

Docket No. 50-324

SEP 22 1975

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Carolina Power & Light Company
ATTN: Mr. J. A. Jones
Executive Vice President
336 Fayetteville Street
Raleigh, North Carolina 27602

Gentlemen:

The Commission has issued the enclosed Amendment No. 6 to Facility Operating License No. DPR-62 for the Brunswick Steam Electric Plant, Unit 2. This amendment is in response to your request dated September 11, 1975.

This amendment requires that the reactor not be made critical unless both recirculation loops are in service; requires that the plant be shut down within 24 hours in the event one recirculation loop becomes out of service while the reactor is operating; and permits testing with one or both recirculation loops out of service for a period not to exceed 24 hours.

Copies of the related Safety Evaluation and the Federal Register Notice are also enclosed.

Sincerely,

Original signed by
R. A. Purple

Robert A. Purple, Chief
Operating Reactors Branch #1
Division of Reactor Licensing

Enclosures:

1. Amendment No. 6
2. Safety Evaluation
3. Federal Register Notice

cc w/enclosures:
See next page

OFFICE	RL:ORB#1 <i>Trammell</i>	TR:RSB <i>TV</i>	OELD <i>Jed</i>	RL:ORB#1 <i>Purple</i>	TR:RS <i>STELLO</i>
SURNAME	CMTrammell:dc	TVNovak		RAPurple	VSTELLO
DATE	9/19/75	9/19/75	9/19/75	9/22/75	9/19/75

SEP 22 1975

cc w/enclosures:

Richard E. Jones, Esquire
Carolina Power & Light Company
336 Fayetteville Street
Raleigh, North Carolina 27602

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Shaw, Pittman, Potts & Trowbridge
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Burney, Burney, Sperry & Barefoot
110 North Fifth Avenue
Wilmington, North Carolina 28401

Ms. Janet Godwin, President
Project Environment
202 Bedford Road East
Wilmington, North Carolina 28401

Southport - Brunswick County Library
109 W. Moore Street
Southport, North Carolina 28461

Mr. W. A. Kopp, Jr.
Chairman, Board of County
Commissioners of Brunswick County
Bolivia, North Carolina 28422

cc w/enclosures & incoming:
Office of Intergovernmental
Relations
116 West Jones Street
Raleigh, North Carolina 27603

Mr. Dave Hopkins
Environmental Protection Agency
1421 Peachtree Street, NE.
Atlanta, Georgia 30309

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-324

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 6
License No. DPR-62

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Carolina Power & Light Company (the licensee) dated September 11, 1975, 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; and
 - 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.
2. Accordingly, the license is amended by a change to Paragraph 2.C.(5) of Facility License No. DPR-62 to read as follows:

"2.C.(5) Recirculation Loop Inoperable

The reactor shall not be made critical unless both recirculation loops are in service. With the reactor operating, if one recirculation loop becomes out of

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service, the plant shall be placed in a hot shutdown condition within 24 hours. Testing conditions shall be allowed in which one or both recirculation loops are out of service for the purposes of the tests (not to exceed 24 hours)."

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by
R. A. Purple
Robert A. Purple, Chief
Operating Reactors Branch #1
Division of Reactor Licensing

Date of Issuance: SEP 22 1975

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 6 TO LICENSE NO. DPR-62

CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2

DOCKET NO. 50-324

Introduction

By letter dated September 11, 1975, Carolina Power & Light Company (the licensee) requested an amendment to Operating License No. DPR-62 for the Brunswick Steam Electric Plant, Unit 2. The present license states, in Paragraph 2.C.(5), that the reactor shall not be operated with one recirculation loop out of service. The requested amendment would require that the reactor not be made critical unless both recirculation pumps are in service, would specify a limiting period of 24 hours of operation in the event one recirculation loop becomes out of service, and would permit operation with one (or both) recirculation loops out of service when necessary for testing.

Discussion

The present restriction that the reactor not be operated with one recirculation loop out of service was recently incorporated into the operating license with Amendment No. 5 on August 28, 1975. As explained in the Safety Evaluation related to this amendment, an evaluation had not been provided for ECCS performance during reactor operation with one (and only one) recirculation loop out of service. Therefore, we stated that reactor operation under such conditions should not be authorized until the necessary analyses have been performed, evaluated, and determined to be acceptable, and included this restriction in the operating license.

As explained in the licensee's letter of September 11, 1975, this restriction, as presently worded, does not clearly state what action should be taken in the event that one recirculation pump should trip or otherwise become unavailable while the reactor is in operation, and eliminates the opportunity for recovery from the loss of a single recirculation pump while the reactor is operating. In addition, it prevents the licensee from executing those portions of the required startup and test program which involve single loop operation (single recirculation pump trip) and natural circulation tests (no recirculation pumps operating).

The licensee has, therefore, requested an amendment to their operating license to clarify the action to be taken in the event one recirculation pump should trip while operating, and to remove the present conflict between the requirement to conduct single loop tests and the prohibition to operate in that mode.

Evaluation

In reviewing the licensee's request for change, we agree that certain clarifications and modifications of this restriction are necessary and desirable.

As stated previously, the restriction was inserted into the operating license because an evaluation of ECCS performance during reactor operation with one recirculation loop out of service has not been provided. The intent of the existing restriction on single loop operation was (and is), therefore, to prohibit sustained operation in this mode, pending receipt of further analyses in support of such operation. It was never our intent to prohibit single loop operation for brief periods for good reason, such as for necessary testing or for recovery from a single pump trip. The requested change provides this clarification. This type of time allowance is similar to Technical Specifications both for this facility and others which allow operation for a limited period of time with systems inoperable in order to make repairs. Such a 24-hour period allows a reasonable length of time to restore an inoperable recirculation loop to service, and avoids undesirable and unnecessary further plant transients, such as a manual scram or rapid plant shutdown which otherwise would be required. Additionally, the proposed amendment is desirable because it would make clear the action that is required in the event a recirculation pump trips during operation.

The proposed amendment is necessary to remove the present restriction that would prohibit the performance of the required startup and test program to test the plant response to loss of one or both recirculation loops (which are anticipated transient events). Long-term operation of the facility without having conducted these tests represents a greater risk than that incurred by permitting single loop operation for no more than 24 hours to perform the tests.

Since the proposed amendment serves principally to clarify the intent of the original restriction, this change does not involve a significant hazards consideration.

As proposed by the licensee, the amendment would permit testing with one or both recirculation loops out of service without a time limit. We have concluded that such testing should be limited to the same 24-hour period

as that allowed for an inoperable pump, and have so modified the proposed amendment. The licensee has agreed with this change.

We have reviewed both single loop and natural circulation modes of operation from a thermal-hydraulic safety standpoint, and conclude that in such modes of operation the reactor will be operated within the bounds of the thermal analysis, will be protected from fuel damage limits resulting from anticipated transients, and is acceptable.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the change does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the change does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: SEP 22 1975

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-324

CAROLINA POWER & LIGHT COMPANY

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE

Notice is hereby given that the U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 6 to Facility Operating License No. DPR-62 issued to Carolina Power & Light Company for operation of the Brunswick Steam Electric Plant, Unit 2, located in Brunswick County, North Carolina. The amendment is effective as of the date of issuance.

This amendment requires that the reactor not be made critical unless both recirculation loops are in service; requires that the plant be shut down within 24 hours in the event one recirculation loop becomes out of service while the reactor is operating; and permits testing with one or both recirculation loops out of service for a period not to exceed 24 hours.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment is not required since the amendment does not involve a significant hazards consideration.

For further details with respect to this action, see (1) the application for amendment dated September 11, 1975, (2) Amendment No. 6 to License No. DPR-62, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C. and at the Southport-Brunswick County Library, 109 W. Moore Street, Southport, North Carolina 28461.

A copy of items (2) and (3) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Reactor Licensing.

Dated at Bethesda, Maryland, this **SEP 22 1975**

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by

R. A. Purple

Robert A. Purple, Chief
Operating Reactors Branch #1
Division of Reactor Licensing

PRELIMINARY DETERMINATION

NOTICING OF PROPOSED LICENSING AMENDMENT

PD-74

Licensee: Carolina Power & Light Company (Brunswick)

Request for: Amendment to OL to permit single loop operation for up to
24 hours in event of a recirc pump trip, and permit single-
and no-loop operation for testing.

Request Date: September 11, 1975

- Proposed Action:**
- Pre-notice Recommended
 - Post-notice Recommended
 - Determination delayed pending completion of Safety Evaluation

Basis for Decision: When we issued the ECCS amendment to Brunswick Unit 2
on August 28, 1975, we included a restriction in the OL that
stated "The reactor shall not be operated with one recirc
loop out of service." The reason this was placed in the
license was (and is) because operation on a single recirc
loop has not yet been evaluated with respect to ECCS
performance, but the choice of words in the amendment was
unfortunate, since it does not state what action should
be taken if, due to a recirc pump trip, the plant finds it-
self in this condition. Furthermore, it (inadvertently)
inserts a direct conflict between the NRC approved

- CONCURRENCES:**
- | | | |
|----|---|----------------|
| | <u><i>C. M. Trammell</i></u> | DATE: |
| 1. | C. M. Trammell | <u>9/19/75</u> |
| | <u><i>R. A. Purple</i></u> | |
| 2. | R. A. Purple | <u>9/19/75</u> |
| | <u><i>K. R. Goller</i></u> | |
| 3. | K. R. Goller | <u>9/19/75</u> |
| 4. | <u>Office of Executive Legal Director</u> | |

Kartalia concurred in amdt package (9/22/75) circulated with this PD.

startup program requirements which include several single-pump and double-pump trips while at power (anticipated transients). The licensee request solves both problems, requiring a plant shutdown within 24 hours if the recirc loop cannot be stored to service, and permitting such operation for testing purposes. While operating with a single loop, the plant remains within the bounds of the steady-state and transient thermal analysis. The benefits to be gained in testing for safe plant response to these test transients is considerable. The risk of a loss-of-coolant accident in a 24 hour period is vanishingly small. Requiring a shutdown in 24 hours is entirely consistent with other Tech Specs. which require a shutdown within 24 hours when safety systems become degraded beyond the bounds of the safety analysis. The intent of placing the restriction on single loop operation was to prevent sustained operation in this mode pending appropriate review. It was not the intent to prohibit such operation for brief periods for good reasons, such as for testing or to avoid an unnecessary plant shutdown. Based on the above, and since the proposed amendment serves principally to clarify the intent of the original restriction, this change does not involve a significant hazards consideration.