10 CFR 50.73

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION

P. O. BOX 2300

SANATOGA, PA 19464-2300

(215) 327-1200 EXT. 2000

ROBERT W. BOYCE
PLANT MANAGER
LIMERICK GENERATING STATION

July 19, 1993
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 the actuation of the Primary Containment and Reactor Vessel Isolation Control System, an Engineered Safety Feature, as a result of the spurious firing and closure of a Traversing Incore Probe system explosive shear valve, a Primary Containment Isolation Valve, due to an indeterminate cause.

Reference:	Docket No. 50-353
Report Number:	2-93-007
Revision Number:	00
Event Date:	June 17, 1993
Discovery Date:	June 22, 1993
Report Date:	July 19, 1993
Facility:	Limerick Generating Station P.O. Box 2300, Sanatoga, PA 19464-2300

This LER is being submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(iv).

Very truly yours,

Robert W. Boyce

DMS:cah

cc: T. T. Martin, Administrator, Region 1, USNRC
N. S. Perry, 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 2	0 5 0 0 0 3 5 3	1 OF 0 3

TITLE (4) Spurious Closure of a Traversing Incore Probe system explosive shear valve, a Primary Containment Isolation Valve, due to an indeterminate cause.

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 0 0 0
0 6	1 7	9 3	9 3	0 0 7	0 0		0 7	1 9	9 3		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
1		20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
1 0 0		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
	AREA CODE
J. L. Kantner, Manager Experience Assessment, LGS	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-space typewritten lines) (16)

On June 17, 1993, Main Control Room (MCR) Operations personnel received alarm indications that the Unit 2 'B' Traversing Incore Probe (TIP) system explosive shear valve had either spuriously fired and closed or was inoperable. This shear valve is one of two Primary Containment Isolation Valves (PCIV) on the TIP tubing. MCR Operations personnel then de-activated the second (i.e., redundant) unaffected PCIV and declared the 'B' TIP shear valve inoperable. The redundant PCIV is a ball valve downstream of the 'B' TIP shear valve. On June 22, 1993, plant personnel confirmed that the 'B' TIP shear valve firing mechanism had spuriously activated, constituting an Engineered Safety Feature actuation. Replacement of the 'B' TIP shear valve was then performed. The 'B' TIP shear valve was then declared operable and returned to service. The actual and potential consequences of this event were minimal. The TIP detector was fully retracted and in its shield chamber, and the 'B' TIP ball valve was fully closed prior to and during this event. The cause of the 'B' TIP shear valve firing and closure is indeterminate. The integrity of the 'B' TIP shear valve including its associated firing circuit and cable were tested and inspected and no abnormalities were identified. Reviews of industry events were performed and no similar events could be identified. We have concluded that this event is an isolated occurrence, and therefore, no long term corrective actions are planned to be implemented.

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

Unit Conditions Prior to the Event:

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

There were no structures, system, or components out of service that contributed to this event.

Description of the Event:

On June 17, 1993, at 1845 hours, Main Control Room (MCR) Operations personnel received alarm indications that the manually operated Unit 2 'B' Traversing Incore Probe (TIP) system (EIIS:IG) explosive shear valve (EIIS:ISV) had either spuriously fired and closed or was inoperable. This shear valve is one of two Primary Containment Isolation Valves (PCIV) on the 'B' TIP tubing that penetrates the Primary Containment. MCR Operations personnel then de-activated the second (i.e., redundant) unaffected PCIV and declared the 'B' TIP shear valve inoperable, thereby isolating the affected penetration in accordance with the Technical Specifications Action 3.6.3. The redundant PCIV is an automatically operated ball valve downstream of the 'B' TIP shear valve, and was in the closed position prior to and during the event. The TIP detector was fully retracted and in its shield chamber when the 'B' TIP shear valve alarm indications were received in the MCR. Confirmation of the status of the 'B' TIP shear valve could not be made for several days due to high radiation dose levels in the TIP room caused by TIP runs which were made on June 17, 1993.

On June 22, 1993, plant personnel confirmed that the 'B' TIP shear valve firing mechanism had spuriously activated, thereby causing the PCIV to close. Replacement of the 'B' TIP shear valve was then performed. The firing mechanism circuitry in the MCR was inspected and no abnormalities were identified. No electrical fuse problems or grounds were discovered and electrical resistance readings for the firing mechanism circuitry were within specifications. Resistance readings on the cable were performed from the TIP room back to the MCR and no deficiencies were identified. On June 22, 1993, the 'B' TIP shear valve was declared operable and returned to service after trickle current and voltage readings were verified to be satisfactory.

On June 30, 1993, plant personnel recognized that this PCIV closure constituted the spurious actuation of the Primary Containment and Reactor Vessel Isolation Control System, an Engineered Safety Feature (ESF). A four hour notification was made to the NRC at 1845 hours, on June 30, 1993, pursuant to the requirements of 10CFR50.72(b)(2)(ii), since this event resulted in an actuation of an ESF. This LER is being submitted in accordance with the requirements of 10CFR50.73(a)(2)(iv).

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

Analysis of the Event:

The actual and potential safety consequences of this event were minimal. There was no release of radioactive material to the environment as a result of this event. The TIP detector and cable were fully retracted, and the 'B' TIP ball valve downstream of the 'B' TIP shear valve was fully closed prior to and during this event.

Cause of the Event:

The cause of 'B' TIP shear valve firing and closure is indeterminate. The integrity of the 'B' TIP shear valve including its associated firing circuit and cable were tested and inspected by plant personnel and no abnormalities were identified.

Corrective Actions:

Reviews of previous Limerick Generating Station and industry events were performed and no similar events were identified. Based on the results of the system troubleshooting and reviews performed, we have concluded that the spurious closure of the 'B' TIP shear valve is an isolated occurrence. Therefore, no long term corrective actions to prevent recurrence are planned to be implemented.

Previous Similar Occurrences:

None