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.

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.

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Dated: October 25, 1984