CP&L
Carolina Power & Light Company

December 6, 1982

Office of Nuclear Reactor Regulation
ATTN: Mr. D. B. Vassallo, Chief
Operating Reactors Branch No. 2
United States Nuclear Regulatory Commission
Washington, D.C. 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NOS. 50-324
LICENSE NOS. DPR-62
REQUEST FOR LICENSE AMENDMENT
CONTAINMENT OXYGEN CONCENTRATION

Dear Mr. Vassallo:

SUMMARY

In accordance with the Code of Federal Regulations, Title 10, Part 50.90 and Part 2.101, Carolina Power & Light Company (CP&L) hereby requests revisions to the Technical Specifications (TS) for the Brunswick Steam Electric Plant (BSEP) Unit No. 2. These changes would allow an exemption for 72 hours from the containment oxygen concentration Technical Specification 3.6.6.3. This was discussed with NRC staff on December 6, 1982. This change is necessary to allow Brunswick-2 to operate until repairs can be made to a rupture in the Containment Atmospheric Control (CAC) inerting line which is common to both units.

DISCUSSION

At 11:00 p.m. on December 5 with Brunswick-2 operating at approximately 50 percent power, the CAC inerting line experienced a rupture downstream of the vaporizer valve. The primary containment oxygen concentration was less than 4 percent by volume at the time of the event. The primary containment atmosphere oxygen concentration exceeded 4 percent by volume at 1:15 p.m. on December 6, 1982. We are attempting to maintain primary containment atmosphere oxygen concentration for both units by using the Containment Atmospheric Dilution (CAD) System; however, the CAD System liquid nitrogen supply will be maintained at greater than 4350 gallons as required by TS 3.6.6.2. Therefore, it may become necessary to terminate use of the CAD System on Unit 2 in order to maintain Unit 1 oxygen concentration and the required 4350 gallon liquid nitrogen supply. Shipment of additional nitrogen to the plant is being expedited in order to re-supply the CAC and CAD Systems.

A001 w/check @ $4,000

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The proposed temporary exemption to TS 3.6.6.3 for Brunswick-2 will provide a 72-hour time period for repairs to be made to the CAC inerting line. When the CAC System is taken out of service for the repairs, the CAD System will be used to maintain primary containment oxygen concentration for Brunswick-1; therefore, a temporary exemption for Brunswick-1 should not be necessary. The extent of the necessary repairs to the CAC System is still undetermined because of poor ground conditions due to overnight rain. It should be noted that two similar requests relating to the TS requirement for primary containment atmosphere oxygen concentration have been previously approved by the Commission.

SAFETY EVALUATION

The following safety considerations have been evaluated in preparation of this Technical Specification change request:

(1) The probability of occurrence of a LOCA during the 72-hour exemption period is extremely remote. Present Technical Specifications allow deinerting for a total of two days during and after a shutdown, and the time period requested by this change will present no significant additional safety hazard.

(2) Carolina Power & Light Company is operating the Brunswick containment purging system in accordance with NRC's October 22, 1979 "Interim Position on Containment Purging and Venting." The purge isolation valves are capable of closing against the dynamic forces of a LOCA.

(3) Regulatory Guide 1.7 Revision 2 discusses production of combustible gases resulting from a LOCA and states that hydrogen concentrations would reach flammable limits within a day to a month after a LOCA. The CAD System at the Brunswick Plant is fully qualified (seismic, safety-related) and is designed to maintain containment inerted following a LOCA. The CAD System can be operated to inject nitrogen into containment to dilute combustible gases after a LOCA. Carolina Power & Light Company commits to utilize this system as a combustible gas control measure if a LOCA were to occur during the period Brunswick-2 operates deinerted.

(4) The latest edition of Standard Technical Specifications (STS) for BWR-4 plants allows deinerted operation for 120 Effective Full Power days during the Startup Test Program. This is a significantly longer time period than the 72 hours being requested for Brunswick-2.

(5) With regard to fire protection considerations for operating in a deinerted condition, the plant fire brigade will be alerted to the degraded fire protection condition in containment.

ADDITIONAL CONSIDERATIONS

Brunswick Plant has installed a plant modification to alleviate this problem. It is currently scheduled to be operational by December 31, 1982. In addition, Brunswick Plant will station an operator at the local CAC control station each time inerting via CAC is in progress. This will provide prompt notification to operations personnel in case of a recurrence and will allow additional surveillance during inerting operations.

CONCURRENCE

This Technical Specification change request and its safety justifications have been reviewed and concurred with by both the Plant Nuclear Safety Committee and the Onsite Nuclear Safety Unit.

CONCLUSION

It is CP&L's intent to inert the Brunswick-2 containment as soon as possible upon completing the required repairs. Since TS require the unit to be the Startup condition within 8 hours after primary containment oxygen concentration exceeds 4 percent, we request your expedited review of this request.

Attached you will find the revised Technical Specifications page with the changes indicated by vertical lines in the right-hand margin. We believe that this request involves a single technical issue and thus constitutes one Class III amendment in accordance with 10 CFR 170.22. Accordingly, our check for $4000 is enclosed.

Should you have any questions regarding this matter, please contact my staff.

Yours very truly,

L. W. Eury
Senior Vice President
Power Supply

WRM/cfr (5848C2T1)

Sworn to and subscribed before me this 6th day of December, 1982.

Franklin Murray
Notary (Seal)

My commission expires: October 4, 1986

cc: Mr. D. O. Myers (NRC-BSEP)
Mr. J. P. O'Reilly (NRC-RII)
Mr. J. A. Van Vliet (NRC)