

September 3, 1985

Docket No. 50-324

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:

The Commission has issued the enclosed Amendment No. 116 to Facility Operating License No. DPR-62 for the Brunswick Steam Electric Plant, Unit 2. The amendment consists of changes to the Technical Specifications in response to your application of August 28, 1985, as supplemented by letter dated August 29, 1985.

The amendment changes the Technical Specifications to allow the isolation time for the inboard high pressure coolant injection (HPCI) steam line isolation valve to be increased from 50 to 55 seconds on a temporary basis until the next reload, at which time the valve will be repacked.

A copy of the related Safety Evaluation is also enclosed.

Sincerely,

Original signed by/

Marshall Grotenhuis, Project Manager
Operating Reactors Branch #2
Division of Licensing

Enclosures:

1. Amendment No. 116 to License No. DPR-62
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

cc:

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

George F. Trowbridge, Esquire
Shaw, Pittman, Potts and Trowbridge
1800 M Street, N. W.
Washington, D. C. 20036

Mr. Charles R. Dietz
Plant Manager
Post Office Box 458
Southport, North Carolina 28461

Mr. Franky Thomas, Chairman
Board of Commissioners
Post Office Box 249
Bolivia, North Carolina 28422

Mrs. Chrys Baggett
State Clearinghouse
Budget and Management
116 West Jones Street
Raleigh, North Carolina 27603

Resident Inspector
U. S. Nuclear Regulatory Commission
Star Route 1
Post Office Box 208
Southport, North Carolina 28461

Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Dayne H. Brown, Chief
Radiation Protection Branch
Division of Facility Services
Department of Human Resources
Post Office Box 12200
Raleigh, North Carolina 27605



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

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-324

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 116
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 August 28, 1985, as supplemented August 29, 1985, 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. 116, 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: September 3, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 116

FACILITY OPERATING LICENSE NO. DPR-62

DOCKET NO. 50-324

Revise the Appendix A Technical Specifications as indicated below. The changed area is indicated by a vertical line.

Remove

3/4 6-15

Insert

3/4 6-15

TABLE 3.6.3-1 (Continued)

PRIMARY CONTAINMENT ISOLATION VALVES

<u>VALVE FUNCTION</u>	<u>VALVE GROUP^{1/}</u>	<u>ISOLATION TIME (Seconds)</u>
HPCI steam line isolation valves E41-F002 E41-F003	4	50*
HPCI torus suction isolation valves E41-F042 E41-F041	4	30
RCIC steam line isolation valves E51-F007 E51-F003	5	20
Drywell purge exhaust backup valve CAC-V10	6	15
Containment air purge isolation valve CAC-V15	6	15
Suppression chamber vent valve CAC-V22	6	15
Drywell purge exhaust backup valve bypass valve CAC-V23	6	15
Suppression chamber makeup and containment atmosphere dilution inlet valve CAC-V47	6	15
Drywell makeup and containment atmosphere dilution inlet valve CAC-V48	6	15

1. See Specification 3.3.2, Table 3.3.2-1 for isolation signal that operates each valve group.
* The isolation time for valves E41-F002 may be increased to 55 seconds until Reload 6 for Cycle 7 or until an outage of sufficient duration to fix the valve at which time it will be returned to 50 seconds.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 116 TO FACILITY LICENSE NO. DPR-62

CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2

DOCKET NO. 50-324

1.0 INTRODUCTION

By letter dated August 28, 1985, as supplemented by letter dated August 29, 1985, the Carolina Power and Light Company (CP&L, the licensee) requested an emergency change to the limiting conditions for operation (LCO) for Brunswick Steam Electric Plant, Unit 2 as set forth in the Technical Specifications (TS) of Facility Operating License No. DPR-62. The requested change would grant a temporary change to the isolation time for the inboard high pressure coolant injection (HPCI) steam line isolation valve until the next refueling outage or the next outage of sufficient time to repack the valve. The change was verbally authorized on August 29, 1985 until September 4, 1985, while this amendment is being processed. The verbal authorization was confirmed in our letter dated August 29, 1985.

2.0 DISCUSSION

In a letter dated August 28, 1985, CP&L notified the Commission of a steam leak in the drywell of Brunswick, Unit 2 approaching TS leakage limits. The major source of the leak has been identified to be degraded valve packing in the HPCI turbine steam inlet line inboard isolation valve (E41-F002). Trouble shooting had revealed that the leak rate can be reduced by almost an order of magnitude by backseating the valve. The licensee exercised one option and closed the outboard valve isolating the HPCI system. The letter requested an exigent TS change. Upon further consideration, the licensee decided that isolating the HPCI system was not the least degraded solution and opened the outboard valve. This made the HPCI system operable, but initiated an 8-hour LCO. In a follow-up letter, the licensee has requested a one-time change to TS 3.6.3.a.1 which would permit Unit 2 operation to continue until the next refueling outage with the E41-F002 valve in the backseated position. Testing has shown that with the valve backseated the automatic valve closure time to increase beyond the LCO of 50 seconds by less than 4 seconds. The licensee proposes that the LCO be changed from 50 seconds to 55 seconds until the valve can be repacked at the next refueling outage.

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3.0 EVALUATION

Valve E41-F002 is a containment isolation valve which is intended to automatically isolate the HPCI main steam inlet line inside containment should a break occur in the line. A longer valve closing time could result in a steam release outside containment greater than previously calculated for a HPCI steam line break accident. The licensee has reviewed its steam line break accident analyses to determine the consequences of an additional 5 seconds in the valve closure time. This review has indicated that taking into account the 55 second isolation time, the total coolant released as a result of a break in the HPCI line between the inboard and outboard isolation valves would continue to be bounded by the more limiting main steam line break accident. The licensee's analysis indicates that the radiological consequences of a HPCI steam line break with the longer isolation valve closure time would continue to remain below limits specified in 10 CFR 100 by at least two orders of magnitude.

In addition to the above, the licensee has also indicated that precautions have been taken to minimize potential damage to the valve motor during the backseating operation. To ensure that the valve motor operator has not been degraded during the stroke testing from the backseated position and final backseating operation, the licensee monitored and controlled motor current, and performed post-operation checks of the motor winding resistance. These testing procedures were discussed with CP&L's test engineers. The licensee also confirmed that the outboard isolation valve was in an acceptable operating condition based on a successful surveillance during the last refueling outage and satisfactory operation during a closing and opening cycle on August 28-29, 1985.

Based on the licensee's analyses of the steam line break accident, the tests performed to measure valve stroke time and check motor performance for the E41-F002 valve, and satisfactory operation of the outboard isolation valve, as discussed above, we conclude that interim operation until the next scheduled refueling outage with the inboard valve (E41-F002) in the backseated position with a response time LCO of 55 seconds is acceptable. We note the licensee has committed to repair the E41-F002 valve should an outage of sufficient duration occur prior to the next refueling outage.

4.0 EMERGENCY CIRCUMSTANCES

On August 28, 1985, CP&L requested an exigent license amendment to increase the isolation time limit of the inboard HPCI steam line isolation valve (E41-F002) from 50 to 55 seconds. This would allow the valve to be backseated, thus reducing leakage through the valve packing and avoiding an unnecessary shutdown due to exceeding the 5 gpm TS limit for unidentified reactor coolant system leakage in the drywell.

Early on the morning of August 28, 1985, unidentified leakage in the Brunswick Unit 2 drywell increased to 4.46 gpm. At that time, three possible courses of action existed.

1. The leakage could be ignored, thereby risking a forced shutdown by exceeding the TS limit of 5 gpm.
2. The E41-F002 valve, earlier identified as a major contributor to drywell leakage, could be backseated, declared inoperable, and the 8-hour LCO requiring plant shutdown with an inoperable primary containment isolation valve entered. Previous isolation time testing revealed that the valve could not be isolated within the required 50 seconds from the backseated position, thus requiring it to be declared inoperable when backseated.
3. Rather than enter the 8-hour LCO, the outboard HPCI steam isolation line valve could be isolated, the HPCI system declared inoperable, and a 14-day LCO for an inoperable HPCI system entered.

On August 28, 1985, CP&L determined that the most prudent course of action would be to temporarily isolate the HPCI system while filing an exigent license amendment request which would allow the backseated E41-F002 valve to be declared operable and the HPCI system returned to service. An analysis had previously been performed and the determination made that this amendment would not involve a significant hazards consideration.

Upon further review, CP&L determined that the plant would be maintained in a safer condition if the HPCI system were returned to service. This determination is based on the fact that the analysis performed indicates that the additional 5 seconds closure time resulting from the backseating of the valve is acceptable and it places the plant in a safer condition to have the HPCI system available in the event of an accident. Based on the plant being in a safer condition, CP&L opened the outboard HPCI steam line isolation valve and declared the HPCI system to be operable. This placed Brunswick Unit 2 in an 8-hour LCO. As required by TS 3.6.3.a.1, the inoperable valve must either be restored to operable status within 8 hours or the affected penetration line isolated within 8 hours, or the unit must be in at least hot shutdown within the next 12 hours. Accordingly, the licensee requested that the August 28, 1985 submittal be processed as an emergency request.

4.1 No Significant Hazards Consideration Determination

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a license amendment involves no significant hazards considerations if operation of the facility in accordance with the amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.

The information in Section III above provides the basis for evaluating this license amendment against these criteria. Since the requested operational mode, plant operating conditions, the physical status of the plant, and dose consequences of potential accidents are the same as without the requested change, the staff concludes that:

- (1) Operation of the facility in accordance with the amendment would not significantly increase the probability or consequences of an accident previously evaluated.
- (2) Operation of the facility in accordance with the amendment would not create the possibility of a new or different kind of accident from any accident previously evaluated.
- (3) Operation of the facility in accordance with the amendment would not involve a significant reduction in a margin of safety.

Accordingly, we conclude the amendment to Facility Operating License No. DPR-62, permitting isolation valve E41-F002 to operate with a response time of up to 55 seconds, involves no significant hazards consideration.

4.2 State Consultation

In accordance with the Commission's regulations, consultation was held with the State of North Carolina by telephone. The State expressed no concern either from the standpoint of safety or of no significant hazards consideration determination, in view of the interim nature of the amendment and the compensatory measures.

5.0 ENVIRONMENTAL CONSIDERATIONS

The amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and a change in a surveillance requirement. 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 offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has made a final no significant hazards consideration finding with respect to this amendment. Accordingly, the 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.

6.0 CONCLUSION

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: Mark Caruso

Dated: September 3, 1985