



**Commonwealth Edison**

Quad Cities Nuclear Power Station  
22710 206 Avenue North  
Cordova, Illinois 61242-9740  
Telephone 309/654-2241

RLB-93-053

March 26, 1993

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

Enclosed is Licensee Event Report (LER) 92-002, 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)(i)(B). The licensee shall report any operation or condition prohibited by the plant's Technical Specifications.

Respectfully,

COMMONWEALTH EDISON  
QUAD CITIES NUCLEAR POWER STATION

*RMB*

R. L. Bax  
Station Manager

RLB/TB/plm

Enclosure

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

050143

STMGR105393 RLB

9304060264 930327  
PDR ADOCK 05000254  
S PDR

*LER*  
*11*

## LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) Quad Cities Unit One  
 Title (4) Failure Of Secondary Containment Test  
 Docket Number (2) 0 | 5 | 0 | 0 | 0 | 2 | 5 | 4 | 1 | of | 0 | 5  
 Page (3) 1 of 0 5

## Failure Of Secondary Containment Test

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   3	0   2	9   3	9   3	0   0   2	0   0	0   3	2   7	9   3	Quad Cities Unit Two	0   5   0   0   0   2   6   5

OPERATING MODE (9) 4  
 POWER LEVEL (10) 0 | 8 | 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) 73.71(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  
 20.405(a)(1)(iii) X 50.73(a)(2)(i) 50.73(a)(2)(viii)(A) in Abstract  
 20.405(a)(1)(iv) 50.73(a)(2)(ii) 50.73(a)(2)(viii)(B) below and in  
 20.405(a)(1)(v) 50.73(a)(2)(iii) 50.73(a)(2)(x) Text)

## LICENSEE CONTACT FOR THIS LER (12)

Name Dave Schumacher, Tech Staff Engineer, Ext. 2820  
 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	MANUFAC-TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFAC-TURER	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:

At 0337 hours on March 2, 1993, Unit One was in the RUN mode operating at 80 percent of rated core thermal power, and Unit Two was in the RUN mode operating at 85 percent of rated core thermal power. The results from QTS 160-5, Secondary Containment Capability Test indicated that a differential pressure of 0.10 inches of water vacuum could be attained; whereas an average of 0.25 inches of water vacuum is required by Technical Specification 4.7.C.1.c.

At 0447 hours the Turbine Building Ventilation was adjusted from positive 0.075 inches of water to 0 inches of water vacuum. At this time Secondary Containment differential pressure increased to 0.29 inches of water vacuum. The test was restarted and at 0611 hours the differential pressure had reached 0.295 inches of water vacuum.

The cause of this event is attributed to a testing deficiency which resulted in placing the Turbine Building ventilation in an excessively conservative configuration.

The safety consequences of this event were minimal because the Secondary Containment was capable of performing its design function at all times.

This event is being reported in accordance with 10 CFR 50.73(A)(2)(i)(B).

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Form Rev 2.0

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			Page (3)		
		Year	///	Sequential Number	///	Revision Number	
Quad Cities Unit One	0   5   0   0   0   2   5   4	9   3	-	0   0   2	-	0   0	0   2 OF 0   5
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: Failure of secondary containment test.

A. CONDITIONS PRIOR TO EVENT:

Unit: One	Event Date: March 2, 1993	Event Time: 0337
Reactor Mode: 4	Mode Name: RUN	Power Level: 80%

This report was initiated by Deviation Report D-4-01-93-013.

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:

At 0337 hours on March 2, 1993, Unit One was in the RUN mode operating at 80 percent of rated core thermal power, and Unit Two was in the RUN mode operating at 85 percent of rated core thermal power. Technical Staff personnel were performing QTS 160-5, Secondary Containment [NH] Capability Test. At this time it was determined that an average of 0.25 inches of water vacuum could not be maintained in the Secondary Containment as required by Technical Specifications.

The test results at 0337 hours indicated that a differential pressure of 0.10 inches of water vacuum could be attained in the Secondary Containment. Technical Specifications require that both units be placed in a condition that does not require Secondary Containment within twenty four hours.

QTS 160-5 was initiated at 0237 hours on March 2, 1993. The wind speed was 4.3 mph and the direction was 318 degrees. The reactor building average interior temperature was 79 F and the outside temperature was 32 F. The average of four differential pressure gages located on the 696' elevation of the reactor building indicated an average of 0.10 inches of water vacuum.

At 0250 hours the Torus bleed line to Standby Gas [BH] Treatment System (SBGTS) was isolated. The Secondary Containment differential pressure increased to 0.12 inches of water vacuum. At 0255 the Torus bleed to SBGTS was reestablished.

At 0314 hours the A SBGTS train was started and the B SBGTS train was stopped. This had no impact on the differential pressure.

At 0330 all interlock door areas were checked for signs of excessive leakage with none identified.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Form Rev 2.0

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			Page (3)		
		Year	Sequential Number	Revision Number			
Quad Cities Unit One	0   5   0   0   0   2   5   4	9   3	-   0   0   2	-   0   0	0   3	OF	0   5
TEXT Energy Industry Identification System (EIIIS) codes are identified in the text as [XX]							

At 0340 hours QTS 160-5 was exited due to apparent failure of the test. The test configuration was maintained to assist in identifying the source of the inleakage.

At 0427 hours a one hour ENC phone call was made per 10 CFR 50.72(b)(1)(ii)(B) for apparently being outside the design basis of the plant.

At 0447 hours an additional Turbine Building exhaust fan was started. This brought the Turbine Building differential pressure to 0 inches of water vacuum. Step F.2 of QTS 160-5 requires the Turbine Building differential pressure to be greater than or equal to zero. The Turbine Building differential pressure had been at 0.075 inches of water. An increase in the Secondary Containment differential pressure was immediately noticed. The differential pressure increased from 0.10 to 0.29 inches of water vacuum.

At 0534 hours, QTS 160-5 was restarted. At 0611 hours the Reactor Building differential pressure had stabilized at 0.295 inches of water vacuum. At this time, QTS 160-5 was complete through step F.13 and all Technical Specifications regarding Secondary Containment were met.

QTS 160-5 was completed at 1025 hours with Reactor Building ventilation returned to normal configuration.

C. APPARENT CAUSE OF EVENT:

This event is being reported in accordance with 10 CFR 50.73(A)(2)(i)(B): The licensee shall report any operation or condition prohibited by the plant's Technical Specifications.

The apparent cause of this event is attributed to a testing deficiency. The Turbine Building ventilation was put in an excessively conservative configuration. This increased Reactor Building inleakage, which subsequently yielded the initial unacceptable test results.

Procedure QTS 160-5 step F.2 states, "Verify that the Turbine Building Ventilation to atmosphere differential pressure is equal to or greater than 0 inches of water". At 0200 hours, the Turbine Building fans were adjusted to comply with step F.2. Three Turbine Building supply fans and one exhaust fan were running. The Turbine Building differential pressure was 0.075 inches of water.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Form Rev 2.0

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)		
		Year	///	Sequential Number	///	Revision Number				
Quad Cities Unit One	0   5   0   0   0   2   5   4	9   3	-	0   0   2	-	0   0	0   4	OF	0   5	
TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]										

The driving force for any inleakage to the Secondary Containment is the differential pressure. The elevated Turbine Building pressure caused additional inleakage to the Secondary Containment. The air that was forced into the Reactor Building by the positive pressure in the Turbine Building had the effect of reducing the differential pressure that was measured during the first test. The Turbine Building ventilation is normally operated at a negative pressure. Configuring it to provide a positive pressure was overly conservative. When it was configured to maintain the Turbine Building at atmospheric pressure, the differential pressure in the Reactor Building was 0.29 inches of water vacuum.

The test results indicate that there are some air inleakage paths between the Turbine Building and the Secondary Containment. These inleakage path(s) would be a contributing cause to this event.

D. SAFETY ANALYSIS OF EVENT:

The safety consequences of this event were minimal because the Secondary Containment was capable of performing its design function at all times.

The Turbine Building is normally maintained at a negative pressure. There are three bounding accidents for the Secondary Containment: the Refueling Accident, the Loss of Coolant Accident, and a Small Line Break Outside the Primary Containment. In all three of these accidents the Turbine Building ventilation remains unaffected. If one of these accidents were to occur in conjunction with a loss of offsite power the west Turbine Building fans will trip. The East Turbine Building fans are powered from safety related busses and will trip on an undervoltage condition. In none of these instances would the Turbine Building ventilation be operating at a positive pressure.

The postulated inleakage path(s) between the Turbine Building and the Secondary Containment did not effect the ability of the Secondary Containment to perform its design function. The final test results indicated that a 0.29 inches of water vacuum differential pressure could be attained while the Turbine Building was at atmospheric pressure.

E. CORRECTIVE ACTIONS:

The test procedure QTS 160-5, Secondary Containment Capability Test will be changed to eliminate this testing deficiency. Also, the primary containment pump back compressor shall be operable as a prerequisite for the performance of the test (NTS 2542009301301).

Technical Staff personnel will perform further inspections to identify and repair any significant inleakage paths between the Turbine Building and the Secondary Containment (NTS 2542009301302).

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

Form Rev 2.0

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			Page (3)	
		Year	///	Sequential Number	///	Revision Number
Quad Cities Unit One	0   5   0   0   0   2   5   4	9   3	-	0   0   2	-	0   0
TEXT	Energy Industry Identification System (EIS) codes are identified in the text as [XX]					

F. PREVIOUS EVENTS:

This is the third event involving the Secondary Containment test. The three events are unrelated and do not constitute a negative trend. The first event was a result of a previously unidentified phenomenon involving differential temperature. The Second event was attributed to a degraded Reactor Building roof seal.

Licensee Event Report 90-02, Failure to maintain -0.25" H2O during QTS 160-5.

License Event Report 91-11, Failure of Secondary Containment Capability Test.

G. COMPONENT FAILURE DATA:

There was no specific failure associated with this event.