

METROPOLITAN EDISON COMPANY

REPORT OF INVESTIGATION
 RE: [REDACTED]
 DATE: [REDACTED]

A. B. [REDACTED]

Case No. [REDACTED]
 Date [REDACTED] 1977
 BY [REDACTED]

The [REDACTED] request states that part has caused electronic control system which are installed at other facilities to fail. The part has caused binding between the lever, lower pin, and the supporting bracket, see items 476, 477, and 478 of MEV drawing No. ME-11-029-01. To alleviate this problem, the manufacturer, Brower, has instituted the design change which MEV has forwarded as field change FC-107, Rev. 0.

Geometric Engineering has reviewed MEV field change FC-107, Rev. 0, and finds it technically acceptable, and recommends that the modification be carried out during the 1977 refueling outage.

- RECOMMENDATION (copy of cert attached)
- 1) MEV Field Change FC-107, Rev. 0 (06-7755-70)
 - 2) MEV Rev. 25-1-675-21 / Drawing No. ME-11-029-01
 - 3) Brower Gear Catalog Pages 107 & 108

With the existing design of the electronic control valve, the possibility exists for part to fail in the lower position of the lever through the lever, and through the electric bracket. The part will prevent the free rotation of the lever.

To correct this potential for malfunction, the manufacturer (Brower) has provided instructions for a modification which will eliminate excessive wear on the bearing surfaces. The inside diameter of the lever in the lower and upper position are to be enlarged and a bronze-bronze-11 impregnated bushing is to be pressed into the hole. The lower pin will bear on the bronze bushing which are mounted on the lever.

Exh. (For ID)
 Exh. in EV
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WORKING INSTRUCTIONS (continued)

The bushings shall be purchased per Table 1 of the instructions in PCA-183. A Certificate of Conformance shall be requested indicating that the material conforms to ASTM S-438, Grade 1.

Re-machining of the lever and solenoid bracket will be done to Figures F1 and F2 of PCA-183. Press efforts shall be modified to Figures F3 and F4. Specific machining methods will be detailed by the Mechanical Maintenance Supervisor at DQ. Instructions for any grinding, or re-splining of the bushings, is found in vendor instructions, Reference F5.

Procedure 1401-2.1 Rev. 2 entitled Pressure Relief Valve Removal and/or Replacement, will be used in preparation and follow-up to the work detailed by this Change/Modification.

ALTERNATIVE ACTIONS:

- 1) The lever and pin assembly could be coated with a corrosion and heat resistant lubricant. Because of the high temperature and humidity of the area, with the fact that the assembly does not regularly rotate, such a lubricant might break down and allow corrosion, or harden which would mean the assembly would not function. Such action would also require additional steps in the annual maintenance and inspection of the valve.
- 2) The holes in the lever and solenoid bracket could have been reamed a few mills larger and the pin coated with molybdenum disulfide. This action has the same disadvantage as noted above.

COMPLETION ACTIONS:

- 1) Prior to reassembly, verify the gap between the pin and bushing (as pressed in place) to be a minimum of .001 and a maximum of .002. (See page F7 of instructions attached to Reference F1.)
- 2) Subsequent to the work designated by this Change/Modification, the valve will be tested and reinstalled per Procedure 1401-2.1, Rev. 2. Documentation of such, need not be forwarded to Generation Management.

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G. E. Shortle
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RECOMMENDATIONS - JAMES E. SHORTLE

- 1) Draw - No changes required
- 2) Technical Specifications - as changes required
- 3) Procedures - as changes required
- 4) Drawings - Reference #2 will be changed per 20 10.1

SAFETY EVALUATION

A safety evaluation was prepared by the TSC equipment engineer and included in the C/E report. Generation Engineering has reviewed this safety evaluation, finds it technically acceptable, and concurs with it.

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