

PHILADELPHIA ELECTRIC COMPANY

LIMERICK GENERATING STATION

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J. DOERING, JR.
PLANT MANAGER
LIMERICK GENERATING STATION

January 5, 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 concerns an improperly set mechanical governor load limit knob on an Emergency Diesel Generator (EDG). As a result of this problem, the EDG failed to start on December 10, 1992. During the event investigation it was determined that the mechanical governor load limit knob was improperly set on November 30, 1992, making the EDG inoperable. Technical Specifications (TS) Section 3.8.1.1 was violated because the associated TS ACTION statements were not implemented within the required time period. Additionally, TS Section 3.0.4 was violated when the Operational Condition (OPCON) of Unit 2 was changed from OPCON 4 to OPCON 2 on December 9, 1992, with the EDG inoperable.

Reference:	Docket No. 50-353
Report Number:	2-92-013
Revision Number:	00
Event Date:	November 30, 1992
Discovery Date:	December 10, 1992
Report Date:	January 5, 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)(i)(B) and TS Section 6.9.2, as required by TS Surveillance Requirement 4.8.1.1.3.

Very truly yours,

110090

KOS/JLP: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)

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TITLE (4) Improperly set Mechanical Governor Load Limit Knob caused Emergency Diesel Generator failure to start and violation of Technical Specifications.

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)															
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	RE-BROW NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)													
1	1	3	0	9	2	9	2	0	0	1	3	0	0	0	1	0	5	9	3	0	5	0	0	0

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)									
POWER LEVEL (10)	<input type="checkbox"/>	20.402(b)	<input type="checkbox"/>	20.405(e)	<input type="checkbox"/>	60.73(a)(2)(iv)	<input type="checkbox"/>	73.71(b)		
	<input type="checkbox"/>	20.405(a)(1)(i)	<input type="checkbox"/>	60.36(a)(1)	<input type="checkbox"/>	60.73(a)(2)(v)	<input type="checkbox"/>	73.71(c)		
	<input type="checkbox"/>	20.405(a)(1)(ii)	<input type="checkbox"/>	60.36(a)(2)	<input type="checkbox"/>	60.73(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 checked="" type="checkbox"/>	60.73(a)(2)(i)	<input type="checkbox"/>	60.73(a)(2)(vii)(1A)		Special Report		
	<input type="checkbox"/>	20.405(a)(1)(iv)	<input type="checkbox"/>	60.73(a)(2)(ii)	<input type="checkbox"/>	60.73(a)(2)(viii)(B)				
	<input type="checkbox"/>	20.405(a)(1)(v)	<input type="checkbox"/>	60.73(a)(2)(iii)	<input type="checkbox"/>	60.73(a)(2)(ix)				
<input type="checkbox"/>	20.405(a)(1)(vi)	<input type="checkbox"/>	60.73(a)(2)(iv)	<input type="checkbox"/>						

LICENSEE CONTACT FOR THIS LER (12)

NAME G. J. Madsen, Regulatory Engineer, Limerick Generating Station	TELEPHONE NUMBER 2 1 5 3 2 7 - 1 2 0 0
ARFA 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 NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14)

<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH DAY YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

On December 10, 1992 the D23 Emergency Diesel Generator (EDG) failed to start during performance of Surveillance Test (ST) procedure ST-6-992-313-2. Upon investigation it was determined that the cause of this event was that the mechanical governor load limit knob was set at the "Minimum Fuel" position and caused the fuel rack to not respond to the engine start. The load limit knob had been moved to the "Minimum Fuel" position during troubleshooting performed on November 30, 1992. This event resulted in a condition prohibited by Technical Specifications (TS) Section 3.8.1.1 because the associated TS ACTION statements were not implemented within the required time period. Additionally, Unit 2 was changed from Operational Condition (OPCON) 4 to OPCON 2 on December 9, 1992 with the D23 EDG inoperable. This is in violation of TS Section 3.0.4. Actual consequences of this event were minimal in that there was no event requiring the D23 EDG to perform its design function. The cause of setting the mechanical governor load limit knob at the "Minimum Fuel" position was a personnel error resulting from procedural non-compliance by the EDG System Manager. A contributing causal factor was failure to properly self-check the troubleshooting activities in order to conclude that the knob adjustment was a system configuration change. The EDG System Manager has been counseled on the importance of procedural compliance, in understanding what constitutes a configuration change, and documenting all configuration changes.

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EXPIRES 8/31/84

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TEXT (If more space is required, use additional NRC Form 368A's) (17)

Unit Conditions Prior to the Event:

Unit 2 was in Operational Condition (OPCON) 1 (Power Operation) from November 30, 1992 through December 4, 1992 at various power levels. Unit 2 was shutdown on December 4, 1992 following the trip of both Recirculation Pumps and startup commenced on December 9, 1992. Unit 2 was in OPCON 2 (Startup) at the time of the discovery of this event on December 10, 1992.

Description of the Event:

On December 10, 1992 at 1319 hours plant personnel were performing Surveillance Test (ST) procedure ST-6-092-313-2, "D23 Diesel Generator Slow Start Operability Test Run." The D23 Emergency Diesel Generator (EDG, E11S:EK) failed to start. Main Control Room (MCR) operators instructed the licensed Plant Operator Nuclear (PON) at the D23 EDG to investigate the problem. MCR operators also contacted the EDG System Manager to assist in the troubleshooting. The test was then placed on hold while the cause of the failure was investigated.

Upon investigation it was determined that the cause of this event was that the mechanical governor load limit knob was set at the "Minimum Fuel" position and caused the fuel rack to not respond to the engine start. The EDG System Manager determined that the load limit knob had been moved to the "Minimum Fuel" position during troubleshooting performed at approximately 1500 hours on November 30, 1992 while using Troubleshooting Control Form (TCF) 92-1112. TCF 92-1112 was used to stroke the governor to check for an internal ground on the shutdown governor wiring. The mechanical governor load limit knob was returned to the "Maximum Fuel" position at approximately 1400 hours on December 10, 1992 by the licensed PON. Procedure ST-6-092-313-2 was successfully completed and the D23 EDG declared operable at 2000 hours on December 10, 1992. The D23 EDG was inoperable from approximately 1500 hours on November 30, 1992, until 2000 hours on December 10, 1992, a total of approximately 10 days.

This event resulted in a condition prohibited by Technical Specifications (TS) Section 3.8.1.1, "A.C. Sources - Operating," because the associated TS ACTION statements were not implemented within the required time period. Additionally, Unit 2 was changed from OPCON 4 (Cold Shutdown) to OPCON 2 on December 9, 1992 with the D23 EDG inoperable. This is in violation of TS Section 3.0.4 which prohibits entry into an OPCON when the conditions for the Limiting Condition for Operation (LCO) are not met and the associated ACTION requires a shutdown if they are not met within a specified time interval. Therefore, this report is being submitted in accordance with the requirements of 10CFR50.73(a)(2)(i)(B).

Furthermore, the D23 EDG failure was classified as a non-valid failure using the guidance of Regulatory Guide (RG) 1.108, "Periodic Testing of Diesel Generator Units as Onsite Electric Power System at Nuclear Power Plants," Revision 1, August 1977, Section C.2.e(2). This failure requires submittal of a Special Report pursuant to TS Section 6.9.2 as required by TS Surveillance Requirement

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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TEXT (If more space is required, use additional NRC Form 388A's) (17)

4.8.1.1.3 since this event resulted in a non-valid EDG test failure. This report also serves as a Special Report.

Analysis of the Event:

The actual consequences of this event were minimal in that there was no event requiring the D23 EDG to perform its design function. There was no release of radioactive material to the environment as a result of this event. The D23 EDG was inoperable for approximately 10 days as a result of this event. The remaining 3 Unit 2 EDGs were operable during the time the D23 EDG was inoperable, with the exception of the inoperability of the D22 and D24 EDGs for brief periods of time (ten minutes or less) during troubleshooting on November 30, 1992 and during testing of the D22 EDG on December 3, 1992.

Had an accident occurred in which the onsite Emergency AC Power system was called upon to perform its design function, coincident with a loss of offsite power, an analysis referenced in the Limerick Generating Station Updated Final Safety Analysis Report states that adequate core cooling would have been maintained with as few Emergency Core Cooling Systems as a single Low Pressure Coolant Injection subsystem with all its support systems.

Cause of the Event:

The cause of setting the mechanical governor load limit knob at the "Minimum Fuel" position was a personnel error resulting from procedural non-compliance by the EDG System Manager. A contributing causal factor was failure to properly self-check the troubleshooting activities in order to conclude that the knob adjustment was a system configuration change.

The EDG System Manager was performing troubleshooting using an approved TCF. The TCF form was filled out and approved in accordance with procedure A-41.1, "Troubleshooting Safety Related/Tech Spec Equipment," including the description of System Configuration Change. When performing the troubleshooting in the field, an unanticipated problem occurred where it was found to successfully stroke the governor, the mechanical governor load limit knob had to be set at the "Minimum Fuel" position. Procedure A-41.1 states, "The worker shall clearly record each system configuration change on the TCF," and "Changes in the approved troubleshooting method shall be discussed with the Work Group Supervisor to determine if a new or revised TCF should be generated." The EDG System manager considered the load limit knob adjustment part of the process of moving the governor linkage and not in itself a configuration change. The EDG System manager later realized that had he spent more time to self-check he would have properly concluded that the adjustment was a configuration change. Since the configuration change was not documented on the TCF, an Independent Verification of Restoration (IVOR) was not performed.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

The cause of entry into OPCON 2 with an inoperable EDG was due to inaccurate information and not a deficiency in the process for allowing OPCON changes. Plant Operations Review Committee (PORC) meetings are held to review plant status prior to startup to ensure that conditions are acceptable for entry into OPCON 2. During the OPCON change PORC meeting the available information was that the D23 EDG was operable based upon it being satisfactorily tested within its surveillance interval and no maintenance performed on the D23 EDG during the brief Unit 2 forced outage.

Corrective Actions:

The EDG System Manager has been counseled on the importance of procedural compliance, in understanding what constitutes a configuration change, and compliance in documenting all configuration changes on the TCF when performing troubleshooting.

A voice mail message was issued on December 10, 1992 to all Technical Section supervisors advising them of the occurrence of this event and requesting them to reinforce to all System Managers the requirement to document all configuration changes performed on the TCF during troubleshooting.

A memorandum was issued on December 16, 1992 to all Technical Section personnel and System Managers that conveyed the lessons learned from this event and reinforced management's expectations regarding the requirements of procedure A-41.1. The lessons learned from this event will be presented to all other groups who use TCFs during Continuing Training.

Because this is a non-valid failure for the D23 EDG, the ST procedure frequency is not required to be changed.

Previous Similar Occurrences:

None