

June 18, 1990

Docket No. 50-325

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Mr. Lynn W. Eury
Executive Vice President
Power Supply
Carolina Power & Light Company
Post Office Box 1551
Raleigh, North Carolina 27602

Dear Mr. Eury:

SUBJECT: ISSUANCE OF AMENDMENT NO. 142 TO FACILITY OPERATING LICENSE
NO. DPR-71 - BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1, REGARDING
(TAC NO. 76402)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. to Facility Operating License No. DPR-71 for the Brunswick Steam Electric Plant, Unit 1. The amendment changes the Technical Specifications in response to your submittal dated February 28, 1990, as amended April 4, 1990.

The amendment will change the minimum critical power ratio safety limit from 1.04 to 1.07. The change is necessary because a new fuel type (GE8x8NB-3) is being added to the core. The amendment will also specify the fuel types located in the core for the upcoming cycle. Fuel type GE8x8NB-3 will be added and fuel types 8x8R and P8x8R will be deleted. Fuel type GE8 will be renamed as fuel type GE8x8EB.

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,

Original signed by:
Ngoc B. Le, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

- Amendment No. 142 to License No. DPR-71
- Safety Evaluation

cc w/enclosures:
See next page

*SEE PREVIOUS CONCURRENCE

DFO
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NAME	:PAn	Le: dt	:EAdensam	:RJones	:	:	:	:	:
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AMENDMENT NO. 142 TO FACILITY OPERATING LICENSE NO. DPR-71 - BRUNSWICK, UNIT 1

~~XXXXXXXXXX~~
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cc: Brunswick Service List

Mr. L. W. Eury
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, et al.

DOCKET NO. 50-325

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 142
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 February 28, 1990, as amended April 4, 1990, 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:

June 18, 1990

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 142, 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 Unit 1 shutdown for the Reload 7/Cycle 8 refueling outage with implementation to follow within 60 days of the unit shutdown.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

Elinor G. Adensam, 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: June 18, 1990

*SEE PREVIOUS CONCURRENCES

OFC	: *LA:PD21:DRRR:PM:PD21:DRPR:D:PD21:DRPR:*OGC	:	:	:
NAME	: PAnderson	: NLe: <i>TL</i>	: EAdensam	: RBachmann
DATE	: 5/10/90	: 6/18/90	: 6/18/90	: 5/23/90

6/18/90 OFFICIAL RECORD COPY

6/18/90
for delay in issuance

ATTACHMENT TO LICENSE AMENDMENT NO. 142

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

2-1

5-1

Insert Pages

2-1

5-1

2.0 SAFETY LIMITS AND LIMITING SAFETY SYSTEM SETTINGS

2.1 SAFETY LIMITS

THERMAL POWER (Low Pressure or Low Flow)

2.1.1 THERMAL POWER shall not exceed 25% of RATED THERMAL POWER with the reactor vessel steam dome pressure less than 800 psia or core flow less than 10% of rated flow.

APPLICABILITY: CONDITIONS 1 and 2.

ACTION:

With THERMAL POWER exceeding 25% of RATED THERMAL POWER and the reactor vessel steam dome pressure less than 800 psia or core flow less than 10% of rated flow, be in at least HOT SHUTDOWN within 2 hours.

THERMAL POWER (High Pressure and High Flow)

2.1.2 The MINIMUM CRITICAL POWER RATIO (MCPR) shall not be less than 1.07 with the reactor vessel steam dome pressure greater than 800 psia and core flow greater than 10% of rated flow.

APPLICABILITY: CONDITIONS 1 and 2.

ACTION:

With MCPR less than 1.07 and the reactor vessel steam dome pressure greater than 800 psia and core flow greater than 10% of rated flow, be in at least HOT SHUTDOWN within 2 hours.

REACTOR COOLANT SYSTEM PRESSURE

2.1.3 The reactor coolant system pressure, as measured in the reactor vessel steam dome, shall not exceed 1325 psig.

APPLICABILITY: CONDITIONS 1, 2, 3, and 4.

ACTION:

With the reactor coolant system pressure, as measured in the reactor vessel steam dome, above 1325 psig, be in at least HOT SHUTDOWN with reactor coolant system pressure \leq 1325 psig within 2 hours.

5.0 DESIGN FEATURES

5.1 SITE

EXCLUSION AREA

5.1.1 The exclusion area shall be as shown in Figure 5.1.1-1.

LOW POPULATION ZONE

5.1.2 The low population zone shall be as shown in Figure 5.1.2-1, based on the information given in Section 2.2 of the FSAR.

SITE BOUNDARY

5.1.3 The SITE BOUNDARY shall be as shown in Figure 5.1.3-1. For the purpose of effluent release calculations, the boundary for atmospheric releases is the SITE BOUNDARY and the boundary for liquid releases is the SITE BOUNDARY prior to dilution in the Atlantic Ocean.

5.2 CONTAINMENT

CONFIGURATION

5.2.1 The PRIMARY CONTAINMENT is a steel-lined, reinforced concrete structure composed of a series of vertical right cylinders and truncated cones which form a drywell. This drywell is attached to a suppression chamber through a series of vents. The suppression chamber is a concrete, steel-lined pressure vessel in the shape of a torus. The primary containment has a minimum free air volume of (288,000) cubic feet.

DESIGN TEMPERATURE AND PRESSURE

5.2.2 The primary containment is designed and shall be maintained for:

- a. Maximum internal pressure 62 psig.
- b. Maximum internal temperature: drywell 300°F
suppression chamber 200°F
- c. Maximum external pressure 2 psig.

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The reactor core shall contain 560 fuel assemblies limited to the following fuel types: BP8x8R, GE8x8EB, and GE8x8NB-3.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 142 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 letters dated February 28, 1990 and April 4, 1990, Carolina Power & Light Company (the licensee) submitted a request for Technical Specification changes for Brunswick Steam Electric Plant (Brunswick), Unit 1, for Cycle 8. The Cycle 8 reload core will consist of three types of GE fuel: BP8x8R, GE8x8EB, and GE8x8NB-3 of which the type GE8x8NB-3 is a new fuel type. The GE8x8NB-3 fuel was approved for reload in Amendment 21 to GESTAR-II (NEDE-24011-P-A). Due to the use of new fuel GE8x8NB-3, the licensee recalculated the minimum critical power ratio (MCPR) safety limit and proposed a change in the Technical Specifications.

2.0 EVALUATION OF TECHNICAL SPECIFICATION CHANGES

(1) Section 2.1.2 THERMAL POWER

The MCPR safety limit for Cycle 8 with the new GE8x8NB-3 fuel type is changed from 1.04 to 1.07. The new MCPR limit is based on an approved methodology described in Amendment 21 to NEDE-24011-P-A which was approved by the staff's letter to the General Electric Company dated March 17, 1989. The degree of conservatism associated with the new MCPR limit is the same as that of the old MCPR limit, i.e., there is an adequate margin to assure that more than 99.9 percent of the fuel rods in the core will not experience boiling transition during normal operation and anticipated operational occurrences (AOOs).

Based on the approved methodology and adequate conservatism, the staff concludes that the new MCPR limit of 1.07 is acceptable for use in Cycle 8.

(2) 5.3.1 FUEL ASSEMBLIES

The fuel types in the Cycle 8 reload core are BP8x8R, GE8x8EB, and GE8x8NB-3. The fuel types BP8x8R and GE8x8EB formerly named GE8 have been previously approved for use in the Cycle 7 core. The new fuel type GE8x8NB-3 was included in the previously approved Amendment 21 to NEDE-24011-P-A. The staff thus concludes that the three fuel types BP8x8R, GE8x8EB, and GE8x8NB-3 are acceptable for use in Cycle 8.

3.0 ENVIRONMENTAL CONSIDERATIONS

This amendment changes a requirement with respect to the 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 off site, 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 this amendment involves no significant hazards consideration which was published in the Federal Register (55 FR 20351) on May 16, 1990, 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.

The staff 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: S. Wu
N. Le

Dated: June 18, 1990