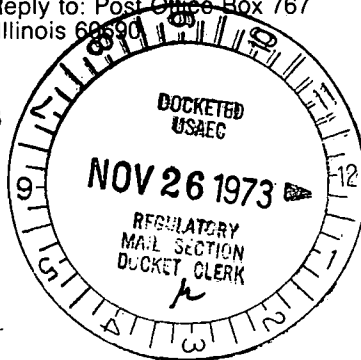




**Commonwealth Edison**  
 One First National Plaza, Chicago, Illinois  
 Address Reply to: Post Office Box 767  
 Chicago, Illinois 60690

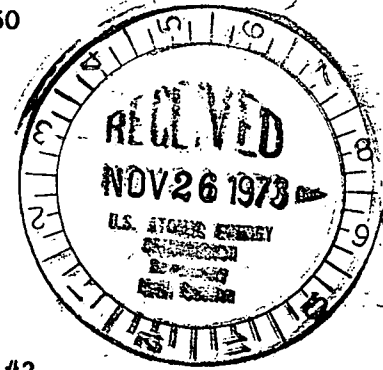
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WPW Ltr.#866-73



Dresden Nuclear Power Station  
 R. R. #1  
 Morris, Illinois 60450  
 November 21, 1973

**Regulatory Docket File**



Mr. J. F. O'Leary, Director  
 Directorate of Licensing  
 U. S. Atomic Energy Commission  
 Washington, D. C. 20545

**SUBJECT: LICENSE DPR-19, DRESDEN NUCLEAR POWER STATION, UNIT #2, REPORT OF UNUSUAL EVENT PER SECTION 6.6.B.2 OF THE TECHNICAL SPECIFICATIONS. MALFUNCTION OF LPCI SYSTEM MO VALVE 1501-3A.**

- References: 1) Notification of Region III of AEC Regulatory Operations  
 Telephone: F. Maura, 1600 hours on October 25, 1973
- 2) Dwgs: P & ID M-29.

Dear Mr. O'Leary:

This letter is to report a condition relating to the operation of the unit at about 1400 hours on October 25, 1973. At this time, Low Pressure Coolant Injection valve 1501-3A failed to open during a maintenance test.

This malfunction is contrary to section 3.5B of the Technical Specifications which requires that both containment cooling systems be operable whenever irradiated fuel is in the reactor.

**PROBLEM**

At the time of the occurrence, the Dresden Instrument Department was performing a functional test on valve 1501-3A on Unit 2. The valve has had a history of failures, and a daily functional test had been initiated to determine the cause of these failures. The reactor was operating at a steady load of 700 MWe at the time of the test. The test consisted of starting the Low Pressure Coolant Injection (LPCI) containment cooling service water pumps and then observing the automatic opening of valve 1501-3A. Valve position and the controller feedback signal were monitored by a recorder during the test. When the failure occurred, it was noted that the feedback polarity was reversed. This condition caused a constant close signal to be developed by the valve controller.

8442

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INVESTIGATION

The valve position feedback potentiometer was inspected, and found to be out of position. The potentiometer is driven by a solid gear assembly which utilizes beveled gears as the final connection to the potentiometer. Investigation revealed that when a strain was placed on the gear drive assembly, the beveled gears separated to a point in which they could easily jump teeth during operation. It is believed that this condition caused the potentiometer to be out of position and thus caused the valve failure.

CORRECTIVE ACTION

The initial corrective action was to install washers on the beveled gear shaft to prevent the gears from coming out of mesh. Also, the chain tension on the sprocket, which drives the local valve position indicator, was loosened to relieve some pressure on the beveled gears. The valve was then tested satisfactorily.

Further action to assure valve operability will be as follows:

1. Continue daily functional testing for an indefinite period of time until a satisfactory performance record is achieved.
2. Inspect the gear mechanism once a month to determine if additional work on the gear mechanism is necessary.
3. Inspect all similar applications to verify that no generic problems exist.

EVALUATION

Public and plant safety was not in jeopardy during the failure of the 2-1501-3A valve. At no time during the failure was the LPCI system declared to be inoperable. The containment cooling system was not declared to be inoperable because this valve could be operated manually at any time. In the case of a LOCA, there would be adequate time to operate this valve manually.

The failure of this valve to open would cause a partial loss of cooling of the torus water by one of the two redundant Containment Cooling Service Water System loops, but would not affect the capability of the LPCI system to inject water into the vessel. Since the Containment Cooling Systems are redundant and the second Containment Cooling System was operational at the time of the failure, continued operation of the unit was considered safe.

Sincerely,

*W. P. Worden*

W. P. Worden  
Superintendent