



**Commonwealth Edison**

Quad Cities Nuclear Power Station  
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RLB-92-163

July 23, 1992

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

Reference: Quad Cities Nuclear Power Station  
Docket Number 50-265, DPR-30, Unit Two

Enclosed is Licensee Event Report (LER) 92-021, 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). The licensee shall report any event or condition that resulted in manual or automatic actuation of any Engineered safety feature.

Respectfully,

COMMONWEALTH EDISON COMPANY  
QUAD CITIES NUCLEAR POWER STATION

*R. L. Bax*  
R. L. Bax  
Station Manager

RLB/TB/plm

Enclosure

cc: J. Schrage  
T. Taylor  
INPO Records Center  
NRC Region III

*TE22*

LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) Quad Cities Unit Two  
 Title (4) Unanticipated Off Gas Isolation Due To A Cocked Saddle On The Fuse Terminal For The Off Gas Timer  
 Docket Number (2) 015000265  
 Page (3) 1 of 4

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)
01	06	23	92	0121	010	01	07	23		015000011
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)							
POWER LEVEL (10)			20.402(b)		20.405(c)		X		50.73(a)(2)(iv)	
			20.405(a)(1)(i)		50.36(c)(1)				50.73(a)(2)(v)	
			20.405(a)(1)(ii)		50.36(c)(2)				50.73(a)(2)(vii)	
			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)	
									73.71(b)	
									73.71(c)	
									Other (Specify in Abstract below and in Text)	

LICENSEE CONTACT FOR THIS LER (12)  
 Name Jim Bundschuh, Tech Staff Engineer, Ext. 2941  
 TELEPHONE NUMBER 309 654-2241  
 AREA CODE 309

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

SUPPLEMENTAL REPORT EXPECTED (14)  
 [Yes (If yes, complete EXPECTED SUBMISSION DATE)] X NO  
 Expected Submission Date (15) \_\_\_\_\_  
 ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

ABSTRACT:

On June 23, 1992 at 1315 hours, Unit Two was in the RUN mode at 98 percent of rated core thermal power. Instrument Maintenance personnel were removing several abandoned wires from Control Room panel 902-10. While removing one of the wires, an adjacent wire was moved causing that wire to lose contact at the fuse connection. This opened the power feed for the Off Gas Isolation Timer and immediately caused an Off Gas system isolation. The control room operators monitored plant conditions while Electrical Maintenance (EM) personnel performed continuity checks on the associated wiring in the 902-10 panel. When the EM's checked continuity across fuse F-6 in the 902-10 panel, the valves reopened. This led the electricians to a cocked saddle on the number two terminal of fuse F-6, which did not allow the wire and terminal to make a proper connection. The EM's straightened the saddle, and Nuclear Work Request Q01800 was generated to properly repair the connection.

This report is being submitted in accordance with 10CFR 50.73(a)(2)(iv).

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TEXT Energy Industry Identification System (EIIIS) codes are identified in the text as [XX]																							

### PLANT AND SYSTEM IDENTIFICATION:

General Electric - Boiling Water Reactor - 2511 Mwt rated core thermal power.

**EVENT IDENTIFICATION:** Unanticipated Off Gas Isolation Due To A Cocked Saddle On The Fuse Terminal For The Off Gas Timer

### A. CONDITIONS PRIOR TO EVENT:

Unit: Two	Event Date: June 23, 1992	Event Time: 1315
Reactor Mode: 4	Mode Name: RUN	Power Level: 98%

This report was initiated by Deviation Report D-4-02-92-095.

**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 June 23, 1992 at 1315 hours, Unit Two was in the RUN mode at 98 percent of rated core thermal power. Instrument Maintenance (IM) personnel were removing several abandoned wires in the Control Room Panel [PL] 902-10 when the Off Gas [WF] system experienced an automatic isolation. The following isolation valves [ISV] went closed: AO-2-5406, Off Gas to the main chimney; AO-2-5408, Off Gas hold up pipe drain line; and SO-2-5437, Off Gas Pressurized Drain Tank [TK] discharge valve.

Control room personnel immediately investigated the cause of the isolation. There are two signals that cause this isolation, the first being a Main Steam Line HI-HI radiation signal and the second occurs after a fifteen minute time delay from a high Steam Jet Air Ejector (SJAE) radiation signal. Since the Main Steam Line radiation levels were in the normal range and the fifteen minute Off Gas Timer did not start, the problem was determined to be in the logic circuitry in the 902-10 panel.

The Shift Engineer ordered the IM personnel to stop working in the 902-10 panel. The Electrical Maintenance (EM) department performed continuity checks on the associated wiring in the 902-10 panel. Condenser [COND] back pressure, hold up pipe pressure, steam jet air ejector flow, and Off Gas flow to the hold up pipe were monitored continuously. The air signal to AO-2-5408 was removed so that when the valve received an open signal, the Off Gas to Radioactive Waste loop seal would not be blown out.

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TEXT Energy Industry Identification System (EIIIS) codes are identified in the text as [XX]

At 1346 hours on June 23, 1992, EM's checked continuity across fuse F-6 in the 902-10 panel. This caused the wire lug to reconnect with the terminal and valves AO-2-5406 and SO-2-5437 both reopened. The EM's then discovered that the saddle on terminal number two of fuse F-6 in the 902-10 panel, was cocked and the wire lug had become separated from the terminal. The EM's straightened the saddle and initiated Nuclear Work Request (NWR) Q01800 to repair the loose connection. On the following shift the saddle was straightened and the air signal to AO-2-5408 was restored.

There were no other systems or components inoperable at the beginning of this event which could have contributed to this event.

C. APPARENT CAUSE OF EVENT:

This report is being submitted in accordance with 10CFR50.73(a)(2)(iv), which requires the reporting of any event or condition that results in manual or automatic actuation of any Engineered Safety Feature, (ESF) including the Reactor Protection System (RPS) [JC].

This event was caused by the cocked saddle on terminal number two of fuse F-6 in the 901-10 panel. The isolation occurred when the IM personnel removed an abandoned wire that was adjacent to this fuse block. This caused the wire lug to separate from the terminal with the cocked saddle. The exact cause of the cocked terminal saddle could not be determined.

An investigation into previous NWR's was performed using the Total Job Management (TJM) computer and manually searching the maintenance history files. Several Work Requests were found involving work in the 902-10 panel, but none involved lifting the lead on the number two terminal of fuse F-6.

D. SAFETY ANALYSIS OF EVENT:

The safety consequences of this event were minimal, because during the entire event the Off Gas system and condenser performance did not degrade. If the event had continued, the condenser would have eventually lost vacuum and this would have caused a reactor scram at 9 inches of mercury back pressure. The Off Gas system failed in the conservative position, such that if a HI-HI Main Steam Line radiation signal had been received or if the Off Gas 15 minute timer had timed out, the valves were already in the proper position.

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9 | 2

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TEXT Energy Industry Identification System (EIIS) codes are identified in the text as (XX)

## E. CORRECTIVE ACTIONS:

The immediate corrective action was to stop the Instrument Maintenance personnel from performing work in the 902-10 panel. Next, the air to AO-2-5408 was isolated and the EM's were notified to perform continuity checks. The electricians discovered the cocked terminal saddle and initiated NWR Q01800. During the following shift, the connection was repaired and the valves were verified to remain in the open position.

Further corrective action will involve the EM's visually inspecting all of the Control room and Auxiliary Equipment room cabinets that contain ESF logic circuitry. The fuse block terminal connections in these cabinets will be checked for cocked saddles. Nuclear Work Requests will be initiated for any defective connections (NTS #2652009209501).

## F. PREVIOUS EVENTS:

A search of previous events over the last 5 years found the following License Event Reports (LER) caused by loose or poor wire connections.

DVR 04-01-87-64 LER 87-01 SJAE Radiation Monitor Failed due to Loose High Voltage Connections.

DVR 04-02-91-57/58 LER 91-08 2-220-45 Automatically Closed Due to a Loose Wire.

DVR 04-01-89-058 LER 89-010 Reactor Scram from an induced voltage due to a loose wire on the condenser low vacuum pressure switch indicating lamp.

The corrective actions for these events was to repair the loose connections and to discuss the events at tailgate meetings. The corrective action for the third event was to tighten any obvious loose connections in the control room panels. This event is not considered to be related to any of these prior events.

## G. COMPONENT FAILURE DATA:

The cause of this event was not attributed to a component failure.