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Mr. James P. O'Reilly, Director
U. S. Nuclear Regulatory Commission
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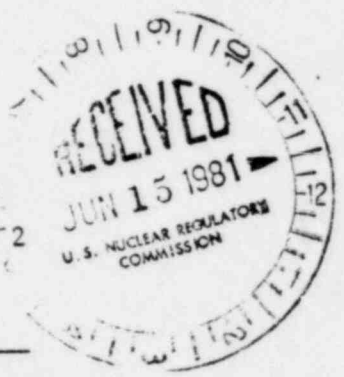

BRUNSWICK STEAM ELECTRIC PLANT UNIT NOS. 1 AND 2
LICENSE NOS. DPR-71 AND DPR-62
DOCKET NOS. 50-325 AND 50-324
RESPONSE TO IE BULLETIN 81-03

Dear Mr. O'Reilly:

In response to your letter of April 10, 1981, transmitting IE Bulletin 81-03, Flow Blockage of Cooling Water to Safety System Components by Corbicula (Asiatic clams) and Mytilus (Mussel), Carolina Power & Light Company submits the following response for the Brunswick Steam Electric Plant (BSEP):

Corbicula does occur in the Cape Fear River from which the Brunswick Plant takes its cooling water; however, they are not found at BSEP due to the high salinities normally found there. Mytilus, oysters, barnacles, hydrozoans, and blood arks (Anadara ovalis) have been found in the circulating water and service water system piping. The Fire Protection System at BSEP uses well water and therefore is not affected by any of the shellfish problems.

As required in Item 2 of this bulletin and to satisfy a commitment made in LER 2-80-30, the Unit No. 1 RHR heat exchangers were examined to determine if a shell problem and/or a divider plate problem existed in these heat exchangers. This inspection determined that shells were present in both heat exchangers and that the divider plates in both were bowed, causing separation between the divider plate and the head, thus allowing flow to bypass the tubes. The deformation was caused by shell blockage of the tubes causing a high service water differential pressure across the plate. An investigation on the Unit No. 2 RHR heat exchangers determined the same shell problem existed; however, only the 2B baffle was found to be bowed.

The occurrence of shell growth is not a new issue at Brunswick. The present problems were a result of our loss of capability to continuously and effectively chlorinate the service water system due to electrical and mechanical problems with the system and the need to stop chlorine carryover into the screen wash system due to environmental concerns. Without the chlorination system in service, shellfish growth, mainly oysters, propagated in the concrete lined carbon steel service water headers. Shells broken off by service water flow were carried to the RHR heat exchangers where they caused the partial blockage. No growth was noted inside the copper-nickel heat exchangers.

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Due to the problems noted with shells in the RHR heat exchangers, the heat exchangers for the diesel generators and the 1A core spray room cooler as well as the nuclear and conventional headers were inspected for shells and/or shell growth. Both service water headers were found to have approximately 100% growth coverage on the concrete lined piping. Shell growth was not detected in the diesel generator heat exchangers (four) or the core spray room cooler heat exchanger; however, approximately one hand full of broken shell fragments were found in each of these heat exchangers. This did not affect the operability of these heat exchangers.

To ensure that problems of this magnitude do not again develop, the plant engineering performance group has been tasked to develop a monitoring/testing program to periodically monitor the performance of safety-related heat exchangers. This program is now in the developmental stage. Following the completion of all inspections, cleaning, and repairs as required, the monitoring/testing program will be finalized and a supplement to this response will be submitted describing the program.

Inspections and evaluations are still in progress which are required to more comprehensively address the items of this bulletin. Following these inspections and evaluations, a supplemental response will be submitted to more fully address each item of this bulletin.

The manpower expended in the review and preparation of this report was approximately 2500 hours and is continuing.

Yours very truly,

B. J. Furr
Vice President
Nuclear Operations

SHC/jc (7814)

cc: Mr. Victor Stello, Jr.

B. J. Furr, having been first duly sworn, did depose and say that the information contained herein is true and correct to his own personal knowledge or based upon information and belief.

Franklin Murray
Notary Public

My commission expires:

October 4, 1981

FRANKLIN MURRAY
NOTARY PUBLIC
WAKE COUNTY, N. C.