



Commonwealth Edison  
LaSalle County Nuclear Station  
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Marseilles, Illinois 61341  
Telephone 815/357-6761

December 13, 1994

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

Licensee Event Report #94-013-00, Docket #050-373 is being submitted to your office in accordance with 10CFR50.73(a)(2)(v).

D. J. Ray  
Station Manager  
LaSalle County Station

DJR/RG/lja

Enclosure

cc: NRC Region III Administrator  
NRC Senior Resident Inspector  
INPO - Records Center  
IDNS Resident Inspector  
IDNS Senior Reactor Analyst  
Nuclear Licensing Administrator

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PDR ADDCK 05000373  
S PDR

LICENSEE EVENT REPORT (LER)																		Form Rev 3.0						
Facility Name (1) LaSalle County Station Unit 1														Docket Number (2) 0   5   0   0   0   3   7   3				1 of 0 4						
Title (4) RCIC Declared Inoperable Due to Control System Oscillations																								
Event Date (5)			LER Number (6)				Report Date (7)				Other Facilities Involved (8)													
Month	Day	Year	Year	///	Sequential	///	Revision	Month	Day	Year	Facility Names				Docket Number(s)									
1	1	1	4	9	4	9	4	---	0	1	3	---	0	0	1	2	1	3	9	4				
OPERATING MODE (9)			1				THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)																	
POWER LEVEL (10) 1    0    0			20.402(b)				20.405(c)				50.73(a)(2)(iv)				73.71(b)									
			20.405(a)(1)(i)				50.36(c)(1)				X 50.73(a)(2)(v)				73.71(c)									
			20.405(a)(1)(ii)				50.36(c)(2)				50.73(a)(2)(vii)				Other (Specify									
			20.405(a)(1)(iii)				50.73(a)(2)(i)				50.73(a)(2)(viii)(A)				in Abstract									
			20.405(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)				below and in									
			20.405(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(x)				Text)									
LICENSEE CONTACT FOR THIS LER (12)																								
Name Russell Gremchuk, System Engineer, Extension 2809														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													
X					Yes																			
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 November 14, 1994, at 1000 hours with Unit 1 in Operating Condition 1 (Run) 100% power, the Reactor Core Isolation Cooling (RCIC) System was declared inoperable. During the performance of procedure LOS-RI-Q5, "Reactor Core Isolation Cooling (RCIC) System Pump Operability, Valve Inservice Test in Conditions 1, 2, 3 and Cold Quick Start", rapid oscillation of the turbine governor valve (1E51-F361) occurred, causing unstable turbine speed and flow response.

The cause of this event has been determined to be the failure of a sub-component within the speed controller (EG-M). Repairs and component replacements were made on the RCIC Turbine Speed and Flow Control System. On November 20, 1994, a cold quick start per LOS-RI-Q5, was successfully completed. The RCIC System was subsequently declared operable.

This event is reportable pursuant to 10CFR50.73(s)(2)(v) due to RCIC being declared inoperable.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION															Form Rev 3.0	
FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)														
		Year	///	Sequential Number	///	Revision Number										
LaSalle County Station Unit 1	0   5   0   0   0   3   7   3	9	4	-	0	1	3	-	0	0	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): 1 Event Date: 11/14/94 Event Time: 1000 Hours  
 Reactor Mode(s): 1 Modes(s) Name: Run Power Level(s): 100%

## B. DESCRIPTION OF EVENT

On November 14, 1994, during performance of LaSalle Operating Surveillance LOS-RI-Q5, "Reactor Core Isolation Cooling (RCIC, RI) [BN] System Pump Operability, Valve Inservice Test In Conditions 1, 2, 3 and Cold Quick Start", rapid oscillation of the RCIC turbine governor valve (1E51-F361) was experienced. Valve oscillations caused unstable RCIC Turbine speed and flow response. The RCIC turbine was shutdown and the system was declared inoperable at 1000 hours.

On the evening of November 14, 1994, calibration and troubleshooting of the electronic control system was performed per LaSalle Special Test Procedure (LST) 94-063, "RCIC Turbine Control System Calibration Test". From this immediate investigation, it was determined that a connector was damaged at the RCIC Turbine magnetic speed pickup. The speed pickup provides a speed feedback signal which is combined with flow signals to determine the final position of the governor valve (1E51-F361). The connector was repaired that day.

On November 15, 1994, LOS-RI-Q5 was again performed. However, following throttling of the test line return valve 1E51-F022 per the surveillance requirements, governor valve oscillations returned. The RCIC Turbine was shutdown and the surveillance was terminated. Event recorder (STARTREC) traces of this run were evaluated. The speed controller (EG-M) output signal to the hydraulic actuator (EG-R) was slightly smoother than the run on the previous day. This improvement was attributed to the speed pickup connector repair.

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B. DESCRIPTION OF EVENT (Continued)

On November 16, 1994, a slow turbine start was initiated, per LST 94-063, to calibrate the EG-R. System Engineering determined that the EG-R had not been tuned following LaSalle Station Unit 1 Sixth Refuel Outage (L1R06), when the EG-M and Ramp Generator/Signal Converter (RG/SC) had been calibrated. General Electric (GE) Service Information Letter (SIL) 351, Rev. 2, Attachment 2, dated April 4, 1990, had recommended calibration of all devices. When GE SIL 351, Revision 2, was issued in 1990, it was evaluated by System Engineering and determined that no action was required. Because of this most recent event, the SIL has been re-evaluated, and it has been determined that the recommendations in the SIL will be implemented in a permanent procedure at LaSalle Station. The recommendations of the SIL were implemented in a special procedure on November 16, 1994 for the calibration of Unit 1 RCIC System. Subsequently, stable operation of the governor valve was achieved.

On Thursday, November 17, 1994, a Root Cause Analysis Team gathered to resolve the control system problems observed on the previous two days. A RCIC Turbine expert was present for the discussions. The team determined that the most probable root cause was an unidentified component failure within the EG-M Speed Control Module. It was decided that the suspect EG-M Speed Control Module should be replaced and sent off-site for analysis.

On November 18, 1994, the EG-M and the RG/SC were replaced. The RG/SC was replaced due to the discovery of a dead spot in an adjustment potentiometer.

On November 19, 1994, a slow start of the RCIC Turbine was performed to calibrate and tune the system controls. With GE concurrence, the EG-M stability potentiometer setting was increased from 5 to 6 1/4. Stable operation was achieved. During two subsequent hot quick starts, fully loaded, no governor valve oscillations were observed.

On November 20, 1994, after a 24 hour wait period, a cold quick start, per LOS-RI-Q5, was successfully completed. The RCIC System was declared operable.

C. APPARENT CAUSE OF EVENT

RCIC Turbine Control System failures combined to cause the event:

1. Damaged magnetic speed pick-up connector
2. Failed component within the EG-M control box speed section

The removed EG-M and the RG/SC will be analyzed in an effort to determine component failure mechanism.

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D. SAFETY ANALYSIS OF EVENT

The safety consequences of this event are minimal because Unit 1 High Pressure Core Spray System (HPCS,HP)[BG] was operable throughout this event as a high pressure safety injection system.

E. CORRECTIVE ACTIONS

The immediate corrective actions completed were:

Repairs or component replacements were made within the RCIC Turbine Speed and Flow Control System consisting of:

1. Replacement of RG/SC,
2. Replacement of EG-M,
3. Repair of magnetic speed pick-up connector, and
4. Recalibration of entire control system in accordance with GE SIL 351, Rev. 2, and GE DRF E51-00167-003.

Corrective actions to be performed include:

1. Revise Procedure LIS-RI-115/215 Unit 1/2 RCIC Control System Calibration to incorporate the recommendations of GE SIL 351, Rev. 2 and GE DRF E51-00167-003,
2. The removed EG-M and RG/SC will be sent out for analysis in an effort to determine component failure mechanism.
3. A special test (LST) will be generated prior to L2R06 to be used until LIS-RI-215 is revised.

F. PREVIOUS EVENTS

None.

G. COMPONENT FAILURE DATA

To be determined upon completion of the above long term corrective actions.