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# THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

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MURRAY R. EDELMAN  
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March 15, 1985

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Mr. James G. Keppler  
Regional Administrator, Region III  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

RE: Perry Nuclear Power Plant  
Docket Nos. 50-440; 50-441  
Borg-Warner 20-Inch Gate  
Valve [RDC 121(84)]

Dear Mr. Keppler:

This letter serves as our second interim report pursuant to 10CFR50.55(e) relative to operation of Borg-Warner gate valves. Mr. Frank Jablonski of your office was notified on October 31, 1984, by Mr. R. G. Solt of The Cleveland Electric Illuminating Company (CEI) that this problem was being evaluated per our Deviation Analysis Report 213.

### Description of Deficiency

A 20-inch ASME Class 1 gate valve (1N27-F560A) manufactured by Borg-Warner Fluid Controls (BWFC) would not open completely. Inspection revealed that gouging of a gate guide by the sliding gate caused the failure. Contributing causes for the failure were determined to be as follows:

- Misalignment of the welded-in guides due to inadequate welding during manufacture.
- The orientation of the valve (stem horizontal) in horizontal piping such that the lower guide carries the entire weight of the gate.
- A "rolling" action of the gate caused by guide misalignment and valve orientation.

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Another valve (1N27-F560B) of identical type, size, and installation was cycled twenty times and inspected. The gate guides of 1N27-F560B were found to be cast in place as part of the valve body. Although minor gate rolling was detected, there was no damage to the guide rails and no further evaluation will be made on valves with cast guides. BWFC subsequently reported the alignment and welding problems in a 10CFR21 notification to the NRC on November 21, 1984. As a result of their internal review, BWFC contends that the guide alignment problem could only occur in 20-inch valves with welded-in guides.

Subsequently, another adverse condition was discovered and documented on Nonconformance Report NTS-0283. Valve 1E12-F072A was fully opened to the backseat position but could not be closed again. Inspection revealed that the gate had disengaged from its guides. This has been attributed to inadequate guide length complicated by valve orientation (horizontal stem and piping).

#### Corrective Action

CEI replaced the misaligned guides in 1N27-F560A. The guides were also replaced in 1N27-F560B in the interest of long-term reliability. CEI is inspecting other Unit 1 20-inch BWFC gate valves with welded guides. To date, 1E12-F008, 1E12-F009, and 1B21-F0065B have been examined with no guide alignment deficiencies noted. In the case of 1B21-F0065B, CEI has increased guide to body weld size because of design differential pressure. The remaining Unit 1 20-inch valves will be evaluated in the near future.

In order to provide additional assurance that guide alignment problems are limited to the 20-inch valves, CEI will examine other BWFC gate valves of various sizes. The additional valves are not installed and shall be one each of the following:

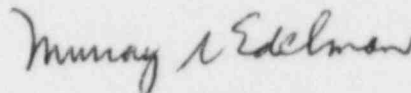
<u>Bill of Material</u>	<u>Size</u>	<u>BWFC Part #</u>
RNN 217	4"	81110
RNN 221	6"	81120
RNN 223	8"	81130
RNN 224	12"	81330-1
RNN 226	18"	81150
RNN 227	24"	81170
RON 207	10"	80990
RON 217	2-1/2"	85030

The 1E12-F072A valve (gate disengaged from guides) is currently being fitted with longer guides. CEI is compiling a list of all Borg-Warner gate valves mounted with the stem in the horizontal position and will evaluate whether corrective action is warranted.

We anticipate that all activities referenced in this report will be completed by May 1, 1985, and that our final report will be submitted by May 15, 1985.

Please call if there are additional questions.

Sincerely,



Murray R. Edelman  
Vice President  
Nuclear Group

MRE:nb  
DW165/Y/3

cc: Mr. J. A. Grobe  
USNRC, Site Office

Mr. D. E. Keating  
USNRC, Site Office

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