



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

February 14, 1990

Director of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Mail Station PL-137  
Washington, D.C. 20555

Dear Sir:

Licensee Event Report #89-009-01, Docket #050-374 is being submitted to your office to supercede previously submitted Licensee Event Report 89-009-00 which was reported pursuant to NRC I.E. Bulletin 86-02, "Static-O-Ring Differential Pressure Switches.".

*WR: Amt*  
G. J. Diederich  
fo' Station Manager  
LaSalle County Station

GJD/MMT/kg

Enclosure

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

9002230180 900214  
PDR ADDCK 05000374  
S PDC

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IE22

LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1)

LaSalle County Station Unit 2

Title (4)

Docket Number (2)

015000374

Page (3)

1 of 04

Reactor Core Isolation Cooling Hi Steam Flow Isolation Switch Failed Diaphragm

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)
06	19	89	89	009	01	02	14	90		015000011

OPERATING MODE (9)

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

POWER LEVEL (10)

075

<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
<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)	in Abstract
<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)	below and in
<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	Text) Voluntary

LICENSEE CONTACT FOR THIS LER (12)

Name

Michael Tennyson, Technical Staff Engineer, extension 2704

TELEPHONE NUMBER

AREA CODE

815 3571-6761

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRPDS
X	R	I	F S S 3 8 2	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

Expected Submission Date (15)

Yes (If yes, complete EXPECTED SUBMISSION DATE)

X NO

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

On June 19, 1989, at 0905 hours, while Unit 2 was in Operational Condition 1 (Run), Reactor Core Isolation Cooling (RCIC) Steam Line High Flow Isolation Switch PDS-2E31-#013AA was found to have a diaphragm leak. The setpoint for this switch was found within the action limit and the Limiting Condition for Operation.

The RCIC System was maintained operable during the event. The High Pressure Core Spray System was inoperable due to the replacement of the 2B Diesel Generator at the time of the event.

The pressure differential switch PDS-2E31-#013AA was removed and replaced, tested and declared operable on June 19, 1989 at 1415 hours. The failed pressure differential switch PDS-2E31-#013AA was disassembled and inspected at LaSalle Station. A one and a half inch tear was found in the diaphragm. The cause of the tear could not be determined.

This event is reported to the Nuclear Regulatory Commission as a voluntary Licensee Event Report in accordance with the requirements of I.E. Bulletin 86-02, "Static-O-Ring (SOR) Differential Pressure Switches."



LICENSEE EVENT REPORT (LER) TEXT CONTINUATION														Form Rev 2.0	
FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)										Page (3)			
		Year		Sequential Number		Revision Number									
LaSalle County Station Unit 2	0   5   0   0   0   3   7   4	8	9	-	0	0	9	-	0	1	0	2	OF	0	4
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): 2 Event Date: 6/19/89 Event Time: 0905 Hours

Reactor Mode(s): 1 Mode(s) Name: Run Power Level(s): 75%

## B. DESCRIPTION OF EVENT

On June 19, 1989, at 0905 hours, while Unit 2 was in Operational Condition 1 (Run), at 75% power, it was discovered that the Reactor Core Isolation Cooling (RCIC) [BN] Steam Line High Flow Isolation (PC) [JM] Switch PDS-2E31-W013AA was inoperable.

During the performance of LaSalle Special Test, LST 98-068, "Unit 2 RCIC High Steam Flow Isolation Functional," the differential pressure switch PDS-2E31-W013AA was unable to maintain pressure while the Instrument Maintenance Technician (CST) was attempting to verify actuation at the proper setpoint. This is normally a symptom of a torn diaphragm, therefore the differential pressure switch was removed and replaced.

Differential Pressure Switch 2E31-W013AA is connected in reverse parallel to PDS-2E31-W013AB. The design function of 2E31-W013AA is to initiate an automatic isolation of 2E51-F008, RCIC Steam Line Outboard Isolation Valve, in the event of a steam line break. The purpose of 2E31-W013AB is to isolate 2E51-F008 in the event of RCIC High Steam Flow Instrument line break.

The RCIC System was required to be operable in accordance with Technical Specification 3.5.1 during the performance of the surveillance due to the High Pressure Core Spray System (HP) [BG] being inoperable for repairs to the 2B Diesel Generator (DG) [EK].

No other inoperable equipment/systems contributed to this event. No automatic or manual safety system actuations occurred and none were required. No Operator actions contributed to the severity of this event. Actions taken to correct the cause of this event were timely and appropriate.

This event is reported to the Nuclear Regulatory Commission as a Voluntary Licensee Event Report in accordance with the requirements of I.E. Bulletin 86-02, "Static-O-Ring (SOR) Differential Pressure Switches."

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

### C. APPARENT CAUSE OF EVENT

The failed pressure differential switch 2E31-W013AA was disassembled and inspected at LaSalle Station. A one and a half inch tear was found in the diaphragm. In inspection of the O-rings and bearings revealed nothing abnormal. The switch failure was due to the tear found in the diaphragm during the inspection. The cause of the tear in the diaphragm could not be determined.

### D. SAFETY ANALYSIS OF EVENT

The differential pressure switch 2E31-W013AA detects a RCIC Steam Line break. The reverse connected differential pressure switch 2E31-W013AB will detect an instrument line break on the "high" side of the instrument line. A leaking diaphragm of 2E31-W013AA would eventually allow equalization of pressure between the "high" and "low" instrument lines making the switch inoperable. Depending on the size of the leak in the diaphragm PDS-2E31-W013AB would also be affected.

There are two channels of RCIC High Steam Flow Sensing Instrumentation which isolate the RCIC System in the event of a steam line break or an instrument line break. Channel A would close the RCIC Steam Line Outboard Isolation Valve 2E51-F008, and Channel B would close the RCIC Steam Line Inboard Isolation Valves 2E51-F063 and 2E51-F076. The Channel B RCIC Steam Line High Flow Sensing Instrumentation was fully operable at the time of the event and would have isolated the RCIC steam line by closing 2E51-F063 and 2E51-F076 in the event of a RCIC steam line break.

In addition, both the inboard and outboard isolation functions for Residual Heat Removal (RHR) [BO] steam line high flow would have occurred as designed had a high flow condition existed in the RHR steam line downstream of 2E51-F064 and 2E51-F091, RHR Heat Exchanger Steam Line Outboard Isolation Valves.

The differential pressure switch 2E31-W013AA for Channel A was replaced within the 1-hour timeclock as required by Technical Specification 3.3.2 Limiting Conditions for Operation. The outboard isolation valve 2E51-F008 was never closed.

The RCIC System was operable during the performance of LST 89-068. The High Pressure Core Spray System was inoperable due to repair work to the 2B DG at the time of the event.

### E. CORRECTIVE ACTIONS

The corrective action for this event was performed as required by Technical Specifications 3.3.2. This resulted in the pressure differential switch PDS-2E31-W013AA being removed and replaced within the time allowed for the Limiting Condition of Operation.

A new SOR differential pressure switch identical to the failed one was certified for use in the RCIC steam line high flow application using LaSalle Instrument Procedure LIP-GM-952, "Static-O-Ring Differential Pressure Switch Operability Test," and LIP-GM-956, "Analysis of Static-O-Ring Differential Pressure Switch Data." This new switch was installed per LIP-GM-946, "Installation Procedure for S-O-R Model 103/102 Environmentally Qualified Differential Pressure Switches" under LaSalle Work Request L90704 on June 19, 1989. The switch was calibrated per LIS-R1-201, "Unit 2 Steam Line High Flow RCIC Isolation Calibration." Differential Pressure Switch 2E31-W013AA was restored to operability on June 19, 1989, at 1415 hours.



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LaSalle County Station Unit 2	0   5   0   0   0   3   7   4	8   9	-	0   0   9	-	0   1	0   4	OF 0   4					

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

E. CORRECTIVE ACTIONS (Continued)

The failed Differential Pressure Switch, PDS-2E31-N013AA, was disassembled and inspected at LaSalle Station. The findings of the inspection revealed that the switch failed due to the torn diaphragm.

F. PREVIOUS EVENTS

LER Number	Title
374/86-018-01	Failure of Reactor Core Isolation Cooling Steam Line Flow Isolation Switch Due to Torn Diaphragm
374/87-016-01	Defective Low Pressure Core Spray Minimum Flow Switch
374/87-019-01	Failure of Static-O-Ring Differential Pressure Switch Due to Leakage Across Diaphragm
373/88-009-01	High Pressure Core Spray Low Low Level Initiation Static-O-Ring Level Switch Diaphragm Rupture
373/89-012-00	Div. II RCIC Hi Steam Flow Isol. SOR Failed Diaphragm

G. COMPONENT FAILURE DATA

Manufacturer	Nomenclature	Model Number	MFG Part Number
SOR, Inc.	Differential Pressure Switch	103AS-8203-C1A NX-JJITX6	N/A