



Carolina Power & Light Company
AUG 28 1985

SERIAL: NLS-85-315

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
HPCI STEAM LINE ISOLATION VALVE

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 Table 3.6.3-1 allows the isolation time for the inboard HPCI steam line isolation valve (E41-F002) to be increased from 50 to 55 seconds. Increasing the isolation time for this valve will allow it to be backseated, thus reducing leakage through the valve packing and avoiding a possible shutdown of the unit due to exceeding the Technical Specification limit for reactor coolant system leakage in the drywell.

DISCUSSION

On August 18, 1985, Brunswick-2 experienced a slow increase in unidentified drywell leakage to 4.46 gpm. Technical Specification 3.4.3.2 requires unit shutdown if unidentified drywell leakage is not maintained at or below 5 gpm. In the process of attempting to identify the cause of the increased leakage, the inboard HPCI steam line isolation valve (E41-F002) was backseated. Backseating the valve resulted in a decrease in average drywell floor drain leakage to approximately 0.71 gpm and a decrease in drywell average volumetric air temperature. However, two independent isolation time tests of the valve from the backseated position resulted in values which exceed the 50 seconds allowed by TS Table 3.6.3-1. In the first test, the stroke time of the valve was 53.3 seconds and in the second it was 53.61 seconds. Subsequently, the valve was returned to its normal position. Since then, the leakage rate has continued to trend upward, as shown by Enclosure 1. Based on the increase in leakage and the two isolation time tests, the Company proposes to increase the maximum allowed isolation time for the E41-F002 valve to 55 seconds in order to allow the valve to be placed in the backseated position.

Since leakage from the E41-F002 valve is causing the TS limit of 5 gpm of unidentified drywell leakage to be approached, the Company believes that it is prudent to backseat the valve. Backseating the valve rather than reclassifying the leakage mitigates the effects of the steam leak, thus subjecting equipment in the area, the valve, the valve motor, and the valve actuator to a less severe environment. In addition, backseating decreases the possibility of equipment damage due to steam impingement.

8509050040 850828
PDR ADOCK 05000324
PDR

teville Street * P. O. Box 1551 * Raleigh, N. C. 27602

Handwritten:
A001
w/ check
#150
#579835

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 Table 3.6.3-1 does not involve a significant increase in the probability or consequence of an accident previously evaluated nor does it create the possibility of a new or different kind of accident from any accident previously evaluated. The change has been evaluated against environmental qualification requirements and it was determined that there is no significant differences in the environmental effects in the Reactor Building as a result of increasing the isolation time to 55 seconds.

The radiological consequences of a HPCI steam line break are bounded by those of a main steam line break. Taking into account the 55-second isolation time, the total coolant released as a result of a break in the HPCI line between the inboard and outboard isolation valves would be approximately 70,000 lbs of steam. A main steam line break would result in the release of approximately 140,000 lbs of steam and liquid. Since the accident analysis for the main steam line break assumes that all halogens become airborne, the total amount of radioactivity released from a HPCI steam line break would be approximately one-half of that which would be released from a main steam line break. Radiation doses at the site boundary resulting from a main steam line break are approximately a factor of 100 less than those allowed by 10CFR100. Therefore, increasing the isolation time to 55 seconds does not present a radiological concern.

Proper functioning of the E41-F002 isolation valve is ensured by special testing procedures used when backseating the valve. In addition, the previous isolation time testing of the valve from the backseated position has revealed no motor degradation and has produced repeatable isolation times.

Increasing the isolation time for the E41-F002 isolation valve does not involve a significant reduction in a margin of safety. There is no effect on HPCI system logic or function. The total coolant loss as a result of a HPCI line break would not exceed previously analyzed limits and remains within the makeup capabilities of the remaining emergency core cooling systems.

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) 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. As such, this amendment does not involve a significant hazards consideration.

DISCUSSION OF EXIGENCY

Carolina Power & Light Company has concluded that maintaining the valve in the backseated position is the most prudent course of action. Backseating the valve results in a reduction of leakage and minimizes the possibility of a shutdown as a result of

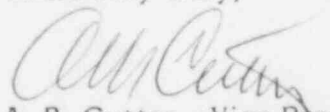
exceeding the TS limit for drywell leakage. This also mitigates the deleterious effects on the valve, valve motor, actuator, and surrounding equipment caused by the steam leak. The isolation time of the valve from the backseated position was determined to be greater than 50 seconds. Upon failure to achieve isolation within the required 50 seconds from the backseated position, the valve was returned to its normal position and the Company began an evaluation to determine the effects on plant safety of increasing the valve's isolation time to 55 seconds. The following factors contribute to the exigency of this request:

- 1) The possibility exists for a forced shutdown of the unit should the drywell leakage exceed the Technical Specification limit of 5 gpm.
- 2) Maintaining the valve in its normal position is causing further degradation of valve packing, thereby increasing the drywell leakage rate. On August 28, 1985, the leakage reached 4.46 gpm and the valve was backseated. The HPCI System has been isolated and a 14-day LCO was initiated.
- 3) Continuing to operate the unit with the valve not backseated will subject the valve, valve motor, actuator, and equipment in the area of the steam leak to a more severe environment and increases the potential for equipment damage due to steam impingement.

ADMINISTRATIVE INFORMATION

The proposed Brunswick-2 TS page is provided in Enclosure 2. 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.

Yours very truly,

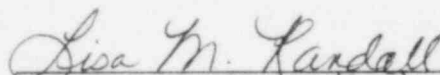

A. B. Cutter - Vice President
Nuclear Engineering & Licensing

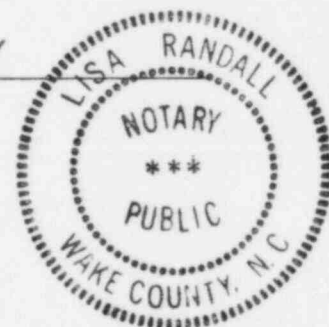
ABC/MAT/mf (1881MAT)
Enclosures

cc: Mr. Dayne H. Brown
Mr. W. H. Ruland (NRC-BNP)
Dr. J. Nelson Grace (NRC-RII)
Mr. M. Grotenhuis (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: 5/18/89


Notary (Seal)



ENCLOSURE 1
TO SERIAL: NLS-85-315

BRUNSWICK-2 UNIDENTIFIED DRYWELL LEAKAGE

UNIDENTIFIED DRYWELL LEAKAGE BRUNSWICK-2

