June 5, 1984

Docket No. 50-325

Mr. E. E. Utley
Executive Vice President
Carolina Power & Light Company
Post Office Box 1551
Raleigh, North Carolina 27602

Dear Mr. Utley:

The Commission has issued the enclosed Amendment No. 71 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 application of January 31, 1984, as supplemented by letter dated February 29, 1984.

The amendment corrects the fuel enrichment number in the description of the fuel assemblies in the Design Features section of the Technical Specifications and revises Section 5.3.1 of the Technical Specifications to conform to the Standard Technical Specifications.

A copy of the related Safety Evaluation is also enclosed.

Sincerely,

Original signed by/

Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

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

cc w/enclosures:
See next page

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Mr. E. E. Utley
Carolina Power & Light Company
Brunswick Steam Electric Plant, Units 1 and 2

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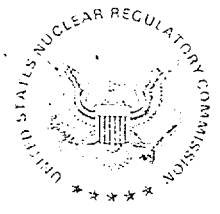

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-325

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 71
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 January 31, 1984, as supplemented February 29, 1984, 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. 71, 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.

FOR THE NUCLEAR REGULATORY COMMISSION

Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 5, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 71

FACILITY OPERATING LICENSE NO. DPR-71

DOCKET NO. 50-325

Revise the Appendix A Technical Specifications by removing pages 5-1 and 5-4 and inserting revised pages 5-1 and 5-4. The changed areas are indicated by vertical lines.

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.

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, with each 8 x 8 fuel assembly containing 63 fuel rods and each 8 x 8R fuel assembly containing 62 fuel rods. All fuel rods shall be cladded with Zircaloy 2. Each fuel rod shall have a nominal active fuel length of 146 inches for 8 x 8 fuel and 150 inches for 8 x 8R fuel.

5.3 REACTOR CORE

FUEL ASSEMBLIES (Continued)

The initial loading shall have a maximum average enrichment of 2.35 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum average enrichment of 2.99 weight percent U-235.

CONTROL ROD ASSEMBLIES

5.3.2 The reactor core shall contain 137 control rod assemblies, each consisting of a cruciform array of stainless steel tubes containing 143 inches or boron carbide, B_4C, powder surrounded by a cruciform-shaped stainless steel sheath.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The nuclear boiler and reactor recirculation system is designed and shall be maintained:

a. In accordance with the code requirements specified in Section 4.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements.

b. For a pressure of 1250 psig, and

c. For a temperature of 575°F.

VOLUME

5.4.2 The total water and steam volume of the reactor vessel and recirculation system is approximately 18,670 cubic feet.

5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 The meteorological tower shall be located as shown in Figure 5.1.1-1.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 71 TO FACILITY LICENSE NO. DPR-71

CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

DOCKET NO. 50-325

1.0 Introduction

By letter dated January 31, 1984, as supplemented February 29, 1984, the Carolina Power & Light Company (the licensee) requested an amendment to Facility Operating License No. DPR-71 for the Brunswick Steam Electric Plant (BSEP), Unit 1. The amendment would correct the fuel enrichment number in the description of the fuel assemblies in the Design Features section of the Technical Specifications.

The fuel enrichment specified in the current Design Features section is incorrect because operation of the reactor with higher enrichment fuel was authorized by License Amendment No. 56. The current Technical Specification in section 5.3.1 limits the maximum enrichment to 2.85 weight percent U-235 whereas Amendment No. 56 authorized operation with fuel containing 2.99 weight percent U-235. However, Technical Specification section 5.3.1 was overlooked when Amendment No. 56 was issued.

This amendment is therefore a purely administrative change to the Technical Specifications to correct the error in the fuel enrichment number. Also, in correcting this error, the text was changed to correspond to that of the Standard Technical Specifications.

2.0 Evaluation

The Brunswick Unit 1 Technical Specifications section 5.3.1 currently states the following:

"5.3.1 The reactor core shall contain 500 fuel assemblies, with each fuel assembly containing 63 fuel rods clad with Zircaloy 2. Each fuel rod shall have a nominal active fuel length of 146 inches for 8 X 8 fuel and 150 inches for 8 X 8R fuel and contain a maximum total weight of 3,355 grams of UO_2. The initial core loading shall have a maximum enrichment of 2.35 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 2.85 weight percent U-235."

The licensee has proposed that section 5.3.1 be replaced by the following:

"5.3.1 The reactor core shall contain 560 fuel assemblies, with each 8 X 8 fuel assembly containing 63 fuel rods and each 8 X 8R fuel assembly containing 62 fuel rods. All fuel rods shall be cladded with Zircaloy 2. Each fuel rod shall have a nominal active fuel length of 146 inches for 8 X 8 fuel and 150 inches for 8 X 8R fuel. The initial loading shall have a maximum average enrichment of 2.35 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum average enrichment of 2.99 weight percent U-235."

The substantive change involved in this amendment is the increase in fuel enrichment from 2.85 to 2.99 weight percent U-235. This change was reviewed and evaluated in our Safety Evaluation accompanying License Amendment No. 56 which was issued June 28, 1983 and authorized the resumption of operation after the third refueling. In that Safety Evaluation, we included the evaluation of plant operation with Fuel Type P8DRB299 (2.99 weight percent U-235). We considered the Fuel System Design, Nuclear Design, Thermal Hydraulic Design, Minimum Critical Power Ratios, Thermal Hydraulic Stability and Analyses of Transients and Accidents. We found the refueled reactor to be suitable for the resumption of operation of Brunswick Unit 1.

3.0 Summary of Evaluation

Based on our previous findings as presented in Amendment No. 56 to Facility Operating License No. DPR-71 for Brunswick Unit 1, we have concluded that Technical Specification section 5.3.1 should be changed to limit the average enrichment to 2.99 weight percent U-235.

We have also reviewed the text of proposed Technical Specification section 5.3.1 and have found that it is consistent with that of the Standard Technical Specifications and is acceptable to the staff.

4.0 Environmental Considerations

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR 51.5(d)(4), that an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

5.0 Conclusions

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: S. MacKay

Dated: June 5, 1984