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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 61 TO FACILITY LICENSE NO. DPR-62

CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2

DOCKET NO. 50-324

I. INTRODUCTION

By telecopied letter dated June 29, 1981, Carolina Power & Light Company (the licensee) proposed a seventy-two hour temporary exemption from Technical Specification Limiting Condition for Operation 3.6.6.3 for Brunswick Steam Electric Plant (BSEP) Unit No. 2. The proposed change would permit the facility to be operated deinerted until repairs can be made to the pipeline that supplies vaporized nitrogen used to inert containment.

II. EVALUATION

The staff reviewed the following points made by the licensee:

1. The probability of occurrence of a LOCA during the 3 day exemption period is extremely remote. Present Technical Specifications allow de-inerting 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. CP&L 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 Brunswick Plant has a fully qualified (seismic, safety-related) Containment Atmospheric Dilution (CAD) System which 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. CP&L commits to utilize this system as a combustible gas control measure if a LOCA were to occur during the period Brunswick 2 operates deinerted. In addition, the containment oxygen concentration had been reduced to 10% by volume immediately prior to the pipeline failure. Such a reduced oxygen concentration would probably tend to raise the hydrogen flammability limits. The licensee is using the CAD system to maintain this reduced oxygen concentration.

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 3 calendar days being requested for Brunswick 2.

In addition to the above considerations, the licensee agreed to alert the fire brigade to the degraded fire protection condition in the containment. Based on the above evaluation, we conclude that the temporary exemption is acceptable.

III. ENVIRONMENTAL CONSIDERATION

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4) that an environmental impact statement, negative declaration, or environmental impact appraisal need not be prepared in connection with the issuance of the amendment.

IV. CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: July 14, 1981