

Commonwealth Edison Company  
LaSalle Generating Station  
2601 North 21st Road  
Marseilles, IL 61341-9757  
Tel 815-357-6761



March 10, 2000

United States Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555

LaSalle County Station, Unit 2  
Facility Operating License No. NPF-18  
NRC Docket No. 50-374

Subject: Licensee Event Report

In accordance with 10 CFR 50.73(a)(2)(v), Commonwealth Edison (ComEd) Company is submitting Licensee Event Report #00-001-00, Docket No. 050-374.

Should you have any questions concerning this letter, please contact Mr. Frank A. Spangenberg, III, Regulatory Assurance Manager, at (815) 357-6761, extension 2383.

Respectfully,

A handwritten signature in black ink, appearing to read "Charles G. Pardee". The signature is fluid and cursive, with a large loop at the beginning.

Charles G. Pardee  
Site Vice President  
LaSalle County Station

cc: Regional Administrator - NRC Region III  
NRC Senior Resident Inspector - LaSalle County Station

IE22

**LICENSEE EVENT REPORT (LER)**

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

**FACILITY NAME (1):** LaSalle County Station, Unit 2

**DOCKET NUMBER (2)** 05000374

**PAGE (3)**  
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**TITLE (4)** 2B Diesel Generator Unavailable for Restart Due to a Diode 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 NAME	DOCKET NUMBER
02	09	00	00	001	00	03	10	00	FACILITY NAME	DOCKET NUMBER

**OPERATING MODE (9)** 1  
**POWER LEVEL (10)** 100  
**THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:** (Check one or more) (11)

<input type="checkbox"/>	20.2201(b)	<input type="checkbox"/>	20.2203(a)(2)(v)	<input type="checkbox"/>	50.73(a)(2)(i)	<input type="checkbox"/>	50.73(a)(2)(viii)
<input type="checkbox"/>	20.2203(a)(1)	<input type="checkbox"/>	20.2003(a)(3)(i)	<input type="checkbox"/>	50.73(a)(2)(ii)	<input type="checkbox"/>	50.73(a)(2)(x)
<input type="checkbox"/>	20.2203(a)(2)(i)	<input type="checkbox"/>	20.2003(a)(3)(ii)	<input type="checkbox"/>	50.73(a)(2)(iii)	<input type="checkbox"/>	73.71
<input type="checkbox"/>	20.2203(a)(2)(ii)	<input type="checkbox"/>	20.2003(a)(4)	<input type="checkbox"/>	50.73(a)(2)(iv)	<input type="checkbox"/>	OTHER
<input type="checkbox"/>	20.2203(a)(2)(iii)	<input type="checkbox"/>	50.36(c)(1)	<input checked="" type="checkbox"/>	50.73(a)(2)(v)	Specify n Abstract below or in NRC Form 366A	
<input type="checkbox"/>	20.2203(a)(2)(iv)	<input type="checkbox"/>	50.36(c)(2)	<input type="checkbox"/>	50.73(a)(2)(vii)		

**LICENSEE CONTACT FOR THIS LER (12)**

**NAME** Danny Bost, Site Engineering Manager  
**TELEPHONE NUMBER (Include Area Code)** (815) 357-6761 Extension 2208

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
A	EK	RECT	W120	Y					

**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 February 9, 2000, at 1212 hours the 2B Diesel Generator (DG) start logic control power fuses blew prior to the conclusion of the monthly operability run during an unexpected reverse power trip of the diesel. This rendered the 2B DG unavailable for subsequent restart. The 2B DG provides the emergency power to the High Pressure Core Spray (HPCS) System.

Troubleshooting determined that the unexpected DC power failure in the diesel start logic was the result of a shorted diode installed in parallel with the output breaker permissive relay. The shorted diode resulted in the blowing of the two start logic control power fuses. The diode and fuses were replaced and the 2B DG was returned to service at 0804 on February 10, 2000.

The safety significance of the event was minimal. The HPCS was still available with normal power. The operability of the redundant Emergency Core Cooling Systems was not challenged.

**LICENSEE EVENT REPORT (LER)**  
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**PLANT AND SYSTEM IDENTIFICATION**

General Electric - Boiling Water Reactor, 3323 Megawatts Thermal Rated Core Power

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

**A. CONDITION PRIOR TO EVENT**

Unit(s): 2                                      Event Date: 02/09/00                      Event Time: 1212 Hours  
 Reactor Mode(s): 1                              Power Level(s): 100  
 Mode(s) Name: Run

**B. DESCRIPTION OF EVENT**

On February 9, 2000, at 1212 hours the 2B Diesel Generator (DG) [EK] tripped on reverse power at the completion of the monthly operability run. The Nuclear Station Operator (NSO) (Licensed Reactor Operator) had just completed reducing load to less than or equal to 200 KW and less than or equal to 200 KVAR in preparation for machine shutdown. Prior to manually opening Air Circuit Breaker ACB 2433, DG 2B Feed to Bus 243, the NSO performed a self-check and requested a peer check from a second NSO. Before these actions were completed the DG tripped on reverse power. The control room annunciator "Loss of DC Power" alarm came in concurrent with the DG trip. Fuse 1 and fuse 2 in the DG start circuit were found blown making the 2B DG unavailable for restart. The DG control switch was taken to "MAINTENANCE" position preventing the DG from being restarted. The 2B DG provides the emergency power to the HIGH Pressure Core Spray (HPCS) [BG] System.

Initial investigation discovered that both fuses in the diesel start circuit were blown. From the investigation, it appears that these fuses blew one to two seconds after the diesel tripped on reverse power. This was supported by the sequence of events recorder. Checks were performed on the DG starting circuit components including diode (CR55), which acts as an arc suppressor across the DG output breaker close permissive relay (K55). The CR55 diode was found shorted. This component failure resulted in a direct short circuit between the fuses in the diesel start circuit, which caused the fuses to blow, resulting in the DG being unavailable for restart.

This event is being reported pursuant to 10CFR50.73(a)(2)(v) as an event that alone could have prevented the fulfillment of the systems that are needed to mitigate the consequences of an accident.

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**C. CAUSE OF EVENT**

The root cause of diode CR55 failure is indeterminate. The autopsy performed on the diode was inconclusive since the fault current the diode was subjected to destroyed any evidence of pre-existing damage or flaws. Based on available indications and evidence the most likely failure mode of the CR55 diode is premature failure, since the diode had been in place for less than two years with a design life of forty years. The cause of the reverse power trip was a personnel error by the NSO in that he was not timely in opening the output breaker. The sequence of actions performed by the operator required too much time, which allowed the reverse power event to occur. The procedure informs the operator of the potential for a reverse power trip when operating less than 200 KVAR. The timeliness of opening the DG output breaker when operating at or less than, 200 KW and 200KVAR is paramount in preventing a reverse power trip.

**D. SAFETY ANALYSIS**

The safety significance of this event was minimal. The HPCS system was still available with normal offsite power. Low Pressure Coolant Injection [BO], Low Pressure Core Spray [BM] and the Automatic Depressurization System were available and operable to mitigate the consequences of an accident. Additionally the Reactor Core Isolation Cooling [BN] system was operable throughout the event.

**E. CORRECTIVE ACTIONS**

**Immediate Actions:**

The shorted diode and blown fuses have been replaced. The DG was tested and returned to service at 0804 on 2/10/2000.

**Corrective Actions to Prevent Recurrence**

Investigate the feasibility of modifying the DG control power circuit by replacing diodes used for arc suppression with a more robust design. (ATM# 23595-18)

**F. PREVIOUS OCCURRENCES**

A review of Licensee Event Reports over the previous five years found no previous occurrences of a DG not being able to start after a reverse power trip.

**G. COMPONENT FAILURE DATA**

Westinghouse Electric Corporation - Medium Power Rectifier Diode - Model Number 1N1194