Commonwealth Edison
LaSalle County Nuclear Station
2601 N. 21st Road
Marseilles, Illinois 61341
Telephone 815/357-6761

January 12, 1995

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

Licensee Event Report #94-010-00, Docket #050-374 is being submitted to your office in accordance with 10CFR50.73(a)(2)(iv).

D. J. Ray
Station Manager
LaSalle County Station

DJR/ME/lja

Enclosure

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

JE22

LICENSEE EVENT REPORT (LER) Form Rev 3.0

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

Title (4) Division 2 Emergency Core Cooling System and Reactor Core Isolation Cooling Initiation Due to the Pressure Switch Isolation Valve Leaking

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)
1 2	1 4	9 4	9 4	---	0 1 0	---	0 0	0 1	1 2	9 5		

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)	X	50.73(a)(2)(iv)		73.71(b)		
			20.405(a)(1)(i)		50.36(c)(1)		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	TELEPHONE NUMBER
	AREA CODE
Michael Ellsworth, Instrument Maintenance Staff, Extension 2278	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	MANUFACTURER	REPORTABLE TO NPRDS	///	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	///
X		I S V	G 1 8 2								

SUPPLEMENTAL REPORT EXPECTED (14)		Expected Submission Date (15)	Month	Day	Year
YES (If yes, complete EXPECTED SUBMISSION DATE)	NO				

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

On December 14, 1994 at 1015 hours, with Unit 2 in Operational Condition 1 (Run) at 100% power, a Division 2 Emergency Core Cooling System (ECCS) and Reactor Core Isolation Cooling (RCIC) low level initiation occurred. The initiation occurred while Instrument Maintenance (IM) Technicians were performing LaSalle Instrument Surveillance, LIS-NB-418B, "Unit 2 Reactor Vessel Low Pressure and Injection Line Low Pressure, RHR 'B'/RHR 'C' (LPCI) Injection Valve Open Permissive Monthly Functional Test". The IM Technicians were in the process of valving out pressure switch 2B21-N413D, when a pressure spike in a common sensing line/reference leg caused a low reactor vessel level initiation signal for Division 2 ECCS and RCIC to occur.

At the time of this event, the 2A Diesel Generator was out of service for planned maintenance. All ECCS Systems were fully operable. Operations verified that the RCIC and RHR B/C initiations were inadvertent and restored these systems to normal standby operation.

This report is being per 10CFR50.73(a)(2)(iv) due to an automatic actuation of an Engineered Safety Feature.

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: 12/14/94 Event Time: 1015 Hours

Reactor Mode(s): 1 Modes(s) Name: Run Power Level(s): 100%

B. DESCRIPTION OF EVENT

On December 14, 1994, at 1015 hours with Unit 2 in Operational Condition 1 (Run) at 100% power, a Division 2 Emergency Core Cooling System (ECCS) and Reactor Core Isolation Cooling (RCIC, RI)[BN] low level initiation occurred resulting in RCIC initiation and injection, and automatic start of "B" and "C" Residual Heat Removal (RHR,RH)[BI] Pumps. The initiation occurred while Instrument Maintenance (IM) Technicians were performing LaSalle Instrument Surveillance, LIS-NB-418B, "Unit 2 Reactor Vessel Low Pressure and Injection Line Low Pressure, RHR "B"/RHR "C" (LPCI,LP)[BM] Injection Valve Open Permissive Monthly Functional Test". The Reactor Operators verified that reactor water level was normal, then secured the RCIC and RHR B/C Systems and returned them to normal standby operation. The initiation logic for these instruments is a two-out-of-two once logic, and the instrument line is common to these instruments.

LIS-NB-418B is a functional test that is performed monthly for Pressure Switches (PS) 2E12-N413B, 2E12-N413C, 2B21-N413B, and 2B21-N413D. This surveillance test verifies the reactor pressure permissive logic for the low pressure ECCS Injection Valves. The IM Technicians were in the process of connecting a dead weight tester to 2B21-N413D when this event occurred.

An IM Technician closed the isolation valve for pressure switch 2B21-N413D and removed the vent cap. As the vent valve was slowly opened, water emerged from the vent line. Recognizing this situation as abnormal, the Technician closed the vent valve and attempted to seat the isolation valve by hand without successful results (the valve handle did not move). The Technician then seated the isolation valve using a wrench (the valve handle moved about one quarter of a turn). It was during this sequence of events that the initiation signals were received. The Technician, unaware of the initiation signal, continued with the surveillance and reopened the vent valve to verify the isolation valve had seated. It had seated as evidenced by the fact that no more water emerged from the vent.

B. DESCRIPTION OF EVENT (Continued)

The sensing line for the locally mounted pressure switches 2B21-N413B and 2B21-N413D is also the common sensing line/reference leg for several other reactor pressure and level transmitters and switches on the 2H22-P027 instrument rack. Venting pressure switch 2B21-N413D with leakage past the isolation valve caused a pressure spike in the common sensing line/reference leg, resulting in a low reactor vessel water level initiation signal for Division 2 ECCS and RCIC.

As a result of the Division 2 initiation signal, RHR Pumps "B" and "C" started, and RCIC initiated. RCIC operated for approximately 16 seconds (actual water injection was approximately 5 seconds). The Control Room Operator verified that the ECCS and RCIC initiation signals were spurious by verifying that Reactor water level was normal and secured RCIC and the RHR Pumps. The RCIC injection did not result in any changes in reactor vessel water level or reactor power. RHR Pumps "B" and "C" did not inject any water into the reactor vessel because actual reactor vessel pressure was greater than the injection valve low pressure permissive. The 2A Diesel Generator (DG)[EK] was out-of-service for planned maintenance and, therefore, did not start.

The IM Technician was informed by the Control Room of the ECCS and RCIC actuations, and he then returned all four pressure switches to normal. The surveillance was immediately suspended. The B/C RHR Systems and RCIC were returned to standby status following the event.

A Work Request was initiated to repair the isolation valve. The Action Request Tag was placed on the isolation valve to indicate that it is difficult to seat. Interim instructions were provided to the IM Department to assure good isolation with valves similar to the one involved in this event.

This event is reported to the Nuclear Regulatory Commission as a Licensee Event Report in accordance with 10CFR50.73(a)(2)(iv) due to an automatic actuation of an Engineered Safety Feature.

C. APPARENT CAUSE OF EVENT

The isolation valve for Pressure Switch 2B21-N413D leaked by the disc when closed, resulting in a sensing line pressure drop when the vent cap was removed and the vent valve opened. This sensing line is also a common sensing line/reference leg for several other transmitters and switches. Previous events have shown this instrument sensing line/reference leg to be sensitive to minor perturbations and vulnerable to spurious actuation.

D. SAFETY ANALYSIS OF EVENT

The consequences of this event were minimal. The RCIC injection did not cause any reactor vessel water level changes or any increases in reactor power.

RHR Pumps "B" and "C" did not inject any water into the reactor vessel because reactor vessel pressure was greater than their injection valve low pressure permissives.

The 2A Diesel Generator was out-of-service for planned maintenance and therefore, did not start.

At the time of this event, all Emergency Core Cooling Systems (ECCS) were fully operable.

E. CORRECTIVE ACTIONS

A Root Cause Investigation was initiated, and an Action Request was initiated to repair the isolation valve. An Action Request Card was placed on the isolation valve to indicate that it is difficult to seat. The IM Department was provided with instructions on how to assure good isolation with valves similar to the one involved in this event.

Corrective actions on Unit 1 for similar events have included the installation of a time delay relay on the RCIC low level switch and replacing the valves with an improved type of valve. The valve involved in this event had not yet been replaced with the new type. This valve will be repaired or replaced during the next refueling outage for Unit 2 scheduled to begin in February 1995. The time delay component replacement will be installed on Unit 2 prior to the completion of the next refueling outage.

Long Term corrective actions to prevent spurious ECCS and RCIC initiation will be taken and includes the following:

1. Susceptible valves (valves similar to the one in this event that are difficult to seat and that are installed on sensitive and vulnerable sensing lines/reference legs) will be identified. Susceptible valves will be evaluated for replacement with an improved type of valve.

2. The IM Technicians have been made aware of the above valves, and were provided guidance to assure good isolation for activities involving these valves. Further training on this issue will be provided.

E. CORRECTIVE ACTIONS (Continued)

3. Sensitive and vulnerable sensing lines/reference legs will be evaluated by Engineering to determine if additional measures can be implemented to reduce sensitivity.

F. PREVIOUS EVENTS

LER Number	*Title*
373/91-011-00	Spurious Actuation/Injection of RCIC System
373/92-008-00	Spurious Instrument Spike Resulting in a RCIC Inject and Half Scram
374/92-013-00	Spurious Initiation of RCIC while performing LIS-LC-403

G. COMPONENT FAILURE DATA

Manufacturer	Nomenclature	Model Number	Mfg Part Number
Gould Imperial-Eastman	Valve, Needle	754-CSSA-08	30124100