



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

May 21, 1993

Docket Nos. 50-348
and 50-364

Mr. W. G. Hairston, III
Executive Vice President
Southern Nuclear Operating
Company, Inc.
Post Office Box 1295
Birmingham, Alabama 35201-1295

Dear Mr. Hairston:

SUBJECT: ISSUANCE OF AMENDMENT NO. 98 TO FACILITY OPERATING LICENSE NO. NPF-2 AND AMENDMENT NO. 90 TO FACILITY OPERATING LICENSE NO. NPF-8 REGARDING ELECTRICAL POWER SYSTEM - JOSEPH M. FARLEY NUCLEAR PLANT, UNITS 1 AND 2 (TAC NOS. M85179 AND M85180)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 98 to Facility Operating License No. NPF-2 and Amendment No. 90 to Facility Operating License No. NPF-8 for the Joseph M. Farley Nuclear Plant, Units 1 and 2. The amendments change the Technical Specifications (TS) in response to your submittal dated December 11, 1992.

The amendments change the TS to:

1. Revise Unit 1 Index page IX to provide the correct page number.
2. Revise the diesel fuel oil storage system requirement to reflect that each storage tank must contain a minimum of 25,000 gallons of usable fuel rather than merely specifying 25,000 gallons of fuel. This change also revises TS 3.8.1.2.
3. Revise the Action statement associated with an offsite circuit inoperable to reflect new requirements for surveillance activities and offsite circuit restoration. This change also deletes the exception to TS 3.0.4.
4. Revise the Action statement associated with one diesel generator set inoperable to reflect new requirements for surveillance activities and removes note ** which states that if the scheduled yearly maintenance of a diesel generator set exceeds 10 days, the diesel generator set must be declared inoperable. This change also reflects new requirements for diesel generator operability status restoration.
5. Revise the Action statement associated with one offsite circuit and one diesel generator set inoperable to reflect new requirements for surveillance activities and to remove note ** which states that if the scheduled yearly maintenance of a diesel generator set exceeds 10 days, the diesel generator set must be declared inoperable. This change also

May 21, 1993

- 2 -

6. Revise the action statement associated with both of the offsite circuits inoperable to reflect new requirements for surveillance activities on the diesel generator sets. This change also reflects new requirements for diesel generator operability status restoration and offsite circuit restoration.
7. Revise the action statement associated with both of the diesel generator sets inoperable to reflect new requirements for surveillance activities on offsite AC sources. The change also reflects new requirements for diesel generator operability status restoration.

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

Sincerely,

ORIGINAL SIGNED BY:

Timothy A. Reed, Senior Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 98 to NPF-2
2. Amendment No. 90 to NPF-8
3. Safety Evaluation

cc w/enclosures:

See next page

*See previous concurrence

*OTSB was involved in
review + development of
SE per C. Yenne
5/18/93*

OFFICE	LA:PD21:DRPE	PM:PD21:DRPE	D:PD21:DRPE	*OGC
NAME	PAnderson	TReed:dt	EAdensam	CBarth
DATE	05/13/93	05/13/93	05/20/93	05/4/93

Document Name: FAR85179.AMD

Mr. W. G. Hairston, III
Southern Nuclear Operating
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AMENDMENT NO. 98 TO FACILITY OPERATING LICENSE NO. NPF-2 - FARLEY, UNIT 1
AMENDMENT NO. 90 TO FACILITY OPERATING LICENSE NO. NPF-8 - FARLEY, UNIT 2

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~~Docket File~~

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

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

DOCKET NO. 50-348

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 98
License No. NPF-2

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Southern Nuclear Operating Company, Inc. (Southern Nuclear), dated December 11, 1992, 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-2 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 98, are hereby incorporated into 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



Elinor G. Adensam, Director
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 21, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 98
TO FACILITY OPERATING LICENSE NO. NPF-2
DOCKET NO. 50-348

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised areas are indicated by marginal lines.

<u>Remove Pages</u>	<u>Insert Pages</u>
IX	IX
3/4 8-1	3/4 8-1
3/4 8-2	3/4 8-2
3/4 8-3	3/4 8-3
3/4 8-6a	3/4 8-6a
3/4 8-6b	3/4 8-6b
B 3/4 0-2	B 3/4 0-2

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>		<u>PAGE</u>
<u>3/4.8 ELECTRICAL POWER SYSTEMS</u>		
3/4.8.1	A.C. SOURCES	
	Operating.....	3/4 8-1
	Shutdown.....	3/4 8-6b
3/4.8.2	ONSITE POWER DISTRIBUTION SYSTEMS	
	A.C. Distribution - Operating.....	3/4 8-6c
	A.C. Distribution - Shutdown.....	3/4 8-7
	Auxiliary Building D.C. Distribution - Operating.....	3/4 8-8
	Auxiliary Building D.C. Distribution - Shutdown.....	3/4 8-11
	Service Water Building D.C. Distribution - Operating.....	3/4 8-12

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits from the offsite transmission network to the switchyard and two physically independent circuits from the switchyard to the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generator sets (Set A: DG 1-2A and DG-1C, Set B: DG-1B and DG-2C) each with:
 1. Separate day tanks containing a minimum volume of 900 gallons of fuel for the 4075 kw diesel generators and 700 gallons of fuel for the 2850 kw diesel generators.
 2. A separate fuel transfer pump for each diesel.
- c. A fuel storage system consisting of four, independent storage tanks each containing a minimum of 25,000 gallons of useable fuel.*

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With only one offsite A.C. circuit operable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a on the remaining offsite A.C. circuit within 2 hours and at least once per 8 hours thereafter; and by performing Surveillance Requirement 4.8.1.1.2.a.4, on both diesel generator sets within 24 hours unless such surveillance has been performed within the previous 24 hours or the diesel generators are already operating. Restore at least two offsite circuits to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one diesel generator set inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a on both offsite A.C. circuits within 2 hours and at least once per 8 hours thereafter. If the diesel generator set became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining diesel generator set by performing Surveillance Requirement 4.8.1.1.2.a.4, on the remaining diesel generator set within 24 hours, unless the

* One operable fuel storage tank must be available for each required diesel generator.

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

- diesel generators are already operating. Restore the inoperable diesel generator set to OPERABLE status within 10 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. The provisions of Specification 3.0.4 are not applicable if only one of the four individual diesel generator units is inoperable.
- c. With one offsite A.C. circuit and one diesel generator set inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a on the remaining offsite A.C. circuit within 2 hours and at least once per 8 hours thereafter. If the diesel generator set became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining diesel generator set by performing Surveillance Requirement 4.8.1.1.2.a.4, on the remaining diesel generator set within 8 hours, unless the diesel generators are already operating. Restore at least one of the inoperable A.C. sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the other A.C. source (offsite A.C. circuit or diesel generator set) to OPERABLE status in accordance with the provisions of Section 3.8.1.1 Action Statements a or b, as appropriate, with the time requirement of the action statement based on the time of initial loss of the remaining inoperable A.C. source.
- d. With both of the offsite A.C. circuits inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.2.a.4, on both diesel generator sets within 8 hours, unless the diesel generators are already operating. Restore at least one of the inoperable offsite A.C. circuits to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite A.C. circuit restored, restore the other offsite A.C. circuits to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- e. With both of the diesel generator sets inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a on both offsite A.C. circuits within 2 hours and at least once per 8 hours thereafter; and by performing Surveillance Requirement 4.8.1.1.2.a.4, on all remaining diesel generators within 8 hours, unless the diesel generators are already operating. Restore at least one of the inoperable diesel generator sets to OPERABLE status:

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

1. Within 24 hours or be in at least HOT STANDBY within the next 6 hours if (DG 1-2A and DG-2C) or (DG-1B and DG-1C) or (DG-1C and DG-2C) are inoperable; or
2. Within 8 hours or be in at least HOT STANDBY within the next 6 hours if DG 1-2A and DG-1B are inoperable; or
3. Within 2 hours or be in at least HOT STANDBY within the next 6 hours if three or more diesel generators are inoperable.

Restore both diesel generator sets to OPERABLE status within 10 days from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, indicated power availability, and
- b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring unit power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each diesel generator set shall be demonstrated OPERABLE:

- a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:
 1. Verifying the fuel level in the day tank.
 2. Verifying the fuel level in the fuel storage tanks.
 3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.
 4. Verifying the diesel starts and accelerates to at least 900 rpm for the 2850 kw generator and 514 rpm for the 4075 kw generators in less than or equal to 12 seconds. The generator voltage and frequency shall be \geq 3952 volts and \geq 57 Hz within 12 seconds after the start signal and operates for 5 minutes.
 5. Verifying the generator is synchronized, loaded to 2700-2850 kw for the 2850 kw generator and 3875-4075 kw for the 4075 kw generator and operates for greater than or equal to 60 minutes.

TABLE 4.8-1
DIESEL GENERATOR TEST SCHEDULE

<u>NUMBER OF FAILURES IN LAST 20 VALID TESTS*</u>	<u>NUMBER OF FAILURES IN LAST 100 VALID TESTS*</u>	<u>TEST FREQUENCY</u>
≤ 1	≤ 4	Once per 31 days
$\geq 2^{**}$	≥ 5	Once per 7 days

* Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, but determined on a per diesel generator basis.

For the purpose of determining the required test frequency, the previous test failure count may be reduced to zero if a complete diesel overhaul to like-new condition is completed, provided that the overhaul, including appropriate post-maintenance operation and testing, is specifically approved by the manufacturer and if acceptable reliability has been demonstrated. The reliability criterion shall be the successful completion of 14 consecutive tests in a single series. These tests shall be in accordance with the routine Surveillance Requirements 4.8.1.1.2a.4) and 4.8.1.1.2a.5). If this criterion is not satisfied during the first series of tests, any alternate criterion to be used to return the failure count to zero requires NRC approval.

** The associated test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one.

ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. One circuit from the offsite transmission network to the switchyard and from the switchyard to the onsite Class 1E distribution system, and
- b. Diesel generator 1-2A, 1C or 1B each with:
 1. A day tank containing a minimum volume of 900 gallons of fuel for the 4075 kw diesel generator and 700 gallons of fuel for the 2850 kw diesel generator.
 2. A fuel storage tank containing a minimum volume of 25,000 gallons of useable fuel, and
 3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes until the minimum required A.C. electrical power sources are restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5.

APPLICABILITY

BASES

3.0.5 This specification delineates what additional conditions must be satisfied to permit operation to continue, consistent with the ACTION statements for power sources, when a normal or emergency power source is not OPERABLE. It specifically prohibits operation when one division is inoperable because its normal or emergency power source is inoperable and a system, subsystem, train, component or device in another division is inoperable for another reason.

The provisions of this specification permit the ACTION statements associated with individual systems, subsystems, trains, components, or devices to be consistent with the ACTION statements of the associated electrical power source. It allows operation to be governed by the time limits of the ACTION statement associated with the Limiting Condition for Operation for the normal or emergency power source, not the individual ACTION statements for each system, subsystem, train, component or device that is determined to be inoperable solely because of the inoperability of its normal or emergency power source.

For example, Specification 3.8.1.1 requires in part that two emergency diesel generators be OPERABLE. The ACTION statement provides for a 10-day out-of-service time when one emergency diesel generator is not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems, subsystems, trains, components and devices supplied by the inoperable emergency power source would also be inoperable. This would dictate invoking the applicable ACTION statement for each of the applicable Limiting Conditions for Operation. However, the provisions of Specification 3.0.5 permit the time limits for continued operation to be consistent with the ACTION statement for the inoperable emergency diesel generator instead, provided the other specified conditions are satisfied. In this case, this would mean that the corresponding normal power source must be OPERABLE, and all redundant systems, subsystems, trains, components, and devices must be OPERABLE, or otherwise satisfy Specification 3.0.5 (i.e., be capable of performing their design function and have at least one normal or one emergency power source OPERABLE). If they are not satisfied, action is required in accordance with this specification.

As a further example, Specification 3.8.1.1 requires in part that two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system be OPERABLE. The ACTION statement provides a 24 hour out-of-service time when both required offsite circuits are not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems, subsystems, trains, components and devices supplied by the inoperable normal power sources, both of the offsite circuits, would also be inoperable. This would dictate invoking the applicable ACTION statements for each of the applicable LCOs. However, the provisions of Specification 3.0.5 permit the time limits for continued operation to be consistent with the ACTION statement for the inoperable normal power sources instead, provided the other specified conditions are satisfied. In case, this would



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

SOUTHERN NUCLEAR OPERATING COMPANY, INC.

DOCKET NO. 50-364

JOSEPH M. FARLEY NUCLEAR PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 90
License No. NPF-8

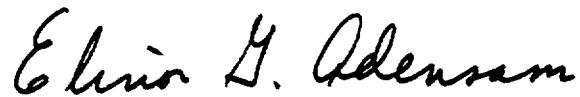
1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Southern Nuclear Operating Company, Inc. (Southern Nuclear), dated December 11, 1992, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the 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. 90, are hereby incorporated into 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



Elinor G. Adensam, Director
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 21, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 90
TO FACILITY OPERATING LICENSE NO. NPF-8
DOCKET NO. 50-364

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised areas are indicated by marginal lines.

<u>Remove Pages</u>	<u>Insert Pages</u>
3/4 8-1	3/4 8-1
3/4 8-2	3/4 8-2
3/4 8-3	3/4 8-3
3/4 8-7	3/4 8-7
3/4 8-8	3/4 8-8
B 3/4 0-2	B 3/4 0-2

3/4.8 ELECTRICAL POWER SYSTEMS

3/4.8.1 A.C. SOURCES

OPERATING

LIMITING CONDITION FOR OPERATION

3.8.1.1 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. Two physically independent circuits from the offsite transmission network to the switchyard and two physically independent circuits from the switchyard to the onsite Class 1E distribution system, and
- b. Two separate and independent diesel generator sets (Set A: DG 1-2A and DG-1C, Set B: DG-2B and DG-2C) each with:
 1. Separate day tanks containing a minimum volume of 900 gallons of fuel for the 4075 kw diesel generators and 700 gallons of fuel for the 2850 kw diesel generators.
 2. A separate fuel transfer pump for each diesel.
- c. A fuel storage system consisting of four, independent storage tanks each containing a minimum of 25,000 gallons of useable fuel.*

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With only one offsite A.C. circuit operable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a on the remaining offsite A.C. circuit within 2 hours and at least once per 8 hours thereafter; and by performing Surveillance Requirement 4.8.1.1.2.a.4, on both diesel generator sets within 24 hours unless such surveillance has been performed within the previous 24 hours or the diesel generators are already operating. Restore at least two offsite circuits to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one diesel generator set inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a on both offsite A.C. circuits within 2 hours and at least once per 8 hours thereafter. If the diesel generator set became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining diesel generator set by performing Surveillance Requirement 4.8.1.1.2.a.4, on the remaining diesel generator set within 24 hours, unless the

* One operable fuel storage tank must be available for each required diesel generator.

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

- diesel generators are already operating. Restore the inoperable diesel generator set to OPERABLE status within 10 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. The provisions of Specification 3.0.4 are not applicable if only one of the four individual diesel generator units is inoperable.
- c. With one offsite A.C. circuit and one diesel generator set inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a on the remaining offsite A.C. circuit within 2 hours and at least once per 8 hours thereafter. If the diesel generator set became inoperable due to any cause other than preplanned preventive maintenance or testing, demonstrate the OPERABILITY of the remaining diesel generator set by performing Surveillance Requirement 4.8.1.1.2.a.4, on the remaining diesel generator set within 8 hours, unless the diesel generators are already operating. Restore at least one of the inoperable A.C. sources to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours. Restore the other A.C. source (offsite A.C. circuit or diesel generator set) to OPERABLE status in accordance with the provisions of Section 3.8.1.1 Action Statements a or b, as appropriate, with the time requirement of the action statement based on the time of initial loss of the remaining inoperable A.C. source.
- d. With both of the offsite A.C. circuits inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.2.a.4, on both diesel generator sets within 8 hours, unless the diesel generators are already operating. Restore at least one of the inoperable offsite A.C. circuits to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours. With only one offsite A.C. circuit restored, restore the other offsite A.C. circuits to OPERABLE status within 72 hours from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- e. With both of the diesel generator sets inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirement 4.8.1.1.1.a on both offsite A.C. circuits within 2 hours and at least once per 8 hours thereafter; and by performing Surveillance Requirement 4.8.1.1.2.a.4, on all remaining diesel generators within 8 hours, unless the diesel generators are already operating. Restore at least one of the inoperable diesel generator sets to OPERABLE status:

ELECTRICAL POWER SYSTEMS

ACTION (Continued)

1. Within 24 hours or be in at least HOT STANDBY within the next 6 hours if (DG 1-2A and DG-2C) or (DG-2B and DG-1C) or (DG-1C and DG-2C) are inoperable; or
2. Within 8 hours or be in at least HOT STANDBY within the next 6 hours if DG 1-2A and DG-2B are inoperable; or
3. Within 2 hours or be in at least HOT STANDBY within the next 6 hours if three or more diesel generators are inoperable.

Restore both diesel generator sets to OPERABLE status within 10 days from time of initial loss or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.1.1.1 Each of the above required independent circuits between the offsite transmission network and the onsite Class 1E distribution system shall be:

- a. Determined OPERABLE at least once per 7 days by verifying correct breaker alignments, indicated power availability, and
- b. Demonstrated OPERABLE at least once per 18 months during shutdown by transferring unit power supply from the normal circuit to the alternate circuit.

4.8.1.1.2 Each diesel generator set shall be demonstrated OPERABLE:

- a. In accordance with the frequency specified in Table 4.8-1 on a STAGGERED TEST BASIS by:
 1. Verifying the fuel level in the day tank.
 2. Verifying the fuel level in the fuel storage tanks.
 3. Verifying the fuel transfer pump can be started and transfers fuel from the storage system to the day tank.
 4. Verifying the diesel starts and accelerates to at least 900 rpm for the 2850 kw generator and 514 rpm for the 4075 kw generators in less than or equal to 12 seconds. The generator voltage and frequency shall be \geq 3952 volts and \geq 57 Hz within 12 seconds after the start signal and operates for 5 minutes.
 5. Verifying the generator is synchronized, loaded to 2700-2850 kw for the 2850 kw generator and 3875-4075 kw for the 4075 kw generator and operates for greater than or equal to 60 minutes.

TABLE 4.8-1
DIESEL GENERATOR TEST SCHEDULE

<u>NUMBER OF FAILURES IN LAST 20 VALID TESTS*</u>	<u>NUMBER OF FAILURES IN LAST 100 VALID TESTS*</u>	<u>TEST FREQUENCY</u>
≤ 1	≤ 4	Once per 31 days
$\geq 2^{**}$	≥ 5	Once per 7 days

* Criteria for determining number of failures and number of valid tests shall be in accordance with Regulatory Position C.2.e of Regulatory Guide 1.108, but determined on a per diesel generator basis.

For the purpose of determining the required test frequency, the previous test failure count may be reduced to zero if a complete diesel overhaul to like-new condition is completed, provided that the overhaul, including appropriate post-maintenance operation and testing, is specifically approved by the manufacturer and if acceptable reliability has been demonstrated. The reliability criterion shall be the successful completion of 14 consecutive tests in a single series. These tests shall be in accordance with the routine Surveillance Requirements 4.8.1.1.2a.4) and 4.8.1.1.2a.5). If this criterion is not satisfied during the first series of tests, any alternate criterion to be used to return the failure count to zero requires NRC approval.

** The associated test frequency shall be maintained until seven consecutive failure free demands have been performed and the number of failures in the last 20 valid demands has been reduced to one.

ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

- a. One circuit from the offsite transmission network to the switchyard and from the switchyard to the onsite Class 1E distribution system, and
- b. Diesel generator 1-2A, 1C or 2B each with:
 1. A day tank containing a minimum volume of 900 gallons of fuel for the 4075 kw diesel generator and 700 gallons of fuel for the 2850 kw diesel generator.
 2. A fuel storage tank containing a minimum volume of 25,000 gallons of useable fuel, and
 3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes until the minimum required A.C. electrical power sources are restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5.

APPLICABILITY

BASES

3.0.5 This specification delineates what additional conditions must be satisfied to permit operation to continue, consistent with the ACTION statements for power sources, when a normal or emergency power source is not OPERABLE. It specifically prohibits operation when one division is inoperable because its normal or emergency power source is inoperable and a system, subsystem, train, component or device in another division is inoperable for another reason.

The provisions of this specification permit the ACTION statements associated with individual systems, subsystems, trains, components, or devices to be consistent with the ACTION statements of the associated electrical power source. It allows operation to be governed by the time limits of the ACTION statement associated with the Limiting Condition for Operation for the normal or emergency power source, not the individual ACTION statements for each system, subsystem, train, component or device that is determined to be inoperable solely because of the inoperability of its normal or emergency power source.

For example, Specification 3.8.1.1 requires in part that two emergency diesel generators be OPERABLE. The ACTION statement provides for a 10-day out-of-service time when one emergency diesel generator is not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems, subsystems, trains, components and devices supplied by the inoperable emergency power source would also be inoperable. This would dictate invoking the applicable ACTION statement for each of the applicable Limiting Conditions for Operation. However, the provisions of Specification 3.0.5 permit the time limits for continued operation to be consistent with the ACTION statement for the inoperable emergency diesel generator instead, provided the other specified conditions are satisfied. In this case, this would mean that the corresponding normal power source must be OPERABLE, and all redundant systems, subsystems, trains, components, and devices must be OPERABLE, or otherwise satisfy Specification 3.0.5 (i.e., be capable of performing their design function and have at least one normal or one emergency power source OPERABLE). If they are not satisfied, action is required in accordance with this specification.

As a further example, Specification 3.8.1.1 requires in part that two physically independent circuits between the offsite transmission network and the onsite Class 1E distribution system be OPERABLE. The ACTION statement provides a 24 hour out-of-service time when both required offsite circuits are not OPERABLE. If the definition of OPERABLE were applied without consideration of Specification 3.0.5, all systems, subsystems, trains, components and devices supplied by the inoperable normal power sources, both of the offsite circuits, would also be inoperable. This would dictate invoking the applicable ACTION statements for each of the applicable LCOs. However, the provisions of Specification 3.0.5 permit the time limits for continued operation to be consistent with the ACTION statement for the inoperable normal power sources instead, provided the other specified conditions are satisfied. In case, this would



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 98 TO FACILITY OPERATING LICENSE NO. NPF-2

AND AMENDMENT NO. 90 TO 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 December 11, 1992, the Southern Nuclear Operating Company, Inc. (the licensee), submitted a request for changes to the Joseph M. Farley Nuclear Plant, Units 1 and 2 (Farley), Technical Specifications (TS). The requested changes would:

1. Revise Index page IX to provide the correct page number.
2. Revise the diesel fuel oil storage system requirement to reflect that each storage tank must contain a minimum of 25,000 gallons of usable fuel rather than merely specifying 25,000 gallons of fuel. This change also revises TS 3.8.1.2.
3. Revise the Action statement associated with an offsite circuit inoperable to reflect new requirements for surveillance activities and offsite circuit restoration. This change also deletes the exception to TS 3.0.4.
4. Revise the Action statement associated with one diesel generator set inoperable to reflect new requirements for surveillance activities and removes note ** which states that if the scheduled yearly maintenance of a diesel generator set exceeds 10 days, the diesel generator set must be declared inoperable. This change also reflects new requirements for diesel generator operability status restoration.
5. Revise the Action statement associated with one offsite circuit and one diesel generator set inoperable to reflect new requirements for surveillance activities and to remove note ** which states that if the scheduled yearly maintenance of a diesel generator set exceeds 10 days, the diesel generator set must be declared inoperable. This change also reflects new requirements for diesel generator operability status restoration and offsite circuit restoration.

6. Revise the Action statement associated with both of the offsite circuits inoperable to reflect new requirements for surveillance activities on the diesel generator sets. This change also reflects new requirements for diesel generator operability status restoration and offsite circuit restoration.
7. Revise the Action statement associated with both of the diesel generator sets inoperable to reflect new requirements for surveillance activities on offsite AC sources. The change also reflects new requirements for diesel generator operability status restoration.

2.0 BACKGROUND

For several months, the staff has had concerns about the AC electrical power system TS and the emergency diesel generator configuration at Farley. On October 4, 1991, the staff met with Alabama Power Company*¹ to discuss these concerns. After evaluating the information presented at this meeting, the staff formally expressed its concerns in a letter dated May 7, 1992. The concerns identified by the staff were as follows:

- A. Limiting Condition for Operation (LCO) 3.8.1.1, Action statements (b) and (c), and their accompanying footnote allow a diesel generator set to be considered operable while it is out of service for 10 days during the yearly scheduled maintenance. This is inconsistent with the Westinghouse Standard Technical Specifications (WSTS), which does not permit an inoperable component to be considered operable.
- B. Limiting Condition for Operation 3.8.1.1, Action statements (a) and (b), indicate that the provisions of LCO 3.0.4 are not applicable. This allows Mode changes with an inoperable diesel set or offsite circuit. This is inconsistent with current WSTS LCO requirements for inoperable electrical systems.
- C. Limiting Condition for Operation 3.8.1.1, Action statements (a) and (b), allow 7 days and 18 days, respectively, to restore an inoperable offsite circuit or diesel generator set to operable status. This is inconsistent with the current allowed outage time of 72 hours permitted in the WSTS for these conditions.

By letter dated December 11, 1992, the licensee submitted proposed revisions to TS Section 3/4.8, Electrical Power System, addressing LCOs for Farley. This submittal contained proposed revisions to resolve the NRC staff concerns and to clarify the existing TS.

*Subsequent to this meeting, Amendment Nos. 90 and 83 to Facility Operating Licenses NPF-2 and NPF-8, respectively, were issued authorizing Southern Nuclear Operating Company, Inc., to become the licensed operator. This change was implemented on December 23, 1991.

3.0 EVALUATION

The licensee proposed revisions to TS 3.8.1.1, Action a, which deals with actions to be taken in the event that an offsite circuit becomes inoperable. The proposed revisions contain several editorial changes and reflect new requirements for surveillance activities and offsite restoration. The revisions delete Surveillance Requirement 4.8.1.1.2.a, Items 1, 2, 3, and 6. Item 1 requires the licensee to verify the fuel level in the day tank. Item 2 requires the licensee to verify the fuel level in the fuel storage tanks. Item 3 requires the licensee to verify that the fuel transfer pump can be started and transfers fuel from the storage system to the day tank. Item 6 requires the licensee to verify that the diesel generator is aligned to provide standby power to the associated emergency busses. The revisions also delete the exception to TS 3.0.4 so that an operating mode change with an offsite circuit inoperable is no longer allowed. One revision also reduces the allowed outage time (AOT) for an inoperable offsite circuit from 7 to 3 days. These changes are consistent with the WSTS. However, the time required to verify the operability of the remaining offsite circuit is different than that in the WSTS. The proposed revisions allow 2 hours to verify the operability of the remaining offsite circuit rather than the 1 hour provided for the WSTS. The additional hour permitted for performing this surveillance allows the operators to focus their immediate attention on plant stabilization following the loss of an offsite power circuit. Operators have sufficient procedural guidance to ensure that adequate electrical power is available following a plant transient without redirecting their attention to performing required surveillance verifications. The staff considers these changes acceptable.

The licensee proposed revisions to TS 3.8.1.1, Action b, which deals with actions to be taken in the event that a diesel generator set becomes inoperable for reasons other than yearly scheduled maintenance. The proposed changes contain several editorial revisions to clarify the meaning of the specification and to reflect a 2-hour requirement verifying the operability of both offsite AC circuits as discussed in Action item a above. It also removes a footnote so emergency diesel generators are declared inoperable during scheduled preventive maintenance without allowance of a 10-day grace period for operability. The proposed change also removes the reference to footnote*. This footnote had required that selection of two diesel generators for testing result in the verification that at least one train of LOCA/shutdown loads is capable of being powered for each unit. The proposed wording changes now refer to diesel generator sets. As such, the proposed action statement now requires testing of the remaining diesel generator set and thereby ensures that one train of LOCA/shutdown loads is capable of being powered for each unit. Hence there is not longer a need for footnote * and removal of the subject footnote is acceptable. No surveillance testing of the other unaffected emergency diesel generator will be required. This meets the intent of the recommendations for reduced emergency diesel generator testing contained in Generic Letter 84-15 and is consistent with the current staff position which is that when an emergency diesel generator is inoperable, the redundant emergency diesel generator is required to be tested, primarily to ensure that common-mode failure mechanisms do not exist.

However, when an emergency diesel generator is intentionally rendered inoperable for testing or maintenance, where the cause of the inoperability is readily known, there is no need for such additional testing.

The licensee proposed revisions to TS 3.8.1.1, Action c, which addresses actions to be taken when one diesel generator and one offsite circuit becomes inoperable. In a similar manner to what was proposed for Action b, the licensee's proposal removes the reference to the footnote denoted as *. The staff finds this change acceptable for the same reasons as delineated above for Action b. The proposed revisions reflect new requirements for emergency diesel generator operability status restoration and offsite circuit restoration. The restoration time of at least one of the inoperable sources to operable is different than the WSTS. The WSTS require restoring at least one of the inoperable AC sources within 12 hours. The revision proposes 24 hours. Due to the flexibility within the onsite AC emergency electrical power system design at Farley, as discussed in the above change, the proposed 24 hours to restore at least one of the AC inoperable sources is acceptable.

The licensee proposed revisions to TS 3.8.1.1, Action d, which deals with actions to be taken in the event that two offsite circuits become inoperable. The proposed specification revises the action to be taken when both offsite circuits are inoperable to reflect new requirements for surveillance activities associated with an emergency diesel generator set and offsite circuit restoration. These proposed revisions are consistent with Specification 3.8.1.1, Action e, in the WSTS and are, therefore, acceptable.

The licensee proposed revisions to TS 3.8.1.1, Action e, that deal with actions to be taken in the event that both required diesel generator sets become inoperable. The proposed specification contains several editorial revisions. Further, it would revise the action associated with both of the diesel generator sets declared inoperable to reflect new requirements for surveillance activities of offsite AC circuits. The new requirement includes performing surveillance on offsite circuits at least once per 8 hours. The current specification does not contain this requirement. The proposed revised specification also changes the time allowed for both diesel generator sets to be inoperable from 18 days to 10 days. These changes are acceptable.

The licensee proposed revisions to TS Table 4.8-1, which gives the diesel generator test schedule. The proposed revision requires the licensee to test an emergency diesel generator every 7 days if the number of failures in the last 20 valid tests is greater than or equal to 2 or if the number of failures of the last 100 valid tests is greater than or equal to 5. If the number of failures is equal to or less than 1 in the last 20 valid tests or if the number of failures is equal to or less than 4 in the last 100 valid tests, the emergency diesel generator will be tested every 31 days. In addition, the proposed specification revises footnote * and adds a footnote ** at the end of this specification. These changes are consistent with the WSTS. The changes also meet the intent of the recommendations for reduced cold starts contained in Generic Letter 84-15. The proposed revisions are acceptable.

The Bases for Specification 3.0.5 have been revised to state the allowed outage time for one diesel generator. This revision is consistent with the information provided above and is, therefore, acceptable.

On the basis of our review of the proposed revisions as provided above, the staff concludes that these proposed changes to the Farley TS remove excessive latitude from the current Farley TS. The proposed changes are in accordance with proposed revisions that were discussed with the staff in response to staff concerns and are, in general, consistent with the WSTS, Revision 4A. There are minor differences between the proposed revisions and the WSTS; however, these differences are justified based on the flexibility of the Farley onsite emergency AC electrical power system design. Our review is based on the five diesel generator design which gives Farley flexibility in its onsite emergency AC electrical power system. This review does not encompass the future possibility of one of the five emergency diesel generators being used as an alternative source for station blackout at either unit.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of Alabama official was notified of the proposed issuance of the amendment. 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 and changes the 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. 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 (58 FR 8787). Accordingly, the amendment meets 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: D. Nguyen

Date: May 21, 1993