



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

April 25, 1991

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

Dear Sir:

Licensee Event Report #91-002-00, Docket #050-373 is being  
submitted to your office in accordance with  
10CFR50.73(a)(2)(iv).

G. J. Diederich  
Station Manager  
LaSalle County Station

GJD/JDS/mkl

Enclosure

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

## LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) LaSalle County Station Unit 1  
 Title (4) Control Room Ventilation Isolation During Return To Service Due To Cognitive Error

Docket Number (2) 0 | 5 | 0 | 0 | 0 | 3 | 7 | 3  
 Page (3) 1 | of | 0 | 4

Control Room Ventilation Isolation During Return To Service Due To Cognitive Error

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   3	2   6	9   1	9   1	0   0   2	0   0	0   4	2   5	9   1	LaSalle Unit 2	0   5   0   0   0   3   7   4

OPERATING  
MODE (9)

5

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

POWER LEVEL (10)	0   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

Joseph Sparacino, Technical Staff Engineer, Extension 2421

AREA CODE

8 | 1 | 5 | 3 | 5 | 7 | - | 6 | 7 | 6 | 3

## 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
A	V	A		N					

## 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 March 26, 1991, at approximately 2024 hours with Unit 1 defueled and Unit 2 in Operational Condition 1 (Run) at 99 percent power, a Division 1, Group 4 Primary Containment (PC) Isolation occurred. This isolation caused Unit 2 Reactor Building Ventilation (VR) Inboard Dampers 2VR05YA and 2VR04YB to close and the VR Fans to trip off. It also caused the Standby Gas Treatment System (VG) on both Units to auto start.

The cause of this event was a momentary loss of continuity in the Reactor Building Ventilation and Fuel Pool Cooling Exhaust Radiation Monitor Trip Logic. The loss of continuity occurred when a Technician loosened an electrical connection in the trip circuitry to remove a previously installed jumper. The location of the interrupted circuit path is such that the power to the contacts forming the combinational logic was lost, resulting in the complete isolation signal from the single open circuit. The root cause of this event was a cognitive error on the part of the Shift Engineer and IM Supervisor approving the removal of the Temporary System Changes. The possibility of disturbing the continuity of PCIS logic circuits during the removal process should have been recognized, and the need of temporary alligator clips specified to the Technician.

The Temporary System Change procedure will be revised and the departments involved in the event will be retrained on the procedure. This event was reportable pursuant to the requirements of 10CFR50.73(a)(2)(iv) due to the actuation of an Engineered Safety Feature System.

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						Year	Sequential Number	Revision Number															
LaSalle County Station Unit 1		0	5	0	0	0	3	7	3	9	1	-	0	0	2	-	0	0	0	2	WF	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): 1/2 Event Date: 03/26/91 Event Time: 2024 Hours

Reactor Mode(s): Defueled/1 Mode(s) Name: Defueled/Run Power Level(s): 0/99%

#### B. DESCRIPTION OF EVENT

On March 26, 1991, at approximately 2024 hours with Unit 1 Defueled and Unit 2 in Operational Condition 1 (Run) at 99 percent power, a Division 1, Group 4 Primary Containment (PC) [JM] Isolation occurred. This isolation caused Unit 2 Reactor Building Ventilation (VR) [VA] Inboard Dampers 2VR05YA and 2VR04YB to close and the VR Fans to trip off. It also caused the Standby Gas Treatment System (VG) [BH] on both Units to auto start. At approximately 2030 hours on March 26, 1991, the Group 4 Isolation was reset and the Unit 2 VR was restarted. The Unit 2 VG system was left running to obtain the necessary chemistry samples.

The event occurred while a jumper was being removed from the Fuel Pool Cooling Exhaust Process Radiation Monitor (PR) [IL] Logic. As the jumper was being removed, continuity was lost and the Group 4 Isolation Signal was given. The jumper was installed for Temporary System Change (TSC) 1-473-91, which was installed to prevent spurious trips from occurring. This was installed after a previous isolation event on March 18, 1991 (Licensee Event Report 374/91-002-00). The TSC was being closed in order to perform LIS-VR-103, "Unit 1 Reactor Building Vent Exhaust High Radiation Secondary Containment Isolation Response Time Test".

There were two jumpers associated with TSC 1-473-91, one in Main Control Room panel 1H13-P635 panel and one in the 1H13-P636 panel. The jumper associated with the isolation was originally installed under a different TSC but was transferred to TSC 1-473-91 on March 22. The purpose of transferring the jumper to a second TSC was to consolidate the documentation for two identical alterations (differing only in affected PCIS divisions) into one document to prevent confusion. During installation of both jumpers, temporary alligator clip jumpers were used to prevent a loss of continuity. The use of the temporary jumper was documented on the original TSC, but when the jumper information was transferred to the new TSC (1-473-91), the temporary alligator clip jumper information was not transferred. The second jumper was installed in the 1H13-P636 panel and the temporary alligator clip jumper that was used was in the 1PA14J panel. This jumper was installed by the Electrical Maintenance Department and the appropriate temporary alligator clip jumper information was recorded on the TSC. The TSC procedure (LAP-240-6, "Temporary System Changes") contains provisions for the elective use of "temporary alligator clip jumpers". These jumpers are used to "protect" the electrical node being worked on during jumper installation, by momentarily jumpering around the connection point.



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LaSalle County Station Unit 1	0   5   0   0   0   3   7   3	9   1	-	0   0   3	-	0   0	0   3	OF 0   4					
TEXT Energy Industry Identification System (EIS) codes are identified in the text as [XX]													

#### B. DESCRIPTION OF EVENT CONTINUED

On March 26, 1991, the Shift Engineer (licensed Senior Reactor Operator) authorized removal of both jumpers and gave the TSC package to the IM Supervisor. The TSC was then given to an "A" and a "B" Instrument Mechanic for removal, at which time the "A" IM briefly reviewed the TSC. The "A" IM then went to talk to the Shift Engineer and permission was granted to start the job. The SCRE was also informed of the job by the "A" IM and permission was given. The Shift Control Room Engineer (SCRE, licensed Senior Reactor Operator) did not question the job because he thought that the jumpers were the banana jack type (which can be removed without disturbing the installed circuit). The "A" IM then told the Unit 1 Nuclear Station Operator (NSO, Licensed Reactor Operator) about the job to clear the TSC. The Unit 1 NSO then reset the inboard and outboard isolation circuits on Unit 1 and the Unit 2 NSO was informed to do the same. The Unit 1 NSO asked the "A" IM if the SCRE had reviewed and approved the TSC. The "A" IM said the SCRE had approved the TSC and the Unit 1 NSO then gave permission to start the job. The Unit 1 NSO instructed the "A" IM to reset the trip units that had been jumpered out prior to removing the jumper.

The IM's removed the jumper in the 1H13-P635 panel without using a temporary alligator clip jumper. This did not cause an isolation signal because when the jumper was being removed, the screw did not have to be completely removed in order to remove the jumper. The IM's then tried to remove the jumper in the 1H13-P636 panel without using a temporary alligator clip jumper in the 1PA14J panel. In order to remove this jumper, the screw had to be completely removed because the jumper had a ring type connection. When the screw was removed the continuity in the circuit was lost, which caused the isolation.

#### C. APPARENT CAUSE OF EVENT

The root cause of this event was a cognitive error on the part of the Shift Engineer and IM Supervisor approving the removal of the Temporary System Changes. The possibility of disturbing the continuity of PCIS logic circuits during the removal process should have been recognized, and the need of temporary alligator clips specified to the Technician.

#### D. SAFETY ANALYSIS OF EVENT

The safety consequences of this event were minimal due to the fact that when the Fuel Pool Exhaust PRM's experienced the loss of continuity, the initiation of the Group 4 Primary Containment Isolation and the auto start of the Standby Gas Treatment System were the correct safety responses according to the design of the plant.

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LaSalle County Station Unit 1	0   5   0   0   0   3   7   3	9   1	-	0   0   2	-	0   0	0   4	OF	0   4				
TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]													

#### E. CORRECTIVE ACTIONS

After the cause of isolation had been identified, Unit 1 Standby Gas Treatment System was shutdown and the Reactor Building Ventilation System was started.

The Electrical Maintenance, Instrument Maintenance and Operating Department will be tailgated on the event through a General Information Notice (GIN) and retrained on the Temporary System Change Procedure. This training will reemphasize the need for thoroughly evaluating the effects of disturbing circuits and the importance of taking compensatory measures. This will be tracked by Action Item Record 373-200-91-04102.

In addition, Procedure LAP-240-6, "Temporary System Changes", will be revised to clarify the use of temporary alligator clip jumpers. Consideration will be given to format changes to make the working copy forms more user friendly with respect to meeting all on-site review comments and requirements. This will be tracked by Action Item Record 373-200-91-04101.

#### F. PREVIOUS EVENTS

LER Number	Title
373/86-020-00	Inadvertent ESF Actuation
373/86-023-00	VR Damper Isolation During Surveillance

#### G. COMPONENT FAILURE DATA

There was no component failure.