NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Limerick Generating Station Unit 1	0 5 0 0 0 3 5 2	1 OF 0 4

TITLE (4) Control Room HVAC Isolation Resulting from a High Chlorine Concentration Signal Believed to have been caused by Rainwater Contacting an Analyzer Probe

EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR		SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
0 5	1 1	8 8	8 8	–	0 1 8	– 0 0	0 6	1 0	8 8		0 5 0 0 0
											0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	1 0	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Charles A. Mengers, Senior Engineer, Licensing Section	AREA CODE 2 1 5 8 4 1 – 5 1 8 4

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

Abstract:

On May 11, 1988 at 1448 hours, the main control room ventilation system isolated due to a 'C' channel high chlorine concentration signal. The 'A' train of the Control Room Emergency Fresh Air Supply (CREFAS) system, an Engineered Safety Feature, initiated as designed. The event occurred during rainy and windy weather conditions and the high chlorine concentration signal is believed to have been caused by rainwater coming in contact with the chlorine analyzer probe resulting in a chemical imbalance in the probe's electrolyte. The analyzer probes are located close to the outside air intake plenum. After the 'C' channel chlorine indicator spiked, the control room operators implemented Special Event Procedure SE-2 (Toxic Gas Procedure). A channel check of the 'A', 'B' and 'D' chlorine detectors was performed by Operations personnel and verified to be normal. Following the spike all chlorine channels indicated normal levels (less than 0.1 ppm). The isolation was reset at 1552 hours. The duration of the Control Room isolation was 1 hour 4 minutes. There was no chlorine intake to the control room. There was no release of radioactive material to the environment as a result of this event. A modification to CREFAS is currently being reevaluated due to the manufacturer of the chlorine detectors going out of business. A supplemental report will be issued when a new implementation date for the modification has been determined.

IE22

1/1

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Limerick Generating Station Unit 1	0 5 0 0 0 3 5 2	8 8	— 0 1 8	— 0 0	0 2 OF 0 4

TEXT (If more space is required, use additional NRC Form 366A's) (17)

Unit Conditions Prior to the Event:

Operating Mode 1 (Power Operation)

Reactor Power 90%

Description of the Event:

On May 11, 1988 at 1448 hours, the main control room ventilation system isolated due to a 'C' channel high chlorine concentration signal.

The 'A' train of the Control Room Emergency Fresh Air Supply (CREFAS) system, an Engineered Safety Feature, started as designed when the 'C' channel chlorine analyzer spiked to approximately 0.50 ppm for approximately 60 seconds. After the isolation control room operators implemented Special Event Procedure SE-2 (Toxic Gas Procedure). A channel check of the 'A', 'B' and 'D' chlorine detectors was performed by Operations personnel and verified to be normal. Instrumentation and Controls (I&C) was notified to inspect the chlorine detection system to determine the cause of the isolation signal. The isolation was reset and normal control room ventilation was restored by 1552 hours. The duration of the Control Room isolation was 1 hour and 4 minutes.

Consequences of the Event:

Normal control room ventilation system tripped and isolated. The 'A' train of the CREFAS responded as designed. The 'B' train of the CREFAS was in standby and available for operation. There was no chlorine intake to the main control room. If actual chlorine was detected, the chlorine detection system was available and would have responded as designed. There was no release of radioactive material to the environment as a result of this event.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Limerick Generating Station Unit 1	0 5 0 0 0 3 5 2	8 8	— 0 1 8	— 0 0	0 3 OF 0 4

TEXT (If more space is required, use additional NRC Form 366A's) (17)

Cause of the Event:

The cause of the main control room ventilation system isolation and initiation of the 'A' train of CREFAS is believed to have been caused by rainwater coming in contact with the 'C' chlorine analyzer probe during rainy and windy weather conditions. This caused a chemical imbalance in the probe's electrolyte which simulated a high chlorine condition. The probe is located approximately one foot away from the outside air intake louvers of the Control Enclosure intake plenum.

Corrective Actions:

Control room personnel implemented Special Event Procedure SE-2 (Toxic Gas Procedure) immediately following the isolation until the signal was confirmed as false. Following the spike Operations personnel verified that all four chlorine detector channels ('A', 'B', 'C' and 'D') indicated chlorine concentration levels below the alarm setpoint. The main control room ventilation system isolation was reset at 1552 hours and normal control room ventilation restored.

Actions Taken to Prevent Recurrence:

A modification to CREFAS, scheduled for implementation on July 15, 1988, is currently being reevaluated because the manufacturer of the chlorine detectors (Anacon) went out of business on April 29, 1988. A supplemental report will be issued when a new implementation date for the modification has been determined.

EIIS Codes:

Control Room Ventilation - (VI)

Analyzer - (AE)

CREFAS - (VI)

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Limerick Generating Station Unit 1	0 5 0 0 0 3 5 2	8 8	— 0 1 8	— 0 0	0 4 OF 0 4

TEXT (If more space is required, use additional NRC Form 366A's) (17)

Previous Similar Occurrences:

Limerick LERS 86-46, 87-03, 87-06, 87-09, 87-051 and 88-014 reported CREFAS actuations resulting from a false 'C' or 'D' channel high chlorine concentration signal during rainy weather conditions.

Tracking Codes: (C) External Cause

(B99) Design Deficiency

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4000

10 CFR Part 50
Section 73

June 10, 1988

Docket No. 50-352

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: Licensee Event Report
Limerick Generating Station - Unit 1

This LER reports an automatic actuation of the Control Room Emergency Fresh Air Supply (CREFAS) system, an Engineering Safety Feature, resulting from a chlorine concentration signal believed to be caused by rainwater contacting a chlorine analyzer probe.

Reference:	Docket No. 50-352
Report Number:	88-018
Revision Number:	00
Event Date:	May 11, 1988
Report Date:	June 10, 1988
Facility:	Limerick Generating Station P.O. Box A, Sanatoga, PA 19464

This LER is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(iv).

Very truly yours,

R. H. Logue
Assistant to the Manager
Nuclear Support Division

cc: W. T. Russell, Administrator, Region I, USNRC
T. J. Kenny, USNRC Senior Resident Inspector
INPO Records Center

IE22
1/1