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

June 27, 1991

Director of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D.C. 20555

Dear Sir:

Licensee Event Report #91-007-00, Docket #050-373 is being submitted to your office in accordance with 10CFR50.73(a)(2)(iv).

Charles H. Schroeder for
G. J. Diederich 6/27/91
Station Manager
LaSalle County Station

GJD/JMS/mkl

Enclosure

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

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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

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

Title (4)

Reactor Water Cleanup Isolation Due To Leaky Filter/Demineralizer Valve

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 5 0 0 0
0 5	2 8	9 1	9 1	---	0 0 7	--- 0 0	0 6	2 7	9 1		0 5 0 0 0

OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)			
	20.402(b)	20.405(c)	X 50.73(a)(2)(iv)	73.71(b)	
POWER LEVEL (10) 1 0 0	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 in Abstract below and in Text)	
	20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)		
	20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)		
	20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

Name	TELEPHONE NUMBER AREA CODE
JoAnn Shields, Technical Staff Engineer, Extension 2371	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	C E	V		N						

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 May 28, 1991, at 1326 hours, with Unit 1 in the Operating Condition 1 (Run) mode at 100% power, the Reactor Water Cleanup (RWCU) System isolated on a Leak Detection (LD) High Differential Flow Isolation Signal causing both the RWCU Inboard and Outboard Isolation Valves to automatically close, followed by automatic trips of the RWCU pumps.

At the time of this event, LaSalle Special Procedure LLP-91-014, "Keeping the Precoat and Hold Pumps on Simultaneously", was being performed on the "B" Filter/Demineralizer. After this filter was de-isolated, the filter inlet valve 1G33-Z001-06B leaked by, allowing high pressure water to flow through the Filter Vessel and back to the low pressure piping, causing low pressure relief valve 1G33-Z001-063 to lift, causing the differential flow isolation logic to initiate.

Prior to the event, the Reactor Recirculation/Reactor Conductivity Monitor was inoperable. When RWCU isolated, the Reactor Water Cleanup/Reactor Conductivity monitor now became inoperable, and Chemistry was notified to monitor Reactor Chemistry in accordance with Technical Specification 3/4.4.4.

The RWCU lines were walked down to verify piping integrity, the isolation was then reset and the RWCU system was restarted at approximately 2120 hours on May 28, 1991.

Work request L08224 was written to repair valve 1G33-Z001-06B, which leaked past its seat.

This event is reportable to the requirements of 10CFR50.73(a)(2)(iv) due to the actuation of an Engineering Safety Feature System.

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: 05/28/91 Event Time: 1326 Hours

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

B. DESCRIPTION OF EVENT

On May 28, 1991 at 1326 hours with Unit 1 in the Run Mode at 100% power, an Equipment Operator was performing LaSalle Special Procedure LLP-91-014, "Keeping The Precoat And Hold Pumps On Simultaneously". This special test was a modified version of the normal Reactor Water Cleanup (RWCU) [CE] operating procedure for Precoats, but allowed for maintenance activities to be monitored on the Hold Pump while the Precoat Pump maintained the filter media on the filter septa. Prior to the event, the "B" filter was in the "Precoat Retain" step of the Precoat. The Precoat Pump was running, recirculating water through the filter, and then back to the Precoat pump suction. There are two air-operated valves on the inlet to the filter which provide the isolation of the high pressure piping from the low pressure precoat piping, 1G33-Z001-32B and 1G33-Z001-06B. Both these valves were closed at this time. Similar valves (1G33-Z001-066B and 1G33-Z001-031B) exist on the outlet of the filter. In accordance with the procedure, the Equipment Operator verified that the Filter inlet and outlet pressures monitored inside the double block isolations, indicated zero pressure. The procedure now called for the filter to be de-isolated, causing one of the filter air-operated inlet valves (1G33-Z001-32B) and one of the filter air-operated outlet valves (1G33-Z001-31B) to open. The Equipment Operator at the local RWCU panel called the Control Room Nuclear Station Operator (NSO, licensed Reactor Operator) prior to de-isolating. After placing the handswitch in the de-isolate position at approximately 1328 hours, the filter air-operated outlet valve opened fully, while the filter inlet air-operated valve showed dual indication. Approximately 20 seconds after the Isolation Valves started to change position, the Equipment Operator and the NSO heard a relief valve (1G33-Z001-63) cycling rapidly. Locally the RWCU precoat tank high level alarm energized, while in the Main Control Room the RWCU Differential Flow 45 second time delay timer energized. When the NSO informed the Equipment Operator that the Differential Flow timer had initiated, the Equipment Operator placed the handswitch back in the Isolate position, and opened 1G33-Z001-047 and 1G33-Z001-048, precoat tank manual drains. He also put the other two RWCU filters in a Hold mode to minimize the impact of the isolation on the RWCU system. At approximately 1329 hours, the NSO informed the Equipment Operator that RWCU had isolated, and the Equipment Operator called his supervisor for assistance. After placing the handswitch in Isolate, the Equipment Operator estimates that it took approximately two minutes for the inlet isolation, 1G33-Z001-32B, to go full closed.

After troubleshooting the logic of RWCU System, it was determined that the filter inlet valve, 1G33-Z001-06B, which had been closed throughout the Precoat and the De-isolation, was leaking past its seat.

B. DESCRIPTION OF EVENT CONTINUED CONTINUED

The conductivity monitor on the Reactor Recirculation line was inoperable at the time of the event, and now, with the RWCU isolation, the RWCU/Reactor conductivity monitor was also inoperable. Per Technical Specification 3/4.4.4, Chemistry was notified to sample reactor water. All chemistry samples obtained through this point while RWCU was isolated were within Technical Specification 3/4.4.4. limits.

At approximately 1840 hours on May 28, 1991, the 1B RWCU filter was backwashed, and left in a Shutdown mode pending further investigation of the isolation.

This event is reportable to the requirements of 10CFR50.73(a)(2)(iv) due to the actuation of an Engineering Safety Feature System.

C. APPARENT CAUSE OF EVENT

The RWCU System differential flow isolation was due to valve 1G33-Z001-06B leaking past its seat, allowing the high pressure reactor piping to become connected to the low pressure precoat piping, and creating a flowpath out of the primary system. The leak detection system operated per design.

D. SAFETY ANALYSIS OF EVENT

The RWCU Differential Flow Isolation had no impact on the safe operation of Unit 1. The leak detection system isolated the RWCU system per design. While the RWCU system was shutdown, reactor coolant chemistry remained within the Technical Specification 3/4.4.4 allowable limits.

E. CORRECTIVE ACTIONS

The RWCU lines were inspected to verify piping integrity and the isolation logic was reset. The RWCU system was filled and vented in accordance with LaSalle Operating Procedure LOP-RT-01, RWCU Fill and Vent, and the RWCU system was re-started in accordance with LOP-RT-02, RWCU Start-Up.

Work request L08224 was written to repair valve 1G33-Z001-06B, which leaked past its seat.

General Electrical Company issued Service Information Letter (SIL) 437 to describe the potential for valve failures or mispositionings to allow the high and low pressure piping to become connected. As a result of this SIL, Modification M01-1-86-082 was created to implement these recommendations.

The modification will change the precoat logic so that the filter will stage from the Precoat Retain step into Hold, allowing the automatic closure of precoat low pressure piping isolation valves and the manual closure of backup manual isolation valves. Only then would the filter be de-isolated, allowing the automatic opening of valves 1G33-Z001-32B, 1G33-Z001-06B, and 1G33-Z001-31B. This change provides multiple double valve isolations between the high and low pressure piping systems. The portion of this modification dealing with the 1B filter was recently installed in June of 1991.

F. PREVIOUS EVENTS

RWCU isolations on differential flow due to mispositioned or leaky valves are described in the following reports:

LER Number	Title
373/84-046-00	Reactor Water Cleanup Isolation On High Differential Flow
373/84-047-00	Reactor Water Cleanup Isolation On High Differential Flow
373/84-050-00	Reactor Water Cleanup Isolation On High Differential Flow
373/84-053-00	Reactor Water Cleanup Differential Flow Isolation
374/84-037-00	Reactor Water Cleanup Differential Flow Isolation
374/86-006-01	Reactor Water Cleanup Isolation Due To Valves Mispositioned

G. COMPONENT FAILURE DATA

Manufacturer	Nomenclature	Model Number	MFG Part Number