May 15, 1987

Docket No. 50-325

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: Fuel Cycle 6 Reload Amendment (TAC No. 63291)

The Commission has issued the enclosed Amendment No. 108 to Facility Operating License No. DPR-71 for the Brunswick Steam Electric Plant, Unit 1. The amendment consists of changes to the Technical Specifications in response to your submittal of October 21, 1986, as supplemented March 11, 1987.

The amendment changes the Technical Specifications to incorporate revised minimum critical power ratio (MCPR) values in Section 3/4.2.3 and in Table 3.2.3.2-1. In addition Table 3.2.3.2-1 is revised to combine the turbine trip/load reject without bypass and the feedwater control failure transients into a single pressurization transient.

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

Sincerely,

/S/

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

Enclosures:
1. Amendment No. 108 to License No. DPR-71
2. Safety Evaluation

cc w/enclosures:
See next page

PM:PD21:DRPR	LA:PD21:DRPR	D:PD21:DRPR
ESylvester/vag	PAnderson	EAdensam
05/6/87	05/6/87	05/6/87

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. 108
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 October 21, 1986, as supplemented March 11, 1987, 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. 108 , 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

/S/

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 15, 1987

LA:PD21:DRPR	PM:PD21:DRPR	OGC	D:PD21:DRPR
PAnderson	ESylvester/vag		EAdensam
05/6 /87	05/6 /87	05/11/87	05/15/87
		5/13	

ATTACHMENT TO LICENSE AMENDMENT NO. 108

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	Insert Pages
3/4 2-10	3/4 2-10
3/4 2-14	3/4 2-14

POWER DISTRIBUTION LIMITS

3/4.2.3 MINIMUM CRITICAL POWER RATIO

LIMITING CONDITION FOR OPERATION

3.2.3.1 The MINIMUM CRITICAL POWER RATIO (MCPR), as a function of core flow, shall be equal to or greater than the MCPR limit times the K_f shown in Figure 3.2.3-1 with the following MCPR limit adjustments:

a. Beginning-of-cycle (BOC) to end-of-cycle (EOC) minus 2000 MWD/t with ODYN OPTION A analyses in effect, the MCPR limits are listed below:

1. MCPR for 8 x 8R fuel = 1.34
2. MCPR for P8 x 8R fuel = 1.36
3. MCPR for BP8 x 8R fuel = 1.36

b. EOC minus 2000 MWD/t to EOC with ODYN OPTION A analyses in effect, the MCPR limits are listed below:

1. MCPR for 8 x 8R fuel = 1.41
2. MCPR for P8 x 8R fuel = 1.44
3. MCPR for BP8 x 8R fuel = 1.44

c. BOC to EOC minus 2000 MWD/t with ODYN OPTION B analyses in effect, the MCPR limits are listed below:

1. MCPR for 8 x 8R fuel = 1.29
2. MCPR for P8 x 8R fuel = 1.29
3. MCPR for BP8 x 8R fuel = 1.29

d. EOC minus 2000 MWD/t to EOC with ODYN OPTION B analyses in effect, the MCPR limits are listed below:

1. MCPR for 8 x 8R fuel = 1.30
2. MCPR for P8 x 8R fuel = 1.32
3. MCPR for BP8 x 8R fuel = 1.32

APPLICABILITY: OPERATIONAL CONDITION 1 when THERMAL POWER is greater than or equal to 25% RATED THERMAL POWER

ACTION:

With MCPR, as a function of core flow, less than the applicable limit determined from Figure 3.2.3-1 initiate corrective action within 15 minutes and restore MCPR to within the applicable limit within 4 hours or reduce THERMAL POWER to less than 25% of RATED THERMAL POWER within the next 4 hours.

TABLE 3.2.3.2-1

TRANSIENT OPERATING LIMIT MCPR VALUES

TRANSIENT	FUEL TYPE 8x8R		P8x8R		BP8x8R	
NONPRESSURIZATION TRANSIENTS						
BOC → EOC	1.29		1.29		1.29	
PRESSURIZATION TRANSIENTS						
	$MCPR_A$	$MCPR_B$	$MCPR_A$	$MCPR_B$	$MCPR_A$	$MCPR_B$
BOC → EOC - 2000	1.34	1.21	1.36	1.21	1.36	1.21
EOC - 2000 → EOC	1.41	1.30	1.44	1.32	1.44	1.32

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO LICENSE AMENDMENT FOR CYCLE 6 RELOAD

LICENSE NO. DPR-71

CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

DOCKET NO. 50-325

1.0 INTRODUCTION

By letter dated October 21, 1986, the licensee proposed a change to the Technical Specifications (TS) for Brunswick Steam Electric Plant, Unit 1 (BSEP-1). The purpose of this change is to incorporate proposed minimum critical power ratio (MCPR) values in Section 3/4.2.3 and Table 3.2.3.2-1. The proposed MCPR values are for the turbine trip/load reject without bypass (LRw/oB) and the feedwater control failure (FWCF) transients combined into a single pressurization transient which is expected to bound the transient analyses for BSEP-1 Cycle 6. The licensee provided additional information by letter dated March 11, 1987, to discuss the bases for the changes. This letter provided a discussion of the methodology used in the MCPR calculations and did not revise the amendment application.

2.0 EVALUATION

The licensee performed an evaluation to establish bounding minimum critical power ratio (MCPR) operating limits for BSEP-1 utilizing GE 8x8R and/or GE BP/P8x8R fuel designs. The previous reload analyses for Units 1 and 2 were reviewed to establish the limiting transients for ODYN Options A and B and for additional fuel exposure levels. The uncorrected ΔCPR value was calculated by GETAB for the limiting transients for BP/P8x8R . A ΔCPR adder was applied to this base ΔCPR value in order to conservatively bound the maximum observed Unit 1 uncorrected ΔCPR. This adder is comprised of three components: (1) a 0.01 ΔCPR to account for the GETAB round-off process; (2) a 0.01 ΔCPR to account for mid-cycle exposure shape and scram reactivity difference from cycle to cycle; and (3) a 0.02 ΔCPR adder to provide a high assurance, without an adverse impact on operations, that the proposed MCPR limits bound any reasonable variation in Cycle 6 designs and potential abnormal modes of operation. In addition, a 0.00 to 0.03 CPR is considered to account for different fuel types. Therefore, a 0.04 or 0.03 ΔCPR adder is imposed to the Brunswick 1, Cycle 6 beginning-of-cycle (BOC) to [end-of-cycle (EOC)-2000 MWD/ST] or [EOC-2000 MWD/ST] to EOC uncorrected ΔCPR to determine the operating limit MCPR. The previous reload analyses indicate that the maximum observed cycle-to-cycle variation in operating limit MCPR for the limiting transients is only 0.02 CPR. Therefore, the proposed adder is acceptable. The licensee submittal did not address the Cycle 6 reload design or the transient and accident analyses for Cycle 6 operation. Therefore our evaluation is

restricted to the proposed technical specification change and does not imply staff review and approval of the Cycle 6 operation.

We have reviewed the proposed operating limit MCPRs in Section 3/4.2.3 and Table 3.2.3.2-1 and find them acceptable since approved calculational methods are used. We conclude that the TS changes related to the operating limit MCPRs are acceptable based on the discussion provided above.

3.0 ENVIRONMENTAL CONSIDERATIONS

This 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 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 should be no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration, and there has been no public comment on such finding. Accordingly, this 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.

4.0 CONCLUSION

The Commission made a proposed determination that the amendment involves no significant hazards consideration, which was published in the Federal Register on December 3, 1986 (52 FR 43678), and consulted with the state of North Carolina. No public comments 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: T. Huang

Dated: May 15, 1987

AMENDMENT NO. 108 TO FACILITY OPERATING LICENSE NO. DPR-71

Brunswick Steam Electric Plant, Unit 1

DISTRIBUTION:

Docket No. 50-325
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cc: Plant Service List