

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/93

FACILITY NAME (1)

Limerick Generating Station - Unit 1

DOCKET NUMBER (2)

050003521 OF 013

PAGE (3)

TITLE (4)

Inadvertent Motor Start of the D-13 Diesel Generator

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)
05	06	85	85	052	00	06	07	85			050003521
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11)								
4			<input checked="" type="checkbox"/> 20.402(a) <input type="checkbox"/> 20.406(a) <input type="checkbox"/> 20.73(a)(2)(i)(w) <input type="checkbox"/> 73.71(a)								
POWER LEVEL (10)			<input type="checkbox"/> 20.406(a)(1)(i) <input type="checkbox"/> 20.36(a)(1) <input type="checkbox"/> 20.73(a)(2)(i)(v) <input type="checkbox"/> 73.71(a)								
			<input type="checkbox"/> 20.406(a)(1)(ii) <input type="checkbox"/> 20.36(a)(2) <input type="checkbox"/> 20.73(a)(2)(i)(w) <input type="checkbox"/> OTHER (Specify in Abstract below and in Tool, NRC Form 366A)								
			<input type="checkbox"/> 20.406(a)(1)(iii) <input type="checkbox"/> 20.73(a)(2)(ii) <input type="checkbox"/> 20.73(a)(2)(i)(w)(IA)								
			<input type="checkbox"/> 20.406(a)(1)(iv) <input type="checkbox"/> 20.73(a)(2)(iii) <input type="checkbox"/> 20.73(a)(2)(i)(w)(IB)								
			<input type="checkbox"/> 20.406(a)(1)(v) <input type="checkbox"/> 20.73(a)(2)(iv) <input type="checkbox"/> 20.73(a)(2)(i)(a)								

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
John C. Nagle, Engineer	AREA CODE 215 841-5184

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 you complete EXPECTED SUBMISSION DATE)	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
<input checked="" type="checkbox"/>	<input type="checkbox"/>				

ABSTRACT (Limit to 1600 spaces, i.e., approximately fifteen single-spaced typewritten lines) (16)

Abstract: 85-052

On May 6, 1985 at approximately 8:45 a.m. with Unit 1 in cold shutdown, an inadvertent motor start of the D-13 emergency diesel generator occurred during an investigation of false protective relay target actuations. To determine the amount of vibration necessary to actuate a relay target, the D-13 diesel output breaker compartment door was struck. When the door was struck, contacts on the D-13 switchgear interposing relay which bypass the diesel generator output breaker closing logic, closed, energizing the D-13 output breaker closing coil. Closing of the output breaker applied 4KV line voltage to the generator stator producing enough torque to rotate the diesel engine. The diesel engine starting sequence was completed and the engine reached rated speed. The D-13 diesel generator was declared inoperable in order to inspect for potential insulation damage. Following testing of the generator insulation system and completion of a load test, the diesel generator was declared operable. There have been no previous similar occurrences.

8506210477 850607
PDR ADOCK 05000352
S PDRIE22
11

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES 8/31/95

FACILITY NAME (1) Limerick Generating Station Unit 1	DOCKET NUMBER (2) 0500035285	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		05	2	0	02	OF	03

TEXT (if more space is required, use additional NRC Form 366A) (17)

Description of the Event:

On May 6, 1985 at approximately 8:45 a.m., with Unit 1 in cold shutdown, an inadvertent motor start of the D-13 emergency diesel generator occurred while investigating false protective relay target operations on the D-13 safeguard switchgear. At the time of the occurrence, plant staff engineering personnel were investigating the causes of false safeguard switchgear protective relay target actuations which had occurred on May 4 and May 5, 1985. No false protective relay target operations were discovered as a result of this investigation.

In order to determine the amount of vibration necessary to actuate a relay target, the D-13 diesel generator output breaker door was struck by plant staff engineering personnel. No relay operation other than a false target operation was expected.

When the door was struck, contact T1-M1 of interposing relay 152YX closed without the coil of the relay being energized. This relay is mounted on the switchgear door close to the location where the compartment door was struck. Contact T1-M1 connects directly to the D-13 diesel generator output breaker closing coil and bypasses the diesel generator output breaker closing logic resulting in closure of D-13 output breaker.

Closure of the output breaker connected the generator to the 4KV line voltage from the D-13 safeguard bus. The breaker remained closed for 0.866 seconds (52 cycles) before tripping from reverse power relay operation. The field current produced enough torque to rotate the diesel engine. The diesel generator accelerated to a sufficient speed to initiate fuel combustion at which time the engine fuel control accelerated the engine to rated speed. The diesel generator was shutdown within approximately five minutes following the start. This LER is submitted pursuant to the requirements of 10CFR50.73(a)(2)(iv). The EISS code for the system described in this LER is EK.

Cause of the Event:

The cause of this event is improper troubleshooting methods used by plant staff engineering personnel for investigation of the false relay target operations. The individuals involved failed to adequately assess the consequences of the troubleshooting activity performed in this manner.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

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 8 5 - 0 5 2 - 0 0 0 3 OF 0 3	LER NUMBER (6)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			

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

Consequences of the Event:

The consequences of the motoring of the diesel generator are considered minimal. Testing of the generator stator and rotor insulation as well as the cable between the generator and switchgear following the event indicated no damage or degradation of the insulation system or cable. Subsequent operability testing of the diesel generator indicated no damage to the engine or diesel generator auxiliary systems.

Corrective Actions:

The D-13 diesel generator was shutdown within approximately five minutes following the start. To investigate the potential for insulation damage, 1000 volt megger and polarization tests were performed on the generator stator and rotor insulation as well as the primary cable between the generator and D-13 safeguard bus switchgear. The testing results were satisfactory. The diesel generator was declared operable following successful load testing in accordance with procedure S92.1.0 "Local and Remote Manual Startup of a Diesel Generator."

The plant staff personnel have been counseled on the importance of following safe and technically acceptable methods for troubleshooting plant equipment.

Two signs have been attached to each of the 4KV switchgear cabinet doors to alert personnel that all door locking bolts must be secured at all times and to caution personnel in the area not to impact the compartment door.

An engineering evaluation is being performed of the switchgear design to assess whether a modification to relocate the interposing relay within the switchgear compartment is warranted. This evaluation is expected to be completed by July 15, 1985.

Previous Similar Occurrences:

None.

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4000

June 7, 1985

Docket No. 50-352

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

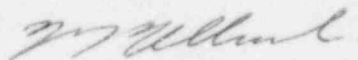
SUBJECT: Licensee Event Report
Limerick Generating Station - Unit 1

This LER concerns an inadvertent motor start of the D-13 diesel generator.

Reference:	Docket No. 50-352
Report Number:	85-052
Revision Number:	00
Event Date:	May 6, 1985
Report Date:	June 7, 1985
Facility:	Limerick Generating Station
	P.O. Box A, Sanatoga, PA 19464

This LER is submitted pursuant to the requirements of 10 CFR 50.73(a)(2)(iv).

Very truly yours,



W. T. Ullrich
Superintendent
Nuclear Generation Division

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

IE22
1/1

cc: Judge Helen F. Hoyt
Judge Jerry Harbour
Judge Richard F. Cole
Troy B. Conner, Jr., Esq.
Ann P. Hodgdon, Esq.
Mr. Frank R. Romano
Mr. Robert L. Anthony
Ms. Phyllis Zitner
Charles W. Elliott, Esq.
Zori G. Ferkin, Esq.
Mr. Thomas Gerusky
Director, Penna. Emergency Management Agency
Angus Love, Esq.
David Wersan, Esq.
Robert J. Sugarman, Esq.
Kathryn S. Lewis, Esq.
Spence W. Perry, Esq.
Jay M. Gutierrez, Esq.
Atomic Safety & Licensing Administration
Atomic Safety & Licensing Board
Docket & Service Section
James Wiggins
Timothy R. S. Campbell

June 12, 1985