

LICENSEE EVENT REPORT (LER)

Facility Name (1) LaSalle County Station Unit 1
 Docket Number (2) 0 5 | 0 | 0 | 0 | 3 | 7 | 3
 Page (3) 1 of 0 4

Title (4) Inability of the 1A Diesel Generator to Meet Load Acceptance Criteria During Surveillance Testing

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 4	2 2	8 8	8 8	0 0 5	0 0	0 5	2 0	8 8	LaSalle Unit 2	0 5 0 0 0 3 7 4	

OPERATING MODE (9) 5

POWER LEVEL (10) 0 0 0

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

<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<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(c)(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(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vii)	<input checked="" type="checkbox"/> Other (Specify in Abstract below and in Text) Special
<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)	
<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)	
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

Name: Paul Sampson, Technical Staff Engineer, extension 704
 TELEPHONE NUMBER: AREA CODE 8 1 | 5 | 3 | 5 | 7 | - | 6 | 7 | 6 | 1

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS
B	E	K		N					

SUPPLEMENTAL REPORT EXPECTED (14)

Expected Submission Date (15) _____

Yes (If yes, complete EXPECTED SUBMISSION DATE) NO

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

On April 22, 1988, with LaSalle Unit 1 defueled, LaSalle Technical Surveillance, LTS-800-5, "1A Diesel Generator (DG) 24 Hour Run Surveillance," was being performed. At the start of the surveillance the Nuclear Station Operator (NSO) loaded the 1A DG to 2880 KW. After approximately 1 hour, conditions on the grid changed enough to decrease the loading on the DG to approximately 2850 KW which is 10 KW below the minimum of 2860 KW required for the first 2 hours of this surveillance. The NSO attempted to increase the DG load, but the DG load would not increase. The 1A DG was declared inoperable at approximately 2030 hours.

The apparent cause of the 1A DG failing to reach its rated load capability was a combination of following:

1. A small difference in tolerance between the fuel racks and the newly installed fuel injectors.
2. Insufficient maximum speed setting on the governor to accommodate the difference in tolerance between the fuel racks and the new fuel injectors.

The safety consequences of this event were minimal. In the event of an actual loss of offsite power the DG would close on to a dead bus and carry load based on bus running loads. No reduction in load would occur since the machine is not running in parallel with the grid and speed droop characteristics are set at zero droop.

The engine governor maximum speed setting was adjusted to allow a slightly higher maximum speed which enabled the DG to achieve its maximum rated load. The 1A DG 24 hour run surveillance (LTS-800-5) was reformed and the results were satisfactory.

This event is reportable as a Special Report due to a non-valid failure of the 1A DG pursuant to Technical Specifications 4.8.1.1.3 and 6.6.C.

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TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [xx]

PLANT AND SYSTEM IDENTIFICATION

General Electric - Boiling Water Reactor

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

A. CONDITION PRIOR TO EVENT

Unit(s): 1 Event Date: 4/22/88 Event Time: 2030 Hours
 Reactor Mode(s): Defueled Mode(s) Name: Defueled Power Level(s): 0%

B. DESCRIPTION OF EVENT

On April 22, 1988 at approximately 2030 hours, with LaSalle Unit 1 defueled, LaSalle Technical Surveillance LTS-800-5, "1A Diesel Generator 24 Hour Run Surveillance," was being performed. This procedure requires the 1A Diesel Generator (1DG01K) (DG) [EK] run at greater than or equal to 2860 Kilowatts (KW) for the first 2 hours and greater than or equal to 2600 KW for the last 22 hours. At the start of the surveillance the Nuclear Station Operator (NSO, licensed RO) loaded the 1A DG to 2880 KW. After approximately 1 hour, conditions on the grid changed enough to decrease the loading on the DG to approximately 2850 KW. The NSO attempted to increase the DG load by increasing the engine speed with the Control Room governor control, but there was no response. The load remained at 2850 KW and would not increase. The 1A DG was immediately shutdown at approximately 2030 hours and declared inoperable for Unit 2 per Technical Specification 3.8.1.1. At the time of the event Unit 2 was in Operating Mode 1 (Run) at approximately 90% power. On April 10, 1988, twelve days prior to this event, all DG engine power-packs, which consist of the cylinder, piston, cylinder head, valves and fuel injectors had been replaced per the refuel outage maintenance schedule. LaSalle Operating Surveillance LOS-DG-M2, "1A Diesel Generator Operability Test," was performed satisfactorily after the replacement. LOS-DG-M2 requires that the 1A DG be loaded to 2600 KW for one hour per Nuclear Regulatory Guide 1.108. Because the DG was not loaded above 2600 KW, this problem was not detected until the 24 hour run surveillance on April 22, 1988 while attempting to maintain the DG load above 2860 KW. The Technical Staff, Electrical Maintenance Department and the vendor (Western Engine Company) began troubleshooting immediately to determine the cause of the failure. Performance parameters (cylinder temperature and fuel pressure) were checked with the DG running loaded and found to be normal. While the NSO tried to increase load further the load limit indicator and synchronizing motor on the engine governor was observed. The NSO again attempted to increase load above 2860 KW, but the governor synchronizing motor stopped at a DG load of 2850 KW. At this load (2850 KW) the load limit indicator was pointing to 88 percent, even though the load limit setpoint was at 100 percent. At this time the DG was shutdown to evaluate the test results. Under the instructions of the vendor the maximum speed setting on the engine governor was increased and the DG was restarted and loaded at approximately 0600 hours on April 23, 1988. A DG load of 3100 KW was achieved after this adjustment and the load limit indicator was able to reach 100 percent. The 1A DG was declared operable at 1205 hours on April 23, 1988.

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B. DESCRIPTION OF EVENT (Continued)

This event is reportable as a Special Report due to a non-valid failure of the 1A DG pursuant to Technical Specifications 4.8.1.1.3 and 6.6.C.

C. APPARENT CAUSE OF EVENT

The apparent cause of the 1A DG failing to reach its rated load capability was a combination of following:

1. A small difference in tolerance between the fuel racks and the newly installed fuel injectors.
2. Insufficient maximum speed setting on the governor to accommodate the difference in tolerance between the fuel racks and the new fuel injectors.

When the maximum speed setting on the governor was increased, it allowed the fuel injector to provide more fuel to the cylinders, which allowed the engine to increase speed and load. The maximum speed setting on the governor has never been changed and the governor has to be partially disassembled to do it. For this reason it is assumed that the governors maximum speed setting was always set at 88 percent. It is believed that 88 percent was sufficient for the old tolerances between the fuel racks and injectors because the DG was able to reach its rated load prior to performing the power-pack replacements.

D. SAFETY ANALYSIS OF EVENT

The safety consequences of this event were minimal. In the event of an actual loss of offsite power the DG would close on to a dead bus and carry load based on bus running loads. No reduction in load would occur since the machine is not running in parallel with the grid and speed droop characteristics are set at zero droop. The electric speed control is only operable when running the DG in parallel with the grid to perform surveillances. Therefore this was not a safety concern. Technical Specification requirement 3.8.1.1 was followed during this event. The 1A DG was inoperable for approximately 15.6 hours for this event. This was well within the 7 day timeclock for Unit 2 per Technical Specification 3.8.1.1.

E. CORRECTIVE ACTIONS

The engine governor maximum speed setting was adjusted to allow a slightly higher maximum speed which enabled the DG to achieve its maximum rated load. On April 23, 1988 at approximately 1000 hours the 1A DG 24 hour run surveillance (LTS-800-5) was reformed and the results were satisfactory. Because this problem could not be detected without trying to load the DG to its maximum rated load, LaSalle Mechanical Surveillance, LMS-DG-01, "Main Emergency Diesel Unit Surveillances," will be revised to verify the maximum load capability of the DG and prior to returning the diesel to operable status, each diesel governor will be verified to be properly set after replacement of the power-packs. Action Item Record 373-200-88-03101 will track completion of this procedure revision. Because this problem only effects the DG in the Test Mode, no further action is required.

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F. PREVIOUS EVENTS

None.

G. COMPONENT FAILURE DATA

None.



Commonwealth Edison
LaSalle County Nuclear Station
Rural Route #1, Box 220
Marseilles, Illinois 61341
Telephone 815/357-6761

May 20, 1988

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

Dear Sir:

Licensee Event Report #88-005-00, Docket #050-373 is being submitted to your office in accordance with Technical Specifications 4.8.1.1.3 and 6.6.C due to a non-valid Diesel Generator failure.

G. J. Diederich
Station Manager
LaSalle County Station

GJD/PSS/kg

Enclosure

xc: Nuclear Licensing Administrator
NRC Resident Inspector
NRC Region III Administrator
INPO - Records Center

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