

VIRGINIA ELECTRIC AND POWER COMPANY, RICHMOND, VIRGINIA 23261

January 26, 1979

Mr. James P. O'Reilly, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Serial No. 656B
PSE&C/GLS:bep/mc

Docket No. 50-339

Dear Mr. O'Reilly:

Under the provisions of 10CFR50.55(e), NRC Region II was notified November 17, 1978, of the potential over-stressing of the Service Water System piping and piping supports during post-LOCA conditions for North Anna Power Station Unit 2. Pursuant to the requirements of 10CFR21, a 5-day report was submitted on November 22, 1978, Serial No. 656. Further provisions require a 30-day report which was submitted to Region II on December 15, 1978, as an interim report.

The original design basis of the Service Water System is for a maximum service water reservoir temperature of 95°F. Present analyses indicate that the reservoir temperature may exceed 95°F after a postulated LOCA. The stress analysis for the large bore piping is for a maximum Service Water temperature of 95°F. Loads on pipe supports are generated by the piping stress analysis, and therefore, the supports are potentially over-stressed during the post-LOCA condition. Small bore piping (less than or equal to six inches in diameter) and supports are analyzed by more conservative approximate methods and not subject to the concerns of the large bore piping and supports.

The nature of the piping stress analysis is such that temperature differentials are treated absolutely. Therefore, the analysis for a positive temperature differential of 25°F (yielding a design basis of 95°F) will also qualify the piping for a negative temperature differential of 25°F (yielding a design basis of 45°F). Pipe supports, however, are not analyzed for temperatures below 70°F.

An evaluation has determined the most appropriate procedure for verifying the structural adequacy of the existing piping and support system. This effort will include a reanalysis of all large bore piping of the Service Water and Component Cooling Water systems and a review of the large bore pipe supports. In addition, small bore piping and supports shall be checked in sufficient detail to document that the original design is sufficiently conservative and that the increased thermal movement of large bore piping can be accommodated. The effect of increased support loads on the structure shall also be checked, if required.

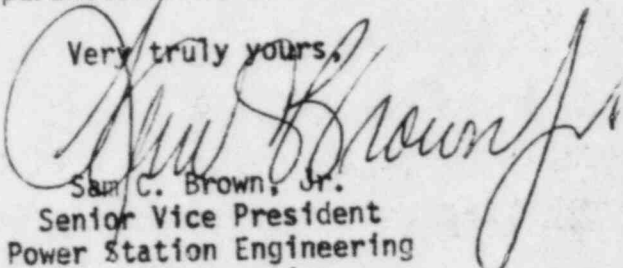
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The preceding analytical verification will be accomplished for a minimum Service Water (SW) inlet temperature of 30°F, a maximum pre-LOCA SW inlet temperature of 95°F, and a maximum post-LOCA SW inlet temperature of 115°F. As in the original analysis, a stress-free thermal condition of 70°F will be assumed.

A final report will be submitted when the nature of the solution is determined. This report, then, shall be considered an interim report to outline the revised analytical parameters and methodology.

Very truly yours,


Sam C. Brown, Jr.
Senior Vice President
Power Station Engineering
and Construction

cc: Mr. John G. Davis, Acting Director
Office of Inspection & Enforcement

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation

ACCESSION NBR: 7901300059 DOC. DATE: 79/01/26 NOTARIZED: NO DOCKET #
 FACIL: 50-339 North Anna Power Station-2, Virginia Electric & Power 05000339
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 BROWN, S.C. Virginia Electric & Power Co.
 RECIP. NAME RECIPIENT AFFILIATION
 O'REILLY, J.P. Region 2, Atlanta, Office of the Director

SUBJECT: Reporting requirements have been carried out re potential over-stressing of Svc Water Sys piping & supports. Evaluation has determined procedure for verifying structural adequacy of existing sys. Final rept forthcoming.

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 TITLE: CONSTRUCTION DEFICIENCY REPORT (10CFR50.55E).

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