10 CFR 50.73

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION
P. O. BOX A
SANATOGA, PENNSYLVANIA 19464
(215) 327-1200 EXT. 2000

J. DOERING, JR.
PLANT MANAGER
LIMERICK GENERATING STATION

February 28, 1992
Docket No. 50-353
License No. NPF-85

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

SUBJECT: Licensee Event Report
Limerick Generating Station - Unit 2

This LER reports an event where a watertight door, which separates the Residual Heat Removal pump rooms, was discovered open and unsupervised, resulting in a condition outside of the Moderate Energy Pipe Break design basis.

Reference:	Docket No. 50-353
Report Number:	2-92-003
Revision Number:	00
Event Date:	February 04, 1992
Report Date:	February 28, 1992
Facility:	Limerick Generating Station P.O. Box 2300, Sanatoga, PA 19464-2300

This LER is being submitted pursuant to the requirements of 10CFR50.73(a)(2)(ii).

Very truly yours,

DMS:cah

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

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 2	0 5 0 0 0 3 5 3	1 OF 0 4

TITLE (4) A watertight door, which separates the Residual Heat Removal pump rooms, was discovered open, resulting in a condition outside of the Moderate Energy Pipe Break design basis.

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 NUMBERS
0 2	0 4	9 2	9 2	- 0 0 3	- 0 0	0 2	2 8	9 2		0 5 0 0 0
										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)	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)	X 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-spaced typewritten lines) (16)

On February 4, 1992, during performance of the daily fire door position verification surveillance test, a Firewatch discovered that watertight door no. 75 was open and unsupervised. Door no. 75 separates the Residual Heat Removal (RHR) 2A/2C and 2B/2D pump rooms. The Firewatch immediately closed and dogged the door and notified the Main Control Room. An evaluation concluded that the door was open for a period of 22 minutes. Door no. 75 is required to be always closed and dogged for Moderate Energy Pipe Break (MEPB) considerations. Therefore, with the door open, the MEPB barrier between the RHR pump rooms was outside the MEPB design basis. Additionally, door no. 75 is required for fire protection considerations per the Technical Specifications (TS) section 3.7.7. However, since there were operable fire detectors in both RHR pump rooms, and the door was closed in less than one hour, the Action associated with TS 3.7.7 was satisfied. The actual consequences of this event were minimal in that no fire or MEPB occurred in either RHR pump room during the 22 minute time period in which the door was open. The proximate cause of this event is that door no. 75 was not properly closed the last time the door was used, however, the root cause of this event cannot be fully determined. Therefore, no direct corrective actions are planned.

Unit Conditions Prior to the Event:

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

Background:

Plant protection against postulated piping failures in fluid systems outside of primary containment is required under 10CFR50, Appendix A Criterion 4, and described in the guidance provided in the Standard Review Plan, NUREG-0800, Section 3.6.1. Philadelphia Electric Company (PECo) has committed to these requirements in Section 3.6 of the Limerick Generating Station (LGS) Updated Final Safety Analysis Report (UFSAR). Water/steam barriers were incorporated into the design of the plant to protect and control against direct or indirect induced loss of equipment and components necessary to assure safe shutdown of the plant in the event of a piping failure. The UFSAR analysis included an evaluation of postulated High Energy Pipe Break (HEPB) and Moderate Energy Pipe Break (MEPB) accidents. A HEPB accident is associated with a system in which its fluid temperature is greater than 200 degrees F and/or its system pressure is greater than 275 psig. A MEPB accident is associated with a system in which its fluid temperature is less than or equal to 200 degrees F and its system pressure is less than or equal to 275 psig.

To mitigate the effects of a postulated HEPB or MEPB accident, water/steam barriers are used to compartmentalize the plant to restrict the piping failure to a particular area. This minimizes the effects of the accident and assures sufficient equipment is available to safely shutdown the plant. Water/steam barriers utilized at LGS are as follows:

1) water and steamtight doors (EIIS:DR), walls, and floors,
2) water and steamtight penetrations (EIIS:PEN) and seals,
3) compartment dams and dikes,
4) water and steamtight dampers (EIIS:DMP) and penetration isolation devices, and
5) steam relief panels.

To prevent the unplanned openings of any of these HEPB or MEPB barriers at LGS, Administrative (A) Procedure A-224, "HEPB/MEPB Barrier Control," has been implemented to establish the administrative requirements, controls, and responsibilities for breaching plant HEPB or MEPB barriers.

Description of the Event:

On February 4, 1992, at 0724 hours, during performance of the Surveillance Test (ST) Procedure ST-7-022-371-2, "Daily Fire Door Position Verification," a Firewatch discovered that watertight door no. 75 was open and unsupervised. Watertight door no. 75 separates the Residual Heat Removal (RHR) (EIIS:BO) 2A/2C and 2B/2D pump rooms. The Firewatch immediately closed and dogged the

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Limerick Generating Station, Unit 2	0 5 0 0 0 3 5 3	9 2	-- 0 0 3	-- 0 0	0 3 OF 0 4

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

watertight door, which was unobstructed and unrestrained, and notified the Main Control Room (MCR) of the incident.

Door no. 75 is required to be in the closed and dogged position for MEPB considerations per procedure A-224, and for fire protection considerations per the Limiting Condition for Operations (LCO) of the Technical Specifications (TS) Section 3.7.7, "Fire Rated Assemblies." For MEPB considerations, door no. 75 is required by procedure A-224 to be always in the closed and dogged position unless personnel or equipment are passing through the doorway. Since door no. 75 was discovered open and unsupervised, the MEPB barrier between the RHR pump rooms was outside the established MEPB design basis. In the event of a MEPB accident in one of the RHR pump rooms, sufficient RHR pumps to safely shutdown the plant could not have been assured.

For fire protection considerations, door no. 75 is required to be closed and dogged, but may be open if there is operable early warning fire detectors in the area and if an hourly fire watch patrol is established per TS action 3.7.7a. Plant security performed an evaluation of the computerized alarm history for door no. 75, and determined that the door was open from 0702 hours to 0724 hours on February 4, 1992; a period of twenty-two (22) minutes. Since there were operable fire detectors in both RHR pump rooms, and the door was closed in less than one hour, TS Action 3.7.7a was satisfied.

A reportability evaluation was initiated when the MCR was notified of the open door. The condition was determined to be outside the design basis at 1205 hours, and therefore reportable. A one hour notification was made to the NRC at 1225 hours, on February 4, 1992, in accordance with the requirements of 10CFR50.72(b)(1)(ii)(B) since this event resulted in a condition outside of the design basis. This LER is being submitted in accordance with the requirements of 10CFR50.73(a)(2)(ii).

Analysis of the Event:

The actual consequences of this event were minimal in that no fire or MEPB accident occurred in either RHR pump room during the 22 minute time period in which door no. 75 was open and unsupervised. There was no release of radioactive material to the environment as a result of this event.

Had a fire occurred in either RHR pump room during the 22 minute time period in which door no. 75 was open and unsupervised, the early warning fire detection system in the affected room would have alarmed in the MCR, and the operations fire brigade team would have been dispatched in accordance with Special Event (SE) Procedure SE-8, "Fire," to mitigate the consequences of the fire including closing door no. 75. Additionally, had a MEPB accident (e.g., an unisolatable RHR pump suppression pool suction line pipe break) occurred in either RHR pump room during the 22 minutes in which door no. 75 was open and unsupervised, the potential for the loss of all four RHR pumps could have occurred. However, located in each RHR pump room are flood detection switches which alarm in the

MCR when the flood water level in either room reaches 3.25 inches. In response to an RHR pump room flood alarm, MCR operators would have initiated the Transient Response Implementing Plan (TRIP) Procedure T-103, "Secondary Containment Control," which provides direction for mitigation of the MEPB. This procedure directs shutdown of the plant when the flood level reaches 18 inches in both RHR rooms. This ensures the plant can achieve safe shutdown before the RHR pumps become inoperable. Licensed operators receive requalification training to review and practice responses to simulated plant transients of this type. The procedure, training, and operator actions would have mitigated the consequences of this type of event.

Cause of the Event:

The proximate cause of this event is that door no. 75 was not properly closed the last time the door was used. Security data which listed the plant personnel within the Unit 2 Reactor Enclosure during the time period of the event was collected and evaluated in conjunction with the computerized alarm history information for door no. 75. Interviews were then conducted with the appropriate plant personnel, however, no conclusion could be reached that clarified the root cause of this event.

Corrective Actions:

Since the root cause of this event could not be fully determined, there are no direct corrective actions that can be implemented to prevent the recurrence of a similar event. However, as a result of a previous HEPB/MEPB degraded barrier incident which occurred in August of 1990, Administrative Procedure A-224 was developed to establish controls for HEPB/MEPB barriers. As part of the training for this new program, a "For Your Information" (FYI) Notice was issued to first line supervision on January 14, 1992. This FYI notice provided a clear and concise set of written management expectations regarding the control of HEPB/MEPB barriers. First line supervision were in the process of disseminating the expectations of management in this FYI notice to station personnel when this event occurred. The completion of the dissemination of this FYI notice should prevent the recurrence of a similar event. Additionally, the information addressed in this FYI notice has been incorporated into the station's General Employee Training (GET) and continuing training programs.

Previous Similar Occurrences:

LER 1-90-018 reported an event where various HEPB/MEPB barriers were inadvertently breeched or restrained. A HEPB/MEPB barrier control program was established as a result of this event. However, training of station personnel was in the process of being performed when this event occurred.

Tracking Codes: X2 Failure that cannot be assigned from codes