

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) LaSalle County Station Unit 1	DOCKET NUMBER (2) 0 5 0 0 0 3 7 3	PAGE(S) 1 OF 03
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TITLE (4)
ESF Actuation from Ammonia Detector Due to Binding of Tape Cassette Spool

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)
05	04	86	86	018	00	06	03	86	LaSalle Station Unit 2		0 5 0 0 0 3 7 4

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

OPERATING MODE (9) 5	20.402(b)	<input checked="" type="checkbox"/>	80.73(a)(2)(iv)	<input type="checkbox"/>	73.71(b)
	20.405(a)(1)(i)	<input type="checkbox"/>	80.73(a)(2)(v)	<input type="checkbox"/>	73.71(a)
	20.405(a)(1)(ii)	<input type="checkbox"/>	80.73(a)(2)(vi)	<input type="checkbox"/>	OTHER (Specify in Abstract below and in Text, NRC Form 305A)
	20.405(a)(1)(iii)	<input type="checkbox"/>	80.73(a)(2)(vii)(A)	<input type="checkbox"/>	
	20.405(a)(1)(iv)	<input type="checkbox"/>	80.73(a)(2)(vii)(B)	<input type="checkbox"/>	
	20.405(a)(1)(v)	<input type="checkbox"/>	80.73(a)(2)(ix)	<input type="checkbox"/>	

LICENSEE CONTACT FOR THIS LER (12)

NAME Paul S. Watford, Technical Staff Engineer, extension 323	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	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS
X	V I	D E T		N					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE)	<input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

At 2117 hours on May 4, 1986, the "A" Control Room HVAC system ammonia detector OXY-VC125YB tripped spuriously and an Engineered Safety Feature (ESF) damper actuation occurred. This placed the "odor eater" (charcoal adsorber) in operation and the minimum outside air damper isolated. The cause of the actuation was binding of the tape cassette spool mechanism in the detector unit. The tape was realigned and the detector alarm reset at 2131 hours. The chemcassette tape previously had been replaced on May 2, 1986. At the time of the event, Unit 1 was in the Refueling Mode and Unit 2 was in Run at 70% power with the "A" VC system in operation.

The principal cause of the event was tape breakage in the tape carriage mechanism due to slippage of the plastic gear wheel which is connected to the motor shaft. The instrument was declared inoperable. The contributory cause of the event was macrofouling on the takeup spool surface where the tape is collected and on the capstan rubber roller. The tape carriage assembly was cleaned and a new motor was installed in the detector. The detector was successfully retested on May 13, 1986, and the "A" VC ammonia detector was returned to operable status on May 14, 1986, at 1300 hours.

AIR 373-200-86-02000 is presently open to investigate upgrade of MDA tape mechanism. A Work Request was written to inspect the moving parts of the remaining three ammonia detectors.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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						YEAR	SEQUENTIAL NUMBER	REVISION NUMBER			
						8 6	- 0 1 8	- 0 0	0 2	OF	0 3

TEXT / If more space is required, use additional NRC Form 206A's (17)

I. EVENT DESCRIPTION:

At 2117 hours on May 4, 1986, the "A" Control Room HVAC system (VC, VI) ammonia detector OXY-VC125YB tripped spuriously and an Engineered Safety Feature (ESF) damper actuation occurred. The Instrument Mechanics inspected the tape cassette unit per LIP-GM-940, Routine Change of Control Room HVAC Ammonia Detector Cassette. The tape was standing still with no forward movement. The tape was advanced to free any possible tape binding. It was then observed for a short period of time to verify proper tape advancement was taking place and to look for any other visible problems. The detector alarm was reset at 2131 hours. The chemcassette tape had been previously replaced on May 2, 1986, per LIP-GM-940.

At the time of the event, Unit 1 was in the Refueling Mode and Unit 2 was in Run at 70% power with the "A" VC system in operation.

II. CAUSE:

The cause of the May 4, 1986, actuation was binding of the tape cassette spool mechanism in the detector unit. With the chemcassette spool rotation impeded, one section of the tape was continuously exposed to impurities from the sample line. The chemically treated tape darkened and caused the detector alarm to trip.

Subsequently on May 8, 1986, with the "A" VC system not in operation, additional work was performed on this detector. The takeup spool had macrofouling on its surface where the tape is collected. The same macrofouling was found on the capstan rubber roller. This combination appeared to inhibit the chemcassette tape from moving freely and causing the tape to curl on the takeup spool. The take up spool was also found to be slightly warped. The tape carriage mechanism was replaced and the capstan roller was cleaned and lubricated. The detector was put in service for further observation. Tape movement was approximately 0.1 cm/hr versus required 10 cm/hr. All moving parts were cleaned with the unit in place and the detector was observed for three days commencing on May 8, 1986, at 1400 hours. When the tape speed did not improve, the motor unit was removed. A small tooth plastic drive gear on the motor shaft was found to be loose. A new motor was installed in the detector and the detector was successfully retested per LIS-VC-053, Control Room HVAC System Ammonia Detector Functional Test, on May 13, 1986. The "A" VC ammonia detector, OXY-VC125B, was returned to operable status and removed from the degraded equipment log on May 14, 1986, at 1300 hours.

The detector is manufactured by MDA Scientific Company, Model number 7060-FAN.

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TEXT (If more space is required, use additional NRC Form 306A's) (17)

III. PROBABLE CONSEQUENCES OF THE EVENT:

The consequences of the event were minimal. The detector actuation resulted in an ESF actuation which placed the "odor eater" (charcoal adsorber) in operation and the minimum outside air damper isolated closed. This event had no effect on the non-operating "B" VC train.

IV. CORRECTIVE ACTION:

After the ammonia detector unit was returned to operable status, the tape carriage assembly was delivered to SMAD and Research Chemistry Department to determine the chemical composition of the macrofouling on the takeup spool and its probable mode of development on the detector's moving parts. AIR 373-200-86-05501 tracks the results from SMAD.

AIR 373-200-86-02000 is presently open to investigate upgrade of MDA tape mechanism. Work Request L58218 was written to inspect the moving parts of the remaining three ammonia detectors (AIR 373-200-86-05500).

V. PREVIOUS OCCURRENCES:

Jammed or broken chemcassette tapes that have caused ESF actuations are documented below.

LER-373-86-014-00	LER-373-84-091-00
LER-373-86-004-00	LER-373-84-078-00
LER-373-85-064-00	LER-373-84-066-00
LER-373-85-050-00	LER-373-82-060/03L-0
LER-373-85-038-00	LER-373-82-157/03L-0

VI. NAME AND TELEPHONE NUMBER OF PREPARER:

Paul S. Watford, Technical Staff Engineer, 815/357-6761, extension 323.



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

June 3, 1986

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

Dear Sir:

Reportable Occurrence Report #86-018-00, Docket #050-373 is being submitted to your office in accordance with 10CFR 50.73.

R. D. Sub
* G. J. Diederich
Station Manager
LaSalle County Station

GJD/DRR/kg

Enclosure

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

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