



MISSISSIPPI POWER & LIGHT COMPANY

Helping Build Mississippi

P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

June 12, 1982

NUCLEAR PRODUCTION DEPARTMENT

U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D. C. 20555

Attention: Harold R. Denton, Director

Dear Mr. Denton:

SUBJECT: Grand Gulf Nuclear Station
Units 1 and 2
Docket Nos. 50-416 and 50-417
File 0260/L-334.0/L-860.0
Drywell Vent Valve Operability
AECM-82/273

During a meeting on June 11, 1982, among Mississippi Power & Light (MP&L), Mr. G. Bagchi, Section Leader, Equipment Qualification Branch (EQB) and other members of the EQB, MP&L submittals (reference AECM-82/28, dated March 15, 1982) regarding containment purge operations and containment purge and vent valve operability were discussed. Additional information regarding containment and drywell isolation valve operability was provided in AECM-82/133, dated April 6, 1982. As stated in both submittals, MP&L has requested Henry Pratt Company to evaluate drywell purge valve isolation operability.

The initial response received from Pratt, which contains the details of this evaluation, is attached as requested at the above meeting. This information is provided as additional justification for using the drywell purge system to vent the drywell for pressure control only during operations up to 5% power. After exceeding 5% power, the drywell purge isolation valves shall be closed at coolant temperatures greater than 200°F until such time as valve operability is established by virtue of your satisfactory review of the Pratt analysis.

Based on the June 11, 1982, meeting, MP&L understands that this position is acceptable. We anticipate that our report on drywell valve operability will be submitted by August 1982. If you have any questions, please contact this office.

Yours truly,

L. F. Dale
Manager of Nuclear Services

NSM/JGC/JDR:n11

Attachment

cc: (See Page 2)

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PDR ADOCK 05000416
A PDR

Member Middle South Utilities System

8001

MISSISSIPPI POWER & LIGHT COMPANY

AECM-82/273

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cc: Mr. N. L. Stampley (w/a)
Mr. G. B. Taylor (w/a)
Mr. R. B. McGehee (w/a)
Mr. T. B. Conner (w/a)

Mr. Richard C. DeYoung, Director (w/a)
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. J. P. O'Reilly, Regional Administrator (w/a)
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
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101 Marietta St., N.W., Suite 3100
Atlanta, Georgia 30303

PRATT

HENRY PRATT COMPANY

creative engineering for fluid systems

401 SOUTH HIGHLAND AVENUE · AURORA, ILLINOIS 60507

May 28, 1982

Bechtel Power Corp.
15740 Shady Grove Road
Gaithersburg, Md. 20760

Attn; Mr. F. M. Parks

Subj: Grand Gulf Purge Valve Analysis
Your P. O. 9645-M-258.0
Pratt Order No. p-039511

Gentlemen:

In response to your April 30, 1982 letter from E. Warfield to T. Wrona, we offer the following:

- A. Pratt's reports for Grand Gulf will be very similar in format and content to the analysis for the Crystal River Plant. The NRC guidelines for Demonstration of Operability of Purge and Vent Valves dated 9-27-79 will be addressed.
- B. We can furnish specific information on modifications as required regarding overstressed components.
 1. Justification for closing times.
We use the closing time as per the original job specification (which has been confirmed in our assembly and test records). We state that valve closure time during a LOCA will be less than or equal to the no-flow time demonstrated during shop tests.
 2. Torque coefficients were determined experimentally in our lab. Our test models included a 5" scale model of a 48"-1200 series valve, which is similar to the 8" and 20" model 1200 valves at Grand Gulf.
 3. We will assume a 90° elbow, out of plane with respect to the valve shaft, immediately upstream of the valve as the worst case installation. This is the worst case test identified at Pratt. It is believed to be a worse case than a partially opened upstream valve which tends to reduce the ΔP across the downstream valve. No specific evaluation of a failed

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upstream valve will be included in the analysis.

Response to the PURGE AND VENT VALVE REVIEW LIST.

- I. A. Our report will address all items except,
 - (1) location - to be provided by owner
 - (2) system - to be provided by owner.
- B. Our reports will include this information
- C. Limited information is available, we will provide what we can, locations should be verified by owner.

II, A, B, & C.

Stroke time per specification is verified under no-flow conditions by our assembly and test records and should be confirmed in service by owner. The pressure-time profile is used and our tests indicate valve direction tendency is to close. It is for this reason that we state that the stroke time does not increase.

- D. The delay time furnished will be used in the reports.

III.A & B.

The pressure-time curve furnished will be included in the reports.

- C. This condition will not be evaluated.
- D. This data will all be included in the report.

IV. A.

- (A to F) 1. Pratt considers its test data, reports and procedures as proprietary information and will not be furnished. Data may be reviewed at Pratt facilities only.

- G. Example of the torque equation used is contained in the report.

- 2.a. Should be provided by the owner.

(A to F)

- b. See response B3 above
- c. A printout including valve torque vs. disc angle at 5° increments will be included in your reports. Torque coefficients are not available for review.

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d. Same as B3 above.

IV. B. Not applicable.

V. A&B The effect of bearing torques will be covered in the report. Seating torque is not applicable.

VI. A. Will be done in reports.

(1 to 5)

B. The valves furnished for Grand Gulf are ANSI Class 150 design (285 psi cold working pressure). The peak differential pressure predicted is considerably below this rating and all stress levels can be expected to be below normal ASME code allowables.

C. No, reference seismic reports originally furnished.

VIII.A. Flow tends to close a butterfly valve. The largest predominant torque value that opposes valve closure is the seating and bearing friction torque developed as the disc edge comes into contact with the seat. Since the valve assembly has previously been cycle tested in our plant as well as in service, it has been proven that the operator is capable of overcoming the seating torque. Operator torque margins are therefore not analyzed.

B. This evaluation is performed in the reports.

VIII.A. This is discussed in the reports.

B. Accumulators were not furnished to Grand Gulf.

C. Not applicable to Pratt Model 1200 valves.

D. Not applicable to subject Grand Gulf valves.

E. Not applicable to Bettis Models furnished.

F. Not applicable.

In general, we would like to state that Pratt has performed testing of various but not all disc models at pressure ratios ranging from 1:1 to 4:1, upstream elbow effects have been investigated and have determined worst case coefficients based on our existing test data. We have also attempted to be most conservative in the interpolation of any empirical data as applied to torque calculations and worst case results have been furnished.

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Our proposal was based on the use of existing Pratt test data and analysis programs. Should further testing, modelling or analysis be required, it will be quoted at Bechtel's expense.

Very truly yours,



J. R. HOLSTROM
Manager, Product Engineering

CC: A. K. Wilson
R. D. Nelson
R. N. Kaza
G. L. Beane