

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION

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J. DOERING, JR.
PLANT MANAGER
LIMERICK GENERATING STATION

January 2, 1991

Docket No. 50-353

License No. NPF-85

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

SUBJECT: Special Report
Limerick Generating Station - Unit 2

This Special Report concerns an Emergency Diesel Generator System invalid failure that occurred during a valid test due to an improperly operating Cross Current Control Relay.

Reference:	Docket No. 50-353
Report Number:	2-90-021
Revision Number:	00
Event Date:	December 6, 1990
Report Date:	January 2, 1991
Facility:	Limerick Generating Station P.O. Box A, Sanatoga, PA 19464

This Special Report is being submitted pursuant to Technical Specifications (TS) Section 6.9.2, as required by TS Surveillance Requirement 4.8.1.1.3.

Very truly yours,

JLP:can

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

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Limerick Generating Station, Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 3 5 3	PAGE (3) 1 OF 0 3
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TITLE (4)
Special Report for an Invalid Diesel Generator Start Failure during a Valid Test.

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)
1	2	0	9	0	0	0	2	1				0 5 0 0 0
												0 5 0 0 0

OPERATING MODE (9) 1

POWER LEVEL (10) 1 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(e)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)
<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(e)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)
<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(e)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)	<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)
<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(vii)(A)	Special Report
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(vii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(viii)	

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 NFRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NFRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)

NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

On December 6, 1990, plant personnel were performing Surveillance Test (ST) procedure ST-6-092-311-2, "D21 Diesel Generator Operability Test Run." After running for approximately 90 minutes, the D21 Emergency Diesel Generator (EDG) output breaker tripped on reverse power. The D21 EDG was declared inoperable at 1228 hours on December 6, 1990. The cause of this event was intermittent closure of Cross Current Control Relay (CCCR) contacts which caused the D21 EDG control circuits to go into and out of the isochronous mode. The D21 EDG CCCR was replaced. The D21 EDG was declared operable at 2340 hours on December 7, 1990, after the successful performance of procedure ST-6-092-361-2. The terminated D21 EDG test was classified as an invalid failure in accordance with the guidance of Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units used as Onsite Electric Power System at Nuclear Power Plants," Revision 1. In the event of an actual loss of offsite power, the three remaining operable Unit 2 EDGs would have provided adequate power to achieve the safe shutdown of the reactor.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
		90	021	00	02	OF	03

TEXT (if more space is required, use additional NRC Form 306A of 1/77)

Reporting Requirements:Technical Specifications (TS) Section 3/4.8, Electrical Power System
Surveillance Requirements

TS Surveillance Requirement 4.8.1.1.3, Reports - all diesel generator failures, valid or non-valid, shall be reported to the Commission in a Special Report pursuant to Specification 6.9.2 within 30 days. Reports of diesel generator failures shall include the information recommended in Regulatory Position C.3.b of Regulatory Guide (RG) 1.108, Revision 1, August 1977.

TS Section 6.9.2, Special Reports

TS Section 6.9.2 - Special reports shall be submitted to the Regional Administrator of the Regional Office of the NRC within the time period specified for each report.

Description of the Event:

On December 6, 1990, with Unit 2 in power operation at 100% power level, plant personnel were performing Surveillance Test (ST) procedure ST-6-092-311-2, "D21 Diesel Generator Operability Test Run." After the D21 Emergency Diesel Generator (EDG) had been running for approximately 90 minutes its output increased to 3500 KW. The Main Control Room (MCR) operator then reduced the output to 2700 KW and noted that the control circuitry was not functioning properly. The output stabilized at 2700 KW, and then dropped to approximately 2200 KW. The MCR operator notified the system engineer of the problem. The system engineer suspected that the D21 EDG control logic had converted to the isochronous mode of operation. Before the system engineer could investigate the problem, the diesel generator output breaker tripped on reverse power. At 1228 hours on December 6, 1990, the D21 EDG was declared inoperable.

Analysis of the Event:

The terminated D21 EDG start was classified as an invalid failure using the guidance of RG 1.108, "Periodic Testing of Diesel Generator Units used as Onsite Electric Power System at Nuclear Power Plants," Revision 1, Section C.2.E.2. The Cross Current Control Relay (CCCR) contacts that caused the D21 EDG to go into and out of the isochronous mode are bypassed in the emergency operating mode so that the D21 EDG would have fulfilled its safety function if it had been called upon in an accident.

The D21 EDG was out of service for approximately one and one-half days as a result of this event. The D21 EDG would not have been able to automatically provide emergency power to the Division 1 Safeguard Bus while it was blocked

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

during this time period; however, the Action requirements specified by TS Section 3.8.1.1 were satisfied to demonstrate the operability of the remaining three Unit 2 EDGs by performing TS Surveillance Requirement 4.8.1.1.2.a.4 within 24 hours for one EDG at a time. All three EDGs were confirmed to be operable. In the event of an actual loss of offsite power, the three operable Unit 2 EDGs would have provided adequate power to achieve the safe shutdown of the reactor.

Cause of the Event:

The cause of this event was an improperly operating CCCR in the D21 EDG control logic circuit. Upon further investigation it was determined that the CCCR had intermittent closure of its contacts which caused the D21 EDG control circuits to go into and out of the isochronous mode.

Corrective Actions:

The D21 EDG CCCR was replaced. Personnel then performed procedure ST-6-092-361-2 to verify operability of the D21 EDG. After successfully completing the procedure, the D21 EDG was declared operable at 2340 hours on December 7, 1990.

An investigation performed to identify similar CCCR problems failed to identify any such occurrences. Personnel demonstrated the three remaining Unit 2 EDGs to not have a similar problem by successfully completing TS Surveillance Requirement 4.8.1.1.2.a.4. Performance of the monthly operability test for each EDG will identify any future problems. Because this event was classified as an invalid failure, the surveillance test frequency is not required to be changed.