



Commonwealth Edison
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50-249

BBS. Ltr.#212-74

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



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, REPORT OF UNUSUAL OCCURRENCE PER SECTION 6.6.B.2 OF THE TECHNICAL SPECIFICATIONS.
PRIMARY CONTAINMENT ISOLATION VALVE LEAKAGE.

- References: 1) Notification of Region III of AEC Regulatory Operations
Telephone: Mr. F. Maura, 1400 hours on March 14, 1974
Telegram: Mr. J. Keppler, 1510 hours on March 14, 1974
- 2) Dwgs: P&ID M-347
- 3) Letter to Mr. A. Giambusso from Mr. W. P. Worden
(WPW Ltr.#468-73) dated June 20, 1973.

Dear Mr. O'Leary:

This letter is to report a condition relating to Local Leak Rate Testing while the unit was shutdown for refueling. The test was conducted on the day shift on March 13, 1974. The tests of feedwater check valves 3-220-58A & 3-220-62A determined that the leakage through each valve was in excess of the Technical Specification limit. This malfunction is contrary to Section 4.7.A.2.f. which specifies that the total leakage rate through any one isolation valve will not exceed 5% L_{T0} (48).

PROBLEM

At the time of the deviation, the unit was shutdown for refueling and LLRT was being conducted.

During testing of the Unit 3 "A" line feedwater check valves on March 13, 1974, excessive leakage was discovered from both tested volumes. One of the tested volumes is bounded by valves 220-57A & 220-58A and the other is bounded by valves 220-57A & 220-62A. The leakage through 220-58A was in excess of that which could be determined by the leak rate test apparatus. The leakage through 220-62A was 2017 scfh, which is above the

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5% LTO (48) or 29.381 scfh maximum leakage allowed through any one isolation valve. Both tests were also in excess of the maximum total allowable leakage (783.493 scfh).

INVESTIGATION

The 18" diameter swing type check valves (220-58A & 220-62A) were disassembled and inspected to determine the cause of the leakage. Upon disassembly it was determined that the "O"ring which seals the valve seat to the valve body was no longer in its groove on either valve. The "O"rings were installed as a modification (M12-3-73-112) in June of 1973 to replace the original stainless steel trim seal ring. The stainless steel seal ring which was located on the periphery of the trim was replaced by a silicone "O"ring on the bottom of the trim.

The silicone "O"ring is 3/16" diameter by 16" I.D. and conforms to MILR-5847 Class 2 Grade 70; Military Specification Rubber, Silicone, Low and High Temperature and Tear Resistant. Class 2 has resistance to extreme high temperature ($\approx 425^{\circ}\text{F}$). The absence of this "O"ring is suspected to be the cause of the excessive leakage.

CORRECTIVE ACTION

The appropriate corrective action has not been determined at this time. The station has requested assistance from Commonwealth Edison's Mechanical & Structural Engineering Department. The appropriate corrective action, pending further review and investigation, will be completed prior to resuming power operation. A follow-up letter, detailing the results of the review and the corrective action, will be submitted following completion of action.

EVALUATIONS

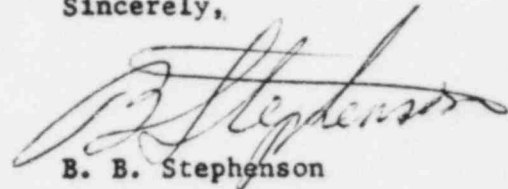
This occurrence did not endanger the safety of the public or of plant personnel. The particular valves in question serve to prevent excessive release of reactor water (vapor) into the reactor or turbine building should the feedwater line break in either of these areas. Should the highly improbable break have occurred, the release would have been minor since the leakage was through a circuitous path by the seal ring. If the leakage was into the secondary containment, the Standby Gas Treatment System offers a sufficient barrier to keep offsite doses within 10CFR100 and station procedures protect plant personnel. If the leakage was into the turbine building, motor operated valves are available to effectively isolate the leak with the exception of two lengths of approximately 12 feet each between the MO valves in the turbine building and secondary containment. The probability of a failure of this piping is so remote as to be considered non credible. Should it have failed station emergency procedures would have been the only protection.

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Cumulative experience on these valves has been poor regarding leak rate tests. As mentioned above, the Unit 3 valves were modified to produce a better seal at the low test pressure of 48 psig and retain equally effective sealing at high differential pressures.

In view of this occurrence and previous attempts to correct the problem, a review will be conducted to determine the appropriate corrective action. Following completion of the review, the check valves in the "B" feedwater line will be tested and repaired or revised in accordance with the review's determination of the appropriate corrective action.

Sincerely,

A handwritten signature in cursive script, appearing to read "B. B. Stephenson", written in dark ink.

B. B. Stephenson

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