

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) LaSalle County Station Unit 1										DOCKET NUMBER (2) 0 5 0 0 0 3 1 7 3				PAGE(S) 1 OF 0 3		
TITLE (4) Failure of Control Room Ventilation Ammonia/Chlorine Detection System																
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 NAME(S) LaSalle Unit 2				DOCKET NUMBER(S) 0 5 0 0 0 3 1 7 4			
0 3	0 8	8 4	8 4	0 1 7	0 0	0 4	0 5	8 4					0 5 0 0 0 1 1			
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)														
POWER LEVEL (10)		20.402(b)				20.406(e)				XX 80.73(a)(2)(iv)				73.71(b)		
		20.406(a)(1)(i)				80.38(a)(1)				80.73(a)(2)(v)				73.71(a)		
		20.406(a)(1)(ii)				80.38(a)(2)				80.73(a)(2)(vi)				OTHER (Specify in Abstract below and in Text, NRC Form 305A)		
		20.406(a)(1)(iii)				80.73(a)(2)(i)				80.73(a)(2)(viii)(A)						
		20.406(a)(1)(iv)				80.73(a)(2)(ii)				80.73(a)(2)(viii)(B)						
		20.406(a)(1)(v)				80.73(a)(2)(iii)				80.73(a)(2)(ix)						
LICENSÉE CONTACT FOR THIS LER (12)																
NAME Vincent Masterson, E.A., Extension 499										TELEPHONE NUMBER AREA CODE 8 1 5 3 5 7 1 - 6 7 6 1						
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPD						
C	VI	OLDIET	M 0 2 1 8	N		X	VI	OAMP	M 0 2 1 8	N						
C	VI	OLDIET	P 1 1 5 1 5	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 March 8, 1984, the ammonia/chlorine monitors OAE-VC091A and OAE-VC091B for the VI System alarmed. An attempt to reset the alarm was unsuccessful. An investigation revealed the VI system "B" Train Ammonia/Chlorine detectors to be frozen, making them inoperable. The VI system "A" Train Ammonia detector was also inoperable, indicating a faulty optical isolator. At the time of the occurrence, both Unit 1 and Unit 2 were in cold shutdown (Condition 4). In accordance with Technical Specification 3.3.7.8, the VI system "A" Train was run in the recirculation mode. Work Requests L34054 and L34055 were generated to investigate and repair the detectors. The detectors were repaired on 3/12/84 and returned to service on 3/13/84.

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## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/86

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (8)			PAGE (3)		
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
LaSalle County Station Unit 1	0500037384	0	17	00	0	2	OF 03

TEXT (If more space is required, use additional NRC Form 388A's) (17)

## I. EVENT DESCRIPTION:

On March 8, 1984, the Ammonia/Chlorine monitors OAE-VC091A and OAE-VC091B for the Control Room Heating, Ventilation and Air Conditioning System (VI) alarmed. After a determination that an actual ammonia/chlorine condition did not exist, an attempt was made to reset the alarm unsuccessfully.

An investigation revealed that the VI system "B" Train Ammonia/Chlorine detectors were frozen making them inoperable. The VI system "A" Train Ammonia detector was also inoperable due to a faulty optical isolator. The "A" Train Chlorine detector was functional and remained operable during the occurrence.

The VI system was placed in the recirculation mode as a result of the concurrent failures on the "A" and "B" trains.

## II. CAUSE:

At the time of the occurrence on March 8, 1984 at 1700, Units 1 and 2 were in cold shutdown (Condition 4). The "B" Residual Heat Removal System (B0) was in the shutdown cooling mode on Unit 1, and the "A" Residual Heat Removal System (B0) in the shutdown cooling mode on Unit 2.

The "A" Control Room Ventilation (VI) train was in operation at the time of receiving the high ammonia and chlorine alarms in the Control Room.

The cause for the failure of the VI system "B" Train Ammonia/Chlorine detectors was due to freezing of the sensing lines and detector assembly. The freezing occurred when the Turbine Building Ventilation System (VK) filter train door was left open to allow warm air to enter the filter train. Heavy snow formation was occurring on the filters to the VK supply fan. It was felt that leaving the filter door open would aid in melting the snow accumulation. What occurred was that large amounts of snow were blown out of the filter train to eventually pile up at the "B" Train VI system ammonia/chlorine detector assembly. This resulted in the freezing of the detector assemblies.

The failure of the "A" Train VI system ammonia detector was due to a failure of the Darlington amplifier for the master fault relay. The low signal output caused by the defective Darlington Amplifier resulted in the master fault relay energizing causing its indicating lamp to extinguish. This appears as a failure of the optical isolator. The Darlington pair consists of two transistors having their collectors connected together and having the emitter of one transistor connected to the base of the other. A connection on the Darlington pair was found to be broken resulting in the optical isolator failure.

These concurrent failures resulted in the inoperability of the chlorine/ammonia detectors.

## LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104  
EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (8)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
LaSalle County Station Unit 1	05000373	84	017	00	03	OF 03

TEXT (If more space is required, use additional NRC Form 388A's (17))

## III. PROBABLE CONSEQUENCES OF THE OCCURRENCE

In accordance with Technical Specification 3.3.7.8, Action Statement b., the Control Room charcoal filter system "A" train was placed in the recirculation mode.

On high outside airborne chlorine/ammonia level being sensed the following take place:

- The Control Room HVAC System is placed in the Recirculation mode.
- Purge operation is prohibited.
- The charcoal filter bypass dampers are closed.
- Outside air makeup dampers are closed.

In addition to the above safeguards, the fuses were removed on the outside air make-up dampers OVC05YA/B and OVC052YA/B to prevent their inadvertent opening.

The Control Room ventilation system was operated in accordance with the Technical Specifications placing the plant in a conservative condition of operation

## IV. CORRECTIVE ACTIONS:

Work Requests L34054 and L34055 were generated as a result of the occurrence. The ammonia and chlorine detector sensing lines were thoroughly cleaned along with the detector assemblies. The detector flows were readjusted and the monitors re-calibrated.

The "A" Train Ammonia/Chlorine detector optical isolator was repaired by re-connecting the broken connection on the Darlington transistor pair. The Work Requests were completed on 3/12/84 and the detectors subsequently returned to service on 3/13/84 at 0900.

Action Item Record (AIR) 01-84-67057 has been written to resolve the freezing problem of the ammonia/chlorine detectors.

## V. PREVIOUS EVENTS:

LER 83-077/03L-0 Docket #50-373 (Optical Isolator Failure)

## VI. NAME AND TELEPHONE NUMBER OF PREPARER:

Vincent Masterson, (815) 357-6761 ext. 499



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

April 5, 1984

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

Dear Sir:

Reportable Occurrence Report #84-016-00, Docket #050-373 is being submitted to your office in accordance with 10 CFR 50.73.

G. J. Diederich  
Superintendent  
LaSalle County Station

GJD/MLD/kg

Enclosure

xc: NRC, Regional Director  
INPO-Records Center  
File/NRC

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