

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION

P. O. BOX A

SANATOGA, PENNSYLVANIA 19464

(215) 327-1200 EXT. 2000

M. J. MCCORMICK, JR., P.E.
PLANT MANAGER
LIMERICK GENERATING STATION

September 30, 1990
Docket No. 50-353
License No. MPF-85

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

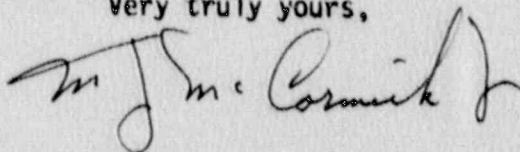
SUBJECT: Licensee Event Report
Limerick Generating Station - Unit 2

This LER concerns an unexpected initiation signal of the Steam Leak Detection System resulting in an actuation of the Primary Containment and Reactor Vessel Isolation Control System which is an Engineered Safety Feature. This actuation resulted in an isolation of the Reactor Core Isolation Cooling System. The cause of this event was due to procedural non-compliance due to Personnel Error.

Reference: Docket Nos. 50-353
Report Number: 2-90-013
Revision Number: 00
Event Date: August 31, 1990
Report Date: September 30, 1990
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,



JKP: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)

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| FACILITY NAME (1) Limerick Generating Station, Unit 2 | | | | | | | DOCKET NUMBER (2) 0 5 0 0 0 3 5 3 | | | PAGE (3) 1 OF 0 4 | |
|--|--|--|--|--|--|--|--------------------------------------|--|--|----------------------|--|

TITLE (4) Reactor Core Isolation cooling System Isolation due to personnel error resulting in procedural non-compliance.

| EVENT DATE (5) | | | LER NUMBER (6) | | | REPORT DATE (7) | | | OTHER FACILITIES INVOLVED (8) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| MONTH | DAY | YEAR | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | MONTH | DAY | YEAR | FACILITY NAMES | | DOCKET NUMBER(S) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>OPERATING MODE (9)</td> <td>1</td> <td colspan="10">THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11)</td> </tr> <tr> <td rowspan="5">POWER LEVEL (10) 0 9 8</td> <td></td> <td>20.602(b)</td> <td></td> <td>20.608(c)</td> <td>X</td> <td>50.73(a)(2)(iv)</td> <td></td> <td>73.71(b)</td> </tr> <tr> <td></td> <td>20.605(a)(1)(ii)</td> <td></td> <td>50.36(e)(1)</td> <td></td> <td>50.73(a)(2)(v)</td> <td></td> <td>73.71(e)</td> </tr> <tr> <td></td> <td>20.605(a)(1)(iii)</td> <td></td> <td>50.36(e)(2)</td> <td></td> <td>50.73(a)(2)(vii)</td> <td></td> <td rowspan="3">OTHER (Specify in Abstract below and in Text, NRC Form 366A)</td> </tr> <tr> <td></td> <td>20.406(a)(1)(iii)</td> <td></td> <td>50.73(a)(2)(i)</td> <td></td> <td>50.73(a)(2)(viii)(A)</td> <td></td> </tr> <tr> <td></td> <td>20.406(a)(1)(iv)</td> <td></td> <td>50.73(a)(2)(ii)</td> <td></td> <td>50.73(a)(2)(viii)(B)</td> <td></td> </tr> <tr> <td></td> <td>20.406(a)(1)(v)</td> <td></td> <td>50.73(a)(2)(iii)</td> <td></td> <td>50.73(a)(2)(ix)</td> <td></td> <td></td> </tr> </table> | | | | | | | | | | | | OPERATING MODE (9) | 1 | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11) | | | | | | | | | | POWER LEVEL (10) 0 9 8 | | 20.602(b) | | 20.608(c) | X | 50.73(a)(2)(iv) | | 73.71(b) | | 20.605(a)(1)(ii) | | 50.36(e)(1) | | 50.73(a)(2)(v) | | 73.71(e) | | 20.605(a)(1)(iii) | | 50.36(e)(2) | | 50.73(a)(2)(vii) | | OTHER (Specify in Abstract below and in Text, NRC Form 366A) | | 20.406(a)(1)(iii) | | 50.73(a)(2)(i) | | 50.73(a)(2)(viii)(A) | | | 20.406(a)(1)(iv) | | 50.73(a)(2)(ii) | | 50.73(a)(2)(viii)(B) | | | 20.406(a)(1)(v) | | 50.73(a)(2)(iii) | | 50.73(a)(2)(ix) | | |
| OPERATING MODE (9) | 1 | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more of the following) (11) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| POWER LEVEL (10) 0 9 8 | | 20.602(b) | | 20.608(c) | X | 50.73(a)(2)(iv) | | 73.71(b) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 20.605(a)(1)(ii) | | 50.36(e)(1) | | 50.73(a)(2)(v) | | 73.71(e) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 20.605(a)(1)(iii) | | 50.36(e)(2) | | 50.73(a)(2)(vii) | | OTHER (Specify in Abstract below and in Text, NRC Form 366A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 20.406(a)(1)(iii) | | 50.73(a)(2)(i) | | 50.73(a)(2)(viii)(A) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 20.406(a)(1)(iv) | | 50.73(a)(2)(ii) | | 50.73(a)(2)(viii)(B) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20.406(a)(1)(v) | | 50.73(a)(2)(iii) | | 50.73(a)(2)(ix) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

LICENSEE CONTACT FOR THIS LER (12)

| | | | |
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| NAME Gil J. Madsen, Regulatory Engineer, Limerick Generating Station | | TELEPHONE NUMBER 2 1 1 5 3 1 2 7 1 - 1 1 2 1 0 1 0 | |
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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 |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
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SUPPLEMENTAL REPORT EXPECTED (14)

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|--|--|-------------------------------|-------|-----|------|
| <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) | <input checked="" type="checkbox"/> NO | EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

Abstract:

On August 31, 1990, at 1100 hours, during the performance of a Surveillance Test (ST) procedure for the Reactor Core Isolation Cooling (RCIC) System (ST procedure ST-2-049-614-2), an unexpected RCIC steam leak detection system signal was generated. This resulted in an automatic actuation of the Primary Containment and Reactor Vessel Isolation Control System (PCRIVICS), an Engineered Safety Feature (ESF). The PCRIVICS actuation resulted in closure of the RCIC system inboard Primary Containment Isolation Valve, HV-49-2F007, and an actuation of a RCIC turbine trip signal. The cause of this event was a personnel error due to a lack of attention to detail resulting in procedural non-compliance. The Instrumentation and Controls (I&C) technicians did not disconnect the test equipment and terminate the field wires as directed by the ST procedure. There were no adverse consequences and no release of radioactive material as a result of this event. Additionally, the High Pressure Coolant Injection System was operable and available for high pressure injection to the reactor vessel. The Main Control Room operators reset the isolation logic and returned the RCIC System to service within ten minutes of the isolation. The PCRIVICS, steam leak detection system, and RCIC system operated as designed. Procedural compliance and a higher level of attention to detail was reinforced to all I&C technicians at an All Hands meeting on September 14, 1990. This test, having a monthly frequency, has been performed successfully many times and the technicians who erred have been counseled.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | |

TEXT IF MORE SPACE IS REQUIRED, use additional NRC Form 206A (1/83)

Unit Conditions Prior to the Event:

Unit 1 Operating Condition: 1 (Power Operation) at 98% power level.
 Unit 2 Surveillance Test (ST) procedure ST-2-049-614-2, "NSSSS - RCIC Equipment Room Temperature - High, RCIC Equipment Room dT - High and RCIC Pipe Routing Area Temperature - High, Division 3 Functional Test," was being performed by Instrumentation and Controls (I&C) Technicians per the normal monthly scheduled frequency.
 There were no structures, systems or components out of service which contributed to this event.

Description of the Event:

On August 31, 1990, at 1100 hours, during the performance of ST procedure ST-2-049-614-2, an unexpected automatic RCIC Steam Leak Detection System signal was generated. This resulted in an automatic actuation of the Primary Containment and Reactor Vessel Isolation Control System (PCRVICS)(EIIS:BJ), an Engineered Safety Feature (ESF). The PCRVICS actuation resulted in closure of the (RCIC) system inboard Primary Containment Isolation Valve (PCIV), HV-49-2F007, and an actuation of a RCIC turbine trip signal.

The Main Control Room (MCR) operators were informed by the utility employed I&C technicians who were performing the ST procedure, that they had made an error that resulted in the unexpected RCIC system isolation and RCIC turbine trip signal. The I&C technicians corrected the error and then the MCR Operators reset the RCIC system isolation and returned the RCIC system to the automatic standby mode at 1110 hours on August 31, 1990 in accordance with System Operating Procedure S49.1.B, "Recovery from RCIC Steam Line Isolation and Turbine Trip." The duration of the isolation was 10 minutes.

A four hour notification was made to the NRC at 1255 hours on August 31, 1990 in accordance with 10CFR50.72(b)(2)(ii), since this event resulted in an automatic actuation of an ESF. This report is being submitted in accordance with the requirements of 10CFR50.73(a)(2)(iv).

Analysis of the Event:

There were no adverse consequences and no release of radioactive material as a result of this event. The PCRVICS, the Steam Leak Detection System, and the RCIC system all operated as designed to the isolation signal.

If a transient had occurred resulting in an automatic RCIC initiation signal during the time period that the RCIC system was isolated, operators could have manually reset the RCIC isolation logic to allow the closed valve to be opened manually and then started the RCIC system. Additionally, High Pressure Coolant Injection System (EIIS:BJ) was operable and available for operation for high pressure injection into the reactor vessel.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

Immediate and follow-up actions to this type of event (i.e., inadvertent isolation of the RCIC System) are provided in procedure S49.1.B. Licensed operators receive requalification training to review and perform operator responses to transients of this type. This training provides practice on immediate operator actions and minimizes the length of time certain systems are isolated reducing the adverse impact on the plant. Therefore, as a result of adequate procedural guidance, prompt communication, training, and prompt operator actions, the event duration was limited and no adverse plant conditions developed.

Cause of the Event:

The cause of this event was a personnel error due to a lack of attention to detail resulting in procedural non-compliance. The I&C technicians did not disconnect the test equipment and terminate the field wires in the panel as directed by the ST procedure even though this is a sign-off step in the restoration section of the ST procedure.

The ST verifies the isolation capability of PCRVICES by verifying its input from the Steam Leak Detection System for the RCIC System. In order to test the Steam Leak Detection System logic, the isolation logic portion of the system is bypassed during the performance of the test using a "Normal/Bypass" switch. The steam leak detection system is designed to detect leaks in the RCIC system piping by the resulting changes in room temperature. Several steps in the ST procedure were inadvertently missed during the restoration portion of this ST. These steps included disconnecting test equipment and reconnecting two wires in the isolation logic system prior to taking the isolation logic system switch from "bypass" to "normal". The I&C technicians took the system out of bypass and verified that all of the alarms were clear. One of the technicians then turned off the test equipment which was still connected to the test terminals. This completed the Steam Leak Detection system isolation logic for high temperature which caused a PCRVICES actuation in that the RCIC turbine steam supply line inboard isolation valve (HV-49-2F007) closed upon receipt of the spurious isolation signal. The PCRVICES actuation also resulted in a RCIC turbine trip signal.

Corrective Actions:

Procedural compliance and a higher level of attention to detail was reinforced to all I&C technicians at an All Hands meeting on September 14, 1990. This test, having a monthly frequency, has been performed successfully many times and the technicians who erred have been counseled. No other additional actions are planned.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 306A's) (17)

Previous Similar Occurrences:

1-89-038 reported an isolation of RCIC system due to procedural non-compliance resulting from personnel error. The corrective actions in LER 1-89-038 did not prevent this LER from occurring due to different root causes.

Tracking Codes: Personnel error
A-2 Failure to follow implementing procedures.