PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION
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M. J. McCORMICK, Jr., P.E.
PLANT MANAGER
LIMERICK GENERATING STATION

December 19, 1989
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 reports a Refuel Floor Secondary Containment Isolation and Standby Gas Treatment System initiation, Engineered Safety Features, due to low negative differential pressure as a result of a passing severe storm front.

Reference:	Docket Nos. 50-352 50-353
Report Number:	1-89-057
Revision Number:	00
Event Date:	November 20, 1989
Report Date:	December 19, 1989
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,

M. J. McCormick, Jr.

VAW:ch

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

IE22
1/1

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 4

TITLE (4)
Refuel Floor Secondary Containment Isolation on Low Differential Pressure due to Severe Storm.

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)
1 1	2 0	8 9	8 9	0 5 7	0 0	1 2	1 9	8 9	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
C. R. Endriss, 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)

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

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

On November 20, 1989, at 2053 hours, the Refuel Floor (RF) Secondary Containment isolated on low negative differential pressure between the RF Secondary Containment and the outside environment and the Standby Gas Treatment System initiated, both Engineered Safety Features. Both systems functioned as designed. A severe storm front passing through the area dropped the outside air temperature 15 degrees F and had wind gusts up to 70 mph. The temperature drop caused cold air to expand as it entered the RF raising its pressure and also the wind may have affected the ability of the RF ventilation system to maintain the negative differential pressure. Normal RF ventilation was restored, at 2110 hours, after the storm front had passed. A note has been added to the Special Event procedure on high winds to identify the possibility of an isolation in these circumstances.

Unit Conditions Prior to the Event:

Unit 1 Operating Mode: 1* (Power Operation)
Unit 1 Reactor Power: 100%
Unit 2 Operating Mode: 1*
Unit 2 Reactor Power: 96%

Movement of irradiated fuel for fuel reconstitution was in progress on the common Refueling Floor (RF) at the time of the event. This requires that Refuel Floor Secondary Containment integrity be maintained.

Description of the Event:

On November 20, 1989 at 2053 hours, the RF Secondary Containment (EIIS:JM) isolated when a low negative differential pressure signal between the RF and the outside environment was received and both trains of the Standby Gas Treatment System (SGTS) (EIIS:BH) initiated, both Engineered Safety Feature (ESF) actuations. Low differential pressure isolation signals were also received for the Nuclear Steam Supply Shutoff System (NSSSS), an ESF, Groups VIA and VIB (Primary Containment Purge Supply and Exhaust and Primary Containment Exhaust to Reactor Enclosure Equipment Compartment Exhaust and nitrogen block valves). No valve motion occurred because these valves are normally closed during Power Operation.

Main Control Room (MCR) operators verified the isolation using system operating procedure S76.9.A "Verification of Reactor Enclosure or Refuel Floor Secondary Containment Isolation." MCR operators also halted fuel reconstitution activities until normal RF ventilation was restored, as required by Technical Specifications.

Operators restored normal RF ventilation at 2110 hours on November 20, 1989. The duration of the isolation was 17 minutes.

A four hour notification was made to the NRC at 2248 hours on November 20, 1989 in accordance with 10 CFR 50.72(b)(2)(ii), since this event resulted in an automatic actuation of an ESF. This report is being submitted in accordance with 10 CFR 50.73(a)(2)(iv).

Consequences of the Event:

There were no adverse consequences and no radioactive material was released to the environment as a result of this event. The RF Secondary Containment, the NSSSS Group VIA and VIB valves, and the SGTS responded as designed to a low negative differential pressure signal. SGTS restored and maintained the required negative differential pressure in the RF Secondary Containment to minimize releases to the environment in the event that a fuel handling accident had occurred. Suspension of fuel reconstitution activities also reduced the probability of a fuel handling accident during the event.

Cause of the Event:

The cause of the event was a rapidly moving storm front that passed through the area at the time of the event. The storm front caused wind gusts up to 70 mph and a 15 degree F drop in outside area temperature.

The temperature drop caused cold air to enter the RF area, which upon contacting the warmer air inside expanded, raising the RF air pressure. The high winds may have affected the ability of the RF ventilation system to maintain the RF at a sufficiently negative pressure.

Plant staff determined that the configuration of the Unit 1 and Unit 2 Reactor Enclosure Secondary Containments was sufficiently different such that the storm front would not and did not cause them to isolate.

Corrective Actions:

After the storm front had passed, MCR operators restored normal ventilation to the RF at 2110 hours on November 20, 1989.

Actions Taken to Prevent Recurrence:

A note has been added to Special Event procedure, SE-9, "High Winds," stating that high winds combined with a rapid temperature drop will adversely affect RF and/or Reactor Enclosure differential pressure and without compensating action, such as increasing steam flow to the ventilation system heating coils, a secondary containment isolation could occur.

Previous Similar Occurrences:

LERs 1-87-024, 1-89-010 and 1-89-014 reported RF Secondary Containment isolations. All are due to causes different from those of this event and their corrective actions would not have prevented this event.

LERs 1-85-089, 1-87-001, 1-87-056, 1-87-058, 1-87-064, 1-87-065 and 1-89-014 reported Secondary Containment (primarily Reactor Enclosure) isolations due to low inlet air temperatures. However, these were due to loss of auxiliary heating steam and thus their corrective actions could not be expected to prevent this externally caused event.

Tracking Codes: C99 - Other external cause