



Commonwealth Edison
LaSalle County Nuclear Station
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Marseilles, Illinois 61341
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November 2, 1994

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

Licensee Event Report #94-007-00, Docket #050-374 is being submitted to your office in accordance with 10CFR50.73(a)(2)(iv).

for *D. J. Ray*
D. J. Ray
Station Manager
LaSalle County Station

DJR/WJB/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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Facility Name (1) LaSalle County Station Unit 2										Docket Number (2) 0 5 0 0 0 3 7 4 1 of 0 5																
Title (4) Division 1 Group 2 and Group 4 Primary Containment and Reactor Building Ventilation Isolation Signal Due to a Blown Fuse																										
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	0	0	3	9	4	9	4	---	0	0	7	---	0	0	1	1	0	2	9	4	LaSalle Unit 1	0 5 0 0 0 3 7 3				
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)																							
POWER LEVEL (10) 0 7 4			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 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: William Bejlovec, Instrument Maintenance Supervisor, Extension 2673										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 NRPDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER			REPORTABLE TO NRPDS													
X	V	R																								
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 October 3, 1994 Units 1 and 2 were in Operational Condition 1 (Run) at 99 percent and 74 percent power, respectively. At 2357 hours a Division 1 Group 2 and Group 4 Primary Containment Isolation System (PCIS) and Reactor Building Ventilation (VR) Isolation Signal occurred. The Unit 2 Standby Gas Treatment System (SBGT) auto-started and was subsequently shutdown. (Unit 1 SBGT was already running for its monthly operability surveillance.)

After verification that no valid isolation signal was present, LaSalle Operating Abnormal (LOA) procedure LOA-VR-01 was entered. PCIS Group 1 High Temperature and High Delta Temperature isolations were defeated to prevent Main Steam Line (MSL) Isolation on High Delta Temperature, and a one-hour timeclock was entered.

The cause of the spurious isolation was traced to a blown fuse. The fuse was replaced, utilizing LaSalle Administrative Procedure (LAP) LAP-400-11, and all systems were restored to normal lineup. Upon restoration of the VR System, the Unit 1 Steam Tunnel temperatures returned to normal, isolations were restored to normal operating status, and the timeclock was exited.

This event is reportable pursuant to 10CFR 50.73(a)(2)(iv) due to an automatic actuation of an Engineered Safety Feature (ESF).

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 2	0 5 0 0 0 3 7 4	9	4	-	0	0	7	-	0	0	0	2	OF	0 5			
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: 10/03/94 Event Time: 2357 Hours
 Reactor Mode(s): 1/1 Modes(s) Name: Run/Run Power Level(s): 99%/74%

B. DESCRIPTION OF EVENT

On October 3, 1994 Units 1 and 2 were in Operational Condition 1 (Run) at 99 percent and 74 percent power, respectively. At 2357 hours a Division 1 Group 2 and Group 4 Primary Containment Isolation System (PCIS, PC) [JM] and Reactor Building Ventilation (VR) [VA] Isolation Signal occurred. The Unit 2 Standby Gas Treatment System (SBGT) [BH] auto-started and was subsequently shutdown. (Unit 1 SBGT was previously running for its monthly operability surveillance and was allowed to continue running.)

After verification that no valid isolation signal was present, LaSalle Operating Abnormal (LOA) procedure LOA-VR-01 "Recovery From A Group 4 Isolation Or Spurious Trip Of Reactor Building Vent" was entered. Group 1 High Temperature and High Delta Temperature isolations were defeated to prevent Main Steam Line (MSL) Isolation on High Delta Temperature, and a one hour timeclock was entered. Following the Reactor Building Ventilation (VR) Isolation, the Unit 1 Steam Tunnel temperatures reached a peak of 167°F as indicated by Temperature Indicating Switch (TIS) 1E31-N602D. Temperatures exceeded 144°F (Group 1 setpoint) for about sixty minutes, and exceeded 165°F for about twenty minutes of this sixty minute time period.

The cause of the spurious isolation was traced to a blown fuse in panel 2H13-P623 which provides power to PC & VR Isolation System relays 2B21-K67 and 2B21-K79, monitoring Division 1 Level 2 & High Drywell Pressure logic. The fuse was replaced, utilizing LaSalle Administrative Procedure (LAP) LAP-400-11 "Fuse Replacement" and all systems restored to normal lineup. Upon restoration of the VR System, the Unit 1 Steam Tunnel temperatures returned to normal, isolations were restored to normal operating status, and the timeclock was exited.

At the time of the event, the Instrument Maintenance Department (IMD) was performing LaSalle Instrument Surveillance (LIS) LIS-MS-407A, "Unit 2 Reactor Vessel Low Water Level 1 and Level 2 Isolation Instrument Channels A & C Monthly Functional Test".

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

B. DESCRIPTION OF EVENT (Continued)

The investigation identified that LIS-MS-407A requires five Volt-Ohm-Meters (VOM's) to be connected to monitor specific relay contact actuation. All VOM's (Simpson Model 260 Rated at 5000 ohms/volt sensitivity for A.C. volts) are initially set to monitor 120 Volts AC. The hook-ups take place within panel 2H13-P609 as follows:

VOM #1....terminals 7 & 8 of relay 2B21-K1A (HFA Type)
 VOM #2....terminals 5 & 6 of relay 2B21-K1A (HFA Type)
 VOM #3....terminals 3 & 4 of relay 2B21-K1A (HFA Type)
 VOM #4....terminals T2 & M2 of relay 2B21-K103A (Agastat)
 VOM #5....terminals T1 & M1 of relay 2B21-K100AX (Agastat)

The IMD Control System Technician (CST) had completed the hook-ups for the first four of the VOM's, and was in the process of connecting the fifth. As the CST maneuvered to make the last hook-up, body contact caused VOM #1 to shift position on the cart, which in turn caused the negative alligator clip lead to release its grip from terminal post #8 of relay 2B21-K1A. The released alligator clip lead dropped. As the CST took control of the lead, the sound of relays changing and VR dampers cycling occurred. The procedure was halted and the CST was directed by the Shift Engineer to disconnect the VOM's and exit the procedure. Once the cause of the spurious isolation was traced to a blown fuse, the fuse was replaced, and systems affected were restored to normal operating condition. Surveillance LIS-MS-407A was then satisfactorily performed without further incident.

C. APPARENT CAUSE OF EVENT

The cause of the PCIS Division I Group 2 and Group 4 PC and VR isolation signal was determined to be the blown fuse. The actual cause of the blown fuse remains unknown. It is believed that the alligator clip lead was involved or actually caused the fuse to blow although the exact mechanism is not clearly understood. The fact that the CST was working on the same string of logic when the fuse blew supports this conclusion.

The following actions took place in an attempt to determine the root cause. Inspection of the alligator clip lead, associated with the involved VOM, that became unattached did not show evidence of any electrical arcing damage. Inspection of the terminal studs of various relays within the swing path of the unattached alligator clip lead did not show evidence of any electrical arcing damage. The overcurrent protection device in the VOM did not actuate.

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C. APPARENT CAUSE OF EVENT (Continued)

The normal service of the 6 amp fuse that blew was to supply power to two normally energized relays (GE Type HFA51), 2B21-K67 and 2B21-K79. The total coil holding current of these two relays is approximately 600 milliamps, which means the fuse would normally be operating at 10% of rated. The Simpson Model 260 is rated at 5000 ohms/volt sensitivity for A.C. volts, which would not allow sufficient current flow to blow a 6 amp fuse through the meter internals. Therefore, the probable current path appears to be external to the meters, most likely a momentary short to ground via the unattached alligator clip lead.

D. SAFETY ANALYSIS OF EVENT

The safety consequences of this event were minimal due to the fact that with the VR Isolation System relay loss of power, the initiation of a Group 2 and Group 4 Isolation and the autostart of the Unit 2 SBTG were the correct safety responses according to the design of the plant. The Group 2 isolation had no effect on the safety of the plant.

As a result of the isolation of the VR, temperatures in the Unit 1 Steam Tunnel exceeded 144°F for about sixty minutes, exceeding 165°F for twenty minutes of this sixty minute time period with a peak of 167°F. These temperatures are bounded by evaluation EQER-01-93-002, reference CHRON 209177, which stated that as long as the equipment experiences elevated temperatures of no more than 174°F for not more than 1.5 hours, Site Engineering does not need to be notified. The qualified life of equipment in the Steam Tunnel is unaffected by this temperature transient.

E. CORRECTIVE ACTIONS

Procedure LOA-VR-01 was entered for the spurious isolation. An investigation and a physical inspection were performed, and the blown fuse was replaced. All systems involved were then returned to their normal operating condition. The timeclock was exited, after which LIS-MS-407 was performed satisfactorily.

Although the root cause of the blown fuse remains unknown, the following corrective actions address the suspected cause.

1. Determine if there are more accessible termination points for the VOM hook-up to minimize awkward movements within the panel.
2. Determine if special spring sheath protected banana test leads would better meet our needs by eliminating metal exposure.
3. Identify locations for banana jacks to be installed when possible, where procedural test connections are routinely terminated. Also make determination at that time if a more accessible termination point is reasonable.

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F. PREVIOUS EVENTS

None previous that were directly similar.

G. COMPONENT FAILURE DATA

This event involved the failure of a 6 amp fuse. The fuse (Buss type NON 6 amp, rated at 250 volts or less A.C. from Bussman Mfg. Div.) was replaced, and systems restored to normal status. The fuse failure is believed to be a result of the IMD CST accidentally bumping the alligator clip lead.