

LICENSEE EVENT REPORT (LER)

APPROVED OMS NO. 3180-0104
EXPIRES - 8/31/85

FACILITY NAME (1)

Limerick Generating Station - Unit 1

DOCKET NUMBER (2)

050003521 OF 014

PAGE (3)

TITLE (4)

Main Control Room Ventilation Isolation

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	DOCKET NUMBER (8)	
04	10	85	85	044	01	05	21	85		050003521	
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50.73 (Check one or more of the following) (11)								
2			20.402(a)			20.406(a)			X 50.73(a)(2)(iv)		
POWER LEVEL (10)			20.406(a)(1)(i)			50.36(a)(1)			50.73(a)(2)(v)		
0.03			20.406(a)(1)(ii)			50.36(a)(2)			50.73(a)(2)(vi)		
			20.406(a)(1)(iii)			50.73(a)(2)(i)			50.73(a)(2)(vii)(A)		
			20.406(a)(1)(iv)			50.73(a)(2)(ii)			50.73(a)(2)(viii)(B)		
			20.406(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(ix)(C)		
			20.406(a)(1)(vi)			50.73(a)(2)(iv)			50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME

John C. Nagle, Engineer

TELEPHONE NUMBER

AREA CODE

215 841-5184

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

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If you complete EXPECTED SUBMISSION DATE)	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input checked="" type="checkbox"/>	<input type="checkbox"/>				

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

Abstract 85-044

On April 10, 1985, with Unit 1 in the startup condition and at 3.4 percent power, the auxiliary equipment room 'A' supply fan tripped due to electrical interference caused by a radio transmission from a portable, hand-held transmitter/receiver unit being utilized within an electrical cabinet. Technicians were performing work on temperature control valves for the auxiliary equipment room 'A' supply fan coils. When the 'B' (standby) supply fan automatically started, a Halon injection into the auxiliary equipment room occurred. Subsequently, a "High Toxic Chemical Concentration" alarm was received in the control room and at 1:42 p.m., a main control room ventilation isolation was manually initiated in accordance with Special Event Procedure SE-2, "Toxic Gas". The alarm was a direct result of the Halon injection and no actual fire condition existed in the auxiliary equipment room. The Halon injection was caused by a heat detector which is sensitive to the rapid increase in pressure resulting from the tripping of the normal supply fan and subsequent auto-start of the standby supply fan. An investigation into the purchase of new heat detectors which are not pressure sensitive is being conducted. All smoke detectors and heat detectors in the auxiliary equipment room are operable for alarm purpose; however, the automatic injection of Halon has

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMS NO. 3190-0104

EXPIRES 8/31/85

FACILITY NAME (1)

Limerick Generating Station
Unit 1

DOCKET NUMBER (2)

LER NUMBER (3)

PAGE (3)

YEAR

SEQUENTIAL
NUMBERREVISION
NUMBER

0 | 5 | 0 | 0 | 0 | 3 | 5 | 2 | 85 | - | 0 | 4 | 4 | - | 0 | 1 | 0 | 2 | OF | 0 | 4

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

been disarmed as an immediate corrective action. Additionally, a fire watch is posted in the area.

Description of the Event:

On April 10, 1985, with Unit 1 in the startup condition and at 3.4 percent power, the auxiliary equipment room 'A' supply fan tripped due to electrical interference caused by a radio transmission from a portable, hand-held transmitter/receiver unit being utilized within electrical cabinet OAC101. This cabinet houses various switches and controls for the auxiliary equipment room supply fans. The 'B' (standby) supply fan auto-start initiated after the specified time delay. Subsequent to the start of standby supply fan, an automatic injection of Halon into the auxiliary equipment room occurred. Suspecting that a fire condition existed in the auxiliary equipment room, the 'B' supply fan was shutdown. The auxiliary equipment room return fan was not shutdown and continued to operate. Subsequently, a 'High Toxic Chemical Concentration' alarm for the main control room was received and at 1:42 p.m., a main control room ventilation isolation (an Engineered Safety Feature) was manually initiated in accordance with Special Event Procedure SE-2, "Toxic Gas". The high toxic chemical concentration alarm was a direct result of the Halon injection into the auxiliary equipment room. No fire condition had actually existed in the auxiliary equipment room. The toxic gas analyzer readouts were verified as acceptable and the chlorine isolation was reset.

Consequences of the Event:

No actual toxic gas (vinyl chloride or ethelene oxide) release occurred. Additionally, no actual fire condition existed in the auxiliary equipment room. There were no adverse consequences 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	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		8 5	0 4 4	0 1	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 auxiliary equipment room 'A' supply fan tripping was the result of a radio transmission from a hand-held transmitter/receiver unit being utilized within electrical cabinet OAC101. This action was reproduced during a test by generating a radio transmission signal within electrical cabinet OBC101. No tripping resulted from a radio transmission signal generated in the area immediately outside the electrical cabinet. Prior to the auto-start (time delayed) of the standby supply fan, the auxiliary equipment room pressure decreased due to the suction effect of the operating auxiliary equipment room return fan. When the standby fan started and came into service, the room pressure increased rapidly. This pressure increase actuated a diaphragm type rate-of-rise heat detector which caused the injection of Halon into the auxiliary equipment room. The operator then shutdown the 'B' supply fan suspecting a fire.

The normal flow path for the return air from the auxiliary equipment room is into the intake ductwork of the supply fans. Most of the room air is recirculated with a small amount of outside air as a result of the suction from the supply fans. The intake ductwork is also common to the control room intake plenum. Since there was no flow path to the auxiliary equipment room available with both of the supply fans shutdown and a return fan was still operating coupled with the fact that several floor coverings in the auxiliary equipment room had been removed for cable sealing work, the Halon was exhausted from the auxiliary equipment room and forced into the control room intake plenum. The toxic gas analyzers which sample the air in the control room intake plenum indicated high concentrations of toxic gas which resulted in the actuation of the "High Toxic Chemical Concentration" alarm in the control room.

Corrective Actions:

In order to verify the suspected sequence of events, this event was recreated by intentionally tripping the operating 'B' supply fan. When the 'A' supply fan (acting now as the standby fan) automatically started after the appropriate time delay, a Halon injection signal was again initiated. There was enough residual

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
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FACILITY NAME (1)

Limerick Generating Station
Unit 1

DOCKET NUMBER (2)

0 5 0 0 0 3 5 2

LER NUMBER (3)

YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
85	044	01

PAGE (3)

0 2 OF 0 4

TEXT (if more space is required, use additional NRC Form 266a (17))

Halon in the auxiliary equipment room to cause another 'High Toxic Chemical Concentration' alarm. Operator response was the same as before. This action, along with discussions held with the heat detector vendor, revealed that certain rate-of-rise heat detectors in the auxiliary equipment room are pressure sensitive. An investigation is being conducted concerning the purchase of detectors which are not pressure sensitive.

All heat detectors and smoke detectors in the auxiliary equipment room are operable for alarm purposes; however, the automatic injection feature of Halon has been disarmed. A continuous fire watch had been established in the area of the auxiliary equipment room prior to this event and will continue until the heat detector problem is corrected. A memorandum will be issued to supervisory personnel prohibiting the use of portable transmitter/receiver units within electrical cabinets.

Previous Similar Occurrences:

None.

PHILADELPHIA ELECTRIC COMPANY

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PHILADELPHIA, PA. 19101

(215) 841-4000

May 21, 1985

Docket No. 50-352

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

SUBJECT: Licensee Event Report
Limerick Generating Station - Unit 1

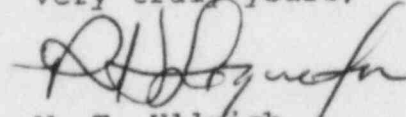
This Revision No. 1 of LER 85-044 is being submitted to correct an error in the "Facility Name" sections of the LER.

This LER concerns a manually initiated control room ventilation isolation.

Reference:	Docket No. 50-352
Report Number:	85-044
Revision Number:	01
Event Date:	April 10, 1985
Report Date:	May 21, 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)(iii).

Very truly yours,



W. T. Ullrich
Superintendent
Nuclear Generation Division

cc: Dr. Thomas E. Murley, Administrator, Region I, USNRC
J. T. Wiggins, Senior Site Inspector
See Service List

IE22
1/1

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Docket & Service Section (3 Copies)
James Wiggins
Timothy R. S. Campbell

January 16, 1985