



Commonwealth Edison
Quad-Cities Generating Station
Post Office Box 216
Cordova, Illinois 61242
Telephone 309/654-2241



NJK-74-11

March 25, 1974

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

Subject: Quad-Cities Nuclear Power Station, Unit 1
Docket No. 50-254
DPR-29, Appendix A, Section 6.6.B.2.b

Dear Mr. O'Leary:

The purpose of this letter is to report a variance in the performance of the Residual Heat Removal (RHR) system from that implied by the FSAR. Recent experience with a heat exchanger leak resulted in torus water leaking to the service water piping and being discharged to the river with the subsequent startup of the service water system. The FSAR states that reactor water leakage into the service water system is prevented by maintaining a higher pressure on the service water, or tube, side of the heat exchanger while the service water system is in operation. With the shell side of the heat exchanger constantly pressurized by the ECCS Fill System, the purpose of this design feature is defeated when a tube to shell side leak exists and the service water pumps are off.

DESCRIPTION OF EVENT

On February 23, 1974 repairs were completed to a tube-to-shell side gasket in the 1B RHR system heat exchanger. When the heat exchanger was returned to service, an RHR service water pump was started and a spike from 200 to 1000 cps was immediately received on the service water process radiation monitor.

EVALUATION

A calculation of the concentration in the discharge bay could not be made with any degree of accuracy due to the transient nature of the monitor spike and flows involved. The duration of the spike

B306130127 740325
PDR ADOCK 05000254
S PDR

COPY SENT REGION

Handwritten: 1111
9-254

2646

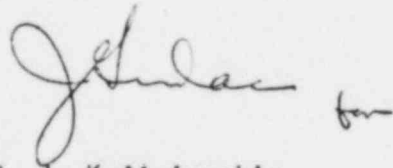
March 25, 1974

was estimated to be only a few seconds since the monitor reading was decreasing to normal when the operator observed it after receiving the alarm. A sample of the water in the heat exchanger before the repair was analyzed and the most significant isotopes present were determined to be I-131 (2.39×10^{-5} uC/ml), Cs-134 (5.00×10^{-4} uC/ml) and Cs-137 (1.19×10^{-3} uC/ml). However, the heat exchanger had been drained for maintenance after that sample was obtained. In summary, due to the small volume of water discharged and the short duration of the release, it was concluded that this should be classified as an unusual event to report the design performance of the RHR system rather than an uncontrolled release. This conclusion has been discussed with the Directorate of Regulatory Operations-Region III.

Although in this case the cause of the Process Radiation Monitor alarm was readily apparent, the annunciator response procedure will be reviewed to insure that it leads to the early detection of heat exchanger leaks. The surveillance procedure for the RHR Service Water System will also be revised to include a check of the process radiation monitor recorder after each pump operation. Any detectable increase in reading would then lead to a more thorough investigation and timely repair of the leak to minimize the frequency of releases of this nature.

Very truly yours,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION



N. J. Kalivianakis
Station Superintendent

NJK/1k

cc: Regional Director
Directorate of Regulatory Operations - Region III