Regulatory File Cy.

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Commonwealth Edison Company

ONE FIRST NATIONAL PLAZA ★ CHICAGO, ILLINOIS

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

June 4, 1971

Dr. Peter A. Morris, Director
Division of Reactor Licensing
U.S. Atomic Energy Commission
Washington, D.C. 20545

SUBJECT: LICENSE DPR-19, DRESDEN NUCLEAR POWER STATION UNIT #2, SECTION 6.6.B.3 OF THE TECHNICAL SPECIFICATIONS

Dear Dr. Morris:

This is to report an abnormal occurrence at the station which involved the unplanned release of radioactive material from the site when a pipe ruptured during a surveillance test of the HPCI system. Additionally, the HPCI steam supply valve MO2-2301-3 failed to close completely following the test.

Problem, Investigation, and Corrective Actions

Following inspection and overhaul of the HPCI turbine during the recently completed refueling outage, a surveillance test of the HPCI system was conducted on May 27, 1971 at approximately 6$\frac{00}{}$ am to demonstrate system operability. The test involved pumping water from the condensate storage tank and returning it to the condensate storage tank via a test line. Following initiation of the system, an unexpected decrease in storage tank level was noted, and the HPCI was shutdown.

Investigation revealed that the test return line to the condensate storage tank had ruptured just outside the storage tank upstream of a manual isolation valve. The manual isolation valve, which is located at the end of the test line just before it enters the condensate storage tank was found in the closed position. The test line is aluminum class 150, 18 inch pipe with a wall thickness of 3/8 inches, and is not designed to withstand HPCI pump discharge pressure. Proper operation is with the manual isolation valve open, and consequently, the test line is not normally subjected to pump discharge pressure.

Rupture of the test line released an estimated 15,000 gallons of condensate storage tank water containing approximately 10^4 pCi/l to the surrounding area. The major portion of the water flowed across the ground surface to a storm sewer and then to the Illinois River via the Unit 1 circulating water canal. Estimated activity of the release leaving the plant boundary, after dilution with circulating water, was calculated to be approximately 70 pCi/l, including river background of approximately 10 pCi/l. Analyses of daily composite samples of intake and discharge water indicated no significant increase above those values routinely reported. Additionally an isotopic analysis was performed on the storage tank water. The results indicate that the activity was primarily Co_{58} and Co_{60} and that the concentration of the identified radionuclides was only about two-tenths of that permitted

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by 10 CFR 20. Station portable instruments were also used to survey the spill area. No contamination was detected as a result of these surveys. However, when soils samples were counted on sensitive laboratory equipment, slight contamination was detected. It is therefore concluded that the release did not cause a hazard to the public. The section of ruptured pipe is being replaced.

A review of the HPCI system valve check list indicated that the test line manual isolation valve had been omitted. The check list was revised to include the test line manual isolation valve.

In addition to the pipe rupture, the HPCI steam supply valve MO2-2301-3 malfunctioned during the surveillance test. Upon actuation of the HPCI system, the valve opened properly. When it was given a close signal, it started to close, but stopped approximately three inches from the seat. The valve was disassembled and found to have a bent stem, and a galled disc and guide. It was concluded that the guide clearance was too small, and it galled during valve closure, causing the valve to stop. Continued operation of the motor operator against the stuck valve caused the valve stem to bend.

The bent stem was straightened, the galled disc and guide were "cleaned up" and the guide clearance increased.

Sincerely,

H.K. Hoyt

H. K. Hoyt
Superintendent

HKH:glt

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