LICENSEE EVENT REPORT

CONTROL BLOCK: [ ] (1–6)

(PLEASE PRINT ALL REQUIRED INFORMATION)

LICENSEE NAME	LICENSE NUMBER	LICENSE TYPE	EVENT TYPE
01 ILQAD1 (7–8, 9–14)	00-00000-00 (15–25)	4 1 1 (26–30)	0 1 (31–32)

CON'T	CATEGORY	REPORT TYPE	REPORT SOURCE	DOCKET NUMBER	EVENT DATE	REPORT DATE
01 (7–8)	D I (57–58)	T (59)	L (60)	0 5 0 - 0 2 5 4 (61–68)	1 0 2 0 7 5 (69–74)	1 0 1 0 7 5 (75–80)

EVENT DESCRIPTION

02 RADWASTE DISCHARGE BATCH 3709 WAS DISCHARGED AT A
03 RATE WHICH RESULTED IN AN ACTIVITY OF 4.42×10^{-7} μci/ml IN
04 THE BLOWDOWN DIFFUSER, DUE TO A MISCALCULATED
05 SET FURNISHED BY THE RADIATION PROTECTION DEPARTMENT.
06 UNIT 1 WAS IN RUN MODE AND UNIT 2 WAS IN REFUEL.

	SYSTEM CODE	CAUSE CODE	COMPONENT CODE	PRIME COMPONENT SUPPLIER	COMPONENT MANUFACTURER	VIOLATION
07	M A (10)	A (11)	X X X X X X (12–17)	Z (43)	Z 9 9 9 (44–47)	N (48)

CAUSE DESCRIPTION

08 The RADIATION PROTECTION MAN MISCALCULATED THE DILUTION
09 RATE BY A FACTOR OF 10. The SHIFT ENGINEER DID NOT CHECK THE CAL-
10 CULATION. A graphical verification method is being developed.

	FACILITY STATUS	% POWER	OTHER STATUS	METHOD OF DISCOVERY	DISCOVERY DESCRIPTION
11	E (9)	073 (10–12)	NA (13–44)	B (45)	MONTHLY DATA REDUCTION (46–80)

	FORM OF ACTIVITY RELEASED	CONTENT OF RELEASE	AMOUNT OF ACTIVITY	LOCATION OF RELEASE
12	L (9)	M (10)	3.8 millicurie Total (11–44)	BLOWDOWN line TO RIVER. Normal line (45–80)

PERSONNEL EXPOSURES

NUMBER	TYPE	DESCRIPTION
000 (7–9, 10–11)	Z (12)	NA (13–80)

PERSONNEL INJURIES

NUMBER	DESCRIPTION
000 (7–9, 10–11)	NA (12–80)

OFFSITE CONSEQUENCES

15 NONE-ADDITIONAL RIVER DILUTION TO BELOW 10CFR20 LIMITS

LOSS OR DAMAGE TO FACILITY

TYPE	DESCRIPTION
Z (7–9)	NA (10–80)

PUBLICITY

17 NA

8306160213 751030
PDR ADOCK 05000265
S PDR

ADDITIONAL FACTORS

18 EVENT DISCRIPTION (CONT'D) (AO-50-254/75-22)
19 NA

NAME: R. FLESSNER PHONE: [redacted]

GPO 881-667

REPORT NUMBER: AO 50-254/75-22

REPORT DATE: October 30, 1975

OCCURRENCE DATE: October 20, 1975

FACILITY: Quad-Cities Nuclear Power Station
Cordova, Illinois 61242

IDENTIFICATION OF OCCURRENCE:

Activity greater than 1.0×10^{-7} uCi/ml above background in the discharge bay.

CONDITIONS PRIOR TO OCCURRENCE:

Unit 1 was in the RUN mode operating at a steady power level of 1830 MWT and 578 MWE. Unit 2 was in the cold shutdown condition for a scheduled core maintenance outage.

DESCRIPTION OF OCCURRENCE:

On October 20, 1975, at 9:00AM, while preparing the monthly radwaste discharge report as required by the Technical Specifications, it was discovered that Laundry Drain Sample Tank Batch 3709 had been discharged at a rate such that Technical Specification 3.8.D.2.a had been exceeded on October 4, 1975. This batch consisted of 950 gallons and had been discharged through the spray canal blowdown line. The Technical Specifications limit the liquid radwaste discharge activity to 1.0×10^{-7} uCi/ml above background in the discharge bay. The monthly report preparation showed the discharge activity had been 4.42×10^{-7} uCi/ml for that particular batch.

An isotopic analysis was made on Batch 3709 to identify the isotopes released. On October 20, 1975, this data was used to determine if 10 CFR 20 limits had been exceeded. Using Maximum Permissible Concentrations (MPC) of each isotope identified as listed in Table II, column 2, Appendix B of 10 CFR 20, and a value of 1×10^{-7} uCi/ml for the Maximum Permissible Concentration in water (MPC_w) of the unidentified activity, the calculations showed an overall release value of 141% of the average MPC_w.

DESIGNATION OF APPARENT CAUSE:

Personnel Performance - The apparent cause of this occurrence was a personnel error in calculating the discharge rate prior to the actual liquid radwaste release to the Mississippi River.

ANALYSIS OF OCCURRENCE:

The Radiation Chemistry Department calculates a conservative radwaste discharge rate which would result in an activity of 1×10^{-8} uCi/ml in the discharge to the river. This method provides a safety factor of 10 for radwaste discharge rates. The Shift Engineer has the authority to increase the discharge rate by a factor of up to 7.5.

Monthly radwaste discharge report calculations determined the allowable Batch 3709 discharge rate to be .33 gpm. The error by the Radiation Protection man had resulted in an erroneous discharge rate of 3.3 gpm. The Shift Engineer had authorized an increase in the discharge rate from 3.3 gpm to 16 gpm. The actual discharge rate had been 14.6 gpm. The batch release had been composed of the following nuclides:

Nuclide	Fraction of MPC_W
I-131	4.4×10^{-4}
CS-134	1.7×10^{-3}
CS-137	1.4×10^{-3}
Zr-Nb-95	2.3×10^{-4}
CO-58	2.2×10^{-4}
CO-60	7.4×10^{-3}
Unidentified	1.4
Total	1.41

The safety implications of this occurrence were minimized by the fact that there was extensive dilution of the liquid radwaste discharge upon its release to the Mississippi River because of the ratio of the low flow through the canal blowdown line to the much larger flow of the river. Based on the slightly excessive fraction of MPC_W discharge, the extreme volume of dilution water, and the short duration of the release, no effects on the health and safety of the public resulted from this occurrence.

CORRECTIVE ACTION:

A graphic method of checking the calculated rate will be developed and added to station procedures for use by the shift engineers. This method of verifying the discharge rate should preclude a repetition of this occurrence.

FAILURE DATA:

A similar occurrence (AO 50-265/74-18) was discovered on July 22, 1974, when during the preparation of the monthly radwaste discharge report, it was found that, during June of 1974, three tank discharges had exceeded Technical Specification radwaste discharge limits. At that time, the discharge rate was too low to be accurately controlled, and consequently the limit was exceeded.

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

NJK-75-542

October 30, 1975

Director of Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Reference: Quad-Cities Nuclear Power Station
Docket No. 50-254, DPR-29, Unit 1
Appendix A, Sections 1.0.A.2, 3.8.D.2.a, 6.6.B.1.a

Enclosed please find Abnormal Occurrence Report No. AO 50-254/75-22 for Quad-Cities Nuclear Power Station. This occurrence was previously reported to Region III, Office of Inspection and Enforcement by telephone on October 20, 1975 and to you and Region III, Office of Inspection and Enforcement by telecopy on October 20, 1975.

This report is submitted to you in accordance with the requirements of Technical Specification 6.6.B.1.a.

Very truly yours,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

N. J. Kalivianakis
Station Superintendent

NJK/RAF/lk

cc: Region III, Office of Inspection and Enforcement
G. A. Abrell

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