PHILADELPHIA ELECTRIC COMPANY

PHILADELPHIA

PEACH BOTTOM ATOMIC POWER STATION

UNIT NO. 3

DOCKET NUMBER 50-278

REACTOR CONTAINMENT BUILDING

INTEGRATED LEAKAGE RATE TEST REPORT

SUBMITTED TO

THE UNITED STATES NUCLEAR REGULATORY COMMISSION

PURSUANT TO

FACILITY OPERATING LICENSE NO. DPR-56

Philadelphia Electric Company

Peach Bottom Atomic Power Station
Unit No. 3
Docket Number 50-278

REACTOR CONTAINMENT BUILDING

INTEGRATED LEAK RATE TEST REPORT

APRIL 4, 1977

Submitted To

The United States Nuclear Regulatory Commission

Pursuant To

Facility Operating License No. DPR-56

Preparation Directed by:
W. T. Ullrich, Superintendent
Peach Bottom Atomic Power Station

TABLE OF CONTENTS

		PAGE
I.	INTRODUCTION	1
II.	TEST SYNOPSIS	2
III.	TEST DATA SUMMARY	4
	A. Plant - Information	3
	B. Technical Data	3
	C. Test Data - Type A Test	3
	D. Test Equipment - Type A Test	4
	E. Test Results - Type B and Type C Tests	7
	F. Information Retained at Jobsite	7
APPENDIX A	BECHTEL ILRT COMPUTER PROGRAM	A-1
I.	DESCRIPTION	A-1
II.	EXPLANATION OF PROGRAM	A-1
III.	COMPUTATIONS	A-3

TABLES

		PAGE
III.C.1	Summary Data	9
III.C.2	Leakage Rate: Total Time Calculation Constant Volume	10
III.C.3	Leakage Rate: Total Time Calculation, Trend Report - Constant Volume	11
III.C.4	Leakage Rate: Mass Point Analysis Constant Volume	12
III.C.5	Leakage Rate: Total Time Calculation Free Air Volume Varied	13
III.C.6	Leakage Rate: Total Time Calculation, Trend Report - Free Air Volume Varied	14
III.C.7	Leakage Rate: Mass Point Analysis Free Air Volume Varied	15
III.C.8 (a) thru (gg)	Measured and Corrected Data Summary	16 - 48
III.C.9	Summary Data Verification Test	49
III.C.10	Leakage Rate Verification: Total Time Calculation - Constant Volume	50
III.C.11	Leakage Rate Verification: Total Time Calculation, Trend Report Constant Volume	51

TABLES (Cont'd.)

		PAGE
III.C.12	Leakage Rate Verification: Mass Point Analysis - Constant Volume	52
III.C.13	Leakage Rate Verification: Total Time Calculation - Free Air Volume Varied	53
III.C.14	Leakage Rate Verification: Total Time Calculation, Trend Report Free Air Volume Varied	54
III.C.15	Leakage Rate Verification: Mass Point Analysis - Free Air Volume Varied	55
III.C.16 (a) thru (z)	Measured and Corrected Data Summary Leakage Rate Verification	56 - 81
III.E.1 (a) thru (i)	Type "B" Test Summary	82 - 90
III.E.2 (a) thru (i)	Type "C" Test Summary	91 - 99

FIGURE

A-1	Computer Program Logic Diagram	A-8

INTRODUCTION

The Reactor Containment Building integrated leakage rate test is performed to ensure the leak tightness of the primary containment vessel and attached piping up to the boundary valves, and to satisfy PBAPS Tech. Spec. 4.7.A.2 and Appendix J to 10CFR50.

Actual leakage is calculated from the measured pressure decay rate with the containment vessel pressurized to Pa., the peak accident pressure, 49.1 psig. Pressure, temperature and dew point data is computer processed and reduced to a leakage rate expressed in percent of initially contained volume per day.

The test is reported, along with individual penetration test results, in accordance with the requirements of 10CFR50 appendix J.

EST SYNOPSIS

ressurization of the containment for the ILRT at Peach Bottom Unit 3 com-enced late Saturday, April 2, 1977. Peak test pressure was reached early unday. A local leak survey was conducted. During the local survey, nalyses of the containment ILRT data indicated leakage rate from the con-tainment of about 10 scfm of air. Investigation of possible sources of leakage continued by checking all system piping penetrating containment.

It was also noted that reactor vessel water level was changing slightly (drop-ping) during cooldown from residual heat removal. The cooldown was causing the reactor coolant to contract, lowering the reactor vessel water level and thereby causing a small change in the containment free air volume. It was decided to determine what effect the changing free air volume would have on the calculated leakage rate since an increasing free air volume would "look" like outleakage since the containment free air volume is assumed con-stant in the leakage rate calculations.

Based on calculations by PECo engineers at the jobsite it was determined that a drop in reactor coolant temperature of $1^{o}F$ caused a 5 ft^3 increase in con-tainment free air volume due to water contraction. The water temperature in the operating recirculation loop was monitored for temperature changes. Also reactor vessel water level was monitored for comparison.

The computer program was modified to compute leakage rate assuming both a constant free air volume and a variable free air volume. During the 8 hour peak pressure ILRT the calculated volume change was 24 ft^3. The total free air volume was about 286,000 ft^3. The calculated leakage rates assuming a constant free air volume versus a variable free air volume agreed within 1.8% of each other based on the Total-Time Method of calculations. (The constant volume formula yielded a leakage rate that was 0.005%/day higher than the variable volume formula. So both method yielded essentially the same results.) Results from calculational methods are attached.

The leak survey continued until the leak was discovered on the air side of a torus water level instrument. The leak was isolated by closing a root valve. The containment leakage rate then came into specification and the ILRT was successfully completed with a test duration of eight (8) hours.

A verification test was then conducted (by imposing a leak rate approximately equal to La) which verified the ILRT measurement system's ability to accurately monitor and calculate the leakage rate. The containment was then depressurized with air exhausted directly to the Standby Gas Treatment System.

TEST DATA SUMMARY

A. PLANT - INFORMATION

Owner:	Philadelphia Electric Company
Plant:	Peach Bottom Atmoc Power Station - Unit 3
Location:	Delta, PA
Type:	Mark 1, BWR
Data Test Completed:	April 4, 1977

B. TECHNICAL DATA

1.	Containment net free air volume, including drywell and torus. (FSAR)	278,000 ft^3
2.	Design pressure	56 psig
3.	Calculated peak accident pressure	49.1 psig
4.	Containment temperature limits for ILRT	40-135°F

C. TEST DATA - TYPE A TEST

1.	Test Method	Absolute	
2.	Data Analysis Technique	Mass-Point and Leakage Rate (Total-Time)	
3.	Test Pressure	49.1 psig	
4.	Maximum Allowable Leakage Rate (La)	0.5%/day	
5.	75% of La	0.375%/day	
6.	Calculated Leakage Rate:	Leakage Rate (%/Day)	Upper 95% Confidence Limit
	a. Free air volume assumed constant		
	i) Mass Point Method	0.296	0.322
	ii) Leakage Rate Point Method	0.281	0.372
	b. Variable free air volume assumed		
	i) Mass Point Method	0.278	0.304
	ii) Leakage Rate Point Method	0.276	0.352

C. TEST DATA - TYPE A TEST - Cont'd.

	Containment Free Air Volume Assumed	
	Constant	Variable
7. Verification Test Imposed Leakage Rate (corrected for temperature and pressure at the flowmeter), Li	0.483%/day	0.483%/day
8. Verification Test Measured Leakage Rate, Lvm		
a. Mass Point Method	0.671	0.665
b. Leakage Rate Point Method	0.669	0.661
9. Verification Test Limits		
a. Upper (Li + Lam + 0.25 La)		
i) Mass Point	0.904	0.886
ii) Total Time	0.889	0.884
b. Lower (Li + Lam - 0.25 La)		
i) Mass Point	0.654	0.636
ii) Total Time	0.639	0.634

10. Report Printouts

Attached are the Report Printouts for the ILRT and the ILRT verification test. Printouts are provided for the Mass-Point and Leakage Rate Point (Total-Time) Analyses for containment free air volume constant and containment free air volume assumed variable. Information provided on Report Printouts includes: containment average temperature and absolute air pressure for each data set; calculated leakage rate at the upper 95% confidence limit; and, measured leakage rates.

D. TEST EQUIPMENT - TYPE A TEST

1. Pressure (1)

Texas Instruments Precision Pressure Gage
Model 145-02, Range C
Bourdon Tube Type 2

Range:	0 - 100 psia
Accuracy:	± 0.015% of reading
Repeatability:	± 0.001% of full scale or ± 0.001 psia

D. TEST EQUIPMENT - TYPE A TEST - Cont'd.

2. Temperature (12)

Leeds and Northrup Resistance Temperature Detectors
Model 8197, 100 ohm copper

Range:	32 - 250°F
Limit of Error:	± 0.5°F
Calibrated Accuracy:	± 0.3°F or better
Repeatability:	± 0.1°F

3. Vapor Pressure

a. Sensors (6)*

CTE Model 84P Dew Point and Dry Bulb Tmperature Sensor

Dew Point Range Limits:	-20°F to 130°F
Dry Bulb Range Limits:	-20°F to 140°F

b. Analyzer

Vap-Air 6-Channel Dewpoint Control and Readout Module for Remote Readout on Item 4 below:

Range:	0 - 100°F Dewpoint
Accuracy:	± 1°F (Instrument ambient +60°F to +100°F)
	± 2°F (Instrument ambient -20°F to +140°F)
Repeatability:	± 0.5°F
Output:	0 to 10 mVDC for 0 - 100°F Dewpoint

4. Temperature and Vapor Pressure Readout

Leeds and Northrup Numatron Digital Display
Model 914-0001-999-1

Range 1:	0.00-150.00°F	Range 2:	0-10 mVDC
Resolution:	0.01°F	Resolution:	0.001 mVDC
Conformity:	± 0.01°F	Accuracy:	± 0.005 mVDC ± 1 digit

5. Overall System Figure of Merit (based on repeatability error):
± 0.03%/day

* NOTE: One drywell temperature sensor malfunctioned. Therefore, only five readings were taken. Volume fractions were recomputed. Of the five dewpoint temperature sensors, three were in the drywell and two were in the torus. Since the torus atmosphere was saturated (i.e., drybulb temperature, dewpoint temperature and wetbulb temperature are equivalent) the torus air drybulb sensors were used to monitor dewpoint temperature to improve readout accuracy.

TEST EQUIPMENT - TYPE A TEST - Cont'd.

6. Temperature and Vapor Pressure Sensor Locations.

VAPOR PRESSURE DEWPOINT

	Elevation (Ft)	Azimuth (Deg.)	Distance From Center (Ft)	Volume Fraction
1. Drywell	200	45	16	0.130
2. Drywell	162	225	20	0.180
3. Drywell	150	328	24	0.262
4. Torus	115	240	66	0.214
5. Torus	115	0	66	0.214
				1.000

TEMPERATURE

1. Drywell	200	45	16	0.065
2. Drywell	200	225	16	0.065
3. Drywell	162	90	20	0.073
4. Drywell	162	270	20	0.073
5. Drywell	150	320	24	0.085
6. Drywell	150	130	24	0.085
7. Drywell	127	90	22	0.050
8. Drywell	127	270	22	0.050
9. Drywell	120	0	0	0.025
10. Torus	115	120	66	0.143
11. Torus	115	240	66	0.143
12. Torus	115	0	66	0.143
				1.000

7. Verification Flow (Superimposed Leakage Rate)

Brooks Hi-Accuracy Full View Rotameter
Model 1110 FV 24

Range: 0.7 - 7 scfm
Accuracy: ± 1% of reading

TEST RESULTS - TYPE B and TYPE C TESTS

A Summary of Results of Type B and Type C tests is provided by Philadelphia Electric Company. (Tables III.E.1. and III.E.2.)

INFORMATION RETAINED AT JOBSITE

The following information is not included in the summary but is retained at the jobsite and available for review:

1. Data and Data Reduction

   a. Raw data sheets showing ILRT data as recorded from the instrumentation and as entered in the computer.

   b. Computer printouts of raw data reduction giving weighted average containment absolute air temperature and pressure suitably corrected for calibration, vapor pressure, and volume fractions.

   c. Formulas used by computer for calculation of leakage rate, regression analyses and confidence limits.

   d. Data to verify temperature stabilization.

2. Systems Status (at time of ILRT)

   a. A system line-up showing valve positions and status of piping systems (drained, vented, etc.) for all plant systems associated with ILRT.

   b. Identification of normal plant instrumentation.

   c. Equipment protection list identifying action taken to prevent equipment damage due to high containment atmosphere pressure.

3. Event Log

   A continuous log of ILRT events.

4. Instrumentation Documentation

   Calibration data and certificates.

5. Test Procedure

   The working copy of test procedure including signature sign offs.

INFORMATION RETAINED AT JOBSITE - Cont'd.

6. Local Leakage Rate Tests

The procedure and data to verify completion of penetrations and valves testing (Type B and C tests) including measured leakage rates, significant problems found, and applicable corrective action, and total, overall leakage rate.

7. Quality Assurance

The Quality Assurance audit plan or checklist that was used to monitor the ILRT.

8. Local Leak Survey During ILRT

Identification of any leakage (into or out of containment) found during ILRT and corrective action taken.

9. System Restoration

Checklist for restoration to normal status of non-standard system or instrumenation conditions after completion of the ILRT.

TABLE III.C.1.
SUMMARY DATA

SUMMARY DATA

PEACHBOTTOM UNIT 3 ILRT

TIME	DATE	TEMP	PRESSURE	VOLUME
1300	404	531.580	63.4720	285971.
1315	404	531.569	63.4675	285975.
1330	404	531.540	63.4607	285978.
1345	404	531.503	63.4532	285981.
1400	404	531.464	63.4438	285984.
1415	404	531.420	63.4370	285987.
1430	404	531.360	63.4291	285989.
1445	404	531.354	63.4220	285988.
1500	404	531.325	63.4203	285981.
1515	404	531.307	63.4169	285983.
1530	404	531.264	63.4114	285984.
1545	404	531.258	63.4054	285984.
1600	404	531.228	63.3988	285985.
1615	404	531.178	63.3935	285986.
1630	404	531.155	63.3869	285987.
1645	404	531.108	63.3824	285987.
1700	404	531.205	63.3903	285987.
1715	404	531.439	63.4199	285987.
1730	404	530.964	63.3530	285990.
1745	404	531.270	63.3976	285990.
1800	404	531.727	63.4431	285990.
1815	404	532.176	63.4964	285990.
1830	404	532.577	63.5377	285991.
1845	404	532.755	63.5448	285990.
1900	404	532.321	63.5011	285991.
1915	404	532.103	63.4911	285991.
1930	404	531.950	63.4620	285993.
1945	404	531.822	63.4453	285993.
2000	404	531.708	63.4312	285995.
2015	404	531.644	63.4206	285994.
2030	404	531.565	63.4093	285995.
2045	404	531.474	63.3982	285995.
2100	404	531.421	63.3975	285995.
0	0	0.0	0.0	0.0

ILRT STABIL. DATA

PEACH BOTTOM UNIT 3 ILRT

TIME	DATE	TEMP	TOTAL PRESSURE
0800	404	532.478	63.964
1200	404	531.645	63.813
1600	404	531.530	63.804

TABLE III.C.2.
LEAKAGE RATE: TOTAL TIME CALCULATION
CONSTANT VOLUME

PEACHBOTTOM UNIT 3 ILRT

LEAKAGE RATE (WEIGHT PERCENT/DAY)
BASED ON TOTAL TIME CALCULATIONS

TIME AND DATE AT START OF TEST: 1300 0404
ELAPSED TIME: 8.00 HOURS

TIME	TEMP. (R)	PRESSURE (PSIA)	MEASURED LEAKAGE RATE
1300	531.580	63.4720	
1315	531.569	63.4675	0.482
1330	531.540	63.4607	0.493
1345	531.503	63.4532	0.484
1400	531.464	63.4438	0.543
1415	531.420	63.4370	0.481
1430	531.360	63.4291	0.419
1445	531.354	63.4220	0.497
1500	531.325	63.4203	0.402
1515	531.307	63.4169	0.378
1530	531.264	63.4114	0.346
1545	531.258	63.4054	0.387
1600	531.228	63.3988	0.393
1615	531.178	63.3935	0.355
1630	531.155	63.3869	0.371
1645	531.108	63.3824	0.335
1700	531.205	63.3903	0.349
1715	531.439	63.4199	0.314
1730	530.964	63.3530	0.382
1745	531.270	63.3936	0.330
1800	531.727	63.4431	0.351
1815	532.176	63.4964	0.336
1830	532.577	63.5377	0.366
1845	532.755	63.5448	0.443
1900	532.321	63.5011	0.374
1915	532.103	63.4911	0.262
1930	531.950	63.4620	0.315
1945	531.822	63.4453	0.311
2000	531.708	63.4313	0.302
2015	531.644	63.4206	0.308
2030	531.565	63.4093	0.307
2045	531.474	63.3982	0.298
2100	531.431	63.3875	0.315

MEAN OF MEASURED LEAKAGE RATES	=	0.376
STD. DEVIATION OF MEASURED LEAKAGE RATES	=	0.071
MAXIMUM ALLOWABLE LEAKAGE RATE	=	0.500
75 % OF MAXIMUM ALLOWABLE LEAKAGE RATE	=	0.375
THE CALCULATED LEAKAGE RATE	=	0.281
THE CALC. LEAKAGE RATE AT 95% CONFIDENCE LEVEL	=	0.281 ± 0.091

CONSTANT VOLUME

TABLE III.C.3.
LEAKAGE RATE: TOTAL TIME CALCULATION, TREND REPORT
CONSTANT VOLUME

PEACHBOTTOM UNIT 3 ILRT

TREND REPORT
LEAKAGE RATES (WEIGHT PERCENT/DAY)
BASED ON TOTAL-TIME CALCULATIONS

TIME AND DATE AT START OF TEST: 1300 0404
ELAPSED TIME: 8.00 HOURS

NO. DATA POINTS	ELAPSED TIME	MEAN MEASURED LEAKAGE RATE	CALCULATED LEAKAGE RATE	CHG IN CALC L/R FROM LAST POINT	UPPER 95% CONF LEVEL
					0.527
10	2.25	0.465	0.412		0.492
11	2.50	0.453	0.381	-0.031	0.475
12	2.75	0.447	0.372	-0.009	0.466
13	3.00	0.442	0.368	-0.004	0.447
14	3.25	0.436	0.354	-0.013	0.438
15	3.50	0.431	0.349	-0.006	0.420
16	3.75	0.425	0.336	-0.013	0.411
17	4.00	0.420	0.329	-0.007	0.394
18	4.25	0.414	0.316	-0.013	0.405
19	4.50	0.412	0.320	0.004	0.396
20	4.75	0.408	0.313	-0.007	0.394
21	5.00	0.405	0.312	-0.002	0.390
22	5.25	0.402	0.308	-0.004	0.395
23	5.50	0.400	0.310	0.002	0.428
24	5.75	0.402	0.325	0.014	0.430
25	6.00	0.401	0.326	0.002	0.415
26	6.25	0.395	0.311	-0.015	0.407
27	6.50	0.392	0.306	-0.005	0.400
28	6.75	0.389	0.301	-0.005	0.392
29	7.00	0.386	0.295	-0.006	0.386
30	7.25	0.383	0.291	-0.004	0.380
31	7.50	0.381	0.287	-0.004	0.374
32	7.75	0.378	0.283	-0.004	0.372
33	8.00	0.376	0.281	-0.002	

THE CALCULATED LEAKAGE RATE = 0.281

CONSTANT VOLUME

TABLE III.C.4.
LEAKAGE RATE: MASS-POINT ANALYSIS
CONSTANT VOLUME

PEACHBOTTOM UNIT 3 ILRT

LEAKAGE RATE (WEIGHT PERCENT/DAY)
MASS POINT ANALYSIS

TIME AND DATE AT START OF TEST: 1300 0404
ELAPSED TIME: 8.00 HOURS

TIME	TEMP (R)	PRESSURE (PSIA)	CTMT. AIR MASS (LBM)	MASS LOSS (LBM)	TOT.AVG. MASS LOSS (LBM/HR)
1300	531.580	63.4720	92174		
1315	531.569	63.4675	92169	4.6	18.5
1330	531.540	63.4607	92164	4.8	18.9
1345	531.503	63.4532	92160	4.5	18.6
1400	531.464	63.4438	92153	6.9	20.8
1415	531.420	63.4370	92150	2.2	18.5
1430	531.360	63.4291	92149	1.1	16.1
1445	531.354	63.4220	92140	9.3	19.1
1500	531.325	63.4203	92143	-2.6	15.4
1515	531.307	63.4169	92141	1.8	14.5
1530	531.264	63.4114	92140	0.5	13.3
1545	531.258	63.4054	92133	7.7	14.9
1600	531.228	63.3988	92128	4.4	15.1
1615	531.178	63.3935	92129	-1.0	13.6
1630	531.155	63.3869	92124	5.6	14.3
1645	531.108	63.3824	92125	-1.6	12.9
1700	531.205	63.3903	92120	5.3	13.4
1715	531.439	63.4199	92122	-2.4	12.1
1730	530.964	63.3530	92107	14.9	14.7
1745	531.270	63.3936	92113	-5.9	12.7
1800	531.727	63.4431	92106	7.3	13.5
1815	532.176	63.4964	92106	0.4	12.9
1830	532.577	63.5377	92096	9.5	14.1
1845	532.755	63.5448	92076	20.5	17.0
1900	532.321	63.5011	92087	-11.7	14.4
1915	532.103	63.4911	92111	-23.2	10.1
1930	531.950	63.4620	92095	15.7	12.1
1945	531.822	63.4453	92093	2.1	12.0
2000	531.708	63.4313	92092	0.6	11.6
2015	531.644	63.4206	92088	4.5	11.8
2030	531.565	63.4093	92085	2.7	11.8
2045	531.474	63.3982	92085	0.4	11.5
2100	531.431	63.3875	92077	8.1	12.1

FREE AIR VOLUME USED (MILLIONS OF CU. FT.) = 0.286

REGRESSION LINE
INTERCEPT (LBM) = 92166
SLOPE (LBM/HR) = -11.3

MAXIMUM ALLOWABLE LEAKAGE RATE = 0.500
75 % OF MAXIMUM ALLOWABLE LEAKAGE RATE = 0.375
THE CALCULATED LEAKAGE RATE = 0.296
THE CALC. LEAKAGE RATE AT 95% CONFIDENCE LEVEL = 0.296 ± 0.026

CONSTANT VOLUME

TABLE III.C.5.
LEAKAGE RATE: TOTAL TIME CALCULATION
FREE AIR VOLUME VARIED

PEACHBOTTOM UNIT 3 ILRT

LEAKAGE RATE (WEIGHT PERCENT/DAY)
BASED ON TOTAL TIME CALCULATIONS

TIME AND DATE AT START OF TEST: 1300 0404
ELAPSED TIME: 8.00 HOURS

TIME	TEMP. (R)	PRESSURE (PSIA)	MEASURED LEAKAGE RATE
1300	531.580	63.4720	
1315	531.569	63.4675	0.348
1330	531.540	63.4607	0.376
1345	531.503	63.4532	0.372
1400	531.464	63.4438	0.434
1415	531.420	63.4370	0.374
1430	531.360	63.4291	0.319
1445	531.354	63.4220	0.416
1500	531.325	63.4203	0.360
1515	531.307	63.4169	0.334
1530	531.264	63.4114	0.302
1545	531.258	63.4054	0.348
1600	531.228	63.3988	0.354
1615	531.178	63.3935	0.316
1630	531.155	63.3869	0.333
1645	531.108	63.3824	0.300
1700	531.205	63.3903	0.316
1715	531.439	63.4199	0.282
1730	530.964	63.3530	0.347
1745	531.270	63.3936	0.296
1800	531.727	63.4431	0.319
1815	532.176	63.4964	0.306
1830	532.577	63.5377	0.336
1845	532.755	63.5448	0.415
1900	532.321	63.5011	0.346
1915	532.103	63.4911	0.235
1930	531.950	63.4620	0.287
1945	531.822	63.4453	0.284
2000	531.708	63.4313	0.274
2015	531.644	63.4206	0.281
2030	531.565	63.4093	0.280
2045	531.474	63.3982	0.272
2100	531.431	63.3875	0.290

MEAN OF MEASURED LEAKAGE RATES	=	0.327
STD. DEVIATION OF MEASURED LEAKAGE RATES	=	0.046
MAXIMUM ALLOWABLE LEAKAGE RATE	=	0.500
75 % OF MAXIMUM ALLOWABLE LEAKAGE RATE	=	0.375
THE CALCULATED LEAKAGE RATE	=	0.276
THE CALC. LEAKAGE RATE AT 95% CONFIDENCE LEVEL	=	0.276 ± 0.076

Free Air Volume Varied

TABLE III.C.6.
LEAKAGE RATE: TOTAL TIME CALCULATION, TREND REPORT
FREE AIR VOLUME VARIED

PEACHBOTTOM UNIT 3 ILRT

TREND REPORT
LEAKAGE RATES (WEIGHT PERCENT/DAY)
BASED ON TOTAL-TIME CALCULATIONS

TIME AND DATE AT START OF TEST: 1300 0404
ELAPSED TIME: 8.00 HOURS

NO. DATA POINTS	ELAPSED TIME	MEAN MEASURED LEAKAGE RATE	CALCULATED LEAKAGE RATE	CHG IN CALC L/R FROM LAST POINT	UPPER 95% CONF LEVEL
					0.468
10	2.25	0.370	0.361		0.445
11	2.50	0.363	0.340	-0.022	0.436
12	2.75	0.362	0.339	-0.001	0.431
13	3.00	0.361	0.340	0.001	0.417
14	3.25	0.358	0.331	-0.009	0.409
15	3.50	0.356	0.328	-0.003	0.396
16	3.75	0.352	0.318	-0.010	0.388
17	4.00	0.350	0.313	-0.004	0.375
18	4.25	0.346	0.303	-0.011	0.382
19	4.50	0.346	0.308	0.005	0.373
20	4.75	0.343	0.302	-0.006	0.371
21	5.00	0.342	0.301	-0.001	0.366
22	5.25	0.341	0.299	-0.003	0.369
23	5.50	0.340	0.301	0.003	0.401
24	5.75	0.344	0.317	0.015	0.402
25	6.00	0.344	0.319	0.002	0.393
26	6.25	0.339	0.305	-0.014	0.386
27	6.50	0.337	0.300	-0.005	0.379
28	6.75	0.335	0.295	-0.005	0.372
29	7.00	0.333	0.289	-0.006	0.366
30	7.25	0.331	0.285	-0.004	0.361
31	7.50	0.330	0.282	-0.004	0.355
32	7.75	0.328	0.278	-0.004	0.352
33	8.00	0.327	0.276	-0.001	

THE CALCULATED LEAKAGE RATE = 0.276

Free Air Volume Varied

TABLE III.C.7.
LEAKAGE RATE: MASS-POINT ANALYSIS
FREE AIR VOLUME VARIED

PEACHBOTTOM UNIT 3 ILRT

LEAKAGE RATE (WEIGHT PERCENT/DAY)
MASS POINT ANALYSIS

TIME AND DATE AT START OF TEST: 1300 0404
ELAPSED TIME: 8.00 HOURS

TIME	TEMP (R)	PRESSURE (PSIA)	CTMT. AIR MASS (LBM)	MASS LOSS (LBM)	TOT.AVG. MASS LOSS (LBM/HR)
1300	531.580	63.4720	92164		
1315	531.569	63.4675	92161	3.3	13.4
1330	531.540	63.4607	92157	3.9	14.4
1345	531.503	63.4532	92154	3.5	14.3
1400	531.464	63.4438	92148	5.9	16.7
1415	531.420	63.4370	92147	1.3	14.3
1430	531.360	63.4291	92146	0.4	12.2
1445	531.354	63.4220	92137	9.6	16.0
1500	531.325	63.4203	92137	-0.3	13.8
1515	531.307	63.4169	92136	1.2	12.8
1530	531.264	63.4114	92135	0.2	11.6
1545	531.258	63.4054	92128	7.7	13.4
1600	531.228	63.3988	92124	4.1	13.6
1615	531.178	63.3935	92125	-1.3	12.2
1630	531.155	63.3869	92120	5.3	12.8
1645	531.108	63.3824	92121	-1.6	11.5
1700	531.205	63.3903	92116	5.3	12.1
1715	531.439	63.4199	92118	-2.4	10.8
1730	530.964	63.3530	92105	13.9	13.3
1745	531.270	63.3936	92110	-5.9	11.4
1800	531.727	63.4431	92103	7.3	12.3
1815	532.176	63.4964	92103	0.4	11.8
1830	532.577	63.5377	92094	9.2	12.9
1845	532.755	63.5448	92073	20.8	15.9
1900	532.321	63.5011	92085	-12.0	13.3
1915	532.103	63.4911	92108	-23.2	9.0
1930	531.950	63.4620	92093	15.1	11.0
1945	531.822	63.4453	92091	2.1	10.9
2000	531.708	63.4313	92091	-0.1	10.5
2015	531.644	63.4206	92086	4.8	10.8
2030	531.565	63.4093	92084	2.4	10.8
2045	531.474	63.3982	92083	0.4	10.5
2100	531.431	63.3875	92075	8.1	11.1

FREE AIR VOLUME USED (MILLIONS OF CU. FT.) = SEE SUMMARY DATA

REGRESSION LINE = 92160
INTERCEPT (LBM) = -10.7
SLOPE (LBM/HR) = 0.500

MAXIMUM ALLOWABLE LEAKAGE RATE = 0.375
75 % OF MAXIMUM ALLOWABLE LEAKAGE RATE = 0.278
THE CALCULATED LEAKAGE RATE = 0.278 ± 0.026
THE CALC. LEAKAGE RATE AT 95% CONFIDENCE LEVEL

Free Air Volume Varied

TABLE III.C.8. (a)
MEASURED AND CORRECTED DATA SUMMARY

SUMMARY OF MEASURED DATA AT 1300 0404

TEMP	1 =	536.330	(76.73)
TEMP	2 =	538.300	(78.70)
TEMP	3 =	531.730	(72.13)
TEMP	4 =	531.390	(71.79)
TEMP	5 =	527.970	(68.37)
TEMP	6 =	529.340	(69.74)
TEMP	7 =	526.930	(67.33)
TEMP	8 =	526.390	(66.79)
TEMP	9 =	522.220	(62.62)
TEMP	10 =	532.980	(73.38)
TEMP	11 =	532.540	(72.94)
TEMP	12 =	532.580	(72.98)
PRES	1 =	63.804	(63802.)
VPRS	1 =	0.278	(62.30)
VPRS	2 =	0.295	(64.00)
VPRS	3 =	0.272	(61.70)
VPRS	4 =	0.401	(72.94)
VPRS	5 =	0.402	(72.98)

SUMMARY OF CORRECTED DATA

TIME = 1300
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.580

CORRECTED PRESSURE (PSIA) = 63.4720

TABLE III.C.8. (b)
MEASURED AND CORRECTED DATA SUMMARY

SUMMARY OF MEASURED DATA AT 1315 0404

TEMP	1 =	536.400	(76.80)
TEMP	2 =	538.440	(78.84)
TEMP	3 =	531.680	(72.08)
TEMP	4 =	531.350	(71.75)
TEMP	5 =	527.980	(68.38)
TEMP	6 =	529.230	(69.63)
TEMP	7 =	526.940	(67.34)
TEMP	8 =	526.360	(66.76)
TEMP	9 =	522.170	(62.57)
TEMP	10 =	532.970	(73.37)
TEMP	11 =	532.530	(72.93)
TEMP	12 =	532.550	(72.95)
PRES	1 =	63.799	(63797.)
VPRS	1 =	0.277	(62.20)
VPRS	2 =	0.295	(64.00)
VPRS	3 =	0.271	(61.60)
VPRS	4 =	0.401	(72.93)
VPRS	5 =	0.401	(72.95)

SUMMARY OF CORRECTED DATA

TIME = 1315
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.569

CORRECTED PRESSURE (PSIA) = 63.4675

TABLE III.C.8. (c)
MEASURED AND CORRECTED DATA SUMMARY

SUMMARY OF MEASURED DATA AT 1330 0404

TEMP	1 =	536.270	(76.67)
TEMP	2 =	538.380	(78.78)
TEMP	3 =	531.650	(72.05)
TEMP	4 =	531.370	(71.77)
TEMP	5 =	527.900	(68.30)
TEMP	6 =	529.290	(69.69)
TEMP	7 =	526.870	(67.27)
TEMP	8 =	526.360	(66.76)
TEMP	9 =	522.130	(62.53)
TEMP	10 =	532.940	(73.34)
TEMP	11 =	532.510	(72.91)
TEMP	12 =	532.530	(72.93)
PRES	1 =	63.792	(63790.)
VPRS	1 =	0.278	(62.30)
VPRS	2 =	0.294	(63.90)
VPRS	3 =	0.271	(61.60)
VPRS	4 =	0.401	(72.91)
VPRS	5 =	0.401	(72.93)

SUMMARY OF CORRECTED DATA

TIME = 1330
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.540

CORRECTED PRESSURE (PSIA) = 63.4607

TABLE III.C.8. (d)
MEASURED AND CORRECTED DATA SUMMARY

SUMMARY OF MEASURED DATA AT 1345 0404

TEMP	1 =	536.220	(76.62)
TEMP	2 =	538.250	(78.65)
TEMP	3 =	531.580	(71.98)
TEMP	4 =	531.320	(71.72)
TEMP	5 =	527.980	(68.38)
TEMP	6 =	529.150	(69.55)
TEMP	7 =	526.870	(67.27)
TEMP	8 =	526.310	(66.71)
TEMP	9 =	522.120	(62.52)
TEMP	10 =	532.920	(73.32)
TEMP	11 =	532.490	(72.89)
TEMP	12 =	532.510	(72.91)
PRES	1 =	63.784	(63782.)
VPRS	1 =	0.277	(62.20)
VPRS	2 =	0.294	(63.90)
VPRS	3 =	0.270	(61.50)
VPRS	4 =	0.400	(72.89)
VPRS	5 =	0.401	(72.91)

SUMMARY OF CORRECTED DATA

TIME = 1345
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.503

CORRECTED PRESSURE (PSIA) = 63.4532

TABLE III.C.8. (e)
MEASURED AND CORRECTED DATA SUMMARY

SUMMARY OF MEASURED DATA AT 1415 0404

TEMP	1 =	536.030	(76.43)
TEMP	2 =	538.080	(78.48)
TEMP	3 =	531.460	(71.86)
TEMP	4 =	531.190	(71.59)
TEMP	5 =	527.780	(68.18)
TEMP	6 =	529.200	(69.60)
TEMP	7 =	526.820	(67.22)
TEMP	8 =	526.180	(66.58)
TEMP	9 =	522.040	(62.44)
TEMP	10 =	532.870	(73.27)
TEMP	11 =	532.450	(72.85)
TEMP	12 =	532.480	(72.88)
PRES	1 =	63.767	(63765.)
VPRS	1 =	0.274	(61.90)
VPRS	2 =	0.293	(63.80)
VPRS	3 =	0.270	(61.50)
VPRS	4 =	0.400	(72.85)
VPRS	5 =	0.400	(72.88)

SUMMARY OF CORRECTED DATA

TIME = 1415
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.420

CORRECTED PRESSURE (PSIA) = 63.4370

Table III.C.8. (f)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1400 0404

TEMP	1 =	536.160	(76.56)
TEMP	2 =	538.200	(78.60)
TEMP	3 =	531.540	(71.94)
TEMP	4 =	531.200	(71.60)
TEMP	5 =	527.850	(68.25)
TEMP	6 =	529.130	(69.53)
TEMP	7 =	526.830	(67.23)
TEMP	8 =	526.300	(66.70)
TEMP	9 =	522.090	(62.49)
TEMP	10 =	532.900	(73.30)
TEMP	11 =	532.480	(72.88)
TEMP	12 =	532.510	(72.91)
PRES	1 =	63.775	(63773.)
VPRS	1 =	0.277	(62.20)
VPRS	2 =	0.294	(63.90)
VPRS	3 =	0.272	(61.70)
VPRS	4 =	0.400	(72.88)
VPRS	5 =	0.401	(72.91)

SUMMARY OF CORRECTED DATA

TIME = 1400
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.464

CORRECTED PRESSURE (PSIA) = 63.4438

Table III.C.8. (g)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1430 0404

TEMP	1 =	535.940	(76.34)
TEMP	2 =	537.960	(78.36)
TEMP	3 =	531.360	(71.76)
TEMP	4 =	531.090	(71.49)
TEMP	5 =	527.730	(68.13)
TEMP	6 =	528.990	(69.39)
TEMP	7 =	526.740	(67.14)
TEMP	8 =	526.180	(66.58)
TEMP	9 =	522.020	(62.42)
TEMP	10 =	532.860	(73.26)
TEMP	11 =	532.440	(72.84)
TEMP	12 =	532.460	(72.86)
PRES	1 =	63.759	(63757.)
VPRS	1 =	0.276	(62.10)
VPRS	2 =	0.293	(63.80)
VPRS	3 =	0.269	(61.40)
VPRS	4 =	0.400	(72.84)
VPRS	5 =	0.400	(72.86)

SUMMARY OF CORRECTED DATA

TIME = 1430
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.360

CORRECTED PRESSURE (PSIA) = 63.4291

Table III.C.8. (h)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1445 0404

TEMP	1 =	535.830	(76.23)
TEMP	2 =	537.860	(78.26)
TEMP	3 =	531.360	(71.76)
TEMP	4 =	531.100	(71.50)
TEMP	5 =	527.680	(68.08)
TEMP	6 =	529.100	(69.50)
TEMP	7 =	526.750	(67.15)
TEMP	8 =	526.220	(66.62)
TEMP	9 =	521.990	(62.39)
TEMP	10 =	532.860	(73.26)
TEMP	11 =	532.430	(72.83)
TEMP	12 =	532.470	(72.87)
PRES	1 =	63.752	(63750.)
VPRS	1 =	0.278	(62.30)
VPRS	2 =	0.292	(63.70)
VPRS	3 =	0.269	(61.40)
VPRS	4 =	0.400	(72.83)
VPRS	5 =	0.400	(72.87)

SUMMARY OF CORRECTED DATA

TIME = 1445
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.354

CORRECTED PRESSURE (PSIA) = 63.4220

Table III.C.8 (i)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1500 0404

TEMP	1 =	535.760	(76.16)
TEMP	2 =	537.900	(78.20)
TEMP	3 =	531.380	(71.78)
TEMP	4 =	531.050	(71.45)
TEMP	5 =	527.680	(68.08)
TEMP	6 =	529.050	(69.45)
TEMP	7 =	526.670	(67.07)
TEMP	8 =	526.120	(66.52)
TEMP	9 =	521.930	(62.33)
TEMP	10 =	532.850	(73.25)
TEMP	11 =	532.430	(72.83)
TEMP	12 =	532.460	(72.86)
PRES	1 =	63.750	(63748.)
VPRS	1 =	0.274	(61.90)
VPRS	2 =	0.292	(63.70)
VPRS	3 =	0.270	(61.50)
VPRS	4 =	0.400	(72.83)
VPRS	5 =	0.400	(72.86)

SUMMARY OF CORRECTED DATA

TIME = 1500
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.325

CORRECTED PRESSURE (PSIA) = 63.4203

Table III.C.8. (j)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1515 0404

TEMP	1 =	535.720	(76.12)
TEMP	2 =	537.830	(78.23)
TEMP	3 =	531.320	(71.72)
TEMP	4 =	531.050	(71.45)
TEMP	5 =	527.660	(68.06)
TEMP	6 =	529.030	(69.43)
TEMP	7 =	526.630	(67.03)
TEMP	8 =	526.050	(66.45)
TEMP	9 =	521.940	(62.34)
TEMP	10 =	532.840	(73.24)
TEMP	11 =	532.420	(72.82)
TEMP	12 =	532.450	(72.85)
PRES	1 =	63.747	(63744.)
VPRS	1 =	0.274	(61.90)
VPRS	2 =	0.292	(63.70)
VPRS	3 =	0.268	(61.30)
VPRS	4 =	0.400	(72.82)
VPRS	5 =	0.400	(72.85)

SUMMARY OF CORRECTED DATA

TIME = 1515
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.307

CORRECTED PRESSURE (PSIA) = 63.4169

Table III.C.8. (k)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1530 0404

TEMP	1 =	535.550	(75.95)
TEMP	2 =	537.810	(78.21)
TEMP	3 =	531.300	(71.70)
TEMP	4 =	531.000	(71.40)
TEMP	5 =	527.590	(67.99)
TEMP	6 =	528.930	(69.33)
TEMP	7 =	526.630	(67.03)
TEMP	8 =	526.010	(66.41)
TEMP	9 =	521.900	(62.30)
TEMP	10 =	532.820	(73.22)
TEMP	11 =	532.400	(72.80)
TEMP	12 =	532.430	(72.83)
PRES	1 =	63.741	(63738.)
VPRS	1 =	0.273	(61.80)
VPRS	2 =	0.292	(63.70)
VPRS	3 =	0.267	(61.20)
VPRS	4 =	0.399	(72.80)
VPRS	5 =	0.400	(72.83)

SUMMARY OF CORRECTED DATA

TIME = 1530
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.264

CORRECTED PRESSURE (PSIA) = 63.4114

Table III.C.8. (1)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1545 0404

TEMP 1 =	535.550	(75.95)
TEMP 2 =	537.830	(78.23)
TEMP 3 =	531.320	(71.72)
TEMP 4 =	530.960	(71.36)
TEMP 5 =	527.600	(68.00)
TEMP 6 =	528.890	(69.29)
TEMP 7 =	526.610	(67.01)
TEMP 8 =	525.990	(66.39)
TEMP 9 =	521.890	(62.29)
TEMP 10 =	532.820	(73.22)
TEMP 11 =	532.400	(72.80)
TEMP 12 =	532.420	(72.82)
PRES 1 =	63.735	(63732.)
VPRS 1 =	0.273	(61.80)
VPRS 2 =	0.291	(63.60)
VPRS 3 =	0.268	(61.30)
VPRS 4 =	0.399	(72.80)
VPRS 5 =	0.400	(72.82)

SUMMARY OF CORRECTED DATA

TIME = 1545
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.258

CORRECTED PRESSURE (PSIA) = 63.4054

Table III.C.8. (m)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1600 0404

TEMP 1 =	535.490	(75.89)
TEMP 2 =	537.740	(78.14)
TEMP 3 =	531.230	(71.63)
TEMP 4 =	530.960	(71.36)
TEMP 5 =	527.550	(67.95)
TEMP 6 =	528.980	(69.38)
TEMP 7 =	526.550	(66.95)
TEMP 8 =	525.950	(66.35)
TEMP 9 =	521.830	(62.23)
TEMP 10 =	532.790	(73.19)
TEMP 11 =	532.380	(72.78)
TEMP 12 =	532.400	(72.80)
PRES 1 =	63.728	(63725.)
VPRS 1 =	0.271	(61.60)
VPRS 2 =	0.291	(63.60)
VPRS 3 =	0.268	(61.30)
VPRS 4 =	0.399	(72.78)
VPRS 5 =	0.399	(72.80)

SUMMARY OF CORRECTED DATA

TIME = 1600
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.228

CORRECTED PRESSURE (PSIA) = 63.3988

Table III.C.8. (n)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1615 0404

TEMP 1 =	535.380	(75.78)
TEMP 2 =	537.650	(78.05)
TEMP 3 =	531.180	(71.58)
TEMP 4 =	530.850	(71.25)
TEMP 5 =	527.480	(67.88)
TEMP 6 =	528.810	(69.21)
TEMP 7 =	526.550	(66.95)
TEMP 8 =	525.980	(66.38)
TEMP 9 =	521.800	(62.20)
TEMP 10 =	532.780	(73.18)
TEMP 11 =	532.360	(72.76)
TEMP 12 =	532.390	(72.79)
PRES 1 =	63.723	(63720.)
VPRS 1 =	0.274	(61.90)
VPRS 2 =	0.291	(63.60)
VPRS 3 =	0.268	(61.30)
VPRS 4 =	0.399	(72.76)
VPRS 5 =	0.399	(72.79)

SUMMARY OF CORRECTED DATA

TIME = 1615
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.178

CORRECTED PRESSURE (PSIA) = 63.3935

Table III.C.8. (o)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1630 0404

TEMP	1 =	535.300	(75.70)
TEMP	2 =	537.600	(78.00)
TEMP	3 =	531.150	(71.55)
TEMP	4 =	530.820	(71.22)
TEMP	5 =	527.440	(67.84)
TEMP	6 =	528.850	(69.25)
TEMP	7 =	526.500	(66.90)
TEMP	8 =	525.930	(66.33)
TEMP	9 =	521.780	(62.18)
TEMP	10 =	532.770	(73.17)
TEMP	11 =	532.350	(72.75)
TEMP	12 =	532.380	(72.78)
PRES	1 =	63.716	(63713.)
VPRS	1 =	0.273	(61.80)
VPRS	2 =	0.290	(63.50)
VPRS	3 =	0.268	(61.30)
VPRS	4 =	0.399	(72.75)
VPRS	5 =	0.399	(72.78)

SUMMARY OF CORRECTED DATA

TIME = 1630
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.155

CORRECTED PRESSURE (PSIA) = 63.3869

Table III.C.8. (p)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1645 0404

TEMP	1 =	535.280	(75.68)
TEMP	2 =	537.440	(77.84)
TEMP	3 =	531.110	(71.51)
TEMP	4 =	530.760	(71.16)
TEMP	5 =	527.440	(67.84)
TEMP	6 =	528.700	(69.10)
TEMP	7 =	526.490	(66.89)
TEMP	8 =	525.870	(66.27)
TEMP	9 =	521.750	(62.15)
TEMP	10 =	532.740	(73.14)
TEMP	11 =	532.330	(72.73)
TEMP	12 =	532.350	(72.75)
PRES	1 =	63.711	(63708.)
VPRS	1 =	0.273	(61.80)
VPRS	2 =	0.289	(63.40)
VPRS	3 =	0.267	(61.20)
VPRS	4 =	0.398	(72.73)
VPRS	5 =	0.399	(72.75)

SUMMARY OF CORRECTED DATA

TIME = 1645
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.108

CORRECTED PRESSURE (PSIA) = 63.3824

Table III.C.8. (q)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1700 0404

TEMP	1 =	535.400	(75.80)
TEMP	2 =	537.530	(77.93)
TEMP	3 =	531.200	(71.60)
TEMP	4 =	530.650	(71.05)
TEMP	5 =	527.840	(68.24)
TEMP	6 =	528.620	(69.02)
TEMP	7 =	526.780	(67.18)
TEMP	8 =	526.240	(66.64)
TEMP	9 =	522.500	(62.90)
TEMP	10 =	532.760	(73.16)
TEMP	11 =	532.330	(72.73)
TEMP	12 =	532.370	(72.77)
PRES	1 =	63.723	(63720.)
VPRS	1 =	0.281	(62.60)
VPRS	2 =	0.293	(63.80)
VPRS	3 =	0.276	(62.10)
VPRS	4 =	0.398	(72.73)
VPRS	5 =	0.399	(72.77)

SUMMARY OF CORRECTED DATA

TIME = 1700
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.205

CORRECTED PRESSURE (PSIA) = 63.3903

Table III.C.8. (r)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1715 0404

TEMP 1 =	535.730	(76.13)
TEMP 2 =	537.840	(78.24)
TEMP 3 =	531.560	(71.96)
TEMP 4 =	530.760	(71.16)
TEMP 5 =	528.250	(68.65)
TEMP 6 =	529.260	(69.66)
TEMP 7 =	527.210	(67.61)
TEMP 8 =	526.860	(67.26)
TEMP 9 =	522.890	(63.29)
TEMP 10 =	532.780	(73.18)
TEMP 11 =	532.350	(72.75)
TEMP 12 =	532.380	(72.78)
PRES 1 =	63.753	(63751.)
VPRS 1 =	0.283	(62.80)
VPRS 2 =	0.301	(64.60)
VPRS 3 =	0.274	(61.90)
VPRS 4 =	0.399	(72.75)
VPRS 5 =	0.399	(72.78)

SUMMARY OF CORRECTED DATA

TIME = 1715
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.439

CORRECTED PRESSURE (PSIA) = 63.4199

Table III.C.8. (s)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1730 0404

TEMP 1 =	534.960	(75.36)
TEMP 2 =	537.310	(77.71)
TEMP 3 =	531.040	(71.44)
TEMP 4 =	530.690	(71.09)
TEMP 5 =	527.040	(67.44)
TEMP 6 =	528.790	(69.19)
TEMP 7 =	526.140	(66.54)
TEMP 8 =	525.380	(65.78)
TEMP 9 =	521.140	(61.54)
TEMP 10 =	532.690	(73.09)
TEMP 11 =	532.280	(72.68)
TEMP 12 =	532.300	(72.70)
PRES 1 =	63.679	(63676.)
VPRS 1 =	0.266	(61.00)
VPRS 2 =	0.288	(63.30)
VPRS 3 =	0.264	(60.80)
VPRS 4 =	0.398	(72.68)
VPRS 5 =	0.398	(72.70)

SUMMARY OF CORRECTED DATA

TIME = 1730
DATE = 0404

TEMPERATURE (DEGREES R.) = 530.964

CORRECTED PRESSURE (PSIA) = 63.3530

Table III.C.8. (t)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1745 0404

TEMP	1 =	535.460	(75.86)
TEMP	2 =	537.580	(77.98)
TEMP	3 =	531.260	(71.66)
TEMP	4 =	530.350	(70.75)
TEMP	5 =	528.250	(68.65)
TEMP	6 =	528.690	(69.09)
TEMP	7 =	526.970	(67.37)
TEMP	8 =	526.550	(66.95)
TEMP	9 =	523.040	(63.44)
TEMP	10 =	532.750	(73.15)
TEMP	11 =	532.320	(72.72)
TEMP	12 =	532.360	(72.76)
PRES	1 =	63.729	(63726.)
VPRS	1 =	0.291	(63.60)
VPRS	2 =	0.298	(64.30)
VPRS	3 =	0.278	(62.30)
VPRS	4 =	0.398	(72.72)
VPRS	5 =	0.399	(72.76)

SUMMARY OF CORRECTED DATA

TIME = 1745
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.270

CORRECTED PRESSURE (PSIA) = 63.3936

Table III.C.8. (u)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1800 0404

TEMP	1 =	536.140	(76.54)
TEMP	2 =	538.040	(78.44)
TEMP	3 =	531.770	(72.17)
TEMP	4 =	530.780	(71.18)
TEMP	5 =	529.460	(69.86)
TEMP	6 =	529.380	(69.78)
TEMP	7 =	527.700	(68.10)
TEMP	8 =	527.560	(67.96)
TEMP	9 =	524.710	(65.11)
TEMP	10 =	532.810	(73.21)
TEMP	11 =	532.370	(72.77)
TEMP	12 =	532.420	(72.82)
PPES	1 =	63.788	(63786.)
VPRS	1 =	0.309	(65.30)
VPRS	2 =	0.315	(65.90)
VPRS	3 =	0.296	(64.10)
VPRS	4 =	0.399	(72.77)
VPRS	5 =	0.400	(72.82)

SUMMARY OF CORRECTED DATA

TIME = 1800
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.727

CORRECTED PRESSURE (PSIA) = 63.4431

Table III.C.8. (v)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1815 0404

TEMP 1 =	536.820	(77.22)
TEMP 2 =	538.360	(78.76)
TEMP 3 =	532.350	(72.75)
TEMP 4 =	531.590	(71.99)
TEMP 5 =	530.460	(70.86)
TEMP 6 =	530.370	(70.77)
TEMP 7 =	528.290	(68.69)
TEMP 8 =	528.140	(68.54)
TEMP 9 =	526.110	(66.51)
TEMP 10 =	532.870	(73.27)
TEMP 11 =	532.410	(72.81)
TEMP 12 =	532.460	(72.86)
PRES 1 =	63.848	(63846.)
VPRS 1 =	0.320	(66.30)
VPRS 2 =	0.329	(67.10)
VPRS 3 =	0.306	(65.00)
VPRS 4 =	0.399	(72.81)
VPRS 5 =	0.400	(72.86)

SUMMARY OF CORRECTED DATA

TIME = 1815
DATE = 0404

TEMPERATURE (DEGREES R.) = 532.176

CORRECTED PRESSURE (PSIA) = 63.4964

Table III.C.8. (w)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1830 0404

TEMP 1 =	537.450	(77.85)
TEMP 2 =	538.740	(79.14)
TEMP 3 =	533.020	(73.42)
TEMP 4 =	532.140	(72.54)
TEMP 5 =	531.410	(71.81)
TEMP 6 =	531.210	(71.61)
TEMP 7 =	528.830	(69.23)
TEMP 8 =	528.770	(69.17)
TEMP 9 =	527.200	(67.60)
TEMP 10 =	532.900	(73.30)
TEMP 11 =	532.440	(72.84)
TEMP 12 =	532.460	(72.86)
PRES 1 =	63.895	(63893.)
VPRS 1 =	0.329	(67.10)
VPRS 2 =	0.340	(68.10)
VPRS 3 =	0.314	(65.80)
VPRS 4 =	0.400	(72.84)
VPRS 5 =	0.400	(72.86)

SUMMARY OF CORRECTED DATA

TIME = 1830
DATE = 0404

TEMPERATURE (DEGREES R.) = 532.577

CORRECTED PRESSURE (PSIA) = 63.5377

Table III.C.8. (x)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1845 0404

TEMP	1 =	537.650	(78.05)
TEMP	2 =	539.070	(79.47)
TEMP	3 =	533.490	(73.89)
TEMP	4 =	532.580	(72.98)
TEMP	5 =	531.500	(71.90)
TEMP	6 =	531.440	(71.84)
TEMP	7 =	529.190	(69.59)
TEMP	8 =	529.210	(69.61)
TEMP	9 =	527.180	(67.58)
TEMP	10 =	532.930	(73.33)
TEMP	11 =	532.450	(72.85)
TEMP	12 =	532.490	(72.89)
PRES	1 =	63.904	(63902.)
VPRS	1 =	0.330	(67.20)
VPRS	2 =	0.345	(68.50)
VPRS	3 =	0.318	(66.10)
VPRS	4 =	0.400	(72.85)
VPRS	5 =	0.400	(72.89)

SUMMARY OF CORRECTED DATA

TIME = 1845
DATE = 0404

TEMPERATURE (DEGREES R.) = 532.755

CORRECTED PRESSURE (PSIA) = 63.5448

Table III.C.8. (y)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1900 0404

TEMP	1 =	536.900	(77.30)
TEMP	2 =	538.710	(79.11)
TEMP	3 =	532.910	(73.31)
TEMP	4 =	531.800	(72.20)
TEMP	5 =	530.350	(70.75)
TEMP	6 =	530.760	(71.16)
TEMP	7 =	528.810	(69.21)
TEMP	8 =	528.660	(69.06)
TEMP	9 =	525.460	(65.86)
TEMP	10 =	532.870	(73.27)
TEMP	11 =	532.420	(72.82)
TEMP	12 =	532.460	(72.86)
PRES	1 =	63.857	(63855.)
VPRS	1 =	0.322	(66.50)
VPRS	2 =	0.341	(68.20)
VPRS	3 =	0.312	(65.60)
VPRS	4 =	0.400	(72.82)
VPRS	5 =	0.400	(72.86)

SUMMARY OF CORRECTED DATA

TIME = 1900
DATE = 0404

TEMPERATURE (DEGREES R.) = 532.321

CORRECTED PRESSURE (PSIA) = 63.5011

Table III.C.8. (z)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1915 0404

TEMP 1 =	536.430	(76.83)
TEMP 2 =	538.510	(78.91)
TEMP 3 =	532.640	(73.04)
TEMP 4 =	531.590	(71.99)
TEMP 5 =	529.850	(70.25)
TEMP 6 =	530.340	(70.74)
TEMP 7 =	528.560	(68.96)
TEMP 8 =	528.240	(68.64)
TEMP 9 =	524.690	(65.09)
TEMP 10 =	532.850	(73.25)
TEMP 11 =	532.400	(72.80)
TEMP 12 =	532.440	(72.84)
PRES 1 =	63.830	(63828.)
VPRS 1 =	0.311	(65.50)
VPRS 2 =	0.334	(67.60)
VPRS 3 =	0.258	(60.20)
VPRS 4 =	0.399	(72.80)
VPRS 5 =	0.400	(72.84)

SUMMARY OF CORRECTED DATA

TIME = 1915
DATE = 0404

TEMPERATURE (DEGREES R.) = 532.103

CORRECTED PRESSURE (PSIA) = 63.4911

Table III.C.8. (a-a)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1930 0404

TEMP 1 =	536.160	(76.56)
TEMP 2 =	538.280	(78.68)
TEMP 3 =	532.450	(72.85)
TEMP 4 =	531.420	(71.82)
TEMP 5 =	529.440	(69.84)
TEMP 6 =	530.160	(70.56)
TEMP 7 =	528.240	(68.64)
TEMP 8 =	527.910	(68.31)
TEMP 9 =	524.160	(64.56)
TEMP 10.=	532.850	(73.25)
TEMP 11 =	532.410	(72.81)
TEMP 12 =	532.440	(72.84)
PRES 1 =	63.809	(63807.)
VPRS 1 =	0.306	(65.00)
VPRS 2 =	0.326	(66.90)
VPRS 3 =	0.297	(64.20)
VPRS 4 =	0.399	(72.81)
VPRS 5 =	0.400	(72.84)

SUMMARY OF CORRECTED DATA

TIME = 1930
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.950

CORRECTED PRESSURE (PSIA) = 63.4620

Table III.C.8. (b-b)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 1945 0404

TEMP	1 =	535.930	(76.33)
TEMP	2 =	538.160	(78.56)
TEMP	3 =	532.180	(72.58)
TEMP	4 =	531.340	(71.74)
TEMP	5 =	529.160	(69.56)
TEMP	6 =	529.950	(70.35)
TEMP	7 =	527.980	(68.38)
TEMP	8 =	527.560	(67.96)
TEMP	9 =	523.700	(64.10)
TEMP	10 =	532.860	(73.26)
TEMP	11 =	532.420	(72.82)
TEMP	12 =	532.450	(72.85)
PRES	1 =	63.789	(63787.)
VPRS	1 =	0.298	(64.30)
VPRS	2 =	0.321	(66.40)
VPRS	3 =	0.292	(63.70)
VPRS	4 =	0.400	(72.82)
VPRS	5 =	0.400	(72.85)

SUMMARY OF CORRECTED DATA

TIME = 1945
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.822

CORRECTED PRESSURE (PSIA) = 63.4453

Table III.C.8. (c-c)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 2000 0404

TEMP	1 =	535.710	(76.11)
TEMP	2 =	537.890	(78.29)
TEMP	3 =	532.100	(72.50)
TEMP	4 =	531.350	(71.75)
TEMP	5 =	528.870	(69.27)
TEMP	6 =	529.760	(70.16)
TEMP	7 =	527.740	(68.14)
TEMP	8 =	527.210	(67.61)
TEMP	9 =	523.460	(63.82)
TEMP	10 =	532.860	(73.26)
TEMP	11 =	532.420	(72.82)
TEMP	12 =	532.450	(72.85)
PRES	1 =	63.772	(63770.)
VPRS	1 =	0.295	(64.00)
VPRS	2 =	0.314	(65.80)
VPRS	3 =	0.287	(63.20)
VPRS	4 =	0.400	(72.82)
VPRS	5 =	0.400	(72.85)

SUMMARY OF CORRECTED DATA

TIME = 2000
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.708

CORRECTED PRESSURE (PSIA) = 63.4313

Table III.C.8. (d-d)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 2015 0404

TEMP	1 =	535.580	(75.98)
TEMP	2 =	537.780	(78.18)
TEMP	3 =	531.970	(72.37)
TEMP	4 =	531.430	(71.83)
TEMP	5 =	528.700	(69.10)
TEMP	6 =	529.700	(70.10)
TEMP	7 =	527.510	(67.91)
TEMP	8 =	527.070	(67.47)
TEMP	9 =	523.160	(63.56)
TEMP	10 =	532.860	(73.26)
TEMP	11 =	532.420	(72.82)
TEMP	12 =	532.450	(72.85)
PRES	1 =	63.759	(63757.)
VPRS	1 =	0.291	(63.60)
VPRS	2 =	0.310	(65.40)
VPRS	3 =	0.283	(62.80)
VPRS	4 =	0.400	(72.82)
VPRS	5 =	0.400	(72.85)

SUMMARY OF CORRECTED DATA

TIME = 2015
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.644

CORRECTED PRESSURE (PSIA) = 63.4206

Table III.C.8. (e-e)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 2030 0404

TEMP 1 =	535.480	(75.88)
TEMP 2 =	537.650	(78.05)
TEMP 3 =	531.860	(72.26)
TEMP 4 =	531.470	(71.87)
TEMP 5 =	528.490	(68.89)
TEMP 6 =	529.570	(69.97)
TEMP 7 =	527.380	(67.78)
TEMP 8 =	526.810	(67.21)
TEMP 9 =	522.970	(63.37)
TEMP 10 =	532.840	(73.24)
TEMP 11 =	532.410	(72.81)
TEMP 12 =	532.440	(72.84)
PRES 1 =	63.747	(63744.)
VPRS 1 =	0.288	(63.30)
VPRS 2 =	0.308	(65.20)
VPRS 3 =	0.280	(62.50)
VPRS 4 =	0.399	(72.81)
VPRS 5 =	0.400	(72.84)

SUMMARY OF CORRECTED DATA

TIME = 2030
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.565

CORRECTED PRESSURE (PSIA) = 63.4093

Table III.C.8. (f-f)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 2045 0404

TEMP 1 =	535.210	(75.61)
TEMP 2 =	537.520	(77.92)
TEMP 3 =	531.710	(72.11)
TEMP 4 =	531.380	(71.78)
TEMP 5 =	528.350	(68.75)
TEMP 6 =	529.350	(69.75)
TEMP 7 =	527.310	(67.71)
TEMP 8 =	526.720	(67.12)
TEMP 9 =	522.780	(63.18)
TEMP 10 =	532.830	(73.23)
TEMP 11 =	532.400	(72.80)
TEMP 12 =	532.430	(72.83)
PRES 1 =	63.734	(63731.)
VPRS 1 =	0.284	(62.90)
VPRS 2 =	0.305	(64.90)
VPRS 3 =	0.277	(62.20)
VPRS 4 =	0.399	(72.80)
VPRS 5 =	0.400	(72.83)

SUMMARY OF CORRECTED DATA

TIME = 2045
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.474

CORRECTED PRESSURE (PSIA) = 63.3982

Table III.C.8. (g-g)
Measured and Corrected Data Summary

SUMMARY OF MEASURED DATA AT 2100 0404

TEMP 1 =	535.140	(75.54)
TEMP 2 =	537.480	(77.88)
TEMP 3 =	531.630	(72.03)
TEMP 4 =	531.300	(71.70)
TEMP 5 =	528.220	(68.62)
TEMP 6 =	529.430	(69.83)
TEMP 7 =	527.180	(67.58)
TEMP 8 =	526.620	(67.02)
TEMP 9 =	522.630	(63.03)
TEMP 10 =	532.820	(73.22)
TEMP 11 =	532.390	(72.79)
TEMP 12 =	532.420	(72.82)
PRES 1 =	63.722	(63719.)
VPRS 1 =	0.283	(62.80)
VPRS 2 =	0.301	(64.60)
VPRS 3 =	0.275	(62.00)
VPRS 4 =	0.399	(72.79)
VPRS 5 =	0.400	(72.82)

SUMMARY OF CORRECTED DATA

TIME = 2100
DATE = 0404

TEMPERATURE (DEGREES R.) = 531.431

CORRECTED PRESSURE (PSIA) = 63.3875

Table III.C.9
Summary Data
Verification Test

SUMMARY DATA

PEACH BOTTOM UNIT 3 ILRT VERIF

TIME	DATE	TEMP	PRESSURE	VOLUME
30	405	531.595	63.4043	286001.
45	405	531.615	63.4024	286001.
100	405	531.647	63.4012	286001.
115	405	531.680	63.3986	286001.
130	405	531.699	63.3953	286001.
145	405	531.694	63.3936	286001.
200	405	531.706	63.3908	286002.
215	405	531.712	63.3873	286002.
230	405	531.720	63.3829	286002.
245	405	531.725	63.3817	286002.
300	405	531.739	63.3786	286003.
315	405	531.742	63.3725	286003.
330	405	531.744	63.3681	286003.
345	405	531.746	63.3629	286003.
400	405	531.766	63.3604	286003.
415	405	531.763	63.3553	286003.
430	405	531.756	63.3508	286004.
445	405	531.780	63.3459	286004.
500	405	531.778	63.3426	286004.
515	405	531.780	63.3398	286004.
530	405	531.775	63.3344	286004.
545	405	531.766	63.3325	286004.
600	405	531.769	63.3295	286004.
615	405	531.778	63.3250	286005.
630	405	531.756	63.3205	286006.
645	405	531.802	63.3153	286006.
0	0	0.0	0.0	0.0

Table III.C.10
Leakage Rate Verification: Total Time Calculation
Constant Volume

PEACH BOTTOM UNIT 3 ILRT VERIF

LEAKAGE RATE (WEIGHT PERCENT/DAY)
BASED ON TOTAL TIME CALCULATIONS

TIME AND DATE AT START OF TEST: 30 0405
ELAPSED TIME: 6.25 HOURS

TIME	TEMP. (R)	PRESSURE (PSIA)	MEASURED LEAKAGE RATE
30	531.595	63.4043	
45	531.615	63.4024	0.649
100	531.647	63.4012	0.704
115	531.680	63.3986	0.799
130	531.699	63.3953	0.810
145	531.694	63.3936	0.681
200	531.706	63.3908	0.675
215	531.712	63.3873	0.669
230	531.720	63.3829	0.687
245	531.725	63.3817	0.641
300	531.739	63.3786	0.649
315	531.742	63.3725	0.679
330	531.744	63.3681	0.681
345	531.746	63.3629	0.692
400	531.766	63.3604	0.695
415	531.763	63.3553	0.697
430	531.756	63.3508	0.683
445	531.780	63.3459	0.716
500	531.778	63.3426	0.702
515	531.780	63.3398	0.690
530	531.775	63.3344	0.691
545	531.766	63.3285	0.665
600	531.769	63.3295	0.657
615	531.778	63.3250	0.665
630	531.756	63.3205	0.659
645	531.802	63.3152	0.628

MEAN OF MEASURED LEAKAGE RATES = 0.689
STD. DEVIATION OF MEASURED LEAKAGE RATES = 0.040

VERIFICATION TEST LEAKAGE RATE UPPER LIMIT = 0.889
VERIFICATION TEST LEAKAGE RATE LOWER LIMIT = 0.639
THE CALCULATED LEAKAGE RATE = 0.669

CONSTANT VOLUME

Table III.C.11

Leakage Rate Verification: Total Time Calculation, Trend Report
Constant Volume

PEACH BOTTOM UNIT 3 ILRT VERIF

TREND REPORT
LEAKAGE RATES (WEIGHT PERCENT/DAY)
BASED ON TOTAL-TIME CALCULATIONS

TIME AND DATE AT START OF TEST: 30 0405
ELAPSED TIME: 6.25 HOURS

NO. DATA POINTS	ELAPSED TIME	MEAN MEASURED LEAKAGE RATE	CALCULATED LEAKAGE RATE	CHG IN CALC L/R FROM LAST POINT
10	2.25	0.702	0.670	
11	2.50	0.696	0.657	-0.012
12	2.75	0.695	0.658	0.001
13	3.00	0.694	0.660	0.001
14	3.25	0.694	0.664	0.004
15	3.50	0.694	0.668	0.004
16	3.75	0.694	0.672	0.004
17	4.00	0.693	0.673	0.001
18	4.25	0.695	0.681	0.007
19	4.50	0.695	0.684	0.003
20	4.75	0.695	0.684	0.000
21	5.00	0.695	0.684	0.000
22	5.25	0.693	0.680	-0.004
23	5.50	0.692	0.675	-0.005
24	5.75	0.691	0.672	-0.003
25	6.00	0.689	0.667	-0.005
26	6.25	0.689	0.669	0.002

THE CALCULATED LEAKAGE RATE = 0.669

CONSTANT VOLUME

Table III.C.12.
Leakage Rate Verification: Mass Point Analysis
Constant Volume

PEACH BOTTOM UNIT 3 ILRT VERIF

LEAKAGE RATE (WEIGHT PERCENT/DAY)
MASS POINT ANALYSIS

TIME AND DATE AT START OF TEST: 30 0405
ELAPSED TIME: 6.25 HOURS

TIME	TEMP (R)	PRESSURE (PSIA)	CTMT. AIR MASS (LBM)	MASS LOSS (LBM)	TOT.AVG. MASS LOSS (LBM/HR)
30	531.595	63.4043	92073		
45	531.615	63.4024	92067	6.2	24.9
100	531.647	63.4012	92059	7.3	27.0
115	531.680	63.3986	92050	9.5	30.7
130	531.699	63.3953	92042	8.1	31.1
145	531.694	63.3936	92040	1.6	26.1
200	531.706	63.3908	92034	6.1	25.9
215	531.712	63.3873	92028	6.1	25.7
230	531.720	63.3829	92020	7.8	26.4
245	531.725	63.3817	92018	2.6	24.6
300	531.739	63.3786	92011	6.9	24.9
315	531.742	63.3725	92001	9.4	26.0
330	531.744	63.3681	91995	6.7	26.1
345	531.746	63.3629	91987	7.9	26.5
400	531.766	63.3604	91980	7.1	26.7
415	531.763	63.3553	91973	6.9	26.7
430	531.756	63.3508	91967	5.3	26.4
445	531.780	63.3459	91956	11.3	27.5
500	531.778	63.3436	91952	4.4	26.9
515	531.790	63.3398	91947	4.4	26.5
530	531.775	63.3344	91940	7.0	26.5
545	531.766	63.3285	91939	1.2	25.9
600	531.769	63.3235	91934	4.9	25.8
615	531.778	63.3250	91926	9.1	25.5
630	531.756	63.3205	91923	2.7	24.9
645	531.802	63.3103	91908	15.5	26.4

FREE AIR VOLUME USED (MILLIONS OF CU. FT.) = 0.286

REGRESSION LINE = 92072
INTERCEPT (LBM) = -25.7
SLOPE (LBM/HR)

VERIFICATION TEST LEAKAGE RATE UPPER LIMIT = 0.904
VERIFICATION TEST LEAKAGE RATE LOWER LIMIT = 0.654
THE CALCULATED LEAKAGE RATE = 0.671

CONSTANT VOLUME

Table III.C.13.
Leakage Rate Verification: Total Time Calculation
Free Air Volume Varied

PEACH BOTTOM UNIT 3 ILRT VERIF

LEAKAGE RATE (WEIGHT PERCENT/DAY)
BASED ON TOTAL TIME CALCULATIONS

TIME AND DATE AT START OF TEST: 30 0405
ELAPSED TIME: 6.25 HOURS

TIME	TEMP. (R)	PRESSURE (PSIA)	MEASURED LEAKAGE RATE
30	531.595	63.4043	
45	531.615	63.4024	0.649
100	531.647	63.4012	0.704
115	531.680	63.3986	0.799
130	531.699	63.3953	0.810
145	531.694	63.3936	0.681
200	531.706	63.3908	0.669
215	531.712	63.3873	0.665
230	531.720	63.3829	0.683
245	531.725	63.3817	0.637
300	531.739	63.3786	0.642
315	531.742	63.3725	0.673
330	531.744	63.3681	0.675
345	531.746	63.3629	0.687
400	531.766	63.3604	0.690
415	531.763	63.3553	0.692
430	531.756	63.3508	0.681
445	531.780	63.3459	0.710
500	531.778	63.3426	0.697
515	531.780	63.3398	0.684
530	531.775	63.3344	0.686
545	531.766	63.3325	0.660
600	531.769	63.3295	0.653
615	531.778	63.3250	0.660
630	531.756	63.3205	0.643
645	531.802	63.3153	0.682

MEAN OF MEASURED LEAKAGE RATES = 0.685
STD. DEVIATION OF MEASURED LEAKAGE RATES = 0.041

VERIFICATION TEST LEAKAGE RATE UPPER LIMIT = 0.884
VERIFICATION TEST LEAKAGE RATE LOWER LIMIT = 0.634
THE CALCULATED LEAKAGE RATE = 0.661

Table III.C.14.
Leakage Rate Verification: Total Time Calculation, Trend Report
Free Air Volume Varied

PEACH BOTTOM UNIT 3 ILRT VERIF

TREND REPORT
LEAKAGE RATES (WEIGHT PERCENT/DAY)
BASED ON TOTAL-TIME CALCULATIONS

TIME AND DATE AT START OF TEST: 30 0405
ELAPSED TIME: 6.25 HOURS

NO. DATA POINTS	ELAPSED TIME	MEAN MEASURED LEAKAGE RATE	CALCULATED LEAKAGE RATE	CHG IN CALC L/R FROM LAST POINT
10	2.25	0.700	0.665	-0.014
11	2.50	0.694	0.651	0.000
12	2.75	0.692	0.652	0.001
13	3.00	0.691	0.653	0.004
14	3.25	0.690	0.657	0.004
15	3.50	0.690	0.662	0.004
16	3.75	0.690	0.666	0.001
17	4.00	0.690	0.667	0.007
18	4.25	0.691	0.674	0.003
19	4.50	0.691	0.677	0.000
20	4.75	0.691	0.677	0.001
21	5.00	0.691	0.677	-0.004
22	5.25	0.689	0.673	-0.005
23	5.50	0.688	0.668	-0.003
24	5.75	0.686	0.665	-0.005
25	6.00	0.685	0.660	0.001
26	6.25	0.685	0.661	

THE CALCULATED LEAKAGE RATE = 0.661

Free Air Volume Varied

Table III.C.15.
Leakage Rate Verification: Mass Point Analysis
Free Air Volume Varied

PEACH BOTTOM UNIT 3 ILRT VERIF

LEAKAGE RATE (WEIGHT PERCENT/DAY)
MASS POINT ANALYSIS

TIME AND DATE AT START OF TEST: 30 0405
ELAPSED TIME: 6.25 HOURS

TIME	TEMP (R)	PRESSURE (PSIA)	CTMT. AIR MASS (LBM)	MASS LOSS (LBM)	TOT.AVG. MASS LOSS (LBM/HR)
30	531.595	63.4043	92073		
45	531.615	63.4024	92067	6.2	24.9
100	531.647	63.4012	92060	7.3	27.0
115	531.680	63.3986	92050	9.5	30.7
130	531.699	63.3953	92042	8.1	31.1
145	531.694	63.3936	92041	1.6	26.1
200	531.706	63.3908	92035	5.8	25.7
215	531.712	63.3873	92029	6.1	25.5
230	531.720	63.3829	92021	7.8	26.2
245	531.725	63.3817	92018	2.6	24.4
300	531.739	63.3786	92012	6.6	24.6
315	531.742	63.3725	92002	9.4	25.8
330	531.744	63.3681	91996	6.7	25.9
345	531.746	63.3629	91988	7.9	26.3
400	531.766	63.3604	91981	7.1	26.5
415	531.763	63.3553	91974	6.9	26.6
430	531.756	63.3508	91969	5.0	26.1
445	531.780	63.3459	91957	11.3	27.3
500	531.778	63.3426	91953	4.4	26.7
515	531.780	63.3398	91949	4.4	26.3
530	531.775	63.3344	91942	7.0	26.3
545	531.766	63.3325	91940	1.2	25.3
600	531.769	63.3295	91935	4.9	25.0
615	531.778	63.3250	91928	7.8	25.3
630	531.756	63.3205	91925	2.4	24.7
645	531.802	63.3153	91910	15.5	26.1

FREE AIR VOLUME USED (MILLIONS OF CU. FT.) = SEE SUMMARY DATA

REGRESSION LINE
INTERCEPT (LBM) = 92072
SLOPE (LBM/HR) = -25.5

VERIFICATION TEST LEAKAGE RATE UPPER LIMIT = 0.886
VERIFICATION TEST LEAKAGE RATE LOWER LIMIT = 0.636
THE CALCULATED LEAKAGE RATE = 0.665

Free Air Volume Varied

Table III.C.16. (a)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 30 0405

TEMP 1 =	535.220	(75.62)
TEMP 2 =	537.370	(77.77)
TEMP 3 =	531.830	(72.23)
TEMP 4 =	530.860	(71.26)
TEMP 5 =	529.160	(69.56)
TEMP 6 =	529.510	(69.91)
TEMP 7 =	527.910	(68.31)
TEMP 8 =	527.640	(68.04)
TEMP 9 =	524.290	(64.69)
TEMP 10 =	532.750	(73.15)
TEMP 11 =	532.310	(72.71)
TEMP 12 =	532.340	(72.74)
PRES 1 =	63.751	(63749.)
VPRS 1 =	0.309	(65.30)
VPRS 2 =	0.323	(66.60)
VPRS 3 =	0.299	(64.40)
VPRS 4 =	0.398	(72.71)
VPRS 5 =	0.398	(72.74)

SUMMARY OF CORRECTED DATA

TIME = 30
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.595

CORRECTED PRESSURE (PSIA) = 63.4043

Table III.C.16 (b)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 45 0405

TEMP	1 =	535.2[illegible]	(75.63)
TEMP	2 =	537.350	(77.75)
TEMP	3 =	531.810	(72.21)
TEMP	4 =	530.920	(71.32)
TEMP	5 =	529.220	(69.62)
TEMP	6 =	529.500	(69.90)
TEMP	7 =	527.960	(68.36)
TEMP	8 =	527.780	(68.18)
TEMP	9 =	524.330	(64.73)
TEMP	10 =	532.750	(73.15)
TEMP	11 =	532.320	(72.72)
TEMP	12 =	532.350	(72.75)
PRES	1 =	63.750	(63748.)
VPRS	1 =	0.310	(65.40)
VPRS	2 =	0.324	66.70)
VPRS	3 =	0.301	(64.60)
VPRS	4 =	0.398	(72.72)
VPRS	5 =	0.399	(72.75)

SUMMARY OF CORRECTED DATA

TIME = 45
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.615

CORRECTED PRESSURE (PSIA) = 63.4024

Table III.C.16. (c)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 100 0405

TEMP	1 =	535.250	(75.65)
TEMP	2 =	537.300	(77.70)
TEMP	3 =	531.930	(72.33)
TEMP	4 =	530.990	(71.39)
TEMP	5 =	529.250	(69.65)
TEMP	6 =	529.630	(70.03)
TEMP	7 =	528.010	(68.41)
TEMP	8 =	527.760	(68.16)
TEMP	9 =	524.390	(64.79)
TEMP	10 =	532.760	(73.16)
TEMP	11 =	532.330	(72.73)
TEMP	12 =	532.360	(72.76)
PRES	1 =	63.750	(63747.)
VPRS	1 =	0.311	(65.50)
VPRS	2 =	0.324	(66.70)
VPRS	3 =	0.301	(64.60)
VPRS	4 =	0.398	(72.73)
VPRS	5 =	0.399	(72.76)

SUMMARY OF CORRECTED DATA

TIME = 100
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.647

CORRECTED PRESSURE (PSIA) = 63.4012

Table III.C.16. (d)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 115 0405

TEMP 1 =	535.250	(75.65)
TEMP 2 =	537.340	(77.74)
TEMP 3 =	531.950	(72.35)
TEMP 4 =	531.120	(71.52)
TEMP 5 =	529.330	(69.73)
TEMP 6 =	529.750	(70.15)
TEMP 7 =	528.030	(68.43)
TEMP 8 =	527.730	(68.13)
TEMP 9 =	524.430	(64.83)
TEMP 10 =	532.770	(73.17)
TEMP 11 =	532.330	(72.73)
TEMP 12 =	532.360	(72.76)
PRES 1 =	63.748	(63745.)
VPRS 1 =	0.312	(65.60)
VPRS 2 =	0.325	(66.80)
VPRS 3 =	0.302	(64.70)
VPRS 4 =	0.398	(72.73)
VPRS 5 =	0.399	(72.76)

SUMMARY OF CORRECTED DATA

TIME = 115
DATE = 0405

TEMPERATURE (DEGREES R.) $\bar{T}$ = 531.680

CORRECTED PRESSURE (PSIA) = 63.3986

Table III.C.16. (e)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 130 0405

TEMP	1 =	535.260	(75.66)
TEMP	2 =	537.450	(77.85)
TEMP	3 =	531.980	(72.38)
TEMP	4 =	531.050	(71.45)
TEMP	5 =	529.340	(69.74)
TEMP	6 =	529.720	(70.12)
TEMP	7 =	528.110	(68.51)
TEMP	8 =	527.870	(68.27)
TEMP	9 =	524.470	(64.87)
TEMP	10 =	532.780	(73.18)
TEMP	11 =	532.340	(72.74)
TEMP	12 =	532.370	(72.77)
PRES	1 =	63.745	(63742.)
VPRS	1 =	0.311	(65.50)
VPRS	2 =	0.328	(67.00)
VPRS	3 =	0.302	(64.70)
VPRS	4 =	0.398	(72.74)
VPRS	5 =	0.399	(72.77)

SUMMARY OF CORRECTED DATA

TIME = 130
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.699

CORRECTED PRESSURE (PSIA) = 63.3953

Table III.C.16. (f)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 145 0405

TEMP	1 =	535.230	(75.63)
TEMP	2 =	537.360	(77.76)
TEMP	3 =	531.950	(72.35)
TEMP	4 =	530.990	(71.39)
TEMP	5 =	529.380	(69.78)
TEMP	6 =	529.740	(70.14)
TEMP	7 =	528.100	(68.50)
TEMP	8 =	527.860	(68.26)
TEMP	9 =	524.500	(64.90)
TEMP	10 =	532.790	(73.19)
TEMP	11 =	532.350	(72.75)
TEMP	12 =	532.380	(72.78)
PRES	1 =	63.744	(63741.)
VPRS	1 =	0.313	(65.70)
VPRS	2 =	0.323	(67.00)
VPRS	3 =	0.304	(64.80)
VPRS	4 =	0.399	(72.75)
VPRS	5 =	0.399	(72.78)

SUMMARY OF CORRECTED DATA

TIME = 145
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.694

CORRECTED PRESSURE (PSIA) = 63.3936

Table III.C.16. (g)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 200 0405

TEMP	1 =	535.280	(75.68)
TEMP	2 =	537.380	(77.78)
TEMP	3 =	531.920	(72.32)
TEMP	4 =	530.980	(71.38)
TEMP	5 =	529.410	(69.81)
TEMP	6 =	529.780	(70.18)
TEMP	7 =	528.110	(68.51)
TEMP	8 =	527.940	(68.34)
TEMP	9 =	524.510	(64.91)
TEMP	10 =	532.780	(73.18)
TEMP	11 =	532.360	(72.76)
TEMP	12 =	532.380	(72.78)
PRES	1 =	63.741	(63738.)
VPRS	1 =	0.312	(65.60)
VPRS	2 =	0.328	(67.00)
VPRS	3 =	0.304	(64.80)
VPRS	4 =	0.399	(72.76)
VPRS	5 =	0.399	(72.78)

SUMMARY OF CORRECTED DATA

TIME = 200
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.706

CORRECTED PRESSURE (PSIA) = 63.3908

Table III.C.16. (h)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 215 0405

TEMP	1 =	535.260	(75.66)
TEMP	2 =	537.400	(77.80)
TEMP	3 =	532.010	(72.41)
TEMP	4 =	531.030	(71.43)
TEMP	5 =	529.400	(69.80)
TEMP	6 =	529.770	(70.17)
TEMP	7 =	528.150	(68.55)
TEMP	8 =	527.960	(68.36)
TEMP	9 =	524.550	(64.95)
TEMP	10 =	532.750	(73.15)
TEMP	11 =	532.350	(72.75)
TEMP	12 =	532.370	(72.77)
PRES	1 =	63.738	(63735.)
VPRS	1 =	0.314	(65.80)
VPRS	2 =	0.328	(67.00)
VPRS	3 =	0.305	(64.90)
VPRS	4 =	0.399	(72.75)
VPRS	5 =	0.399	(72.77)

SUMMARY OF CORRECTED DATA

TIME = 215
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.712

CORRECTED PRESSURE (PSIA) = 63.3873

Table III.C.16. (i)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 230 0405

TEMP	1 =	535.210	(75.61)
TEMP	2 =	537.250	(77.65)
TEMP	3 =	532.060	(72.46)
TEMP	4 =	531.020	(71.42)
TEMP	5 =	529.410	(69.81)
TEMP	6 =	529.810	(70.21)
TEMP	7 =	528.180	(68.58)
TEMP	8 =	527.940	(68.34)
TEMP	9 =	524.570	(64.97)
TEMP	10 =	532.800	(73.20)
TEMP	11 =	532.360	(72.76)
TEMP	12 =	532.400	(72.80)
PRES	1 =	63.734	(63731.)
VPRS	1 =	0.314	(65.80)
VPRS	2 =	0.328	(67.00)
VPRS	3 =	0.306	(65.00)
VPRS	4 =	0.399	(72.76)
VPRS	5 =	0.399	(72.80)

SUMMARY OF CORRECTED DATA

TIME = 230
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.720

CORRECTED PRESSURE (PSIA) = 63.3829

Table III.C.16. (i)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 245 0405

TEMP	1 =	535.210	(75.61)
TEMP	2 =	537.290	(77.69)
TEMP	3 =	532.010	(72.41)
TEMP	4 =	531.060	(71.46)
TEMP	5 =	529.450	(69.85)
TEMP	6 =	529.800	(70.20)
TEMP	7 =	528.200	(68.60)
TEMP	8 =	527.940	(68.34)
TEMP	9 =	524.570	(64.97)
TEMP	10 =	532.800	(73.20)
TEMP	11 =	532.390	(72.79)
TEMP	12 =	532.370	(72.77)
PRES	1 =	63.732	(63729.)
VPRS	1 =	0.314	(65.80)
VPRS	2 =	0.328	(67.00)
VPRS	3 =	0.302	(64.70)
VPRS	4 =	0.399	(72.79)
VPRS	5 =	0.399	(72.77)

SUMMARY OF CORRECTED DATA

TIME = 245
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.725

CORRECTED PRESSURE (PSIA) = 63.3817

Table III.C.16. (k)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 300 0405

TEMP	1 =	535.260	(75.66)
TEMP	2 =	537.360	(77.76)
TEMP	3 =	532.050	(72.45)
TEMP	4 =	531.050	(71.45)
TEMP	5 =	529.470	(69.87)
TEMP	6 =	529.800	(70.20)
TEMP	7 =	528.230	(68.63)
TEMP	8 =	527.990	(68.39)
TEMP	9 =	524.600	(65.00)
TEMP	10 =	532.800	(73.20)
TEMP	11 =	532.360	(72.76)
TEMP	12 =	532.380	(72.78)
PRES	1 =	63.729	(63726.)
VPRS	1 =	0.314	(65.80)
VPRS	2 =	0.329	(67.10)
VPRS	3 =	0.302	(64.70)
VPRS	4 =	0.399	(72.76)
VPRS	5 =	0.399	(72.78)

SUMMARY OF CORRECTED DATA

TIME = 300
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.739

CORRECTED PRESSURE (PSIA) = 63.3786

Table III.C.16. (1)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 315 0405

TEMP	1 =	535.230	(75.63)
TEMP	2 =	537.360	(77.76)
TEMP	3 =	532.090	(72.49)
TEMP	4 =	531.100	(71.50)
TEMP	5 =	529.460	(69.86)
TEMP	6 =	529.760	(70.16)
TEMP	7 =	528.240	(68.64)
TEMP	8 =	527.990	(68.39)
TEMP	9 =	524.620	(65.02)
TEMP	10 =	532.790	(73.19)
TEMP	11 =	532.370	(72.77)
TEMP	12 =	532.390	(72.79)
PRES	1 =	63.723	(63720.)
VPRS	1 =	0.314	(65.80)
VPRS	2 =	0.328	(67.00)
VPRS	3 =	0.304	(64.80)
VPRS	4 =	0.399	(72.77)
VPRS	5 =	0.399	(72.79)

SUMMARY OF CORRECTED DATA

TIME = 315
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.742

CORRECTED PRESSURE (PSIA) = 63.3725

Table III.C.16. (m)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 330 0405

TEMP	1 =	535.140	(75.54)
TEMP	2 =	537.240	(77.64)
TEMP	3 =	532.100	(72.50)
TEMP	4 =	531.080	(71.48)
TEMP	5 =	529.520	(69.92)
TEMP	6 =	529.840	(70.24)
TEMP	7 =	528.220	(68.62)
TEMP	8 =	528.040	(68.44)
TEMP	9 =	524.630	(65.03)
TEMP	10 =	532.810	(73.21)
TEMP	11 =	532.370	(72.77)
TEMP	12 =	532.390	(72.79)
PRES	1 =	63.719	(63716.)
VPRS	1 =	0.313	(65.70)
VPRS	2 =	0.329	(67.10)
VPRS	3 =	0.305	(64.90)
VPRS	4 =	0.399	(72.77)
VPRS	5 =	0.399	(72.79)

SUMMARY OF CORRECTED DATA

TIME = 330
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.744

CORRECTED PRESSURE (PSIA) = 63.3681

Table III.C.16. (n)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 345 0405

TEMP	1 =	535.130	(75.53)
TEMP	2 =	537.220	(77.62)
TEMP	3 =	532.100	(72.50)
TEMP	4 =	531.110	(71.51)
TEMP	5 =	529.470	(69.87)
TEMP	6 =	529.880	(70.28)
TEMP	7 =	528.260	(68.66)
TEMP	8 =	528.050	(68.45)
TEMP	9 =	524.640	(65.04)
TEMP	10 =	532.810	(73.21)
TEMP	11 =	532.370	(72.77)
TEMP	12 =	532.390	(72.79)
PRES	1 =	63.714	(63711.)
VPRS	1 =	0.313	(65.70)
VPRS	2 =	0.330	(67.20)
VPRS	3 =	0.305	(64.90)
VPRS	4 =	0.399	(72.77)
VPRS	5 =	0.399	(72.79)

SUMMARY OF CORRECTED DATA

TIME = 345
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.746

CORRECTED PRESSURE (PSIA) = 63.3629

Table III.C.16. (o)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 400 0405

TEMP	1 =	535.200	(75.60)
TEMP	2 =	537.270	(77.67)
TEMP	3 =	532.070	(72.47)
TEMP	4 =	531.200	(71.60)
TEMP	5 =	529.530	(69.93)
TEMP	6 =	529.920	(70.32)
TEMP	7 =	528.240	(68.64)
TEMP	8 =	528.030	(68.43)
TEMP	9 =	524.640	(65.04)
TEMP	10 =	532.810	(73.21)
TEMP	11 =	532.380	(72.78)
TEMP	12 =	532.390	(72.79)
PRES	1 =	63.712	(63709.)
VPRS	1 =	0.315	(65.90)
VPRS	2 =	0.330	(67.20)
VPRS	3 =	0.306	(65.00)
VPRS	4 =	0.399	(72.78)
VPRS	5 =	0.399	(72.79)

SUMMARY OF CORRECTED DATA

TIME = 400
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.766

CORRECTED PRESSURE (PSIA) = 63.3604

Table III.C.16. (p)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 415 0405

TEMP	1 =	535.180	(75.58)
TEMP	2 =	537.250	(77.65)
TEMP	3 =	532.030	(72.43)
TEMP	4 =	531.190	(71.59)
TEMP	5 =	529.540	(69.94)
TEMP	6 =	529.890	(70.29)
TEMP	7 =	528.270	(68.67)
TEMP	8 =	528.030	(68.43)
TEMP	9 =	524.650	(65.05)
TEMP	10 =	532.820	(73.22)
TEMP	11 =	532.380	(72.78)
TEMP	12 =	532.400	(72.80)
PRES	1 =	63.707	(63704.)
VPRS	1 =	0.315	(65.90)
VPRS	2 =	0.330	(67.20)
VPRS	3 =	0.306	(65.00)
VPRS	4 =	0.399	(72.78)
VPRS	5 =	0.399	(72.80)

SUMMARY OF CORRECTED DATA

TIME = 415
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.763

CORRECTED PRESSURE (PSIA) = 63.3553

Table III.C.16. (q)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 430 0405

TEMP	1 =	535.160	(75.56)
TEMP	2 =	537.280	(77.68)
TEMP	3 =	532.100	(72.50)
TEMP	4 =	531.050	(71.45)
TEMP	5 =	529.540	(69.94)
TEMP	6 =	529.870	(70.27)
TEMP	7 =	528.310	(68.71)
TEMP	8 =	528.020	(68.42)
TEMP	9 =	524.670	(65.07)
TEMP	10 =	532.810	(73.21)
TEMP	11 =	532.380	(72.78)
TEMP	12 =	532.390	(72.79)
PRES	1 =	63.702	(63699.)
VPRS	1 =	0.314	(65.80)
VPRS	2 =	0.330	(67.20)
VPRS	3 =	0.305	(64.90)
VPRS	4 =	0.399	(72.78)
VPRS	5 =	0.399	(72.79)

SUMMARY OF CORRECTED DATA

TIME = 430
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.756

CORRECTED PRESSURE (PSIA) = 63.3508

Table III.C.16. (r)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 445 0405

TEMP	1 =	535.160	(75.56)
TEMP	2 =	537.310	(77.71)
TEMP	3 =	532.140	(72.54)
TEMP	4 =	531.230	(71.63)
TEMP	5 =	529.530	(69.93)
TEMP	6 =	529.950	(70.35)
TEMP	7 =	528.270	(68.67)
TEMP	8 =	528.020	(68.42)
TEMP	9 =	524.670	(65.07)
TEMP	10 =	532.820	(73.22)
TEMP	11 =	532.380	(72.78)
TEMP	12 =	532.400	(72.80)
PRES	1 =	63.697	(63694.)
VPRS	1 =	0.315	(65.90)
VPRS	2 =	0.330	(67.20)
VPRS	3 =	0.304	(64.80)
VPRS	4 =	0.399	(72.78)
VPRS	5 =	0.399	(72.80)

SUMMARY OF CORRECTED DATA

TIME = 445
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.780

CORRECTED PRESSURE (PSIA) = 63.3459

Table III.C.16. (s)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 500 0405

TEMP	1 =	535.130	(75.53)
TEMP	2 =	537.270	(77.67)
TEMP	3 =	532.100	(72.50)
TEMP	4 =	531.220	(71.62)
TEMP	5 =	529.570	(69.97)
TEMP	6 =	529.930	(70.33)
TEMP	7 =	528.270	(68.67)
TEMP	8 =	528.080	(68.48)
TEMP	9 =	524.660	(65.06)
TEMP	10 =	532.820	(73.22)
TEMP	11 =	532.390	(72.79)
TEMP	12 =	532.400	(72.80)
PRES	1 =	63.694	(63691.)
VPRS	1 =	0.315	(65.90)
VPRS	2 =	0.330	(67.20)
VPRS	3 =	0.305	(64.90)
VPRS	4 =	0.399	(72.79)
VPRS	5 =	0.399	(72.80)

SUMMARY OF CORRECTED DATA

TIME = 500
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.778

CORRECTED PRESSURE (PSIA) = 63.3426

Table III.C.16. (t)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 515 0405

TEMP	1 =	535.160	(75.56)
TEMP	2 =	537.290	(77.69)
TEMP	3 =	532.080	(72.48)
TEMP	4 =	531.160	(71.56)
TEMP	5 =	529.550	(69.95)
TEMP	6 =	529.980	(70.38)
TEMP	7 =	528.290	(68.69)
TEMP	8 =	528.080	(68.48)
TEMP	9 =	524.680	(65.08)
TEMP	10 =	532.820	(73.22)
TEMP	11 =	532.390	(72.79)
TEMP	12 =	532.400	(72.80)
PRES	1 =	63.691	(63688.)
VPRS	1 =	0.314	(65.80)
VPRS	2 =	0.330	(67.20)
VPRS	3 =	0.305	(64.90)
VPRS	4 =	0.399	(72.79)
VPRS	5 =	0.399	(72.80)

SUMMARY OF CORRECTED DATA

TIME = 515
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.780

CORRECTED PRESSURE (PSIA) = 63.3398

Table III.C.16. (u)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 530 0405

TEMP	1 =	535.070	(75.47)
TEMP	2 =	537.220	(77.62)
TEMP	3 =	532.140	(72.54)
TEMP	4 =	531.170	(71.57)
TEMP	5 =	529.540	(69.94)
TEMP	6 =	529.990	(70.39)
TEMP	7 =	528.290	(68.69)
TEMP	8 =	528.070	(68.47)
TEMP	9 =	524.680	(65.08)
TEMP	10 =	532.830	(73.23)
TEMP	11 =	532.390	(72.79)
TEMP	12 =	532.400	(72.80)
PRES	1 =	63.686	(63683.)
VPRS	1 =	0.315	(65.90)
VPRS	2 =	0.331	(67.30)
VPRS	3 =	0.305	(64.90)
VPRS	4 =	0.399	(72.79)
VPRS	5 =	0.399	(72.80)

SUMMARY OF CORRECTED DATA

TIME = 530
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.775

CORRECTED PRESSURE (PSIA) = 63.3344

Table III.C.16. (v)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 545 0405

TEMP	1 =	535.050	(75.45)
TEMP	2 =	537.250	(77.65)
TEMP	3 =	532.120	(72.52)
TEMP	4 =	531.200	(71.60)
TEMP	5 =	529.530	(69.93)
TEMP	6 =	529.880	(70.28)
TEMP	7 =	528.280	(68.68)
TEMP	8 =	528.050	(68.45)
TEMP	9 =	524.680	(65.08)
TEMP	10 =	532.830	(73.23)
TEMP	11 =	532.400	(72.80)
TEMP	12 =	532.400	(72.80)
PRES	1 =	63.683	(63680.)
VPRS	1 =	0.314	(65.80)
VPRS	2 =	0.329	(67.10)
VPRS	3 =	0.302	(64.70)
VPRS	4 =	0.399	(72.80)
VPRS	5 =	0.399	(72.80)

SUMMARY OF CORRECTED DATA

TIME = 545
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.766

CORRECTED PRESSURE (PSIA) = 63.3325

Table III.C.16. (w)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 600 0405

TEMP	1 =	535.100	(75.50)
TEMP	2 =	537.180	(77.58)
TEMP	3 =	532.160	(72.56)
TEMP	4 =	531.220	(71.62)
TEMP	5 =	529.550	(69.95)
TEMP	6 =	529.840	(70.24)
TEMP	7 =	528.300	(68.70)
TEMP	8 =	528.060	(68.46)
TEMP	9 =	524.660	(65.06)
TEMP	10 =	532.830	(73.23)
TEMP	11 =	532.400	(72.80)
TEMP	12 =	532.400	(72.80)
PRES	1 =	63.680	(63677.)
VPRS	1 =	0.314	(65.80)
VPRS	2 =	0.329	(67.10)
VPRS	3 =	0.302	(64.70)
VPRS	4 =	0.399	(72.80)
VPRS	5 =	0.399	(72.80)

SUMMARY OF CORRECTED DATA

TIME = 600
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.769

CORRECTED PRESSURE (PSIA) = 63.3295

Table III.C.16. (x)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 615 0405

TEMP 1 =	535.030	(75.43)
TEMP 2 =	537.180	(77.58)
TEMP 3 =	532.090	(72.49)
TEMP 4 =	531.330	(71.73)
TEMP 5 =	529.540	(69.94)
TEMP 6 =	529.920	(70.32)
TEMP 7 =	528.290	(68.69)
TEMP 8 =	528.070	(68.47)
TEMP 9 =	524.670	(65.07)
TEMP 10 =	532.840	(73.24)
TEMP 11 =	532.410	(72.81)
TEMP 12 =	532.410	(72.81)
PRES 1 =	63.676	(63673.)
VPRS 1 =	0.315	(65.90)
VPRS 2 =	0.329	(67.10)
VPRS 3 =	0.304	(64.80)
VPRS 4 =	0.399	(72.81)
VPRS 5 =	0.399	(72.81)

SUMMARY OF CORRECTED DATA

TIME = 615
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.778

CORRECTED PRESSURE (PSIA) = 63.3250

Table III.C.16. (y)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 630 0405

TEMP	1 =	535.010	(75.41)
TEMP	2 =	537.160	(77.56)
TEMP	3 =	532.110	(72.51)
TEMP	4 =	531.110	(71.51)
TEMP	5 =	529.550	(69.95)
TEMP	6 =	529.950	(70.35)
TEMP	7 =	528.290	(68.69)
TEMP	8 =	528.060	(68.46)
TEMP	9 =	524.670	(65.07)
TEMP	10 =	532.820	(73.22)
TEMP	11 =	532.390	(72.79)
TEMP	12 =	532.400	(72.80)
PRES	1 =	63.671	(63668.)
VPRS	1 =	0.313	(65.70)
VPRS	2 =	0.330	(67.20)
VPRS	3 =	0.302	(64.70)
VPRS	4 =	0.399	(72.79)
VPRS	5 =	0.399	(72.80)

SUMMARY OF CORRECTED DATA

TIME = 630
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.756

CORRECTED PRESSURE (PSIA) = 63.3205

Table III.C.16. (z)
Measured and Corrected Data Summary
Leakage Rate Verification

SUMMARY OF MEASURED DATA AT 645 0405

TEMP	1 =	535.060	(75.46)
TEMP	2 =	537.140	(77.54)
TEMP	3 =	532.130	(72.53)
TEMP	4 =	531.370	(71.77)
TEMP	5 =	529.590	(69.99)
TEMP	6 =	529.940	(70.34)
TEMP	7 =	528.330	(68.73)
TEMP	8 =	528.090	(68.49)
TEMP	9 =	524.700	(65.10)
TEMP	10 =	532.860	(73.26)
TEMP	11 =	532.430	(72.83)
TEMP	12 =	532.440	(72.84)
PRES	1 =	63.666	(63663.)
VPRS	1 =	0.312	(65.60)
VPRS	2 =	0.329	(67.10)
VPRS	3 =	0.304	(64.80)
VPRS	4 =	0.400	(72.83)
VPRS	5 =	0.400	(72.84)

SUMMARY OF CORRECTED DATA

TIME = 645
DATE = 0405

TEMPERATURE (DEGREES R.) = 531.802

CORRECTED PRESSURE (PSIA) = 63.3153

Table III.E.1. (a)

TYPE "B" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
1	Equip. Access Hatch "O" Ring		2-07-74	20	
			2-12-74	10	
			1-04-75	10	
			1-26-77	10	10
2	Personnel Airlock		2-08-74	850	
			8-22-74	1051	
			10-08-74	281	
			10-25-74	610	
			11-03-74	418	
			11-20-74	420	
			12-14-74	396	
			9-24-75	0	
			12-27-75	0	
			2-04-76	20	
			3-07-76	0	
			3-23-76	400	
			5-05-76	Off Scale	
		Replaced inner door seal	5-14-76	0	
			5-24-76	20	
			5-31-76	0	
			7-16-76	0	
			7-24-76	0	
			9-21-76	0	
			4-02-77	1100	
	Personnel Airlock Double "O" Ring		2-05-74	0	
			1-04-75	0	
			2-26-75	550	
			1-26-77	10	1110
4	Head Access		2-14-74	0	
			1-09-75	0	
			1-25-77	10	10
6	CRD Hatch		2-06-74	0	
			8-15-74	0	
			10-01-75	0	
			4-01-77	10	10
	Dry Well Head Seal		2-14-74	0	
			8-21-74	0	
			1-09-75	0	
			1-31-76	0	
			4-01-77	10	10

Table III.E.1. (b)

TYPE "B" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
	Reactor Stabilizer Manways A thru H		12-17-73 1-30-75 1-18-77	0 0 45	45
7A	"A" Main Steam Line Bellows		1-22-74 7-23-75 9-01-76	0 0 20	20
7B	"B" Main Steam Line Bellows	Repaired Bellows	1-22-74 7-23-75 1-29-76 1-27-77	0 1500 2705 20	20
7C	"C" Main Steam Line Bellows		1-22-74 7-23-75 9-01-76	0 0 20	20
7D	"D" Main Steam Line Bellows		1-22-74 7-23-75 9-01-76	0 99 105	105
9A	Feedwater Line Bellows		1-22-74 1-23-75 9-01-76	0 99 105	105
9B	Feedwater Line Bellows		1-22-74 7-23-75 9-01-76	0 0 20	20
11	HPCI Steam Line Bellows		1-22-74 9-16-75 10-14-76	0 0 20	20
12	RHR Suction Line Bellows		1-22-74 9-16-75 10-14-76	0 0 10	10

Table III.E.1. (c)

TYPE "B" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
13A	RHR Injection Line Bellows		1-22-74 9-16-75 10-14-76	0 0 240	240
14	RWCU Suction Line Bellows		1-22-74 9-16-75 10-14-76	0 0 10	10
16A	Core Spray Injection Line Bellows		1-22-74 9-16-75 10-14-76	0 0 10	10
17	Head Spray Line Bellows		11-22-74 9-16-75 10-14-76	0 0 10	10
13B	"A" RHR Injection Line Bellows		1-22-74 9-30-75 10-14-76	145 130 145	145
16B	Core Spray Injection Line Bellows		1-22-74 9-30-75 10-04-76	0 0 10	10
201A	Torus Vent Bellows		12-07-73 12-09-75 9-07-76	40 105 58	58
201B	Torus Vent Bellows		12-07-73 10-11-75 9-07-76	65 80 20	20
201C	Torus Vent Bellows		12-06-73 10-10-75 9-02-76	0 0 20	20
201D	Torus Vent Bellows		12-06-73 10-10-75 9-02-76	0 0 20	20

Table III.E.1. (d)

TYPE "B" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
201E	Torus Vent Bellows		12-05-73 10-09-75 9-02-76	0 75 58	58
201F	Torus Vent Bellows		12-05-73 10-09-75 9-02-76	0 0 20	20
201G	Torus Vent Bellows		12-04-73 10-10-75 9-07-76	95 108 130	130
201H	Torus Vent Bellows		12-04-73 10-10-75 9-07-76	0 0 20	20
205B	A0-30502A Double "0" Ring		12-06-73 1-31-74 11-11-75 10-07-76	0 0 260 256	
	26A Double "0" Ring		1-09-74 10-13-76	0 10	266
205A	A0-3502B Double "0" Ring	Replaced "0" Ring	2-02-74 11-11-75 10-07-76	217 0 20	
	26B Double "0" Ring		1-09-74 10-13-76	0 10	30
25	A0-3505 Double "0" Ring		12-21-73 10-28-75 10-08-76	0 0 20	
	A0-3519 Double "0" Ring		12-26-73 10-28-75 10-08-76	0 0 10	
	A0-3520 Double"0" Ring		12-21-73 1-18-74 10-28-75 10-08-76	0 0 0 10	40

Table III.E.1. (e)

TYPE "B" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
26	A0-3507 Double "O" Ring		12-20-73	0	
			11-10-75	0	
			10-07-76	10	
	A0-3506 Double "O" Ring		2-03-74	50	
			11-10-75	0	
			10-07-76	20	
					30
219	A0-3511 Double "O" Ring		11-12-75	0	
			10-12-76	37	
	A0-3512 Double "O" Ring		11-12-75	0	
			10-12-76	10	
					47
205B	A0-3521A Double "O" Ring		12-06-73	0	
			1-26-74	0	
			1-26-76	0	
			10-07-76	10	
	A0-3512B Double "O" Ring		12-06-73	0	
			1-26-74	0	
			1-26-76	0	
			10-07-76	20	
					30
35A	TIP Double "O" Ring		12-15-73	0	
			1-22-76	0	
			10-25-76	10	
					10
35B	TIP Double "O" Ring		12-15-73	0	
			4-24-74	0	
			4-25-74	0	
			6-10-74	0	
			1-22-76	0	
			10-25-76	10	10

Table III.E.1. (f)

TYPE "B" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
35C	TIP Double "O" Ring		12-15-73	0	
			4-24-74	0	
			4-25-74	0	
			1-22-76	0	
			10-25-76	10	10
35D	TIP Double "O" Ring		12-15-73	0	
			4-30-74	0	
			6-11-74	0	
			7-01-74	0	
			1-22-76	0	
			10-25-76	10	10
35E	TIP Double "O" Ring		12-15-73	0	
			4-23-74	0	
			4-25-74	0	
			1-22-76	0	
			10-25-76	10	10
35F	TIP Double "O" Ring		12-15-73	0	
			4-23-74	0	
			4-25-74	0	
			1-22-76	0	
			10-25-76	10	10
35G	TIP Double "O" Ring		12-15-73	0	
			6-28-74	0	
			7-01-74	0	
			1-22-76	0	
			10-25-76	10	10
150	Test Nozzle Double "O" Ring		2-07-74	0	
			8-31-76	10	10
200A	Torus Manway		2-14-74	0	
			9-22-75	0	
			12-12-75	650	
			1-28-76	0	
			3-17-77	10	10
213A	Const. Drain		7-02-74	0	
			12-10-75	0	
			9-23-76	10	10
213B	Const. Drain		7-01-74	28	
			12-04-75	0	
			10-19-76	10	10

Table III.E.1. (g)

TYPE "B" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
100D	Electrical		1-21-74 9-26-75 10-20-76	0 0 10	10
100E	Electrical		1-21-74 9-26-75 10-20-76	0 0 10	10
101D	Electrical		1-21-74 9-26-75 10-20-76	0 0 10	10
101C	Electrical		1-21-74 9-26-75 10-20-76	0 0 10	10
101E	Electrical		1-21-74 9-26-75 10-20-76	0 0 10	10
103B	Electrical		1-21-74 9-26-75 10-20-76	0 0 10	10
104E	Electrical		1-21-74 9-26-75 10-20-76	0 0 10	10
104F	Electrical		1-21-74 9-26-75 10-20-76	0 0 10	10
104H	Electrical		1-21-74 9-26-75 10-20-76	0 0 10	10
105C	Electrical		1-21-74 9-26-75 10-20-76	0 0 10	10
105D	Electrical		1-21-74 9-26-75 10-20-76	0 0 10	10
106C	Electrical		1-21-74 9-26-75 10-20-76	0 0 10	10

Table III.E.1. (h)

TYPE "B" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
106D	Electrical		1-21-74 9-26-75 10-20-76	0 0 10	10
100A	Electrical		1-22-74 9-25-75 10-20-76	0 0 10	10
100C	Electrical		1-22-74 9-25-75 10-20-76	0 0 10	10
104A	Electrical		1-22-74 9-25-75 10-20-76	0 0 10	10
104B	Electrical		1-22-74 9-25-75 10-20-76	0 0 10	10
104C	Electrical		1-22-74 9-25-75 10-20-76	0 0 10	10
104D	Electrical		1-22-74 9-25-75 10-20-76	0 0 10	10
105A	Electrical		1-22-74 9-25-75 10-20-76	0 0 10	10
105B	Electrical		1-22-74 9-25-75 10-20-76	0 0 10	10
106A	Electrical		1-22-74 9-25-75 10-20-76	0 0 10	10
106B	Electrical		1-22-74 9-25-75 10-20-76	0 0 10	10
107	Electrical		1-22-74 9-25-75 10-20-76	0 0 10	10

Table III.E.1. (i)

TYPE "B" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
220	Electrical		1-22-74	0	
			9-25-75	0	
			10-20-76	10	10
101A	Electrical		1-22-74	0	
			9-14-75	0	
			10-19-76	10	10
101B	Electrical		1-22-74	0	
			9-14-75	0	
			10-19-76	10	10
101F	Electrical		1-22-74	0	
			9-14-75	0	
			10-19-76	10	10
231A	Electrical		2-07-74	175	
			4-15-74	0	
			10-19-76	10	10
231B	Electrical		2-04-74	325	
			4-15-74	0	
			10-19-76	10	10
104G	Electrical		1-21-74	0	
			9-26-75	0	
			10-20-76	10	10
200B	Torus Manway		1-22-74	0	
			7-11-74	0	
			12-10-74	0	
			1-31-76	0	
			5-28-76	0	
			7-13-76	0	
			4-01-77	10	10

Table III.E.2. (a)

TYPE "C" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
7A	MSIV 80A		12-01-73	326	
			12-29-76	Off Scale	
		Lapped Valve	12-14-77	120	
	MSIV 86A		1-02-74	2173	
			12-29-76	1560	
					1560
7B	MSIV 80B		12-01-73	0	
			12-29-76	10	
	MSIV 86B		12-01-73	978	
			12-26-76	4850	
					4850
7C	MSIV 80C		1-03-74	848	
			12-26-76	Off Scale	
		Lapped Valve	2-14-77	85	
	MSIV 86C		4-06-74	316	
			12-26-76	1240	
					1240
7D	MSIV 80D		1-19-74	913	
			12-26-76	Off Scale	
		Lapped Valve	2-14-77	100	
	MSIV 86D		1-19-74	283	
			12-29-76	1520	
					1520
8	MSL Drain MO 2-74 MO 2-77		2-06-74	115	
			2-01-75	0	
			12-29-74	235	235
~~9A~~	Feedwater		1-31-74	200	
			1-29-75	380	
			1-30-76	381	
			1-18-77	556	556
9B	Feedwater		1-21-74	1200	
			1-30-76	0	
			1-08-77	Off Scale	
			1-21-77	Off Scale	
		Lapped 28B & 96B	2-03-77	4200	4200

Table III.E.2. (b)

TYPE "C" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
10	RCIC Steam Supply MO 13-15, 16		1-09-74	0	
			2-02-75	127	
			5-18-75	190	
			2-14-77	8000	
		Lapped MO-13-15	3-14-77	100	100
11	HPCI Steam Supply MO 23-15, 16		12-05-73	0	
			1-09-74	0	
			1-25-75	0	
			1-20-77	Off Scale	
		Lapped MO-23-15	2-15-77	60	60
12	RHR Suction MO-10-17, 18		12-04-73	0	
			5-03-74	0	
			12-19-75	144	
			3-18-77	400	400
13A	RHR Injection MO-25B, 154B SV-5222		1-07-74	690	
			1-02-76	600	
			1-21-76	600	
			1-28-77	400	400
13B	RHR Injection MO-10-154 SV-5221.		12-10-73	0	
			2-01-76	0	
			8-10-76	0	
			12-21-76	10	
	MO-25A		3-03-77	200	200
14	RWCU Suction MO-12-15, 18		12-31-73	0	
			2-02-75	0	
			1-21-77	10	10
16A	Core Spray MO-14-11B, SV 5224		12-04-73	37	
			1-30-75	106	
		Lapped 11B Valve	1-21-75	45	
			12-29-76	35	
	MO-14-12B		1-25-77	10	35
16B	Core Spray MO-14-11A, SV-5225		12-11-73	400	
			2-01-75	85	
		Lapped 11A Valve	12-15-76	800	
	MO-14-12A		1-25-77	10	800

Table III.E.2. (c)

TYPE "C" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
17	Head Spray MO-10-32, 33 SV-5223		5-21-74 1-13-76 2-14-77	0 0 950	950
18	DW Floor Drains AO-20-82, 83	 Lapped Valves	2-06-74 1-21-75 2-24-75 1-14-77	42 110 39 15	15
19	DW Equip. Drains AO-20-94,95	Lapped Valves	2-06-74 1-26-76 10-21-76	450 0 10	10
22	Inst. Nitrogen AO-3969A Check Valve		12-15-73 1-08-76 2-02-77	78 42 75	75
25	Containment Purge Purge Supply Valves	Replaced Rubber Seat	2-07-74 10-16-74 10-15-75 10-23-75	200 0 0 192	
		Replaced Rubber Seat		10	
	Slow Purge Check Valves	Lapped Torus Check Valve	10-27-75 10-28-76	250 47	
	Slow Purge Valve AO-3523		4-18-74 10-28-75 10-28-76	0 325 130	140
26	Drywell Purge Exhaust AO-3506, 3507		12-14-73 11-11-75 2-26-76 9-02-76	40 0 22 35	
	Drywell CAD. Exhaust AO-3509, 3510, 5235	 Lapped AO-3509	12-14-73 11-07-75 9-07-76 1-26-77	140 202 235 90	
	PCAC Sample SV-3671G	Rebuilt Valve	1-10-74 4-01-74 8-27-74 4-28-75 9-02-76 2-25-77	95 0 0 0 10 10	

Table III.E.2. (d)

TYPE "C" SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
	PCAC Sample SV-3978G	Rebuilt Valve	4-04-74 8-27-74 5-08-75 9-02-76 9-25-77	200 40 0 20 10	
	CAD Sample SV-5960B/61B/66B		5-25-76	10	145
32C	ILRT Test Tap		5-22-74 5-21-76 10-22-76	0 0 10	10
32D	ILRT Test Tap		5-22-74 5-21-76 10-22-76	0 0 10	10
218C	ILRT Test Tap		5-22-74 5-21-76 10-22-76	0 38 135	135
36	CRD Return Check Vlv. 13-110	Lapped Valve	1-22-74 2-08-77	400 10	
	Check Vlv. 13-113		6-28-74 1-13-77	30 10	10
39A	Containment Spray MO-10-26B, 31B	Lapped 26B Valve	12-10-73 12-19-75 12-16-76	0 160 40	
	CAD Injection SV-5948A, 49A		5-15-76	15	55
41	Recirc. Sample AO-2-39, 40		1-04-74 1-27-75 1-04-77	0 0 10	10
42	Stand-by Liquid Control XV-14A, 14B		4-22-74 2-01-75 3-11-77	0 0 10	
	Check Vlv. 11-16		1-02-74 4-23-74 2-01-75 3-11-77	0 0 0 10	10

Table III.E.2. (e)

TYPE "C" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
39B	Containment Spray MO-10-26A, 31A		12-11-73	150	
			12-19-75	370	
			3-30-77	215	
	CAD Injection		10-28-76	80	
					295
51B	PCAC sample' SV3671D		1-8-74	0	
			4-7-74	0	
			4-30-75	0	
			10-19-76	43	
			2-25-77	15	
	SV 3978D		1-4-74	0	
			4-4-74	40	
			5-7-75	0	
			9-2-76	260	
			2-25-77	32	
					32
51 C	PCAC sample SV 3671C		4-7-74	0	
			8-24-74	0	
			2-19-75	0	
			5-2-75	750	
		Rebuilt valve	7-1-75	80	
	CAD sample SV 5960 C/61C/66C		5-24-76	5	
					85
51D	PCAC sample return SV 4980		1-8-74	0	
			8-23-74	0	
			5-8-75	0	
			9-9-76	310	
	Check Valve		1-22-74	215	
			5-8-75	265	
		Lapped Valve	3-10-77	20	
					310

Table III.E.2. (f)

TYPE "C" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
51A	PCAC Sample SV-3671 E	Rebuilt Valve	1-08-74	200	
			4-07-74	0	
			8-24-74	0	
			4-30-75	0	
			10-20-76	5	
			2-25-77	38	
	SV-3978E		1-04-74	0	
			4-04-74	0	
			5-08-75	0	
			9-02-76	0	
			2-25-77	10	
					38
52F	Inst. Nitrogen AO-3969B		12-14-73	0	
			1-20-76	0	
	Check Valve		2-04-77	20	
		Lapped Valve	2-02-74	925	
			1-20-76	0	
			2-04-77	25	
					25
57	Main Steam Sample AO-316- 317		1-04-74	0	
			12-08-74	0	
			1-04-75	0	
			12-30-76	25	25
203	PCAC Sample SV-3671B		4-07-74	0	
			4-28-75	0	
			12-10-75	0	
			9-22-76	18	
			2-25-77	10	
	SV-3978B		4-05-74	0	
			5-07-75	0	
			8-31-76	48	
			2-25-77	55	
	CAD Sample SV-5960D, 61D, 66D		5-24-76	10	
					65
205A	Torus Vac Breaker AO-3502B & VRV 9-26B		1-18-74	30	
			1-11-76	0	
			11-03-76	20	20

Table III.E.2. (g)

TYPE "C" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
205B	Torus Vac Breaker AO-3502A & VRV 9-26A	Replaced VRV Seal	2-02-74 1-15-76 11-02-76	240 65 10	10
211A	Torus Spray MO-10- 34,38,39B	Lapped MO-39B	1-26-74 1-26-76 12-29-76	200 25 480	
	CAD Injection SV-5950B, 5951B		5-22-76	25	505
211B	Torus Spray MO-10-34,38,39A	Lapped MO-39A	1-30-74 1-27-76 12-20-76 4-04-77	50 210 Off Scale 1425	
	CAD Injection SV-5950A, 5951A		5-20-76	20	1445
212	RCIC Exhaust 13-9, 50	Lapped 13-9	1-21-74 1-08-76 2-01-77 2-16-77	50 475 270 185	
	AO-5240, 41		1-26-74 9-19-75 12-28-76	0 20 10	
	13-9 "O" Ring		1-09-76	10	205
214	HPCI Exhaust 23-12, 65	Lapped Both Valves	2-02-74 1-20-76 1-15-77 2-15-77	80 0 Off Scale 10	
	AO-5247, 48		1-22-74 1-13-76 12-29-76 2-22-77	0 0 Off Scale 450	
	23-12 "O" Ring		1-12-76	10	470

Table III.E.2. (h)

TYPE "C" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
217B	HPCI Vac Breaker MO-5245		8-20-74	0	
			1-09-76	50	
			2-14-77	2000	
	RCIC Vac Breaker MO-5244		5-02-74	250	
		Lapped Manual Valve	8-30-74	40	
			1-14-76	52	
			2-14-77	240	
					2240
218A	Inst. Nitrogen AO-3968		1-30-74	100	
		Lapped Valve	1-29-75	0	
			1-31-77	Off Scale	
			2-22-77	360	
	Check Valve		2-04-74	0	
		Lapped Valve	2-02-76	475	
		Lapped Valve	1-31-77	Off Scale	
			2-22-77	10	
					360
218B	PCAC Sample SV-3671A		4-05-74	0	
			9-28-75	0	
		Rebuilt Valve	9-07-76	Off Scale	
		Rebuilt Valve	9-15-76	1700	
			9-22-76	10	
	SV-3978		4-05-74	0	
			5-07-75	0	
			8-31-76	Off Scale	
			9-15-76	1700	
			9-22-76	0	
			2-25-77	10	
					10
219	Torus Exhaust AO-3511, 12		2-06-74	40	
			10-17-75	0	
			12-16-75	0	
			9-09-76	220	
	CAD Exhaust AO-3513, 14		2-02-74	28	
			11-14-75	0	
		Lapped Valves	9-10-76	Off Scale	
			3-11-77	1510	

Table III.E.2. (i)

TYPE "C" TEST SUMMARY

PEN'T NO.	SYSTEM OR PENETRATION NAME	REMARKS	TEST DATE	TEST TOTAL	PEN'T TOTAL
	PCAC Sample				
	SV-3671F	Rebuilt Valve	2-04-77	225	
			8-27-74	0	
			4-30-75	0	
			10-21-76	0	
			2-25-77	10	
	SV-3978F		2-04-74	0	
			4-03-74	0	
			8-27-74	0	
			5-08-75	0	
			9-02-76	0	
			2-25-77	10	
	CAD Sample				
	SV-5960A, 61A, 66A		5-25-76	10	
					1750
221	RCIC Vac Pump Discharge		1-14-74	90	
	13-10, 38		1-13-76	50	
			12-29-76	250	250
223	HPCI Exhaust Drain		12-13-73	310	
	23-13, 56		8-07-75	100	
			12-29-76	225	225
225	RCIC Suction		2-01-74	0	
	MO-13-39, 41		5-21-74	90	
			1-29-75	60	
			1-14-77	Off Scale	
			2-11-77	50	
	Torus Clean-Up		12-26-73	0	
	MO-14-70,71		7-18-75	190	
			9-01-76	10	
					60
227	HPCI Suction		1-26-74	275	
	MO-23-37,58		4-08-74	0	
			1-30-75	0	
			1-18-77	Off Scale	
			3-21-77	135	135
		TOTAL B & C TESTS		20,290	
		60% La CRITERIA		71,136	

APPENDIX A

BECHTEL ILRT COMPUTER PROGRAM

DESCRIPTION

A. The Containment Integrated Leakage Rate Test (ILRT) Program calculates the leakage rate for a nuclear reactor containment vessel. The program computes the leakage rate at a given time from input values of absolute pressure, drybulb temperature and dewpoint temperature (water vapor pressure). Leakage rate is calculated by the Absolute Method as defined in ANSI N45.4-1972, "Leakage Rate Testing of Containment Structures for Nuclear Reactors".

B. The Containment Integrated Leakage Rate Test Program is designed to allow the user to evaluate containment leakage rate test results at the jobsite during containment leakage rate testing. Interim leakage rate test reports may be obtained at any time during the testing period. Each interim report can provide three printouts. The first printout, called the Total-Time Method, uses the initial and latest input data to compute leakage rate Each computed leakage rate is statistically averaged using a linear least-squares fit.

C. The second printout is the Trend Report. This report is a trend of Total-Time Method calculations and gives a more concise and timely description of test results. In this printout the leakage rate is reported as a function of test duration.

D. The third printout, called the Mass Point Method, uses data at a given time and computes the mass of air within the containment. Each individually computed mass of air is statistically fit to a straight line using a linear least-squares fit. The slope of the straight line is the leakage rate. The Mass Point Method is a recommended method in the ANS N274 draft standard which is being prepared to supercede ANSI N45.4.

E. The test results indicate that both methods are satisfactory for computing containment integrated leakage rates. However, the Total-Time Method is recommended by Appendix J to 10 CFR 50 and is used, therefore, to report the containment leakage rate.

I. EXPLANATION OF PROGRAM

A. The Containment Integrated Leakage Rate Program computes containment leakage rate using the Absolute Method given in ANSI N45.4-1972, "Leakage Rate Testing of Containment Structures for Nuclear Reactors".

B. Prior to the start of the test basic data is entered, which consists of:

(1) Number of containment drybulb temperature points, dewpoint temperature (vapor pressure) points and absolute pressure points.

(2) Volume fractions assigned to each sensor.

(3) Calibration data, conversion factors, etc.

At the start of the test the following information is inserted:

(1) Test title.

(2) Test pressure.

(3) Maximum allowable leakage rate at peak test pressure.

(4) Containment free air volume.†

(5) Verification test imposed leakage rate.*

C. The recorded data, which is used to compute the leakage rate, is then entered. Recorded data consists of:

(1) Containment atmosphere drybulb temperature.

(2) Containment atmosphere absolute pressure.

(3) Containment atmosphere dewpoint temperature.

(4) Containment free air volume $^{\$}$.

D. Drybulb temperature, absolute pressure and dewpoint temperature (water vapor pressure) values are entered as read from the data sheets, i.e., each drybulb and dewpoint temperature is entered in °F and pressure is entered in counts. After all data for a given time step is entered, a printout Summary or the Measured Data is provided.

E. If a drybulb temperature or dewpoint temperature (vapor pressure) sensor becomes inoperable during the course of the test, the sensor is eliminated and volume fractions recomputed. The new volume fractions are then entered in the computer program of the leakage rate computations.

*For verification test and Mass Point Method only.
†For verification test only.
§If containment free air volume is changing (due to water level changes, for example).

F. In the Summary of the Measured Data, each temperature entry is printed out in °F as entered. Each dewpoint temperature entry is corrected based on calibration data and on standard conversion factors. Dewpoint temperature is printed out in °F as entered, in °F corrected by calibration data, and in the equivalent water vapor pressure in psia. Pressure is printed out in counts as entered and in psia as corrected by calibration data.

G. At this point the user is given an opportunity to check the data and correct any errors. Following any corrections, if required, a Corrected Data Summary is printed out. This summary consists of the date, time, one weighted average containment drybulb temperature and one average containment air pressure (corrected for water vapor pressure and water vapor pressure volume fractions). These corrected values of temperature and pressure are the values used in the containment leakage rate computations. Free air volume changes, if applicable, are recorded on the data file for use in the leakage rate computations.

COMPUTATIONS

A. Total-Time

1. The leakage rate is computed as follows:

$$P_1V_1 = W_1RT_1 \qquad (1)$$

$$P_2V_2 = W_2RT_2 \qquad (2)$$

$$\frac{\%\ \text{leakage}}{24\ \text{hours}} = \frac{24}{t}\left[\frac{W_1 - W_2}{W_1}\right](100) \qquad (3)$$

Solving for W_1 and W_2 and substituting equations (1) and (2) into (3) yields:

$$L = \frac{2400}{\Delta t}\left[1 - \frac{T_1P_2V_2}{T_2P_1V_1}\right] \quad \text{(variable free air volume)}$$

$$L = \frac{2400}{\Delta t}\left[1 - \frac{T_1P_2}{T_2P_1}\right] \quad \text{(constant free air volume)}$$

Where:

W_1, W_2 = Weight of containment air at time t_1 and t_2, respectively.

T_1, T_2 = Absolute temperature of containment volume at time t_1 and t_2, respectively.

P_1, P_2 = Absolute containment air pressure (corrected for water vapor pressure) at time t_1 and t_2, respectively.

V_1, V_2 = Containment internal free air volume at time t_1 and t_2, respectively.

Δt = $t_2 - t_1$, in hours.

L = Leakage rate (percent/day).

R = Gas Constant (assumed constant).

2. Linear least-squares fitting is used to establish the value of leakage rate at any hour. The leakage rate as a linear function of time is:

$$\tilde{L} = a + bt \qquad (4)$$

Where:

$$a = \frac{\Sigma L_i \Sigma t_i^2 - \Sigma t_i \Sigma t_i L_i}{N\Sigma t_i^2 - (\Sigma t_i)^2}$$

$$b = \frac{N\Sigma L_i t_i - L_i \Sigma t_i}{N\Sigma t^2 - (\Sigma t_i)^2}$$

$\tilde{L}_i$ = Calculated leakage rate from equation (4) above at time t_i.

N = Number of leakage rate calculations.

$$\Sigma = \sum_{i=1}^{N}$$

Where:

W_1, W_2 = Weight of containment air at time t_1 and t_2, respectively.

T_1, T_2 = Absolute temperature of containment volume at time t_1 and t_2, respectively.

P_1, P_2 = Absolute containment air pressure (corrected for water vapor pressure) at time t_1 and t_2, respectively.

V_1, V_2 = Containment internal free air volume at time t_1 and t_2, respectively.

Δt = $t_2 - t_1$, in hours.

L = Leakage rate (percent/day).

R = Gas Constant (assumed constant).

2. Linear least-squares fitting is used to establish the value of leakage rate at any hour. The leakage rate as a linear function of time is:

$$\tilde{L} = a + bt \qquad (4)$$

Where:

$$a = \frac{\Sigma L_i \Sigma t_i^2 - \Sigma t_i \Sigma t_i L_i}{N\Sigma t_i^2 - (\Sigma t_i)^2}$$

$$b = \frac{N\Sigma L_i t_i - L_i \Sigma t_i}{N\Sigma t^2 - (\Sigma t_i)^2}$$

$\tilde{L}_i$ = Calculated leakage rate from equation (4) above at time t_i.

N = Number of leakage rate calculations.

$$\Sigma = \sum_{i=1}^{N}$$

3. Considering confidence limits:

$$S_m = \pm t_{0.025}(s)\sqrt{1 + \frac{1}{N} + \frac{(t_p-\bar{t})^2}{\Sigma(t_i-\bar{t})^2}} \quad ; \quad s = \sqrt{\frac{\Sigma(L_i-\tilde{L}_i)^2}{N-2}}$$

$$\bar{t} = \frac{\Sigma t}{N}$$

$t_{0.025}$ = Percentage point of the students-t distribution at the 95% confidence level.

Formalizing the standard t-distribution table yields:

$$t_{0.025} = 1.96 + \frac{2.37}{N-2} + \frac{2.82}{(N-2)^2}$$

t_p = test duration

and

$$L_{95} = \tilde{L}_i \pm S_m$$

B. Mass-Point Method

1. The leakage rate is computed as follows:

$$W_i = 144\ \frac{P_i V_i}{R T_i}$$

2. Linear least squares fitting:

$$\tilde{W}_i = b + mt$$

$$b = \frac{(\Sigma W_i)(\Sigma t_i^2) - (\Sigma t_i W_i)(\Sigma t_i)}{N(\Sigma t_i^2) - (\Sigma t_i)^2}$$

$$m = \frac{N(\Sigma t_i W_i) - (\Sigma W_i)(\Sigma t_i)}{N(\Sigma t_i^2) - (\Sigma t_i)^2}$$

$$L = \frac{m}{b}(2400)$$

3. Considering confidence limits:

$$S_m = \pm t_{0.025}\sqrt{\frac{\frac{\Sigma(W_i-\bar{W}_i)^2}{N-2}}{\Sigma(t_i-\bar{t})^2}}$$

and

$$L_{95} = \frac{2400}{b}(m \pm S_m)$$

Where:

W_i = Mass of contained air at time t_i.

T_i = Absolute temperature of containment atmosphere at time t_i.

P_i = Absolute pressure of containment atmosphere air at time t_i.

R = Gas constant for air.

V_i = Containment internal free air volume.

t_i = Time, in hours.

L_{95} = Leakage rate, percent/day at the 95% confidence level.

$\bar{W}_i$ = Regression line value of mass of contained air at time t_i.

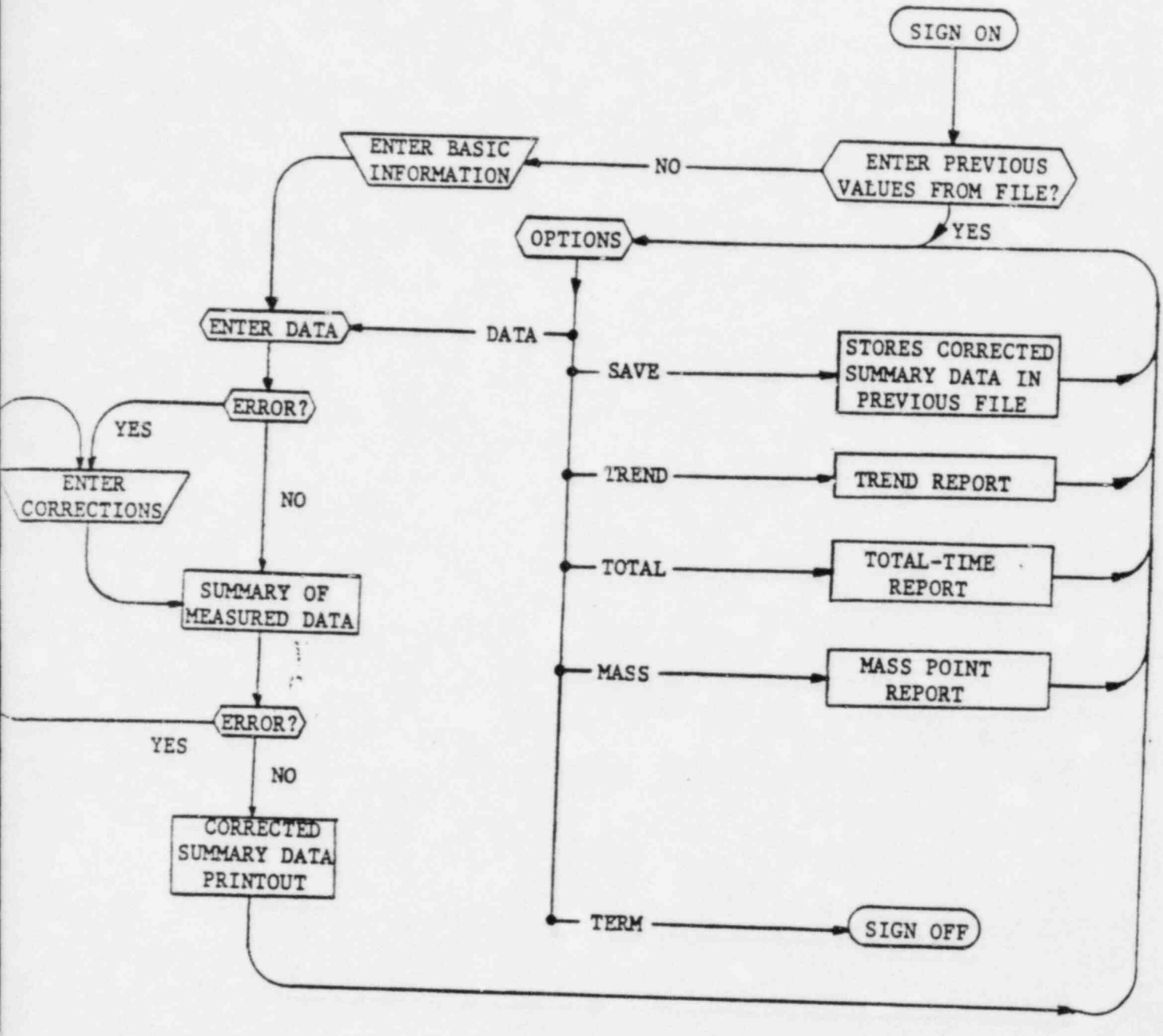
D. Program Logic

1. The general flow of user's decisions for the Bechtel Time Share System ILRT program is shown in the flow chart in Figure A-1, Page A-8.

2. Initially, the basic data (see paragraph II.B of page A-2) is supplied to the system. After entering the basic data, values of drybulb temperature, absolute pressure, dewpoint temperature, and containment free air volume (if changing) for each data set are entered. The Temperature and Pressure Corrected Data Summary is then computed for each data set and this information is stored on a file. Therefore, when restarting the program it is

possible to enter averaged values of temperature and pressure from previous runs from a stored file. After entry of data the user may select one of the following options:

Option Commend	Function
DATA	Enables operator to enter additional raw data. When the system requests values of time, drybulb temperature, pressure, dewpoint temperature (vapor pressure), and free air volume (if applicable) the user enters data as directed by the program. After completing the data entry, a summary is printed out for the user's verification of data correctness. If there are errors detected, the user will be given the opportunity to correct the errors. After the user certifies that the data as entered is correct, a Corrected Data Summary Report is printed.
TREND	Terminal will print out a Trend Report.
TOTAL	Terminal will print out a Total-Time Report.
MASS	Terminal will print out a Mass Point Report.
TERM	Enables operator to sign-off temporarily or permanently.
SAVE	Enables operator to store the Temperature and Pressure Corrected Data Summary on a file thereby updating the previous file automatically.
LIST	When used with a given file name, the printer will print out a listing of the Corrected Summary Data stored on the file.



CONTAINMENT INTEGRATED LEAKAGE RATE TEST PROCEDURE

COMPUTER PROGRAM LOGIC DIAGRAM

Figure A-1

PHILADELPHIA ELECTRIC COMPANY

2301 MARKET STREET

P.O. BOX 8699

PHILADELPHIA, PA. 19101

(215) 841-4000

June 28, 1977

Re: Docket No. 278

Regulatory Docket File

Mr. [illegible]dson G. Case
Acting Director
Office of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Case:

SUBJECT: Peach Bottom Unit 3
Reactor Containment Building Integrated
Leak Rate Test Report

This letter accompanies 15 copies of the Reactor Containment Building Integrated Leak Rate Test Report for Peach Bottom Unit 3, pursuant to Operating License DPR - 56.

This report is being submitted in compliance with Section 4.7.A.2 of the Technical Specifications of Appendix A to DPR-56 and Appendix J to 10 CFR 50.

Very truly yours,

W. M. Alden

W. M. Alden
Engineer-In-Charge
Nuclear Section
Generation Division

WJD:klf

cc: Mr. William G. McDonald
Office of Management Information and
Program Control
U.S. Nuclear Regulatory Commission
Washington, DC 20555
with enclosure (2 copies)