MISSISSIPPI POWER & LIGHT COMPANY
Helping Build Mississippi
P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

NUCLEAR PRODUCTION DEPARTMENT

August 1, 1980

Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N.W.
Suite 3100
Atlanta, Georgia 30303

79-168-003

Attention: Mr. J. P. O'Reilly, Director

Dear Mr. O'Reilly:

SUBJECT: Grand Gulf Nuclear Station
Units 1 and 2
Docket Nos. 50-416/417
File 0260/15525/15526
PRD-79/13, Final Report, William Powell Valves, Seismic Evaluation
AECM-80/160

References: 1) AECM-79/112, 10/4/79
2) AECM-79/141, 12/18/79
3) AECM-80/68, 4/4/80

On September 4, 1979, Mississippi Power & Light Company notified Mr. V. L. Brownlee of your office of a Potentially Reportable Deficiency (PRD) at the Grand Gulf Nuclear Station (GGNS) construction site. The deficiency concerns William Powell supplied valves which may not meet the seismic requirements of the original purchase order.

We have determined this deficiency to be reportable within the meaning of both 10CFR50.55(e) and 10CFR21. Details are described in the attached final report.

Yours truly,

For J. P. McGaughy, Jr.
Assistant Vice President,
Nuclear Production

ATR:mt
Attachment

cc: Mr. N. L. Stampley
Mr. R. B. McGehee
Mr. T. B. Conner

Mr. Victor Stello, Director
Division of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

FINAL REPORT FOR PRD-79/13

I. Description of Deficiency

During the requalification of valves to the new loads requirements, the natural frequency reports submitted by valve suppliers to the original purchase specification requirements were reviewed by our Architect/Engineer. As a result, the accuracy of the reports submitted by William Powell Valves was questioned and an independent laboratory was engaged to perform a finite element analysis on three of the valves. The results of this analysis differed from the results submitted by William Powell by 200 to 2000%. The natural frequency of some valves is, therefore, below the minimum natural frequency required by design specification.

II. Analysis of Safety Implications

During a postulated seismic event, valve function cannot be assured due to low natural frequency. This condition could have resulted in an overstress condition at the pipe connection or hinder valve operation had it remained uncorrected.

III. Corrective Actions Taken

The incorrect natural frequencies were caused by an apparent computer programming error by the sub-supplier who performed the analysis for the William Powell Company. The extent of the problem has been identified, by the William Powell Company, as affecting only Grand Gulf. It is contemplated for those valves with a resonant frequency below 33 Hertz to raise their resonant frequency to acceptable levels. This action is in process at this time through either re-evaluation or modification to the valves themselves.

The William Powell Company has notified the NRC of the applicability of 10CFR21 by submission of the attached written report.

THE WM. POWELL COMPANY
2503 Spring Grove Avenue, P.O. Box 14006, Cincinnati, Ohio 45214, U.S.A.
513/852-2000

November 12, 1979

United States Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive
Suite 1000
Arlington, Texas 76012

Attention: Mr. K.V. Seyfrit, Director

Reference: Phone conversation of 11/9/79 between Mr. Edwin E. Winterfeldt and Mr. Joe Lofus of Powell and Mr. Ramon Hall, Duty Officer, N

Dear Mr. Seyfrit:

The following is a confirmation of a verbal report in accordance with NRC Regulation 10CFR Part 21 of a noncompliance to specifications for nuclear valves supplied by the Wm. Powell Company to the Mississippi Power and Light Co., Grand Gulf Nuclear Station, Units 1 and 2, Port Gibson, Mississippi 39150. This nuclear plant is still under construction and therefore, is not in operation. The noncompliance was verified to exist by the Wm. Powell Company on November 9, 1979.

We have supplied Mississippi Power and Light with Class 1, 2, and 3 valves which were, by design specification, to have a minimum natural frequency of 33 hertz. In the process of reviewing the possibility of recertifying these valves to have a minimum natural frequency of 100 hertz, in accordance with a Bechtel proposed specification change, it was discovered that the original calculations were in error. We have determined that the error lies in a computer program which was developed by one of our subcontractors.

We find that this error is not of a fixed magnitude, nor does it disqualify all valves supplied. The error magnitude is dependent upon the geometry of each valve and therefore, necessitates a reanalysis of each qualifying seismic report for this customer. The valves, we know today, that fall below the specification requirement are cylinder operated 8 and [illegible] through F, 14.21 A through D, [illegible] specification 9605-M-242.0.

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