



**Commonwealth Edison**

Quad Cities Nuclear Power Station  
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RLB-92-009

January 9, 1992

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

Reference: Quad Cities Nuclear Power Station  
Docket Number 50-254, DPR-29, Unit One  
Docket Number 50-265, DPR-30, Unit Two

Enclosed is Licensee Event Report (LER) 91-026, 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)(ii). Any event or condition that resulted in the condition of the nuclear power plant, including its principal safety barriers, being seriously degraded, or that resulted in the nuclear plant being in a condition that was outside the design basis of the plant.

Respectfully,

COMMONWEALTH EDISON CO.  
QUAD CITIES NUCLEAR POWER STATION

F. L. Bax  
Station Manager

RLB/TB/plm

Enclosure

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

STMGR 252

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LICENSEE EVENT REPORT (LER)

Form Rev 2.0

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

Breach of Secondary Containment - 1A and 2A Drywell to Torus Purge Fan Dampers

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)	
1	2	1	0	9	1	9	1	0	2	6	5
1	2	1	0	9	1	9	1	0	2	6	5

OPERATING MODE (9) 4  
 POWER LEVEL (10) 1 0 0  
 THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)  
 20.402(b) 20.405(c) 50.73(a)(2)(iv) 73.1(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)  
 20.405(a)(1)(iii) 50.73(a)(2)(i) 50.73(a)(2)(viii)(A)  
 20.405(a)(1)(iv) X 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 Merv C. Miller, Regulatory Assurance Analyst Ext. 3107  
 TELEPHONE NUMBER  
 AREA CODE 3 0 9 6 5 4 - 2 2 4 1

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)

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)

ABSTRACT:

Beginning on December 9 and continuing into December 10, 1991, Operations staff placed the 1A and 2A Drywell/Torus Purge Fans Out-of-Service for Mechanical Maintenance to seal access door leaks and replace filters. Due to a misconception by the Equipment Attendants, and the lack of labels on the damper operators of the purge system, the dampers were wired OPEN instead of wired CLOSED as the Out-of-Service request required.

When Mechanical Maintenance pulled the access cover from the 1A purge fan, a breach in Secondary Containment was created via the Reactor Building Ventilation Exhaust system through the wired open discharge dampers and out the open access cover. Deinerting and reinerting of the Unit 2 Drywell was underway simultaneous to this maintenance work.

Soon after Mechanical Maintenance pulled the access cover to the 2A purge fan the Control Room received a high differential pressure alarm on the purge filters. An Equipment Attendant sent to investigate recognized that the dampers were OOS in the wrong position and initiated the actions which placed the dampers in the correct, CLOSED position. This action restored Secondary Containment.

Corrective actions include labelling purge fan damper positions, revising station procedures to more clearly define the verification process for dampers, and investigate the installation of damper inspection doors.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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		Year	///	Sequential Number	///	Revision Number			
Quad Cities Unit One	U   5   0   0   0   2   5   4	2   1	-	0   2   6	-	0   0	0   2	OF	0   4

TEXT Energy Industry Identification System (EII5) 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: Breach of Secondary Containment - 1A and 2A Drywell to Torus Purge Fan Dampers.

A. CONDITIONS PRIOR TO EVENT:

Unit: One                      Event Date: December 10, 1991    Event Time: 0745  
Reactor Mode: 4              Mode Name: RUN                      Power Level: 100%

This report was initiated by Deviation Report D-4-01-91-150

RUN Mode (4) - Run 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 December 8, 1991 at approximately 2320 hours, the SCRE authorized Out-of-Service (OOS) #3523 and #3524 for the 1A and 2A Drywell/Torus Purge Fans. These OOSs were necessary to support filter replacement and ductwork sealing to be performed in accordance with work requests Q 93236 and Q 93237. The Center Desk NSO (CD NSO) dispatched Equipment Attendants (EA) to hang and verify the OOSs.

EA#1 racked out the breakers for the fans, then proceeded to the fan/filter area. The EA pulled the actuator connector pins and wired the damper actuator arms in what he thought was the closed position. Because there is no labelling to indicate the damper position, the EA based his determination of damper position on the fact that when the fan is off, the damper is closed. This configuration is normally correct; however, with the fan breaker racked out, the damper is open. As a result, the dampers were wired in the open position.

EA#2 then verified the damper position using the same logic (fan off/damper closed) that had been used by EA#1.

Mechanical Maintenance was notified that the 1A and 2A DW/Torus Purge Fans were OOS. No work was performed on shift 2 on December 9 due to additional Radiation Work Permit requirements for working inside the ductwork. During Shift 2, however, a Maintenance Staff Supervisor toured the area and saw the OOS cards hanging, but did not identify that the dampers were open.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

On the 3-11 shift on December 9, the Operating crew received alarm G-4 on the 912-5 panel, "Drywell/Tor Exh Filter High dp". An operator dispatched to investigate found the 2A DW/Torus Purge Fan rotating backwards. The operator checked the dp on both fans and found the 2A fan high and the 2B fan downscale. Because the Unit 2 drywell was being deinerted at the time, the operating crew believed that the fan rotation was due to leakage through the dampers and no further action was taken.

On December 10, at the morning shift meeting, Operations instructed Mechanical Maintenance not to work on the 2A DW/Torus Purge Fan filters until the 2B fan was off and Unit 2 drywell inerting was complete. No further controls were placed on this work to prevent its performance.

At 0730, the work package for the 1A filters was issued to the MM personnel. Upon arriving at the work area, the A mechanic checked that the OOS cards were hung but did not identify that the dampers were open. At 0745, the covers were removed from the 1A filter housing causing an unknown breach of secondary containment.

At 0845, the MM foreman for the job called the Unit 2 NSO to determine the status of the 2A DW/Torus Purge Fan. The U2 NSO informed the MMF that the fan was in "Pull-to-Lock". The MMF took this to mean that the requirements to start the Unit 2 work were satisfied. The requirement that U2 drywell inerting be complete was not fully conveyed to the MMF by the Maintenance Staff Supervisor who had attended the morning shift briefing. As a result, the MMF issued the work package for the 2A filters to the workers at 0930.

At approximately 1030, a second MM work group removed the covers from the 2A filter housing. The A mechanic noticed higher than normal suction when removing the covers.

At 1045, the Operating crew received alarm G-4 on the 912-5 panel, and the CD NSO dispatched an EA to investigate. The EA found the 2A fan rotating slowly and checked the damper position on all four fans. The EA was aware of the correct fan/damper position interlocks and determined that the 1A and 2A fan suction and discharge dampers were open. The EA recalled having been trained on the interlocks and had previously performed OOS evolutions on these dampers. The EA immediately notified the CD NSO and discussed the situation with a Shift Foreman.

At 1130, the EA completed repositioning the dampers and wired the dampers in the closed position. This restored Secondary Containment integrity.

C. APPARENT CAUSE OF EVENT:

The apparent cause of the event was a misconception of the fan/breaker/damper interlock which led the EAs to believe that the dampers were closed because the fans were off. The lack of labelling prevented positive verification of damper positions.



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

D. SAFETY ANALYSIS OF EVENT:

During this event, Secondary Containment was breached for about three and three-quarter hours without the condition being recognized.

This provided a potential unmonitored release path to the environment. A mitigating condition throughout the event was the continued negative differential pressure at the breach point provided by the operation of the reactor building ventilation system. This prevented any actual release via this pathway.

E. CORRECTIVE ACTIONS:

Immediate correction action was taken to wire the dampers in the closed position to restore secondary containment integrity.

The Secondary Containment Dampers/Damper Operators will be labelled to indicate OPEN and CLOSED position (NTS #254 200 91 15001).

QCAP 230-5 will be revised to include discussion of proper method of verification of ventilation dampers (NTS #254 200 91 15002).

This event will be tailgated with Operating Management with emphasis on the need for Operating to take Admin. Control of jobs when necessary (NTS #254 200 91 15003).

Operators will be tailgated on damper operations including the proper method of position verification and the need to contact supervision if the approved method of verification can not be performed. (NTS #254 200 91 15004).

Tech Staff will evaluate the feasibility of installing inspection ports to allow damper position verification (Unit 2 discharge damper) (NTS #254 200 91 15005).

The Heightened Level of Awareness procedure will be revised to include reference to Secondary Containment work (NTS #254 200 91 15006).

F. PREVIOUS EVENTS:

No similar event has occurred on this system.

G. COMPONENT FAILURE DATA:

There was no component failure associated with this event.