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BBS Ltr.#551-74

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

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

SUBJECT: REPORT OF ABNORMAL OCCURRENCE PER SECTION 6.6.B.1.a OF THE TECHNICAL SPECIFICATIONS.
EXCESSIVE LEAKAGE THROUGH AO-3-1601-21 & 22.

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

2) Notification of Region III of AEC Regulatory Operations
Telephone: Mr. F. Maura, 1630 hours on July 28, 1974 and 1445 hours on July 29, 1974.
Telegram: Mr. J. Keppler, 1613 hours on July 26, 1974 and 1445 hours on July 29, 1974.

3) Drawing Number P&TD M 25

Report Number: 50-249/1974-23 & 24

Report Date: August 1, 1974

Occurrence Date: July 26, 1974

Facility: Dresden Nuclear Power Station, Morris, Illinois

IDENTIFICATION OF OCCURRENCE

Failure of primary containment due to leakage through AO-3-1601-21 & 22.

CONDITIONS PRIOR TO OCCURRENCE

Prior to the occurrence, the unit was in the run mode and operating at an electrical load of about 380 megawatts. Thermal power at the time of discovery was about 1300 megawatts. Local leak rate testing of the rubber seated vent valves was in progress.

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DESCRIPTION OF OCCURRENCE

During an inspection prior to conducting local leak rate testing of the boundary formed by AO valves 3-1601-21, 22, 55, and 56, the rubber coated valve seat for AO-3-1601-22 was found to be cracked. On further investigation, it was found that the AO-3-1601-21 valve also had a cracked rubber coated seat. Leakage through both the 3-1601-22 and 21 valves were excessive.

DESIGNATION OF APPARENT CAUSE OF OCCURRENCE

It is believed that the cause of the occurrence was due to liquid nitrogen reaching both valves. At the time of the occurrence, the heating boiler for the system was shutdown. With heating steam unavailable, it is possible for liquid nitrogen to reach the boundary of the 3-1601-21, 22, 55, and 56 valves.

ANALYSIS OF OCCURRENCE

During the occurrence the safety of the plant and public was not placed in jeopardy. Although primary containment integrity had been lost, secondary containment was completely functional and the standby gas system was operational at the time of the occurrence. The line was blank flanged to restore primary containment integrity immediately following the discovery.

CORRECTIVE ACTION

The immediate corrective action was to initiate an orderly plant shutdown. Following shutdown, the 3-1601-21 valve was replaced and the 3-1601-22 valve was blank flanged. Following repairs, the piping section was leak tested and found to be within limits. To prevent this type of an occurrence in the future, the nitrogen system is being studied to determine a means of preventing liquid nitrogen from reaching the valves during a loss of heating steam. In view of cumulative experience, the corrective action taken was satisfactory.

FAILURE DATA

During the period of the occurrence on Unit 3, a similar failure occurred on Dresden Unit 2. During this occurrence, the 2-1601-21 and 22 valves were also damaged. Again it is believed that liquid nitrogen reached the valves on the unit startup which took place on June 14, 1974.

Sincerely,

D. B. Bauchman
Superintendent

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