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

March 20, 2012

Mr. M. J. Ajluni
Nuclear Licensing Director
Southern Nuclear Operating Company, Inc.
P. O. Box 1295
Bin - 038
Birmingham, AL 35201-1295

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2, ISSUANCE OF AMENDMENTS REGARDING REQUEST TO ADOPT TECHNICAL SPECIFICATION TASK FORCE [TSTF]-513-A REVISION 3, REVISE PRESSURIZED WATER REACTOR OPERABILITY REQUIREMENTS AND ACTIONS FOR REACTOR COOLANT SYSTEM LEAKAGE INSTRUMENTATION (TAC NOS. ME6142 AND ME6143)

Dear Mr. Ajluni:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 187 to Renewed Facility Operating License No. NPF-2 and Amendment No. 182 to Renewed Facility Operating License No. NPF-8 for the Joseph M. Farley Nuclear Plant, Units 1 and 2 (FNP) respectively, in response to your letter dated April 29, 2011, as supplemented on October 21, 2011 (Agencywide Document Access and Management System (ADAMS) Accession No. ML111220091 and ML112980506).

This amendment revised the FNP Technical Specification 3.4.15, "RCS [Reactor Coolant System] Leakage Detection Instrumentation," to define a new time limit for restoring inoperable RCS leakage detection instrumentation to operable status and establish alternate methods of monitoring RCS leakage when one or more required monitors are inoperable. The amendments revise the TS to reflect the adoption of the NRC-approved TS Task Force (TSTF) traveler TSTF-513-A, Revision 3, "Revise PWR [Pressurized Water Reactor] Operability Requirements and Actions for RCS Leakage Instrumentation."

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 Martin

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 and 50-364

Enclosures:
1. Amendment No. 187 to NPF-2
2. Amendment No. 182 to NPF-8
3. Safety Evaluation

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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. 187
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 April 29, 2011, as supplemented on October 21, 2011, 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. 187 , are hereby incorporated in the 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 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Nancy Salgado

Nancy Salgado, 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: March 20, 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. 182
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 April 29, 2011, as supplemented on October 21, 2011, 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. 182 , are hereby incorporated in the 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 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Nancy Salgado, 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: March 20, 2012

ATTACHMENT TO LICENSE AMENDMENT NOS. 187 AND 182

TO RENEWED FACILITY OPERATING LICENSE NOS. NPF-2 and NPF-8

DOCKET NOS. 50-348 AND 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	Insert Pages
License	License
License No. NPF-2, page 4	License No. NPF-2, page 4
License No. NPF-8, page 3	License No. NPF-8, page 3
TS	TS
3.4.15-2 and 3.4.15-3	3.4.15-2 and 3.4.15-3

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 187 , 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. 182 are hereby incorporated in the renewed license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. Required containment atmosphere gaseous radioactivity monitor inoperable. AND Required containment air cooler condensate level monitor inoperable.	B.1.1	Analyze grab samples of the containment atmosphere. OR	Once per 24 hours
	B.1.2	Perform SR 3.4.13.1. AND	Once per 24 hours
	B.2	Restore at least one required monitor to OPERABLE status.	30 days
C. Containment atmosphere particulate radioactivity monitor inoperable. AND Required containment air cooler condensate level monitor inoperable.	C.1	Analyze grab samples of the containment atmosphere. AND	Once per 12 hours
	C.2	Perform SR 3.4.13.1 AND	Once per 24 hours
	C.3.1	Restore containment atmosphere particulate radioactivity monitor to OPERABLE status. OR	7 days
	C.3.2	Restore required containment air cooler condensate level monitor to OPERABLE status.	7 days

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
D. Required Action and associated Completion Time not met.	D.1	Be in MODE 3.	6 hours
	AND		
	D.2	Be in MODE 5.	36 hours
E. All required monitors inoperable.	E.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.15.1	Perform CHANNEL CHECK of the required containment atmosphere radioactivity monitor.	In accordance with the Surveillance Frequency Control Program
SR 3.4.15.2	Perform COT of the required containment atmosphere radioactivity monitor.	In accordance with the Surveillance Frequency Control Program
SR 3.4.15.3	Perform CHANNEL CALIBRATION of the required containment atmosphere radioactivity monitor.	In accordance with the Surveillance Frequency Control Program
SR 3.4.15.4	Perform CHANNEL CALIBRATION of the required containment air cooler condensate level monitor.	In accordance with the Surveillance Frequency Control Program

UNITED STATES
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO

AMENDMENT NO. 187 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-2 AND

AMENDMENT NO. 182 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 April 29, 2011 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML111220091), as supplemented by letter dated October 21, 2011 (ADAMS Accession No. ML112980506), Southern Nuclear Operating Company (SNC, the licensee) proposed changes to the Technical Specifications (TS) for Joseph M. Farley Nuclear Plant, Unit 1 and Unit 2 (FNP 1 and 2). The proposed changes revise the TS to define a new time limit for restoring inoperable Reactor Coolant System (RCS) leakage detection instrumentation to operable status and establish alternate methods of monitoring RCS leakage when one or more required monitors are inoperable.

The licensee utilized the NRC-approved Revision 3 to Technical Specification Task Force (TSTF) Standard Technical Specification (STS) Change Traveler, TSTF-513, "Revise PWR [pressurized water reactor] Operability Requirements and Actions for RCS Leakage Instrumentation." The availability of this TS improvement was announced in the *Federal Register* on January 3, 2011, (76 FR 189) as part of the consolidated line item improvement process (CLIIP).

The supplement dated October 21, 2011, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on June 14, 2011 (76 FR 34768)

2.0 REGULATORY EVALUATION

The NRC's regulatory requirements related to the content of the TS are contained in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.36. Paragraph (c)(2)(i) of 10 CFR 50.36 states that limiting conditions for operation (LCOs) are the lowest functional capability or performance levels of equipment required for safe operation of the facility. Paragraph (c)(2)(ii) of 10 CFR 50.36 lists four criteria for determining whether particular items are required to be included in the TS LCOs. The first criterion applies to installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary

(RCPB). As described in the *Federal Register* Notice associated with this regulation (60 FR 36953, July 16, 1995), the scope of TS includes two general classes of technical matters: (1) those related to prevention of accidents, and (2) those related to mitigation of the consequences of accidents. Criterion 1 addresses systems and process variables that alert the operator to a situation when accident initiation is more likely, and supports the first of these two general classes of technical matters which are included in TS. As specified in Paragraph (c)(2)(i) of 10 CFR 50.36, when a limiting condition for operation of a nuclear reactor is not met, the licensee shall shut down the reactor or follow any remedial action permitted by TS until the condition can be met.

The NRC's guidance for the format and content of PWR TS can be found in NUREG-1431, Revision 3.0, "Standard Technical Specifications-Westinghouse Plants." STS 3.4.15 "RCS Leakage Detection Instrumentation" contains the guidance specific to the RCS leakage detection instrumentation for PWRs. The STS Bases provide a summary statement of the reasons for the STS.

The Bases for STS 3.4.15 contained in NUREG-1431, Revision 3.0, provide background information, the applicable safety analyses, a description of the LCO, the applicability for the RCS leakage detection instrumentation TS, and describe the Actions and Surveillance Requirements. The TS Bases provide the purpose or reason for the TS which are derived from the analyses and evaluation included in the safety analysis report, and for these Specifications, the RCS leakage detection instrumentation design assumptions and licensing basis for the plant.

As stated in NRC Information Notice (IN) 2005-24, "Nonconservatism in Leakage Detection Sensitivity" (Agencywide Documents Access and Management System (ADAMS) Accession No. ML051780073), the reactor coolant activity assumptions for containment atmosphere gaseous radioactivity monitors may be nonconservative. This means the monitors may not be able to detect a one gpm leak within one hour under all likely operating conditions.

The issue described in IN 2005-24 has raised questions regarding the operability requirements for containment atmosphere gaseous radioactivity monitors. TSTF-513, Revision 3, revises the TS Bases to reflect the proposed TS changes and more accurately describe the contents of the facility design basis related to operability of the RCS leakage detection instrumentation. Part of the TS Bases changes revise the specified safety function of the RCS leakage detection monitors to specify the required instrument sensitivity level. In addition, TSTF-513, Revision 3, includes revisions to TS Actions for RCS leakage detection instrumentation to establish limits for operation during conditions of reduced monitoring sensitivity because of inoperable RCS leakage detection instrumentation.

The regulation at 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 30, "Quality of Reactor Coolant Pressure Boundary," requires means for detecting and, to the extent practical, identifying the location of the source of RCS leakage. Regulatory Guide (RG) 1.45, Revision 0, "Reactor Coolant Pressure Boundary Leakage Detection Systems," May 1973, describes acceptable methods of implementing the GDC 30 requirements with regard to the selection of leakage detection systems for the RCPB.

RG 1.45, Revision 0, Regulatory Position C.2, states that "Leakage to the primary reactor containment from unidentified sources should be collected and the flow rate monitored with an accuracy of one gallon per minute (gpm) or better."

RG 1.45, Revision 0, Regulatory Position C.3 states:

> At least three separate detection methods should be employed and two of these methods should be (1) sump level and flow monitoring and (2) airborne particulate radioactivity monitoring. The third method may be selected from the following: a. monitoring of condensate flow rate from air coolers [or] b. monitoring of airborne gaseous radioactivity. Humidity, temperature, or pressure monitoring of the containment atmosphere should be considered as alarms or indirect indication of leakage to the containment.

RG 1.45, Revision 0, Regulatory Position C.5 states, "The sensitivity and response time of each leakage detection system in regulatory position 3 above employed for unidentified leakage should be adequate to detect a leakage rate, or its equivalent, of one gpm in less than one hour." RG 1.45, Revision 0, states, "In analyzing the sensitivity of leak detection systems using airborne particulate or gaseous radioactivity, a realistic primary coolant radioactivity concentration assumption should be used. The expected values used in the plant environmental report would be acceptable." The appropriate sensitivity of a plant's containment atmosphere gaseous radioactivity monitors is dependent on the design assumptions and the plant-specific licensing basis as described in the plant's final safety analysis report (FSAR). The NRC staff's approval of the use of expected primary coolant radioactivity concentration values used in the environmental report creates a potential licensing conflict when a licensee is able to achieve and maintain primary coolant radioactivity concentration values lower than the value assumed in the environmental report.

RG 1.45, Revision 1, "Guidance on Monitoring and Responding to Reactor Coolant System Leakage," was issued in May 2008. RG 1.45, Revision 1, describes methods for implementing GDC 30 requirements that are different from those in RG 1.45, Revision 0, and was developed and issued to support new reactor licensing. Revision 1 allows that having two TS leakage detection methods capable of detecting a one gpm leak within one hour provides adequate leakage detection capability from a safety perspective. It recommends that other potential indicators (including the gaseous radiation monitors) be maintained even though they may not have the same detection capability. These indicators, in effect, provide additional defense-in-depth.

The regulation in GDC 4 of Appendix A to 10 CFR Part 50, "Environmental and dynamic effects design bases," requires structures, systems, and components important to safety to 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 loss-of-coolant accidents. GDC 4 allows the use of leak before break (LBB) technology to exclude dynamic effects of pipe ruptures in the design bases when analyses reviewed and approved by the Commission demonstrate that the probability of fluid system piping rupture is extremely low under conditions consistent with the design basis for the piping.

FNP compliance with GDC 30 is discussed in FSAR Section 3.1.26, "Criterion 30 - Quality of Reactor Coolant Pressure Boundary." With respect to RCS leakage detection, FSAR Section 3.1.26 states:

> "Leakage is detected by an increase in the amount of makeup water required to maintain a normal level in the pressurizer. The reactor vessel closure joint

is provided with a temperature monitored leak off between double gaskets. Leakage inside the containment is drained to the containment sump. Leakage is also detected by measuring the airborne activity and the rate of condensate drained from the containment air recirculation units. Monitoring the inventory of reactor coolant in the system at the pressurizer, volume control tank, and coolant drain collection tanks makes available an accurate indication of integrated leakage.

The reactor coolant pressure boundary leakage detection system is discussed in subsection 5.2.7."

FNP's FSAR Section 5.2.7, "Reactor Coolant Pressure Boundary (RCPB) Leakage Detection Systems" states that the containment Air Particulate Monitor would detect a 1 gpm RCS leak within .5 minutes, the Containment Radioactive Gas Monitor would take 40 minutes to register double the level during a 1 gpm leak, assuming .1% failed fuel, and the Condensate Measuring system would detect a 1 gpm leak within 1 hour, assuming 40% of the leakage enters the containment atmosphere as vapor.

3.0 TECHNICAL EVALUATION

In adopting the changes to TS included in TSTF-513, Revision 3, the licensee proposed to revise TS 3.4.15, "Reactor Coolant System (RCS) Leakage Detection Instrumentation" Conditions and Required Actions. The proposed changes differ from TSTF-513 changes to NUREG-1431 because the FNP TS are slightly different from NUREG-1431. Specifically, The Required Actions for FNP TS 3.4.15 Condition A can be completed by either analyzing grab samples once per 24 hours or performing an RCS mass balance once per 24 hours, whereas the Required Actions for NUREG-1431 TS 3.4.15 Condition A can only be met by performing an RCS mass balance once per 24 hours. The licensee proposed adding new Condition C to TS 3.4.15. New Condition C would be applicable when the containment atmosphere gaseous radioactivity monitor is the only operable RCS leakage detection monitor. This new Condition is necessary because improved fuel integrity and the resulting lower primary coolant radioactivity concentration affects a plant's containment atmosphere gaseous radioactivity monitor to a greater extent than other monitors. The proposed Required Actions for new Condition C require the licensee to analyze grab samples of the containment atmosphere once per 12 hours, perform an RCS mass balance once per 24 hours and restore the required containment sump monitor to operable status within 7 days, or analyze grab samples of the containment atmosphere once per 12 hours, perform an RCS mass balance once per 24 hours and restore the containment air cooler condensate flow rate monitor to operable status within 7 days. The deviations between FNP new Condition C Required Actions and the applicable TS changes described in TSTF-513, Revision 3, are consistent with the intent of TSTF-513.

The NRC staff determined that the proposed Condition C is more restrictive than the current requirement, because the current Condition that would apply to the situation when the containment atmosphere gaseous radioactivity monitor is the only operable RCS leakage detection monitor would allow the licensee 30 days to restore the inoperable monitors to operable status. The proposed Actions and Completion Times are adequate because the grab samples combined with the more frequent RCS mass balances will provide an alternate method of monitoring RCS leakage when the containment atmosphere gaseous radioactivity monitor is the only operable RCS leakage detection monitor and the 12-hour interval is sufficient to detect

increasing RCS leakage before a piping flaw could progress to a catastrophic failure of the primary RCPB. Allowing 7 days to restore another RCS leakage monitor to operable status is reasonable given the diverse methods employed in the Required Actions to detect an RCS leak and the low probability of a large RCS leak during this period. Proposed Condition C is conservative relative to the STS, sufficiently alerts the operating staff, provides a comparable ability to detect RCS leakage, and provides time intervals that are reasonable. Therefore, the NRC staff determined that proposed Condition C provides an adequate assurance of safety when judged against current regulatory standards.

Certain ASME Code Class 1 piping systems in VEGP have been approved by the NRC for LBB. The basic concept of LBB is that certain piping material has sufficient fracture toughness (i.e., ductility) to resist rapid flaw propagation; thereby minimizing the probability of a pipe rupture. The licensee has evaluated postulated flaws in RCS loop piping and determined the piping has sufficient fracture toughness that the postulated flaw would not lead to pipe rupture and potential damage to adjacent safety-related systems, structures and components before the plant could be placed in a safe, shutdown condition. The NRC staff has previously reviewed and approved these plant-specific LBB analyses. Before remotely approaching a pipe rupture, the postulated flaw would lead to limited but detectable leakage, which would be identified by the leak detection systems in time for the operator to take action. The NRC staff previously addressed concerns that LBB depends on erroneous leak rate measurements in the final rule making for use of LBB technology. In addressing the concerns, it was noted that:

> One criterion for application of leak-before-break is that postulated flaw sizes be large enough so that the leakage is about ten times the leak detection capability, and that this flaw be stable even if earthquake loads are applied to the pipe in addition to the normal operating loads. This margin of a factor of ten is more than ample to account for uncertainties in both leakage rate calculations and leak detection capabilities. Furthermore, additional sensitivity studies reported by Lawrence Livermore National Laboratory in NUREG/CR-2189, dated September 1981, entitled "Probability of Pipe Fracture in the Primary Coolant Loop of a PWR Plant" indicate that even in the absence of leak detection, the probability of pipe ruptures in PWR primary coolant loop piping is sufficiently low to warrant exclusion of these events from the design basis.
> (51 FR 12502-01)

The proposed actions for inoperable RCS leakage detection instrumentation maintain sufficient continuity, redundancy, and diversity of leakage detection capability that an extremely low probability of undetected leakage leading to pipe rupture is maintained. This extremely low probability of pipe rupture continues to satisfy the basis for acceptability of LBB in GDC 4. The licensee proposed minor changes to ensure continuity of the TS format. These changes re-letter current Condition C, which applies when the required action and the associated completion time are not satisfied, to Condition D, and current Condition D, which applies when all required leakage detection systems are inoperable, to Condition E. Similar changes were made to the associated Required Actions. The NRC staff determined that these changes are editorial, and therefore acceptable.

The associated TS Bases submitted with the licensee's proposed revision for TS 3.4.15 reflect the proposed TS changes and more accurately describe the contents of the facility design basis related to operability of the RCS leakage detection instrumentation and reflect the proposed TS changes. The proposed TS Bases changes related to the operability of the RCS leakage

detection instrumentation are acceptable because they provide background information, the applicable safety analyses, a description of the limiting condition for operation, and the applicability for the RCS leakage detection instrumentation TS and are consistent with the design basis of the facility. These instruments satisfy Criterion 1 of 10 CFR 50.36(c)(2)(ii) in that they are installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the RCPB.

The NRC staff evaluated the licensee's proposed changes against the applicable regulatory requirements listed in Section 2 of this SE. The NRC staff also compared the proposed changes to the changes made to STS by TSTF-513, Revision 3. The NRC staff determined that all the proposed changes afford adequate assurance of safety when judged against current regulatory standards. Therefore, the NRC staff finds the proposed changes 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. 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. 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 (76 FR 34768). 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. Southern Nuclear Operating Company, Inc. Joseph M. Farley Nuclear Plant Units 1 and 2, License Amendment Request to adopt Technical Specification Task Force Traveler TSTF-513, Revision 3 "Revise PWR Operability Requirements and Actions for RCS Leakage Instrumentation," April 29, 2011 (ADAMS Accession No. ML111220091)

2. Southern Nuclear Operating Company, Inc. Joseph M. Farley Nuclear Plant Units 1 and 2, License Amendment Request to adopt Technical Specification Task Force Traveler TSTF-513, Revision 3, "Response to Request for Additional Information Regarding Requiring Performance of Reactor Coolant System Mass Balance, " October 21, 2011 (ADAMS Accession No. ML112980506)

3. Submittal of TSTF-513, Revision 3 and TSTF-514, Revision 2, (ADAMS Accession No. ML102360355)

4. Federal Register Notice, Notice of Availability published on January 3, 2001 (ADAMS Accession No. ML101340267)

Principal Contributors: M. Hamm
M. Singletary

Date: March 20, 2012

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 and 50-364

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