DESIGNATED ORIGINAL

Certified By D.C. 11-23-81

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NOV 16 1981

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


ATTENTION: Mr. Boyce H. Grier, Director

SUBJECT: BEAVER VALLEY POWER STATION - UNIT NO. 2
Docket No. 50-412
Motor Operated Gate Valves - Significant Deficiency 80-06

Gentlemen:

This letter is interim report number 3 on Significant Deficiency 80-06.

On October 29, 1980, a significant deficiency of problems with three-inch gate valves manufactured by the Westinghouse Electro-Mechanical Division (W-EMD) was reported to the Nuclear Regulatory Commission Region I office. Since that time, two interim reports were issued and some four-inch gate valves were also identified as deficient.

Recently, communication with Westinghouse and IE Bulletin No. 81-02, Supplement 1 have indicated that similar problems may exist in all W-EMD motor operated gate valves. The enclosed report describes the recent developments as they apply to Beaver Valley Unit No. 2.

This problem is still being investigated. Duquesne Light plans to issue another report per the requirements of 10CFR50.55(e) when valve modification details are complete. This report is planned for June 1, 1982.

DUQUESNE LIGHT COMPANY

By E. J. Woolever
E. J. Woolever
Vice President

Enclosure
cc: Mr. V. Stello (15)
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Interim Report No. 3
Significant Deficiency 80-06
Westinghouse MOV Gate Valves

## 1.0 SUMMARY

IE Bulletin No. 81-02, Supplement No. 1, stated that closure problems could be anticipated with the entire line of W-EMD manufactured motor-operated gate valves. Several of these valves are scheduled for installation on Beaver Valley Unit No. 2. Attachment No. 1 to this report lists the valves identified as a result of this Bulletin Supplement that were not previously reported in earlier interim reports of Significant Deficiency 80-06.

## 2.0 IMMEDIATE ACTION TAKEN

Nonconformance and disposition report 5029 has been prepared to identify and control all of the valves listed in Attachment No. 1 pending further investigation.

## 3.0 DESCRIPTION OF DEFICIENCY

As a part of its ongoing analysis program, Westinghouse Electro-Mechanical Division (W-EMD) has applied the analytical methods developed for the 3" and 4" gate valves to the remaining W-EMD motor operated gate valves. These analyses predict that the entire line of motor-operated gate valves has the potential for not closing against differential pressure.

## 4.0 ANALYSIS OF SAFETY IMPLICATIONS

The safety implications are listed in the last column of Attachment No. 1 titled "Consequences of Failure to Close."

## 5.0 CORRECTIVE ACTION TO REMEDY THE DEFICIENCY

Westinghouse is continuing the analysis of these valves to determine if each valve as currently built is capable of closing under its limiting normal and post accident service condition ("Final Functional Requirement" of Attachment 1). For those valves which are incapable of meeting these requirements, Westinghouse will identify corrective action to be taken to insure that the valves close when required. The corrective action is expected to be complete by June 1, 1982.

## 6.0 ADDITIONAL REPORTS

A final report will be issued when valve modification details are complete.

ATTACHMENT 1
INTERIM REPORT NO. 3
SIGNIFICANT DEFICIENCY 80-06

| Valve Function | Valve Location Number | W-EMD Model Number | Maximum Differential Pressure (PSI) as Flow Approaches Zero | | Consequence of Failure to Close |
|---|---|---|---|---|---|
| | | | Equip. Spec. | Final Functional Requirement | |
| VCT Outlet | LCV-115C,E | 4-GM72FB | 200 | 100 | Two valves in series; failure of either valve to close reduces redundancy of providing isolation. Alternate valve will provide isolation. |
| RWST to Suction of Charging Pumps | LCV-115B,D | 8-GM72FB | 200 | 200 | One MOV in each of two parallel paths from the RWST to suction of the CCP's; failure reduces redundancy of providing isolation of RWST during the recirculation phase following a LOCA. Isolation will be provided by check valve in series with the two paths. |
| RCP Seal Water Return (Containment isolation) | 8100<br>8112 | 3-GM72FBH | 200 | 165 | Two valves in series; failure of either valve to close reduces redundancy of providing isolation. Alternate valve will provide isolation |
| Charging Pump Suction Header | 8130A,B<br>8131A,B | 8-GM72FB | 200 | 200 | Two valves in series; failure of either valve to close reduces redundancy of providing isolation Alternate valve will provide isolation |
| RHR Suction Isolation (inner valves) | 8702A,B | 12-GM88SEH | 700 | 700 | Two valves in series; failure of inner isolation valve to close reduces redundancy of providing isolation. Isolation is provided by closing the outer valve. |
| RHR Suction Isolation (outer valves) | 8701A,B | 12-GM88SEH | 700 | 700 | Two valves in series; failure of outer isolation valve to close reduces redundancy of providing isolation. Isolation is provided by closing the inner valve. |

ATTACHMENT 1 (CONTINUED)

| Valve Function | Valve Location Number | W-EMD Model Number | Maximum Differential Pressure (PSI) as Flow Approaches Zero | | Consequence of Failure to Close |
|---|---|---|---|---|---|
| | | | Equip. Spec. | Final Functional Requirement | |
| RHR Cold Leg Discharge | 8703A,B | 10-GM88SEH | 700 | 700 | Valve in series with two check valves; no effect of valve failing to close. Backflow into the RHRS from the RCS is prevented by the check valves. |
| RWST to SI Pump Suction | 8809A,B | 14-GM72FB | 200 | 100 | Valve is closed for recirculation phase following a LOCA. If valve fails to close, backflow into RWST is prevented by check valve in line. |
| SI Pump Cold Leg Injection | 8888A,B | 10-GM78FN | 2750 | 200 | When valves are used for containment isolation:<br><br>Containment isolation (ORC) valve. Isolation of containment following failure of valve to close is provided by check valve (IRC).<br><br>When valves are used for switchover from cold leg to hot leg recirculation:<br><br>Valve is closed for switchover from CL to HL recirculation. Failure of valve to close will degrade flow to HL's. |
| Accumulator Discharge | 8808A,B | 12-GM88FNH | 2750 | 0 | Valve is closed to prevent RCS pressurization during cold shutdown operations. If the valve fails to close, the accumulator may be depressurized by venting the $N_2$ to the containment. |

ATTACHMENT 1 (CONTINUED)

| Valve Function | Valve Location Number | W-EMD Model Number | Maximum Differential Pressure (PSI) as Flow Approaches Zero | | Consequence of Failure to Close |
|---|---|---|---|---|---|
| | | | Equip. Spec. | Final Functional Requirement | |
| Low Head SI Pump Discharge Crossconnect | 8887A,B | 10-GM72FB | 200 | 300 | Failure of valve to close reduces redundancy of providing low head train separation during CL recirculation phase following a LOCA. Train separation can be achieved by closing other valve. |
| Low Head SI Pump Discharge to Hot Leg | 8889 | 10-GM78FN | 2750 | 200 | Valve is closed for switchover from HL to CL recirculation following a LOCA. If valve fails to close, isolation is provided by closing the LHSI discharge crossconnect valves. |
| Recirculation Pump to Low Head Safety Injection Header | 8811A,B | 10-GM72FB | 200 | 200 | Valve is opened for recirculation phase following a LOCA and would be closed for passive failure in the recirculation train. Following failure of the valve to close, backflow into the recirculation line is precluded by two check valves in the discharge line. |
| Low Head Recirculation to Charging Pump Suction | 8812A,B | 8-GM72FB | 200 | 200 | Valve is opened for recirculation phase following a LOCA and would be closed for an active or passive failure downstream of the valve (in the CCP train). Failure of the valve to close will not preclude isolation of CCP flow; flow will be stopped by shutting off the CCP. |