October 16, 1989

Docket No. 50-324

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Mr. Lynn W. Eury
Executive Vice President
Power Supply
Carolina Power & Light Company
Post Office Box 1551
Raleigh, North Carolina 27602

Dear Mr. Eury:

SUBJECT: ASME CODE RELIEF REQUEST FOR SERVICE WATER SYSTEM TEMPORARY REPAIR - BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2, (TAC No. 72021)

By letter dated November 4, 1988, pursuant to 10 CFR 50.55a(a)(3) and (g)(5), you requested relief from ASME Boiler and Pressure Vessel Code, Section XI. The relief was in regard to a leaking and then repaired (on a temporary basis) weld in the service water system of Brunswick Steam Electric Plant, Unit 2. A non-code repair was made and the Code required hydrostatic test was not performed. The temporary repair consisted of a carbon steel split collar being fully welded to the service water piping, top and bottom, 360 degrees by means of a fitted weld and halves of the collar longitudinally welded on both sides with a full penetration weld. The design calculations performed verified that full structural and seismic integrity of the line would be maintained by the repair. The temporary repair was deemed acceptable by Carolina Power & Light Company until the next refueling outage estimated to commence in September 1989. Replacement of the subject piping/piping weld joint will be performed during the 1989 refueling outage.

In accordance with the requirements of 10 CFR 50.55a(a)(3) and 50.55a(g)(6)(i) the staff has performed a review of your request and has determined that the ASME Code requirements are impractical and create unnecessary hardship without a compensating increase in the level of quality and safety. We find that the temporary repair is acceptable for the time period in question, and we also grant relief from performing the hyrdostatic test. This relief is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest given due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility. The details of our evaluation are contained in the enclosed Safety Evaluation.

Sincerely,

Original Signed By:

E. G. Tourigny, Senior Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

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Enclosure:
As stated

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Mr. L. W. Eury
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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REGARDING ASME CODE RELIEF REQUEST - SERVICE WATER SYSTEM

CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2

DOCKET NO. 50-324

1.0 INTRODUCTION

On July 3, 1988, during Brunswick Steam Electric Plant (Brunswick), Unit 2 operation, a through-wall leak was detected in a weld in the Service Water System. Ultrasonic thickness measurements were made on this weld and six similar welds on the A and B service water loops for both Brunswick units. The only indication of significance was 11.5 inches long and 66% through-wall in the area of the through-wall leak. A temporary repair was made by welding a carbon steel split collar over the defective area of the service water piping. Code repair or piping replacement would have required unit shutdown. A justification for continued operation was prepared and approved by the Plant Nuclear Safety Committee. Design calculations verified that full structural and seismic integrity of the piping would be maintained by the repair. A hydrostatic test was not performed immediately after the repair.

NRC Inspection Report 50-324/88-26 and 50-325/88-26, dated August 22, 1988, indicated that the licensee was questioned whether Nuclear Regulatory Commission (NRC) approval was obtained prior to deviating from the ASME Boiler and Pressure Vessel Code, Section XI. The licensee response was that prior NRC approval had not been obtained, but that a relief request was being prepared. By letter dated November 4, 1988, the licensee requested relief from the Code requirements for repairs and hydrostatic testing.

2.0 EVALUATION

The licensee requested relief from the ASME Section XI Code requirements for an alternate noncode repair procedure and for not performing the hydrostatic test after the repair on the basis of impracticability and unnecessary hardship. The welded split collar repair is considered a temporary repair to stop leakage until the permanent ASME Code-approved repair can be made during the next Brunswick Unit 2 refueling outage. The licensee is committed to replace the defective service water piping during the refueling outage scheduled to begin in September 1989.

The hydrostatic test required by paragraph IWA-4400 of the ASME Boiler and Pressure Vessel Code was not performed since an isolable hydrostatic test boundary could not be achieved during unit operation. As an alternative, a system inservice pressure test was performed in accordance with paragraph IWA-5213(c). In addition, the licensee committed to monthly visual inspections until the piping is replaced during the September 1989 Unit 2 refueling outage.

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As a result of the inspection reported in NRC Inspection Report Nos. 50-324/88-26 and 50-325/88-26, the licensee has committed to revise plant procedures to require NRC approval prior to deviation from the ASME Code.

3.0 CONCLUSION

The staff has reviewed the licensee's request for relief from the requirements of the ASME Boiler and Pressure Vessel Code, Section XI for Brunswick Unit 2.

On the basis of the provisions of 10 CFR 50.55a(a)(3) and 50.55a(g)(6)(i) which allow relief from the requirements of the ASME Boiler and Pressure Vessel Code, Section XI, when compliance with the specified requirements would be impractical or would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety, the staff concludes that the temporary repair and lack of hydrostatic testing of the repair is acceptable. The staff understands that this is a temporary repair to stop leakage until a permanent ASME Code-approved repair is made during the Brunswick Unit 2 refueling outage in September 1989. This relief is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest given due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

The licensee has revised plant procedures to assure NRC approval of ASME Code relief requests to avoid a similar recurrence. This is acceptable.

Principal Contributor: F. Witt

Dated: October 16, 1989