

MAY 27 1987

Dockets Nos. 50-325/324

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: D. C. DISTRIBUTION SYSTEM BRUNSWICK STEAM ELECTRIC  
PLANT, UNITS 1 AND 2 (TAC NO. 63957/63958)

The Commission has issued the enclosed Amendments Nos. 109 and 136 to Facility Operating Licenses Nos. DPR-71 and DPR-62 for the Brunswick Steam Electric Plant, Units 1 and 2. The amendments consist of changes to the Technical Specifications in response to your submittal of November 7, 1986.

The amendments change Technical Specification Surveillance Requirement 4.8.2.3.1(b) to define acceptable loading of the B division battery bus to allow operation with a new standby uninterruptible power supply system.

A copy of our Safety Evaluation and Notice of Issuance are enclosed.

Also enclosed is a copy of an Environmental Assessment and Finding of No Significant Impact which has been published in the Federal Register.

Sincerely,

Ernest D. Sylvester, Project Manager  
Project Directorate II-1  
Division of Reactor Projects - I/II

Enclosures:

1. Amendment No. 109 to License No. DPR-71
2. Amendment No. 136 to License No. DPR-62
3. Safety Evaluation
4. Environmental Assessment

cc w/enclosures:  
See next page

LA:PD21:DRPR  
PAnderson  
05/21/87

PM:PD21:DRPR *EDS*  
ESylvester/vag  
05/21/87

D:PD21:DRPR  
EAdensam  
05/21/87

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PDR ADDCK 05000324  
PDR

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

Brunswick Steam Electric Plant  
Units 1 and 2

cc:

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

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-325

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 109  
License No. DPR-71

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Carolina Power & Light Company (the licensee), dated November 7, 1986, 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. DPR-71 is hereby amended to read as follows:

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P PDR

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 109, are hereby incorporated in the license. The licensee 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 of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: May 27, 1987

LA: PD21/DRPR  
PAAnderson  
05/14/87

PM: PD21: DRPR <sup>EOS</sup>  
ESylvester/vag  
05/14/87

OGC  
*Chalk*  
05/19/87

D: PD21/DRPR  
EAdensam  
05/1/87

*[Handwritten signature]*  
5/19

ATTACHMENT TO LICENSE AMENDMENT NO. 109

FACILITY OPERATING LICENSE NO. DPR-71

DOCKET NO. 50-325

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

Remove

3/4 8-8

Insert

3/4 8-8

## ELECTRICAL POWER SYSTEMS

### D.C. DISTRIBUTION - OPERATING

#### LIMITING CONDITION FOR OPERATION

3.8.2.3 As a minimum, the following D.C. divisions shall be OPERABLE with tie breakers between divisions open:

- a. Division I, consisting of:
  1. A 250/125 volt bus
  2. Two 125 volt D.C. batteries, 1A-1 and 1A-2, each with a full capacity charger.
  
- b. Division II, consisting of:
  1. A 250/125 volt bus.
  2. Two 125 volt D.C. batteries, 1B-1 and 1B-2, each with a full capacity charger.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

#### ACTION:

- a. With one or more batteries and/or its associated charger inoperable in one division, restore the division to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
  
- b. With one or more batteries and/or its associated charger inoperable in both divisions, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

#### SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each of the above required D.C. divisions shall be determined OPERABLE with tie breakers open at least once per 7 days by verifying:

- a. Correct breaker alignment and indicated power availability, and
  
- b. That no combination of more than two power conversion modules, consisting of either two lighting inverters or one lighting inverter and one plant UPS unit, are aligned to division II bus B.



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

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-324

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 136  
License No. DPR-62

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Carolina Power & Light Company (the licensee), dated November 7, 1986, 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. DPR-62 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 136, are hereby incorporated in the license. The licensee 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 of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: May 27, 1987

LA:PD21:DRPR  
PAnderson  
05/14/87

PM:PD21:DRPR  
ESylvester/vag  
05/14/87

OGC  
CSant  
05/19/87

D:PD21:DRPR  
EAdensam  
05/14/87

5/19/87

ATTACHMENT TO LICENSE AMENDMENT NO. 136

FACILITY OPERATING LICENSE NO. DPR-62

DOCKET NO. 50-324

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

Remove

3/4 8-8

Insert

3/4 8-8

## ELECTRICAL POWER SYSTEMS

### D.C. DISTRIBUTION - OPERATING

#### LIMITING CONDITION FOR OPERATION

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3.8.2.3 As a minimum, the following D.C. divisions shall be OPERABLE with tie breakers between divisions open:

- a. Division I, consisting of:
  1. A 250/125 volt bus.
  2. Two 125 volt D.C. batteries, 2A-1 and 2A-2, each with a full capacity charger.
  
- b. Division II, consisting of:
  1. A 250/125 volt bus.
  2. Two 125 volt D.C. batteries, 2B-1 and 2B-2, each with a full capacity charger.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

#### ACTION:

- a. With one or more batteries and/or its associated charger inoperable in one division, restore the division to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
  
- b. With one or more batteries and/or its associated charger inoperable in both divisions, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

#### SURVEILLANCE REQUIREMENTS

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4.8.2.3.1 Each of the above required D.C. divisions shall be determined OPERABLE with tie breakers open at least once per 7 days by verifying:

- a. Correct breaker alignment and indicated power availability, and
  
- b. That no combination of more than two power conversion modules, consisting of either two lighting inverters or one lighting inverter and one plant UPS unit, are aligned to division II bus B.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
SUPPORTING AMENDMENT NO. 109 TO FACILITY OPERATING LICENSE NO. DPR-71  
AND AMENDMENT NO. 136 TO FACILITY OPERATING LICENSE NO. DPR-62  
CAROLINA POWER & LIGHT COMPANY  
BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2  
DOCKETS NOS. 50-325 AND 50-324

1.0 INTRODUCTION

The Carolina Power & Light Company, by letter dated November 7, 1986, proposed changes to the Technical Specifications regarding loads on the B division battery bus. The proposed changes revise Surveillance Requirements 4.8.2.3.1.(b) by deleting specific reference to 37.5 kVA power conversion modules and adding a definition of acceptable load configurations for the B division battery bus.

2.0 EVALUATION

The B division battery bus of each of the Brunswick Units is configured such that it is the normal supply to a unit's lighting inverter and standby Uninterruptible Power Supply (UPS). In addition, the B division bus serves as the alternate supply for the opposite unit's lighting inverter. Each of the lighting inverters and the power conversion module for the UPS is currently rated at 37.5 kVA.

In 1984, the licensee completed a detailed DC battery load study. This study evaluated the sequential loading of the batteries during the worst case design basis event. The design basis event assumed for the study was a complete loss of offsite power coincident with a large and/or small break loss of coolant accident on one unit and a safe shutdown of the other unit. One assumption of the load study was that no more than two of the possible three 37.5 kVA power conversion modules will be aligned to the B division bus at any time. The largest load on the battery for the load study occurs when two lighting inverters are aligned to the B division bus. In an effort to ensure that no more than two of the 37.5 kVA power conversion modules are aligned to the B division bus at any time, the licensee incorporated the result of the load study into Surveillance Requirement 4.8.2.3.1.(b) of the Brunswick Technical Specifications. This surveillance requirement currently requires verification at least once per seven days that there are no more than two 37.5 kVA power conversion modules aligned to the B division bus. In addition, the licensee has an operating procedure to ensure that not more than two of the three modules are connected to the DC bus at any time.

The UPS system is a non-1E system which feeds various non-essential loads throughout the plant. The licensee intends to replace the obsolete existing 37.5 kVA UPS system, which includes a primary power converter unit, a

standby power converter unit, and switching modules with new equipment rated at 50 kVA. The UPS system modification is scheduled to be completed for Unit 1 during the current refueling outage.

The proposed modification of the UPS system (50 kVA) was evaluated for its impact on the DC battery load study. The loads fed from the UPS power conversion module are not altered by this modification. However, there is an increase in the load from the batteries due to a decrease in the efficiency of the new 50 kVA system. Even with the additional 20 amp increase, the configuration of two lighting inverters is a conservative loading of the B division battery and bus. The loading of the power conversion modules does not exceed the combination of the greatest load on the battery system which was used for the load study. While the capacity margin of the batteries is slightly reduced, the proposed modification has been bounded by the 1984 battery load study. The proposed change to Surveillance Requirement 4.8.2.3.1.(b) to delete reference to 37.5 kVA power conversion modules and to clearly add a definition of the load configuration is acceptable.

### 3.0 ENVIRONMENTAL CONSIDERATIONS

An Environmental Assessment has been prepared pursuant to 10 CFR Part 51.32 and published in the FEDERAL REGISTER on .

### 4.0 CONCLUSION

The Commission has issued a "Notice of Consideration of Issuance of Amendments to Facility Operating Licenses and Opportunity for Prior Hearing" which was published in the FEDERAL REGISTER (51 FR 44158) on December 8, 1986, and consulted with the State of North Carolina. No public comments or requests for hearing were received, and the State of North Carolina did not have any comments.

We have 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, and  
(2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: S. Rhow

Dated:



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

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UNITED STATES NUCLEAR REGULATORY COMMISSION

CAROLINA POWER & LIGHT COMPANY

DOCKET NOS. 50-325 and 50-324

ENVIRONMENTAL ASSESSMENT AND FINDING OF

NO SIGNIFICANT IMPACT

The U. S. Nuclear Regulatory Commission (the Commission) is considering issuance of amendments to Facility Operating Licenses Nos. DPR-71 and DPR-62 issued to the Carolina Power & Light Company, (the licensee), for operation of Brunswick Steam Electric Plant, Units 1 and 2, located in Brunswick County, North Carolina.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action:

The proposed action would permit the licensee to implement changes to the Brunswick facility and to Technical Specifications (TSs), as described in their letter of November 7, 1986. The following assessment applies to Units 1 and 2.

The Need for the Proposed Action:

The B division battery bus for each of the Brunswick units is configured in such a way that it is the normal feed for a unit's lighting inverter and standby Uninterruptible Power Supply (UPS). In addition, the B division bus serves as the alternate feed for the opposite unit's lighting inverter. Each of the lighting inverters and the power conversion module for the UPS is currently rated at 37.5 kVA. Currently, TS Surveillance Requirement 4.8.2.3.1(b) requires verification at least once per seven days that there are no more than two of these 37.5 kVA power conversion modules aligned to the B division bus to prevent overloading the bus, which also feeds safety-related loads during a postulated design basis accident.

The UPS system is a non-IE system that feeds various loads throughout the Brunswick facility. The licensee states that the existing UPS system is approaching obsolescence and is considered to be beyond reasonable maintainability. The licensee proposes to replace the UPS system with currently available equipment that is rated at 50 kVA. To permit this upgrade, the licensee proposes to delete the reference to 37.5 kVA equipment from Surveillance Requirement 4.8.2.3.1 (b). The proposed TS change would require verification that no more than two power conversion modules, consisting of either two lighting inverters or one lighting inverter and one plant UPS unit, are aligned to the B division bus. As currently exists, the load from two lighting inverters would be greater than from one lighting inverter and the proposed 50 kVA UPS module.

Environmental Impacts of the Proposed Action:

Because the maximum load from the inverters and UPS module would not change, there would be no effect from this change on systems required to mitigate the effects of a postulated accident. Thus, post-accident radiological releases will not be greater than previously determined, nor do the proposed changes otherwise affect radiological plant effluents. Occupational exposures to radiation would also be unaffected. Therefore, the Commission concludes that there are no significant radiological environmental impacts associated with the proposed changes.

With regard to potential non-radiological impacts, the proposed changes involve systems located within the restricted area, as defined in 10 CFR Part 20. No non-radiological effluents are affected, and no other environmental impact would occur. Therefore, the Commission concludes that there are no significant non-radiological environmental impacts associated with the proposed changes.

Alternatives to the Proposed Action:

Since the Commission has concluded that there is no measureable environmental impact associated with the proposed changes to the TSS, any alternative to the amendments will either have no environmental impact or greater environmental impact. The principal alternative would be to deny the requested amendments. This would not reduce environmental impacts of plant operation.

Alternative Use of Resources:

This action does not involve the use of resources not previously considered in the Final Environmental Statement for Brunswick Steam Electric Plant, Units 1 and 2, dated January 1974.

Agencies and Persons Consulted:

The Commission's staff reviewed the licensee's request and did not consult other agencies or persons.

FINDING OF NO SIGNIFICANT IMPACT

The Commission has determined not to prepare an environmental impact statement for the proposed license amendments.

Based on the foregoing environmental assessment, the Commission concludes that the proposed action will not have significant effect on the quality of the human environment.

For further information with respect to this action, see the application for the amendments dated November 7, 1986, which is available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W.,

Washington, D.C. 20555 and at the University of North Carolina at Wilmington,  
William Madison Randall Library, 601 S. College Road, Wilmington,  
North Carolina 28403-3297.

Dated at Bethesda, Maryland this 22nd day of May 1987.

FOR THE NUCLEAR REGULATORY COMMISSION

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

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