

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3180-0104
EXPIRES - 8/31/85

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)
Inoperable HPCI Room Differential Temperature Switch

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		
01	29	85	85	0119	010	03	11	85	DOCKET NUMBER (8)		
									0 5 0 0 0		
									0 5 0 0 0		

OPERATING MODE (9) 2

POWER LEVEL (10) 0, 0, 0

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

20.402(b)	20.406(a)	20.73(a)(2)(iv)	73.71(b)
20.406(a)(1)(i)	20.36(a)(1)	20.73(a)(2)(v)	73.71(a)
20.406(a)(1)(ii)	20.36(a)(2)	20.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Title, NRC Form 366A)
20.406(a)(1)(iii)	X 20.73(a)(2)(ii)	20.73(a)(2)(vii)(A)	
20.406(a)(1)(iv)	20.73(a)(2)(iii)	20.73(a)(2)(vii)(B)	
20.406(a)(1)(v)	20.73(a)(2)(iv)	20.73(a)(2)(viii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME: John C. Nagle, Engineer

TELEPHONE NUMBER: 2 1 5 8 4 1 - 5 1 8 4

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
B	B, J	T, DS	R 2, 7, 8	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If you complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 17000 characters typewritten text) (16)

Abstract: 85-019

On January 29, 1985, at approximately 0930 hours with Unit 1 operating at 3.5 percent power in the startup mode, instrument and control technicians, while investigating a reported temperature switch problem, discovered a High Pressure Coolant Injection (HPCI) Room differential temperature switch, TDTS-55-1N601B, with reversed thermocouple leads. This switch generates a signal to close the HPCI turbine steam supply outboard isolation valve in the event of a measured high differential temperature between HPCI equipment room supply and exhaust ventilation. The reversed leads of this switch precluded its ability to satisfy this function. Both the inboard and outboard HPCI steam supply isolation valves were immediately manually closed. Technicians discovered the problem to be unlabeled reversed thermocouple wires. The technicians labeled and connected the thermocouple wire to the proper terminals, performed a functional test to verify operability of the temperature switch, reopened the isolation valves, and returned the temperature switch to service on January 30, 1985.

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TEXT (11 more spaces is required, use additional NRC Form 366A (17))

Description of the Event:

On January 28, 1985, with Unit 1 operating at 3.5 percent power in the startup mode, a plant operator recording channel checks during the performance of Surveillance Test ST-6-107-590-1, "DAILY SURVEILLANCE LOG/OPCONS 1, 2, 3", observed a low (zero degree) differential temperature reading during the channel check of the HPCI Room differential temperature switch TDTS-55-1N601B.

A Maintenance Request Form (MRF) was generated to investigate the temperature switch. Investigation on January 29, 1985, with Unit 1 still operating at 3.5 percent power, revealed that the thermocouple field wires were reversed at the terminals on the temperature switch, therefore, precluding its ability to generate a signal to close the HPCI turbine steam supply outboard isolation valve on a high differential temperature between the room supply and exhaust ventilation ducts in the HPCI equipment room. Both the inboard and outboard HPCI steam supply isolation valves were immediately manually closed and HPCI declared inoperable. The unit continued to operate because the other required ECCS systems were operable.

A functional test of the temperature switch, "NSSSS-HPCI Equipment Room Temperature Division 2 Functional Test", ST-2-055-611-1, determined that the problem was caused by a reversed pair of unlabeled wires from the thermocouple to the Temperature Switch TDTS-55-1N601B terminals.

The wires were labeled and connected to their correct terminals. The functional test for this temperature switch was satisfactorily performed and the switch declared operable. The HPCI steam supply isolation valves were opened and HPCI returned to service at 0336 hours January 30, 1985.

A review of the results of the daily channel checks for this switch from the date of initial criticality (December 22, 1984) to January 28, 1985 was performed to determine the length of time the wires had been reversed.

Based on this review, we have postulated that the wires may have been reversed prior to January 1, 1985.

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

Consequences of the Event:

Temperature switch TDTS-55-1N601B generates a signal to close the HPCI turbine steam supply outboard isolation valve in the event of a measured high differential temperature between the room supply and exhaust ventilation ducts in the HPCI equipment room. Reversal of the thermocouple wires for TDTS-55-1N601B prevented the temperature switch from closing the HPCI outboard isolation valve, HV-55-1F003, upon a measured differential temperature of eighty degrees Fahrenheit between the room supply and exhaust ventilation ducts of the HPCI Equipment Room. Isolation capability was still provided by temperature switch TDTS-55-1N601D which would have generated a signal to close HPCI steam supply line by signaling the inboard isolation valve HV-55-1F002 to close under these conditions.

Cause of the Event:

The event was caused by leads reversed from field thermocouple wires to the temperature switch TDTS-55-1N601B terminals.

Investigation of the event determined that the improperly wired field thermocouple wires were not labeled. The failure to properly label these wires contributed to the event because the functional test for this temperature switch requires lifting of both these wires.

Comparison of the results of the differential temperature reading during the daily channel checks of temperature switch TDTS-55-1N601B verses the differential temperature reading during the daily channel checks of temperature switch TDTS-55-1N601D, which also measures and displays HPCI Room differential temperature, revealed recorded differences of up to twenty-seven degrees Fahrenheit. Although the surveillance test "DAILY SURVEILLANCE LOG/OPCONS 1, 2, 3," provides the guidance that instruments reading the same plant parameter shall be in close agreement, the brief period of record of channel checks of these temperature switches during power operation did not provide operations staff with sufficient information to determine what constitutes "close agreement."

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TEXT (if more space is required, use additional NRC Form 368) (17)

Corrective Actions:

The wires were labeled and properly connected to the temperature switch terminals and a functional test for this temperature switch performed to verify operability. An additional action taken in response to this event was to review and verify that all other thermocouple wires for the other NSSSS differential temperature switches are clearly labeled. This additional action was completed by February 6, 1985.

Furthermore, the procedure portion of daily Surveillance Test ST-6-107-590-1 will be enhanced to describe how to recognize discrepancies when recording channel check readings. The Limerick Training Coordinator will include this particular event in the operators monthly reading list for the purpose of identifying the importance of recognizing discrepancies during performance of channel checks.

PHILADELPHIA ELECTRIC COMPANY

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March 11, 1985

Docket No. 50-352

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

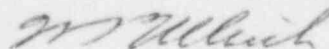
SUBJECT: Licensee Event Report
Limerick Generating Station - Unit 1

This LER concerns the discovery of an inoperable HPCI Room differential temperature switch.

Reference: Docket No. 50-352
Report Number: 85-019
Revision Number: 00
Event Date: January 29, 1985
Report Date: March 11, 1985
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)(i). We regret the late submission date of the LER. The delay in the reporting of this LER was due to the time required to determine and initiate an appropriate long-term corrective action.

Very truly yours,



W. T. Ullrich
Superintendent
Nuclear Generation Division

cc: Dr. Thomas E. Murley, Administrator, Region I, USNRC
J. T. Wiggins, Senior Site Inspector
See Service List

IE22
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January 16, 1985