CP&L
Carolina Power & Light Company

SERIAL: NLS-85-267

JUL 12 1985

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 NO. 2
DOCKET NO. 50-324/LICENSE NO. DPR-62
REQUEST FOR LICENSE AMENDMENT
PRIMARY CONTAINMENT AVERAGE AIR TEMPERATURE

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 Unit No. 2. The proposed change to TS Section 3.6.1.6 allows the maximum average air temperature of the primary containment to be raised from 135 degrees F to 140 degrees F until August 15, 1985 at which time the primary containment average air temperature limit shall be returned to 135 degrees F.

DISCUSSION

The current Action Statement for TS Section 3.6.1.6 requires hot shutdown of the unit if primary containment average air temperature cannot be maintained at or below 135 degrees F. Due to the warm temperatures being experienced in the area of the Brunswick Plant, service water injection temperature has risen. This reduces the efficiency of the drywell cooling system causing difficulties in maintaining primary containment average air temperature at or below 135 degrees F. On July 8, 1984 this resulted in a derating of Brunswick-2 to 80 percent of maximum power. Since that time, Brunswick-2 has been derated to as low as 71 percent of maximum power.

Historically, drywell temperatures of Brunswick-2 have been higher than those of Brunswick-1. The Company has recognized this problem and has taken corrective actions to alleviate it. During the extensive Brunswick-2 refueling/maintenance outage in 1984, a program was initiated to identify the causes of the high drywell temperatures. This program identified the following problems: (1) a degradation of insulation; (2) a decreased efficiency in the drywell coolers; (3) a decreased efficiency due to the balance of system flows; and (4) a ductwork design which does not provide for maximum air flow or efficiency. Actions were taken to correct all but the ductwork design during the refueling outage and a subsequent mini-outage.

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Rec'd w/check $150.00
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Despite the corrective action taken to reduce Brunswick-2 drywell temperature, the drywell cooling system could not support operation of the unit at 100 percent power as service water injection temperature increased. As a result, CP&L decided to design and install a supplemental drywell closed cooling water system to provide the required additional cooling capacity. The cooling system is currently scheduled to be operational within 30 days. In order to avoid further derating and a possible shutdown during peak summer capacity requirements, the Company proposes to raise the primary containment average air temperature limit to 140 degrees F. This limit will be returned to 135 degrees F when the new cooling system is operational, but in any case no later than August 15, 1985.

DISCUSSION OF EXIGENCY

Brunswick-2 began operating in a derated condition on June 4, 1985. When the decision was made to install the new supplemental drywell closed cooling water system, the Company expected no more than a 10 to 15 percent derate as a result of the increased service water injection temperature. However, on July 8, 1985, Brunswick-2 was derated to 80 percent of maximum power, and since then power has been reduced to as low as 71 percent of maximum power. As a result, a safety evaluation of the proposed action was initiated and your staff was informed of the likelihood that an emergency TS request would be submitted. During the period of July 9 through July 11, CP&L with assistance from General Electric and United Engineers & Constructors, Inc. performed a safety evaluation of the proposed change. The above circumstances, together with the following factors contribute to the exigency of this request.

1. The major controllable input to average air temperature in the drywell is the recirculation pumps. The amount of heat added to the drywell by these pumps is directly proportional to the cube of the speed change. We have continued to reduce recirculation pump speed in an attempt to reduce the drywell temperature until the pumps are now running at approximately their minimum speed. Since power operation of the unit provides a nearly constant amount of heat over the entire operating range, the option now left for reducing drywell temperature is shutdown of the unit.

2. Historically, temperatures in the Brunswick area gradually rise during the months of July and August. Therefore, there is an increased probability of a shutdown.

3. Based on projected system loads and capacities, we expect to buy power during the remainder of July and throughout August. The loss of Brunswick-2 would force the Company to purchase more power than originally planned at an undue, additional expense to the consumer.

4. Carolina Power & Light Company has made every reasonable attempt to meet the existing requirement in an attempt to avoid an expedited TS request. This includes: modifications made during the 1984 refueling outage, a planned mini-outage to perform a flow balance and insulation upgrade in the drywell, and the current work to install a new supplemental drywell closed cooling water system.

SIGNIFICANT HAZARDS ANALYSIS

As stated in 10CFR50.90(c), a proposed amendment to an operating license involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety.

The proposed revision to TS Section 3.6.1.6 does not involve a significant increase in the probability or consequence of an accident previously evaluated. The change was evaluated against environmental qualification requirements, drywell concrete design requirements, and the bounding FSAR accident, a loss-of-cooling-accident (LOCA). Operation at the proposed elevated temperature could cause a slight acceleration of aging in some components; resulting in the possible need for these components to be replaced at an earlier date. Despite the increased aging, component operability would not be affected. Due to the short period of time during which these components may be subjected to higher operating temperatures (a maximum of 30 days) and the small overall increase in that temperature (5 degrees F), the effect on the component's expected life will be negligible. This change does not affect affect the equipment qualification justifications for continued operation submitted to the staff in accordance with IE Bulletin 79-01B.

A 5 degree F increase in the average drywell temperature does not create the possibility of a new or different kind of accident from any accident previously evaluated because the analysis and increased temperature profile are still within the bounds of the LOCA analysis. Environmental qualification of drywell components will not be affected by the proposed change.

An evaluation has determined that the margin of safety will not be affected by this change. An increase in the drywell temperature during normal operation would reduce the air and non-condensibles within the drywell. Thus, in the unlikely event of a LOCA, the final drywell temperature and pressure will be negligibly changed and remain below existing design criteria. The environmental qualification and drywell concrete limits also remain within the design criteria.

Based on the above reasons, the Company has determined that the proposed revision does not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) created the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety. As such, this amendment does not involve a significant hazards consideration.

ADMINISTRATIVE INFORMATION

The proposed Brunswick-2 TS page is provided in Enclosure 1. Carolina Power & Light Company has evaluated this request in accordance with the provisions of 10CFR170.12 and has determined that a license amendment application fee is required. A check for $150 is enclosed in payment of this fee.

Should you have any questions concerning this submittal, please contact Mr. Sherwood R. Zimmerman at (919) 836-6242.

Yours very truly,

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

ABC/MAT/crs (1735MAT)

Enclosure

cc: Mr. W. H. Ruland (NRC-BNP)
Dr. J. Nelson Grace (NRC-RII)
Mr. M. Grotenhuis (NRC)
Mr. Dayne H. Brown

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.

Ruby R. Morgan
Notary (Seal)

My commission expires: 11/27/89