Commonwealth Edison Company
Quad Cities Generating Station
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ComEd

January 12, 2000

SVP-00-013

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

Quad Cities Nuclear Power Station, Units 1 and 2
Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

Enclosed is Licensee Event Report (LER) 254-005, 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)(v)(D). The licensee shall report any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

We are committing to the following actions:

Implement a Preventive Maintenance task to check the switches on the Refrigeration Control Unit panel in one year.

Inspect 20 switches, in similar applications, to identify whether the cam has loosened over time.

Any other actions described in the submittal represent intended or planned actions by Commonwealth Edison (ComEd) Company. They are described for the NRC's information and are not regulatory commitments.

IE22

Should you have any questions concerning this letter, please contact Mr. C.C. Peterson at (309) 654-2241, extension 3609.

Respectfully,

Oscar P. Barnes III for

Joel P. Dimmette, Jr.
Site Vice President
Quad Cities Nuclear Power Station

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Quad Cities Nuclear Power Station

LICENSEE EVENT REPORT (LER) Form Rev. 2.0

Facility Name (1)	Docket Number (2)	Page (3)
Quad Cities Unit 1	0 5 0 0 0 2 5 4	1 of 0 3

Title (4)
"B" Control Room HVAC Inoperable Due to Refrigeration Control Unit Breaker Trip

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)
12	13	1999	1999	005	00	01	12	2000		05000254 05000265

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)

POWER LEVEL (10)	100									
		20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)
		20.405(a)(1)(i)		50.36(c)(1)	X	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)		50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		
		20.405(a)(1)(iv)		50.73(a)(2)(ii)		50.73(a)(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
Charles Peterson, Regulatory Affairs Manager, ext. 3609	309 654-2241

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
X	VI	JS	G080	Yes					

SUPPLEMENTAL REPORT EXPECTED (14)		Expected Submission Date (15)	Month	Day	Year
☐ YES (If yes, complete EXPECTED SUBMISSION DATE)	☒ NO				

ABSTRACT (Limit to 1400 spaces, i.e. approximately fifteen single-space typewritten lines) (16)

ABSTRACT:

At 2045 hours on December 13, 1999, with Unit 1 and Unit 2 at 100% power, the B Control Room Heating Ventilation Air Conditioning (B HVAC) System was declared inoperable when the Refrigeration Control Unit (RCU) breaker unexpectedly tripped while its control switch was being placed in the off position.

The root cause of the breaker trip was a malfunction of the switch cam follower.

The safety significance of this event was minimal. The Control Room Emergency Ventilation System filtration capability was not lost and the Control Room temperature was adequately maintained during this event.

Corrective actions taken include installation of a new contact assembly, proper alignment and adjustment of the cam follower.

B. DESCRIPTION OF EVENT:

At 2045 hours, planned filter replacements on the A Train Heating Ventilation Air Conditioning (HVAC) System [VI] were completed and Operations began restoration of the A Train HVAC. When the B Train HVAC compressor switch [JS] at the local control panel was positioned from "AUTO" to "OFF" the Refrigeration Control Unit (RCU) compressor stopped, restarted and the RCU feeder breaker tripped.

At 2045 hours, the B Train HVAC was declared inoperable and the station entered Limiting Condition of Operation per Technical Specification 3.8.D "PLANT SYSTEMS".

On December 14, 1999, the Electrical Maintenance Department performed non-intrusive electrical checks of the compressor motor local control switch, and inspection of the breaker. Each component was determined to be satisfactory. The RCU was then operationally checked and found to be performing satisfactorily.

On December 15, 1999, resistance checks were performed on the local control switch which identified a problem with contact #1. Resistance readings across the contact would vary between 1 and 54 ohms while the switch was repositioned from the "AUTO" to "OFF" position. Contact #1 should not change state during this operation. If the cam follower on the switch was aligned correctly, it would make contact with the actuator for contact #1 when the switch was moved.

On December 16, 1999, while replacing the local control switch, the Electrical Maintenance Department identified that the cam follower on the switch was loose, which would have allowed the switch to rotate in mid position or between two different positions simultaneously. This was the same switch that the operator manipulated during the incident.

C. CAUSE OF THE EVENT:

The cause of the breaker trip has been determined to be a malfunction of the switch cam follower, as a result of it being loose (NRC cause code other [X]). The simultaneous impingement on both the switch contactors caused the compressor motor to stop and restart in quick succession. This caused a high current surge and tripped the breaker open.

D. SAFETY ANALYSIS:

The safety significance of this event was minimal.

The safety function of CREVS which is, to provide a source of filtered makeup air to the Control Room Emergency Zone in the event of a Loss of Coolant Accident, was maintained throughout the event. Additionally, the Control Room temperature was adequately maintained during this event.

E. CORRECTIVE ACTIONS:

CORRECTIVE ACTIONS COMPLETED

A new contact assembly was installed on the switch and the cam follower was properly aligned, adjusted, and re-tested satisfactory.

CORECTIVE ACTIONS TO BE COMPLETED

Implement a Preventive Maintenance task to check the switches on the RCU panel in one year.

Inspect 20 switches, in similar applications, to identify whether the cam has loosened over time.

F. PREVIOUS OCCURRENCES:

A three year search of Licensee Event Reports did not reveal any other instances of switch problems.

G. COMPONENT FAILURE DATA:

The switch that malfunctioned was Model # CR2940-US203M, manufactured by General Electric Company.