



Commonwealth Edison  
Quad-Cities Generating Station  
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NJK-74-28

April 9, 1974

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

Reference: Quad-Cities Nuclear Power Station, Unit 1  
Docket No. 50-254, DPR-29, Appendix A  
Section 1.0.A.3

Dear Mr. O'Leary:

The purpose of this letter is to inform you of the details of a break in the radioactive waste discharge pipe on March 27, 1974. This occurrence was previously reported to you by telegram on April 1, 1974, and was discussed with Region III Regulatory Operations personnel by telephone that same day.

#### PROBLEM AND INVESTIGATION

At 9:00 on March 27, 1974 a caisson to be used for concrete support of the new radwaste building was driven into the ground near the southwest corner of the present radwaste building. Vibrations and impact of this caisson on the radwaste discharge pipe caused the pipe to be severed at the radwaste building wall. This pipe break was not actually discovered until the afternoon of March 31, 1974, when contractors' personnel observed bubbling in standing water around the caisson. The radiation protection department was notified of the situation on April 1, 1974 at 7:35 a.m. Immediately liquid radwaste discharge was terminated and the area was surveyed with end-window GM meters and found to be slightly contaminated. Station construction was notified and the area in the vicinity was excavated which revealed the broken discharge pipe.

#### CAUSES AND CORRECTIVE ACTIONS

On the morning of April 1, 1974, station construction department hooked up a temporary steel pipe and fire hose to re-connect the radwaste discharge line. This was found to be

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satisfactory for temporarily discharging liquid radwaste. Radiation protection personnel surveyed the temporary line and found that the line did not leak. The area was roped off and identified as a radioactive materials area.

On the morning of April 7, 1974 a permanent 316 stainless steel pipe was connected to the radwaste discharge effluent line at the building wall to replace the temporary line. Approximately 50 feet of the line was replaced. This covers the portion that will be under the new radwaste building and the roadway.

#### SAFETY IMPLICATIONS

During the time period March 27, 1974 to April 1, 1974, approximately 118,000 gallons of liquid radioactive waste was discharged into the sand-sediments on the south side of the radwaste building. The total activity discharged into the sand was approximately 0.191 curies. Station construction barrelled thirteen 55-gallon barrels with sand which was reading 1000-2000 counts per minute. These barrels were sealed and shipped from the site as low level radwaste.

On the morning of April 1, 1974 three sediment samples were taken in the trench near the broken discharge line at a depth of 1 meter. These samples were taken after station construction had barrelled 13 barrels of sand.

The results of the activity in these sand samples as analyzed by Ge(Li) detection were as follows:

<u>Sample</u>	<u>Location</u>	<u>Sample Size(g)</u>	<u>Sample Size(cm<sup>2</sup>)</u>		<u>uCi/g</u>	<u>pCi/cm<sup>2</sup></u>
A	1 meter below surface	20	38	Cs-136	1.69X10 <sup>-4</sup>	
				Cs-137	21.67X10 <sup>-4</sup>	
				Cs-134	12.60X10 <sup>-4</sup>	
				I-131	0.68X10 <sup>-4</sup>	
				Total	36.54X10 <sup>-4</sup>	9.65X10 <sup>-2</sup>
B	1.5 meters below surface	22	40	Cs-136	1.03X10 <sup>-4</sup>	
				Cs-137	11.80X10 <sup>-4</sup>	
				Cs-134	6.98X10 <sup>-4</sup>	
				I-131	0.95X10 <sup>-4</sup>	
				Total	2.08X10 <sup>-4</sup>	5.20X10 <sup>-2</sup>

In addition water samples were taken in well #1 and well #5 onsite at Quad-Cities Nuclear Power Station. The results of Ge(Li) analysis indicated that no appreciable activity above background existed.

Mr. J. F. O'Leary

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Water samples were taken on April 4th in three caissons in the area of the broken line. Also, sediment samples were taken at 0.3, 0.5, 1.0, 1.5, 2.0 and 2.5 meters below the spill. On April 5th, three other sediment samples were taken at 0.3 meters below the surface at distances of 5 to 10 meters from the point at which the line was severed. Analysis of these samples at the site indicate no significant activity above background levels. Additionally, Eberline Instrument Company will be analyzing portions of these same samples.

Eberline will also be sampling water wells at various places routinely in the following month to determine any contamination above background levels.


Results of any analyses which are above background levels will be reported in a timely manner.

CUMULATIVE EXPERIENCE

There has been no previous failure of the radwaste discharge line at Quad-Cities Station. It is felt that the new stainless steel line installed along with caution practiced by construction personnel while working in this area should eliminate any further occurrences of this type.

Very truly yours,

COMMONWEALTH EDISON COMPANY  
QUAD-CITIES NUCLEAR POWER STATION

  
N. J. Kalivianakis  
Station Superintendent

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cc: Region III, Directorate of Regulatory Operations  
J. S. Abel