

May 2, 1994

Docket Nos. 50-325  
and 50-324

Mr. R. A. Anderson  
Vice President  
Carolina Power & Light Company  
Brunswick Steam Electric Plant  
Post Office Box 10429  
Southport, North Carolina 28461

Dear Mr. Anderson:

SUBJECT: ISSUANCE OF AMENDMENT NO. 170 TO FACILITY OPERATING LICENSE NO. DPR-71 AND AMENDMENT NO. 201 TO FACILITY OPERATING LICENSE NO. DPR-62 REGARDING SPENT FUEL POOL DRAINING - BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2 (TAC NOS. M86425 AND M86428)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 170 to Facility Operating License No. DPR-71 and Amendment No. 201 to Facility Operating License No. DPR-62 for Brunswick Steam Electric Plant, Units 1 and 2. The amendments change the Technical Specifications in response to your submittal dated April 13, 1993.

The amendments change the Technical Specifications to revise the design feature information pertaining to the elevation at which the spent fuel storage pool is designed to prevent inadvertent draining.

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

Sincerely,

ORIGINAL SIGNED BY:

Patrick D. Milano, Senior Project Manager  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

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PDR ADOCK 05000324  
P PDR

Enclosures:

1. Amendment No. 170 to License No. DPR-71
2. Amendment No. 201 to License No. DPR-62
3. Safety Evaluation

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cc w/enclosures: See next page

OFFICE	LA:PD21:DRPE	PM:PD21:DRPE	C:SPLB	D:PD21:DRPE	OGC
NAME	PAAnderson	PMilano	CMcCracken	SBajwa	APK
DATE	02/31/94	04/1/94	04/7/94	04/1/94	04/14/94

Document Name: G:\BRUNSWIC\BR86425.AMD

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

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

Sincerely,

A handwritten signature in cursive script, appearing to read "Patrick D. Milano".

Patrick D. Milano, Senior Project Manager  
Project Directorate II-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 170 to License No. DPR-71
2. Amendment No. 201 to License No. DPR-62
3. Safety Evaluation

cc w/enclosures: See next page

Mr. R. A. Anderson  
Carolina Power & Light Company

Brunswick Steam Electric Plant  
Units 1 and 2

cc:

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Brunswick County Board of Commissioners  
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State of South Carolina  
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Mr. Clay C. Warren  
Plant Manager - Unit 2  
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Post Office Box 10429  
Southport, North Carolina 28461

AMENDMENT NO. 170 TO FACILITY OPERATING LICENSE NO. DPR-71 - BRUNSWICK, UNIT 1  
AMENDMENT NO. 201 TO FACILITY OPERATING LICENSE NO. DPR-62 - BRUNSWICK, UNIT 2

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cc: Brunswick Service List

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

CAROLINA POWER & LIGHT COMPANY, et al.

DOCKET NO. 50-325

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 170  
License No. DPR-71

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment filed by Carolina Power & Light Company (the licensee), dated April 13, 1993, 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:

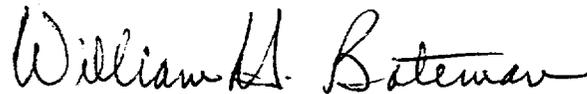
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P PDR

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 170, 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 of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



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: May 2, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 170

FACILITY OPERATING LICENSE NO. DPR-71

DOCKET NO. 50-325

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

Remove Pages

5-5

Insert Pages

5-5

## DESIGN FEATURES

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### 5.6 FUEL STORAGE

#### CRITICALITY

5.6.1.1 The new fuel storage racks are designed and shall be maintained with sufficient center-to-center distance between fuel assemblies placed in the storage racks to ensure a  $k_{\text{eff}}$  equivalent to less than 0.90 when dry and less than 0.95 when flooded with unborated water. In order to meet these limits, new fuel assemblies shall have an infinite core geometry lattice multiplication factor less than or equal to 1.31 at 20°C.

5.6.1.2 The spent fuel storage racks are designed and shall be maintained with sufficient center-to-center distance between fuel assemblies placed in the storage racks to ensure a  $k_{\text{eff}}$  equivalent to less than 0.95 with the storage pool filled with unborated water with:

- a. PWR fuel assemblies with a maximum infinite core geometry lattice multiplication factor less than or equal to 1.41 at 20°C.
- b. BWR fuel assemblies with a maximum infinite core geometry lattice multiplication factor less than or equal to 1.33 at 20°C.

5.1.6.3 The  $k_{\text{eff}}$  for the unpoisoned racks includes a conservative allowance of 0.5%  $\Delta k/k$  for uncertainties. The  $k_{\text{eff}}$  calculated for the poisoned racks includes the sum of all appropriate biases and the root-mean-square (RMS) of the uncertainties.

#### DRAINAGE

5.6.2 The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 115'11".

#### CAPACITY

5.6.3 The spent fuel storage pool is designed and shall be maintained with no more than 160 PWR fuel assemblies and 1803 BWR fuel assemblies.

### 5.7 COMPONENT CYCLIC OR TRANSIENT LIMIT

5.7.1 The components identified in Table 5.7.1-1 are designed and shall be maintained within the cycle or transient limits of Table 5.7.1-1.



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

CAROLINA POWER & LIGHT COMPANY, et al.

DOCKET NO. 50-324

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.201  
License No. DPR-62

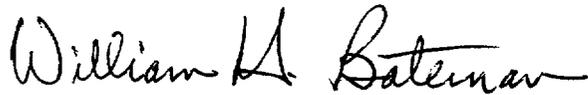
1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment filed by Carolina Power & Light Company (the licensee), dated April 13, 1993, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's 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. 201, 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 of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



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: May 2, 1994

ATTACHMENT TO LICENSE AMENDMENT NO. 201

FACILITY OPERATING LICENSE NO. DPR-62

DOCKET NO. 50-324

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

Remove Pages

5-5

Insert Pages

5-5

## DESIGN FEATURES

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### 5.6 FUEL STORAGE

#### CRITICALITY

5.6.1.1 The new fuel storage racks are designed and shall be maintained with sufficient center-to-center distance between fuel assemblies placed in the storage racks to ensure a  $k_{eff}$  equivalent to less than 0.90 when dry and less than 0.95 when flooded with unborated water. In order to meet these limits, new fuel assemblies shall have an infinite core geometry lattice multiplication factor less than or equal to 1.31 at 20°C.

5.6.1.2 The spent fuel storage racks are designed and shall be maintained with sufficient center-to-center distance between fuel assemblies placed in the storage racks to ensure a  $k_{eff}$  equivalent to less than 0.95 with the storage pool filled with unborated water with:

- a. PWR fuel assemblies with a maximum infinite core geometry lattice multiplication factor less than or equal to 1.41 at 20°C.
- b. BWR fuel assemblies with a maximum infinite core geometry lattice multiplication factor less than or equal to 1.33 at 20°C.

5.1.6.3 The  $k_{eff}$  for the unpoisoned racks includes a conservative allowance of 0.5%  $\Delta k/k$  for uncertainties. The  $k_{eff}$  calculated for the poisoned racks includes the sum of all appropriate biases and the root-mean-square (RMS) of the uncertainties.

#### DRAINAGE

5.6.2 The spent fuel storage pool is designed and shall be maintained to prevent inadvertent draining of the pool below elevation 115'11".

#### CAPACITY

5.6.3 The spent fuel storage pool is designed and shall be maintained with no more than 144 PWR fuel assemblies and 1839 BWR fuel assemblies.

### 5.7 COMPONENT CYCLIC OR TRANSIENT LIMIT

5.7.1 The components identified in Table 5.7.1-1 are designed and shall be maintained within the cycle or transient limits of Table 5.7.1-1.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 170 TO FACILITY OPERATING LICENSE NO. DPR-71  
AND AMENDMENT NO. 201 TO FACILITY OPERATING LICENSE NO. DPR-62

CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2

DOCKET NOS. 50-325 AND 50-324

1.0 INTRODUCTION

By letter dated April 13, 1993, the Carolina Power & Light Company (the licensee) submitted a request for changes to the Brunswick Steam Electric Plant, Units 1 and 2, Technical Specifications (TS). The requested changes would revise the design feature information pertaining to the elevation at which the spent fuel storage pool is designed to prevent inadvertent draining. The proposed amendment would change this elevation from 116 feet 4 inches to 115 feet 11 inches, based on the actual spent fuel storage pool design.

2.0 EVALUATION

The licensee proposed the changes to TS 5.6.2, Drainage, to correct an error in the design feature information provided in this section. The proposed change would revise the elevation to which the spent fuel pool was designed to prevent inadvertent draining from the present 116 feet 4 inches to 115 feet 11 inches. This lower elevation corresponds to the actual elevation at the bottom of the spent fuel pool overflow suction to the skimmer surge tanks. With the fuel pool gates installed, the minimum level to which the pool could be inadvertently drained is governed by the location of the bottom of these skimmer overflows. For this to occur, spent fuel pool water would be drained through the piping connected to the skimmer overflows with no return or makeup flow to the pool.

The licensee is required to maintain a minimum level of water above the top of the spent fuel rods in the storage racks. The minimum level required by TS 3.9.9 is 20 feet 6 inches above the top of the fuel. This level equates to an actual spent fuel pool elevation of about 115 feet 6 inches. Thus, should inadvertent draining occur, the worst case level of water would still remain about 5 inches above the minimum required level.

The staff finds this proposed change acceptable. The change will correct the design information error in the TS to correspond with the actual construction of the fuel pool and the connected skimmer piping. The change does not reduce the minimum water level required above the fuel in the spent fuel storage pool for radiation shielding.

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### 3.0 STATE CONSULTATION

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

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendments change 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 staff has determined that the amendments involve 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 amendments involve no significant hazards consideration, and there has been no public comment on such finding (59 FR 12359). Accordingly, the amendments meet 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 amendments.

### 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: P. Milano

Date: May 2, 1994