

March 1, 2000

Mr. J. S. Keenan  
Vice President  
Carolina Power & Light Company  
Brunswick Steam Electric Plant  
Post Office Box 10429  
Southport, North Carolina 28461

SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1 - ISSUANCE OF  
AMENDMENT REVISING MINIMUM CRITICAL POWER RATIO SAFETY LIMIT  
VALUES (TAC NO. MA7177)

Dear Mr. Keenan:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 208 to Facility Operating License No. DPR-71 for the Brunswick Steam Electric Plant, Unit 1. The amendment changes the Technical Specifications (TS) in response to your submittal dated November 17, 1999. The amendment revises TS 2.1.1.2, "Reactor Core Safety Limits," by revising the Minimum Critical Power Ratio. You also requested additional changes to TS 2.1.1.2 and a change to TS 5.6.5, "Core Operating Limits Report." These requested changes are identical to changes requested in your submittal dated September 28, 1999, which were granted in Amendment No. 207 and are not addressed in this evaluation.

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

Sincerely,

/RA/

Allen Hansen, Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-325

Enclosures:

1. Amendment No. 208 to License No. DPR-71
2. Safety Evaluation

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cc w/enclosures: See next page  
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\* No substantive changes to SE

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Name	AHansen	EDunnington	RCaruso *	J. Hill	RCorreia
Date	2/23/00	2/23/00	2/16/00	2/25/00	3/1/00
Copy	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No

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*Template # NRR-058*

AMENDMENT NO. 208 TO FACILITY OPERATING LICENSE NO. DPR-71 - BRUNSWICK,  
UNIT 1

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

March 1, 2000

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Vice President  
Carolina Power & Light Company  
Brunswick Steam Electric Plant  
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Allen Hansen, Project Manager, Section 2  
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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. 208  
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 November 17, 1999, 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:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 208, 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 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard P. Correia, Chief, Section 2

Project Directorate II

Division of Licensing Project Management

Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: March 1, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 208

FACILITY OPERATING LICENSE NO. DPR-71

DOCKET NO. 50-325

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains a marginal line indicating the area of change.

Remove Page

2.0-1

Insert Page

2.0-1

## 2.0 SAFETY LIMITS (SLs)

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### 2.1 SLs

#### 2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure  $< 785$  psig or core flow  $< 10\%$  rated core flow:

THERMAL POWER shall be  $\leq 25\%$  RTP.

2.1.1.2 With the reactor steam dome pressure  $\geq 785$  psig and core flow  $\geq 10\%$  rated core flow:

MCPR shall be  $\geq 1.10$  for two recirculation loop operation or  $\geq 1.11$  for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

#### 2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be  $\leq 1325$  psig.

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### 2.2 SL Violations

With any SL violation, the following actions shall be completed within 2 hours:

2.2.1 Restore compliance with all SLs; and

2.2.2 Insert all insertable control rods.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 208 TO FACILITY OPERATING LICENSE NO. DPR-71

CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

DOCKET NO. 50-325

1.0 INTRODUCTION

By letter dated November 17, 1999, Carolina Power & Light Company (the licensee) submitted a request for changes to the Brunswick Steam Electric Plant, Unit 1, Technical Specifications (TS). The requested changes would revise TS 2.1.1.2, "Reactor Core Safety Limits," by revising the Minimum Critical Power Ratio (MCPR). The upcoming Brunswick Cycle 13 core will have 560 fuel assemblies, of which there are 220 fresh GE13 bundles, 196 once-burned GE13 bundles, and 144 twice-burned GE13 bundles.

The licensee also requested additional changes to TS 2.1.1.2 and a change to TS 5.6.5, "Core Operating Limits Report." These requested changes are identical to changes requested in the licensee submittal dated September 28, 1999, which were granted in Amendment No. 207 and will not be addressed in this evaluation.

2.0 EVALUATION

The licensee proposed to change the MCPR values in TS 2.1.1.2 (with the reactor steam dome pressure  $\geq$  785 psig and core flow  $\geq$  10% rated core flow) from 1.09 to 1.10 for two recirculation loop operation and from 1.10 to 1.11 for single recirculation loop operation.

The licensee described the methodologies used to calculate the MCPR values for the proposed TS changes in the submittal. The Cycle 13 MCPR analysis was performed by GE Nuclear Energy (GENE) using the plant- and cycle-specific fuel and core parameters, and NRC-approved methodologies including NEDC-52505P, Revision 1 (R-Factor Calculation Method for GE11, GE12 and GE13 Fuel), NEDO-10958-A (GETAB), and Amendment 25 to NEDE-24011-P-A (GESTAR-II).

The staff has reviewed the justification for the MCPR value of 1.10 for two recirculation loop operation and 1.11 for single loop operation for Cycle 13 using the approach stated in Amendment 25 to GESTAR II. Based on our review of the submittal and the detailed summary of analysis results for Cycle 12 and 13 operation in Table 1 of Enclosure 2 of the November 17, 1999, submittal, the staff has concluded that the MCPR analysis for Brunswick Unit 1 Cycle 13 operation using the plant- and cycle-specific parameters in conjunction with the approved method is acceptable. The Cycle 13 MCPR will ensure that 99.9 percent fuel rods in the core will not experience boiling transition, which satisfies the requirements of General Design Criterion 10 of Appendix A to 10 CFR Part 50 regarding acceptable fuel design limits. Therefore, the staff has concluded that the justification for analyzing and determining the MCPR of 1.10 for two recirculation loop operation and 1.11 for single loop operation for Brunswick Cycle 13 is acceptable.

Based on this review, the staff concludes that the requested revisions to TS 2.1.1.2 are acceptable because approved cycle-specific MCPR calculation methods were used and the results conform to the specified acceptance criteria.

### 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 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 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 (64 FR 70080). 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: T. Huang

Date: March 1, 2000

Mr. J. S. Keenan  
Carolina Power & Light Company

Brunswick Steam Electric Plant  
Units 1 and 2

cc:

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