August 11, 1989

Docket Nos. 50-325 and 50-324

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. 137 TO FACILITY OPERATING LICENSE NO. DPR-71 AND AMENDMENT NO. 167 TO FACILITY OPERATING LICENSE NO. DPR-62 - BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2, REGARDING FUEL POOL STORAGE CAPACITY (TAC NOS. 69528 AND 65929)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 137 to Facility Operating License No. DPR-71 and Amendment No. 167 to Facility Operating License No. DPR-62, for Brunswick Steam Electric Plant, Units 1 and 2. The amendments consist of changes to the Technical Specifications in response to your submittal dated June 23, 1987, as supplemented May 19, 1989.

The amendments change the Technical Specifications to delete the words "a storage capacity limited to" from Technical Specification (TS) 5.6.3.

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:

Edmond G. Tourigny, Senior Project Manager
Project Directorate II-1
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 137 to License No. DPR-71
2. Amendment No. 167 to License No. DPR-62
3. Safety Evaluation

cc w/enclosures:
See next page (LTR. TO EURY FROM TOURIGNY)

LA:PD21:DRPR	PM:PD21:DRPR	D:PD21:DRPR
PDAnderson	EGTourigny	EGAdensam
06/12/89	06/22/89	08/11/89

DFO1

cc:

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Raleigh, North Carolina 27626-0520

AMENDMENT NO. 137 TO FACILITY OPERATING LICENSE NO. DPR-71 - BRUNSWICK, UNIT 1
AMENDMENT NO. 167 TO FACILITY OPERATING LICENSE NO. DPR-62 - BRUNSWICK, UNIT 2

Docket File
NRC PDR
Local PDR
PDII-1 Reading
S. Varga (14E4)
G. Lainas
E. Adensam
P. Anderson
E. Tourigny
N. Le
L.Spessard (MNBB 3701)
OGC
D. Hagan (MNBB 3302)
E. Jordan (MNBB 3302)
B. Grimes (9A2)
T. Meeks (4) (P1-137)
W. Jones (P-130A)
E. Butcher (11F23)
ACRS (10)
GPA/PA
ARM/LFMB

cc: Licensee/Applicant Service List

DF01
1/1

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. 137
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 June 23, 1987, as supplemented May 19, 1989, 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. 137, 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

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: August 11, 1989

Please issue w/ SER

LA:PD21:DRPR	PM:PD21:DRPR	SRLB	OGC	D:PD21:DRPR
PDAnderson	EGTourigny	for JCraig		EGAdensam
06/26/89	06/27/89	06/26/89	06/30/89	08/11/89

ATTACHMENT TO LICENSE AMENDMENT NO. 137

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
5-5	5-5

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 116'4".

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

CAROLINA POWER & LIGHT COMPANY, et al.

DOCKET NO. 50-324

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 167
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 June 23, 1987, as supplemented May 19, 1989, 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. 167, 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

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: August 11, 1989

LA:PD21:DRPR	PM:PD21:DRPR	SPLB	OGC	D:PD21:DRPR
PDAnderson	EGTourigny	CCraig		EGAdensam
06/26/89	06/27/89	06/26/89	06/30/89	08/11/89

ATTACHMENT TO LICENSE AMENDMENT NO. 167

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	Insert Pages
5-5	5-5

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 116'4".

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 137 TO FACILITY OPERATING LICENSE NO. DPR-71

AND AMENDMENT NO. 167 TO FACILITY OPERATING LICENSE NO. DPR-62

CAROLINA POWER & LIGHT COMPANY, et al.

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2

DOCKET NOS. 50-325 AND 50-324

1.0 INTRODUCTION

By letter dated June 21, 1987, as supplemented May 19, 1989, the Carolina Power & Light Company (CP&L) submitted a request for changes to the Brunswick Steam Electric Plant, Units 1 and 2, (Brunswick) Technical Specifications (TS).

The amendments would delete the words "a storage capacity limited to" from TS 5.6.3. TS 5.6.3 for Unit 1 presently states, "The fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 160 PWR fuel assemblies and 1803 BWR fuel assemblies." TS 5.6.3 for Unit 2 presently states, "The fuel storage pool is designed and shall be maintained with a storage capacity limited to no more than 144 PWR fuel assemblies and 1839 BWR fuel assemblies".

2.0 BACKGROUND

This specification for each unit was last amended in December 15, 1983 when the staff authorized the reracking of both spent fuel pools (Amendment No. 61 for Unit 1 and Amendment No. 87 for Unit 2).

Unit 1 was authorized to store no more than 160 PWR fuel assemblies and 1803 BWR fuel assemblies. Unit No. 2 was authorized to store no more than 144 PWR fuel assemblies and 1839 BWR fuel assemblies. A technical evaluation supported these values and included criticality, thermal-hydraulic, structural, and seismic analyses.

The PWR fuel assemblies came from CP&L's Robinson plant (presently in storage at Brunswick) and the BWR fuel assemblies came from the Brunswick plant. Table 1 illustrates a summary of total possible fuel assembly storage by rack type authorized by Amendments 61 and 87.

By letter dated May 12, 1989, the licensee described the current storage capacity at Brunswick. Table 2 illustrates the total possible fuel

assembly storage by rack type currently installed. A comparison of the tables for Unit 1 shows one standard 6 X 6 rack that was authorized was not installed. A comparison of the tables for Unit 2 shows (a) two standard 6 X 6 racks, which were authorized, were not installed, and (b) there is an extra PWR 4 X 4 rack in the pool.

The licensee explained the differences. In regard to Unit 1, one of the 6 X 6 BWR racks is not installed; however, should the need arise the rack can be installed. In regard to Unit 2, there are ten 4 X 4 PWR racks, one more than necessary for storage of 144 PWR assemblies to allow for storage configuration changes. However, only 144 PWR spent fuel assemblies are stored. In addition, two of the 6 X 6 BWR racks are not installed; if necessary, one 6 X 6 BWR rack may be installed directly, and the other installed after removal of the extra 4 X 4 PWR rack.

The NRC Inspection Reports Nos. 50-325/87-03 and 50-324/87-03, dated March 30, 1987, identified a violation of T.S. 5.6.3 for Unit No. 2. The TS requires, in part, that the fuel storage pool shall be maintained with a storage capacity limited to no more than 144 PWR fuel assemblies. The Notice of Violation stated that the spent fuel pool storage capacity was not maintained with a capacity limited to 144 PWR assemblies on and before February 28, 1987.

In order to address the discrepancy between the TS wording and the above described violation, the licensee requested that the words "a storage capacity limited to" be deleted from TS 5.6.3.

3.0 EVALUATION

The staff authorized the licensee to store no more than 1803 BWR fuel assemblies and 160 PWR fuel assemblies in Unit No. 1 by Amendment No. 61. The licensee is within these limits and the deletion of the words "a storage capacity limited to" will have no effect on Amendment No. 61. Likewise, the staff authorized the licensee to store no more than 1839 BWR fuel assemblies and 144 PWR fuel assemblies in Unit No. 2 by Amendment No. 87. The licensee is within these limits and the deletion of the words "a storage capacity limited to" will have no effect on Amendment No. 87. Since there is an extra PWR rack in the Unit No. 2 pool, there is nothing physically preventing the licensee from storing more than 144 PWR fuel assemblies. The licensee is meeting the TS limit by administrative means which requires more diligence on the part of the licensee. Such administrative controls are acceptable to the staff.
Therefore, the proposed TS changes are acceptable.

4.0 ENVIRONMENTAL CONSIDERATIONS

These amendments change a requirement with respect to installation or use of a facility component located within the restricted areas as defined in 10 CFR Part 20. The staff has determined that these amendments involve 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 is no significant increase in individual or cumulative occupational

radiation exposure. The Commission has previously issued a proposed finding that these amendments involve no significant hazards consideration, and there has been no public comment on such finding. Accordingly, these 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 these amendments.

5.0 CONCLUSION

The Commission made a proposed determination that this amendment involves no significant hazards consideration which was published in the Federal Register (54 FR 27223) on June 28, 1989, 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and 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: Edmond G. Tourigny

Dated: August 11, 1989

TABLE 1

TOTAL POSSIBLE FUEL ASSEMBLY STORAGE BY RACK TYPE

AUTHORIZED BY AMENDMENTS NO. 61 AND 87

UNIT 1

TYPE OF RACK		NUMBER	STORAGE LOCATION BY RACK	STORAGE LOCATION BY RACK TYPE
HDFS	15 X 17	2	255	510
HDFS	13 X 17	1	221	221
HDFS	13 X 15	1	195	195
HDFS	13 X 19	1	247	247
Standard	6 X 6	15	36	540
Standard	6 X 3	5	18	90
				1803
PWR	4 X 4	10	16	160

UNIT 2

TYPE OF RACK		NUMBER	STORAGE LOCATION BY RACK	STORAGE LOCATION BY RACK TYPE
HDFS	15 X 17	2	255	510
HDFS	13 X 17	1	221	221
HDFS	13 X 15	1	195	195
HDFS	13 X 19	1	247	247
Standard	6 X 6	16	36	576
Standard	6 X 3	5	18	90
				1839
PWR	4 X 4	9	16	144

HDFS = High Density Fuel Storage - BWR Fuel Assemblies
Standard = Standard BWR Rack

TABLE 2

TOTAL POSSIBLE FUEL ASSEMBLY STORAGE BY RACK TYPE

CURRENTLY INSTALLED

UNIT 1

TYPE OF RACK		NUMBER	STORAGE LOCATION BY RACK	STORAGE LOCATION BY RACK TYPE
HDFS	15 X 17	2	255	510
HDFS	13 X 17	1	221	221
HDFS	13 X 15	1	195	195
HDFS	13 X 19	1	247	247
Standard	6 X 6	14	36	504
Standard	6 X 3	5	18	90
				1767
PWR	4 X 4	10	16	160

UNIT 2

TYPE OF RACK		NUMBER	STORAGE LOCATION BY RACK	STORAGE LOCATION BY RACK TYPE
HDFS	15 X 17	2	255	510
HDFS	13 X 17	1	221	221
HDFS	13 X 15	1	195	195
HDFS	13 X 19	1	247	247
Standard	6 X 6	14	36	504
Standard	6 X 3	5	18	90
				1767
PWR	4 X 4	10	16	160

HDFS = High Density Fuel Storage - BWR Fuel Assemblies
Standard = Standard BWR Rack