August 1, 1995

Mr. W. R. Robinson, Vice President
Shearon Harris Nuclear Power Plant
Carolina Power & Light Company
Post Office Box 165, Mail Code: Zone 1
New Hill, North Carolina 27562-0165

SUBJECT: ISSUANCE OF AMENDMENT NO. 60 TO FACILITY OPERATING LICENSE NO. NPF-63 REGARDING THE ELIMINATION OF REDUNDANT EMERGENCY DIESEL GENERATOR TESTING - SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1 (TAC NO.91962)

Dear Mr. Robinson:

The Nuclear Regulatory Commission has issued Amendment No. 60 to Facility Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit 1. This amendment changes the Technical Specifications (TS) in response to your request dated March 30, 1995, as supplemented July 6, 1995.

The amendment proposes changes to revise the Emergency Diesel Generator (EDG) surveillance requirements contained in TS 3/4.8.1.1.2 to be consistent with NUREG-1431, "Standard Technical Specifications, Westinghouse plants," and to eliminate the need for duplicate EDG testing being performed to satisfy the requirements of the Station Blackout Rule and the Maintenance Rule.

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

Sincerely,

Original signed by:

Ngoc B. Le, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-400

Enclosures:
1. Amendment No. 60 to NPF-63
2. Safety Evaluation

cc w/enclosures:
See next page

FILENAME: G:\HARRIS\HAR91962.AMD

OFFICE	LA:PDII-1	PM:PDII-1	D:PDII-1	OGC	
NAME	EDunnington	NLe	DMatthews		
DATE	07/19/95	07/17/95	07/28/95	07/26/95	
COPY	Yes/No	Yes/No	Yes/No	Yes/No	

OFFICIAL RECORD COPY

Mr. W. R. Robinson
Carolina Power & Light Company

Shearon Harris Nuclear Power Plant
Unit 1

cc:

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AMENDMENT NO. 60 TO FACILITY OPERATING LICENSE NO. NPF-63 - HARRIS, UNIT 1

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

CAROLINA POWER & LIGHT COMPANY, et al.

DOCKET NO. 50-400

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 60
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 March 30, 1995, as supplemented July 6, 1995, 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:

(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. 60, 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 and shall be implemented within 60 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

David B. Matthews, 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: August 1, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 60

FACILITY OPERATING LICENSE NO. NPF-63

DOCKET NO. 50-400

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

Remove Pages	Insert Pages
3/4 8-6	3/4 8-6
3/4 8-7	3/4 8-7
3/4 8-8	3/4 8-8
3/4 8-9	3/4 8-9

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 (Continued)

The generator shall be manually synchronized to its appropriate emergency bus, loaded to an indicated 6200-6400*** kW, and operate for at least 60 minutes. The diesel generator shall be started for this test by using one of the following signals on a rotating basis:

1. Simulated loss of offsite power by itself, and

2. A Safety Injection test signal by itself.

This test, if it is performed so that it coincides with the testing required by Surveillance Requirement 4.8.1.1.2.a.4, may also serve to concurrently meet those requirements as well.

f. At least once per 18 months during shutdown by:

1. DELETED

2. Verifying that, on rejection of a load of greater than or equal to 1078 kW, the voltage and frequency are maintained with 6900 ± 690 volts and 60 ± 6.75 Hz, with frequency stabilizing to 60 ± 1.2 Hz within 10 seconds without any safety-related load tripping out or operating in a degraded condition.

3. Verifying that the load sequencing timer is OPERABLE with the interval between each load block within 10% of its design interval.

4. Simulating a loss of offsite power by itself, and:

***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.

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 (Continued)

a) Verifying de-energization of the emergency buses and load shedding from the emergency buses.

b) Verifying the diesel starts** on the auto-start signal, energizing the emergency buses with permanently connected loads in less than or equal to 10 seconds, energizing the auto-connected shutdown loads through the load sequencer, and operating for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization of these loads, the steady-state voltage and frequency shall be maintained at 6900 ± 690 volts and 60 ± 1.2 Hz.

5. Verifying that on a safety injection test signal (without loss of power) the diesel generator starts** on the auto-start signal and operates on standby for greater than or equal to 5 minutes.

6. Simulating a loss of offsite power in conjunction with a safety injection test signal, and

a) Verifying de-energization of the emergency buses and load shedding from the emergency buses.

b) Verifying the diesel starts** on the auto-start signal, energizing the emergency buses with permanently connected loads in less than or equal to 10 seconds, energizing the auto-connected emergency (accident) loads through the sequencing timers, and operating for greater than or equal to 5 minutes and maintaining the steady-state voltage and frequency at 6900 ± 690 volts and 60 ± 1.2 Hz.

c) DELETED

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

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 (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***.

8. DELETED

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. DELETED

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.

SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 (Continued)

13. Verifying that all diesel generator trips, except engine overspeed, loss of generator potential transformer circuits, generator differential, and emergency bus differential are automatically bypassed on a simulated or actual loss of offsite power signal in conjunction with a safety injection signal.

14. Verifying that within 5 minutes of shutting down the EDG, after the EDG has operated for at least 2 hours at an indicated load of 6200-6400 kw, the EDG starts and accelerates to 6900 ± 690 volts and 60 ± 1.2 hz in 10 seconds or less.

g. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting** both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 450 rpm in less than or equal to 10 seconds.

h. At least once per 10 years by:

1) Draining each main fuel oil storage tank, removing the accumulated sediment, and cleaning the tank using a sodium hypochlorite solution or other appropriate cleaning solution, and

2) Performing a pressure test, of those portions of the diesel fuel oil system designed to Section III, subsection ND of the ASME Code, at a test pressure equal to 110% of the system design pressure.

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

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 60 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 March 30, 1995, as supplemented July 6, 1995, the Carolina Power & Light Company (the licensee) submitted a request for changes to the Shearon Harris Nuclear Power Plant, Unit 1 (SHNPP), Technical Specifications (TS). The requested changes would revise the Emergency Diesel Generator (EDG) surveillance requirements contained in TS 3/4.8.1.1.2 to be consistent with NUREG-1431, "Standard Technical Specifications, Westinghouse plants," and to eliminate the need for duplicate EDG testing being performed to satisfy the requirements of the Station Blackout Rule and the Maintenance Rule. The elimination of duplicate testing will reduce the overall wear and stress on engines and thus result in an increase in long-term engine reliability for the EDG. The safety function of the EDGs is to supply ac electric power to plant safety systems whenever the preferred ac power supply is unavailable. The July 6, 1995, submittal did not change the initial no significant hazards consideration determination; it contained clarifying information only.

3.0 EVALUATION

The current surveillance requirement (SR) 4.8.1.1.2.e requires in part that the EDG be synchronized to its appropriate emergency bus, loaded to an indicated 6200-6400 kW in less than or equal to 60 seconds, and operate for at least 60 minutes. The proposed amendment would delete the words "in less than or equal to 60 seconds," following the words "loaded to an indicated 6200-6400*** kW." The rapid loading of the EDG to 6200-6400 kW in 60 seconds produces high thermal stresses in the engine piston, cylinder liners and cylinder heads, and contributes to accelerated wear of these and other engine components. The ability of the EDG to start and load rapidly is adequately demonstrated by 18-month surveillance testing currently being performed to satisfy surveillance requirement 4.8.1.1.2.f.6.b. This test verifies that the EDG will start on an auto-start signal, energizes the auto-connected emergency loads through the sequencer and operates for greater than or equal to 5 minutes, while maintaining steady-state voltage and frequency at 6900 ± 690 volts and 60 ± 1.2 Hz. The staff finds the proposed change to be consistent with NUREG-1431 and Generic Letter 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," and therefore, is acceptable.

The current SR 4.8.1.1.2.f.1 requires that each EDG be inspected every 18 months in accordance with procedures that have been prepared in accordance with the TDI Owners Group's recommendations. The proposed change would modify

by relocating this surveillance requirement to the Shearon Harris' EDG reliability and availability program, and the licensee has stated that any changes to this program will be controlled by the 10 CFR 50.59 process. The staff concurs that these inspection and testing provisions can be controlled by the EDG reliability and availability program because sufficient surveillance requirements are retained in the TS to demonstrate the functional capability of the diesel generator. Further, this change does not alter the surveillance requirements because the subject TS will be relocated in their entirety to the EDG reliability and availability program. Therefore, the staff finds that the proposed relocation of the SV from the TS is acceptable.

The current SR 4.8.1.1.2.f.6.c requires that, by simulating a loss of offsite power (LOOP) in conjunction with a safety injection test signal, the licensee verifies that all diesel generator trips (except for engine overspeed, loss of generator potential transformer circuit, generator differential, and emergency bus differential) are automatically bypassed. The licensee has proposed to change to this surveillance requirement by deleting the word "upon" and inserting the phrase "on simulated or actual" and relocate it as separate SR 4.8.1.1.2.f.13. Since the licensee will continue to perform this SR, the staff finds the above proposed change to be acceptable. Moreover, the modified format of this SR is consistent with the format used in NUREG-1431.

The current SR 4.8.1.1.2.f.7 requires that within 5 minutes of shutting down the EDG following an 24-hour endurance test run, a simulated LOOP in conjunction with a safety injection signal surveillance test be conducted. The licensee has proposed to separate the 5-minute hot restart test from the 24-hour endurance test, to eliminate the requirement for the LOOP in conjunction with a safety injection signal test following the 24-hour loaded run, and to add a new surveillance requirement of a simple hot restart test following a 2-hour loaded run of the EDG. The revised surveillance requirement will verify EDG hot restart capability by starting the EDG and verifying that it will attain rated voltage and frequency within the required time.

The purpose of the EDG hot restart surveillance is to demonstrate the functional capabilities of the EDG to restart from the full-load temperature conditions. The new SR 4.8.1.1.2.f.14 would provide adequate demonstration that the EDG has the restart capability from full-load temperature conditions. This modified surveillance requirement of the EDGs has been examined and accepted by the NRC staff in NUREG-1431. Further, the hot restart test, the LOOP in conjunction with a safety injection signal test, and 24-hour endurance test objectives will continue to be met at the SHNPP; and thus decoupling the tests would result in improved scheduling flexibility with no reduction in demonstration of EDG operability. Based on the above, the staff finds the proposed changes to be acceptable.

The current SR 4.8.1.1.2.f.8 requires verification that auto-connected loads do not exceed the continuous rating of the EDG. The licensee has proposed to delete this requirement from the TS and relocate this requirement to the plant test procedures. This verification will continue to be performed periodically per refueling cycle by testing, design verification, or a combination of both to insure that the auto-connected loading has not changed and that the loads

do not exceed the continuous rating of the EDGs. On this basis, the staff concludes that this change does not alter the surveillance requirements because the subject TS will be relocated in its entirety to the plant test procedures and any changes to the plant test procedures are subjected to the 10 CFR 50.59 review process. Therefore, the staff finds that the proposed relocation of this requirement from the TS is acceptable.

The current SR 4.8.1.1.2.f.10 requires verification that the EDG will not start when a non-bypassed trip condition exists or when the EDG is locked out by the selection of maintenance mode. The licensee has proposed to delete this requirement from the TS and relocate this SR to the EDG reliability and availability program. The maintenance mode selector switch is designed to prevent the EDG operation while the switch is in the maintenance mode. The licensee contends that though important to personnel safety, the mode selector switch has no plant safety-related function and thus needs not be included as a SR in the TS. The actual activation of this maintenance feature is evidenced by observing the indicating light on the EDG control panel and the extension of the shutdown cylinder (fuel racks in the "no fuel" position). The staff concurs with the licensee that the maintenance mode switch does not perform any safety function and therefore the proposed removal of its SR to the EDG reliability and availability program is acceptable.

With regard to the verification of EDG shutdown when non-bypassed trip conditions exists, the licensee states that the EDG reliability and availability program requirements will ensure the EDG to shut down when a non-bypassed trip condition is received and to remain locked-out from any start signal. Thus, monitoring and testing activities to verify the EDG system/subsystem functions are within the scope of these programs and therefore, inclusion of these surveillance requirements in TS is an unnecessary duplication. Based on the above, the staff concludes that the proposed change does not alter the surveillance requirements because the subject TS will be relocated in their entirety to the EDG reliability and availability program and any change to this program are controlled by the 10 CFR 50.59 process. Moreover, this change is consistent with NUREG-1431. Therefore, the staff concludes that SR 4.8.1.1.2.f.10 may be relocated from the TS.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of North Carolina 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 (60 FR 20515). 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 Contributors: O. Chopra
N. Le

Date: August 1, 1995