

## 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

January 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 Unit 2 pressure indicating switch shorted to ground causing a blown fuse that made the High Pressure Coolant Injection (HPCI) system, the D24 Emergency Diesel Generator, the 'D' Residual Heat Removal system, and the 'D' Core Spray system inoperable.

Reference:	Docket No. 50-353
Report Number:	2-92-001
Revision Number:	00
Event Date:	January 4, 1992
Report Date:	January 28, 1992
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)(v).

Very truly yours,

JLP:cah

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

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LICENSEE EVENT REPORT (LER)

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

TITLE (4): High Pressure Coolant Injection system, D24 Emergency Diesel Generator, 'D' Residual Heat Removal system, and 'D' Core Spray inoperable due to a blown fuse.

EVENT DATE (6)			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	1	0	4	9	2	9	2	0	0	1	0	0	0	1	2	8	9	2	0	5	0	0	0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following.) (11)

OPERATING MODE (9): 1	20.402(a)	20.405(a)	50.73(a)(2)(i)(x)	73.71(b)
POWER LEVEL (10): 1 0 0	20.405(a)(1)(i)	50.73(a)(1)	X 50.73(a)(2)(iv)	73.71(c)
	20.405(a)(1)(ii)	50.73(a)(2)	50.73(a)(2)(iv)	OTHER (Specify in Abstract below and in text NRC Form 388A)
	20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(iv)(A)	
	20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(iv)(B)	
	20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(v)	

LICENSEE CONTACT FOR THIS LER (12):  
NAME: G. J. Madsen, Regulatory Engineer, Limerick Generating Station  
TELEPHONE NUMBER: 2 1 5 3 2 7 - 1 2 0 1 0  
AREA CODE

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13):

CAUSE	SYSTEM	COMPONENT	MANUF. TURNER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUF. TURNER	REPORTABLE TO NPROS
K	J	E P I S	R 3 6 9	YES					

SUPPLEMENTAL REPORT EXPECTED (14):  
YES (If yes, complete EXPECTED SUBMISSION DATE): X NO  
EXPECTED SUBMISSION DATE (15):

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

On January 4, 1992, a Unit 2 pressure indicating switch shorted to ground causing a blown power supply fuse that made the High Pressure Coolant Injection (HPCI) system, the D24 Emergency Diesel Generator, the 'D' Residual Heat Removal system, and the 'D' Core Spray system inoperable. After removing the failed pressure indicating switch, the fuse was replaced. When the HPCI system instrumentation was reenergized an anticipated HPCI system isolation occurred. The HPCI system isolation was reset and the HPCI system was declared operable. The actual consequences of this event were minimal. The failed pressure indicating switch was replaced on January 4, 1991. Similar pressure indicating switches in the same card file were inspected and confirmed to not have the same condition. The failed pressure indicating switch has been sent to the manufacturer for performance of a failure analysis. The results of the failure analysis conducted by the manufacturer will be reviewed to determine if additional corrective action needs to be taken.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER IS			PAGE IS		
		YEAR	SEQUENTIAL NUMBER	SESSION NUMBER			
Limerick Generating Station, Unit 2	051010353	92	001	010	02	OF	03

TEXT (if more space is required, use additional NRC Form 3064's) (17)

Unit Conditions Prior to the Event:

Unit 2 was in Operational Condition 1 (Power Operation) operating at 100% power level. There were no structures, systems, or components out of service that contributed to this event.

Description of the Event:

On January 4, 1992, at 0600 hours, a failure of a pressure indicating switch (EIIS:PIS) caused a power supply fuse to blow. The blown fuse deenergized card file E21A-Z30 and its associated instrumentation used to automatically initiate multiple safety systems. At 0650 hours, operators determined that the deenergized instrumentation made the High Pressure Coolant Injection (HPCI) system (EIIS:BJ), the D24 Emergency Diesel Generator (EDG) (EIIS:EK), the 'D' Residual Heat Removal (RHR) system (EIIS:BO), and the 'D' Core Spray (CS) system (EIIS:BM) inoperable. At 0658 hours, operators reduced power in accordance with the action specified by Technical Specifications (TS) Section 3.0.3. Instrumentation and Control (I&C) technicians removed and tested CS system and RHR system pressure indicating switches until they identified switch PIS-42-2N690H was shorted to ground. After removing PIS-42-2N690H, the fuse was replaced. When card file E21A-Z30 and its associated instrumentation, including the HPCI system instrumentation, was reenergized, an anticipated HPCI system isolation occurred. The HPCI system isolation resulted from the trip unit switch electronics reenergizing at a faster rate than their associated transmitter electronics. The trip unit switch electronics sensed an input signal below their low trip setpoint and initiated the HPCI system isolation. Operators reset the HPCI system isolation in accordance with General Plant (GP) Procedure GP-8, "Primary and Secondary Containment Isolation Verification and Reset." Operators then declared the HPCI system operable at 0738 hours and exited TS Section 3.0.3. PIS-42-2N690H was replaced on January 4, 1992. The D24 EDG, the 'D' RHR system, and the 'D' CS system were declared operable after I&C technicians reinstalled all pressure indicating switches and completed functional testing of the switches. A one hour notification was made to the NRC at 0748 hours on January 4, 1992, with a followup notification at 0845 hours in accordance with the requirements of 10 CFR 50.72(b)(1)(i)(A) because a TS required plant shutdown was initiated. This notification was also made in accordance with the requirements of 10 CFR 50.72(b)(2)(iii)(A) because the HPCI system was unable to perform its safety functions of maintaining the reactor in a safe shutdown condition and mitigating the consequences of an accident. The notification made in accordance with the requirements of 10 CFR 50.72(b)(2)(ii) for the HPCI system isolation, an Engineered Safety Feature (ESF) actuation, was a conservative measure because the ESF actuation resulted from a preplanned sequence during reactor operation and did not need to be reported. This LER is being submitted in accordance with the requirements of 10 CFR 50.73(a)(2)(v).

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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   1	-   0   0	0   3	OF 0   3

TEXT (if more space is required, use additional NRC Form 3054's.)

Analysis of the Event:

The actual consequences of this event were minimal in that an accident condition did not occur during the time in which the HPCI system, the D24 EDG, the 'D' RHR system, and 'D' CS system were inoperable. The period of time in which the HPCI system was inoperable was limited to 48 minutes. The period of time in which the D24 EDG, the 'D' RHR system, and the 'D' CS system were inoperable was limited to 7 hours 58 minutes.

Although the systems were inoperable because they would not automatically initiate under all accident conditions; operators could have manually initiated these systems to perform their safety function. If an accident had occurred while all affected systems were inoperable, sufficient Emergency Core Cooling Systems and AC power sources were available to maintain safe shutdown of the reactor and mitigate the consequences of an accident.

Cause of the Event:

The cause of this event was the failure of PIS-42-2N690H which resulted in a blown power fuse. PIS-42-2N690H has been sent to the manufacturer for performance of a failure analysis. The results of the failure analysis will be relied upon to identify the cause of failure to PIS-42-2N690H.

Corrective Actions:

PIS-42-2N690H was replaced on January 4, 1992. Similar pressure indicating switches in card file E21A-230 were inspected and confirmed to not have the same condition. The results of the failure analysis conducted by the manufacturer will be reviewed to determine if additional corrective action needs to be taken.

Previous Similar Occurrences:

None

Tracking Codes: B - Design, manufact, const/install deficiency