Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

BBS Ltr. #334-75

Dresden Nuclear Power Station
R. R. #1
Morris, Illinois 60450
May 30, 1975

Mr. James G. Keppler, Regional Director
Directorate of Regulatory Operation-Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

SUBJECT: REPORT OF ABNORMAL OCCURRENCE PER SECTION 6.6.A OF THE TECHNICAL SPECIFICATIONS
VALVE MO-1501-3A FAILURE TO CONTROL FLOW

References: 1) Regulatory Guide 1.16 Rev. 1 Appendix A

2) Notification of Region III of U. S. Nuclear Regulatory Commission
Telephone: Mr. Johnson, 1500 hours on May 22, 1975
Telegram: Mr. Keppler, 1500 hours on May 22, 1975

3) Drawing Number P & ID M-29

Report Number: 50-237/75-31

Report Date: May 30, 1975

Occurrence Date: May 22, 1975

Facility: Dresden Nuclear Power Station, Morris, Illinois

IDENTIFICATION OF OCCURRENCE

The containment cooling service water valve MO-1501-3A failed to control flow during a scheduled surveillance.

CONDITIONS PRIOR TO OCCURRENCE

At the time of this occurrence, Unit-2 was operating at 890 MWt and 252 MWe.

DESCRIPTION OF OCCURRENCE

At 0500 hours on May 22, 1975 the Instrument Mechanics began LPCI/Containment Cooling logic testing. The MO-1501-3A valve is throttled automatically to maintain service water pressure 20 psig above LPCI/CC system water pressure to minimize the consequences of a heat exchanger tube leak. When the 2A containment cooling service water pump was started, MO-1501-3A continued to give a closed indication while the pump flow indicator was registering 3,000 gpm. The control room operator tried to increase the containment cooling service water flow rate by adjusting the position modulator reference potentiometer. Although there was no immediate

response, approximately one minute later the flow rapidly increased to 3600 gpm. Repeated attempts by the operator to vary the flow by remotely operating the valve failed. A visual check of MO-1501-3A verified that it was open. As the 2A containment cooling service water pump was secured, the motor operator drove the valve closed as per design; however, the motor operator continued to run causing the valve stem to bend and disengage from the Limitorque. The valve had to be electrically racked out in order to stop the motor.

DESIGNATION OF APPARENT CAUSE (Equipment Failure)

Since the recent startup of Unit-2, this particular type of failure has occurred on valve MO-1501-3B. The actual cause has not yet been determined. A supplementary report identifying the cause will be submitted upon completion of the investigation.

ANALYSIS OF OCCURRENCE

When the MO-1501-3A valve failed, it was unable to control flow significantly; consequently the required 20 psig differential was not able to be maintained. However, the cooling capability of the system was still effective since the valve was opened sufficiently to ensure adequate flow.

Despite the loss of differential pressure control, only a tube leak in the heat exchanger could have resulted in a release of contaminated water to the river.

If a tube leak had occurred, the LPCI heat exchanger could have been manually isolated, diverting flow through the bypass line. Therefore, the health and safety of the plant personnel and the public were not jeopardized as a result of this occurrence.

CORRECTIVE ACTION

The new 1" valve stems (previously described in report No. 50-237/75-28) have not yet arrived; consequently the valve still utilized a 3/4" valve stem. At 0630 hours on May 25, 1975 the valve was placed back in service. At 1625 hours the LPCI/CC surveillance test was successfully completed and the valve was declared operable.

A design modification for Units 2 & 3 on valves MO-1501-3A & 3B is being evaluated. A summary of this evaluation will be submitted along with the results of the investigation to determine the cause of failure.

FAILURE DATA

The MO-1501-3A valve is a 12"-300 psi standard globe valve assembly manufactured by Copes-Vulcan, a division of Blaw-Knox Co. The operator is a Limitorque

type SMB-0. One failure of this type has previously occurred for Units 2 & 3. On May 6, 1975 MO-2-1501-3A & 3B failed in an identical manner. For reference, see report No. 50-237/75-28 as mentioned above.

B. B. Stephenson
Superintendent

BBS:GAR:smp

File/NRC