10 CFR 50.73

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION
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J. DOLRING, JR.
PLANT MANAGER
LIMERICK GENERATING STATION

February 13, 1992
Docket Nos. 50-352
50-353
License Nos. NPF-39
NPF-85

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

SUBJECT: Licensee Event Report
Limerick Generating Station - Units 1 and 2

This LER concerns the manual isolation of the Main Control Room Ventilation System and the actuation of the Control Room Emergency Fresh Air Supply system, Engineered Safety Features, due to a high toxic chemical concentration signal caused by a vinyl chloride release from Occidental Chemical Corporation.

Reference:	Docket Nos. 50-352; 50-353
Report Number:	1-92-001
Revision Number:	00
Event Date:	January 29, 1992
Report Date:	February 13, 1992
Facility:	Limerick Generating Station P.O. Box 2300, Sanatoga, PA 19464-2300

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

Very truly yours,

J Doering

KOS:cah

cc: T. T. Martin, Administrator, Region I, USNRC
T. J. Kenny, USNRC Senior Resident Inspector, LGS

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NRC Form 366
(9-83)*

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES 8/31/88

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 3

TITLE (4) Manual Isolation of the Main Control Room due to a High Toxic Chemical Concentration Alarm.

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 1	2 9	9 2	9 2	— 0 0 1	— 0 0	0 2	1 3	9 2	Limerick, Unit 2	0 5 0 0 0 3 5 3
										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 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
G. J. Madsen, Regulatory Engineer, Limerick Generating Station	AREA CODE 2 1 5 3 2 7 - 1 2 0 0

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)

On January 29, 1992, a high toxic chemical concentration alarm was received in the Main Control Room (MCR) as a result of a high vinyl chloride concentration in the MCR outside air intake plenum, as detected by the 'A' and 'B' Toxic Gas Analyzers. MCR personnel immediately implemented Special Event procedure SE-2, "Toxic Gas," and donned self-contained breathing apparatus (SCBA). Additionally, MCR personnel manually initiated a MCR ventilation system chlorine isolation, an Engineered Safety Feature (ESF). The 'A' train of the Control Room Emergency Fresh Air Supply (CREFAS) system, also an ESF, initiated as designed and provided total recirculation of the MCR air without any intake from the outside atmosphere. The 'A' and 'B' MCR Toxic Gas Analyzers detected a vinyl chloride concentration of 21.29 ppm and 21.25 ppm respectively (i.e., alarm setpoint is 10 ppm) which is well below the hazardous concentration limit of 1000 ppm. Chemistry personnel obtained and analyzed samples of the MCR air and the MCR outside air plenum. The samples showed no detectable vinyl chloride therefore MCR personnel removed SCBA and then reset the chlorine isolation. This event was caused by the presence of vinyl chloride in the MCR outside air intake plenum from an atmospheric release of the chemical from the Occidental Chemical Corporation (OCC) which is located in the vicinity of Limerick Generating Station.

Unit Conditions Prior to the Event:

Unit 1 Operational Condition was 1 (Power Operation) at 100% power level.

Unit 2 Operational Condition was 1 (Power Operation) at 100% power level.

There were no structures, systems or components out of service which contributed to this event.

Description of the Event:

On January 29, 1992, at 0808 hours a high toxic chemical concentration alarm was received in the Main Control Room (MCR). The toxic chemical concentration alarm setpoint for vinyl chloride is 10 ppm. The 'A' and 'B' MCR Toxic Gas Analyzers (EIIS:VI) indicated 21.29 ppm and 21.25 ppm of vinyl chloride, respectively, for less than thirty seconds. MCR personnel immediately implemented Special Event procedure SE-2, "Toxic Gas," and donned self-contained breathing apparatus (SCBA) and manually initiated a MCR ventilation system (EIIS:VI) chlorine isolation, an Engineered Safety Feature (ESF). In conjunction with the manual MCR chlorine isolation, the 'A' train of the Control Room Emergency Fresh Air Supply (CREFAS) system, also an ESF, initiated automatically as designed and provided total recirculation of the MCR air without any intake from the outside atmosphere. The 'B' train of the CREFAS system remained in the automatic standby mode.

Chemistry personnel obtained and analyzed a sample of the MCR air. At 0851 hours, chemistry results indicated that there was no vinyl chloride present in the MCR, therefore MCR personnel removed their SCBAs. After an air sample from the outside air intake plenum showed no detectable levels of vinyl chloride, and Occidental Chemical Corporation (OCC) was contacted to verify they had completed a release of vinyl chloride, MCR operators reset the chlorine isolation at 1059 hours.

A four (4) hour notification to the NRC was made at 1100 hours on January 29, 1992, in accordance with 10CFR50.72(b)(2)(ii) since this event resulted in a manual actuation of an ESF. This report is being submitted in accordance with the requirements of 10CFR50.73(a)(2)(iv).

Analysis of the Event:

The actual consequences of this event were minimal. There was no release of radioactive material to the environment as a result of this event. Both the 'A' and 'B' Toxic Gas Analyzers functioned as designed and alarmed on the presence of vinyl chloride. The MCR ventilation system isolated and the 'A' train of the CREFAS system started automatically and operated as designed. The redundant 'B' train of the CREFAS system was in the automatic standby mode and was available for operation in the event the 'A' train failed to properly function.

In the event these systems had failed to properly function, the consequences would have been minimal in that the vinyl chloride concentrations detected by the toxic gas analyzers were well below specified hazardous limits. NRC Regulatory Guide

1.78, "Assumptions for Evaluating the Habitability of a Nuclear Power Plant Control Room during a Postulated Hazardous Chemical Release," as committed to in the Limerick Generating Station (LGS) Updated Final Safety Analysis Report (i.e., Section 6.4.1), defines the toxic limit of vinyl chloride at 1000 ppm. The maximum concentration observed during this event was 21.29 ppm which is well below this toxic limit.

In addition, immediate and follow-up actions to this type of event are provided in procedure SE-2. MCR personnel donned SCBAs which provided additional protection against the possible inhalation of any toxic chemicals.

Cause of the Event:

The cause of this event was the presence of vinyl chloride in the MCR outside air intake plenum as detected by the 'A' and 'B' Toxic Gas Analyzers. The source of the vinyl chloride was an atmospheric release of the toxic chemical from the OCC which is located in the vicinity of the station.

Corrective Actions:

This event resulted from an off-site actual release and detection of vinyl chloride. At LGS, all detection and isolation systems responded as designed and performed their intended functions; therefore, no further corrective actions to prevent recurrence are planned.

Previous Similar Occurrences:

LER 1-89-053 also reported a manual isolation of the MCR ventilation due to an atmospheric release of vinyl chloride from OCC. At LGS, all subject systems responded as designed in that event as well. There were no actions which could have been taken by LGS which would have prevented this event.

Tracking Codes: C99 - Other External Cause