

April 29, 1979
TMI-79-60

Mr. G. P. Miller
Station Superintendent
Metropolitan Edison Company
P. O. Box 480
Middletown, PA 17057

Subject: Operating Instruction for Symptoms of a Stuck-Open
Power Operated Relief Valve

Dear Mr. Miller

1. Introduction

Item 3 of I.E. Bulletin No. 79-05 requests utilities with B&W supplied NSS systems to review the actions required for coping with transients. This I.E. Bulletin was prompted by the nuclear incident at Three Mile Island. During this incident, the Power Operated Relief Valve (PORV) on the pressurizer opened and failed to reclose. Considerable time passed before the operator determined that the PORV had failed open and took corrective action to isolate the valve. Operating and emergency procedures should be reviewed and revised as necessary to minimize the potential for a similar event. To support this effort, information relative to symptoms of a stuck open PORV is provided below for your consideration.

2. Design Function of the PORV

Overpressure protection of the RCS is provided by two code safety valves on the pressurizer. The ASME code requires that these valves cannot be isolated. Prudent operation of these valves dictates minimizing the number of times the code safety valves will be opened. This is accomplished by providing a PORV with a lower opening setpoint.

3. Symptoms of a Stuck Open PORV (see Note (1) below)

1. RC pressure below the reset pressure of the PORV and decreasing (primary symptom) with:
 - a. Pressurizer level increasing or indicated high (opposite trend may be possible under certain conditions.)
 - b. Primary coolant temperature approaching saturation.

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2. Increase in the RC drain tank level, pressure, and/or temperature.
3. Sustained high (T/C) temperature downstream of the PORV.

NOTE: (1) The PORV position indicator lights do not provide direct status of the valve position. The light indicates the position of the solenoid operator on the PORV. Therefore, the indicator lights might not indicate a stuck open PORV.

If you have any questions on this operating instruction, please advise.

Very truly yours,



G. T. Fairburn
Service Manager

GTF/fch

cc: R. M. Klingaman
J. F. Hilbish
L. L. Lawyer
J. L. Seelinger
C. R. Montgomery
L. C. Rogers
S. L. Smith