

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION

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J. DOERING, JR.
PLANT MANAGER
LIMERICK GENERATING STATION

September 30, 1992

Docket No. 50-352
License No. NPF-39

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

SUBJECT: Licensee Event Report
Limerick Generating Station - Unit 1

This LER concerns an unplanned isolation of the Reactor Enclosure Ventilation, along with the actuation of the Standby Gas Treatment System and Reactor Enclosure Recirculation System due to a breach in the equipment access airlock caused by personnel error.

Reference:	Docket No. 50-352
Report Number:	86-024
Revision Number:	01
Event Date:	May 12, 1986
Report Date:	September 30, 1992
Facility:	Limerick Generating Station P.O. Box 2300, Sanatoga, PA 19464-2300

This revised LER is being submitted to revise a corrective action commitment. Changes are indicated by revision bar markers in the right hand margin. The original LER was submitted pursuant to the requirements of 10CFR50.73(a)(2)(iv).

Very truly yours,

050083

DBN:cah

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

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PDR ADDCK 05000352
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LICENSEE EVENT REPORT (LER)

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

TITLE (4) Unplanned Isolation of Reactor Enclosure HVAC due to Personnel Error.

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 2	8 6	8 6	0 2 4	0 1 0	9 3	0 9	2			0 5 0 0 0
0 5 0 0 0											

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5 (Check one or more of the following) (11)										
4	20.402(b)			20.405(c)			<input checked="" type="checkbox"/> 50.73(a)(2)(iv)			73.71(b)	
POWER LEVEL (10) 0 0 0	20.405(a)(1)(i)			50.73(c)(1)			50.73(a)(2)(v)			73.71(c)	
	20.405(a)(1)(ii)			50.73(c)(2)			50.73(a)(2)(vii)			OTHER (Specify in Abstract below and in Text, NRC Form 306A)	
	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)(vii)(B)				
	20.405(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(ix)				

LICENSEE CONTACT FOR THIS LER (12)
NAME G. J. Madsen, Regulatory Engineer, Limerick Generating Station TELEPHONE NUMBER 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 NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO				

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

At approximately 1522 on May 12, 1986, while the plant was shutdown for a maintenance outage, a Reactor Enclosure Heating Ventilation and Air Conditioning (HVAC) system isolation occurred, along with actuation of the Reactor Enclosure Recirculation System (RERS) and the Standby Gas Treatment System (SGTS). Because of personnel error, both doors of the reactor enclosure equipment access airlock at elevation 217 were opened simultaneously, creating a low differential pressure condition. The presence of the low differential condition, after a 100-second designed time delay, resulted in the isolation of the reactor enclosure HVAC. The isolation was confirmed and after observing that the low differential pressure condition was not improving, a walkdown of the reactor enclosure disclosed the open airlock. The low differential condition existed for approximately 10 minutes. Following closure of the airlock, the HVAC system was returned to normal.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/86

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
Limerick Generating Station, Unit 1	05000352816	—	024	—	01	02 OF 04

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

Unit Conditions Prior to the Event:

Operational Mode 4 (Cold Shutdown)
Unit Shutdown for Maintenance Outage

Description of the Event:

At approximately 1522 on May 12, 1986, a reactor enclosure isolation occurred along with an unplanned actuation of the Reactor Enclosure Recirculation System (RERS) and the Standby Gas Treatment System (SGTS) while material was being moved through the reactor enclosure equipment access airlock at elevation 217. While moving the material through the airlock, both airlock doors were opened. With both doors open, a low differential pressure condition occurred between the reactor enclosure and the outside air. The low differential pressure condition existed for greater than the system designed 100-second time delay, causing the reactor enclosure isolation.

Two Security Force Members (SFMs) were assigned to coordinate the movement of personnel and material through the airlock. One SFM stood watch outside the airlock near the outer door, and a second SFM was posted inside the airlock. Although one of the two doors was required to remain closed at all times by the security post orders, because of personnel error both doors were allowed to be open simultaneously.

Following the isolation, the operator observed that the low differential pressure condition was not improving and instituted a walkdown of the reactor enclosure in an attempt to disclose the cause. After approximately ten minutes, the equipment airlock was discovered open and was closed. Following reset of the system in accordance with Operating Procedure GP-8 and closure of the airlock, the reactor enclosure ventilation system was returned to normal.

The EIIS code to this system is VA.

Consequences of the Event:

During cold shutdown, secondary containment is normally not required unless "... both of the ... required (ECCS) subsystems (are) inoperable ..." When both of the ECCS subsystems are inoperable, then action item (b) of Specification 3.5.2 requires the establishment of "... secondary containment integrity within the next 8 hours..." Because of the maintenance activities in progress, the ECCS subsystems were inoperable; and therefore, the establishment of secondary containment integrity was required. Secondary containment had been established earlier and was again established following the event. In addition to the requirements for establishment of "... Secondary Containment Integrity within ... 8 hours ...", the Technical Specifications also require suspension of "... all operations with a potential for draining the reactor vessel (whenever) both of the ... required (ECCS) subsystems (are) inoperable..." During the event, the ECCS systems were inoperable and "... all operations with the potential for

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

draining the reactor vessel ..." had been suspended. The necessity for Secondary Containment, because of plant conditions during the event, therefore, was limited to a narrow set of improbable conditions.

Based on cold shutdown, without any operations with potential for draining the vessel and because both the SGTS and RERS functioned as designed, the consequences of the event were minimal and without adverse effects.

Cause of the Event:

The isolation was caused by a breach in the reactor enclosure equipment access airlock while personnel were moving material through the airlock. The breach was caused by both the inner and the outer airlock doors being open simultaneously as a result of personnel error. The Security Force Member assigned to coordinate the airlock operation had not read the written post instructions, which specifically prohibits allowing both doors to be open simultaneously. Because of the infrequent use of the reactor enclosure equipment access, warning lights and horns were not installed for the airlock. Lights and horns are installed, however, on other non-equipment (personnel) airlocks in order to alert personnel when doors are open. Consequently, the Security Force Member was not alerted to the fact that a problem existed at the time both doors were open. Both the inner and outer doors being open caused the differential pressure between the reactor enclosure and the outside to decrease below the isolation setpoint of -0.1 inches of water, which after the designed 100-second time delay, actuated the reactor enclosure isolation.

Corrective Actions:

The isolation was reset in accordance with Operating Procedure GP-8. The SGTS and RERS were secured, and the HVAC system restored to normal.

Actions Taken to Prevent Recurrence:

To prevent recurrence, all security force personnel were counseled on the importance of the security requirements that include reading post orders. A written summary of the violation was provided to all members of the security force, along with the cause of the violation to highlight the importance of reading post orders. The Security force member who failed to read the post orders prior to assuming the airlock post was disciplined by being suspended along with having a counseling letter entered into his personnel file.

Signs have been posted on both sides of the airlock doors, "DO NOT OPEN BOTH INNER AND OUTER AIRLOCK DOORS WITHOUT PRIOR APPROVAL OF SHIFT SUPERVISION ...". The alarm on the outer door to the security system has been changed so that the test of the alarm message, which is displayed in the security alarm stations, indicates that having airlock doors #203 and #195 open simultaneously is prohibited.

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		<table border="1"><tr><td data-bbox="987 223 1065 266">YEAR</td><td data-bbox="1065 223 1214 266">SEQUENTIAL NUMBER</td><td data-bbox="1214 223 1329 266">REVISION NUMBER</td></tr></table>	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
YEAR	SEQUENTIAL NUMBER	REVISION NUMBER				
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TEXT (If more space is required, use additional Form 365A's) (17)

A modification was implemented that installed a local warning light and horn and a remote annunciator in the main control room to alert personnel that the doors of the reactor enclosure equipment access airlock are open. This airlock alarm system is the same design installed in the other airlocks used effectively by site personnel on a daily basis. This eliminates the need for the lock and chain on the outside door that was committed to in revision 0 of this LER.

The sign postings, security system messages, and air lock alarms were also installed on Unit 2.

Previous Similar occurrences: Reactor enclosure isolations were reported in the following LERs: 84-014, 84-029, 84-041, 84-045, 85-005, 85-012, 85-018, 85-020, 85-023, 85-041, 85-067, 85-089, 86-014. Only 86-014, however, was from a similar cause.