



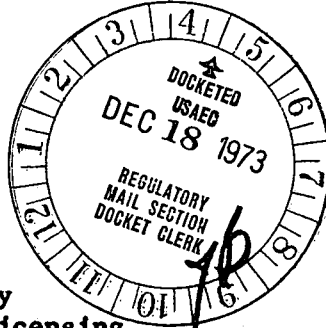
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Regulatory

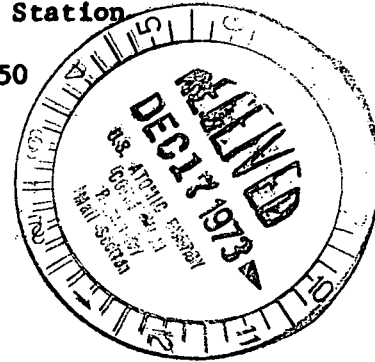
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WPW Ltr.#913-73



Dresden Nuclear Power Station
 R. R. #1
 Morris, Illinois 60450
 December 12, 1973



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

SUBJECT: LICENSE DPR-19, DRESDEN NUCLEAR POWER STATION, UNIT #2, REPORT OF ABNORMAL OCCURRENCES PER SECTION 6.6.B.1.a OF THE TECHNICAL SPECIFICATIONS, HPCI DRAIN LINE LEAK AND TORUS HIGH LEVEL RESULTING FROM VALVE LINEUP SUBSEQUENT TO REPAIRS.

References: 1) Notification of Region III of AEC Regulatory Operations
 Telephone: Mr. Maura, 1505 hours on December 3, 1973 and
 1400 hours on December 4, 1973.
 Telegram: Mr. Keppler, 1535 hours on December 3, 1973 and
 1530 hours on December 4, 1973.

2) Dwgs: P & ID M-40,51

Dear Mr. O'Leary:

This letter is to report a condition relating to the operation of the unit at about 0900 hours on December 3, 1973. At this time it was noted that a HPCI drain pot drain line was blowing steam at a 90° elbow. In order to make repairs to this line, a different line was used for drainage. The drainage was directed to the torus during and after repairs. This drainage caused an increase in torus water level above established limits. These malfunctions are contrary to section 1.A.5 of the Technical Specifications which defines an abnormal occurrence as an abnormal degradation of a boundary designed to contain the radioactive material resulting from the fission process and section 3.7.A.1 which requires that a torus maximum water volume of 115,655 ft.³ be maintained.

PROBLEM

The unit was operating at 735 MWe with steady state conditions. At 0900 hours on December 3 it was noted in the Unit #2 turbine building walkway that the HPCI drain pot drain line 2-2323-1"-LX was leaking steam at a 90° elbow where the line penetrates a shield wall to enter the condenser. Because of the manner in which the line is situated, it is tied directly to the condenser from the HPCI drain pot with isolation valves upstream of the leak which prevents condenser vacuum from being isolated from the affected area of the line. At 1315 hours, the valve lineup was changed such that drainage was directed to the torus instead of the condenser and the segment of line isolated so that the elbow was under a vacuum. Close inspection

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indicated that a pinhole had been washed out. Temporary repairs were completed by 2200 hours December 3. The valve lineup, however, was not changed back to condenser drainage. Instead, the water continued to the torus, and at 0715 hours, December 4, the torus water high level alarm annunciated. The water level reached a maximum level of -1 inch. This exceeds Technical Specification limits by one-half inch, which is equal to approximately 310 ft.³. At 0740 hours, the valve lineup was changed. At 0850 hours, the operating shift began pumping down Unit #2 torus to Unit #3 torus. Ten minutes later at 0900 hours, the Unit #2 torus water level was down to -1.75 inches, which is within Technical Specification limits.

INVESTIGATION

Investigation of the leaking elbow showed steam was blowing through the line under pressure. The trap in the drain pot discharge line should eliminate any steam blowing down this line. The trap has a one inch bypass valve which if it was leaking could also cause this steam. Either inadequate trap performance or bypass valve leakage could be the main reason for this erosion problem.

The torus high level condition resulted from not changing the valve lineup when the repairs to the drain pot drain line were completed. The water level continued to increase until the alarm came up indicating the torus level had exceeded Technical Specification limits.

CORRECTIVE ACTION

Because the line is tied directly to the condenser from the drain pot, this segment of line can't be isolated and will always be under a vacuum from the condenser. The line was temporarily repaired by 2200 hours December 3. This temporary fix only lasted approximately 2.5 days, however, and the line was taken out of service at 0800 hours on December 6 to make another repair. This time repairs consisted of seal welding a one inch pipe coupling around the leak and sealing with a pipe plug (Fig.1). These repairs were completed by 1407 hours on December 7, 1973. During the next extended unit outage, this segment of carbon steel line and elbows will be replaced with stainless steel pipe. At the same time, as many fittings as possible will be removed to decrease the opportunities for erosion. The drain pot trap and trap bypass valve will be inspected for proper operation.

The operating department personnel were aware of the drain valve lineup. However, they failed to change the valving when the initial temporary repair was completed. Station management reviewed the incident with involved personnel and made them aware of the Technical Specification limitations and the breakdown in communication between shifts. To ensure that this situation does not recur, the torus high water level annunciator was reset to initiate at -2 inches versus the present -1.5 inches. This will allow the operator 0.5 inch before the high Technical Specification limit is violated. The low level was also changed from -5 inches to -4 inches to give the operator more time to respond to a torus low water condition.

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EVALUATION

The leaking elbow has no affect on the HPCI system operability. The system is still capable of its intended function. This is the first time this line has developed a leak on Unit #2. Similar occurrences have, however, occurred on Unit #3. On Unit #3, each time the failed segment of line was replaced with similar material. For this occurrence on Unit #2, however, the failed line will be replaced with stainless steel and an effort will be made to minimize elbows to reduce erosion. An inspection of the drain pot trap and bypass valve will also be made. These inspections and modifications should alleviate the problem and ensure no recurrences.

The high water level condition did not jeopardize the public safety or health because pressure suppression chamber free volume reduction was not enough to result in containment pressures above design figures in the event a LOCA had occurred. The 310 ft.³ of water added to the torus water volume would result in an estimated pressure increase of 0.127 psig (assuming gas law relationship) above the containment pressure of 48 psig expected during a LOCA. The containment design pressure is 62 psig.

These corrective actions and evaluations are believed adequate and therefore warrant continued operation as being safe.

Sincerely,

W. P. Worden

W. P. Worden
Superintendent

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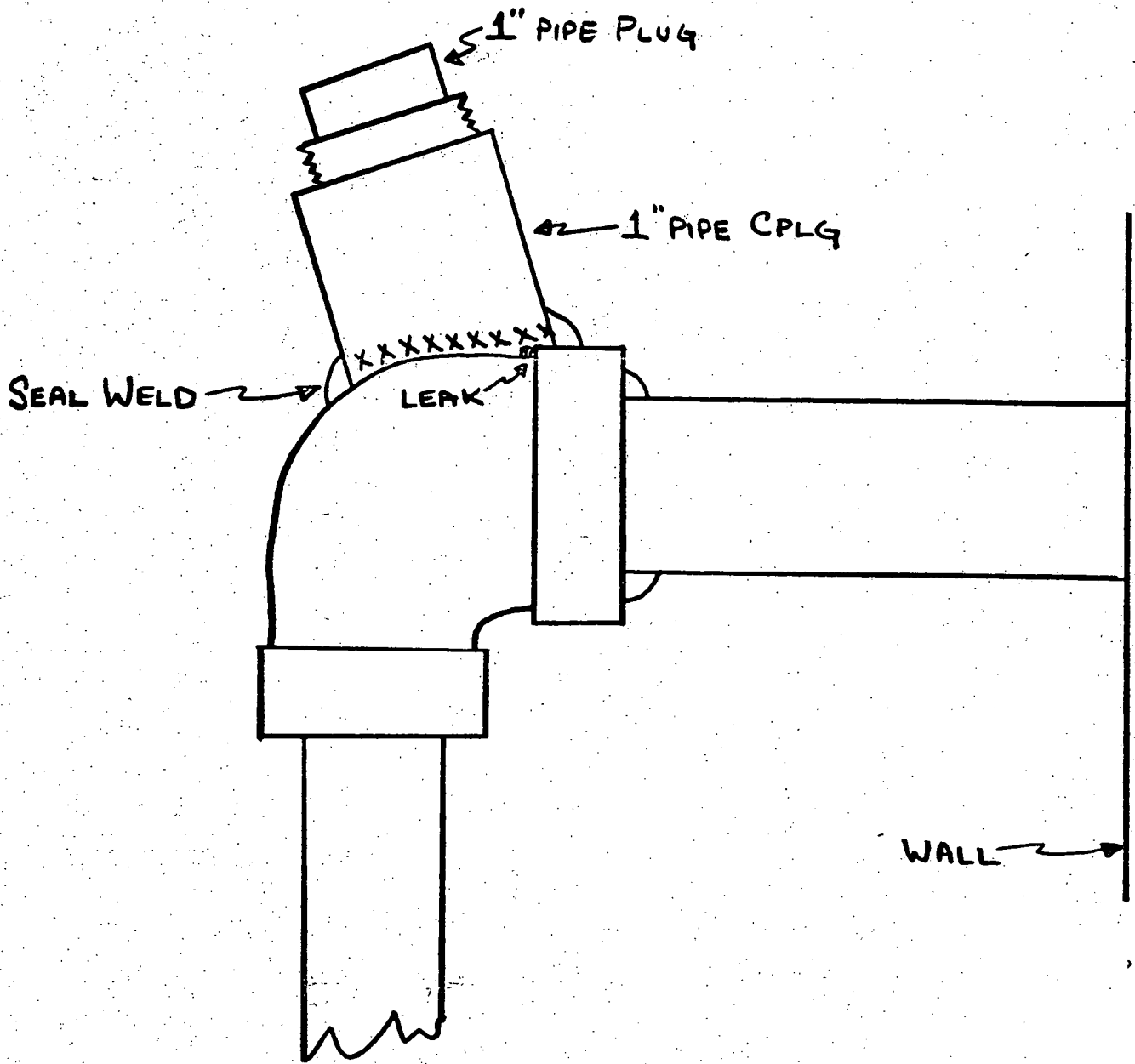


FIG. 1

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