Docket No. 50-400

October 30, 1987

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Mr. E. E. Utley
Senior Executive Vice President
Power Supply and Engineering & Construction
Carolina Power & Light Company
Post Office Box 1551
Raleigh, North Carolina 27602

Dear Mr. Utley:

SUBJECT: ISSUANCE OF AMENDMENT NO. 2 TO FACILITY OPERATING LICENSE NO. NPF-63 - SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 REGARDING DIESEL GENERATOR VOLTAGE (TAC NO. 66460)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 2 to Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1. This amendment consists of changes to the Technical Specifications in response to your request dated October 15, 1987, and supplemental letter dated October 29, 1987, in which you requested that the amendment be processed as a emergency amendment. These Technical Specifications are being issued prior to the expiration of the Notice period to preclude an unnecessary delay in plant startup from the current outage.

The amendment revises Technical Specification 4.8.1.1.2.f.11 to ensure that during a diesel generator load rejection test, the diesel generator voltage does not exceed 110 percent of the diesel generator voltage at the start of the test, rather than the limiting value of 7590 volts currently stipulated in the Technical Specifications.

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

Sincerely,

/S/

Bart C. Buckley, Senior Project Manager
Project Directorate II-1
Division of Reactor Projects I/II

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Enclosures:
1. Amendment No. 2 to NPF-63
2. Safety Evaluation

cc: w/enclosures
See next page
*See previous concurrence page

LA:PD21:DRPR	PM:PD21:DRPR	SELB	D:PD21:DRPR
*PAnderson/dsf	*BBuckley	*FRosa	*EAdensam
10/23/87	10/23/87	10/23/87	10/23/87

Mr. E. E. Utley
Carolina Power & Light Company

Shearon Harris

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

CAROLINA POWER & LIGHT COMPANY, et al.

DOCKET NO. 50-400

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 2
License No. NPF-63

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Carolina Power & Light Company, (the licensee), dated October 15, 1987, 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 Facility Operating License No. NPF-63 is hereby amended to read as follows:

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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, as revised through Amendment No. 2 , are hereby incorporated into this license. Carolina Power & Light Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/S/

Gus C. Lainas, Assistant Director
for Region II Reactors
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 30, 1987

See previous concurrence page*

LA:PD21:DRPR	PM:PD21:DRPR	D:PD21:DRPR	OGC-B	DR2:DRPR
*PAnderson/dsf	BCB BBuckley	EAdensam	*	GLainas
10/23/87	10/30/87	10/30/87	10/23/87	10/30/87

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 2 FACILITY OPERATING LICENSE NO. NPF-63

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

Remove Page	Insert Page
3/4 8-8	3/4 8-8

SURVEILLANCE REQUIREMENTS (Continued)

7. Verifying the diesel generator operates** for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to 6800-7000 kW*** and, during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 6200-6400 kW***. Within 5 minutes after completing this 24-hour test, perform Surveillance Requirement 4.8.1.1.2.f.6 b).#

8. Verifying that the auto-connected loads to each diesel generator do not exceed the continuous rating of 6500 kW;

9. Verifying the diesel generator's capability to:

   a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,
   b) Transfer its loads to the offsite power source, and
   c) Proceed through its shutdown sequence.

10. Verifying that the following diesel generator lockout features prevent diesel generator operation:

    a) Engine overspeed
    b) Generator differential
    c) Emergency bus differential
    d) Emergency Stop
    e) Operational and maintenance switch in the maintenance mode
    f) Loss of generator potential transformer circuit

11. Verifying the generator capability to reject a load of between 6200 and 6400 kW without tripping. The generator voltage shall not exceed 110% of the generator voltage at the start of the test during and following the load rejection;

12. Verifying that, with the diesel generator operating in a test mode and connected to its bus, a simulated Safety Injection signal overrides the test mode by: (1) returning the diesel generator to standby operation and (2) automatically energizing the emergency loads with offsite power.

**This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading recommendations.

***This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing or momentary variations due to changing bus loads shall not invalidate the test.

#If Specification 4.8.1.1.2f.6 b) is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the diesel generator may be operated at 6200-6400 kW for 1 hour or until operating temperature has stabilized.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 2 TO FACILITY OPERATING LICENSE NO. NPF-63

CAROLINA POWER & LIGHT COMPANY

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

DOCKET NO. 50-400

1.0 INTRODUCTION

By letter dated October 15, 1987, the Carolina Power & Light Company (the licensee) requested an exigent change to the Technical Specifications (Appendix A to Facility Operating License No. NPF-63) for the Shearon Harris Nuclear Power Plant, Unit 1. However, by letter dated October 29, 1987, the licensee requested that this amendment be processed as an emergency amendment. The proposed change would revise Technical Specification 4.8.1.1.2.f.11 to ensure that during a diesel generator full load rejection test, the diesel generator voltage does not exceed 110 percent of the diesel generator voltage at the start of the test, rather than the limiting value of 7590 volts currently stipulated in the Technical Specifications.

2.0 DISCUSSION AND EVALUATION

With the plant in MODE 5 (cold shutdown), the licensee, on October 13, 1987, attempted to conduct an 18 month surveillance test on diesel generator 1B-SB. The objective of the surveillance requirement is (1) to demonstrate that a load rejection between 6200 and 6400 kw does not result in an emergency diesel generator overspeed trip, and (2) to ensure that the voltage regulator is functioning correctly such that the diesel generator is available in the event it is needed immediately following a load rejection. While performing this full load rejection test on October 13, 1987, the diesel generator voltage reached 7850 volts which exceeded the 7590 volt limit stipulated in the Technical Specifications. The 7590 volt value is based on 110 percent of the nominal diesel generator starting voltage of 6900 volts. Typically, during a generator load rejection, the diesel generator voltage increases momentarily to some higher value, but usually less than the 110 percent of the starting voltage and then decreases to the no-load values. Thus, a specific maximum voltage value should take into consideration the initial generator starting voltage value which could be higher than the previously assumed nominal value of 6900 volts. However, the voltage regulator did function properly since the generator voltage of 7850 volts did not exceed 8085 volts, which is 110 percent of the generator starting

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voltage of 7350 volts existing at the time of the test. Since the initial starting voltage of the diesel generator is linked to the grid voltage at the time of the test, it may be above the nominal 6900 volts depending on load requirements of the licensee's power grid. This situation cannot be avoided since the diesel generator must be paralleled to the offsite grid in order to achieve the initial loading requirement (6200-6400 kw) specified in the Technical Specifications. The proposed change to Specification 4.8.1.1.2.f.11 will limit the generator voltage to less than or equal to 110 percent of the voltage on the generator at the start of the test instead of the limiting value of 7590 volts currently required by the Technical Specifications. Furthermore, the proposed change is within the design capability of the diesel generator. The staff finds the proposed change acceptable based on information contained in the licensee's submittal as discussed above. The staff has accepted 115 percent of nominal voltage as a value in the standard Technical Specifications.

3.0 EXIGENT OR EMERGENCY CIRCUMSTANCES

Originally, this proposed change fell into the category of an exigent change, since absent this change, diesel generator 1B-SB would have to be declared inoperable in operational modes 1 through 4. This would have significantly impacted the licensee's estimated schedule for return to service on November 4, 1987. The licensee had no previous reason to suspect that failure of this surveillance requirement would occur. Previous testing was performed when system grid demand was much higher and, therefore, system voltage and diesel generator voltage were proportionally lower. As such, sufficient margin existed to successfully perform the surveillance requirement. Subsequently, the licensee, by letter dated October 29, 1987, requested that the amendment be processed as an emergency amendment to allow the plant to enter operational MODE 4 now scheduled for the evening of October 30, 1987. Therefore, an emergency license amendment is required to be issued in order to avoid delay of startup of the unit. The staff has reviewed the licensee's explanation of the circumstances justifying consideration of this amendment on an emergency basis. Based on this review, the staff finds that the licensee used its best efforts to apply for the subject amendment in a timely manner and that it had not acted in a manner as to create the emergency to take advantage of these procedures.

4.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The Commission has provided standards in 10 CFR 50.92(c) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability

or consequences of an accident previously evaluated; (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. The licensee has reviewed this request and determined, and the NRC staff concur, that:

A. The proposed amendment does not involve a significant increase in the probability or consequences of any accident previously evaluated because the change does not affect the method in which the diesel generators, or any other safety system, perform their intended safety function. Diesel generator and voltage regulator operability is still ensured and the intent of Surveillance Requirement 4.8.1.1.2.f.11 to verify the ability of the diesel generator to perform satisfactorily during a full load rejection is still fulfilled by the revised surveillance requirement. The revision merely allows operational flexibility to perform the required surveillance without reliance on system grid voltage conditions.

B. The proposed amendment does not create the possibility of a new or different kind of accident than previously evaluated. As stated above, no physical change to any safety related system, nor change in the method in which any safety system performs its intended function result from the proposed amendment. Therefore, the proposed amendment cannot create the possibility of a new or different kind of accident than previously evaluated.

C. The proposed amendment does not involve a significant reduction in a margin of safety. Diesel generator and voltage regulator operability and the ability to incur a load rejection without a diesel generator overspeed trip or excess voltage is adequately ensured by the revised surveillance requirement. As such, the margin of safety is not affected by the proposed amendment.

Based on the review of the licensee's submittal, the staff has made a final determination that the licensee's amendment request does not involve a significant hazards consideration since operation of Shearon Harris, Unit 1 with the requested change would not (1) involve a significant increase in the probability or consequences of an accident previously analyzed, (2) create the possibility of a new or different kind of accident from any accident previously analyzed, or (3) involve a significant reduction in a margin of safety.

5.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change in surveillance requirements. The 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

AMENDMENT NO. 2 TO FACILITY OPERATING LICENSE NO. NPF-63 - HARRIS, UNIT 1

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