

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION

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J. DOERING, JR.
PLANT MANAGER
LIMERICK GENERATING STATION

March 30, 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 an inadvertent actuation of a Unit 2 Emergency Diesel Generator, an Engineered Safety Feature, as a result of personnel error during procedure performance.

Reference:	Docket No. 50-353
Report Number:	2-93-004
Revision Number:	00
Event Date:	March 3, 1993
Report Date:	March 30, 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,

DCS:cah

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

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Handwritten initials/signature

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Limerick Generating Station, Unit 2	DOCKET NUMBER (2) 0 5 0 1 0 0 3 5 3	PAGE (3) 1 OF 0 3
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TITLE (4) **Inadvertent Emergency Diesel Generator start as a result of personnel error from misunderstood verbal communications during performance of a procedure.**

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 3	0 3	9 3	9 3	0 0 4	0 0	0 3	3	0 9 3				0 5 0 0 0		
												0 5 0 0 0		

OPERATING MODE (9) **4**

POWER LEVEL (10) **0 1 0 1 0**

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

<input type="checkbox"/> 20.402(b)	<input checked="" type="checkbox"/> 20.405(d)	<input type="checkbox"/> 50.73(e)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.426(a)(1)(ii)	<input type="checkbox"/> 50.38(e)(1)	<input type="checkbox"/> 50.73(e)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.38(e)(2)	<input type="checkbox"/> 50.73(e)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(e)(2)(i)	<input type="checkbox"/> 50.73(e)(2)(vii)(A)	
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(e)(2)(ii)	<input type="checkbox"/> 50.73(e)(2)(vii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(e)(2)(iii)	<input type="checkbox"/> 50.73(e)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
Gil J. Madsen, Regulatory Engineer, Limerick Generating Station	2 1 5 3 2 7 1 - 1 2 0 0

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

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

ABSTRACT (Limit to 1500 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On March 3, 1993, while Operations and Technical Section personnel were performing Surveillance Test (ST) procedure ST-1-092-112-2, "D22 Diesel Generator 4KV SFGD Loss of Power LSF/SAA and Outage Testing," performance of a procedural step out of sequential order resulted in premature start of the D22 Emergency Diesel Generator (EDG). This inadvertent EDG start constituted actuation of an Engineered Safety Feature (ESF). Operations Shift Supervision was immediately notified and directed that the D22 EDG be realigned to the 101 offsite source bus to carry load. The D22 EDG was secured per the ST procedure using the EMERGENCY SHUTDOWN push button. The actual consequences of this event were minimal and there was no release of radioactive material to the environment as a result of this event. This type of inadvertent start had minimal detrimental effects on the EDG, such as thermal cycling and wear, because the EDG had been operating at steady state conditions earlier during performance of the ST procedure. The cause of this event was personnel error during performance of the ST procedure in that verbal communications were misunderstood by the test director. This event was communicated to all Technical Section personnel by memorandum on March 17, 1993 to reinforce Management's expectations regarding procedure use and proper communication techniques.

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TEXT IF more space is required, use additional NRC Form 266A's (17)

Unit Conditions Prior to the Event:

Unit 2 was in Operational Condition (OPCON) 4 (Cold Shutdown) w/ 0% power at the time of this event.

The D22 4KV Safeguard bus was removed from service for testing. There were no other structures, systems or components out of service which contributed to this event.

Description of the Event:

On March 3, 1993, at approximately 2000 hours, while Operations and Technical personnel were performing Surveillance Test (ST) procedure ST-1-092-112-2, "D22 Diesel Generator 4KV Loss of Power LSF/SAA and Outage Testing," performance of a procedural step out of sequential order resulted in a premature start of the D22 Emergency Diesel Generator (EDG, EIIS:EK). This inadvertent EDG start constituted actuation of an Engineered Safety Feature (ESF).

Upon completion of the full load reject test section of the ST procedure, the EDG was shutdown to support the section which verifies the EDG hot restart upon a simulated Loss of Offsite Power (LOOP) transient. This section aligned the D22 4KV Safeguard Bus breaker (EIIS:BKR) control switches to simulate a LOOP. The EDG was secured and the generator output breaker was placed in the TRIP position. The D22 Safeguard Bus feeder breaker from the 201 offsite source bus was then opened and an undervoltage signal was simulated on the 201 bus. The D22 Safeguard Bus feeder breaker from the other offsite source bus, the 101 source bus, was then taken to the TRIP position to initiate the LOOP on the D22 bus. After waiting 110 seconds to allow the permissive for the EDG trip logic to reset, the 101/D22 feeder breaker was simulated to be in the CLOSE position. The next step was to verify the EDG did not start. Following this step, the 101/D22 feeder breaker was to be placed in the TRIP position. Before that step was completed, a member of the test team repeated that the EDG start circuitry had been shutdown for 150 seconds and the EDG circuitry could be reset.

At approximately 2000 hours the test director believed that the 101/D22 breaker had been placed in the TRIP position after seeing the Main Control Room (MCR) operator manipulate the 101/D22 breaker and hearing that the EDG circuitry could be reset. The test director then gave direction to the test team member in the EDG bay to reset the engine as directed by the ST procedure. However, this step was performed out of sequence in that the prior step, to place the 101/D22 breaker in the TRIP position, had not been performed. Performance of the prior step would have served to remove the LOOP signal from the D22 bus such that resetting the start logic would not initiate an EDG start until the 101/D22 breaker had been placed back in the CLOSE position. As a consequence of the performance of a step in the ST procedure out of sequence, the D22 EDG started sooner than expected.

Operations Shift Supervision was immediately notified of the problem and directed that the D22 EDG be realigned to the 101 offsite source bus to carry load. At 2134 hours, the D22 EDG was secured per the ST procedure using the

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

EMERGENCY SHUTDOWN push button. The section of the ST procedure to verify the EDG hot restart upon a simulated LOOP transient was then successfully reperformed. At 2200 hours the System Manager determined that the premature start of the D22 EDG constituted an inadvertent actuation of an ESF. A four hour notification was made to the NRC at 0140 hours on March 4, 1993, to report an ESF actuation, in accordance with 10CFR50.72(b)(2)(ii). This report is being submitted in accordance with the requirements of 10CFR50.73(a)(2)(iv).

Analysis of the Event:

The actual consequences of this event were minimal and there was no release of radioactive material to the environment as a result of this event. The immediate identification of the cause of the EDG start resulted in minimal impact on Operations personnel activities. The D22 EDG was run for approximately 94 minutes and then secured by Operations personnel. This type of inadvertent start had minimal detrimental effects on the EDG, such as thermal cycling and wear, because the EDG had been operating at steady state conditions earlier during performance of the ST procedure.

Cause of the Event:

The cause of this event was personnel error during performance of an ST procedure in that verbal communications were misunderstood by the test director. The misunderstood verbal communications and the belief that the 101/D22 breaker had been tripped led the test director to conclude that certain procedure steps had been performed when, in fact, they had not yet been completed. The performance of a procedure step out of sequence caused the D22 EDG to start prematurely.

Corrective Actions:

The test director was counseled regarding this event and on the importance of proper communication techniques during work activities. A voice mail message was issued to all Technical Section supervision on March 3, 1993 to provide immediate notification of the event and its cause, and to reinforce Management's expectations for proper communication during work activities. This event was communicated to all Technical Section personnel by memorandum on March 17, 1993 to reinforce Management's expectation regarding procedure use and proper communication techniques. The memorandum was also sent to other site groups involved in performance of system testing procedures to address the potential for generic concerns. This event, however, is considered to be an isolated occurrence.

Previous Similar Occurrences:

LERs 1-85-037, 1-85-040, 1-85-052, 1-87-042, 2-91-004, and 2-91-014 reported inadvertent EDG starts due to personnel error during procedure performance. None of these previous events involved a misinterpretation of verbal communications. Corrective actions for this and previous similar events are considered adequate.