

LICENSEE EVENT REPORT (LER)

Facility Name (1) QUAD-CITIES NUCLEAR POWER STATION, UNIT ONE										Docket Number (2) 0150000254				Page (3) 1 of 4			
Title (4) CONTROL ROOM VENTILATION ISOLATIONS DUE TO PERSONNEL ERROR AND CAUSE NOT DETERMINED																	
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)				
									QUAD CITIES UNIT TWO				0150000265				
02	01	88	88	005	00	02	24	88					015000011				
OPERATING MODE (9) 4			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)														
POWER LEVEL (10) 095			<input type="checkbox"/> 20.402(b)			<input type="checkbox"/> 20.405(c)			<input checked="" type="checkbox"/> 50.73(a)(2)(iv)			<input type="checkbox"/> 73.71(b)					
			<input type="checkbox"/> 20.405(a)(1)(i)			<input type="checkbox"/> 50.36(c)(1)			<input type="checkbox"/> 50.73(a)(2)(v)			<input type="checkbox"/> 73.71(c)					
			<input type="checkbox"/> 20.405(a)(1)(ii)			<input type="checkbox"/> 50.36(c)(2)			<input type="checkbox"/> 50.73(a)(2)(vii)			<input type="checkbox"/> Other (Specify in Abstract below and in Text)					
			<input type="checkbox"/> 20.405(a)(1)(iii)			<input type="checkbox"/> 50.73(a)(2)(i)			<input type="checkbox"/> 50.73(a)(2)(viii)(A)								
			<input type="checkbox"/> 20.405(a)(1)(iv)			<input type="checkbox"/> 50.73(a)(2)(ii)			<input type="checkbox"/> 50.73(a)(2)(viii)(B)								
			<input type="checkbox"/> 20.405(a)(1)(v)			<input type="checkbox"/> 50.73(a)(2)(iii)			<input type="checkbox"/> 50.73(a)(2)(ix)								
LICENSEE CONTACT FOR THIS LER (12)																	
Name Bob Castro, Technical Staff Engineer										TELEPHONE NUMBER AREA CODE 309 654 - 2241							
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																	
CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	REPORTABLE TO NPRDS							
X	VI	MIQIN	XI999	N													
SUPPLEMENTAL REPORT EXPECTED (14)										Expected Submission Date (15)							
<input type="checkbox"/> Yes (If yes, complete EXPECTED SUBMISSION DATE)										<input checked="" type="checkbox"/> NO							
ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)																	

On February 1, 1988 Units One and Two were in the RUN mode at 95 and 100 percent thermal power respectively. At 0739 hours, the Control Room Ventilation isolated due to personnel error. Instrument Maintenance (IM) personnel were performing routine maintenance on the chlorine monitor portion of Toxic Gas Analyzer and had failed to inform operating personnel of the work in progress. NRC notification of this event was completed at 0800 hours.

On February 4, 1988, Units One and Two were in the RUN mode at 90 and 98 percent power respectively. At 0440 hours, the Control Room Ventilation isolated due to a spike in the chlorine monitor portion of the Toxic Gas Analyzer. No cause could be determined. NRC notification was complete at 0600 hours.

Corrective action includes IM retraining addressing the procedure that was in use. The chlorine monitor probe was replaced and tested satisfactorily after the February 4 event. A manufacturer's representative has provided assistance for resolution of the recurring problems with the chlorine monitor. This involved temporarily relocating the probe to an area of reduced air flow and temperature prior to initiation of a modification. This report is provided per 10CFR50.73(a)(2)(iv).

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TEXT										

PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2511 Mwt rated core thermal power. Energy Industry Identification System (EIIS) codes are identified in the text as [XX].

EVENT IDENTIFICATION: Control Room Ventilation isolations due to personnel error and cause not determined.

A. CONDITIONS PRIOR TO EVENT:

Unit: One	Event Date: February 1, 1988	Event Time: 0739
Reactor Mode: 4	Mode Name: Run	Power Level: 95%

This report was initiated by Deviation Report D-4-i-88-012

RUN Mode(4) - In this position the reactor system pressure is at or above 825 psig, and the reactor protection system is energized, with APRM protection and RBM interlocks in service (excluding the 15% high flux scram).

B. DESCRIPTION OF EVENT:

On February 1, 1988 Unit One and Unit Two were in the RUN mode at 95 percent and 100 percent of rated core thermal power respectively. At 0739 hours, the control room ventilation [VI] isolated (changed to 100 percent recirculation) as indicated by alarms [ALM] received in the control room. An Equipment Operator (EO) was immediately dispatched to the standby ventilation room to investigate. Upon arrival, the EO found an Instrument Mechanic (IM) adding electrolyte solution to the control room toxic gas analyzer chlorine probe. Operating Department personnel were not aware that this activity was being performed. Filling the chlorine analyzer probe is addressed by procedure QIP 5700-2, "Filling Procedure for the Chlorine Analyzer Probe." This procedure precautions that filling the probe will result in a control room ventilation isolation and has a precaution to notify the control room of the intent to perform this procedure. The mechanic was not using the procedure. The control room ventilation system was reset following work completion at 0745 hours. The chlorine monitor is part of the control room ventilation toxic gas analyzer [VI].

NRC telephone notification of this event via the Emergency Notification System (ENS) was made at 0800 hours as required by 10CFR50.72.

On February 4, 1988 Unit One and Unit Two were in the RUN mode at 90 percent and 98 percent of rated core thermal power, respectively. At 0400 hours, the control room ventilation isolated again as indicated by alarms received in the control room. Operations personnel determined that the control room ventilation isolated due to a spike in the chlorine monitor of the toxic gas analyzer. Work Request Q64071 was then written to investigate the cause and make any repairs as necessary.

NRC telephone notification of this event via the ENS was made at 0600 hours as required by 10CFR50.72.

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C. APPARENT CAUSE OF EVENT:

This report is submitted to comply with the requirements of 10CFR50.73(a)(2)(iv), which requires the reporting of any event or condition that resulted in a manual or automatic actuation of any Engineered Safety Feature.

The cause of the February 1 event is inadequate communication and work instruction during the job assignment. The mechanic performing the work was not aware of procedure QIP 5700-2. The foreman assumed the mechanic was familiar with the procedure and did not discuss it with him. As a result the procedure was not followed and the Operating Department was not informed of the work. If the Operating Department had been aware of this work, the Control Room Ventilation isolation would have been a replanned event.

The cause of the event on February 4, 1988 is unknown. The chlorine probe spiked for no apparent reason. The chlorine probe is manufactured by Anacon Incorporated model number M-17.

D. SAFETY ANALYSIS OF EVENT:

The control room ventilation system is designed to automatically switch from the normal air circulation mode which has outside air makeup to the recirculation mode when a toxic gas analyzer trip setpoint is reached. The toxic gas analyzer will trip the control room ventilation when the chlorine level reaches 1.00 PPM. Technical Specification 3.2.F.2 requires the chlorine trip point to be less than or equal to 5.00 PPM. The recirculation mode prevents the intake of toxic gases into the control room since the outside air dampers are closed in this mode.

In both events, the toxic gas analyzer tripped the control room ventilation due to spikes in the chlorine analyzer. Therefore, toxic gas entry into the control room via the outside air supply would have been prevented in both events since the control room ventilation was in the recirculation mode.

E. CORRECTIVE ACTION:

For the February 1, 1988 event no immediate corrective action was necessary except resetting the control room ventilation when maintenance was complete. Long term corrective action will consist of retraining the Instrument Mechanic and Foreman involved on the requirements and results of the procedure (QIP 5700-2) for filling the chlorine analyzer probe. Instrument Department Supervision will ensure that all mechanics are aware of QIP 5700-2 and its contents. This will be tracked with Nuclear Tracking System (NTS) number 2542008801201.

For the February 4, 1988 event, the immediate corrective action consisted of replacing the Anacon chlorine probe in the toxic gas analyzer per Work Request Q64071. The probe was functionally tested per QIS 79-2, "Chlorine Analyzer Functional Test Procedure." The chlorine analyzer portion of the toxic gas analyzer was returned to service on the same day as the event.

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As a result of the excessive chlorine analyzer problems the Station has experienced in the last few months, an Anacon representative was contacted to review the problems and to assist in the resolution of them. The representative was at the Station on February 10, 1988. It was determined that no problems exist with the chlorine monitor electronics. The problem is apparently caused by the current installation of the chlorine probe itself. The chlorine probe is the weak link in the analyzer circuitry, and its installation is critical. The current installation method subjects the chlorine probe to too high a flow concentration and ambient temperature. The high flow and temperature causes excessive probe "drying out" problems with the end result being erratic probe measurements and spikes that lead to control room ventilation isolations. The Anacon representative believes that relocating the probe in a larger volume and away from heat sources should minimize erratic chlorine probe readings.

The Station, at the advice of the Anacon representative, has relocated the chlorine analyzer probe into a much larger volume on a temporary basis until a permanent modification can be undertaken. Modification initiation will be tracked with NTS Number 2542008801202.

F. PREVIOUS EVENTS:

<u>Licensee Event Report</u>	<u>Description</u>
254/86-029	Control Room Ventilation isolated due to ammonia analyzer failure (broken belt on timing mechanism)
254/87-010	Control Room Ventilation Trip due to power loss to Toxic Gas Analyzer - Design deficiency
254/87-013	Control Room Ventilation isolation due to chlorine monitor problems caused by defective procedures or corrosion
254/87-014	Control Room Ventilation isolation caused by chlorine analyzer spike during electrical storm
254/87-027	Control Room Ventilation isolations due to personnel error and inadequate training/procedures

G. COMPONENT FAILURE DATA:

<u>Manufacturer</u>	<u>Nomenclature</u>	<u>Model</u>
Anacon	Chlorine Analyzer Probe	M-17



Commonwealth Edison

Quad Cities Nuclear Power Station
22710 206 Avenue North
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Telephone 309/654-2241

RLB-88-63

February 24, 1988

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

Reference: Quad-Cities Nuclear Power Station
Docket Number 50-254, D2R-29, Unit One

Enclosed please find Licensee Event Report (LER) 88-005, Revision 00, for Quad-Cities Nuclear Power Station.

This report is submitted in accordance with the requirements of the Code of Federal Regulations, Title 10, Part 50.73(a)(2)(iv), which requires the reporting of any event or condition that resulted in a manual or automatic actuation of any Engineered Safety Feature.

Respectfully,

COMMONWEALTH EDISON COMPANY
QUAD-CITIES NUCLEAR POWER STATION

R. L. Bax
Station Manager

RLB/MSK/e

Enclosure

cc: I. Johnson
R. Higgins
INPO Records Center
NRC Region III

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