

October 25, 1984

Docket Nos. 50-325/324

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 Nos. 77 and 104 to Facility Operating License Nos. DPR-71 and DPR-62 for the Brunswick Steam Electric Plant, Units 1 and 2. The amendments consist of changes to the technical specifications in response to your submittal of June 13, 1984.

The amendments revise the Technical Specifications to reduce the minimum permitted water height covering spent fuel in the spent fuel pool.

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. 77 to License No. DPR-71
- 2. Amendment No. 104 to License No. DPR-62
- 3. Safety Evaluation

cc w/enclosures:
See next page

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[Handwritten signatures and initials]

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

cc:

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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. 77
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 June 13, 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:

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2. Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 77, 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: October 25, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 77

FACILITY OPERATING LICENSE NO. DPR-71

DOCKET NO. 50-325

Revise the Appendix A Technical Specifications as follows:

Remove

3/4 9-11

B3/4 9-2

Insert

3/4 9-11

B3/4 9-2

REFUELING OPERATION

3/4.9.9 WATER LEVEL - SPENT FUEL STORAGE POOL

LIMITING CONDITION FOR OPERATION

3.9.9 At least 20 feet 6 inches of water shall be maintained over the top of the irradiated fuel rods seated in the spent fuel storage pool racks.

APPLICABILITY: Whenever irradiated fuel assemblies are in the spent fuel storage pool.

ACTION:

With the requirements of the above specification not satisfied, suspend all movement of fuel assemblies and crane operations with loads in the spent fuel storage pool area after placing the load in a safe location. Restore the water level to within its limit within 4 hours. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.9 The water level in the spent fuel storage pool shall be determined to be at least its minimum required depth at least once per 7 days.

REFUELING OPERATIONSBASES3/4.9.6 CRANE AND HOIST OPERABILITY

The OPERABILITY requirements of the cranes and hoists used for movement of fuel assemblies ensures that: 1) each has sufficient load capacity to lift a fuel element, and 2) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

3/4.9.7 CRANE TRAVEL-SPENT FUEL STORAGE POOL

The restriction on movement of loads in excess of the weight specified provides some assurance that with the failure of the lifting device the fuel pool would not be damaged to such a degree that the irradiated fuel would be subjected to a loss-of-coolant.

3/4.9.8 and 3/4.9.9 WATER LEVEL-REACTOR VESSEL AND SPENT FUEL STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 98% of the assumed 10% iodine gas activity released from the rupture of irradiated fuel assembly. This minimum water depth is consistent with the assumptions of the accident analysis.

3/4.9.10 CONTROL ROD REMOVAL

This specification ensures that maintenance or repair on control rods or control rod drives will be performed under conditions that limit the probability of inadvertent criticality. The requirements for simultaneous removal of more than one control rod are more stringent since the SHUTDOWN MARGIN specification provides for the core to remain subcritical with only one control rod fully withdrawn.



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. 104
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 June 13, 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-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. 104, 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: October 25, 1984

ATTACHMENT TO LICENSE AMENDMENT NO. 104

FACILITY OPERATING LICENSE NO. DPR-62

DOCKET NO. 50-324

Revise the Appendix A Technical Specifications as follows:

Remove

3/4 9-11

B3/4 9-2

Insert

3/4 9-11

B3/4 9-2

REFUELING OPERATIONS

3/4.9.9 WATER LEVEL - SPENT FUEL STORAGE POOL

LIMITING CONDITION FOR OPERATION

3.9.9 At least 20 feet 6 inches of water shall be maintained over the top of the irradiated fuel rods seated in the spent fuel storage pool racks.

APPLICABILITY: Whenever irradiated fuel assemblies are in the spent fuel storage pool.

ACTION:

With the requirements of the above specification not satisfied, suspend all movement of fuel assemblies and crane operations with loads in the spent fuel storage pool area after placing the load in a safe location. Restore the water level to within its limit within 4 hours. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.9 The water level in the spent fuel storage pool shall be determined to be at least its minimum required depth at least once per 7 days.

REFUELING OPERATIONSBASES3/4.9.6 CRANE AND HOIST OPERABILITY

The OPERABILITY requirements of the cranes and hoists used for movement of fuel assemblies ensures that: 1) each has sufficient load capacity to lift a fuel element, and 2) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

3/4.9.7 CRANE TRAVEL-SPENT FUEL STORAGE POOL

The restriction on movement of loads in excess of the weight specified provides some assurance that with the failure of the lifting device the fuel pool would not be damaged to such a degree that the irradiated fuel would be subjected to a loss-of-coolant.

3/4.9.8 and 3/4.9.9 WATER LEVEL-REACTOR VESSEL AND SPENT FUEL STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 98% of the assumed 10% iodine gap activity released from the rupture of irradiated fuel assembly. This minimum water depth is consistent with the assumptions of the accident analysis.

3/4.9.10 CONTROL ROD REMOVAL

This specification ensures that maintenance or repair on control rods or control rod drives will be performed under conditions that limit the probability of inadvertent criticality. The requirements for simultaneous removal of more than one control rod are more stringent since the SHUTDOWN MARGIN specification provides for the core to remain subcritical with only one control rod fully withdrawn.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 77 TO FACILITY LICENSE NO. DPR-71 AND
AMENDMENT NO. 104 TO FACILITY 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 dated June 13, 1984, the Carolina Power & Light Company (the licensee) submitted proposed changes to the Technical Specifications appended to Facility Operating License Nos. DPR-71 and DPR-62 for the Brunswick Steam Electric Plant (BSEP), Units 1 and 2. The proposed changes would modify the Technical Specifications to reduce the minimum permitted water height covering spent fuel in the spent fuel pool. As requested, this change would involve three factors:

- 1) A lowering of 7/8" in the minimum height of water in the spent fuel pool, from elevation 115'7" to 115' 6 1/8".
- 2) A raising by 10" of the fuel rods in the pool caused by replacement of the present racks with higher density storage racks.
- 3) A change of 10 1/8" in the reference point from which water height is specified.

The installation of the high density racks, which is the cause of the water height change, was approved by a Safety Evaluation dated December 13, 1983. That Safety Evaluation is incorporated by reference.

2.0 Evaluation and Findings

The proposed change would decrease the minimum water coverage of stored spent fuel by 10 7/8". By application of Standard Review Plan 15.7.4 and Regulatory Guide 1.25, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Fuel Handling Accident in the Fuel Handling and Storage Facility for Boiling and Pressurized Water Reactors," the effect upon radiological consequences due to diminished water coverage during a fuel handling accident has been computed; the assumptions for and results of which are shown in Table I below.

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Table 1: Assumptions in Staff Computation of Radiological Consequences of a Fuel Handling Accident

Reactor Power Level	2250 MW _{th}
Effective Pool Decontamination Factor for Iodine	65.
Peaking Factor	1.5
Fraction of Core Damaged	0.005
Cool-down Time for Damaged Fuel	24 hours
Atmospheric Dispersion Coefficient, 0-2 Hours at Exclusion Area Boundary	1×10^{-3} sec/cubic meter
Filter Efficiencies	
Inorganic Iodine	90%
"Organic" iodine	70%

The computed thyroid dose, assuming the reduced water coverage, is 2.4 rem at the exclusion area boundary, which is well within the guidelines of 10 CFR Part 100. The dose for this accident was reported as 2 rem in the Safety Evaluation Report of November 1973, the only significant difference with the present calculation being a larger assumed pool decontamination factor. We conclude that the increase in the computed thyroid dose due to the change in water level is not significant.

Based on our review we conclude that the proposed change in Technical Specification is acceptable.

3.0 Environmental Considerations

The amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The staff has determined that the 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 the amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, the 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 the amendments.

4.0 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: J. Read

Dated: October 25, 1984