

March 3, 1995

Mr. C. S. Hinnant, Vice President
Carolina Power & Light Company
H. B. Robinson Steam Electric Plant,
Unit No. 2
3581 West Entrance Road
Hartsville, South Carolina 29551-0790

SUBJECT: ISSUANCE OF AMENDMENT NO. 158 TO FACILITY OPERATING LICENSE NO. DPR-23 REGARDING INOPERABLE EMERGENCY DIESEL GENERATOR DURING POWER OPERATION - H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2 (TAC NO. M89996)

Dear Mr. Hinnant:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 158 to Facility Operating License No. DPR-23 for the H. B. Robinson Steam Electric Plant, Unit No. 2. This amendment changes the Technical Specifications (TS) in response to your request dated July 29, 1994, as supplemented January 29, 1995.

The purpose of the amendment is to reduce the frequency of testing an operable EDG when the other EDG is inoperable and also to prevent entering a condition prohibited by the TS prior to the expiration of the required action statement time.

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

Sincerely,

Original signed by:

Brenda L. Mozafari, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-261

Enclosures:

1. Amendment No. 158 to DPR-23
2. Safety Evaluation

cc w/enclosures:

See next page

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NAME	PAnderson	B Mozafari	W Bateman		
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Mr. C. S. Hinnant
Carolina Power & Light Company

H. B. Robinson Steam Electric
Plant, Unit No. 2

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AMENDMENT NO. 158 TO FACILITY OPERATING LICENSE NO. DPR-23 - H. B. ROBINSON
STEAM ELECTRIC PLANT, UNIT NO. 2

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

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-261

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 158
License No. DPR-23

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Carolina Power & Light Company (the licensee), dated July 29, 1994, as supplemented January 29, 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 3.B. of Facility Operating License No. DPR-23 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 158, are hereby incorporated in the license. Carolina Power & Light Company shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 60 days.

FOR THE NUCLEAR REGULATORY COMMISSION

for *Brenda Mozafari*
William H. Bateman, 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: March 3, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 158

FACILITY OPERATING LICENSE NO. DPR-23

DOCKET NO. 50-261

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>
3.7-2	3.7-2
3.7-2a	3.7-2a
3.7-4	3.7-4
3.7-4a	3.7-4a

- e) Station batteries A and B, a battery charger, A or A-1 and B or B-1, on each battery and their DC distribution systems are operable.

3.7.2 During power operation the following components may be inoperable:

- a) Provided both diesel generators are operable, power operation may continue with the start-up transformer out of service for 24 hours without reporting to the NRC.
- b) Power operation may continue with the start-up transformer out of service beyond 24 hours provided both diesel generators are operable and the reporting requirements of Specification 6.6.1 are followed.
- c) Power operation may continue if the start-up transformer and one diesel generator is inoperable provided the reporting requirements of Specification 6.6.1 and 6.6.2 are followed.

d) -----NOTES-----

- 1. For the purpose of operability testing, the diesel generator start may be preceded by an engine pre-lube period and followed by a warmup period. The diesel generator is not required to be loaded. The diesel generator shall achieve steady state voltage and frequency during the test.
- 2. The diesel generator may be inoperable for a total of two hours per test inclusive of the 24 hours allowed time in 2) or 3) below.

With either diesel generator inoperable, restore inoperable diesel generator to service within 7 days and perform 1) AND EITHER 2) OR 3) below:

- 1) Verify the availability of the required off-site power source within one hour and once per twelve hours thereafter.

AND

- 2) Determine that the remaining operable diesel generator is not inoperable due to common cause failure within 24 hours; AND if the inoperable diesel generator is not restored prior to 72 hours, verify the remaining operable diesel generator starts within the next 24 hours.

OR

- 3) Verify the remaining operable diesel generator starts within 24 hours.

- e) During periods when a diesel generator is being operated for testing purposes, its protective trips listed in Specification 3.7.1.d need not be bypassed after the diesel generator has properly assumed the load on its bus.

Two diesel generators have sufficient capacity to start and run at design load all of the engineered safety features equipment. The safety features operated from one diesel generator can adequately cool the core for any Loss-of-Coolant accident, maintain the containment pressure within the design value, and mitigate the consequences of the design basis accident.

The required actions associated with a single diesel generator being inoperable are intended to provide assurance that a loss of off-site power, during the period that an diesel generator is inoperable, does not result in a complete loss of the engineered safety features equipment. These features are designed with redundant safety related trains. This includes motor driven auxiliary feedwater pumps. Single train systems, such as turbine driven auxiliary feedwater pumps, are not included.

Availability of off-site power sources is verified by verifying that breaker alignment is such that each breaker is in its correct position to ensure that distribution buses and loads are connected to their preferred power source.

The required action in Section 3.7.2(d) provides an allowance to avoid unnecessary testing of the operable diesel generator. All diesel generator inoperabilities must be investigated for common cause failures regardless of how long the diesel generator inoperability persists. The term "common cause failure" means that the cause of the inoperable diesel also exists on the operable diesel. This investigation is performed by evaluation or by actually testing the operable diesel generator.

If it can be determined that the cause of the inoperable diesel generator does not exist on the operable diesel generator, testing of the operable diesel generator is not performed for a period up to 72 hours. If the diesel generator inoperability lasts as long as 72 hours, the operability of the other operable diesel generator is verified by a start within the next 24 hours of the operable diesel generator to provide continued assurance of operability. If the inoperable diesel generator is restored to operability within the subsequent 24 hours (i.e., between 72 hours and 96 hours), and the test of the operable diesel generator has not yet been performed, the test of the operable diesel generator need not be performed. This testing does not require entry into Technical Specification Section 3.0.

If the cause of the initial inoperable diesel generator cannot be confirmed not to exist on the other operable diesel generator, verifying a start of the diesel generator within 24 hours suffices to provide assurance of continued operability of that diesel generator. This testing does not require entry into Technical Specification Section 3.0.

The required action in Section 3.7.2(d) requires only one test of the operable diesel generator in the 7 day Limiting Condition for Operations time period for both of the above conditions.

if it can be determined that the cause of the inoperable diesel generator exists on the other diesel generator, the other diesel generator is declared inoperable upon discovery, and Technical Specification Section 3.0 will apply.

To minimize wear on moving parts that do not get lubricated when the engine is not running, the operability tests in Section 3.7.2(d) are modified by a note to indicate that the diesel generator start may be preceded by an engine prelube period. The diesel generator may be started at a limited starting speed, followed by a warm up at the lower speed, and then followed by gradual acceleration to synchronous speed. The diesel generator may be partially loaded, but loading is not required for operability testing in Section 3.7.2(d).

The minimum diesel fuel oil inventory available to the diesel generators from the Unit 2 diesel generator fuel oil storage tank (Unit 2 tank) is maintained at all times to assure the operation of either 1) both diesel generators at rated design capacity for at least 48 hours⁽¹⁾, or 2) one diesel generator at rated design capacity for at least 96 hours. Diesel fuel is also available to the Unit 2 tank from four Unit 1 I-C turbine fuel oil storage tanks (Unit 1 tanks). This additional storage is comprised of three I-C turbine fuel oil storage tanks at approximately 23,900 gallons capacity each, and one I-C turbine vertical light-off fuel oil storage tank at approximately 23,900 gallons capacity, for a total Unit 1 fuel oil storage capacity of approximately 95,600 gallons. (The Unit 1 I-C turbine horizontal light-off fuel oil storage tank capacity is not available to the Unit 2 tank.) Connections are provided for fuel oil transfer from the four Unit 1 tanks to the Unit 2 tank.

Therefore, the minimum diesel fuel oil inventory available to the diesel generators from the total on-site diesel fuel oil storage capacity is maintained at all times to assure the operation of one diesel generator at its rated design capacity for seven days. "Rated design capacity" for this specification is defined as operation at 2500 kw for 22 hours and 2750 kw for 2 hours in any 24-hour period.

Additional supplies of diesel oil are available in the Hartsville area and from port terminals at Charleston, S.C. and Wilmington, N.C., and inland terminals at Columbia, S.C., Charlotte, N.C., Greensboro, N.C., Fayetteville, N.C., and Raleigh, N.C. Ample trucking facilities exist to assure deliveries to the site within eight hours.

At least one battery charger for each station battery shall normally be in service so that the batteries will always be at full charge in anticipation of a loss-of-AC power incident. This ensures that adequate DC power will be available for emergency uses.

The plant can be safely shut down without the use of off-site power since all vital loads (safety systems, instruments, etc.) can be supplied from the diesel generators.

The two diesel generators, each capable of supplying safeguards loads, and the start-up transformer provide three separate sources of power immediately available for operation of these loads.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 158 TO FACILITY OPERATING LICENSE NO. DPR-23
CAROLINA POWER & LIGHT COMPANY
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261

1.0 INTRODUCTION

By letter dated July 29, 1994, as supplemented January 29, 1995, Carolina Power & Light Company (licensee) submitted a request for changes to the H. B. Robinson Steam Electric Plant, Unit No. 2, Technical Specifications (TS). The requested changes would revise the TS for an inoperable emergency diesel generator (EDG) during power operation at H. B. Robinson Steam Electric Plant, Unit No. 2 (HBR). The proposed amendment changes Section 3.7.2(d) and its Basis in TS 3.7, Auxiliary Electrical Systems. The purpose is to reduce the frequency of testing an operable EDG when the other EDG is inoperable and also to prevent entry into TS Section 3.0.

Under current TS 3.7.2(d), power operation can be continued for 7 days if one EDG is inoperable, provided the other EDG is tested daily to ensure its operability. This test requires that the EDG be paralleled with the grid and run approximately 2 to 4 hours. Since the EDG design features at HBR do not include an automatic override of the EDG test mode, no onsite power sources (i.e., EDGs) would be available during the operability test, and the TS does not stipulate the duration of the test. To limit plant operation without EDGs, TS Section 3.0 requires, "Except as otherwise provided for in each specification, if a Limiting Condition for Operation cannot be satisfied because of circumstances in excess of those addressed in the specification, the unit shall be placed in hot shutdown within eight hours and in COLD SHUTDOWN within the next 30 hours...." Therefore, TS Section 3.0 must be entered when an EDG operability test is required.

In Licensee Event Report 94-015-01, dated October 27, 1994, the licensee cited five such incidents of entering into TS Section 3.0 at 100 percent power when an operable EDG was being tested while the other EDG was on scheduled maintenance. Thus, the licensee proposes that TS 3.7.2(d) be revised, not only to reduce the frequency of testing an operable EDG when the other EDG is inoperable, but also to prevent an entry into TS 3.0.

The January 29, 1995, letter provided clarifying information that did not change the initial proposed no significant hazards consideration determination.

2.0 EVALUATION

The NRC staff has reviewed the proposed changes in Section 3.7.2(d) and its Basis in TS 3.7, Auxiliary Electric Systems. The NRC staff's evaluation of each proposed TS amendment for HBR is as follows:

The proposed TS states:

With either diesel generator inoperable, restore inoperable diesel generator to service within 7 days and perform 1) and either 2) or 3) below:

- 1) Verify the availability of the required off-site power source within one hour and once per twelve hours thereafter; and
- 2) Determine that the remaining operable diesel generator is not inoperable due to common cause failure with 24 hours; AND if the inoperable diesel generator is not restored prior to 72 hours, verify the remaining operable diesel generator starts within the next 24 hours; or
- 3) Verify the remaining operable diesel generator starts within 24 hours.

The licensee also proposed that the following two notes be attached to the above TS 3.7.2(d). These notes state the details of the operability test and limit the testing duration:

1. For the purpose of operability testing, the diesel generator start may be preceded by an engine pre-lube period and followed by a warmup period. The diesel generator is not required to be loaded. The diesel generator shall achieve steady state voltage and frequency during the test.
2. The diesel generator may be inoperable for a total of two hours per test inclusive of the 24 hours allowed time in 2) or 3) above.

The NRC staff has recently developed a position for plants with the 7-day allowed outage time (AOT) that is similar to the provision for plants with a 3-day AOT as in NUREG-1431, "Westinghouse Owner's Group Improved Standard Technical Specifications" (WSTS). The position recommends that with an EDG inoperable, the operability test of an operable EDG need not be performed for the first 3 days if no common mode failure is suspected. Beyond 3 days, the NRC staff believes that failures could be detected by additional EDG testing. To provide that assurance of operability, it recommends the operable EDG be tested after 3 days. On this basis, if the inoperable EDG remains inoperable beyond 72 hours, the staff requires that the operable EDG be tested once during the subsequent 24 hours (i.e., 4th day) to provide assurance of operability due to the increased vulnerability of the plant associated with

the longer out-of-service time. However, if common cause can not be ruled out, then operability of the operable EDG should be demonstrated by testing it within the first 24 hours. In either case, only one test of the operable EDG is required during the entire 7-day AOT.

The NRC staff has reviewed the licensee's submittal and finds that latest proposed TS 3.7.2(d) presents a balance between testing for operability and preserving the overall life and reliability of the EDG; it also prevents an entry into TS Section 3.0 when an EDG is inoperable. The NRC staff concludes that the proposed TS is comparable to the provision in the WSTS and is, therefore, acceptable.

Modification of Basis

To support the changes made in TS 3.7.2(d), the licensee proposes to add the following paragraphs in the Basis section for each added TS provision.

1. Currently, no provision exists in the TS to verify the required offsite power source when testing the operable EDGs. Paragraphs have been added to require that the offsite power source is verified once per twelve hours, corresponding to once per shift and to describe how to confirm availability of the offsite power source.
2. To reduce the frequency of starting of an operable EDG when the other EDG is inoperable, a paragraph has been added regarding an investigation to determine whether the EDG inoperability is due to common cause failures, prior to performing an EDG operability test.
3. A paragraph has been added to explain that only one test of the operable EDG is required during the entire 7-day AOT period under the proposed TS 3.7.2(d) and to provide details on how to perform the EDG operability test and limits the testing duration. Should the testing go beyond two hours, the licensee will enter TS Section 3.0.

The NRC staff has reviewed each paragraph in the Basis section and finds that the proposed changes clearly describe the basis for continued assurance of EDG operability without causing excessive wear on the EDG. Therefore, the changes made in the Basis section are acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of South Carolina official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC 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 (59 FR 45018). 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.

5.0 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: P. Kang

Date: March 3, 1994