

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

March 18, 1991

Docket Nos. 50-352

50-353

License Nos. NPF-39

NPF-85

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

SUBJECT: Licensee Event Report
Limerick Generating Station - Units 1 and 2

This LER reports the actuation of the Primary Containment and Reactor Vessel Isolation Control System (PCRIVICS), an Engineered Safety Feature, resulting in an isolation signal for the Drywell and Suppression Pool Purge Supply and Exhaust valves. This event was due to a personnel error when the direction provided by a system procedure was exceeded.

Reference: Docket Nos. 50-352
50-353
Report Number: 1-91-006
Revision Number: 00
Event Date: February 18, 1991
Report Date: March 18, 1991
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,

WGS: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 1										DOCKET NUMBER (2) 0 5 0 0 0 3 5 2										PAGE (3) 1 OF 05							
TITLE (4) This LER reports the actuation of the Primary Containment and Reactor Vessel Isolation Control System due to a personnel error																											
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									
0 2		1 8		9 1		9 1		0 0 6		0 0 0		3 1		8 9		1 1		Unit 2									
0 5		0 0		0 0		3 5		2 1		0 5		0 0		0 3		5 3		0 5 0 0 0 3 5 3									
0 5		0 0		0 0		3 5		2 1		0 5		0 0		0 3		5 3		0 5 0 0 0 3 5 3									
OPERATING MODE (9)		1		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 2. (Check one or more of the following) (11)																							
POWER LEVEL (10)		1 0 1 0		20.402(b)						20.405(e)						X 90.73(a)(2)(iv)						73.73(b)					
				20.405(a)(1)(i)						90.36(e)(1)						90.73(a)(2)(ix)						73.73(c)					
				20.405(a)(1)(ii)						90.36(e)(2)						90.73(a)(2)(vii)						OTHER (Specify in Abstract below and in Text NRC Form 366A)					
				20.405(a)(1)(iii)						90.73(a)(2)(i)						90.73(a)(2)(viii)(A)											
				20.405(a)(1)(iv)						90.73(a)(2)(ii)						90.73(a)(2)(viii)(B)											
				20.405(a)(1)(v)						90.73(a)(2)(iii)						90.73(a)(2)(ix)											
LICENSEE CONTACT FOR THIS LER (12)																											
NAME G. J. Madsen, Regulatory Engineer, Limerick Generating Station																		TELEPHONE NUMBER									
																		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 NRRDS		CAUSE		SYSTEM		COMPONENT		MANUFACTURER		REPORTABLE TO NRRDS									
SUPPLEMENTAL REPORT EXPECTED (14)																											
YES (If yes, complete EXPECTED SUBMISSION DATE)																		X NO		EXPECTED SUBMISSION DATE (15)		MONTH		DAY		YEAR	

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

On February 17, 1991, while the Shift Technical Advisor (STA) was instructing an STA trainee on the Radiological Meteorological Monitoring System (RMMS), an 'undefined' Wide Range Accident Monitor (WRAM) channel item number was selected at the Safety-Related Data Access Panel (RM-23) located in the Main Control Room. This caused an actuation of the Primary Containment and Reactor Vessel Isolation Control System (PCRIVICS), an Engineered Safety Feature (ESF), resulting in the generation of a radiation isolation signal for the Drywell and Suppression Pool Purge Supply and Exhaust valves. However, no valve movement occurred since these valves were in the closed position during this event. The consequences of this event were minimal in that all associated plant systems and equipment performed as designed and there was no radioactive material released. The cause of this event was due to personnel error when the STA and STA trainee exceeded the direction provided by a system procedure while interrogating the RMMS. The STA and STA trainee used a RM-23 channel item number that is not listed in Procedure RMMS-301, "Operation of the Main Control Room Panel OOC691." The STA and STA trainee were counseled on the importance of performing a thorough review of procedures prior to their performance and on operating systems within procedural bounds. However, to reinforce procedure compliance, this LER will be incorporated into the continuing training program for appropriate operations personnel.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMR NO. 3150-0104

EXPIRES: 8/31/85

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

TEXT (If more space is required, use additional NRC Form 3054's) (17)

Unit Conditions Prior to the Event:

Unit 1 Operational Condition was 1 (Power Operation) at 100% Power Level.

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

There were no other structures, systems, or components out of service which contributed to this event.

Description of the Event:

On February 17, 1991, at 2239 hours, while the Shift Technical Advisor (STA) was instructing an STA trainee on the Radiological Meteorological Monitoring System (RMMS, EIIS:IS), an 'undefined' Wide Range Accident Monitor (WRAM, EIIS:MON) channel item number was selected at the Safety-Related Data Access Panel (RM-23) located in the Main Control Room (MCR). This caused the actuation of the Primary Containment and Reactor Vessel Isolation Control System (PCRVS, EIIS:JM), an Engineered Safety Feature (ESF), and caused the generation of a high radiation isolation signal for the Drywell and Suppression Pool Purge Supply and Exhaust valves (EIIS:VTV). However, since these valves were in the closed position, no valve movement occurred during this event.

The STA was instructing an STA trainee on the RMMS which consists of the following computer systems:

- o RM-80; Wide Range Accident Monitor (WRAM),
- o RM-23; Safety-Related Data Access Panel,
- o RM-11; Remote Terminal, and
- o RR-026-076; Recorder.

See Figure 1 for the single line system schematic.

The STA and STA trainee proceeded to the RM-23, which consists of a key pad and digital display that allows the user to access and display all RMMS data. The STA and STA trainee then began accessing the RM-23 for ten minute trending data in accordance with procedure RMMS-301, "Operation of the Main Control Room Panel 00C691." During their review of Procedure RMMS-301, the STA and STA trainee attempted to find an access item number corresponding to trending data for the current ten minute period. As defined in Procedure RMMS-301, key pad access item number 101 corresponds to the last ten minute average. Therefore, the STA and STA trainee reasoned that the current ten minute period trending data could be found by using access item number 100. However, access item number 100 is not defined for Limerick Generating Station (LGS) RMMS use and is not listed within Procedure RMMS-301.

At 2239 hours, on February 17, 1991, the STA and STA trainee proceeded to access channel item number 100 and immediately received an error light. This error light was promptly cleared by the STAs in accordance with procedure RMMS-301.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

APPROVED OMB NO. 3150-0104

EXPIRES 8/31/85

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

TEXT (If more space is required, use additional NRC Form 365A's) (17)

The two STAs then checked the RM-11 (Remote Terminal) located in the control area of the MCR.

The RM-11 was found to display the error message, "Monitor Scan Overload," which is an alarm that is not addressed by the Alarm Response Procedure RMMS-402, "Determining Monitor or Channel Status at RM-11 Color Console." Additionally, WRAM High and High-High radiation alarms were momentarily received concurrent with the "Monitor Scan Overload" error message. However, both of these alarms had cleared prior to the STAs entering the control area of the MCR and the RM-11 indicated no valid radiation alarm conditions. MCR operations personnel then contacted Instrumentation and Controls (I&C) personnel to begin an investigation to determine the reasons for the momentary radiation alarms and 'undefined' RMMS error message.

On February 18, 1991, at 0300 hours, I&C personnel associated with troubleshooting the RMMS processed a Troubleshooting Control Form (TCF). As part of the TCF review process, the STA interrogated the Emergency Response Facilities Data System in order to view the display for system isolation statuses. The STA found that an actuation of the PCRVICS, an ESF actuation, had occurred at 2239 hours on February 17, 1991, resulting in the isolation of the Drywell and Suppression Pool Purge Supply and Exhaust valves. However, no valve movement occurred during this event. MCR Operations personnel reset the high radiation isolation at 0316 hours. Further investigation into the cause of the PCRVICS actuation by I&C personnel and the STA revealed that the PCRVICS isolation signal associated with the Drywell Suppression Pool Purge Supply and Exhaust valves initiated concurrently with the RMMS "Monitor Scan Overload" error message.

A four hour notification was made to the NRC on February 18, 1991, at 0404 hours, in accordance with the requirements of 10CFR50.72(b)(2)(ii), since this event resulted in the automatic actuation of an ESF (PCRVICS). This report is being submitted in accordance with the requirements of 10CFR50.73(a)(2)(iv).

Analysis of the Event:

The consequences of this event were minimal in that the RMMS and PCRVICS operated as designed and there was no radioactive material released.

The RMMS and PCRVICS were operable during this event and could have initiated MCR radiation alarms in the event an actual radioactive material release had occurred. Additionally, the Drywell and Suppression Pool Purge Supply and Exhaust valves experienced no valve movement as a result of the PCRVICS radiation isolation signal since these valves were in the closed position during this event.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES 6/30/95

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

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

Cause of the Event:

The cause of this event was personnel error in that the STA and STA trainee exceeded the direction provided in Procedure RMMS-301 while interrogating the RMMS.

While interrogating the RMMS, the STAs selected a channel item number (i.e., 100) that is not listed in procedure RMMS-301. When the STAs selected this channel item number, the WRAM microprocessor began to repeatedly search for non-existent data. The WRAM microprocessor was not able to complete the task of locating the requested data in the allotted time period, resulting in the error message. This error message caused the WRAM to initiate a system reset by momentarily down powering and then powering back up. This system reset resulted in the de-energization of the relays located within the WRAM. One of these relays is associated with the actuation of the PCRVICS high radiation isolation signal. Therefore, when this specific relay was momentarily de-energized, it failed to its safe position (closed) and initiated the PCRVICS high radiation isolation signal for the Drywell and Suppression Pool Purge Supply and Exhaust valves.

Corrective Actions:

The STA and STA trainee were counseled on the importance of performing a thorough review of procedures prior to their performance, and operating systems within procedural bounds. This event has been determined to be an isolated case. However, to reinforce procedure compliance, this LER will be incorporated into the continuing training program for appropriate operations personnel.

Procedure RMMS-402 was revised on March 15, 1991 to define the "Monitor Scan Overload," error message and clarify MCR alarm and monitor restoration.

Previous Similar Occurrences:

None

Tracking Codes: All - Failure to Properly Assess Consequences of Actions

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)

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Limerick Generating Station, Unit 1

0 5 1 0 0 0 3 5 2 9 1 - 0 0 6 - 0 0 0 5 OF 0 5

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

Figure 1

