



Carolina Power & Light Company

SERIAL: NLS-86-311
86TSB12

SEP 12 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 NOS. 1 AND 2
DOCKET NOS. 50-325 & 50-324/LICENSE NOS. DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENT
RCIC STEAM LINE ISOLATION TIME

Dear Sir:

SUMMARY

In accordance with 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 Nos. 1 and 2. The proposed revision to Section 3/4.6.3 extends the allowable isolation time for the RCIC steam line isolation valves from 20 seconds to 30 seconds. Amendment No. 126 for Brunswick-2, issued on June 10, 1986, granted a similar change on a temporary basis.

DISCUSSION

Technical Specification 3/4.6.3 requires the RCIC steam line isolation valves to close within 20 seconds. The isolation time for these valves has historically been between 18 and 20 seconds. Therefore, the Company is requesting the allowable isolation time be extended to 30 seconds.

An analysis has been performed to determine the effect of extending the isolation time for the RCIC isolation valves 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 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 effect 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. 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.

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Consideration has also been given to the effects this change would have on the consequences of 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 containment isolation valves are not designed to isolate on a water line break.

There is no concern with regard to increased piping forces resulting from the proposed revision. Increasing the isolation time of the valves from 20 to 30 seconds will have no adverse effect on piping forces because maximum flow through the line is reached within seconds of a steam line rupture. In addition, these valves close slowly, gradually throttling back the steam flow. Therefore, forces analogous to those associated with a water hammer event cannot occur.

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 effect 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 main steam line break. While the proposed change could result in a slight increase in the amount of radioactivity released upon 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 limits. 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.

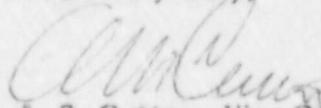
Based on the above reasoning, CP&L has determined that the proposed amendment does not involve a significant hazards consideration.

ADMINISTRATIVE INFORMATION

The revised Brunswick 1 and 2 TS pages are provided in Enclosures 1 and 2. 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.

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

Yours very truly,



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

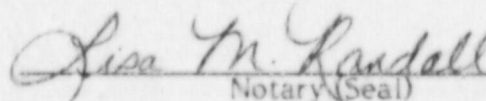
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Enclosures

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

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.

My commission expires: 5-18-88


Notary (Seal)