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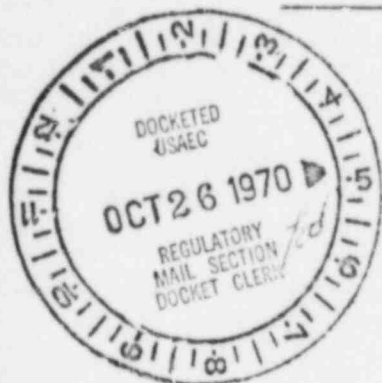


# Commonwealth Edison Company

ONE FIRST NATIONAL PLAZA ★ CHICAGO, ILLINOIS

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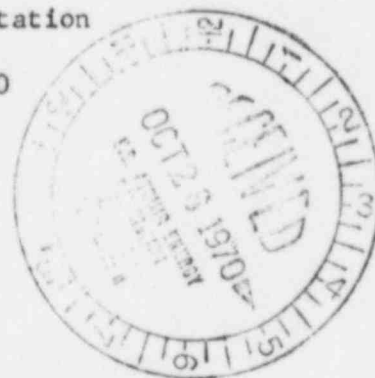


Dresden Nuclear Power Station

R.R. #1

Morris, Illinois 60450

October 22, 1970



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 a condition relating to the operation of the station in which on October 15, 1970, at approximately 6:00 p.m., an unplanned release of a small amount of radioactive liquid waste resulted from heating boiler blowdown after the plant heating system water had been contaminated.

## Problem, Investigation, and Corrective Action

The Unit 2/3 radwaste concentrator is operated on heating steam from the plant heating system. The heating steam condensate return has a two way valve, controlled by condensate conductivity, which normally returns the condensate to the heating boiler if conductivity is less than 2  $\mu$ mho/cm. If the conductivity is greater than 2  $\mu$ mho/cm, the condensate is diverted to the waste collector.

Prior to the occurrence the condensate return was being routed to the waste collector because of high conductivity. Considerable difficulties had been experienced with this conductivity cell and its accuracy was questionable. On October 13, 1970, at approximately 2400 hours, the conductivity cell indicated a step increase and remained upscale. To determine accuracy of the cell, and to determine if the condensate could be routed back to the heating boiler, a sample was collected from the concentrator's heating system condensate return on October 14, 1970, and analyzed in the laboratory for conductivity and radioactivity. The sample verified the accuracy of the conductivity cell, but also showed a level of radioactivity of 512 pCi/l. At that time the waste concentrator was shutdown.

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October 22, 1970

A sample of the heating boiler water was taken at approximately 4:00 p.m. on October 15, 1970, and analysis indicated that it contained an activity of approximately  $3 \times 10^5$  pCi/l. Upon receiving the results of the analysis at 6:45 p.m., the Shift Engineer ordered the operator not to blow down the heating boiler. At that time the operator informed the shift engineer that he had just blown down the boiler. He estimated that his blowdown had reduced the boiler drum water level by about 4 inches and that the blowdown had been of about 5 minutes duration.

Investigation of the occurrence revealed that a discharge rate of approximately 27 gallons per minute of heating boiler water, in conjunction with normal planned release in progress at the time, resulted in an activity discharge rate in the discharge canal of approximately 276 pCi/l for about five minutes.

The source of the radioactivity in the heating boiler water is presently believed to have been leakage from the waste concentrator. Investigation and testing the following day indicated that the waste concentrator had numerous leaks, both in the shell and tube bundle.

The occurrence was reviewed by the station review board the following day, October 16, 1970. The review board considered the procedures used to terminate the release were appropriate. A procedure was formulated to clean up the heating boiler system by draining to radwaste, refilling, operating the boiler to concentrate activity, draining, refilling, etc.

Investigation will continue to confirm the source of the heating boiler water activity. The leaking concentrator will be replaced by a new concentrator. Investigation will continue into the cause of the failure of the waste concentrator.

*H. K. Hoyt*  
H. K. Hoyt

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