September 24, 1987

Docket Nos. 50-325/324

DISTRIBUTION
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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: ISSUANCE OF AMENDMENT NO. 112 TO FACILITY OPERATING LICENSE NO. DPR-71 AND AMENDMENT NO. 139 TO FACILITY OPERATING LICENSE NO. DPR-62 - BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2, REGARDING ROD BLOCK MONITOR OPERABILITY (TAC NOS. 59586 AND 59587)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 112 to Facility Operating License No. DPR-71 and Amendment No. 139 to Facility Operating License No. DPR-62, Brunswick Steam Electric Plant, Units 1 and 2. The amendments consist of changes to the Technical Specifications in response to your submittal dated August 28, 1985, as supplemented May 15, 1987.

The amendments change the Technical Specifications by revising the required power level for rod block monitor operation. Amended Technical Specification Section 3.1.4.3 and Tables 3.3.4-1 and 4.3.4-1 require the rod block monitor to be operable when rated thermal power is greater than or equal to 30 percent.

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,

/S/

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

Enclosures:
1. Amendment No. 112 to License No. DPR-71
2. Amendment No. 139 to License No. DPR-62
3. Safety Evaluation

cc w/enclosures:
See next page

PD21:DRPR	PD21:DRPR	PD21:DRPR
PAnderson	ESylvester/sh	EAdensam
9/14/87	9/14/87	9/14/87

BCB for

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PDR ADOCK 05000324
P PDR

cc:

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Vice President
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AMENDMENT NO. 112 TO FACILITY OPERATING LICENSE NO. DPR-71, Brunswick, UNIT 1
AMENDMENT NO. 139 TO FACILITY OPERATING LICENSE NO. DPR-62, Brunswick, UNIT 2

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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. 112
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 August 28, 1985, as supplemented May 15, 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:

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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 112, 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: September 24, 1987

LA:PD21:DRPR	PM:PD21:DRPR	OGC-B	D:PD21:DRPR
PAnderson	ESylvester/sh	E. Chan	BGS for EAdensam
9/9/87	9/10/87	9/15/87	9/14/87

ATTACHMENT TO LICENSE AMENDMENT NO. 112

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 1-17	3/4 1-17
3/4 3-41	3/4 3-41
3/4 3-43a	3/4 3-43a

REACTIVITY CONTROL SYSTEMS

ROD BLOCK MONITOR

LIMITING CONDITION FOR OPERATION

3.1.4.3 Both Rod Block Monitor (RBM) channels shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITION 1, when THERMAL POWER is greater than or equal to 30% of RATED THERMAL POWER.

ACTION:

a. With one RBM channel inoperable, POWER OPERATION may continue provided that either:

   1. The inoperable RBM channel is restored to OPERABLE status within 24 hours, or

   2. The redundant RBM is demonstrated OPERABLE within 4 hours and at least once per 24 hours until the inoperable RBM is restored to OPERABLE status, and the inoperable RBM is restored to OPERABLE status within 7 days, or

   3. THERMAL POWER is limited such that MCPR will remain above 1.07 assuming a single error that results in complete withdrawal of any single control rod that is capable of withdrawal.

   Otherwise, trip at least one rod block monitor channel.

b. With both RBM channels inoperable, trip at least one rod block monitor channel within one hour.

SURVEILLANCE REQUIREMENTS

4.1.4.3 Each of the above required RBM channels shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION at the frequencies and during the OPERATIONAL CONDITIONS specified in Table 4.3.4-1.

TABLE 3.3.4-1 (Continued)

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

NOTE

(a) The minimum number of OPERABLE CHANNELS may be reduced by one for up to 2 hours in one of the trip systems for maintenance and/or testing except for Rod Block Monitor function.

(b) This function is bypassed if detector is reading >100 cps or the IRM channels are on range 3 or higher.

(c) This function is bypassed when the associated IRM channels are on range 8 or higher.

(d) A total of 6 IRM instruments must by OPERABLE.

(e) This function is bypassed when the IRM channels are on range 1.

* When THERMAL POWER is greater than or equal to 30% of RATED THERMAL POWER.

** With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.

This signal is contained in the Channel A logic only.

TABLE 4.3.4-1 (Cont'd)

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION(a)	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
5. SCRAM DISCHARGE VOLUME (C11-LSH-N013E)				
a. Water Level - High	NA	Q	R	1, 2, 5**

(a) CHANNEL CALIBRATIONS are electronic.
(b) This calibration shall consist of the adjustment of the APRM flow biased setpoint to conform to a calibrated flow signal.
(c) Within 24 hours prior to startup, if not performed within the previous 7 days.
(d) When changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2, perform the required surveillance within 12 hours after entering OPERATIONAL CONDITION 2.
* When THERMAL POWER is greater than or equal to 30% of RATED THERMAL POWER.
** With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.

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. 139
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 August 28, 1985, as supplemented May 15, 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-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. 139 , 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: September 24, 1987

LA:PD21:DRPR	PM:PD21:DRPR	OGC-B	D:PD21:DRPR
PAnderson	ESylvester /sh	E. Chan	EAdensam
9/9/87	9/10/87	9/15/87	9/14/87

ATTACHMENT TO LICENSE AMENDMENT NO. 139

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
3/4 1-17	3/4 1-17
3/4 3-41	3/4 3-41
3/4 3-43a	3/4 3-43a

REACTIVITY CONTROL SYSTEMS

ROD BLOCK MONITOR

LIMITING CONDITION FOR OPERATION

3.1.4.3 Both Rod Block Monitor (RBM) channels shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITION 1, when THERMAL POWER is greater than or equal to 30% of RATED THERMAL POWER.

ACTION:

a. With one RBM channel inoperable, POWER OPERATION may continue provided that either:

   1. The inoperable RBM channel is restored to OPERABLE status within 24 hours, or

   2. The redundant RBM is demonstrated OPERABLE within 4 hours and at least once per 24 hours until the inoperable RBM is restored to OPERABLE status within 7 days, or

   3. THERMAL POWER is limited such that MCPR will remain above 1.07, assuming a single error that results in complete withdrawal of any single control rod that is capable of withdrawal.

   Otherwise, trip at least one rod block monitor channel;

b. With both RBM channels inoperable, trip at least one rod block monitor channel within one hour.

SURVEILLANCE REQUIREMENTS

4.1.4.3 Each of the above required RBM channels shall be demonstrated OPERABLE by performance of a CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION at the frequencies and during the OPERATIONAL CONDITIONS specified in Table 4.3.4-1.

TABLE 3.3.4-1 (Continued)

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION

NOTE

(a) The minimum number of OPERABLE CHANNELS may be reduced by one for up to 2 hours in one of the trip systems for maintenance and/or testing except for Rod Block Monitor function.

(b) This function is bypassed if detector is reading >100 cps or the IRM channels are on range 3 or higher.

(c) This function is bypassed when the associated IRM channels are on range 8 or higher.

(d) A total of 6 IRM instruments must be OPERABLE.

(e) This function is bypassed when the IRM channels are on range 1.

* When THERMAL POWER is greater than or equal to 30% of RATED THERMAL POWER.

** With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.

This signal is contained in the Channel A logic only.

TABLE 4.3.4-1 (Cont'd)

CONTROL ROD WITHDRAWAL BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION	OPERATIONAL CONDITIONS IN WHICH SURVEILLANCE REQUIRED
5. SCRAM DISCHARGE VOLUME (C12-LSH-N013E)				
a. Water Level - High	NA	Q	R	1, 2, 5**

(a) CHANNEL CALIBRATIONS are electronic.
(b) This calibration shall consist of the adjustment of the APRM flow biased setpoint to conform to a calibrated flow signal.
(c) Within 24 hours prior to startup, if not performed within the previous 7 days.
(d) When changing from OPERATIONAL CONDITION 1 to OPERATIONAL CONDITION 2, perform the required surveillance within 12 hours after entering OPERATIONAL CONDITION 2.
* When THERMAL POWER is greater than or equal to 30% of RATED THERMAL POWER.
** With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 112 TO FACILITY OPERATING LICENSE NO. DPR-71

AND AMENDMENT NO. 139 TO FACILITY OPERATING LICENSE NO. DPR-62

CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2

DOCKET NOS. 50-325 AND 50-324

1.0 INTRODUCTION

By letter of August 28, 1985, Carolina Power & Light Company (CP&L) requested a revision to the Technical Specifications (TS) for Brunswick Steam Electric Plant, Units 1 and 2, which would change the power range over which the Rod Block Monitor (RBM) is required to be operable. The affected specifications, for both Brunswick 1 and 2, are the "Applicability" statement of TS 3.1.4.3 (Rod Block Monitor) and notes for Tables 3.4.4-1 and 4.3.4-1 (concerning control rod withdrawal block instrumentation). These specifications currently require the RBM to be operational "when thermal power is greater than the preset power level of the RWM and RSCS" (Rod Worth Minimizer and Rod Sequence Control System). The requested change of August 28, 1985, was to replace the above statement with "when thermal power is greater than or equal to 35% of rated thermal power." As a result of discussions with the staff concerning justification of the 35 percent power level, CP&L, in a letter dated May 15, 1987, submitted a revision to the original amendment request of August 28, 1985. The revised proposed amendment would lower the RBM operability threshold to 30 percent of rated power.

2.0 EVALUATION

The single purpose of the RBM is the mitigation of the Rod Withdrawal Error (RWE) at power event by blocking rod movement before the safety limit Minimum Critical Power Ratio (MCPR) is reached. It is thus intended for use in the operating power region. The RSCS and RWM are intended solely for mitigation of the Rod Drop Accident (RDA), and are thus for use in the very low "zero" power regions in which the RDA could be of significance. That region, based on General Electric and staff consultant analyses, is less than 10 percent power, although most TS, including those of Brunswick 1 and 2, currently require 20 percent power before deactivating the RSCS and the RWM.

There is no significant technical need for the merging or overlap of these two regions. While a few plants still have TS requiring an overlap, like Brunswick's, most TS, including both older plants and recent plants using standard TS format, do not. These plants generally require the RWM (and RSCS, if they have it) up to 20 percent power and the RBM above 30 percent power. Based on previous reviews going back many years, 30 percent power has been established as a reasonable and conservative minimum level for needed RWE mitigation. The requirement for overlap, when unneeded, could be an operational inconvenience and could result in unnecessary delay in power ascent.

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The initial CP&L submittal of August 28, 1985, requesting a 35 percent power level to activate RBM turn on, led to a staff request for an analysis examining this increase over the standard approved level of 30 percent power. CP&L decided it was more cost effective to alter the request to conform to the standard rather than generating such a plant specific analysis for Brunswick. The resulting proposal, transmitted by letter dated May 15, 1987, conforms to the standard TS in that an operability threshold for the RBM of 30 percent power is requested.

We have reviewed the reports submitted for the proposed changes to the Brunswick 1 and 2 TS for the RBM operability region. Based on this review, the staff concludes that appropriate material was submitted and that the Technical Specification changes, as proposed by the May 15, 1987 submittal, are acceptable.

3.0 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 and changes to surveillance requirements. 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 offsite; 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 hazard 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.

4.0 CONCLUSION

The Commission made a proposed determination that this amendment involves no significant hazards consideration which was published in the Federal Register on September 25, 1985 at 50 FR 38911 and on July 29, 1987 at 52 FR 28373, 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: H. Richings

Dated: September 24, 1987