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

November 26, 1990

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

Dear Sir:

Licensee Event Report #90-011-00, Docket #050-374 is being submitted to your office.

This event was originally determined to not be reportable under 10CFR50.73. After further review, while the event did not violate the FSAR requirements for Automatic Depressurization System (ADS) operability for the Emergency Core Cooling System (ECCS) function, the ADS valves could not meet all their FSAR specified functions. In addition, the intent of Technical Specification Surveillance requirements 4.5.1.d.1 and 4.5.1.d.2.2) were not met. Therefore this event is being submitted per 10CFR50.73(a)(2)(i), as operation prohibited by the plant's Technical Specifications. This reclassification occurred on November 21, 1990 which exceeded the 30 day limit for reportable events.

for G. J. Diederich
Station Manager
LaSalle County Station

GJD/MKG/mkl

Enclosure

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

IE27
1/1

LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1)	Docket Number (2)	Page (3)
LaSalle County Station Unit 2	0 5 0 0 0 3 7 4	1 of 0 6

Title (4)

Loss Of Unit 2 North Bank Automatic Depressurization System Backup Pressure Supply

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
1 0	1 6	9 0	9 0	0 1 1	0 0	1 1	2 6	9 0		0 5 0 0 0

OPERATING MODE (9): 1

POWER LEVEL (10): 0 9 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)	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)	X 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)
Mike Gronek, Technical Staff Engineer, Ext. 2324	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
A	P C			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 October 16, 1990 at 0930 hours, with Unit 2 in operational condition 1 (Run) at 99% power, the Unit 2 Shift Supervisor received a report that the 2IN01CA Drywell Pneumatic (IN) Compressor was running loaded continuously and the 2IN01CB Drywell Pneumatic Compressor was cycling on and off and loading to maintain system pressure. At approximately 1015 hours the 2IN01CB Compressor was shutdown to make some minor adjustments. Operating shift personnel opened the 2IN059 and 2IN060 valves to crosstie Instrument Air to the Drywell Pneumatic System.

At 1036 hours, the 2IN01CB Compressor was tagged Out-Of-Service and work commenced. At 1315 hours, following the installation of calibrated pressure gauges the Instrument Maintenance personnel informed the Shift Engineer that the South Automatic Depressurization System (ADS) Bottle Bank header pressure was 160 psig and the North ADS Bottle Bank header pressure indicated 112 psig. Based on this information it was determined that the North ADS Bottle Bank pressure regulator was not opening to control header pressure. At 0110 hours on October 17, 1990, the 2IN090 Gas Manifold System 2IN09MB Pressure Regulator Downstream Stop was determined to be closed during the performance of LaSalle Special Procedure LLP-90-062, "IN Regulator Adjustment." The 2IN090 valve was then opened and the pressure regulator was observed to be operating normally. At 0300 hours, the 2IN01CA compressor was returned to service and restarted. The 2IN090 valve had been left closed since the last system lineup verification was performed in accordance with LaSalle Operating Procedure LOP-IN-02M, "Unit 2 IN Mechanical Checklist." This event was caused by personnel error. The South ADS bottle bank pressure regulator stop and Unit 1 ADS North and South bottle bank pressure regulator stops were verified in their proper positions following this event.

This event is reportable pursuant to the requirements of 10CFR50.73(a)(2)(i) due to operation prohibited by the plants Technical Specifications.

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: 10/16/90 Event Time: 0930 Hours

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

B. DESCRIPTION OF EVENT

On October 16, 1990 at 0930 hours, with Unit 2 in operational condition 1 (Run) at 99% power, the Unit 2 Shift Supervisor received a report that the 2IN01CA Drywell Pneumatic (IN) [PC] Compressor was running loaded continuously and the 2IN01CB Drywell Pneumatic Compressor was cycling on and off and loading to maintain system pressure. It was also reported that the 2IN01CB Compressor was making a loud knocking noise when it unloaded. Mechanical Maintenance personnel were immediately notified of the problem and the need for assistance to repair the compressors.

At approximately 1015 hours the 2IN01CB Compressor was shutdown in preparation for tagging it Out-Of-Service to make some minor adjustments. A Drywell Pneumatic inlet pressure low alarm was received during this time. Operating shift personnel opened the 2IN059 and 2IN060 valves to crosstie Instrument Air to the Drywell Pneumatic System. This was done in accordance with LaSalle Operating Abnormal Procedure LOA-IN-01, "Loss of Normal Drywell Pneumatic Air Supply" to maintain system pressure at approximately 100 psig which provides sufficient air pressure to keep the Main Steam Isolation Valves open.

At 1036 hours, the 2IN01CB Compressor was tagged Out-Of-Service and work commenced. Because the piston was observed to be loose at the piston rod end, the Mechanical Maintenance personnel made adjustments to prevent the piston from contacting the piston head of the cylinder.

While the Mechanical Maintenance personnel were working on the 2IN01CB Compressor, Operating personnel replaced the North and South (ADS) Automatic Depressurization System Bottle banks because the bottle pressures were low (600 - 700 psig) and they anticipated an increase in usage due to Drywell Compressor problems.

At 1238 hours, the Shift Engineer instructed the Instrument Maintenance personnel to install calibrated pressure gauges on both the North and South ADS valve pneumatic supply headers. This was done to monitor pneumatic supply pressure to verify ADS valve operability.

At 1315 hours, following the installation of calibrated pressure gauges, the Instrument Maintenance personnel informed the Shift Engineer that the South (ADS) Bottle Bank header pressure was 160 psig and the North ADS Bottle Bank header pressure indicated 112 psig. This pressure was measured downstream of the regulator and is normally 160 psig. Based on this information it was determined that the North ADS Bottle Bank pressure regulator was not opening to control header pressure. Individual ADS accumulator pressure switches were determined to be pressurized above the alarm point of 152 psig. This was determined by verifying that no ADS accumulator low pressure alarms were present.

At 1345 hours, the 2IN01CB compressor was returned to service and started. At this time it appeared to be operating normally. The 2IN059 and 2IN060 were then closed to isolate the Instrument Air system from the Drywell Pneumatic System.

At 1402 hours, the 2IN01CA compressor was shutdown.

At 1514 hours, the 2IN01CB compressor tripped and was unable to be restarted. Following the trip of the 2IN01CB compressor, the Instrument Air system was crosstied with the Drywell Pneumatic System to maintain system pressure of 110 psig.

At 1615 hours, the Unit 2 Containment Nitrogen Makeup valves were closed to minimize Primary Containment pressure increase. This was due to Instrument Air system being crosstied to the Drywell Pneumatic System. This is normally expected and is caused by minor leakage from the pneumatic valve operators in the containment while being supplied from a source outside of the containment such as the Instrument Air System.

During the afternoon shift (1500-2300 hours), a plan was developed based on a past experience with a failure of the ADS pressure regulator to maintain pressure. Previously the valve was exercised to prevent it from sticking in one position. The Technical Staff was requested to develop a Special Procedure to cycle the North Side ADS Bottle Bank Regulator 2IN038.

At 1845 hours, the Primary Containment was vented in accordance with LaSalle Operating Procedure LOP-VQ-05, "Venting The Drywell".

At approximately 2130 hours, LaSalle Special Procedure LLP-90-062, "IN Regulator Adjustment" was approved. Technical Staff, Operating and Maintenance personnel reported to the North ADS Bottle Bank Area to perform the test.

At 2240 hours, the Primary Containment Vent and Purge system was shutdown.

At 0110 hours on October 17, 1990, the 2IN090 Gas Manifold System 2IN09MB Pressure Regulator Downstream Stop was determined to be closed during the performance of LaSalle Special Procedure LLP-90-062, "IN Regulator Adjustment". The 2IN090 valve was then opened and the pressure regulator was observed to be operating normally.

At 0300 hours, the 2IN01CA compressor was returned to service and restarted. Following verification of the proper operation of the compressor, the 2IN060 and the 2IN059 Instrument Air to Drywell Pneumatic crosstie valves were closed.

B. DESCRIPTION OF EVENT (Continued)

This event was originally determined to not be reportable under 10CFR50.73. After further review, while the event did not violate the FSAR requirements for ADS operability for the Emergency Core Cooling System (ECCS) function, the ADS valves could not meet all their FSAR specified functions. In addition, the intent of Technical Specification Surveillance requirements 4.5.1.d.1 and 4.5.1.d.2.2) were not met. Therefore this event is being submitted per 10CFR50.73(a)(2)(i), as operation prohibited by the plant's Technical Specifications. This reclassification occurred on November 21, 1990 which exceeded the 30 day limit for reportable events.

C. APPARENT CAUSE OF EVENT

The 21N090 valve had been left closed since the last system lineup verification was performed in accordance with LaSalle Operating Procedure LOP-IN-02M, "Unit 2 IN Mechanical Checklist". LOP-IN-02M requires this valve to be closed to prevent the Backup Nitrogen Storage Bottles from depressurizing prior to system startup. The LaSalle Operating Procedure LOP-IN-01, "Drywell Pneumatic System Startup and Operation" provides guidance for opening both the North and South Drywell Pneumatic Bottle Bank Pressure Regulator Downstream Stops 21N089/21N090 once normal system pressure is established using the IN system compressors. A review of the Unit 2 Reactor Building Rounds has been performed to determine when this valve could have been closed by comparing the rate at which the bottle banks were depressurizing. A review has also been performed to determine if any Equipment Out-Of-Service or Equipment Tag Outs could have closed the 21N090 valve and no Out-Of-Service were found to have affected the position of this valve. Another review of the Unit Operators and the Shift Engineers Log was performed to determine if any operations had been performed which may have affected this valve position. These reviews were inconclusive. This event was caused by personnel error.

A Contributing Factor to the discovery of this event was the failure of both Drywell Pneumatic Compressors to maintain system pressure, this contributed to operating personnel believing that they had a problem with the North Bank ADS Backup Pressure Regulator.

Another contributing factor was that no one actually challenged the valve to determine actual valve line up or position of the 21N090. Operating personnel had no reason to believe the valve was closed since the system had been up and operating since the last refuel outage in June of 1990. The valve was discovered closed in an attempt to close the 21N090 in accordance with LLP-90-062, when the valve could not be turned in the closed direction (clockwise) an attempt was made to turn the valve in the open direction (counter-clockwise), at this time the flow was heard and the valve was fully opened. During the operation of the valve, the valve could not be moved without assistance of a valve cheater (lever type device which connects to the valve handwheel to provide additional leverage to operate the valve). This could have also contributed to someone thinking that the valve was open if trying to verify the valve was open by attempting to turn the valve in the counter-clockwise direction (open direction) without the assistance of a valve cheater. This is contrary to LaSalle's normal work practice for verifying manual valve positions in accordance with LaSalle Administrative Procedure LAP-100-30, "Independent Verification" and LAP-1600-2, "Conduct of Operations".

D. SAFETY ANALYSIS OF EVENT

The safety consequences of this event were minimal. All seven ADS valves remained capable of performing their ECCS functions during this event. The accumulator is designed to operate the safety/relief valve two times at 70% of drywell design pressure following a failure of the pneumatic supply to the accumulator. At no time did any of the ADS valve accumulator pressures drop to less than 152 psig which is the low pressure alarm point. The mispositioning of 2IN090 affected only the (three) ADS valves supplied by the North Bottle Bank. The other (four) valves had their backup pneumatic supply available at all times. The loss of the backup air supply affected the long term cooling capability of the safety/relief valves which were supplied by this source. Therefore upon the loss of shutdown cooling only four safety/relief valves could have been supplied with operating air during design basis conditions. This is a sufficient number of valves to meet this requirement.

E. CORRECTIVE ACTIONS

At 0110 hours on October 17, 1990, the 2IN090 Gas Manifold System 2IN09MB Pressure Regulator Downstream Stop was determined to be closed during the performance of LaSalle Special Procedure LLP-90-062, "IN Regulator Adjustment". The 2IN090 valve was then open and the pressure regulator was observed to be operating normally.

The IN system line up was returned to normal and both North and South ADS bottle bank header pressures were determined to be normal (approximately 160 psig).

At 0300 hours, the 2IN01CA compressor was returned to service and restarted. Following verification of the proper operation of the compressor, the 2IN060 and the 2IN059 Instrument Air to Drywell Pneumatic crosstie valves were closed.

The South ADS bottle bank pressure regulator stop and Unit 1 ADS North and South bottle bank pressure regulator stops were verified in their proper positions following this event.

A review will be performed of LaSalle Operating Procedures for safety related systems and systems that are required to support safety related systems, such as the IN system, for additional controls involving normal valve manipulations (i.e. possible checklists). This will insure the valve operations are documented and tracked to determine system status following operations of that system. The results and the completion of this review will be tracked by Action Item Record (AIR) number 374-200-90-07101.

A review will be performed of both 2IN01CA and 2IN01CB compressor work request packages and work performed to determine the causes for the compressor failure and determine changes needed for the preventive maintenance program, operating procedures, or system design, as applicable. The results and the completion of this review will be tracked by AIR number 374-200-90-07102.

A tailgate (review) of this event was conducted with operating personnel to emphasize the importance of verifying the manual valve positions by attempting to take the valve in the close direction, and not to rely solely on observation. The completion of this review is documented under General Information Notice 90-072.

E. CORRECTIVE ACTIONS (Continued)

A review will be performed of current training content regarding manual valve verification and operation. This review will be performed with Operating Department personnel. The review will also include the continuing training program and/or requalification program. The results and the completion of this review will be tracked by AIR number 374-200-90-07103.

Work Request L03289 was submitted to repack this valve or adjust the packing to allow easier operation and verify no packing leakage following pressurization of the system. AIR 374-200-90-07104 will track the completion of this work request.

A Human Performance Enhancement System (HPES) evaluation was also performed in addition to this report.

F. PREVIOUS EVENTS

LER Number	Title
374/88-010-00	Unit Shutdown Due to Automatic Depressurization System Nitrogen Backup Pressure Regulator Failure.

G. COMPONENT FAILURE DATA

None