

## LICENSEE EVENT REPORT (LER)

APPROVED ONS NO. 2180-0104  
EXPIRES: 9/31/85

FACILITY NAME (1)

Limerick Generating Station - Unit 1

DOCKET NUMBER (2)

05000352

PAGE (3)

1 OF 013

TITLE (4)

Main Control Room Chlorine Isolation and Emergency Fresh Air System Actuation

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 NAME														
1	0	2	3	8	5	8	5	-	0	8	5	-	0	0	1	1	2	2	6	5	DOCKET NUMBER (9)		
												0			5	0	0	0					

OPERATING MODE (10)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50.71 (Check one or more of the following) (11)																	
POWER LEVEL (11)	0	5	0	30.402(a)				30.402(b)				30.73(a)(2)(i)				30.73(a)(2)(ii)			
				30.402(a)(1)(i)				30.402(a)(1)(ii)				30.73(a)(2)(i)				30.73(a)(2)(ii)			
				30.402(a)(1)(iii)				30.402(a)(1)(iv)				30.73(a)(2)(i)				30.73(a)(2)(ii)			
				30.402(a)(1)(v)				30.402(a)(1)(vi)				30.73(a)(2)(i)				30.73(a)(2)(ii)			
				30.402(a)(1)(vii)				30.402(a)(1)(viii)				30.73(a)(2)(i)				30.73(a)(2)(ii)			

LICENSEE CONTACT FOR THIS LER (12)

NAME		TELEPHONE NUMBER	
John C. Nagle, Engineer - Special Projects		AREA CODE	215841-5184

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC
B	V	I	A	E	M	0	2	8	N

SUPPLEMENTAL REPORT EXPECTED (14)

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

ABSTRACT (Limit to 1000 words, i.e., approximately 10 lines single space typewritten text) (16)

Abstract: 85-085

On October 23, 1985 at 1940 hours with Unit 1 at 50 percent power, an Engineered Safety Feature (ESF) actuation occurred. The main control room ventilation system isolated and the 'B' train of the Control Room Emergency Fresh Air System (an ESF system) started as a result of failure of the 'D' chlorine analyzer. The analyzer failed due to failure of one of the optic bulbs, which caused the analyzer to indicate high chlorine level. The isolation signal was cleared using Temporary Circuit Alteration, TCA-412, in accordance with system procedure S78.7.A, "System Restoration to Normal Operation After Isolation." Both bulbs were replaced, the analyzer tested and returned to service, and TCA-412 was removed. The installation and testing of a replacement chlorine detection system is being scheduled. There were no adverse affects as a result of this event.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

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

TEXT (If more space is required, use additional NRC Form 366a (17))

Description of the Event:

On October 23, 1985 at 1940 hours with Unit 1 at 50 percent power, the operators received an alarm, "Control Room Chlorine Isolation Initiated". The main control room ventilation system isolated and the 'B' train of the Control Room Emergency Fresh Air System, an engineered safety feature (ESF) started. The remaining three chlorine indicators, which measure the chlorine concentration in the control room ventilation intake air, were observed to show normal levels. All automatic isolations occurred as verified by system procedure S78.0.B, "Verification of Control Room HVAC Response to a Control Room Isolation Signal".

The EIIS code for the affected system is VI and the code for the defective component is AE.

Consequences of the Event:

No adverse consequences resulted from this event because the Main Control Room Isolation system and Control Room Emergency Fresh Air system responded in accordance with their designs. During the investigation of this event, continuous monitoring of the control room ventilation intake air was provided by the operable redundant 'C' chlorine analyzer.

Cause of the Event:

The control room chlorine isolation and ESF actuation resulted from the failure of a bulb in the optic circuitry of the 'D' chlorine analyzer (AE-78-016D). The chlorine analyzer circuitry contains two bulbs, one which provides light to the fiber optics component for analysis of the analyzer tape and another which indicates the optic circuit is in operation. Failure of either bulb results in an upscale failure of the chlorine analyzer. The chlorine analyzer is a MDA Scientific, Inc., Model 7040 FAN.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO 3150-0104

EXPIRES 8/31/85

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 5	0 8 5	0 0	0 3	OF	0 3

TEXT (If more space is required, use additional NRC Form 365A's) (17)

Corrective Actions:

After it was determined that the cause of the analyzer failure was the result of an optic bulb failure, the control room chlorine isolation signal was bypassed in accordance with Temporary Circuit Alteration TCA-412 and the 'D' chlorine analyzer was declared inoperable. Both bulbs in the 'D' chlorine analyzer's circuitry were replaced and the analyzer was tested. The circuit was returned to normal operation by removing TCA-412 and the 'D' chlorine analyzer was returned to service.

Action Taken to Prevent Recurrence:

Measures have been taken to procure and install an alternate type of detection system under Modification Design Change Package (MDCP) #85-611. This system, which is manufactured by Anacon, uses an electrochemical reduction process rather than the present photo-optic/analyzer tape method. In addition, modification request #85-0502, which is under evaluation, would provide a more reliable isolation logic for the Main Control Room Ventilation system.

Previous Similar Occurrences:

LERs 84-008, 85-010, 84-028, 84-033, 84-046, 85-029, 85-030, 85-031, 85-042, 85-050, 85-059, 85-063 and 85-081 report chlorine analyzer failures which caused the Control Room Emergency Fresh Air System to actuate.

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4000

November 22, 1985

Docket No. 50-352

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Washington, DC 20555

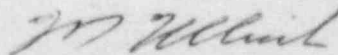
SUBJECT: Licensee Event Report  
Limerick Generating Station - Unit 1

This LER concerns the actuation of the Control Room  
Emergency Fresh Air System ( an Engineered Safety Feature) due to  
a chlorine analyzer failure.

Reference:	Docket No. 50-352
Report Number:	85-085
Revision Number:	00
Event Date:	October 23, 1985
Report Date:	November 22, 1985
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,



W. T. Ullrich  
Superintendent  
Nuclear Generation Division

cc: Dr. Thomas E. Murley, Administrator, Region I, USNRC  
E. M. Kelly, Senior Resident Site Inspector  
See Service List

IF22  
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September, 1985