PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION
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M. J. McCORMICK, Jr., P.E.
PLANT MANAGER
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November 2 , 1990
Docket No. 50-352
License No. NPF-39

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

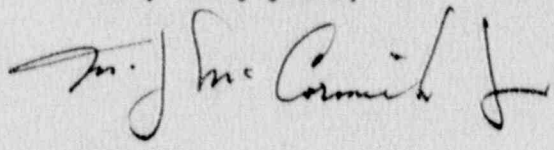
SUBJECT: Special Report
Limerick Generating Station - Unit 1

This Special Report concerns an Emergency Diesel Generator (EDG) system start failure due to an improperly operating voltage sensing relay.

Reference:	Docket Nos. 50-352
Report Number:	1-90-022
Revision Number:	0
Event Date:	October 3, 1990
Report Date:	November 2, 1990
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 Reports - "All diesel generator failures."

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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1/1

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/88

LICENSEE EVENT REPORT (LER)

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

TITLE (4)
Special Report for Diesel Generator Start Failure

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 5 0 0 0
1 0	0 3	9 0	9 0	0 2 2	0 0	1 1	0 2	9 0		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
5		20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)		20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
0 0 0		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	X OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	Special Report
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
G. J. Madsen, Regulatory Engineer, Limerick Generating Station	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 NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

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

On October 3, 1990, with Unit 1 in a refueling outage, plant personnel were performing System (S) Procedure S92.1.0, "Local Remote Manual Startup of a Diesel Generator" on the Unit 1 D11 Emergency Diesel Generator (EDG). During the performance of this System Procedure, at 2230 hours, the D11 EDG output breaker failed to close. The D11 EDG was declared inoperable as of 2230 hours on October 3, 1990 as a result of the output breaker failure. The cause of this event was an malfunctioning voltage sensing relay in the EDG logic circuit. The contacts on the voltage sensing relay were not closing completely resulting in a degraded condition. This condition prevented the "ready to load" relay from energizing which is required to close the EDG output breaker. The contacts on the voltage sensing relay were replaced and the EDG was declared operable by 2245 hours on October 5, 1990 after the performance of the EDG operability test. The terminated EDG start was classified as a valid failure in accordance with the guidance in Regulatory Guide 1.108 "Periodic Testing of Diesel Generator Units used as Onsite Electric Power System at Nuclear Power Plants." In the event of an actual loss of offsite power condition, the remaining two operable EDGs would have provided adequate power to maintain the safe shutdown of Unit 1 since the unit was already in a shutdown mode due to a scheduled outage. There were no other voltage sensing relay problems identified for the other seven Unit 1 and Unit 2 EDGs.

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

Reporting Requirements

Technical Specifications (TS) Section 3/4.8, Electrical Power Systems 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 Technical 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, "Periodic Testing of Diesel Generator Units used as Onsite Electric Power System at Nuclear Power Plants" 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 October 3, 1990, with Unit 1 in a refueling outage, plant personnel were performing System (S) Procedure S92.1.0, "Local Remote Manual Startup of a Diesel Generator." During the performance of this System Procedure, the D11 Emergency Diesel Generator (EDG) output breaker failed to close.

The D11 EDG was declared inoperable at 2230 hours on October 3, 1990 as a result of the failure of the output breaker. Operators performed the appropriate TS Actions for TS Section 3.8.1.2 for Unit 1 with one EDG inoperable. Following the investigation into the cause and the implementation of the corrective action for this event, the D11 EDG was declared operable by 2245 hours on October 5, 1990.

The terminated EDG start was classified as a valid failure using the guidance of RG 1.108, "Periodic Testing of Diesel Generator Units Used As Onsite Electric Power Systems At Nuclear Power Plants." This was the first failure for the D11 EDG, and therefore, the EDG test interval will remain at 31 days in accordance with TS Table 4.8.1.1.2-1.

Analysis of the Event:

The D11 EDG was out of service for two days and 15 hours as a result of this event. The D11 EDG would not have been able to provide emergency power to the Division 1 Safeguard Bus during this time period. However, in the event of an actual loss of offsite power condition, the remaining two operable EDGs (D12 and D13) would have provided adequate power to maintain the safe shutdown of Unit 1 since the unit was already in a shutdown mode due to a scheduled refueling outage. In addition, since Unit 1 was already in a shutdown mode of operation, only two EDGs are required to be operable in accordance with TS.

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

Cause of the Event

The cause of this event was an improperly operating voltage sensing relay in the D11 EDG logic circuit. More specifically, the contacts on the voltage sensing relay were in a degraded (i.e. badly pitted) condition due to normal wear. This condition prevented the "ready to load" relay from energizing which is required to close the EDG output breaker.

Corrective Actions:

The contacts on the voltage sensing relay were replaced. The D11 EDG operability surveillance test (ST) procedure, ST-6-092-311-1, "D11 Diesel Generator Operability Test Run," was then performed to verify operability of the D11 EDG. The D11 EDG was declared operable at 2245 hours on October 5, 1990.

The contacts on the voltage sensing relays for the other seven (Unit 1 and Unit 2) EDGs were inspected to assure that a similar problem did not exist in the other relays. No other problems were identified. No other relays of this type have experienced a similar type of failure at Limerick. A data search on the Nuclear Plant Reliability Data System (NPRDS) was performed to determine if this particular type of failure had occurred previously at another plant. No other similar failures were identified.

The voltage sensing relay in question is verified for operability on a monthly basis during the D11 EDG operability test. The performance of the monthly operability test will aide in identifying any future degraded conditions (i.e. pitted contacts) for the voltage sensing relay. For the next six months, a visual inspection of the relay contacts on the D11 EDG will be performed to monitor for abnormal degradation of the relay contacts. Based upon the results of these inspections, the frequency of the preventive maintenance procedure will be appropriately adjusted if necessary to prevent recurrence of this problem. Since this is a first failure of the voltage sensing relay, this event is considered to be an isolated occurrence and no further corrective actions are planned.