



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

October 25, 2000

Mr. D. N. Morey
Vice President - Farley Project
Southern Nuclear Operating
Company, Inc.
Post Office Box 1295
Birmingham, Alabama 35201-1295

SUBJECT: JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2 RE: ISSUANCE OF
AMENDMENT ON PORV BLOCK VALVES (TAC NO. MB0099)

Dear Mr. Morey:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 139 to Facility Operating License No. NPF-8 for the Joseph M. Farley Nuclear Plant, Unit 2. The amendment consists of changes to the Technical Specifications and associated Bases in response to your application of September 8, 2000, as supplemented by your letter on October 2, 2000.

The amendment revises surveillance requirements 3.4.11.1 and 3.4.11.4 to eliminate the requirement to cycle the Unit 2 pressurizer power-operated relief valve block valves during the remainder of operating cycle 14.

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,

L. Mark Padovan, Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-364

Enclosures:

1. Amendment No. 139 to NPF-8
2. Safety Evaluation

cc w/encl: See next page

NRR-058

DFOI

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DATE	10/11/00	10/11/00	10/12/00	10/25/00	10/24/00

Handwritten notes: "Approved" and "revised" with arrows pointing to the OGC column.

OFFICIAL RECORD COPY

Joseph M. Farley Nuclear Plant

cc:

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

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

ALABAMA POWER COMPANY

DOCKET NO. 50-364

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 139
License No. NPF-8

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Southern Nuclear Operating Company, Inc. (Southern Nuclear), dated September 8, 2000, as supplemented by letter dated October 2, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this license amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Facility Operating License No. NPF-8 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 139, are hereby incorporated in the license. Southern Nuclear shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard L. Emch, Jr., Chief, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 25, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 139

TO FACILITY OPERATING LICENSE NO. NPF-8

DOCKET NO. 50-364

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

Remove

Insert

3.4.11-3

3.4.11-3

3.4.11-4

3.4.11-4

B 3.4.11-7

B 3.4.11-7

B 3.4.11-8

B 3.4.11-8

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. More than one block valve inoperable.	F.1 Place associated PORVs in manual control.	1 hour
	<u>AND</u>	
	F.2 Restore one block valve to OPERABLE status.	2 hours
	<u>AND</u>	
	F.3 Restore remaining block valve to OPERABLE status.	72 hours
G. Required Action and associated Completion Time of Condition F not met.	G.1 Be in MODE 3.	6 hours
	<u>AND</u>	
	G.2 Be in MODE 4.	12 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.4.11.1 -----NOTES----- 1. Not required to be met with block valve closed in accordance with the Required Action of Condition B or E. 2. Not required to be performed prior to entry into MODE 3. 3. Not required to be performed for Unit 2 for the remainder of operating cycle 14. ----- Perform a complete cycle of each block valve.	92 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.4.11.2	<p>-----NOTE----- Not required to be performed prior to entry into MODE 3. -----</p> <p>Perform a complete cycle of each PORV during MODE 3 or 4.</p>	18 months
SR 3.4.11.3	Perform a complete cycle of each PORV using the backup PORV control system.	18 months
SR 3.4.11.4	<p>-----NOTE----- Required to be performed only for Unit 2 for the remainder of operating cycle 14. -----</p> <p>Check power available to the Unit Two PORV block valves.</p>	24 hours

BASES

ACTIONS
(continued)

G.1 and G.2

If the Required Actions of Condition F are not met, then the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 4 within 12 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. In MODES 4, 5, and 6, the PORVs are not required OPERABLE.

SURVEILLANCE
REQUIREMENTS

SR 3.4.11.1

Block valve cycling verifies that the valve(s) can be closed if needed. The basis for the Frequency of 92 days is the ASME Code, Section XI (Ref. 3). If the block valve is closed to isolate a PORV that is capable of being manually cycled, the OPERABILITY of the block valve is of importance, because opening the block valve is necessary to permit the PORV to be used for manual control of reactor pressure. If the block valve is closed to isolate an otherwise inoperable PORV, the maximum Completion Time to restore the PORV and open the block valve is 72 hours, which is well within the allowable limits (25%) to extend the block valve Frequency of 92 days. Furthermore, these test requirements would be completed by the reopening of a recently closed block valve upon restoration of the PORV to OPERABLE status (i.e., completion of the Required Actions fulfills the SR).

This SR is modified by two Notes. Note 1 modifies this SR by stating that it is not required to be met with the block valve closed, in accordance with the Required Action of this LCO. Note 2 modifies this SR to allow entry into and operation in MODE 3 prior to performing the SR. This allows the test to be performed in MODE 3 under operating temperature conditions, prior to entering MODE 1 or 2. A temporary third note has been added to suspend SR 3.4.11.1 for Unit Two for the remainder of operating cycle 14.

SR 3.4.11.2

SR 3.4.11.2 requires a complete cycle of each PORV in MODE 3 or 4. The PORVs are stroke tested during MODES 3 or 4 with the associated block valves closed in order to limit the uncertainty

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.4.11.2 (continued)

introduced by testing the PORVs at lesser system temperatures than expected during actual operating conditions. Operating a PORV through one complete cycle ensures that the PORV can be manually actuated for mitigation of an SGTR. The Frequency of 18 months is based on a typical refueling cycle and industry accepted practice. The Note modifies this SR to allow entry into and operation in MODE 3 prior to performing the SR. This allows the test to be performed in MODE 3 under operating temperature conditions, prior to entering MODE 1 or 2.

SR 3.4.11.3

SR 3.4.11.3 requires a complete cycle of each PORV using the backup PORV control system. This surveillance verifies the capability to operate the PORVs using the backup air and nitrogen supply systems. Additionally, this surveillance ensures the correct function of the associated air and nitrogen supply system valves. The 18-month Frequency is based on a typical refueling cycle and industry accepted practice for Surveillances requiring the PORVs to be cycled.

SR 3.4.11.4

SR 3.4.11.4 applies only to Unit 2 for the remainder of cycle 14. It requires that power to the PORV block valves is checked to be available at least every 24 hours. This surveillance provides additional assurance that the PORV block valves could be stroked if demanded while SR 3.4.11.1 is suspended.

REFERENCES

1. Regulatory Guide 1.32, February 1977.
2. FSAR Sections 5.5 and 15.2.
3. ASME, Boiler and Pressure Vessel Code, Section XI.



UNITED STATES
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WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 139 TO FACILITY OPERATING LICENSE NO. NPF-8

SOUTHERN NUCLEAR OPERATING COMPANY, INC., ET AL.

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-364

1.0 INTRODUCTION

Southern Nuclear Operating Company's (SNC's) et al., letter of September 8, 2000, as supplemented by letter on October 2, 2000, submitted a request for changes to the Joseph M. Farley Nuclear Plant, Unit 2 (FNP), Technical Specifications (TS). The requested changes would eliminate the requirement to cycle the Unit 2 pressurizer power-operated relief valve (PORV) block valves during the remainder of operating cycle 14. Cycle 14 is presently scheduled to end in the spring of 2001. This change is needed because excessive packing leakage from at least one of the Unit 2 PORV block valves occurs during valve surveillance testing (stroking). Cycling the valves with this packing leakage could result in additional valve packing degradation potentially resulting in a forced unit shutdown. Repairing the valve packing would require shutting down and cooling down the unit to establish conditions for the repair.

2.0 BACKGROUND

Farley Unit 2 has two PORVs. Plant operators use the PORVs to depressurize the reactor coolant system (RCS) in response to certain plant transients if normal pressurizer spray is not available. Normally-open block valves are located between the pressurizer and the PORVs. Plant operators use the block valves to isolate the PORVs in case of excessive leakage or a stuck-open PORV. Operators manually close the block valves using controls in the control room. A stuck-open PORV is, in effect, a small break loss-of-coolant accident (LOCA). As such, closing the block valve terminates the RCS depressurization and coolant inventory loss. Additionally, the series arrangement of the PORVs and their block valves permits performing surveillances on the valves during power operation.

The PORVs, their block valves, and their controls are powered from the vital buses that normally receive power from offsite power sources. They are also capable of being powered from emergency power sources in the event of a loss of offsite power. Two PORVs and their associated block valves are powered from two separate safety trains.

In Modes 1, 2, and 3, the PORV and its block valve are required to be Operable to limit the potential for a small break LOCA through the flow path. The PORVs are also required to be Operable in Modes 1, 2, and 3 to minimize challenges to the pressurizer safety valves.

Farley TS Surveillance Requirement (SR) 3.4.11.1 requires plant operators to cycle each PORV block valve every 92 days. Packing leakage from one or both of the two PORV block valves occurred during the surveillance on July 29, 2000. SNC assessed the operability of the block valves and concluded that the valves were still operable since they were capable of performing their safety function. Block valve packing leakage occurs only during the brief period when the valve is neither fully open nor fully closed. The valves are normally fully open with no indicated leakage. The valve seat isolates RCS pressure from the packing if the valves are closed.

The PORV block valves have packing leak-off lines routed to the reactor coolant drain tank (RCDT). Packing leakage occurring during the July 29 surveillance pressurized the RCDT and caused the RCDT relief valve to lift. Performing the two remaining scheduled surveillances during current operating cycle 14 might again lift the RCDT relief valve which could stick in the open position. RCDT availability for normal functions would be lost should that occur. These functions include collecting water from various valve and equipment leak-off lines including the reactor coolant pump number 2 seals. The RCDT also provides level and temperature control for the pressurizer relief tank. These functions are important for normal plant operation even though they are not required for reactor safety.

SNC's proposed TS changes modify SR 3.4.11.1, for Unit 2 only, so that SNC will not have to cycle each PORV block valve during the remainder of operating cycle 14. SNC proposes to add a note for SR 3.4.11.1 that states "Not required to be performed for Unit 2 for the remainder of operating cycle 14." In addition, SNC proposes to add a temporary TS SR 3.4.11.4 as a compensatory action while SR 3.4.11.1 is suspended. SR 3.4.11.4 requires plant operators to check electrical power to the Unit 2 PORV block valves at least every 24 hours for the remainder of operating cycle 14. SNC will inspect and repair the valves during the upcoming Unit 2 refueling outage.

3.0 EVALUATION

SNC believes that additional stroking of the block valves creates the risk of further degrading the block valve packing due to either a galled stem rubbing the packing or steam cutting while the valve is being cycled. Additional packing degradation could cause the valves to leak while fully open. Repairing the valves would require a plant shutdown and cooldown. Therefore, SNC wants to leave the block valves in their normal fully-open position and not cycle them for surveillance testing purposes.

SNC concluded that the incremental risk imposed by maneuvering the plant to a cold shutdown condition to repair the PORV block valves exceeds the incremental risk associated with not cycle testing the PORV block valves for the remainder of cycle 14. A mid-cycle shutdown to repair these valves would also result in more personnel radiation exposure. In addition, SNC stated that the potential operational impact of continuing to cycle test the PORV block valves is substantial. Therefore, SNC believes that the lowest-risk option is to suspend cycle testing of the PORV block valves for the remainder of cycle 14, and that the risk associated with the proposed change is acceptably low.

SNC successfully cycled the PORV block valves three times during cycle 14 to demonstrate that valves will close if demanded. Also, the block valves are safety related and are in FNP's Generic Letter 89-10 program. FNP's PORV block valve history indicates that they are highly

reliable. SNC's compensatory measure to verify that electrical power is available to the block valves provides additional assurance that the valves will close if demanded.

SNC evaluated the potential impact of boron buildup due to block valve packing leakage. Presently, there is no indication of external leakage. The process fluid at the block valves comes from the pressurizer steam space. Therefore, the amount of boron is minimal. Further, if boron is present in the process fluid, the combination of the low boron concentration of the fluid and the high process temperature minimizes the potential for boron to crystallize. Therefore, potential boron buildup in the leakage path will not impact block valve function.

The staff finds that, based on SNC successfully cycling the PORV block valves three times during cycle 14 and the minimal potential impact of boron buildup, there is assurance that the valves will perform adequately until the next refueling outage. Therefore, the staff finds the proposed one-time change to TS SR 3.4.11.1 to eliminate the requirement to cycle the Unit 2 pressurizer PORV block valves during the remainder of operating cycle 14 to be acceptable.

4.0 EXIGENT CIRCUMSTANCES

SNC's letter of October 2, 2000, asked the NRC to treat SNC's request as exigent. SNC had to request exigent amendment processing for several reasons. Cycling the PORV block valves with packing leakage during a scheduled surveillance at the end of October 2000 could result in additional valve packing degradation potentially requiring a forced unit shutdown. SNC indicated that it identified RCS leakage on July 29, 2000. SNC had to determine the cause of the leakage and evaluate possible solutions. SNC then needed more time to prepare the associated license amendment request and process it through the Farley Plant Operating Review Committee and the Nuclear Operating Review Board and promptly submitted its request for amendment on September 8, 2000. The staff finds that the Commission must act quickly and there is not enough time for a 30-day public comment period. Therefore, the Commission finds that exigent circumstances exist pursuant to 10 CFR 50.91(a)(6).

5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that license amendments involve no significant hazards consideration if operation of the facility, in accordance with the proposed amendments, would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. As required by 10 CFR 50.91(a), SNC provided its analysis of the issue of no significant hazards consideration, which is presented below.

Pursuant to 10 CFR 50.92, SNC has evaluated the proposed amendment and has determined that operation of the facility in accordance with the proposed amendment would not involve a significant hazards consideration. The basis for this determination is as follows:

1. The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change to Surveillance Requirement (SR) 3.4.11.1 suspends the requirement to cycle test the Unit Two pressurizer power operated relief valve (PORV) block valves for the remainder of operating cycle 14. This change will eliminate two scheduled cycle tests for the PORV block valves during the remainder of operating cycle 14. SR 3.4.11.4 is added to provide compensatory measures for verifying power available to the block valves at least every 24 hours. At the end of cycle 14, the proposed changes will no longer be in effect. Suspension of the cycle tests for the PORV block valves may result in a small decrease in assurance that the block valves would cycle if required to isolate a stuck open PORV. However, experience with these valves has shown them to be very reliable and suspension of the remaining tests will not appreciably reduce reliability of the valves. The proposed compensatory measure of verifying block valve power available on a 24 hour basis adds additional assurance that the block valves will close if demanded.

The proposed changes do not affect the consequences of a previously analyzed accident since the magnitude and duration of analyzed events are not impacted by this change. The dose consequences of the proposed change are bounded by LOCA analyses. Therefore, the consequences of a previously evaluated accident are unchanged.

Therefore, the proposed TS changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes involve no change to the physical plant. They allow for suspension of the PORV block valve cycle tests for a limited time and provide for compensatory action to verify power to the PORV block valves. These valves provide an isolation function for a postulated stuck open or leaking pressurizer PORV. This condition is an analyzed event since it is bounded by the FNP LOCA analyses. In addition to the isolation function, the block valves are required to remain open to allow the PORVs to function automatically to control reactor coolant system (RCS) pressure. These changes do not impact the open function of the block valves since the normal position is open.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed changes do not involve a significant reduction in a margin of safety.

The physical plant is unaffected by these changes. The proposed changes do not impact accident offsite dose, containment pressure or temperature, emergency core cooling system (ECCS) or reactor protection system (RPS) settings or any other parameter that could affect a margin of safety. The elimination of cycle testing of the PORV block valves for the remainder of the Unit Two operating cycle

and the addition of the proposed compensatory action that enhances assurance of valve operation are somewhat offsetting.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Based on the above considerations, the NRC staff concludes that the amendment meets the three criteria of 10 CFR 50.92. Therefore, the staff has made a final determination that the proposed amendment does not involve a significant hazards consideration.

6.0 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.

7.0 ENVIRONMENTAL CONSIDERATION

The amendment changes surveillance requirements. 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. As set forth above, the Commission has made a final determination that the amendment involves no significant hazards consideration. Accordingly, the amendment 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 amendment.

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.

Principal Contributor: L. M. Padovan, DLPM

Date: October 25 2000