# QUAD-CITIES NUCLEAR POWER STATION UNITS 1 AND 2
# SECONDARY CONTAINMENT LEAK RATE TEST SUMMARY

## INTRODUCTION

Prior to the Unit 2 Cycle Four refueling outage, a secondary containment leak rate test was performed on the combined volume of Unit 1 and Unit 2 secondary containment building. The test was performed to demonstrate the ability of the standby gas treatment system (SBGTS) to maintain a 1/4 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 flow indication of 4000 cfm.

## SECONDARY CONTAINMENT CAPABILITY TEST

The test was conducted with "A" SBGTS train in primary by initiating a "HI" radiation signal in the Units 1 and 2 reactor building ventilation monitors. This action isolated the ventilation systems, stopping all supply and exhaust fans, and started the "A" SBGTS train. When equilibrium conditions were reached, wall differential pressure readings were taken. "ZERO WIND" data was taken following shutdown of the SBGTS and allowing the building to come to equilibrium with the environs.

## TEST RESULTS

Data on wind speed, wind direction, building inside and outside temperatures, and differential building pressures were obtained at a SBGTS flow rate of approximately 4000 cfm on the "A" filter train.

The results of the test were corrected to zero wind conditions using flow rates of 0 cfm as the "STATIC" reference. Corrected data at the flow rate of 4000 cfm, therefore, gauged the rate at which air was exhausted through the system and the amount of in-leakage to the building.

## TEST RESULTS CORRECTED TO ZERO WIND CONDITIONS

Filter Train: "A"
Flow Rate: 4000 cfm
Building Wall DP (Inches of Water)
North: -0.24
South: -0.28
East: -0.28
West: -0.22
Average: -0.255

The results of the test indicate that the standby gas treatment filter train is capable of maintaining 1/4 inch of water vacuum under calm wind conditions with a filter train flow rate of no more than 4000 cfm. Average building differential pressure for the train results in -0.255 inches of water, indicating adequate performance of the secondary containment and standby gas treatment system.

SUMMARY OF TEST DATA
November 21, 1979

QUAD-CITIES 1 and 2 Reactor Building Leak Rate

"A" SBGT TRAIN

| Flow (cfm) | Wall Pressure (inches of water) | | | |
|---|---|---|---|---|
| | North | South | East | West |
| 1. 4000 | -0.24 | -0.28 | -0.28 | -0.22 |
| 2. 0 | -0.00 | -0.00 | -0.00 | -0.00 |

SUMMARY OF WIND AND TEMPERATURE CONDITIONS

Temperature (°F)

| | |
|---|---|
| Indoor | 82°F |
| Outdoor | 57°F. |

| Elevation Above Grade Level (Feet) | Wind Velocity (MPH) | Wind Direction |
|---|---|---|
| 196 | 11 | SE (151°) |

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