Class 3, dated July 2001 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML012420149).
5. NUREG-1431, Volume 1, Revision 3, "Standard Technical Specifications Westinghouse Plants - Specifications." (Agencywide Documents Access and Management System (ADAMS) Accession No. ML041830612).
6. Notice of Opportunity to Comment on Model Safety Evaluation on Technical Specification Improvement Regarding Extension of Reactor Coolant Pump Motor Flywheel Examination for Westinghouse Plants Using the Consolidated Line Item Improvement Process, 68 FR 37590, June 24, 2003.
7. Notice of Availability of Model Application Concerning TS Improvement Regarding Extension of RCP Motor Flywheel Examination for Westinghouse Plant using the Consolidated Line Item Improvement Process, 68 FR 60422, October 22, 2003.

Principal Contributor: R. Grover, NRR

Date: December 5, 2012

M. Ajluni

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

Sincerely,

/RA/

Robert E. Martin, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-348, 50-364, 50-424 and 50-425

Enclosures:

1. Amendment No. 190 to NPF-2
2. Amendment No. 185 to NPF-8
3. Amendment No. 168 to NPF-68
4. Amendment No. 150 to NPF-81
5. Safety Evaluation

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* By memo dated

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