CP&L
Carolina Power & Light Company
P.O. Box 1551 • Raleigh, N.C. 27602

SERIAL: NLS-91-335

JAN 10 1992

G. E. VAUGHN
Vice President
Nuclear Services Department

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 1
DOCKET NO. 50-325/LICENSE NO. DPR-71
FEEDWATER NOZZLE N4D SAFE END UT INDICATION
(NRC TAC NO. M81880)

Gentlemen:

The purpose of this letter is to provide additional information to clarify Carolina Power & Light Company's (CP&L) intended actions concerning crack growth monitoring for the N4D feedwater nozzle safe end attachment welds at the Brunswick Steam Electric Plant, Unit No. 1.

By letter dated September 10, 1991 (Serial NLS-91-232), CP&L provided a written response to the NRR Project Manager's request of August 8, 1991 to identify the Company's intended actions to monitor crack growth rate conditions in the reactor coolant system based on the use of data obtained from the crack arrest verification system (CAVS). In a telephone conversation on November 8, 1991, the NRR Project Manager requested that CP&L provide additional information clarifying the Company's intended actions based on the CAVS monitoring. The additional information requested was provided to the Staff by letter dated November 27, 1991 (Serial: NLS-91-307).

Based on subsequent telephone discussions with the NRC, the Company has determined that further clarification of the information provided in the Company's November 27, 1991 response was needed. The revised response, with the specific revisions indicated by the change bars in the right hand margin, is as follows:

1. Crack growth data for the Inconel 182 sample from the Crack Arrest Verification System (CAVS) will be obtained:

   a. At least every 30 days, and

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b. Within 7 days of startup following a reactor shutdown or scram.

2. The data will be reviewed and compared to the maximum projected crack growth rate of 2.45 E-5 inches per hour, which was previously analyzed.

a. If the average crack growth rate observed during any thirty day period exceeds the projected crack growth rate of 2.45 E-5 inches per hour, the CAVS data will be obtained at least every seven days until the thirty day average crack growth rate returns to less than the 2.45 E-5 rate for two consecutive 7 day periods.

b. If the average crack growth rate observed during any forty-five day period exceeds 2.45 E-5 inches per hour, an engineering evaluation will be performed using the observed forty-five day average crack growth rate to project the time at which the feedwater nozzle flaw would be expected to exceed the ASME Section XI allowable flaw size. Plans will be implemented to shut down Unit 1 prior to the projected size exceeding 0.4792 inches, which corresponds to 80 percent of the remaining allowable crack growth necessary to reach the ASME Section XI allowable flaw size of 0.504 inches (based on an initial flaw size of 0.38 inches).

c. In the event that the CAVS monitoring reveals a crack growth rate above 2.45 E-5 on repeated occasions, without a continuous period exceeding 45 days, then an engineering analysis will be conducted when the number of cumulative days of high growth rate exceeds 45 days.

d. If the average crack growth rate observed during any thirty day period exceeds 3.0 E-5 inches per hour, an evaluation will be performed to determine the cause of this high crack growth rate, and reduce it to a level below 2.45 E-5 inches per hour. If the average crack growth rate observed through any 45 day period exceeds 3.0 E-5 inches per hour, plans will be implemented to shut down Unit 1 within 15 days.

3. The NRC will be notified if plans are made for Unit 1 shutdown. During the unit shutdown, an ultrasonic examination of the flaw will be made to determine if changes have occurred since the previous

ultrasonic examination. The results of the examination shall be submitted to the NRC.

4. Future plans for inspection, evaluation, and/or repair as necessary during the next scheduled refueling outage remain as presented at the May 23, 1991 meeting between CP&L and the NRC.

Please refer any questions regarding this submittal to Mr. W. R. Murray at (919) 546-4661.

Yours very truly,

G. E. Vaughn

WRM/wrm (commit3.wpf)

cc: Mr. S. D. Ebneter
Mr. N. B. Le
Mr. R. L. Prevatte