

Commonwealth Edison Company  
Quad Cities Generating Station  
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LWP-96-004

January 24, 1996

Mr. Hubert J. Miller  
Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region III  
801 Warrenville Road  
Lisle, IL 60532-4351

SUBJECT: Quad Cities Station Units 1 and 2  
Secondary Containment Capability  
Test Summary Technical Report  
NRC Docket Nos. 50-254 and 50-265

Dear Mr. Miller:

Attached, in accordance with Section 6.6.B.4 and Table 6.6-1 of Appendix A to DPR-29 and DPR-30, is a summary of the Secondary Containment Leak Rate Test performed for the Quad Cities Station Units 1 and 2 Reactor Buildings on January 21, 1996. This test was performed in accordance with Section 4.7.C.1.c of the Quad Cities Units 1 and 2 Technical Specifications.

Very truly yours,

A handwritten signature in cursive script, appearing to read "L. W. Pearce", is written over the typed name.

L. W. Pearce  
Station Manager  
Quad Cities Nuclear Power Station

LWP/OVI/sml

Enclosure

cc: C. Miller, Senior Resident Inspector, Quad Cities

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# Quad Cities Nuclear Power Station

## Units 1 and 2

### Secondary Containment Leak Rate Test Summary

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#### Introduction

Prior to the Unit One Refueling Outage at the End of Cycle Fourteen operations, a Secondary Containment Leak Rate Test was performed on the combined volume of the Unit One and Unit Two Secondary Containment Building. The test was performed to demonstrate the ability of the Standby Gas Treatment System (SBGTS) to maintain a quarter of an inch of water vacuum in both Reactor Buildings simultaneously with a filter train flow rate of not more than 4000 cfm. The test was conducted with a local filter train flow rate of 3980 cfm.

#### Secondary Containment Capability Test

The test was initiated at 0911 hours on January 21, 1996 with the 'B' SBGTS train in primary by simulating a "HI" radiation signal in the Reactor Building Ventilation Monitors. This action isolated the Reactor Building Ventilation systems, stopping all operating supply and exhaust fans, and starting 'B' SBGTS train. When equilibrium conditions were reached, differential pressure readings were taken.

#### Test Results

Data on wind speed, wind direction, building inside and outside temperatures, and differential building pressures were obtained for SBGTS flow rate of approximately 3980 cfm on the 'B' filter train. The test data represents the "as-found" condition of the Secondary Containment Building.

A 4 inch hole (leak) in the Secondary Containment was induced during the test. The purpose was to obtain data in order to quantify the performance of the Secondary Containment in a degraded condition. The leak was induced by opening a four inch fire header from outside to the Reactor Building.

Corrections for the reactor building to atmosphere differential temperature have been performed and are shown along with the uncorrected data in this report.

## SUMMARY OF TEST DATA

January 21, 1996

### Quad Cities 1 & 2 Reactor Building Leak Rate

'B' SBGTS Train

| <u>Flow (cfm)</u> | <u>Differential Wall Pressure (inches of water)</u> |              |             |             |                |
|-------------------|---|--------------|-------------|-------------|----------------|
|                   | <u>North</u>  | <u>South</u> | <u>East</u> | <u>West</u> | <u>Average</u> |
| 3980              | -0.275  | -0.325       | -0.280      | -0.255      | -0.284         |

Differential Reactor Building to Atmosphere Temperature = 50.9 F

Temperature Correction (inches of water) = -0.045

Temperature Corrected Average

Differential Pressure (inches of water) = -0.329

### Induced Leak Rate Results

| <u>Flow (cfm)</u> | <u>Differential Wall Pressure (inches of water)</u> |              |             |             |                |
|-------------------|---|--------------|-------------|-------------|----------------|
|                   | <u>North</u>  | <u>South</u> | <u>East</u> | <u>West</u> | <u>Average</u> |
| 3980              | -0.280  | -0.325       | -0.280      | -0.265      | -0.288         |

Temperature Corrected Average

Differential Pressure (inches of water) = -0.333

### Summary of Wind and Temperature Conditions

Temperature (deg. F): Indoor 73.2° F

Outdoor 22.3° F

Wind Velocity (MPH): 6.0 - 8.0

Wind Direction: South (196.8 deg.)

Elevation Above Grade Level (feet): 196

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The results of the test indicate that the SBGTS is capable of maintaining a quarter of an inch of water vacuum under calm wind conditions with a filter train flow rate of no more than 4000 cfm. Average reactor building differential pressure for the train results in -0.284 inches of water (without correction for building to atmosphere differential temperature), indicating adequate performance of the Secondary Containment and Standby Gas Treatment System.