



Carolina Power & Light Company

JUN 13 1984

SERIAL: NLS-84-158

Director of Nuclear Reactor Regulation  
Attention: Mr. D. B. Vassallo, Chief  
Operating Reactors Branch No. 2  
Division of Licensing  
United States Nuclear Regulatory Commission  
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-325 & 50-324/LICENSE NOS. DPR-71 & DPR-62  
REQUEST FOR LICENSE AMENDMENT  
SPENT FUEL POOL WATER LEVEL

Dear Mr. Vassallo:

SUMMARY

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, Carolina Power & Light Company (CP&L) hereby requests a revision to the Technical Specifications (TS) for the Brunswick Steam Electric Plant (BSEP), Units No. 1 and 2. The proposed TS would change the requirements for minimum water level in TS 3/4.9.9, Water Level - Spent Fuel Storage Pool, from 22 feet 3 inches to 20 feet 6 inches.

DISCUSSION

On December 15, 1983 the NRC issued a Safety Evaluation Report (SER) which authorizes increasing the storage capacity for boiling water reactor (BWR) fuel in the spent fuel pools for BSEP Units No. 1 and 2. This would be achieved by replacing some of the existing spent fuel storage racks with new high density storage racks. The physical construction of these new racks will encroach on the present technical specification limits concerning minimum water level.

The present BSEP Technical Specification 3.9.9 states, "At least 22 feet, 3 inches of water shall be maintained over the top of active irradiated fuel assemblies seated in the spent fuel storage racks." The basis for this level is to ensure that sufficient water depth is available to remove some of the activated iodine released following a postulated fuel handling accident.

Regulatory Guide (RG) 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," provides guidance for assessing the risk to the public health and safety resulting from a fuel handling accident. Using the assumptions listed in RG 1.25 and some additional conservatisms, CP&L has performed an analysis which shows that the decrease in water level over the spent fuel racks does not significantly

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increase the radiological doses caused by a potential refueling accident and that these same doses are well within the limits provided in 10 CFR Part 100. A copy of this analysis is attached for your review.

The numerical difference between 22 feet 3 inches and 20 feet 6 inches is explained in the attached Figure 1 and is summarized below:

- |    |   |               |
|----|---|---------------|
| 1. | Difference in elevation of the fuel support plates between the old spent fuel racks and the new spent fuel racks ( $\Delta 1$ , figure 1):          | 10 inches     |
| 2. | Difference in reference points between the top of the irradiated fuel assemblies and the top of the irradiated fuel rods ( $\Delta 2$ , figure 1) : | 10 1/8 inches |
| 3. | Difference applied to obtain an even number of inches ( $\Delta 3$ , figure 1) :  | 7/8 inches    |

TOTAL

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21 inches

It should be noted that the proposed change results in a reduction in water height above the active fuel of 10-7/8 inches. The remaining 10-1/8 inches is the result of a change in reference points to correlate with the reference point called out in RG 1.25.

#### SIGNIFICANT HAZARDS ANALYSIS

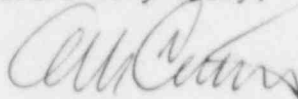
Carolina Power & Light Company has reviewed this request and has determined that reducing the minimum water level over the top of the fuel assemblies seated in the spent fuel storage racks, as described above, is likely to not involve a significant hazards consideration. The Commission has provided guidance concerning the application of the standards for determining whether a significant hazards consideration exists by providing certain examples (48 FR 14870). The examples of actions involving no significant hazards consideration include: "(vi) A change which either may result in some increase to the probability or consequences of a previously-analyzed accident or may reduce in some way a safety margin, but where the results of the change are clearly within all acceptable criteria with respect to the system or component specified in the Standard Review Plan: for example a change resulting from the application of a small refinement of a previously used calculational model or design method."

Reducing the minimum water level over the top of the active irradiated fuel assemblies seated in the spent fuel storage racks could reduce a safety margin. However, the results of the change are within the acceptable criteria specified in the Standard Review Plan, Section 15.7.4 and 10 CFR Part 100, limits. Therefore, CP&L believes that this amendment involves a proposed change that is similar to the example quoted above and that no significant hazards consideration exists.

ADMINISTRATIVE INFORMATION

The proposed BSEP Unit Nos. 1 and 2 TS pages are provided in Enclosure 1 (CP&L reference 83TSB38). A summary list of the proposed changes is also provided to aid in your review of this request. Carolina Power & Light Company has evaluated this request in accordance with the provisions of 10 CFR 170.22 and has determined that a Class III and Class I license amendment fee is required. A check for \$4,400 is enclosed in payment of the license amendment fees.

Yours very truly,




A. B. Cutter - Vice President  
Nuclear Engineering & Licensing

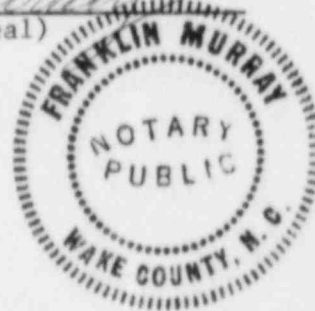
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Enclosures

cc: Mr. D. O. Myers (NRC-BSEP)  
Mr. J. P. O'Reilly (NRC-RII)  
Mr. M. Grotenhuis (NRC)  
Mr. Dayne H. Brown  
Radiation Protection Branch  
Division of Facility Services  
Department of Human Resources

A. B. Cutter, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

My commission expires: OCT 04 1986

  
Notary (Seal)



Summary List of Revision  
Brunswick Unit 1

Page

Comment

3/4 9-11 .

- a) the water level was changed from 22 feet 3 inches to 20 feet 6 inches
- b) the word "the" was added following "top of"
- c) the word "assemblies" was replaced by the word "rods"

B 3/4 9-2

- a) Under Section 3/4.9.8 and 3/4.9.9, the number "99%" was replaced by "98%"

Summary List of Revision  
Brunswick Unit 2

Page

Comment

3/4 9-11

- a) the water level was changed from 22 feet 3 inches to 20 feet 6 inches
- b) the word "the" was added following "top of"
- c) the word "assemblies" was replaced by the word "rods"

B 3/4 9-2

- a) Under Section 3/4.9.8 and 3/4.9.9, the number "99%" was replaced by "98%"