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MURRAY R. EDELMAN
VICE PRESIDENT
NUCLEAR

May 21, 1986
PY-CEI/NRR-0466L

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

Perry Nuclear Power Plant
Docket No. 50-440
LERs 86-005-0 and 86-007-0

Dear Sir:

Enclosed are Licensee Event Reports 86-005-0 and 86-007-0 for the Perry Nuclear Power Plant. Licensee Event Report 86-006-0 will be transmitted via separate correspondence.

Very truly yours,

Murray R. Edelman
Vice President
Nuclear Group

MRE:njc

Enclosure: LERs 86-005-0 and 86-007-0

cc: Jay Silberg, Esq.
John Stefano (2)
J. Grobe

U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL. 60137

IE22
1/1

NRC Form 366
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-0104
EXPIRES: 8/31/85

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Perry Nuclear Power Plant, Unit 2	0 5 0 0 0 4 4 0	1 OF 0 3

TITLE (4)

Chlorine Gas Monitor Faults Cause Control Room Emergency Recirculation Actuations

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 4	2 1	8 6	8 6	0 0 5	0 0	0 5	2 1	8 6		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (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 in Abstract below and in Text, NRC Form 366A)
		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	TELEPHONE NUMBER
Paul Russ, Compliance Engineer, ext. 6472	AREA CODE 2 1 6 2 5 9 - 3 7 3 7

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	
X	V I	I L	X 9 9 9	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 April 21, 1986 at 2320, May 10 at 1530, May 17 at 0954 and May 19 at 0208, the Control Room Heating Ventilating and Air Conditioning (CRHVAC) system shifted into its' Emergency Recirculation (ER) mode due to high Chlorine Gas Monitor trip signals. Technicians investigating the cause of the first actuation found the M25-K200A Chlorine Gas Monitor in the tripped condition with the optics lamp out. When the monitor was opened, the optics lamp illuminated and the monitor was reset. Technicians were unable to repeat the condition. At 2332, the CRHVAC system was returned to its normal lineup. On April 22 at 0927, troubleshooting discovered a defective filament in the optics lamp. The lamp was replaced and the monitor returned to service at 1139. Technicians investigating the second, third and fourth events found the sensing paper torn in the M25-K205B, 205A and 200A monitors respectively. In each case the paper was replaced and the system returned to its' normal lineup.

A replacement schedule for the Chlorine Gas Monitor optic lamps has been incorporated into the Repetitive Task Program. Sensing paper is replaced on a weekly basis. An engineering design change is being evaluated to alter the logic for these monitors to prevent spurious actuations of CRHVAC. Engineering evaluations are continuing to determine methods to improve Chlorine Gas Monitor performance.

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Perry Nuclear Power Plant, Unit 1	0 5 0 0 0 4 4 0	8 6	— 0 0 5	— 0 0	0 2 OF 0 3

TEXT (If more space is required, use additional NRC Form 366A's) (17)

On April 21, 1986 at 2320, May 10 at 1530, May 17 at 0954 and May 19 at 0208, the Control Room Heating Ventilating and Air Conditioning (CRHVAC)[VI] system shifted into its' Emergency Recirculation (ER) mode due to high Chlorine Gas Monitor [45] trip signals. At the time of the events, the plant was in Operational Condition 5 (Refuel), the reactor vessel [RPV] and drywell heads were removed, the reactor cavity flooded and steam dryer storage area/reactor well gate [GATE] removed. Reactor temperature was approximately 75 degrees and pressure atmospheric. Train A of CRHVAC was running normally with Train B in standby.

Within minutes after the first actuation, the Control Room operator responded to the "Control Room Emergency Recirculation Train A (B) Initiated" annunciator [ALM] and verified proper system operation. Both trains shifted into the ER mode. Technicians investigating the cause of the actuation found the M25-K200A Chlorine Gas Monitor in the tripped condition with the optics lamp [IL] out. When the monitor was opened by the technician, the optics lamp illuminated and the monitor was reset. Technicians were unable to repeat the condition. At 2332, the CRHVAC system was returned to its normal lineup.

On April 22 at 0927, troubleshooting was conducted on the M25-K200A monitor and a defective filament in the optics lamp (manufacturer, MDA Scientific; Model No. 10009) was discovered. The lamp was replaced and the monitor returned to service at 1139.

On May 10 at 1530, May 17 at 0954 and May 19 at 0208, three more trips of a Chlorine Gas Monitor shifted the CRHVAC system into its' Emergency Recirculation mode. Operators took similar actions to those described above. Technicians investigating the cause of the trips discovered torn sensing paper in the M25-K205B, 205A and 200A Chlorine Gas Monitors respectively. In each case, the paper was replaced and the system returned to service.

When the CRHVAC system is in the Emergency Recirculation Mode of operation, the Control Room [NA] is isolated and maintained at atmospheric pressure by recirculating the Control Room air. The air removed from the Control Room is filtered to remove radioactive gases and particulates before returning it to the Control Room. Detection of high toxic gas levels (.4 ppm CL trip setpoint) at the air intake plenums overrides the mode switch and places both CRHVAC trains in Emergency Recirculation. The monitors will also trip if a sensing paper problem develops or the optics lamp burns out. There are four Chlorine Gas Monitors in the system. The tripping of any one of the four will place both trains of CRHVAC in Emergency Recirculation.

When activated, the CRHVAC system responded as designed. During the time the monitor was under repair, one train of the CRHVAC system was maintained in Emergency Recirculation and the other in standby. If a similar actuation were to occur at normal operating conditions (ie. 100% power), the system would not have responded differently. In either case, for the above stated reasons, and

the fact that no actual toxic gas condition existed, the event was not safety significant. There were no previous similar events identified.

A replacement schedule for the Chlorine Gas Monitor optic lamps has been incorporated into the Repetitive Task Program. Sensing paper is presently scheduled for replacement on a weekly basis. This is more frequent than the vendor recommended frequency. The monitors are visually inspected once per day. An engineering design change is being evaluated to alter the logic for the Chlorine Gas Monitors to prevent spurious actuations of CRHVAC. Engineering evaluations are continuing to determine methods to improve Chlorine Gas Monitor performance.

Energy Industry Identification System Codes are identified in the text as [XX].