ENCLOSURE
SECONDARY CONTAINMENT LEAK RATE TEST
BROWNS FERRY NUCLEAR PLANT
UNIT 1

1.0 Browns Ferry Nuclear Plant Unit 1 Secondary Containment Leak Rate Test Report per Technical Specification 6.7.3.C.1.a.

2.0 Purpose

This report describes the results and analysis of the test data taken during leak rate testing of the Browns Ferry secondary containment system pursuant to Technical Specification 4.7.C.1.a.

3.0 Procedure

Surveillance Instruction (SI 4.7.C) outlines the procedure followed during secondary containment leak rate testing.

4.0 Data

The surveillance instruction was performed concurrently on all zones. SI 4.7.C data sheets list the following test data.

1.	Standby gas treatment system flowrate:	10,947	CFM
2.	Reactor building differential pressures		
	Unit 1 Reactor Zone	-.35	in H_2O
	Unit 2 Reactor Zone	-.27	in H_2O
	Unit 3 Reactor Zone	-.26	in H_2O
	Unit 1 Refuel Zone	-.29	in H_2O
	Unit 2 Refuel Zone	-.275	in H_2O
	Unit 3 Refuel Zone	-.275	in H_2O
3.	Wind Speed	7.38	MPH
4.	Wind Direction	359° (north)	

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5.0 Analysis and Interpretation

Technical Specification 4.7.C.1.a requires that secondary containment capability to maintain 1/4" water vacuum under calm wind (≤5 MPH) conditions with a system leakage rate of not more than 12,000 CFM shall be demonstrated at each refueling outage prior to refueling. Performance of SI 4.7.C is permissible under conditions of higher wind speeds (>5 MPH) provided a more stringent acceptance criteria is imposed on the differential pressure measured in each zone. The modified ΔP is shown in Table 1 (attached). The technical specification allowable inleakage value of 12,000 CFM has been conservatively reduced by 850 CFM. This reduction was administratively imposed because of an Engineering Design identified nonconformance concerning the seismic qualifications of auxiliary boiler penetrations into secondary containment. The secondary containment (all three reactor zones and the common refuel zone) was leak rate tested on April 16, 1985. The test was satisfactorily performed, showing secondary containment capability of maintaining a vacuum of -.26 in H_2O with less than 11,150 CFM of inleakage.

TABLE 1

Zone Static Pressure Requirements for Given Wind Velocity at 33 feet

$P \leq -.25 - \{3.44 \times 10^{-4} (V^2 - 25)\}$ (1)

Wind Velocity	Required Δ P (in H_2O)
0-5 (MPH)	-.250
6	-.254
7	-.258
8	-.263
9	-.269
10	-.276
11	-.283
12	-.291
13	-.299
14	-.309
15	-.319
16	-.329
17	-.341
18	-.353
19	-.365
20	-.379
21	-.393
22	-.408
23	-.423
24	-.439
25	-.456
>25	Calculate using the formula above

(1) Equation developed from FSAR section 12.2.2.9.

TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

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June 7, 1985

U.S. Nuclear Regulatory Commission
Region II
ATTN: Dr. J. Nelson Grace, Regional Administrator
101 Marietta Street, Suite 2900
Atlanta, Georgia 30323

Dear Dr. Grace:

BROWNS FERRY NUCLEAR PLANT UNIT 1 - REACTOR BUILDING CONTAINMENT LEAK RATE TEST - 90-DAY REPORT

Enclosed is the report on secondary containment leak rate testing for the Browns Ferry Nuclear Plant unit 1. This report is submitted pursuant to Browns Ferry Technical Specifications Section 6.7.3.C.1.a. If you have any questions, please call R. E. Rogers at FTS 858-2725.

To the best of my knowledge, I declare the statements contained herein are complete and true.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

J. W. Hufham, Manager
Licensing and Regulations

Enclosure
cc (Enclosure):
Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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