



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

May 10, 2010

Mr. Mark J. Ajluni
Manager, Nuclear Licensing
Southern Nuclear Operating Company, Inc
40 Inverness Center Parkway
Birmingham, Alabama 35201

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT - ISSUANCE OF AMENDMENT
REGARDING CHANGE OF IMPLEMENTATION DATE FOR AMENDMENT
NO. 176 FOR UNIT 2 (TAC NO. ME3445)

Dear Mr. Ajluni:

The U.S. Nuclear Regulatory Commission has issued the enclosed Amendment No. 179 to Renewed Facility Operating License No. NPF-8 for the Joseph M. Farley Nuclear Plant (FNP), Unit 2.

Amendment No. 176 for FNP, Unit 2, was issued on September 18, 2009, with a required implementation date of prior to the end of the 20th refueling outage (RFO) (U2R20). The amendment approved the deletion of the reactor coolant pump breaker position reactor trip function from the technical specification requirements for the reactor trip system. The enclosed amendment extends the date to implement Amendment No. 176 for FNP, Unit 2, from the end of the 20th FNP, Unit 2, RFO until the end of the 21st FNP, Unit 2, RFO, in response to your application dated February 26, 2010. There is no change to the implementation date for FNP, Unit 1, that was approved in Amendment No. 183 for FNP, Unit 1, (prior to the end of the 23rd RFO (U1R23)).

The implementation date extension is needed due to unforeseen difficulties encountered by the licensee with respect to delays in the receipt of design input from the original equipment manufacturer and the resulting impact on the licensee's schedule for implementing the modification during the originally scheduled 20th FNP, Unit 2, RFO.

M. Ajluni

- 2 -

A copy of the related Safety Evaluation is also enclosed. A 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 No. 50-364

Enclosures:

1. Amendment No. 179 to NPF-8
2. Safety Evaluation

cc w/encl: Distribution via ListServ



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. 179
Renewed License No. NPF-8

1. The U.S. Nuclear Regulatory Commission has found that:
 - A. The application for amendment by Southern Nuclear Operating Company, Inc. (Southern Nuclear), dated February 26, 2010, 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, Facility Operating License No. NPF-8 is amended to extend the implementation date of Amendment No. 176, which was issued on September 18, 2009, to prior to the end of the twenty-first refueling outage (U2R21).
3. This license amendment is effective as of its date of issuance and shall be implemented within thirty (30) days.

FOR THE NUCLEAR REGULATORY COMMISSION



Gloria Kulesa, Chief
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Date of Issuance: May 10, 2010



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 179 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-8

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-364

1.0 INTRODUCTION

By application, dated February 26, 2010, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML100600593), to the U.S. Nuclear Regulatory Commission (NRC, the Commission), Southern Nuclear Operating Company (SNC, the licensee) submitted a license amendment request (LAR) for changes to the Joseph M. Farley Nuclear Plant (FNP), Unit 2, operating license.

Amendment No. 176 for FNP, Unit 2, was issued on September 18, 2009 (ADAMS ML092220022), with a required implementation date of prior to the end of the 20th refueling outage (RFO) (U2R20). The amendment approved the deletion of the Reactor Coolant Pump (RCP) breaker position reactor trip in TS 3.3.1, "Reactor Trip System (RTS) Instrumentation." SNC's LAR proposed to extend the date to implement Amendment No. 176 for FNP, Unit 2, from the end of the 20th FNP, Unit 2, RFO until the end of the 21st FNP, Unit 2, RFO. There is no change to the implementation date for FNP, Unit 1, that was approved in Amendment No. 183 for Unit 1, as also issued on September 18, 2009.

SNC stated that the implementation date extension is needed due to unforeseen difficulties encountered by SNC with respect to delays in the receipt of design input from the original equipment manufacturer and the resulting impact on the licensee's schedule for implementing the modification during the originally scheduled 20th FNP, Unit 2, RFO.

2.0 REGULATORY EVALUATION

Consistent with its review of the initial LAR on this subject, as discussed in Amendment No. 176 for FNP, Unit 2, as issued on September 18, 2009, the NRC staff considered the following regulatory requirements in its review of the LAR:

- Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," establishes the fundamental regulatory requirements with respect to the domestic licensing of nuclear production and utilization facilities. Specifically, Appendix A, "General Design Criteria for Nuclear Power Plants," to

10 CFR Part 50 provides, in part, the necessary design, fabrication, construction, testing, and performance requirements for structures, systems, and components important to safety.

- General Design Criteria (GDC) - 13, "Instrumentation and Control," requires that instrumentation shall be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions as appropriate to assure adequate safety, including those variables and systems that can affect the fission process, the integrity of the reactor core, the reactor coolant pressure boundary, and the containment and its associated systems. Appropriate controls shall be provided to maintain these variables and systems within prescribed operating ranges.
- GDC - 20, "Protective System Functions," requires the protection system to be designed (1) to initiate automatically the operation of appropriate systems including the reactivity control systems, to assure that specified acceptable fuel design limits are not exceeded as a result of anticipated operational occurrences and (2) to sense accident conditions and to initiate the operation of systems and components important to safety.
- 10 CFR 50.36(a)(1), "Technical Specifications," states, "Each applicant for a license authorizing operation of a production or utilization facility shall include in his application proposed technical specifications in accordance with the requirements of this section." Specifically, 10 CFR 50.36(c)(2)(ii) states, "A technical specification limiting condition for operation of a nuclear reactor must be established for each item meeting one or more of the following criteria:"
 - (A) Criterion 1. Installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary.
 - (B) Criterion 2. A process variable, design feature, or operating restriction that is an initial condition of a design basis accident or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
 - (C) Criterion 3. A structure, system, or component that is part of the primary success path and which functions or actuates to mitigate a design basis accident or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.
 - (D) Criterion 4. A structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety.

3.0 TECHNICAL EVALUATION

The position of breakers in the power circuits for RCPs is monitored to provide a reactor trip if one RCP breaker is open above the P-8 setpoint (approximately 30 percent rated thermal power (RTP)). Above the P-7 setpoint (approximately 10 percent RTP) and below the P-8 setpoint a reactor trip would be initiated if RCP breakers for any two pumps are open.

In its safety evaluation (SE) accompanying Amendment No. 176 for FNP, Unit 2, (and Amendment No. 183 for FNP, Unit 1), issued on September 18, 2009, the NRC staff reviewed SNC's prior proposal to revise Technical Specification (TS) Section 3.3.1, Table 3.3.1-1, to delete Function 11, "Reactor Coolant Pump Breaker Position," including Applicable Modes or other Specified Conditions, Required Channels, Conditions, Surveillance Requirements, Allowable Value, and Trip Setpoint, for both single-loop and two-loop reactor trips. Also deleted were TS Section 3.3.1, Table 3.3.1-1, Footnotes (g) and (h) and TS Section 3.3.1, Conditions N and O, Required Actions N.1, N.2, O.1, and O.2, and associated Completion Times. These changes would enable a modification to the plant design to delete this trip function from the reactor trip system for FNP, Units 1 and 2. The dates for implementation of this modification in the amendments issued on September 18, 2009, were prior to the end of the 23rd RFO for FNP, Unit 1, (U1R23) and prior to the end of the 20th RFO for FNP, Unit 2, (U2R20).

As discussed in further detail in the September 18, 2009 SE, the NRC staff approved deletion of the RCP breaker trips on consideration of the backup status of the RCP breaker position trips, the existence of the primary loss-of-coolant flow trip to protect against the partial and complete loss of flow events, as analyzed in the Updated Final Safety Analysis Report, the existence of other back-up trip functions for partial and complete loss-of-flow events, and the requirements of 10 CFR 50.36, "Technical Specifications." On the basis of that review, the NRC staff concluded that the deletion of the RCP breaker position trip function met the plant's current licensing basis and 10 CFR Part 50 and was acceptable.

The time period from SNC's initial LAR on this subject, submitted in March 2009, until planned implementation was approximately 12 months for FNP, Unit 2, and approximately 18 months for Unit 1. With the proposed change in implementation schedule for FNP, Unit 2, the time period would change to approximately 30 months for FNP, Unit 2.

SNC has considered actions that can be taken during the additional period of operation for Unit 2 until the modification can be completed, as follows:

Currently, both Units' RCP breaker position indications are supplied from inverters. The inverters prevent grid perturbations from being experienced downstream of the inverters.

The inverters are the preferred source of power for the AC [alternating current] vital buses because of the stability and reliability they achieve. The function of the inverter is to provide AC electrical power to the vital buses.

The Class 1E inverters provide the preferred source of 120 V [volt], 60 Hz [Hertz] power for the reactor protection system, the engineered safety feature actuation system, the nuclear steam supply system control and instrumentation, the post accident monitoring system, and the safety related radiation monitoring system. Each distribution panel can be connected to an alternate source of Class 1E 120 VAC power. The backup power source is an emergency 600V motor control center supplying a 120V regulated panel through a constant voltage transformer. Should the normal distribution panel source fail, the inverter static transfer switch will function to supply the vital AC distribution panels from this alternate source. The inverters have not experienced a failure since 2006. A failure of the inverter will swap the power source to the alternate source. Although a fault downstream of the inverters

could cause a plant trip, the inverters have proven to be reliable and afford protection to minimize the likelihood of unwarranted reactor trips. Therefore, the inverters normal alignment will support the enablement of the RCP breaker position reactor trip circuit for one additional cycle.

The RCP breaker position trip is an anticipatory trip. The FNP, Unit 2 accident analyses does not credit the RCP breaker position trip. The accident analyses credits the reactor coolant system low - flow reactor trip as the primary reactor trip for both loss of reactor coolant system flow and partial loss of reactor coolant system flow. Although the RCP breaker position trip is within the current licensing basis, the requirements of 10 CFR Part 50 would be met with or without the RCP breaker position trip being in service.

The NRC staff has not identified a safety-related issue concerning whether the modification date for FNP, Unit 2, is extended until prior to the end of the 21st RFO (Fall 2011). The NRC staff finds that the primary and secondary features of the reactor protection system providing protection from partial or complete loss of flow that are relied upon in the safety analyses, remain in effect. On these bases, the NRC staff concludes that the proposed change to the implementation date for FNP, Unit 2, until FNP, Unit 2, RFO 21st outage is acceptable. The NRC staff also notes that SNC has considered system alignments to minimize the likelihood of unwarranted reactor trips.

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 amendment changes 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 amendment involves 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 amendment involves no significant hazards consideration, and there has been no public comment on such finding dated March 10, 2010 (75 FR 11202). 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 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.

Principal Contributors: Robert Martin, NRR/DORL
Barry Marcus, NRR/DE

Date of issuance: May 10, 2010

M. Ajluni

- 2 -

A copy of the related Safety Evaluation is also enclosed. A 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 No. 50-364

Enclosures:

- 1. Amendment No. 179 to NPF-8
- 2. Safety Evaluation

cc w/encl: Distribution via ListServ

DISTRIBUTION:

Public
LPL2-1 R/F
RidsNrrPMFarley (hard copy)
RidsRgn2MailCenter

RidsAcrsAcnw_MailCTR
RidsOgcRp
RidsNrrLASRohrer
RidsNrrDorIDpr

RidsNrrDorLpl2-1
RidsNrrDirsltsb
RidsNrrDeEicb
BMarcus, NRR/DE

Amendment No.: ML101100668

*via e-mail Dated

OFFICE	LPL2-1/PM	LPL2-1/LA	EICB/BC	OGC/NLO	LPL2-1/BC
NAME	RMartin	SRohrer	WKemper*	SUttal	GKulesa
DATE	04/21/10	04/21/10	04/21/10	04/28/10	05/10/10

OFFICIAL RECORD COPY