CP&L
Carolina Power & Light Company

SERIAL: NLS-86-214

JUN 04 1986

Director of Nuclear Reactor Regulation
Attention: Mr. Dan Muller, Director
BWR Project Directorate #2
Division of BWR Licensing
United States Nuclear Regulatory Commission
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-324/LICENSE NO. DPR-62
EMERGENCY REQUEST FOR LICENSE AMENDMENT
RCIC ISOLATION VALVE STROKE TIME

Dear Mr. Muller:

SUMMARY

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, Carolina Power & Light Company hereby requests a revision to the Technical Specifications (TS) for the Brunswick Steam Electric Plant Unit No. 2. The proposed revision to Section 3/4.6.3 extends the allowable isolation time for the RCIC steam line isolation valve from 20 seconds to 30 seconds. This is an emergency request, required to support startup of Brunswick-2 from the current refueling outage.

DISCUSSION

The RCIC system steam line is provided with both an inboard isolation valve (E51-F007) and an outboard isolation valve (E51-F008). Technical Specification 3/4.6.3 requires these RCIC steam line isolation valves to close within 20 seconds. During the current refueling outage, modifications to RCIC isolation valve E51-F007 were performed in order to establish environmental qualification. Apparently, as a result of these environmental qualification modifications and other valve maintenance, the stroke time of valve E51-F007 was slightly increased. The isolation time for both the valves has historically been between 18 and 20 seconds. The isolation time for valve E51-F007 now ranges from 20 to 21 seconds. Therefore, the Company is requesting the allowable isolation time of valve E51-F007 be extended to 30 seconds. This is a temporary change effective until December 6, 1986.

An analysis has been performed to determine the effect of extending the isolation time for the RCIC isolation valve on the environmental qualification of safety-related electrical equipment. The worst case line break for the temperature, pressure, and radiation profiles used to establish post-accident environments is the 10-inch HPCI steam line. This line is required to isolate within 50 seconds by TS Section 3/4.6.3. Areas

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where an RCIC line break could occur are analyzed for and bounded by the HPCI line break environmental profiles. The total coolant loss as a result of flow through a ruptured 10-inch HPCI line for 50 seconds would be much greater than that from a ruptured 3-inch RCIC line for 30 seconds. As such, the requested change has no affect on the environmental qualification program.

The radiological affects of the extended RCIC isolation time have also been evaluated. Design basis accident dose estimates at the site boundary are based on a main steam line break. These estimates are approximately a factor of 100 less than the dose allowed by 10 CFR 100. The dose estimate resulting from a rupture in the 10-inch HPCI steam line is approximately 1/3 of that of a main steam line break. Given the reduced loss of coolant through the 3-inch RCIC line, doses at the site boundary due to a ruptured RCIC line would clearly be well within limits established in 10 CFR 100.

Consideration has also been given to a break in the water side of the RCIC system. Carolina Power & Light Company has determined that the proposed change has no effect on this event because the RCIC isolation valves do not isolate on a water line break.

SIGNIFICANT HAZARDS ANALYSIS

The Commission has provided standards for determining whether a significant hazards consideration exists in 10 CFR 50.92(c). A proposed amendment to an operating license for a facility 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 any 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. Carolina Power & Light Company has reviewed this request and determined that:

1. The proposed amendment does not involve a significant increase in the probability or consequences of any accident previously evaluated. An analysis has been performed which determined that extending the allowable RCIC steam line isolation time to 30 seconds has no affect on the profiles used to establish environmental qualification at Brunswick. These profiles were established based on a rupture of a 10-inch HPCI line with a 50 second isolation time. The amount of coolant lost in 30 seconds through a break in the 3-inch RCIC steam line would be much less than that assumed for the 10-inch HPCI line break; therefore, although increasing the isolation time for the 3-inch RCIC steam line results in a slight increase in the consequences of that accident, a rupture of the 10-inch HPCI steam line remains the limiting event for environmental qualification purposes. In addition, it has been determined that the radiological effects of this change are bounded by those estimated for a main steam line break. While the proposed change could result in a slight increase in the amount of radioactivity released as a result of a RCIC steam line rupture, such a release would be much less than that estimated for a main steam line break and well within 10 CFR 100 limits.

2. The proposed amendment does not create the possibility of a new or different kind of accident than previously evaluated because the change does not affect the method in which the RCIC system, or any other safety system, performs its safety function. Valve operability will continue to be ensured through periodic stroke time testing to the 30 second limit. As mentioned in Item 1, the environmental and radiological affects of extending the RCIC steam line isolation time have been shown to be bounded by other scenarios.

3. The proposed amendment does not involve a significant reduction in a margin of safety because the slight increase in the consequences of a RCIC steam line rupture which could result due to the proposed change are bounded by those of a main steam line or 10-inch HPCI line rupture. As such, the extended RCIC steam line isolation time does not present either a radiological or an environmental qualification concern. Periodic stroke time testing of the valves will maintain assurance of valve operability.

Based on the above reasoning, CP&L has determined that the proposed amendment does not involve a significant hazards consideration.

ENVIRONMENTAL ASSESSMENT

Carolina Power & Light Company has reviewed this request and determined that the proposed amendment changes a requirement with respect to the use of a facility component located within the restricted area, as defined in 10 CFR Part 20, and changes a surveillance requirement. Operation in accordance with the proposed revision will not result in a significant increase in the amounts or a significant change in the types of any effluents that may be released offsite nor will it result in a significant increase in individual or cumulative occupational radiation exposure. The Company has previously determined that the proposed amendment does not involve a significant hazards consideration. Based on the above reasoning, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need to prepared in connection with the issuance of the amendment.

DISCUSSION OF EXIGENCY

Brunswick-2 is currently completing an extended maintenance/refueling outage with startup scheduled for June 6, 1986. Valve E51-F007 initially failed stroke time testing on May 26, 1986. CP&L had no previous reason to suspect that failure of this isolation test would occur. Subsequently, CP&L attempted to reduce the stroke time of the valves. Some improvement was achieved; however, not enough to meet the 20-second isolation requirement. In addition, an attempt was made to obtain environmentally qualified replacement components to reduce the isolation time. Procurement of these components and preparation of the necessary modification packages would have a significant impact on the outage schedule. As such, an emergency license amendment is required to support startup of Brunswick-2.

ADMINISTRATIVE INFORMATION

The revised Brunswick-2 TS page is provided in Enclosure 1. The Company has evaluated this request in accordance with the provisions of 10 CFR 170.12 and determined that a license amendment application fee is required. A check for $150 is enclosed in payment of this fee. In accordance with 10 CFR 50.91, the Company has forwarded a copy of this request to Mr. Dayne H. Brown of the State of North Carolina.

Please refer questions regarding this submittal to Mr. Sherwood R. Zimmerman at (919) 836-6242.

Yours very truly,

M A McDuffie

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

ABC/MAT/mf (3966MAT)

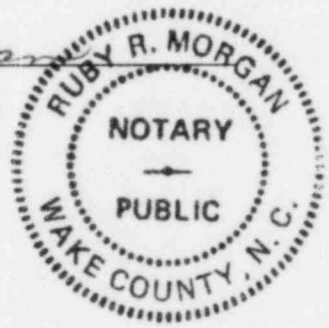
Enclosures

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

M.A. McDuffie
~~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



ENCLOSURE 1

TO SERIAL: NLS-86-214

PROPOSED BRUNSWICK-2
TECHNICAL SPECIFICATION PAGES