



## Duquesne Light

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October 29, 1982

United States Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA 19406

ATTENTION: Mr. R. Haynes  
Administrator

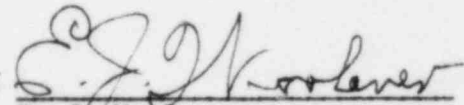
SUBJECT: Beaver Valley Power Station - Unit No. 2  
Docket No. 50-412  
Westinghouse Motor-operated Gate Valves - Closure Problems  
Significant Deficiency Report No. 80-06

Gentlemen:

Pursuant to the requirements of 10CFR50.55(e), the "Final Report on Westinghouse Motor-operated Gate Valves" is attached for your review. If there are any questions concerning this report, please contact the Beaver Valley Unit 2 Project Office.

DUQUESNE LIGHT COMPANY

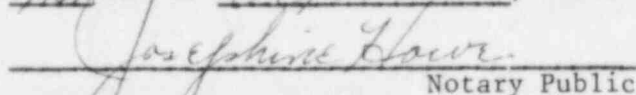
BY

  
E. J. Woollever  
Vice President

JMM/wjs  
Attachment

cc: Mr. R. DeYoung, Director, Office of Inspection and Enforcement (w/a) (3)  
NRC Document Control Desk (w/a)  
Mr. G. Walton, NRC Resident Inspector (w/a)  
Ms. E. Doolittle, Project Manager (w/a)

SUBSCRIBED AND SWORN TO BEFORE ME THIS  
29th DAY OF October, 1982.

  
Notary Public

JOSEPHINE HOWE, NOTARY PUBLIC  
PITTSBURGH, ALLEGHENY COUNTY  
MY COMMISSION EXPIRES APR 7, 1984  
Member, Pennsylvania Association of Notaries

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PDR ADOCK 05000412  
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COMMONWEALTH OF PENNSYLVANIA )

) SS:

COUNTY OF ALLEGHENY )

On this 29th day of October, 1982, before me,  
Josephine Howe, a Notary Public in and for said Common-  
wealth and County, personally appeared E. J. Woolever, who being duly sworn,  
deposed, and said that (1) he is Vice President of Duquesne Light, (2) he is  
duly authorized to execute and file the foregoing Submittal on behalf of said  
Company, and (3) the statements set forth in the Submittal are true and correct  
to the best of his knowledge, information and belief.

 JOSEPHINE HOWE, NOTARY PUBLIC  
PITTSBURGH, ALLEGHENY COUNTY  
MY COMMISSION EXPIRES APR 7, 1984  
Member, Pennsylvania Association of Notaries

Josephine Howe

JMM/wjs  
Attachment

bcc: C. R. Bishop (w/o attachment)  
T. D. Jones                   "  
J. M. Markovich               "  
H. M. Siegel                 "  
R. J. Swiderski               "  
D. H. Williams                "  
C. E. Ewing   (w/attachment)  
M. H. Judkis (4)               "  
NCD File                      "  
J. Pedro (NUS)                "  
P. RaySircar (3)               "  
J. Sutton (S&W)               "

- REFERENCES:
1. Significant Deficiency Report 80-06
  2. IE Bulletin No. 81-02, Supplement 1, " Failure of Gate Type Valves to Close Against Differential Pressure"
  3. 2DLC-4660 of 6/2/82, "SDR 80-06" Interim Report No. 4
  4. 2DLC-4333 of 11/16/81, "SDR 80-06" Interim Report No. 3
  5. 2DLC-4110 of 7/13/81, "SDR 80-06" Interim Report No. 2
  6. 2DLC-3806 of 11/20/80, "SDR 80-06" Interim Report No. 1

BEAVER VALLEY POWER STATION - UNIT NO. 2  
DUQUESNE LIGHT COMPANY

Final Report on Significant Deficiency 80-06  
Westinghouse Motor-operated Gate Valves

1. SUMMARY

IE Bulletin No. 81-02, Supplement No. 1, stated that closure problems could be anticipated with the entire line of Westinghouse Electro-Mechanical Division (W-EMD) manufactured motor-operated gate valves. Several of these valves are scheduled for installation at Beaver Valley Unit No. 2 (BVPS-2).

2. IMMEDIATE ACTION TAKEN

For those valves which were incapable of meeting functional requirements, Westinghouse began to evaluate several corrective measures which would ensure valve operability under specified system conditions, taking into account closing or opening functions and operating differential and line pressures as they apply to BVPS-2.

3. DESCRIPTION OF THE DEFICIENCY

The gate valve closing problem first surfaced when several valves failed to fully close against high flow and high differential pressure conditions during plant start-up testing at the Almaraz Nuclear Station in Spain and during the Electric Power Research Institute Power Operated Relief Valve (PORV) block valve tests at Duke Power's Marshall Station. Typically, these valves operated through 75 percent of their full disc travel leaving about 5 percent of the flow passage unsealed. Subsequent strain gage testing showed the stem thrust loads required to fully close the valve to be 50 percent larger than original design calculations predicted.

4. ANALYSIS OF SAFETY IMPLICATIONS

Some of the potential safety consequences of the valves' failure to fully close against differential pressure are as follows:

Potential Consequences

1. (PORV Block Valves) Potential incomplete isolation of pressurizer PORV.
2. Potential cavitation of a centrifugal charging pump or safety injection pump due to operation beyond maximum runout flow.
3. Potential inability to perform post-accident containment isolation.
4. Potential degradation of safety injection flow below values given in the safety analysis report.
5. Potential inability to isolate Reactor Coolant System pressure boundary.

5. CORRECTIVE ACTION TO REMEDY THE DEFICIENCY

Since Duquesne Light Company issued Interim Report No. 4 to the NRC, the

required modifications of 37 Westinghouse EMD gate valves at the BVPS-2 site have been completed. The valve modifications involved either a torque switch adjustment or a torque control to limit control closure adjustment accompanied by a gear ratio change on the valve operator. This is required in order to ensure valve operability under specified system conditions taking into account closing or opening functions and operating differential and line pressures.

The BVPS-2 project office has received Westinghouse reports which provide a summary of the valve modifications. These reports will be made available to the Resident Inspector upon request.

6. FINAL REPORT

This is the final report. No further corrective action is required.