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Regulatory

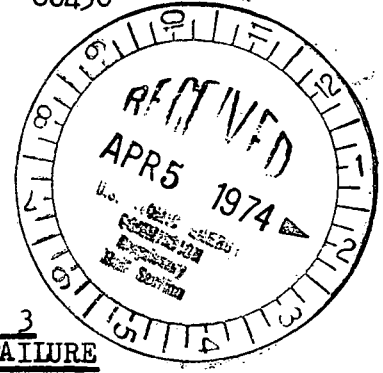
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BBS Ltr #218-74

Dresden Nuclear Power Station
 R. R. #1
 Morris, Illinois 60450
 March 22, 1974

50-249

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



SUBJECT: LICENSE DPR-25, DRESDEN NUCLEAR POWER STATION, UNIT 3
ADDITIONAL INFORMATION ON HPCI STEAM SUPPLY VALVE FAILURE

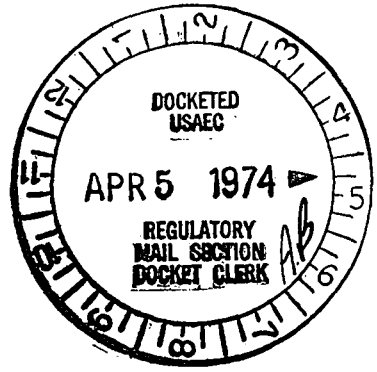
Reference: Dresden Nuclear Power Station, Unit 3
 Letter to Mr. A. Giambusso, dated June 14, 1973

Dear Mr. O'Leary:

This letter is to furnish additional information concerning the disassembly inspection and final corrective action for the failed HPCI steam supply valve, 3-2301-3, as reported June 14, 1973.

Prior to the disassembly and inspection of the HPCI steam supply valve, a representative of Limitorque of Philadelphia Gear Corp. was contacted for assistance in the determination of mode of failure. A meeting was held between Station Electrical Engineering and Limitorque to discuss the problem. The details of the failure were discussed and the cause of the problem was then found to be related to the gearing ratio of the valve.

Because the HPCI steam supply valve is one requiring rapid operation, the gear ratio used is high. Due to the high gear ratio, there exists a lessening of the tolerances between gears, and a slight shift of the valve stem is therefore possible. In this situation, it is possible to over torque the valve stem by holding the valve control in the closed position. Once the valve has reached the closed position and the torque switch opens, valve travel is stopped. However, with a slight shifting of the valve stem possible, the torque switch could reset, allowing further closing torque to be applied. This condition would result in a bent or broken stem if the control switch were held in the closed position longer than necessary.



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Mr. J. F. O'Leary, Director

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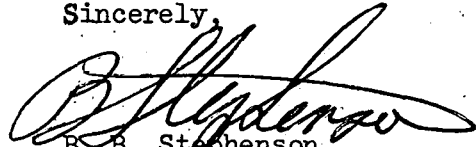
March 22, 1974

In regard to corrective measures, it would be possible to reduce the amount of stem shift by changing the gear ratio. The change, however, would decrease the operational speed of the valve, since a lower gear ratio would be required. Since the HPCI system response time would be decreased, the change was considered to be unacceptable.

Upon disassembly of the valve, it was found that the stem was indeed bent. The inspection of all component parts failed to reveal other possible causes for the problem. It is therefore believed that the cause of the problem is inherent to the high gear ratio used, and that caution in operation is the only corrective action possible. An operating order to caution valve operation has been issued by the operating department.

To return the valve to an operational status, all damaged parts were replaced. In addition, Operations has been informed of the need to release the control switch once the valve has reached its intended position.

Sincerely,



B. B. Stephenson
Superintendent

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